WCH-381
Rev. 1

River Corridor
Closure Contract

Data Quality Assessment Report for the Remedial Investigation of Hanford Site Releases to the Columbia River, Hanford Site, Washington

September 2010

For Public Release

Washington Closure Hanford

Prepared for the U.S. Department of Energy, Richland Operations Office
Office of Assistant Manager for River Corridor

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REVISION HISTORY

Revision	Date	Reason for revision	Revision initiator
1	09/2010	Tables in Section 2 and text in Sections 3.3 and 4.5 were updated to reflect the addition of the remaining walleye data that was not available for Rev. 0. Appendix E was updated to include the worksheets for the remaining walleye data packages.	L. C. Hulstrom
0	06/2010	Initial issuance	NA

ACRONYMS

CERCLA	*Comprehensive Environmental Response, Compensation, and Liability Act of 1980*
COPC	contaminant of potential concern
DOC	dissolved organic carbon
DOE	U.S. Department of Energy
DRO	diesel range organics
DQA	data quality assessment
DQO	data quality objective
Ecology	Washington State Department of Ecology
EPA	U.S. Environmental Protection Agency
IDL	instrument detection limit
LBGR	lower boundary of gray region
LCS	laboratory control sample
MARSSIM	*Multi-Agency Radiation Surveys and Site Investigation Manual*
MDA	minimum detectable activity
PCB	polychlorinated biphenyl
QA	quality assurance
QC	quality control
RDL	reported detection limit
RI	remedial investigation
RPD	relative percent difference
SAP	sampling and analysis plan
SDG	sample delivery group
SVOC	semivolatile organic compound
TOC	total organic carbon
VOC	volatile organic compound
VSP	Visual Sample Plan
WCH	Washington Closure Hanford

METRIC CONVERSION CHART

Into Metric Units			Out of Metric Units		
If You Know	*Multiply By*	*To Get*	*If You Know*	*Multiply By*	*To Get*
Length			**Length**		
inches	25.4	millimeters	millimeters	0.039	inches
inches	2.54	centimeters	centimeters	0.394	inches
feet	0.305	meters	meters	3.281	feet
yards	0.914	meters	meters	1.094	yards
miles	1.609	kilometers	kilometers	0.621	miles
Area			**Area**		
sq. inches	6.452	sq. centimeters	sq. centimeters	0.155	sq. inches
sq. feet	0.093	sq. meters	sq. meters	10.76	sq. feet
sq. yards	0.836	sq. meters	sq. meters	1.196	sq. yards
sq. miles	2.6	sq. kilometers	sq. kilometers	0.4	sq. miles
acres	0.405	hectares	hectares	2.47	acres
Mass (weight)			**Mass (weight)**		
ounces	28.35	grams	grams	0.035	ounces
pounds	0.454	kilograms	kilograms	2.205	pounds
ton	0.907	metric ton	metric ton	1.102	ton
Volume			**Volume**		
teaspoons	5	milliliters	milliliters	0.033	fluid ounces
tablespoons	15	milliliters	liters	2.1	pints
fluid ounces	30	milliliters	liters	1.057	quarts
cups	0.24	liters	liters	0.264	gallons
pints	0.47	liters	cubic meters	35.315	cubic feet
quarts	0.95	liters	cubic meters	1.308	cubic yards
gallons	3.8	liters			
cubic feet	0.028	cubic meters			
cubic yards	0.765	cubic meters			
Temperature			**Temperature**		
Fahrenheit	subtract 32, then multiply by 5/9	Celsius	Celsius	multiply by 9/5, then add 32	Fahrenheit
Radioactivity			**Radioactivity**		
picocuries	37	millibecquerel	millibecquerels	0.027	picocuries

1.0 INTRODUCTION

Between 1943 and 1989, historic releases of contamination to the Columbia River occurred during the Hanford Site weapons production mission. In addition, waste disposal practices at the Hanford Site also resulted in release of contaminants to the upland soil. Some of the contaminants have moved from the soil into groundwater beneath the Hanford Site. The contaminants then moved via the groundwater into the Columbia River where the groundwater percolates up through the river bottom and mixes with river water and riverine sediments. As a part of the remedial investigation (RI), it is important to understand what contaminants are present, the concentrations of these contaminants, and current contaminant locations because the contamination may have undesirable effects on humans and animals that use the Columbia River.

1.1 PURPOSE

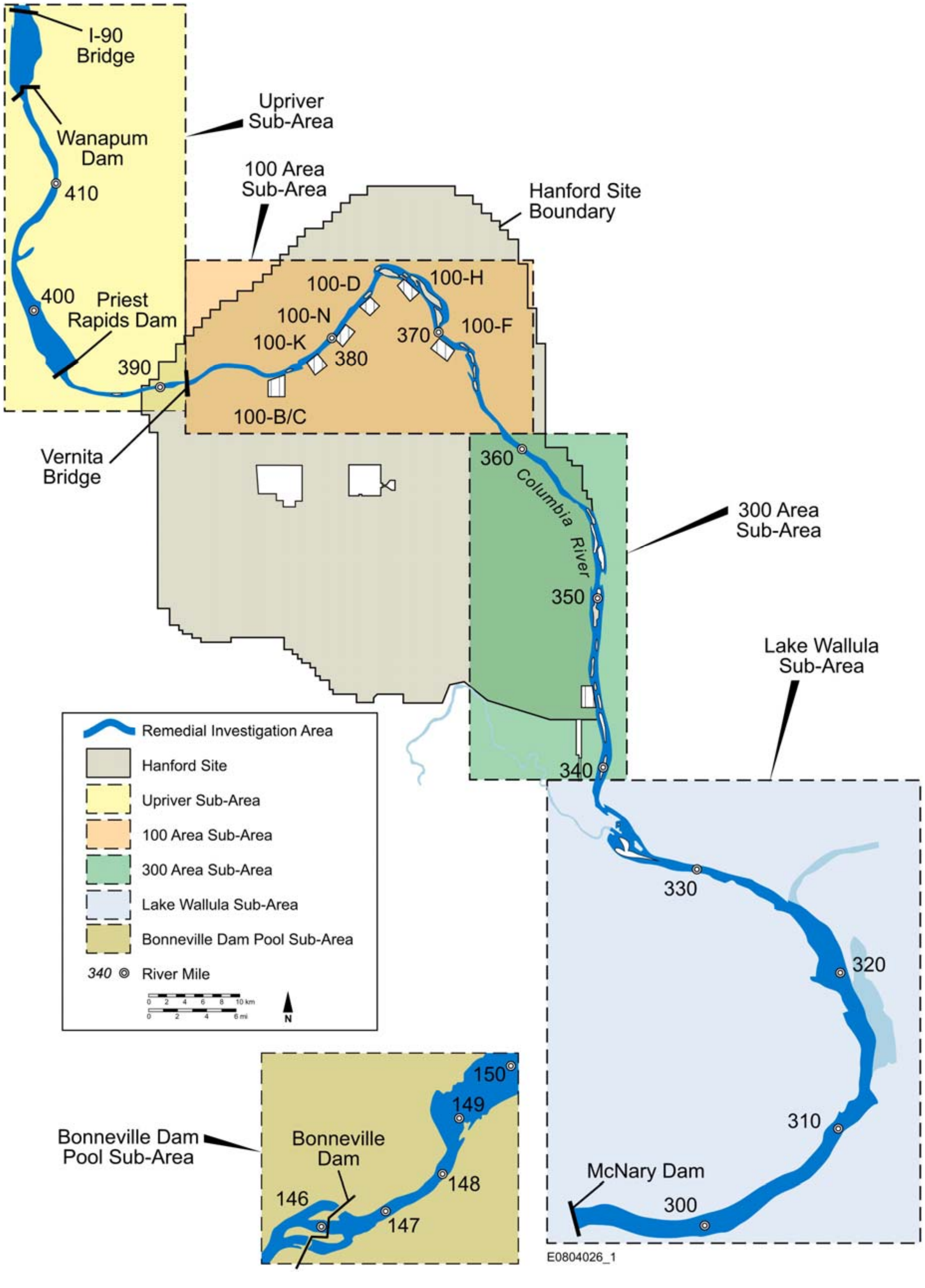
This report has been prepared in support of the RI of Hanford Site Releases to the Columbia River and summarizes the results of the data quality assessment (DQA) that was performed on the analytical data generated in connection with the following data collection efforts:

- 2008/2009 surface water, sediment, and soil data collection
- Groundwater upwelling investigation (e.g., pore water, surface water, sediment) sample collection
- Fish tissue sample collection.

The field investigation program for the RI was developed by the U.S. Department of Energy (DOE), the U.S. Environmental Protection Agency (EPA) and the Washington State Department of Ecology (Ecology), collectively referred to as the "Tri-Parties." The scope of the sampling program was based on the outcome of the data quality objectives (DQO) process (WCH-265) to address the data needs. The rationale for the sampling approach and strategy are detailed in DOE/RL-2008-11, *Remedial Investigation Work Plan for Hanford Site Releases to the Columbia River* (Work Plan). Appendix A to the work plan is the sampling and analysis plan (SAP) that describes the sampling activities. Requirements for sampling methods, sample handling and custody and analytical methods are detailed in WCH-286, *Sampling and Analysis Instructions for the Remedial Investigation of Hanford Site Releases to the Columbia River*. The work plan, SAP, and sampling and analysis instructions directed the sample collection methods and locations. Figure 1-1 depicts the investigation area for the RI, which is divided into five subareas based on proximity to the Hanford Site.

The RI field activities associated with the collection of sediment, river water, and soil in and adjacent to the Columbia River near the Hanford Site and in nearby tributaries are documented in WCH-352, *Field Summary Report for Remedial Investigation of Hanford Site Releases to the Columbia River, Hanford Site, Washington*. WCH-352 describes the sampling locations, identifies samples collected, and describes any modifications and additions made to the SAP.

Figure 1-1. Columbia River Remedial Investigation Area.



The groundwater upwelling field activities and data collection are documented in WCH-380*, Sampling Summary Report for Mapping and Characterization of Hanford Site Releases into the Columbia River via Groundwater Upwelling*. The RI field activities associated with the collection of fish tissue samples are documented in WCH-387*, Sampling Summary Report for Fish Sample Collection for the Remedial Investigation of Hanford Site Releases to the Columbia River*.

The data from the RI sampling efforts will be used by the DOE to evaluate the nature and extent of past releases of Hanford Site contaminants to the Columbia River. Results from the sampling efforts will be combined with previously collected environmental data and used to complete a baseline human health and ecological risk assessment prepared in accordance with *Comprehensive Environmental Response, Compensation, and Liability Act of 1980* (CERCLA) guidance. The risk assessments will address current environmental conditions in the Columbia River. The data are being used to allow regulators to make final decisions for cleaning up Hanford Site contamination that exists in and along the Columbia River. The DQA was required to verify that the data collected in support of the RI are suitable for their intended purpose to support the Screening Level Ecological Risk Assessment and the Baseline Human Health Risk Assessment.

1.2 SCOPE

The scope of this DQA was detailed in Section 3.13 of the SAP (DOE/RL-2008-11, Appendix A). The purpose of this evaluation is to determine if quantitative data are of the correct type and are of adequate quality to meet the project DQOs. Tasks that were completed in support of this DQA included data validation and assessment of laboratory analytical data packages to determine if the data meet the DQOs. The DQOs associated with data include characterization and quantification of contaminants in the Columbia River, quantification of human health and ecological risk from contact with the river environment, and evaluation of the potential need for remedial action to reduce potential risk from contact with contaminants.

2.0 DATA QUALITY ASSESSMENT METHODS

The following subsections summarize the methods that were used for the DQA. The media evaluated as part of this DQA consisted of surface water, sediment, soil, pore water, and fish tissue. This section describes the methodology used for the assessment of laboratory data packages.

2.1 DATA QUALITY ASSESSMENT OF LABORATORY DATA PACKAGES

During the RI field sampling activities, surface water, sediment, soil, groundwater upwelling, and fish tissue samples were collected and submitted to off-site laboratories for analysis of chemical, physical, and radiological methods. The media sampled in connection with the groundwater upwelling investigation included pore water, surface water, and sediment. The analytical laboratories used for chemical analysis are listed in Table 2-1. The samples were grouped into unique sample delivery groups (SDGs). Typically, only one medium was included in any SDG. A summary of the number of SDGs by medium that were assessed during this DQA is provided in Table 2-2. The analytical results for the samples associated with each SDG were reported by the laboratory in data packages that included laboratory quality assurance/quality control (QA/QC) results. Table 2-3 lists the analytical methods used by the laboratories.

Table 2-1. Analytical Laboratories.

Laboratory	Address
Lionville Laboratory, Inc.	208 Welsh Pool Road, Exton, PA 19341
Test America	2800 George Washington Way, Richland, WA 99354
	5815 Middlebrook Pike, Knoxville, TN 37921
Eberline Analytical Corporation/Eberline Services	2030 Wright Avenue, Richmond, CA 94804
Pacific Northwest National Laboratory, Battelle Marine Science Laboratory	1529 West Sequim Bay Road, Sequim, WA 98382

Table 2-2. Number of Sample Delivery Groups Assessed by Medium.

Medium	Number of SDGs Assessed[a]
Surface water	51
Sediment	87
Soil	6
Groundwater upwelling (pore water, surface water, and sediment)	189
Fish tissue	47
Total	**378**

[a] Includes SDGs that were assessed and validated for this DQA.

DQA = data quality assessment
SDG = sample delivery group

Table 2-3. Analytical Methods.

Parameter	Analytical Method	Media Analyzed	Laboratory
Volatile organic compounds	EPA 8260B	SW, SD, PW	Lionville
Semivolatile organic compounds	EPA 8270C	SW, SD, SO	Lionville
Metals	EPA 6010/7470/7471	SW, SD, SO, FT	Lionville
Hexavalent chromium	EPA 7196A	SW, SD, SO, PW	Test America (WA)
	EPA 6800	FT	PNNL
Speciated arsenic	EPA 1632A	FT	PNNL
Methyl mercury	EPA 1630M	FT	PNNL
Pesticides	EPA 8081	SW, SD, SO, FT	Lionville
Polychlorinated biphenyls	EPA 8082	SW, SD, SO, FT	Lionville
PCB congeners	EPA 1668	SW, SD, FT	Test America (TN)
Total organic carbon	EPA 415.1	SD, SO	Lionville
Dissolved organic carbon	EPA 415.1M	SW	Lionville
Anions (bromide, fluoride, nitrate, nitrite, orthophosphate, sulfate)	EPA 300.0	PW, SW	Lionville
Nitrate/nitrite - combined	EPA 353.2	PW, SW	Lionville
Petroleum hydrocarbons/diesel range organics	EPA 8115	SW, SD, SO	Lionville
Radionuclides	Gamma Spectroscopy	SW, SD, SO, FT	Eberline
	Carbon-14	SW, SD, SO, FT	Eberline
	Isotopic Plutonium	SW, SD, SO, FT	Eberline
	Strontium-90	SW, SD, SO, FT	Eberline
	Technetium-99	SW, SD, SO, FT	Eberline
	Isotopic Thorium	SW, SD, SO, FT	Eberline
	Isotopic Uranium	SW, SD, SO, FT	Eberline
	Tritium	SW, SD, SO, FT	Eberline

FT = fish tissue
PCB = polychlorinated biphenyl
PW = pore water
SD = sediment
SO = soil
SW = surface water
TN = Tennessee
WA = Washington

Most of the laboratory data packages that were evaluated for this DQA were assessed for adequacy in meeting the requirements for precision, accuracy, completeness, and required detection limits as described in Section 3.13 of the SAP. The data packages that underwent data assessment are listed in Table 2-4. Several additional SDGs were third-party validated as described in Section 2.1.1.

Quality control (QC) results associated with analyses of the RI samples were compared to performance criteria and specifications contained in the work plan (DOE/RL-2008-11); HNF-20434, *Data Validation Procedure for Radiochemical Analyses*; and HNF-20433, *Data Validation Procedure for Chemical Analyses*. The results of the evaluation of each laboratory data package, or SDG, were used to determine if the data were of sufficient quality for their intended project use.

Table 2-4. Summary of Sample Delivery Groups Subject to Data Assessment. (9 Pages)

SDG Number	Number of Samples in SDG	Laboratory Analyses Assessed in SDG										
		Hexavalent Chromium	VOC	SVOC	PCBs	Pesticides	PHC/DRO	Metals	Radionuclides	TOC/DOC	Anions	NO_3/NO_2
Surface Water												
J00209	1	X	–	–	–	–	–	–	–	–	–	–
J00211	2	X	–	–	–	–	–	–	–	–	–	–
J00216	1	X	–	–	–	–	–	–	–	–	–	–
J00219	2	X	–	–	–	–	–	–	–	–	–	–
J00220	4	X	–	–	–	–	–	–	–	–	–	–
J00221	3	X	–	–	–	–	–	–	–	–	–	–
J00222	2	X	–	–	–	–	–	–	–	–	–	–
J00223	3	X	–	–	–	–	–	–	–	–	–	–
J00224	2	X	–	–	–	–	–	–	–	–	–	–
J00225	2	X	–	–	–	–	–	–	–	–	–	–
J00226	1	X	–	–	–	–	–	–	–	–	–	–
J00227	4	X	–	–	–	–	–	–	–	–	–	–
J00228	2	X	–	–	–	–	–	–	–	–	–	–
J00229	2	X	–	–	–	–	–	–	–	–	–	–
J00231	1	X	–	–	–	–	–	–	–	–	–	–
J00232	3	X	–	–	–	–	–	–	–	–	–	–
J00233	5	X	–	–	–	–	–	–	–	–	–	–
J00234	1	X	–	–	–	–	–	–	–	–	–	–
J00529	1	X	–	–	–	–	–	–	–	–	–	–
J00530	1	X	–	–	–	–	–	–	–	–	–	–
J00531	6	X	–	–	–	–	–	–	–	–	–	–
J00533	4	X	–	–	–	–	–	–	–	–	–	–
J00535	2	X	–	–	–	–	–	–	–	–	–	–
J00537	1	X	–	–	–	–	–	–	–	–	–	–
J00545	2	X	–	–	–	–	–	–	–	–	–	–
J00548	2	X	–	–	–	–	–	–	–	–	–	–
K1399	6	−	X	X	X	X	X	X	X	X	–	–
K1419	2	−	X	X	X	X	–	X	X	X	–	–
K1427	8	−	X	X	X	X	–	X	X	X	–	–
K1428	4	−	X	X	X	X	X	X	X	X	–	–
K1430	6	−	X	X	X	X	X	X	X	X	–	–
K1439	10	−	X	X	X	X	X	X	X	X	–	–
K1441	8	–	X	X	X	X	X	X	X	X	–	–
K1442	10	–	X	X	X	X	X	X	X	X	–	–
K1447	4	–	X	X	X	X	X	X	X	X	–	–
K1452	6	–	–	X	X	–	X	X	X	X	–	–
K1453	6	–	X	X	X	X	X	X	X	X	–	–

Table 2-4. Summary of Sample Delivery Groups Subject to Data Assessment. (9 Pages)

SDG Number	**Number of Samples in SDG**	**Laboratory Analyses Assessed in SDG**										
		Hexavalent Chromium	**VOC**	**SVOC**	**PCBs**	**Pesticides**	**PHC/DRO**	**Metals**	**Radionuclides**	**TOC/DOC**	**Anions**	**NO_3/NO_2**
K1455	12	–	X	X	X	X	X	X	X	X	–	–
K1641	4	–	X	X	X	X	X	X	X	X	X	X
K1648	12	–	X	X	X	X	X	X	X	X	X	X
K1651	8	–	X	X	X	X	X	X	X	X	X	X
K1652	8	–	X	X	X	X	X	X	X	X	–	–
K1654	4	–	X	X	X	X	X	X	X	X	X	X
K1656	6	–	X	X	X	X	X	X	–	X	X	X
K1660	4	–	X	X	X	X	X	X	X	X	X	X
Sediment												
J00242	11	X	–	–	–	–	–	–	–	–	–	–
J00244	13	X	–	–	–	–	–	–	–	–	–	–
J00246	8	X	–	–	–	–	–	–	–	–	–	–
J00248	8	X	–	–	–	–	–	–	–	–	–	–
J00249	7	X	–	–	–	–	–	–	–	–	–	–
J00250	9	X	–	–	–	–	–	–	–	–	–	–
J00251	8	X	–	–	–	–	–	–	–	–	–	–
J00252	8	X	–	–	–	–	–	–	–	–	–	–
J00254	5	X	–	–	–	–	–	–	–	–	–	–
J00256	8	X	–	–	–	–	–	–	–	–	–	–
J00257	10	X	–	–	–	–	–	–	–	–	–	–
J00258	7	X	–	–	–	–	–	–	–	–	–	–
J00259	11	X	–	–	–	–	–	–	–	–	–	–
J00262	6	X	–	–	–	–	–	–	–	–	–	–
J00263	5	X	–	–	–	–	–	–	–	–	–	–
J00319	8	X	–	–	–	–	–	–	–	–	–	–
J00325	10	X	–	–	–	–	–	–	–	–	–	–
J00327	8	X	–	–	–	–	–	–	–	–	–	–
J00330	7	X	–	–	–	–	–	–	–	–	–	–
J00333	5	X	–	–	–	–	–	–	–	–	–	–
J00334	6	X	–	–	–	–	–	–	–	–	–	–
J00335	5	X	–	–	–	–	–	–	–	–	–	–
J00338	11	X	–	–	–	–	–	–	–	–	–	–
J00339	14	X	–	–	–	–	–	–	–	–	–	–
J00340	19	X	–	–	–	–	–	–	–	–	–	–
J00342	20	X	–	–	–	–	–	–	–	–	–	–
J00343	5	X	–	–	–	–	–	–	–	–	–	–
J00348	13	X	–	–	–	–	–	–	–	–	–	–
J00349	12	X	–	–	–	–	–	–	–	–	–	–

Table 2-4. Summary of Sample Delivery Groups Subject to Data Assessment. (9 Pages)

SDG Number	Number of Samples in SDG	Laboratory Analyses Assessed in SDG										
		Hexavalent Chromium	VOC	SVOC	PCBs	Pesticides	PHC/DRO	Metals	Radionuclides	TOC/DOC	Anions	NO_3/NO_2
J00351	7	X	–	–	–	–	–	–	–	–	–	–
J00352	10	X	–	–	–	–	–	–	–	–	–	–
J00355	5	X	–	–	–	–	–	–	–	–	–	–
J00360	3	X	–	–	–	–	–	–	–	–	–	–
J00361	1	X	–	–	–	–	–	–	–	–	–	–
J00368	6	X	–	–	–	–	–	–	–	–	–	–
J00371	5	X	–	–	–	–	–	–	–	–	–	–
J00421	6	X	–	–	–	–	–	–	–	–	–	–
J00422	15	X	–	–	–	–	–	–	–	–	–	–
J00423	13	X	–	–	–	–	–	–	–	–	–	–
J00424	9	X	–	–	–	–	–	–	–	–	–	–
J00425	5	X	–	–	–	–	–	–	–	–	–	–
J00426	3	X	–	–	–	–	–	–	–	–	–	–
J00431	4	X	–	–	–	–	–	–	–	–	–	–
J00435	13	X	–	–	–	–	–	–	–	–	–	–
J00436	13	X	–	–	–	–	–	–	–	–	–	–
J00438	15	X	–	–	–	–	–	–	–	–	–	–
J00544	16	X	–	–	–	–	–	–	–	–	–	–
J00546	6	X	–	–	–	–	–	–	–	–	–	–
K1479	11	–	X	X	X	X	X	X	X	X	–	–
K1480	13	–	X	X	X	X	X	X	X	X	–	–
K1482	16	–	X	X	X	X	X	X	X	X	–	–
K1484	16	–	X	X	X	X	X	X	X	X	–	–
K1486	8	–	X	X	X	X	X	X	X	X	–	–
K1491	14	–	X	X	X	X	X	X	X	X	–	–
K1495	34	–	X	X	X	X	X	X	X	X	–	–
K1497	5	–	X	X	X	X	–	X	X	X	–	–
K1524	12	–	X	X	X	X	X	X	X	X	–	–
K1526	8	–	X	X	X	X	–	X	X	X	–	–
K1527	12	–	X	X	X	X	X	X	X	X	–	–
K1536	15	–	X	X	X	X	X	X	X	X	–	–
K1537	11	–	X	X	X	X	X	X	X	X	–	–
K1539	5	–	X	X	X	X	X	X	X	X	–	–
K1542	58	–	X	X	X	X	X	X	X	X	–	–
K1543	25	–	X	X	X	X	X	X	X	X	–	–
K1547	22	–	X	X	X	X	X	X	X	X	–	–
K1555	1	–	–	–	–	–	–	X	X	X	–	–
K1557	7	–	X	X	X	X	X	X	X	X	–	–

Table 2-4. Summary of Sample Delivery Groups Subject to Data Assessment. (9 Pages)

SDG Number	Number of Samples in SDG	Laboratory Analyses Assessed in SDG										
		Hexavalent Chromium	VOC	SVOC	PCBs	Pesticides	PHC/DRO	Metals	Radionuclides	TOC/DOC	Anions	NO_3/NO_2
K1558	5	–	X	X	X	X	X	X	X	X	–	–
K1565	3	–	X	X	X	X	–	X	–	X	–	–
K1573	21	–	X	X	X	X	–	X	X	X	–	–
K1574	27	–	X	X	X	X	X	X	X	X	–	–
K1580	15	–	X	X	X	X	X	X	X	X	–	–
K1583	26	–	X	X	X	X	–	X	X	X	–	–
K1584	20	–	X	X	X	X	–	X	X	X	–	–
K1663	8	–	–	–	–	X	–	–	–	–	–	–
K1665	16	–	–	X	–	X	X	X	–	–	–	–
K1667	6	–	–	X	–	X	X	X	–	–	–	–
Soil												
K1551	11	–	–	X	X	X	–	X	X	–	–	–
K1554	47	X	–	X	X	X	X	X	X	X	–	–
K1556	27	X	–	X	X	X	X	X	X	X	–	–
K1566	8	X	–	X	X	X	X	X	X	X	–	–
K1668	9	X	–	–	–	–	–	X	–	–	–	–
Groundwater Upwelling – Pore Water												
J00557	1	X	–	–	–	–	–	–	–	–	–	–
J00560	2	X	–	–	–	–	–	–	–	–	–	–
J00561	1	X	–	–	–	–	–	–	–	–	–	–
J00562	1	X	–	–	–	–	–	–	–	–	–	–
J00566	2	X	–	–	–	–	–	–	–	–	–	–
J00567	4	X	–	–	–	–	–	–	–	–	–	–
J00570	17	–	–	–	–	–	–	–	X	–	–	–
J00571	3	–	–	–	–	–	–	–	X	–	–	–
J00572	3	X	–	–	–	–	–	–	–	–	–	–
J00573	2	X	–	–	–	–	–	–	–	–	–	–
J00574	4	X	–	–	–	–	–	–	–	–	–	–
J00575	2	X	–	–	–	–	–	–	–	–	–	–
J00576	4	X	–	–	–	–	–	–	–	–	–	–
J00578	2	X	–	–	–	–	–	–	–	–	–	–
J00580	3	X	–	–	–	–	–	–	–	–	–	–
J00582	4	X	–	–	–	–	–	–	–	–	–	–
J00583	2	X	–	–	–	–	–	–	–	–	–	–
J00584	1	X	–	–	–	–	–	–	–	–	–	–
J00586	2	X	–	–	–	–	–	–	–	–	–	–
J00589	2	X	–	–	–	–	–	–	–	–	–	–
J00590	6	–	–	–	–	–	–	–	X	–	–	–

Table 2-4. Summary of Sample Delivery Groups Subject to Data Assessment. (9 Pages)

SDG Number	Number of Samples in SDG	Laboratory Analyses Assessed in SDG										
		Hexavalent Chromium	VOC	SVOC	PCBs	Pesticides	PHC/DRO	Metals	Radionuclides	TOC/DOC	Anions	NO_3/NO_2
J00591	2	X	–	–	–	–	–	–	–	–	–	–
J00592	2	X	–	–	–	–	–	–	–	–	–	–
J00593	1	X	–	–	–	–	–	–	–	–	–	–
J00594	1	X	–	–	–	–	–	–	–	–	–	–
J00595	1	X	–	–	–	–	–	–	–	–	–	–
J00596	3	X	–	–	–	–	–	–	–	–	–	–
J00597	2	X	–	–	–	–	–	–	–	–	–	–
J00599	4	X	–	–	–	–	–	–	–	–	–	–
J00600	1	X	–	–	–	–	–	–	–	–	–	–
J00602	2	X	–	–	–	–	–	–	–	–	–	–
J00605	2	X	–	–	–	–	–	–	–	–	–	–
J00606	3	X	–	–	–	–	–	–	–	–	–	–
J00608	4	X	–	–	–	–	–	–	–	–	–	–
J00609	2	X	–	–	–	–	–	–	–	–	–	–
J00610	4	X	–	–	–	–	–	–	–	–	–	–
J00611	2	X	–	–	–	–	–	–	–	–	–	–
J00612	4	X	–	–	–	–	–	–	–	–	–	–
J00613	2	X	–	–	–	–	–	–	–	–	–	–
J00615	2	X	–	–	–	–	–	–	–	–	–	–
J00616	4	X	–	–	–	–	–	–	–	–	–	–
J00618	2	X	–	–	–	–	–	–	–	–	–	–
J00619	2	X	–	–	–	–	–	–	–	–	–	–
J00620	4	X	–	–	–	–	–	–	–	–	–	–
J00621	4	X	–	–	–	–	–	–	–	–	–	–
J00622	1	X	–	–	–	–	–	–	–	–	–	–
J00624	3	X	–	–	–	–	–	–	–	–	–	–
J00627	1	X	–	–	–	–	–	–	–	–	–	–
J00628	1	X	–	–	–	–	–	–	–	–	–	–
J00629	1	X	–	–	–	–	–	–	–	–	–	–
J00630	4	X	–	–	–	–	–	–	–	–	–	–
J00632	20	–	–	–	–	–	–	–	X	–	–	–
J00634	5	X	–	–	–	–	–	–	–	–	–	–
J00635	1	–	–	–	–	–	–	–	X	–	–	–
J00636	4	X	–	–	–	–	–	–	–	–	–	–
J00638	5	X	–	–	–	–	–	–	–	–	–	–
J00639	5	X	–	–	–	–	–	–	–	–	–	–
J00642	15	–	–	–	–	–	–	–	X	–	–	–
J00653	2	X	–	–	–	–	–	–	X	–	–	–

Table 2-4. Summary of Sample Delivery Groups Subject to Data Assessment. (9 Pages)

SDG Number	Number of Samples in SDG	Laboratory Analyses Assessed in SDG										
		Hexavalent Chromium	VOC	SVOC	PCBs	Pesticides	PHC/DRO	Metals	Radionuclides	TOC/DOC	Anions	NO_3/NO_2
J00658	5	–	–	–	–	–	–	–	X	–	–	–
J00663	1	X	–	–	–	–	–	–	X	–	–	–
J00664	1	X	–	–	–	–	–	–	X	–	–	–
J00669	1	X	–	–	–	–	–	–	X	–	–	–
J00673	1	X	–	–	–	–	–	–	X	–	–	–
J00674	1	X	–	–	–	–	–	–	X	–	–	–
J00679	1	X	–	–	–	–	–	–	X	–	–	–
J00680	1	X	–	–	–	–	–	–	X	–	–	–
J00688	4	X	–	–	–	–	–	–	X	–	–	–
J00693	1	X	–	–	–	–	–	–	X	–	–	–
J00694	1	X	–	–	–	–	–	–	X	–	–	–
J00698	1	X	–	–	–	–	–	–	–	–	–	–
J00700	1	X	–	–	–	–	–	–	–	–	–	–
J00701	1	X	–	–	–	–	–	–	X	–	–	–
J00703	3	X	–	–	–	–	–	–	X	–	–	–
J00706	3	X	–	–	–	–	–	–	X	–	–	–
J00709	2	X	–	–	–	–	–	–	X	–	–	–
J00717	2	X	–	–	–	–	–	–	X	–	–	–
J00719	2	X	–	–	–	–	–	–	X	–	–	–
J00729	2	X	–	–	–	–	–	–	X	–	–	–
J00730	2	X	–	–	–	–	–	–	X	–	–	–
J00734	2	X	–	–	–	–	–	–	X	–	–	–
J00737	2	X	–	–	–	–	–	–	X	–	–	–
J00738	2	–	–	–	–	–	–	–	X	–	–	–
J00741	2	X	–	–	–	–	–	–	X	–	–	–
J00744	2	X	–	–	–	–	–	–	X	–	–	–
J00747	1	X	–	–	–	–	–	–	–	–	–	–
J00748	1	X	–	–	–	–	–	–	X	–	–	–
J00749	2	–	–	–	–	–	–	–	X	–	–	–
J00753	1	X	–	–	–	–	–	–	X	–	–	–
J00756	2	X	–	–	–	–	–	–	X	–	–	–
J00759	2	X	–	–	–	–	–	–	X	–	–	–
J00765	2	X	–	–	–	–	–	–	X	–	–	–
K1755	6	–	X	–	–	–	–	–	–	–	–	–
K1777	2	–	X	–	–	–	–	–	–	–	–	–
K1789	5	–	X	–	–	–	–	–	–	–	–	–
K1821	2	–	–	–	–	–	–	X	–	–	X	X
K1825	3	–	–	–	–	–	X	–	–	–	–	–

Table 2-4. Summary of Sample Delivery Groups Subject to Data Assessment. (9 Pages)

SDG Number	Number of Samples in SDG	Laboratory Analyses Assessed in SDG										
		Hexavalent Chromium	VOC	SVOC	PCBs	Pesticides	PHC/DRO	Metals	Radionuclides	TOC/DOC	Anions	NO_3/NO_2
K1908	14	–	X	–	–	–	–	X	–	X	X	X
K1913	14	–	X	–	–	–	–	X	–	X	X	X
K1940	12	–	–	–	–	–	X	X	–	X	X	X
K1943	4	–	–	–	–	–	X	X	–	X	X	X
K1946	16	–	–	–	–	–	–	X	–	X	X	X
K1962	12	–	X	–	–	–	–	X	–	X	X	X
K1963	10	–	X	–	–	–	–	X	–	X	X	X
Groundwater Upwelling – Surface Water												
J00656	2	X	–	–	–	–	–	–	–	–	–	–
J00659	1	X	–	–	–	–	–	–	–	–	–	–
J00661	1	X	–	–	–	–	–	–	–	–	–	–
J00666	2	X	–	–	–	–	–	–	–	–	–	–
J00668	1	X	–	–	–	–	–	–	–	–	–	–
J00671	1	X	–	–	–	–	–	–	–	–	–	–
J00676	1	X	–	–	–	–	–	–	–	–	–	–
J00677	1	X	–	–	–	–	–	–	–	–	–	–
J00678	1	X	–	–	–	–	–	–	–	–	–	–
J00687	3	X	–	–	–	–	–	–	–	–	–	–
J00692	1	X	–	–	–	–	–	–	–	–	–	–
J00696	1	X	–	–	–	–	–	–	–	–	–	–
J00699	1	X	–	–	–	–	–	–	–	–	–	–
J00702	3	X	–	–	–	–	–	–	–	–	–	–
J00704	2	X	–	–	–	–	–	–	–	–	–	–
J00711	2	X	–	–	–	–	–	–	–	–	–	–
J00715	2	X	–	–	–	–	–	–	–	–	–	–
J00718	1	X	–	–	–	–	–	–	–	–	–	–
J00728	2	X	–	–	–	–	–	–	–	–	–	–
J00731	2	X	–	–	–	–	–	–	–	–	–	–
J00735	2	X	–	–	–	–	–	–	–	–	–	–
J00742	2	X	–	–	–	–	–	–	–	–	–	–
J00746	1	X	–	–	–	–	–	–	–	–	–	–
J00754	1	X	–	–	–	–	–	–	–	–	–	–
J00758	1	X	–	–	–	–	–	–	–	–	–	–
J00760	2	X	–	–	–	–	–	–	–	–	–	–
J00764	2	X	–	–	–	–	–	–	–	–	–	–
K1905	6	–	X	–	–	–	–	X	X	X	X	X
K1907	8	–	X	–	–	–	–	X	X	X	X	X
K1923	16	–	X	–	–	–	–	X	X	X	–	–

Table 2-4. Summary of Sample Delivery Groups Subject to Data Assessment. (9 Pages)

SDG Number	Number of Samples in SDG	Laboratory Analyses Assessed in SDG										
		Hexavalent Chromium	VOC	SVOC	PCBs	Pesticides	PHC/DRO	Metals	Radionuclides	TOC/DOC	Anions	NO_3/NO_2
K1931	14	–	–	–	–	–	–	X	X	X	–	–
K1944	18	–	–	–	–	–	–	X	X	X	X	X
K1952	16	–	X	–	–	–	–	X	X	X	X	X
K1955	13	–	X	–	–	–	–	X	X	X	X	X
Groundwater Upwelling - Sediment												
J00657	2	X	–	–	–	–	–	–	–	–	–	–
J00660	1	X	–	–	–	–	–	–	–	–	–	–
J00662	1	X	–	–	–	–	–	–	–	–	–	–
J00667	1	X	–	–	–	–	–	–	–	–	–	–
J00670	2	X	–	–	–	–	–	–	–	–	–	–
J00672	1	X	–	–	–	–	–	–	–	–	–	–
J00675	1	X	–	–	–	–	–	–	–	–	–	–
J00681	1	X	–	–	–	–	–	–	–	–	–	–
J00682	1	X	–	–	–	–	–	–	–	–	–	–
J00683	1	X	–	–	–	–	–	–	–	–	–	–
J00689	3	X	–	–	–	–	–	–	–	–	–	–
J00695	1	X	–	–	–	–	–	–	–	–	–	–
J00697	1	X	–	–	–	–	–	–	–	–	–	–
J00705	2	X	–	–	–	–	–	–	–	–	–	–
J00707	1	X	–	–	–	–	–	–	–	–	–	–
J00710	2	X	–	–	–	–	–	–	–	–	–	–
J00713	2	X	–	–	–	–	–	–	–	–	–	–
J00716	2	X	–	–	–	–	–	–	–	–	–	–
J00720	2	X	–	–	–	–	–	–	–	–	–	–
J00727	1	X	–	–	–	–	–	–	–	–	–	–
J00732	2	X	–	–	–	–	–	–	–	–	–	–
J00740	2	X	–	–	–	–	–	–	–	–	–	–
J00743	2	X	–	–	–	–	–	–	–	–	–	–
J00745	1	X	–	–	–	–	–	–	–	–	–	–
J00752	1	X	–	–	–	–	–	–	–	–	–	–
J00757	3	X	–	–	–	–	–	–	–	–	–	–
J00762	2	X	–	–	–	–	–	–	–	–	–	–
J00763	2	X	–	–	–	–	–	–	–	–	–	–
K1906	7	–	X	–	–	–	–	X	X	X	–	–
K1922	5	–	X	–	–	–	–	X	X	X	–	–
K1932	8	–	–	–	–	–	–	X	X	X	–	–
K1945	8	–	–	–	–	–	–	X	X	X	X	X
K1953	7	–	X	–	–	–	–	X	X	X	–	–

Table 2-4. Summary of Sample Delivery Groups Subject to Data Assessment. (9 Pages)

SDG Number	Number of Samples in SDG	Laboratory Analyses Assessed in SDG										
		Hexavalent Chromium	VOC	SVOC	PCBs	Pesticides	PHC/DRO	Metals	Radionuclides	TOC/DOC	Anions	NO_3/NO_2
K1956	7	–	X	–	–	–	–	X	X	X	–	–
Fish Tissue												
K1579	20	–	–	–	–	X	–	X	X	–	–	–
K1618	12	–	–	–	–	X	–	X	X	–	–	–
K1709	20	–	–	–	–	X	–	X	X	–	–	–
K1714	20	–	–	–	–	X	–	X	X	–	–	–
K1725	20	–	–	–	–	X	–	X	X	–	–	–
K1758	20	–	–	–	–	X	–	X	X	–	–	–
K1759	20	–	–	–	–	X	–	X	X	–	–	–
K1761	20	–	–	–	–	X	–	X	X	–	–	–
K1769	20	–	–	–	–	X	–	X	X	–	–	–
K1774	16	–	–	–	–	X	–	X	X	–	–	–
K1785	39	–	–	–	–	X	–	–	–	–	–	–
K1813	20	–	–	–	–	X	–	X	X	–	–	–
K1847	20	–	–	–	–	X	–	X	X	–	–	–
K1852	36	–	–	–	–	X	–	X	X	–	–	–
K1863	35	–	–	–	–	X	–	X	X	–	–	–
K1919	4	–	–	–	–	X	–	X	X	–	–	–
K2124	8	–	–	–	–	–	–	X	X	–	–	–
K2125	16	–	–	–	–	X	–	X	X	–	–	–

– = samples not analyzed for this parameter
DOC = dissolved organic carbon
DRO = diesel range organics
NO_2 = nitrite
NO_3 = nitrate
PCBs = polychlorinated biphenyl
PHC = petroleum hydrocarbons
PW = pore water
SD = sediment
SDG = sample delivery group
SVOC = semivolatile organic compound
SW = surface water
TOC = total organic carbon
VOC = volatile organic compound

Each SDG that was assessed contained at least one, and often several, different analytical methods that were assessed as part of the DQA. The methods are listed in Table 2-3. Data assessment was not conducted for wet chemistry or physical parameters (e.g., grain size, hardness, and alkalinity) or acid volatile sulfide (AVS) results. Several QC parameters, as appropriate for a given analytical method, were evaluated including the following:

- Holding time
- Method detection limits
- Surrogate recoveries
- Method blank results
- Laboratory control sample (LCS) results

- Matrix spike/matrix spike duplicate results
- Tracer results (for radionuclides)
- Laboratory duplicate results
- Field QC sample results (e.g., trip blanks, equipment blanks, field duplicates, field blanks).

Each QC parameter was assessed and noncompliant results were noted on QC summary worksheets. If a corrective action was needed for a noncompliant result, that action was also noted on the QC summary worksheet, and data qualifiers were added to impacted samples in accordance with the guidance documents (HNF-20433 and HNF-20434). In addition to qualifiers that have been assigned by the analytical laboratory, the following data qualifiers were assigned during data assessment:

- UJ – The compound or analyte was analyzed for and detected in the sample. However, due to a minor QC deficiency associated with method blank results, the associated results are labeled as estimated quantitation limits. The data are considered usable for decision-making purposes.

- J – Due to a minor QC deficiency identified during the data assessment, the associated concentration is an estimate. The data are considered usable for decision-making purposes.

- R – Due to an identified major QC deficiency, the data are not considered usable for decision-making purposes (i.e., rejected).

Based on the results of the DQA, a determination was made as to whether the data were suitable for their intended purpose to support the Screening Level Ecological Risk Assessment and the Baseline Human Health Risk Assessment. The results of the DQA are discussed in Section 3.0 of this report. The 2008/2009 surface water, sediment, and soil investigation assessment results are discussed in Section 3.1; the groundwater upwelling assessment (pore water, surface water, sediment) results are discussed in Section 3.2; and the fish tissue assessment results are addressed in Section 3.3.

2.1.1 Third-Party Data Validation of Laboratory Data Packages

Data quality for a subset of the laboratory data packages (i.e., SDGs) underwent third-party data validation. Approximately 5% of the laboratory analytical data packages from the 2008/2009 surface water, sediment, and soil investigation underwent third-party Level C data validation in accordance with Section 3.12 of the SAP. A similar level of effort was conducted for a subset of the groundwater upwelling and fish tissue data packages. These third-party validated SDGs are listed in Table 2-5.

A separate third-party data validation was conducted on a subset (approximately 5%) of the surface water, sediment, and soil samples that were analyzed for polychlorinated biphenyl (PCB) congeners as listed in Table 2-6. In addition, for the fish tissue data, 19 samples that were analyzed for PCB congeners were third-party validated, along with 33 speciated arsenic samples, four methyl mercury samples, and five hexavalent chromium samples. The fish tissue samples that were validated for these analytical methods are listed in Table 2-7. Table 2-8 lists several SDGs with PCB congener, speciated arsenic, methyl mercury, or hexavalent chromium analyses that were not validated as described above.

Table 2-5. Summary of Sample Delivery Groups Subject to Third-Party Data Validation. (2 Pages)

SDG Number	Number of Samples in SDG	Laboratory Analyses Assessed in SDG										
		Hexavalent Chromium	VOC	SVOC	PCBs	Pesticides	PHC/DRO	Metals	Radionuclides	TOC/DOC	Anions	NO_3/NO_2
Surface Water												
J00212	4	X	–	–	–	–	–	–	–	–	–	–
J00217	3	X	–	–	–	–	–	–	–	–	–	–
K1401	8	–	X	X	X	X	X	X	X	X	–	–
K1421	6	–	X	X	X	X	–	X	X	X	–	–
Sediment												
J00253	9	X	–	–	–	–	–	–	–	–	–	–
J00322	15	X	–	–	–	–	–	–	–	–	–	–
J00337	15	X	–	–	–	–	–	–	–	–	–	–
J00350	16	X	–	–	–	–	–	–	–	–	–	–
K1489	17	–	X	X	X	X	X	X	X	X	–	–
K1525	21	–	X	X	X	X	X	X	X	X	–	–
K1540	27	–	X	X	X	X	X	X	X	X	–	–
K1544	22	–	X	X	X	X	X	X	X	X	–	–
Groundwater Upwelling – Pore Water												
J00565	3	X	–	–	–	–	–	–	–	–	–	–
J00585	9	–	–	–	–	–	–	–	X	–	–	–
J00601	3	X	–	–	–	–	–	–	X	–	–	–
J00603	6	X	–	–	–	–	–	–	–	–	–	–
J00607	2	–	–	–	–	–	–	X	–	X	–	–
J00625	2	X	–	–	–	–	–	–	–	–	–	–
J00637	11	–	–	–	–	–	–	–	X	–	–	–
J00646	11	–	–	–	–	–	–	–	X	–	–	–
J00665	2	X	–	–	–	–	–	–	X	–	–	–
J00714	2	X	–	–	–	–	–	–	X	–	–	–
K1833	8	–	–	–	–	–	X	–	–	–	–	–
K1926	18	–	X	–	–	–	–	X	–	X	X	X
Groundwater Upwelling – Surface Water												
J00712	2	X	–	–	–	–	–	–	–	–	–	–
K1917	14	–	X	–	–	–	–	X	X	X	–	–
Groundwater Upwelling – Sediment												
J00733	2	X	–	–	–	–	–	–	–	–	–	–
J00736	2	X	–	–	–	–	–	–	–	–	–	–
K1918	10	–	X	–	–	–	–	X	X	X	–	–

Table 2-5. Summary of Sample Delivery Groups Subject to Third-Party Data Validation. (2 Pages)

SDG Number	Number of Samples in SDG	Laboratory Analyses Assessed in SDG										
		Hexavalent Chromium	VOC	SVOC	PCBs	Pesticides	PHC/DRO	Metals	Radionuclides	TOC/DOC	Anions	NO_3/NO_2
Fish Tissue												
K1608	28	–	–	–	–	X	–	X	X	–	–	–
K1735	24	–	–	–	–	–*	–	X	X	–	–	–
K1785	39	–	–	–	–	–	–	X	X	–	–	–
K1839	27	–	–	–	–	–*	–	X	X	–	–	–

– = samples not analyzed for this method
* = validation not conducted for this method
DOC = dissolved organic carbon
DRO = diesel range organic
GU = groundwater upwelling
NO_2 = nitrite
NO_3 = nitrate

PCB = polychlorinated biphenyl
PHC = petroleum hydrocarbons
PW = pore water
SDG = sample delivery group
SVOC = semivolatile organic compound
TOC = total organic carbon
VOC = volatile organic compound

Table 2-6. Summary of Surface Water, Sediment, and Soil Polychlorinated Biphenyls Congener Samples Subject to Third-Party Data Validation.

Sample Identification	Sample Delivery Group Number	Medium
J17T02	J00255	Surface water
J17RY8	J00255	
J18689	J00364	Sediment
J18694	J00364	
J17W23	J00367	
J18692	J00367	
J18HW7	J00419	Soil
J18HW9	J00419	

Table 2-7. Summary of Fish Tissue Polychlorinated Biphenyls Congener, Arsenic, Mercury, and Hexavalent Chromium Samples Subject to Third-Party Data Validation. (2 Pages)

Sample Identification	Sample Delivery Group Number	Species	Tissue Type
PCB Congeners			
J19037	J00564	Bass	Fillet
J19075	J00568	Bass	Fillet
J19227	J00643	Sucker	Carcass
J19242	J00623	Carp	Fillet
J19276	J00558	Sturgeon	Fillet
J19289	J00558	Carp	Fillet
J19300	J00559	Sturgeon	Fillet
J19464	J00564	Sturgeon	Liver
J19625	J00581	Sturgeon	Carcass
J19749	J00588	Walleye	Fillet
J19750	J00588	Walleye	Carcass
J18K69	J00486	Whitefish	Carcass
J18K87	J00469	Whitefish	Fillet
J18WY1	J00641	Walleye	Carcass
J18XD8	J00588	Walleye	Fillet
J190F3	J00568	Bass	Carcass
J191T2	J00643	Sucker	Fillet
J194C5	J00569	Sturgeon	Carcass
J196Y6	J00641	Carp	Carcass
Arsenic			
J19062	SEQ082809	Bass	Carcass
J19078	SEQ090909	Bass	Fillet
J19080	SEQ090909	Bass	Fillet
J190N0	SEQ082809	Bass	Fillet
J19246	SEQ102809	Carp	Fillet
J196F7	SEQ112309	Carp	Fillet
J196Y9	SEQ102809	Carp	Carcass
J19628	SEQ092309	Sturgeon	Fillet
J19267	SEQ080609	Sturgeon	Fillet
J195T2	SEQ091809	Sturgeon	Fillet
J19504	SEQ091809	Sturgeon	Carcass
J195T3	SEQ091809	Sturgeon	Carcass
J19447	SEQ082009	Sturgeon	Carcass
J191T4	SEQ120809	Sucker	Fillet

Table 2-7. Summary of Fish Tissue Polychlorinated Biphenyls Congener, Arsenic, Mercury, and Hexavalent Chromium Samples Subject to Third-Party Data Validation. (2 Pages)

Sample Identification	Sample Delivery Group Number	Species	Tissue Type
J191W7	SEQ120809	Sucker	Carcass
J18WW4	SEQ112309	Walleye	Fillet
J18WY6	SEQ112309	Walleye	Carcass
J18X99	SEQ093009	Walleye	Fillet
J19751	SEQ093009	Walleye	Fillet
J18XF3	SEQ093009	Walleye	Fillet
J18XF5	SEQ093009	Walleye	Fillet
J18XJ5	SEQ093009	Walleye	Carcass
J18J17	SEQ042309	Whitefish	Fillet
J18J83	SEQ042309	Whitefish	Carcass
J196L9	SEQ112309	Carp	Fillet
J196K2	SEQ112309	Carp	Carcass
J19702	SEQ112309	Carp	Carcass
J19700	SEQ102809	Carp	Carcass
J19692	SEQ102809	Carp	Fillet
J196D0	SEQ102809	Carp	Carcass
J196D1	SEQ102809	Carp	Carcass
J19693	SEQ102809	Carp	Fillet
J196D2	SEQ102809	Carp	Carcass
Hexavalent Chromium			
J19628	SEQ092309	Sturgeon	Fillet
J19267	SEQ080609	Sturgeon	Fillet
J19503	SEQ091809	Sturgeon	Fillet
J195T3	SEQ091809	Sturgeon	Carcass
J193L2	SEQ081409	Sturgeon	Carcass
Methyl Mercury			
J195T9	SEQ091109	Sturgeon	Fillet
J195V1	SEQ091109	Sturgeon	Fillet
J195V3	SEQ091109	Sturgeon	Fillet
J195V4	SEQ091109	Sturgeon	Carcass

PCB= polychlorinated biphenyl

Table 2-8. Summary of Sample Delivery Groups Subject to Preliminary Quality Control Review.

Sample Delivery Group Number	Medium	Analysis	Method
J00492	Fish tissue	PCB congeners	EPA Method 1668
J00577			
J00649			
J00686			
J00543	Surface water		
J00264	Sediment		
J00420	Soil		
SEQ081409	Fish tissue	Speciated arsenic	EPA Method 1632A
SEQ091109			
SEQ121809			
SEQ12810A			
SEQ070710			
SEQ092309	Fish tissue	Methyl mercury	EPA Method 1630M
SEQ082009	Fish tissue	Hexavalent chromium	EPA Method 6800
SEQ091109			
SEQ093009			

EPA = U.S. Environmental Protection Agency
PCB = polychlorinated biphenyl

Although these samples did not undergo a full validation, a preliminary review of the quality control data contained in the data packages for these SDGs was conducted, as described in Section 2.1.2 to identify potential bias or interferences to the associated sample results.

2.1.2 Preliminary QC Review Methods for PCB Congener, Arsenic, Mercury, and Hexavalent Chromium Results

In order to identify potential impacts to the usability of the data, a preliminary review was conducted of tabulated quality control results associated with the SDGs in Table 2-8. The chemical analyses that were performed include polychlorinated biphenyl congeners (Method 1668A), inorganic arsenic (Method 1632), hexavalent chromium (Method 6800) and methyl mercury (Method 1630). For these methods, the tabulated quality control results included the following QC parameters: method blank analyses, replicate sample results, and standard reference material, laboratory control sample and matrix spike recoveries. For the PCB congener analyses, the narrative presented at the beginning of each SDG data package was reviewed to identify potential quality control issues. In addition, the laboratory blank results were reviewed. Based on the results of the data quality review, data qualifiers were added to the associated sample concentrations.

The results of the review provide a broad, general overview of data quality associated with each of the methods used for the analyses, and are not intended as a replacement for data validation. Data validation is a more extensive and rigorous assessment of the data based on set procedures and guidelines that are used for the identification of potential data usability issues.

3.0 DATA ASSESSMENT RESULTS

This section provides a summary of the data assessment results. Section 3.1 summarizes the results of the 2008/2009 surface water, sediment, and soil DQA. Section 3.2 summarizes the results of the groundwater upwelling data assessment. Section 3.3 describes the results of the fish tissue data assessment.

Appendices A through E, for surface water, sediment, soil, groundwater upwelling, and fish tissue data, respectively (included on a CD), contain the QC summary worksheets prepared during the data assessment. These worksheets are grouped by medium and by SDG and contain information on the parameters analyzed; sample IDs; the QC parameters evaluated; QC deficiencies identified during the assessment, if any; corrective actions taken as a result of the deficiencies; and any data qualifiers that were applied as a result of the identified deficiencies. With the exceptions discussed below, only minor QC deficiencies were identified during the data assessment, and the majority of the data are suitable for their intended use. Data that are deemed unusable for decision-making purposes in the RI and risk assessments are those that were rejected (qualified “R”) based on a major QC deficiency identified during data assessment. The guidance documents used for this assessment were the work plan (DOE/RL-2008-11); HNF-20434, *Data Validation Procedure for Radiochemical Analyses*; and HNF-20433, *Data Validation Procedure for Chemical Analyses*. A summary of the rejected data including medium, SDG number, analytical class, number of rejected samples, and basis for the rejection is presented in Table 3-1. This table provides a broad summary of the rejected data. A more detailed summary of the rejected data by compound and sample identification number is presented in Tables 3-2 through 3-6 for surface water, sediment, soil, groundwater upwelling, and fish tissue data, respectively.

3.1 SUMMARY OF RESULTS FOR 2008/2009 SURFACE WATER, SEDIMENT, AND SOIL DATA

The following subsections present by medium and analytical method a summary of the QC deficiencies identified during the data assessment for the 2008/2009 surface water, sediment, and soil data.

3.1.1 Summary of Data Assessment Results for Surface Water

The following subsections present a summary of the results of the assessment and the major and minor QC deficiencies identified during the data assessment of the surface water data. Forty-six SDGs were included in this assessment. The majority of the data meet the project DQOs. Those data that were rejected and determined to be unusable based on a major QC deficiency identified during the assessment are provided in Table 3-2.

3.1.1.1 Radionuclides – Surface Water. For radionuclide data, QC results were generally compliant for most QC parameters. None of the radionuclide data was rejected, and the data are acceptable for their intended project use. The following is a summary of the results of the assessment and minor QC deficiencies noted during the assessment.

Table 3-1. Summary of Rejected Data by Medium and Sample Delivery Group. (3 Pages)

Medium	Sample Delivery Group Number	Analytical Method	Number of Samples with Rejected Results	Basis for Rejection
Surface water	K1439	SVOC - 8270	1	Surrogate recovery <10%
	K1442	DRO - 8115	1	Surrogate recovery <10%
	K1453	Pesticides - 8081	2	Holding time exceeded by >2 times limit
		PCBs - 8082	2	Holding time exceeded by >2 times limit
	K1455	Pesticides - 8081	2	Holding time exceeded by >2 times limit
		PCBs - 8082	2	Holding time exceeded by >2 times limit
Sediment	J00242	Hexavalent chromium - 7196	10	Matrix spike recovery <30%
	J00246	Hexavalent chromium - 7196	1	Matrix spike recovery <30%
	J00259	Hexavalent chromium - 7196	11	Holding time; matrix spike recovery <30%
	J00262	Hexavalent chromium - 7196	6	Holding time exceeded by >2 times limit
	J00263	Hexavalent chromium - 7196	2	Holding time exceeded by >2 times limit
	J00334	Hexavalent chromium - 7196	6	Matrix spike recovery <30%
	J00342	Hexavalent chromium - 7196	18	Matrix spike recovery <30%
	J00350	Hexavalent chromium - 7196	16	Matrix spike recovery <30%
	J00355	Hexavalent chromium - 7196	4	Matrix spike recovery <30%
	J00425	Hexavalent chromium - 7196	1	Matrix spike recovery <30%
	J00544	Hexavalent chromium - 7196	16	Matrix spike recovery <30%
	J00546	Hexavalent chromium - 7196	6	Matrix spike recovery <30%
	K1479	SVOC - 8270	1	Surrogate recovery <10%
	K1491	Metals - 6010	14	Matrix spike recovery <30%
		SVOC - 8270	1	Surrogate recovery <10%
	K1497	Pesticides - 8081	5	Holding time exceeded by >2 times limit
		PCBs - 8082	5	Holding time exceeded by >2 times limit
		SVOC - 8270	5	Holding time exceeded by >2 times limit; surrogate recovery <10%
	K1524	Metals - 6010	6	Matrix spike recovery <30%

Table 3-1. Summary of Rejected Data by Medium and Sample Delivery Group. (3 Pages)

Medium	Sample Delivery Group Number	Analytical Method	Number of Samples with Rejected Results	Basis for Rejection
	K1542	SVOC - 8270	2	Surrogate recovery <10%
	K1580	SVOC - 8270	1	Surrogate recovery <10%
Soil	K1551	SVOC - 8270	2	Surrogate recovery <10%
	K1554	SVOC - 8270	1	Surrogate recovery <10%
	K1554	Hexavalent chromium - 7196	15	Matrix spike recovery <30%
	K1556	Hexavalent chromium - 7196	20	Matrix spike recovery <30%
Groundwater upwelling–pore water	J00557	Hexavalent chromium - 7196	1	Matrix spike recovery <30%
	K1908	Nitrite/orthophosphate - 300.0	7	Holding time exceeded by >2 times limit
	K1913	Nitrite/orthophosphate - 300.0	4	Holding time exceeded by >2 times limit
	K1926	Nitrite/nitrate/orthophosphate - 300.0	3	Holding time exceeded by >2 times limit
	K1940	Nitrite/orthophosphate - 300.0	6	Holding time exceeded by >2 times limit
	K1946	Nitrite/orthophosphate - 300.0	8	Holding time exceeded by >2 times limit
	K1962	Nitrite/orthophosphate - 300.0	6	Holding time exceeded by >2 times limit
	K1963	Nitrite/nitrate/orthophosphate - 300.0	4	Holding time exceeded by >2 times limit
Groundwater upwelling–surface water	K1905	Nitrite/orthophosphate - 300.0	2	Holding time exceeded by >2 times limit
	K1907	Nitrite/orthophosphate - 300.0	3	Holding time exceeded by >2 times limit
	K1944	Nitrite/orthophosphate - 300.0	4	Holding time exceeded by >2 times limit
	K1952	Nitrite/orthophosphate - 300.0	6	Holding time exceeded by >2 times limit
	K1955	Nitrite/orthophosphate - 300.0	2	Holding time exceeded by >2 times limit
Groundwater upwelling - sediment	J00660	Hexavalent chromium - 7196	1	Matrix spike recovery <30%
	J00705	Hexavalent chromium - 7196	2	Matrix spike recovery <30%
	J00757	Hexavalent chromium - 7196	3	Matrix spike recovery <30%
	K1953	Metals - 6010	6	Matrix spike recovery <30%

Table 3-1. Summary of Rejected Data by Medium and Sample Delivery Group. (3 Pages)

Medium	Sample Delivery Group Number	Analytical Method	Number of Samples with Rejected Results	Basis for Rejection
Fish tissue	J00469	PCB congeners - 1668A	1	Low internal standards recovery
	J00558	PCB congeners - 1668A	2	Low internal standards recovery
	J00564	PCB congeners - 1668A	2	Low internal standards recovery
	K1579	Pesticides - 8081	20	Holding time exceeded by >2 times limit
	K1714	Pesticides - 8081	10	Holding time exceeded by >2 times limit
	K1725	Pesticides - 8081	7	Holding time exceeded by >2 times limit
	K1758	Pesticides - 8081	20	Holding time exceeded by >2 times limit
	K1759	Pesticides - 8081	16	Holding time exceeded by >2 times limit
	K1761	Pesticides - 8081	10	Holding time exceeded by >2 times limit
	K1769	Pesticides - 8081	10	Holding time exceeded by >2 times limit
	K1774	Pesticides - 8081	8	Holding time exceeded by >2 times limit
	K1785	Pesticides - 8081	17	Holding time exceeded by >2 times limit
	K1852	Pesticides - 8081	36	Holding time exceeded by >2 times limit
	K1863	Pesticides - 8081	13	Holding time exceeded by >2 times limit
	K1919	Pesticides - 8081	2	Holding time exceeded by >2 times limit

DRO = diesel range organic
PCB = polychlorinated biphenyl
SVOC = semivolatile organic compound

Table 3-2. Summary of Rejected Surface Water Data by Method. (4 Pages)

Analytical Method	Analyte	SDG Number	Sample Identification	Sample Date	Results	Units	Laboratory Qualifier	Validation Qualifier
DRO - 8115	Total petroleum hydrocarbons	K1442	J17TK0	11/6/2008	5.90E-05	mg/L	J	R
PCBs - 8082	Aroclor-1016	K1453	J17TK8	11/11/2008	4.00E-04	mg/L	U	R
PCBs - 8082	Aroclor-1016	K1453	J17TK9	11/11/2008	4.00E-04	mg/L	U	R
PCBs - 8082	Aroclor-1016	K1455	J17RR6	11/12/2008	4.00E-04	mg/L	U	R
PCBs - 8082	Aroclor-1016	K1455	J17RV2	11/13/2008	4.00E-04	mg/L	U	R
PCBs - 8082	Aroclor-1221	K1453	J17TK8	11/11/2008	4.00E-04	mg/L	U	R
PCBs - 8082	Aroclor-1221	K1453	J17TK9	11/11/2008	4.00E-04	mg/L	U	R
PCBs - 8082	Aroclor-1221	K1455	J17RR6	11/12/2008	4.00E-04	mg/L	U	R
PCBs - 8082	Aroclor-1221	K1455	J17RV2	11/13/2008	4.00E-04	mg/L	U	R
PCBs - 8082	Aroclor-1232	K1453	J17TK8	11/11/2008	4.00E-04	mg/L	U	R
PCBs - 8082	Aroclor-1232	K1453	J17TK9	11/11/2008	4.00E-04	mg/L	U	R
PCBs - 8082	Aroclor-1232	K1455	J17RR6	11/12/2008	4.00E-04	mg/L	U	R
PCBs - 8082	Aroclor-1232	K1455	J17RV2	11/13/2008	4.00E-04	mg/L	U	R
PCBs - 8082	Aroclor-1242	K1453	J17TK8	11/11/2008	4.00E-04	mg/L	U	R
PCBs - 8082	Aroclor-1242	K1453	J17TK9	11/11/2008	4.00E-04	mg/L	U	R
PCBs - 8082	Aroclor-1242	K1455	J17RR6	11/12/2008	4.00E-04	mg/L	U	R
PCBs - 8082	Aroclor-1242	K1455	J17RV2	11/13/2008	4.00E-04	mg/L	U	R
PCBs - 8082	Aroclor-1248	K1453	J17TK8	11/11/2008	4.00E-04	mg/L	U	R
PCBs - 8082	Aroclor-1248	K1453	J17TK9	11/11/2008	4.00E-04	mg/L	U	R
PCBs - 8082	Aroclor-1248	K1455	J17RR6	11/12/2008	4.00E-04	mg/L	U	R
PCBs - 8082	Aroclor-1248	K1455	J17RV2	11/13/2008	4.00E-04	mg/L	U	R
PCBs - 8082	Aroclor-1254	K1453	J17TK8	11/11/2008	4.00E-04	mg/L	U	R
PCBs - 8082	Aroclor-1254	K1453	J17TK9	11/11/2008	4.00E-04	mg/L	U	R
PCBs - 8082	Aroclor-1254	K1455	J17RR6	11/12/2008	4.00E-04	mg/L	U	R
PCBs - 8082	Aroclor-1254	K1455	J17RV2	11/13/2008	4.00E-04	mg/L	U	R
PCBs - 8082	Aroclor-1260	K1453	J17TK8	11/11/2008	4.00E-04	mg/L	U	R
PCBs - 8082	Aroclor-1260	K1453	J17TK9	11/11/2008	4.00E-04	mg/L	U	R
PCBs - 8082	Aroclor-1260	K1455	J17RR6	11/12/2008	4.00E-04	mg/L	U	R
PCBs - 8082	Aroclor-1260	K1455	J17RV2	11/13/2008	4.00E-04	mg/L	U	R
Pesticides - 8081	Aldrin	K1453	J17TK8	11/11/2008	5.00E-05	mg/L	U	R
Pesticides - 8081	Aldrin	K1453	J17TK9	11/11/2008	5.00E-05	mg/L	U	R
Pesticides - 8081	Aldrin	K1455	J17RR6	11/12/2008	5.00E-05	mg/L	U	R
Pesticides - 8081	Aldrin	K1455	J17RV2	11/13/2008	5.00E-05	mg/L	U	R
Pesticides - 8081	Alpha-BHC	K1453	J17TK8	11/11/2008	5.00E-05	mg/L	U	R
Pesticides - 8081	Alpha-BHC	K1453	J17TK9	11/11/2008	5.00E-05	mg/L	U	R
Pesticides - 8081	Alpha-BHC	K1455	J17RR6	11/12/2008	5.00E-05	mg/L	U	R
Pesticides - 8081	Alpha-BHC	K1455	J17RV2	11/13/2008	5.00E-05	mg/L	U	R
Pesticides - 8081	alpha-Chlordane	K1453	J17TK8	11/11/2008	5.00E-05	mg/L	U	R
Pesticides - 8081	alpha-Chlordane	K1453	J17TK9	11/11/2008	5.00E-05	mg/L	U	R

Table 3-2. Summary of Rejected Surface Water Data by Method. (4 Pages)

Analytical Method	Analyte	SDG Number	Sample Identification	Sample Date	Results	Units	Laboratory Qualifier	Validation Qualifier
Pesticides - 8081	alpha-Chlordane	K1455	J17RR6	11/12/2008	5.00E-05	mg/L	U	R
Pesticides - 8081	alpha-Chlordane	K1455	J17RV2	11/13/2008	5.00E-05	mg/L	U	R
Pesticides - 8081	beta-1,2,3,4,5,6-Hexachlorocyclohexane	K1453	J17TK8	11/11/2008	5.00E-05	mg/L	U	R
Pesticides - 8081	beta-1,2,3,4,5,6-Hexachlorocyclohexane	K1453	J17TK9	11/11/2008	5.00E-05	mg/L	U	R
Pesticides - 8081	beta-1,2,3,4,5,6-Hexachlorocyclohexane	K1455	J17RR6	11/12/2008	5.00E-05	mg/L	U	R
Pesticides - 8081	beta-1,2,3,4,5,6-Hexachlorocyclohexane	K1455	J17RV2	11/13/2008	5.00E-05	mg/L	U	R
Pesticides - 8081	Chlordane	K1453	J17TK8	11/11/2008	0.0001	mg/L	U	R
Pesticides - 8081	Chlordane	K1453	J17TK9	11/11/2008	0.0001	mg/L	U	R
Pesticides - 8081	Chlordane	K1455	J17RR6	11/12/2008	0.0001	mg/L	U	R
Pesticides - 8081	Chlordane	K1455	J17RV2	11/13/2008	0.0001	mg/L	U	R
Pesticides - 8081	Delta-BHC	K1453	J17TK8	11/11/2008	5.00E-05	mg/L	U	R
Pesticides - 8081	Delta-BHC	K1453	J17TK9	11/11/2008	5.00E-05	mg/L	U	R
Pesticides - 8081	Delta-BHC	K1455	J17RR6	11/12/2008	5.00E-05	mg/L	U	R
Pesticides - 8081	Delta-BHC	K1455	J17RV2	11/13/2008	5.00E-05	mg/L	U	R
Pesticides - 8081	Dichlorodiphenyldichloroethane	K1453	J17TK8	11/11/2008	5.00E-05	mg/L	U	R
Pesticides - 8081	Dichlorodiphenyldichloroethane	K1453	J17TK9	11/11/2008	5.00E-05	mg/L	U	R
Pesticides - 8081	Dichlorodiphenyldichloroethane	K1455	J17RR6	11/12/2008	5.00E-05	mg/L	U	R
Pesticides - 8081	Dichlorodiphenyldichloroethane	K1455	J17RV2	11/13/2008	5.00E-05	mg/L	U	R
Pesticides - 8081	Dichlorodiphenyldichloroethylene	K1453	J17TK8	11/11/2008	5.00E-05	mg/L	U	R
Pesticides - 8081	Dichlorodiphenyldichloroethylene	K1453	J17TK9	11/11/2008	5.00E-05	mg/L	U	R
Pesticides - 8081	Dichlorodiphenyldichloroethylene	K1455	J17RR6	11/12/2008	5.00E-05	mg/L	U	R
Pesticides - 8081	Dichlorodiphenyldichloroethylene	K1455	J17RV2	11/13/2008	5.00E-05	mg/L	U	R
Pesticides - 8081	Dichlorodiphenyltrichloroethane	K1453	J17TK8	11/11/2008	5.00E-05	mg/L	U	R
Pesticides - 8081	Dichlorodiphenyltrichloroethane	K1453	J17TK9	11/11/2008	5.00E-05	mg/L	U	R
Pesticides - 8081	Dichlorodiphenyltrichloroethane	K1455	J17RR6	11/12/2008	5.00E-05	mg/L	U	R
Pesticides - 8081	Dichlorodiphenyltrichloroethane	K1455	J17RV2	11/13/2008	5.00E-05	mg/L	U	R
Pesticides - 8081	Dieldrin	K1453	J17TK8	11/11/2008	5.00E-05	mg/L	U	R
Pesticides - 8081	Dieldrin	K1453	J17TK9	11/11/2008	5.00E-05	mg/L	U	R
Pesticides - 8081	Dieldrin	K1455	J17RR6	11/12/2008	5.00E-05	mg/L	U	R
Pesticides - 8081	Dieldrin	K1455	J17RV2	11/13/2008	5.00E-05	mg/L	U	R
Pesticides - 8081	Endosulfan I	K1453	J17TK8	11/11/2008	5.00E-05	mg/L	U	R
Pesticides - 8081	Endosulfan I	K1453	J17TK9	11/11/2008	5.00E-05	mg/L	U	R
Pesticides - 8081	Endosulfan I	K1455	J17RR6	11/12/2008	5.00E-05	mg/L	U	R
Pesticides - 8081	Endosulfan I	K1455	J17RV2	11/13/2008	5.00E-05	mg/L	U	R
Pesticides - 8081	Endosulfan II	K1453	J17TK8	11/11/2008	5.00E-05	mg/L	U	R

Table 3-2. Summary of Rejected Surface Water Data by Method. (4 Pages)

Analytical Method	Analyte	SDG Number	Sample Identification	Sample Date	Results	Units	Laboratory Qualifier	Validation Qualifier
Pesticides - 8081	Endosulfan II	K1453	J17TK9	11/11/2008	5.00E-05	mg/L	U	R
Pesticides - 8081	Endosulfan II	K1455	J17RR6	11/12/2008	5.00E-05	mg/L	U	R
Pesticides - 8081	Endosulfan II	K1455	J17RV2	11/13/2008	5.00E-05	mg/L	U	R
Pesticides - 8081	Endosulfan sulfate	K1453	J17TK8	11/11/2008	5.00E-05	mg/L	U	R
Pesticides - 8081	Endosulfan sulfate	K1453	J17TK9	11/11/2008	5.00E-05	mg/L	U	R
Pesticides - 8081	Endosulfan sulfate	K1455	J17RR6	11/12/2008	5.00E-05	mg/L	U	R
Pesticides - 8081	Endosulfan sulfate	K1455	J17RV2	11/13/2008	5.00E-05	mg/L	U	R
Pesticides - 8081	Endrin	K1453	J17TK8	11/11/2008	5.00E-05	mg/L	U	R
Pesticides - 8081	Endrin	K1453	J17TK9	11/11/2008	5.00E-05	mg/L	U	R
Pesticides - 8081	Endrin	K1455	J17RR6	11/12/2008	5.00E-05	mg/L	U	R
Pesticides - 8081	Endrin	K1455	J17RV2	11/13/2008	5.00E-05	mg/L	U	R
Pesticides - 8081	Endrin aldehyde	K1453	J17TK8	11/11/2008	5.00E-05	mg/L	U	R
Pesticides - 8081	Endrin aldehyde	K1453	J17TK9	11/11/2008	5.00E-05	mg/L	U	R
Pesticides - 8081	Endrin aldehyde	K1455	J17RR6	11/12/2008	5.00E-05	mg/L	U	R
Pesticides - 8081	Endrin aldehyde	K1455	J17RV2	11/13/2008	5.00E-05	mg/L	U	R
Pesticides - 8081	Endrin ketone	K1453	J17TK8	11/11/2008	5.00E-05	mg/L	U	R
Pesticides - 8081	Endrin ketone	K1453	J17TK9	11/11/2008	5.00E-05	mg/L	U	R
Pesticides - 8081	Endrin ketone	K1455	J17RR6	11/12/2008	5.00E-05	mg/L	U	R
Pesticides - 8081	Endrin ketone	K1455	J17RV2	11/13/2008	5.00E-05	mg/L	U	R
Pesticides - 8081	Gamma-BHC (lindane)	K1453	J17TK8	11/11/2008	5.00E-05	mg/L	U	R
Pesticides - 8081	Gamma-BHC (lindane)	K1453	J17TK9	11/11/2008	5.00E-05	mg/L	U	R
Pesticides - 8081	Gamma-BHC (lindane)	K1455	J17RR6	11/12/2008	5.00E-05	mg/L	U	R
Pesticides - 8081	Gamma-BHC (lindane)	K1455	J17RV2	11/13/2008	5.00E-05	mg/L	U	R
Pesticides - 8081	gamma-Chlordane	K1453	J17TK8	11/11/2008	5.00E-05	mg/L	U	R
Pesticides - 8081	gamma-Chlordane	K1453	J17TK9	11/11/2008	5.00E-05	mg/L	U	R
Pesticides - 8081	gamma-Chlordane	K1455	J17RR6	11/12/2008	5.00E-05	mg/L	U	R
Pesticides - 8081	gamma-Chlordane	K1455	J17RV2	11/13/2008	5.00E-05	mg/L	U	R
Pesticides - 8081	Heptachlor	K1453	J17TK8	11/11/2008	5.00E-05	mg/L	U	R
Pesticides - 8081	Heptachlor	K1453	J17TK9	11/11/2008	5.00E-05	mg/L	U	R
Pesticides - 8081	Heptachlor	K1455	J17RR6	11/12/2008	5.00E-05	mg/L	U	R
Pesticides - 8081	Heptachlor	K1455	J17RV2	11/13/2008	5.00E-05	mg/L	U	R
Pesticides - 8081	Heptachlor epoxide	K1453	J17TK8	11/11/2008	5.00E-05	mg/L	U	R
Pesticides - 8081	Heptachlor epoxide	K1453	J17TK9	11/11/2008	5.00E-05	mg/L	U	R
Pesticides - 8081	Heptachlor epoxide	K1455	J17RR6	11/12/2008	5.00E-05	mg/L	U	R
Pesticides - 8081	Heptachlor epoxide	K1455	J17RV2	11/13/2008	5.00E-05	mg/L	U	R
Pesticides - 8081	Methoxychlor	K1453	J17TK8	11/11/2008	5.00E-05	mg/L	U	R
Pesticides - 8081	Methoxychlor	K1453	J17TK9	11/11/2008	5.00E-05	mg/L	U	R
Pesticides - 8081	Methoxychlor	K1455	J17RR6	11/12/2008	5.00E-05	mg/L	U	R
Pesticides - 8081	Methoxychlor	K1455	J17RV2	11/13/2008	5.00E-05	mg/L	U	R

Table 3-2. Summary of Rejected Surface Water Data by Method. (4 Pages)

Analytical Method	Analyte	SDG Number	Sample Identification	Sample Date	Results	Units	Laboratory Qualifier	Validation Qualifier
Pesticides - 8081	Toxaphene	K1453	J17TK8	11/11/2008	5.00E-04	mg/L	U	R
Pesticides - 8081	Toxaphene	K1453	J17TK9	11/11/2008	5.00E-04	mg/L	U	R
Pesticides - 8081	Toxaphene	K1455	J17RR6	11/12/2008	5.00E-04	mg/L	U	R
Pesticides - 8081	Toxaphene	K1455	J17RV2	11/13/2008	5.00E-04	mg/L	U	R
SVOC - 8270	2,4,5-Trichlorophenol	K1439	J17TK1	11/4/2008	2.50E-02	mg/L	U	R
SVOC - 8270	2,4,6-Trichlorophenol	K1439	J17TK1	11/4/2008	0.01	mg/L	U	R
SVOC - 8270	2,4-Dichlorophenol	K1439	J17TK1	11/4/2008	0.01	mg/L	U	R
SVOC - 8270	2,4-Dimethylphenol	K1439	J17TK1	11/4/2008	0.01	mg/L	U	R
SVOC - 8270	2,4-Dinitrophenol	K1439	J17TK1	11/4/2008	2.50E-02	mg/L	U	R
SVOC - 8270	2-Chlorophenol	K1439	J17TK1	11/4/2008	0.01	mg/L	U	R
SVOC - 8270	2-Methylphenol (cresol, o-)	K1439	J17TK1	11/4/2008	0.01	mg/L	U	R
SVOC - 8270	2-Nitrophenol	K1439	J17TK1	11/4/2008	0.01	mg/L	U	R
SVOC - 8270	4-Bromophenylphenyl ether	K1439	J17TK1	11/4/2008	0.01	mg/L	U	R
SVOC - 8270	4-Chloro-3-methylphenol	K1439	J17TK1	11/4/2008	0.01	mg/L	U	R
SVOC - 8270	4-Chlorophenylphenyl ether	K1439	J17TK1	11/4/2008	0.01	mg/L	U	R
SVOC - 8270	Bis(2-Chloroethoxy)methane	K1439	J17TK1	11/4/2008	0.01	mg/L	U	R
SVOC - 8270	Bis(2-chloroethyl) ether	K1439	J17TK1	11/4/2008	0.01	mg/L	U	R
SVOC - 8270	Bis(2-ethylhexyl) phthalate	K1439	J17TK1	11/4/2008	6.00E-04	mg/L	J	R
SVOC - 8270	Butylbenzylphthalate	K1439	J17TK1	11/4/2008	0.01	mg/L	U	R
SVOC - 8270	Dibenzofuran	K1439	J17TK1	11/4/2008	0.01	mg/L	U	R
SVOC - 8270	Diethylphthalate	K1439	J17TK1	11/4/2008	0.01	mg/L	U	R
SVOC - 8270	Dimethyl phthalate	K1439	J17TK1	11/4/2008	0.01	mg/L	U	R
SVOC - 8270	Di-n-butylphthalate	K1439	J17TK1	11/4/2008	0.01	mg/L	U	R
SVOC - 8270	Di-n-octylphthalate	K1439	J17TK1	11/4/2008	0.01	mg/L	U	R
SVOC - 8270	Isophorone	K1439	J17TK1	11/4/2008	0.01	mg/L	U	R
SVOC - 8270	Pentachlorophenol	K1439	J17TK1	11/4/2008	2.50E-02	mg/L	U	R
SVOC - 8270	Phenol	K1439	J17TK1	11/4/2008	0.01	mg/L	U	R

DRO = diesel range organic
J = estimated
PCB = polychlorinated biphenyl
R = rejected
SDG = sample delivery group
SVOC = semivolatile organic compound
U = nondetect
µg/L = micrograms per liter

All samples were analyzed prior to expiration of the associated 6-month required holding time. Reported detection limits (RDLs) and minimum detectable activity (MDA) levels were reviewed and determined to be at or below the levels specified in the project SAP, with the exception of the RDLs for carbon-14 and strontium and the MDA levels for radium-226, radium-228, americium-241, beryllium-7, and ruthenium-106, which exceeded the limits specified in the SAP (DOE/RL-2008-11, Appendix A).

Method blanks generally did not contain concentrations of target analytes above corresponding detection limits, with the exception of thorium-230 in blanks associated with a few SDGs. LCS results were compliant with respective criteria, indicating a positive correlation to the accuracy of reported sample concentrations. Noncompliant tracer recovery results were reported for technetium-99 in a few SDGs. The recoveries generally exceeded the 105% upper control limit, indicating a potential high bias in sample concentrations. Because the associated sample results were reported as nondetect for technetium, there was no action taken based on this finding. Noncompliant matrix spike recoveries were found in SDG K1427 for tritium and in SDG K1654 for carbon-14, and the associated sample results were qualified as estimated (J). Laboratory duplicate samples were analyzed to measure the precision of reported results. The relative percent differences (RPDs) between the duplicate pairs generally indicated that there was an acceptable level of analytical precision.

QC results for the radionuclides were compliant for most QC parameters. None of the radionuclide data was rejected. Radionuclide data for surface water are of sufficient quality for their intended end use.

3.1.1.2 Volatile Organic Compounds – Surface Water. For the surface water volatile organic compound (VOC) data, QC results were compliant for most QC parameters. None of the VOC data was rejected, and the data are acceptable for their intended project use. The following is a summary of the results of the assessment and minor QC deficiencies noted during the assessment.

Analysis of the samples in all SDGs took place prior to the expiration of the associated holding time. Detection limits for all compounds that are reported with this analysis are the same or below those specified in the SAP (DOE/RL-2008-11, Appendix A), with the exception of methylene chloride. Laboratory blanks were analyzed for target VOCs to identify potential false-positive concentrations resulting from laboratory processing and analyses. Methylene chloride and/or acetone were detected in many of these blanks at trace concentrations. Both are classified by the EPA as common laboratory contaminants. In order to eliminate potential false-positive results, sample concentrations less than 10 times the blank concentration were qualified as estimated nondetect (UJ). If the sample concentration of the blank contaminant was below the RDL it was replaced with the RDL as part of this action.

One equipment blank associated with SDG K1654 contained trace concentrations of toluene. Several trip blanks associated with a number of the SDGs contained low-level concentrations of methylene chloride, acetone, and/or toluene. Based on the guidance used for this DQA (HNF-20433), no action was taken with respect to equipment blank or trip blank contamination.

LCS recoveries were generally compliant for all samples, indicating that accuracy requirements were satisfied. Exceptions include 2-butanone, acetone, and/or chloroethane LCS recoveries reported in some SDGs. Matrix spike recoveries and RPDs were compliant for all SDGs. The field duplicate results demonstrated that there was little variability and acceptable levels of precision of reported results. Laboratory duplicates were not analyzed in association with any of the SDGs.

Because only minor QC deficiencies were identified during the assessment, results from the VOC data are of sufficient quality for their intended end use.

3.1.1.3 Semivolatile Organic Compounds – Surface Water. For the semivolatile organic compounds (SVOCs) in surface water, QC results were compliant for most QC parameters. Although data from one sample were rejected based on low surrogate recoveries, the QC results from the SVOC analyses indicate that the remaining results are of acceptable quality for their intended project use. The following is a summary of the results of the assessment and QC deficiencies noted during the assessment. The data that were rejected are provided in Table 3-2.

Detection limits were reviewed and found to be generally at or below those specified in the SAP (DOE/RL-2008-11, Appendix A). Reported detection limits that exceeded those specified in the SAP included 2,4,5-trichlorophenol, 2-nitroaniline, 3-nitroaniline, 4-nitrophenol, 4-nitroaniline, 4,6-dintro-2-methylphenol, and pentachlorophenol. The samples were extracted and analyzed prior to holding time expirations, with the exception of sample J17K53 in SDG K1399, which was extracted out of holding time, but less than twice the holding time limit. Results for this sample were qualified as estimated (J).

Bis(2-ethylhexyl)phthalate and di-n-butyl phthalate, both classified by EPA as common laboratory contaminants, were detected in several laboratory blanks, indicating potential introductions from the laboratory during sample preparation and analysis. Detected results below the action level were qualified as estimated nondetect (UJ).

Most surrogate recoveries were compliant for all samples, indicating that instrument performance during sample analysis was acceptable. However, recovery of the surrogates 2,4,6-tribromophenol, 2-fluorphenol, and phenol-d5 at less than 10% in sample J17TK1 in SDG K1439 resulted in the rejection of results for several associated acid fraction compounds for that sample.

LCS and matrix spike recoveries indicated some extraction difficulties for some SVOCs. Numerous compounds including 4-chloroaniline, 3-nitroaniline, 4-nitroaniline, 3,3'-dichlorobenzidine, hexachlorocyclopentadiene, and hexachloroethane had recoveries that were below the lower control limit, demonstrating a potential low bias to sample results (i.e., concentrations may potentially be underestimated). LCS and matrix spike recoveries below the lower control limit resulted in associated data being qualified as estimated (J).

Field duplicate comparisons with the primary sample results generally indicated acceptable precision.

The DQA identified compounds with extraction problems resulting in extremely low recoveries. Although acid fraction data from sample J17TK1 in SDG K1439 were rejected based on surrogate recoveries, the QC results from the SVOC analyses indicated that the remaining data are of sufficient quality for their intended project use.

3.1.1.4 Polychlorinated Biphenyls – Surface Water. For the PCB data, QC results were compliant for most QC parameters. Although data from two samples each in two SDGs were rejected based on holding time exceedances, the QC results from the PCB analyses indicate that the majority of the results are of acceptable quality for their intended project use. The following discussion is a summary of the results of the assessment and QC deficiencies noted during the assessment. The data that were rejected are summarized in Table 3-2.

Detection limits reported for all Aroclors were below the specifications listed in the SAP (DOE/RL-2008-11, Appendix A). PCB sample extractions on all samples analyzed in SDGs K1453 and K1455 were performed beyond twice the holding time limit. All of the nondetect sample results were qualified as unusable, or rejected (R), based on this finding. Results from two samples were rejected in each SDG.

Low matrix spike recoveries of Aroclor-1016 were identified in SDGs K1439 and K1452. Aroclor-1260 had a low recovery in SDG K1439. Associated samples were qualified as estimated (J). Other QC parameters including method blank results, laboratory duplicate, field duplicate, surrogate, and LCS recoveries were generally compliant.

Although all the results for all samples in SDGs K1453 and K1455 were rejected based on holding time exceedances, the PCB data for all other SDGs are of sufficient quality for their intended project use.

3.1.1.5 Chlorinated Pesticides – Surface Water. For the pesticide data, QC results were compliant for most QC parameters. Although data from two samples in both SDG K1453 and K1455 were rejected based on holding time exceedances, the QC results from the pesticide analyses indicated that the majority of the results are of acceptable quality for their intended project use. The following discussion is a summary of the results of the assessment and QC deficiencies noted during the assessment. The data that were rejected are provided in Table 3-2.

Detection limits were at or below those specified in the SAP (DOE/RL-2008-11, Appendix A). The holding time limits were exceeded by more than twice the limit for samples analyzed in SDGs K1453 and K1455. All nondetect sample results associated with these SDGs were therefore rejected and are considered unusable. Results from two samples in each of the two SDGs were rejected based on this finding.

No compounds were detected in the method blanks or equipment blanks. Matrix spike and LCS results were generally compliant, although a few SDGs had noncompliant recoveries for delta-BHC, heptachlor, aldrin, endosulfan, methoxychlor, and/or 4,4'-DDT. Low recoveries indicate a potential low bias for associated sample concentrations; therefore, associated sample results were qualified as estimated (J). LCS and matrix spike QC results for toxaphene were not provided, and therefore toxaphene results for all samples in all SDGs were qualified as estimated (J). The field duplicate results indicated acceptable levels of precision. Laboratory duplicates were not analyzed in association with any of the SDGs.

Although results from two samples each in SDGs K1453 and K1455 were rejected based on holding time exceedances, the majority of the pesticide sample results are of sufficient quality for their intended project use.

3.1.1.6 Metals – Surface Water. For the metals data, QC results were compliant for most QC parameters. The QC results for metals analyses indicate that the results are of acceptable quality for their intended project use. The following is a summary of the results of the assessment and the minor QC deficiencies noted during the assessment.

Detection limits for most metals were generally at or below those specified in the SAP with the exception of silicon. There was no action taken with respect to the elevated detection limits. Samples were analyzed within the holding times specified in the project SAP (DOE/RL-2008-11, Appendix A).

A number of elements were detected in the preparation blanks associated with the surface water SDGs, indicating potential interferences during sample preparation and analysis. Since almost all of the detections were at trace levels, those elements detected at similar levels in samples (less than five times the blank concentration) were qualified as estimated nondetect (UJ).

Equipment blanks were analyzed in association with SDGs K1399 and K1654. The results of the equipment blank were used to assess the effectiveness of decontamination procedures and the potential for carry-over contamination to transfer from the sampling equipment to the samples. A number of elements were detected in both equipment blanks, at concentrations higher than in the laboratory blanks. In accordance with the guidance used for this DQA (HNF-20433), no action was taken based on the equipment blank detections.

LCS recoveries were compliant for all of the SDGs. Noncompliant matrix spike results were identified for silicon in a few SDGs. In all cases, the concentrations of silicon in the sample used for the spike analyses exceeded four times the spike concentration making the contributions from the spike insignificant relative to native amounts. No action was taken with respect to sample qualification in these cases. Noncompliant recoveries of lithium and aluminum resulted in SDGs K1399 and K1652 lithium and aluminum sample results being qualified as estimated (J).

The RPDs between sample/duplicate pairs were acceptable for most of the elements in the laboratory and field duplicates. Noncompliant RPDs for the laboratory duplicates generally did not result in any impacts to the samples results. No action was taken based on noncompliant field duplicate results.

The majority of the QC results reviewed in association with the other elements was compliant with criteria contained in the SAP (DOE/RL-2008-11, Appendix A) and other guidance (HNF-20433), indicating that the metals data are of sufficient quality for their intended project use.

3.1.1.7 Hexavalent Chromium – Surface Water. Hexavalent chromium QC results were compliant for all QC parameters assessed. None of the hexavalent chromium data was rejected or otherwise qualified during the data assessment, and the data are acceptable for their intended project use.

3.1.1.8 Diesel Range Organics – Surface Water. In general, diesel range organics (DRO) QC results were compliant. Most of the DRO data are acceptable for their intended project use. One sample result in SDG K1442 was qualified as rejected based on a low surrogate recovery. The following is a summary of the results of the assessment and the QC deficiencies noted during the assessment. The rejected result is listed in Table 3-2.

All samples were extracted prior to expiration of the 14-day holding time. Detection limits were at or below the level specified in the SAP (DOE/RL-2008-11, Appendix A). Surrogate recoveries were in control for most sample analyses, with the exception of SDGs K1442 and K1447. For SDG K1442, one sample had a recovery of 0%, resulting in that sample data being qualified as rejected and unusable. Laboratory blanks were analyzed to determine potential interferences from preparation and analysis of the samples. DRO was detected in several of these blanks including those associated with SDGs K1441, K1442, K1447, K1452, K1453, and K1455. Associated detected sample results were qualified as estimated nondetect (UJ).

LCS and matrix spike recoveries were below the lower control limit for many samples, suggesting a low bias to sample concentrations. Associated samples were qualified as estimated (J). Field duplicate results were generally compliant for the DRO analyses.

The only major QC deficiency identified for the surface water DRO data was the low surrogate recovery in one sample that resulted in the data for that sample being qualified as rejected. The majority of the DRO data are of sufficient quality for their intended project use.

3.1.1.9 Dissolved Organic Carbon – Surface Water. In general, dissolved organic carbon (DOC) QC results were compliant for most QC parameters. None of the DOC data was rejected, and the data are considered acceptable for their intended project use. The following is a summary of the results of the assessment and minor QC deficiencies noted during the assessment.

Detection limit values reported for all samples were at or below the specification included in the SAP (DOE/RL-2008-11, Appendix A), and all samples were analyzed within the required holding time limits.

No DOC concentrations were detected in the associated laboratory blanks. DOC was detected in two equipment blanks. Based on the guidance used for this DQA (HNF-20433), no action was taken based on this finding. LCS results were generally compliant; however, LCS samples were not analyzed for a few SDGs. Associated samples for those SDGs were qualified as estimated (J). Matrix spike recoveries were compliant for all SDGs. The results from comparison of sample results from those of corresponding duplicates indicate little variability.

No major QC deficiencies were identified during the assessment of DOC data quality, and the data are sufficient for their intended project use.

3.1.1.10 Anions – Surface Water. Anions that were analyzed include bromide, chloride, fluoride, nitrate, nitrite, orthophosphate, sulfate, and combined nitrate/nitrite. Quality control results were compliant for most QC parameters and were acceptable for their intended project use. No results were rejected. The following is a summary of the results of the assessment and minor QC deficiencies noted during the assessment.

Detection limit values for these analytes were not specified in the SAP (DOE/RL-2008-11, Appendix A). Holding times were exceeded by less than twice the limit for nitrate, nitrite, and orthophosphate for samples in SDGs K1641, K1648, and K1654. Detected and nondetect results were qualified as estimated (J).

Chloride was detected in the laboratory blanks associated with SDGs K1656 and K1660, however no results were qualified since the results were greater than five times the blank concentrations. Sulfate was detected in the equipment blank associated with SDG K1651 and chloride and nitrate/nitrite as N were detected in the equipment blanks associated with SDG K1654. Based on the guidance used for this DQA (HNF-20433), no action was taken based on these equipment blank findings. LCS and matrix spike results were compliant for all SDGs, except for SDGs K1648 and K1651. No LCS or matrix spike analyses were performed for nitrate/nitrite as N in these two SDGs, and all results were qualified as estimated (J). The field duplicate for SDG K1648 had noncompliant RPDs for sulfate and chloride. Based on the guidance (HNF-20433), no action was taken based on this finding.

No major QC deficiencies were identified during the assessment of anion data quality, and the data are sufficient for their intended project use.

3.1.2 Summary of Data Assessment Results for Sediment

The following subsections present a summary of the major and minor QC deficiencies identified during the data assessment of the sediment data. Seventy-seven SDGs were included in this assessment. The majority of the data are acceptable for their intended project use. Those data that were rejected and unusable based on a major QC deficiency identified during the assessment are listed in Table 3-3.

3.1.2.1 Radionuclides – Sediment. Radionuclide target analytes include carbon-14, total strontium, technetium-99, various isotopic forms of uranium, plutonium, and thorium, and a gamma scan that provides results for 17 additional radionuclides. Quality control results were compliant for most QC parameters. None of the radionuclide data was rejected, and the data are acceptable for their intended project use. The following is a summary of the results of the assessment and minor QC deficiencies noted during the assessment.

All samples were analyzed prior to expiration of the associated 6-month required holding time. RDLs and MDA levels were reviewed and determined to be at or below the levels specified in the project SAP (DOE/RL-2008-11, Appendix A). In accordance with the guidance used for this DQA (HNF-20434), no action was taken with respect to detection limit exceedances.

Method blanks generally did not contain concentrations of target analytes above corresponding detection limits. LCS results were compliant with respective criteria, indicating a positive correlation to the accuracy of reported sample concentrations. Several noncompliant tracer recovery results were reported for samples in several SDGs. Recoveries generally exceeded the 105% upper control limit, indicating a potential high bias to sample concentrations. If the sample was nondetect for the associated radionuclide, there was no action taken based on this finding. Detected sample results were qualified as estimated (J).

Laboratory duplicate samples were analyzed to measure the precision of reported results. The RPDs between the duplicate pairs indicated that there was an acceptable level of analytical precision. Matrix spike analyses were not performed in conjunction with the carbon-14 analyses and therefore all carbon-14 sample results from all SDGs were qualified as estimated (J).

None of the radionuclide data was rejected, and the data are of sufficient quality for their intended project use.

Table 3-3. Summary of Rejected Sediment Data by Method. (19 Pages)

Analytical Method	Analyte	SDG Number	Sample Identification	Sample Date	Results	Units	Laboratory Qualifier	Validation Qualifier
Hexavalent chromium - 7196	Hexavalent chromium	J00242	J17VB3	12/1/2008	0.155	mg/Kg	U	R
Hexavalent chromium - 7196	Hexavalent chromium	J00242	J17VB4	12/1/2008	0.155	mg/Kg	U	R
Hexavalent chromium - 7196	Hexavalent chromium	J00242	J17VB6	12/1/2008	0.155	mg/Kg	U	R
Hexavalent chromium - 7196	Hexavalent chromium	J00242	J17VB8	12/1/2008	0.155	mg/Kg	U	R
Hexavalent chromium - 7196	Hexavalent chromium	J00242	J17VD2	12/1/2008	0.155	mg/Kg	U	R
Hexavalent chromium - 7196	Hexavalent chromium	J00242	J17VD3	12/1/2008	1.55E-01	mg/Kg	U	R
Hexavalent chromium - 7196	Hexavalent chromium	J00242	J17VD4	12/1/2008	1.55E-01	mg/Kg	U	R
Hexavalent chromium - 7196	Hexavalent chromium	J00242	J17VD5	12/1/2008	0.155	mg/Kg	U	R
Hexavalent chromium - 7196	Hexavalent chromium	J00242	J17VD6	12/1/2008	0.155	mg/Kg	U	R
Hexavalent chromium - 7196	Hexavalent chromium	J00242	J17VD7	12/1/2008	1.55E-01	mg/Kg	U	R
Hexavalent chromium - 7196	Hexavalent chromium	J00246	J17WC6	12/3/2008	0.155	mg/Kg	U	R
Hexavalent chromium - 7196	Hexavalent chromium	J00259	J180L0	12/11/2008	0.155	mg/Kg	U	R
Hexavalent chromium - 7196	Hexavalent chromium	J00259	J180L1	12/11/2008	0.155	mg/Kg	U	R
Hexavalent chromium - 7196	Hexavalent chromium	J00259	J180L2	12/11/2008	0.155	mg/Kg	U	R
Hexavalent chromium - 7196	Hexavalent chromium	J00259	J180L3	12/11/2008	0.155	mg/Kg	U	R
Hexavalent chromium - 7196	Hexavalent chromium	J00259	J180L4	12/11/2008	0.155	mg/Kg	U	R
Hexavalent chromium - 7196	Hexavalent chromium	J00259	J180L5	12/11/2008	0.155	mg/Kg	U	R
Hexavalent chromium - 7196	Hexavalent chromium	J00259	J180L6	12/11/2008	0.155	mg/Kg	U	R
Hexavalent chromium - 7196	Hexavalent chromium	J00259	J180L7	12/11/2008	0.155	mg/Kg	U	R
Hexavalent chromium - 7196	Hexavalent chromium	J00259	J180L8	12/11/2008	0.155	mg/Kg	U	R
Hexavalent chromium - 7196	Hexavalent chromium	J00259	J180L9	12/11/2008	0.155	mg/Kg	U	R
Hexavalent chromium - 7196	Hexavalent chromium	J00259	J17VR3	12/11/2008	1.55E-01	mg/Kg	U	R
Hexavalent chromium - 7196	Hexavalent chromium	J00262	J180V0	12/11/2008	0.155	mg/Kg	U	R
Hexavalent chromium - 7196	Hexavalent chromium	J00262	J180V1	12/11/2008	0.155	mg/Kg	U	R
Hexavalent chromium - 7196	Hexavalent chromium	J00262	J180V2	12/11/2008	0.155	mg/Kg	U	R
Hexavalent chromium - 7196	Hexavalent chromium	J00262	J180V3	12/11/2008	0.155	mg/Kg	U	R
Hexavalent chromium - 7196	Hexavalent chromium	J00262	J180V4	12/11/2008	0.155	mg/Kg	U	R
Hexavalent chromium - 7196	Hexavalent chromium	J00262	J17VR5	12/11/2008	0.155	mg/Kg	U	R
Hexavalent chromium - 7196	Hexavalent chromium	J00263	J18170	12/12/2008	0.155	mg/Kg	U	R
Hexavalent chromium - 7196	Hexavalent chromium	J00263	J180X7	12/12/2008	0.155	mg/Kg	U	R
Hexavalent chromium - 7196	Hexavalent chromium	J00334	J18615	2/10/2009	0.155	mg/Kg	U	R
Hexavalent chromium - 7196	Hexavalent chromium	J00334	J18628	2/10/2009	0.155	mg/Kg	U	R
Hexavalent chromium - 7196	Hexavalent chromium	J00334	J186Y2	2/10/2009	0.155	mg/Kg	U	R
Hexavalent chromium - 7196	Hexavalent chromium	J00334	J186Y3	2/10/2009	0.155	mg/Kg	U	R
Hexavalent chromium - 7196	Hexavalent chromium	J00334	J186Y6	2/10/2009	0.155	mg/Kg	U	R
Hexavalent chromium - 7196	Hexavalent chromium	J00334	J18712	2/10/2009	0.155	mg/Kg	U	R
Hexavalent chromium - 7196	Hexavalent chromium	J00342	J18623	2/17/2009	0.155	mg/Kg	U	R
Hexavalent chromium - 7196	Hexavalent chromium	J00342	J17XP4	2/17/2009	0.155	mg/Kg	U	R
Hexavalent chromium - 7196	Hexavalent chromium	J00342	J17XP5	2/17/2009	0.155	mg/Kg	U	R

Table 3-3. Summary of Rejected Sediment Data by Method. (19 Pages)

Analytical Method	Analyte	SDG Number	Sample Identification	Sample Date	Results	Units	Laboratory Qualifier	Validation Qualifier
Hexavalent chromium - 7196	Hexavalent chromium	J00342	J17XP6	2/17/2009	0.155	mg/Kg	U	R
Hexavalent chromium - 7196	Hexavalent chromium	J00342	J18817	2/17/2009	0.155	mg/Kg	U	R
Hexavalent chromium - 7196	Hexavalent chromium	J00342	J18818	2/17/2009	0.155	mg/Kg	U	R
Hexavalent chromium - 7196	Hexavalent chromium	J00342	J18819	2/17/2009	1.55E-01	mg/Kg	U	R
Hexavalent chromium - 7196	Hexavalent chromium	J00342	J18854	2/17/2009	1.55E-01	mg/Kg	U	R
Hexavalent chromium - 7196	Hexavalent chromium	J00342	J18855	2/17/2009	0.155	mg/Kg	U	R
Hexavalent chromium - 7196	Hexavalent chromium	J00342	J18856	2/17/2009	0.155	mg/Kg	U	R
Hexavalent chromium - 7196	Hexavalent chromium	J00342	J18857	2/17/2009	0.155	mg/Kg	U	R
Hexavalent chromium - 7196	Hexavalent chromium	J00342	J18858	2/17/2009	0.155	mg/Kg	U	R
Hexavalent chromium - 7196	Hexavalent chromium	J00342	J18859	2/17/2009	0.155	mg/Kg	U	R
Hexavalent chromium - 7196	Hexavalent chromium	J00342	J18860	2/17/2009	0.155	mg/Kg	U	R
Hexavalent chromium - 7196	Hexavalent chromium	J00342	J18861	2/17/2009	0.155	mg/Kg	U	R
Hexavalent chromium - 7196	Hexavalent chromium	J00342	J18875	2/17/2009	0.155	mg/Kg	U	R
Hexavalent chromium - 7196	Hexavalent chromium	J00342	J188F3	2/17/2009	0.155	mg/Kg	U	R
Hexavalent chromium - 7196	Hexavalent chromium	J00342	J188F4	2/17/2009	0.155	mg/Kg	U	R
Hexavalent chromium - 7196	Hexavalent chromium	J00350	J18995	2/19/2009	0.15	mg/Kg	U	R
Hexavalent chromium - 7196	Hexavalent chromium	J00350	J18996	2/19/2009	0.152	mg/Kg	U	R
Hexavalent chromium - 7196	Hexavalent chromium	J00350	J18997	2/19/2009	0.15	mg/Kg	U	R
Hexavalent chromium - 7196	Hexavalent chromium	J00350	J18998	2/19/2009	0.151	mg/Kg	U	R
Hexavalent chromium - 7196	Hexavalent chromium	J00350	J189B0	2/19/2009	0.149	mg/Kg	U	R
Hexavalent chromium - 7196	Hexavalent chromium	J00350	J189B1	2/19/2009	0.151	mg/Kg	U	R
Hexavalent chromium - 7196	Hexavalent chromium	J00350	J189B2	2/19/2009	0.154	mg/Kg	U	R
Hexavalent chromium - 7196	Hexavalent chromium	J00350	J189C5	2/19/2009	0.157	mg/Kg	U	R
Hexavalent chromium - 7196	Hexavalent chromium	J00350	J189C6	2/19/2009	0.152	mg/Kg	U	R
Hexavalent chromium - 7196	Hexavalent chromium	J00350	J189D0	2/19/2009	0.148	mg/Kg	U	R
Hexavalent chromium - 7196	Hexavalent chromium	J00350	J189D1	2/19/2009	0.156	mg/Kg	U	R
Hexavalent chromium - 7196	Hexavalent chromium	J00350	J189D3	2/19/2009	0.156	mg/Kg	U	R
Hexavalent chromium - 7196	Hexavalent chromium	J00350	J189D4	2/19/2009	1.53E-01	mg/Kg	U	R
Hexavalent chromium - 7196	Hexavalent chromium	J00350	J189F3	2/19/2009	0.147	mg/Kg	U	R
Hexavalent chromium - 7196	Hexavalent chromium	J00350	J189F4	2/19/2009	0.157	mg/Kg	U	R
Hexavalent chromium - 7196	Hexavalent chromium	J00350	J189F5	2/19/2009	0.148	mg/Kg	U	R
Hexavalent chromium - 7196	Hexavalent chromium	J00355	J180M5	2/23/2009	0.155	mg/Kg	U	R
Hexavalent chromium - 7196	Hexavalent chromium	J00355	J180M7	2/23/2009	0.154	mg/Kg	U	R
Hexavalent chromium - 7196	Hexavalent chromium	J00355	J180M8	2/23/2009	0.152	mg/Kg	U	R
Hexavalent chromium - 7196	Hexavalent chromium	J00355	J180M9	2/23/2009	0.153	mg/Kg	U	R
Hexavalent chromium - 7196	Hexavalent chromium	J00425	J18MK6	3/27/2009	0.152	mg/Kg	U	R
Hexavalent chromium - 7196	Hexavalent chromium	J00544	J18X18	6/9/2009	0.151	mg/Kg	U	R
Hexavalent chromium - 7196	Hexavalent chromium	J00544	J18X19	6/9/2009	0.155	mg/Kg	U	R
Hexavalent chromium - 7196	Hexavalent chromium	J00544	J18X20	6/9/2009	0.152	mg/Kg	U	R

Table 3-3. Summary of Rejected Sediment Data by Method. (19 Pages)

Analytical Method	Analyte	SDG Number	Sample Identification	Sample Date	Results	Units	Laboratory Qualifier	Validation Qualifier
Hexavalent chromium - 7196	Hexavalent chromium	J00544	J18X21	6/9/2009	0.153	mg/Kg	U	R
Hexavalent chromium - 7196	Hexavalent chromium	J00544	J18X22	6/9/2009	0.15	mg/Kg	U	R
Hexavalent chromium - 7196	Hexavalent chromium	J00544	J18X38	6/9/2009	0.15	mg/Kg	U	R
Hexavalent chromium - 7196	Hexavalent chromium	J00544	J18X39	6/9/2009	0.154	mg/Kg	U	R
Hexavalent chromium - 7196	Hexavalent chromium	J00544	J18X40	6/9/2009	0.153	mg/Kg	U	R
Hexavalent chromium - 7196	Hexavalent chromium	J00544	J18X41	6/9/2009	0.152	mg/Kg	U	R
Hexavalent chromium - 7196	Hexavalent chromium	J00544	J18X42	6/9/2009	0.152	mg/Kg	U	R
Hexavalent chromium - 7196	Hexavalent chromium	J00544	J18X51	6/9/2009	0.155	mg/Kg	U	R
Hexavalent chromium - 7196	Hexavalent chromium	J00544	J18X52	6/9/2009	0.154	mg/Kg	U	R
Hexavalent chromium - 7196	Hexavalent chromium	J00544	J18X53	6/9/2009	0.154	mg/Kg	U	R
Hexavalent chromium - 7196	Hexavalent chromium	J00544	J18X54	6/9/2009	0.152	mg/Kg	U	R
Hexavalent chromium - 7196	Hexavalent chromium	J00544	J18X55	6/9/2009	0.151	mg/Kg	U	R
Hexavalent chromium - 7196	Hexavalent chromium	J00544	J18X59	6/9/2009	0.153	mg/Kg	U	R
Hexavalent chromium - 7196	Hexavalent chromium	J00546	J18X33	6/10/2009	0.155	mg/Kg	U	R
Hexavalent chromium - 7196	Hexavalent chromium	J00546	J18X34	6/10/2009	0.155	mg/Kg	U	R
Hexavalent chromium - 7196	Hexavalent chromium	J00546	J18X35	6/10/2009	0.155	mg/Kg	U	R
Hexavalent chromium - 7196	Hexavalent chromium	J00546	J18X36	6/10/2009	0.155	mg/Kg	U	R
Hexavalent chromium - 7196	Hexavalent chromium	J00546	J18X37	6/10/2009	0.155	mg/Kg	U	R
Hexavalent chromium - 7196	Hexavalent chromium	J00546	J18X58	6/10/2009	0.155	mg/Kg	U	R
Metals - 6010	Antimony	K1524	J18172	2/2/2009	0.484	mg/Kg	U	R
Metals - 6010	Antimony	K1524	J18173	2/2/2009	0.353	mg/Kg	U	R
Metals - 6010	Antimony	K1524	J18176	2/2/2009	0.411	mg/Kg	U	R
Metals - 6010	Antimony	K1524	J17XR5	2/2/2009	0.492	mg/Kg	U	R
Metals - 6010	Antimony	K1524	J17XR8	2/2/2009	5.45E-01	mg/Kg	U	R
Metals - 6010	Antimony	K1524	J17XR9	2/2/2009	3.61E-01	mg/Kg	B	R
Metals - 6010	Calcium	K1491	J17YW0-A	12/8/2008	2680	mg/Kg		R
Metals - 6010	Calcium	K1491	J17VP2	12/9/2008	3860	mg/Kg		R
Metals - 6010	Calcium	K1491	J18030	12/9/2008	4070	mg/Kg		R
Metals - 6010	Calcium	K1491	J18031	12/9/2008	3450	mg/Kg		R
Metals - 6010	Calcium	K1491	J18032	12/9/2008	3210	mg/Kg		R
Metals - 6010	Calcium	K1491	J18092	12/9/2008	4050	mg/Kg		R
Metals - 6010	Calcium	K1491	J18093	12/9/2008	4470	mg/Kg		R
Metals - 6010	Calcium	K1491	J18094	12/9/2008	2790	mg/Kg		R
Metals - 6010	Calcium	K1491	J18095	12/9/2008	1610	mg/Kg		R
Metals - 6010	Calcium	K1491	J18096	12/9/2008	3940	mg/Kg		R
Metals - 6010	Calcium	K1491	J18097	12/9/2008	3680	mg/Kg		R
Metals - 6010	Calcium	K1491	J18098	12/9/2008	4830	mg/Kg		R
Metals - 6010	Calcium	K1491	J180B0	12/9/2008	1590	mg/Kg		R
Metals - 6010	Calcium	K1491	J180B1	12/9/2008	6670	mg/Kg		R

Table 3-3. Summary of Rejected Sediment Data by Method. (19 Pages)

Analytical Method	Analyte	SDG Number	Sample Identification	Sample Date	Results	Units	Laboratory Qualifier	Validation Qualifier
PCBs - 8082	Aroclor-1016	K1497	J18164	12/12/2008	1.33E-02	mg/Kg	U	R
PCBs - 8082	Aroclor-1016	K1497	J18165	12/12/2008	1.33E-02	mg/Kg	U	R
PCBs - 8082	Aroclor-1016	K1497	J18166	12/12/2008	1.33E-02	mg/Kg	U	R
PCBs - 8082	Aroclor-1016	K1497	J18167	12/12/2008	1.33E-02	mg/Kg	U	R
PCBs - 8082	Aroclor-1016	K1497	J18168	12/12/2008	1.33E-02	mg/Kg	U	R
PCBs - 8082	Aroclor-1221	K1497	J18164	12/12/2008	1.33E-02	mg/Kg	U	R
PCBs - 8082	Aroclor-1221	K1497	J18165	12/12/2008	1.33E-02	mg/Kg	U	R
PCBs - 8082	Aroclor-1221	K1497	J18166	12/12/2008	1.33E-02	mg/Kg	U	R
PCBs - 8082	Aroclor-1221	K1497	J18167	12/12/2008	1.33E-02	mg/Kg	U	R
PCBs - 8082	Aroclor-1221	K1497	J18168	12/12/2008	1.33E-02	mg/Kg	U	R
PCBs - 8082	Aroclor-1232	K1497	J18168	12/12/2008	1.33E-02	mg/Kg	U	R
PCBs - 8082	Aroclor-1232	K1497	J18167	12/12/2008	1.33E-02	mg/Kg	U	R
PCBs - 8082	Aroclor-1232	K1497	J18166	12/12/2008	1.33E-02	mg/Kg	U	R
PCBs - 8082	Aroclor-1232	K1497	J18165	12/12/2008	1.33E-02	mg/Kg	U	R
PCBs - 8082	Aroclor-1232	K1497	J18164	12/12/2008	1.33E-02	mg/Kg	U	R
PCBs - 8082	Aroclor-1242	K1497	J18166	12/12/2008	1.33E-02	mg/Kg	U	R
PCBs - 8082	Aroclor-1242	K1497	J18165	12/12/2008	1.33E-02	mg/Kg	U	R
PCBs - 8082	Aroclor-1242	K1497	J18164	12/12/2008	1.33E-02	mg/Kg	U	R
PCBs - 8082	Aroclor-1242	K1497	J18168	12/12/2008	1.33E-02	mg/Kg	U	R
PCBs - 8082	Aroclor-1242	K1497	J18167	12/12/2008	1.33E-02	mg/Kg	U	R
PCBs - 8082	Aroclor-1248	K1497	J18168	12/12/2008	1.33E-02	mg/Kg	U	R
PCBs - 8082	Aroclor-1248	K1497	J18167	12/12/2008	1.33E-02	mg/Kg	U	R
PCBs - 8082	Aroclor-1248	K1497	J18166	12/12/2008	1.33E-02	mg/Kg	U	R
PCBs - 8082	Aroclor-1248	K1497	J18165	12/12/2008	1.33E-02	mg/Kg	U	R
PCBs - 8082	Aroclor-1248	K1497	J18164	12/12/2008	1.33E-02	mg/Kg	U	R
PCBs - 8082	Aroclor-1254	K1497	J18168	12/12/2008	1.33E-02	mg/Kg	U	R
PCBs - 8082	Aroclor-1254	K1497	J18167	12/12/2008	1.33E-02	mg/Kg	U	R
PCBs - 8082	Aroclor-1254	K1497	J18166	12/12/2008	1.33E-02	mg/Kg	U	R
PCBs - 8082	Aroclor-1254	K1497	J18165	12/12/2008	1.33E-02	mg/Kg	U	R
PCBs - 8082	Aroclor-1254	K1497	J18164	12/12/2008	1.33E-02	mg/Kg	U	R
PCBs - 8082	Aroclor-1260	K1497	J18164	12/12/2008	1.33E-02	mg/Kg	U	R
PCBs - 8082	Aroclor-1260	K1497	J18165	12/12/2008	1.33E-02	mg/Kg	U	R
PCBs - 8082	Aroclor-1260	K1497	J18166	12/12/2008	1.33E-02	mg/Kg	U	R
PCBs - 8082	Aroclor-1260	K1497	J18167	12/12/2008	1.33E-02	mg/Kg	U	R
PCBs - 8082	Aroclor-1260	K1497	J18168	12/12/2008	1.33E-02	mg/Kg	U	R
Pesticides - 8081	Aldrin	K1497	J18166	12/12/2008	0.00133	mg/Kg	U	R
Pesticides - 8081	Aldrin	K1497	J18165	12/12/2008	0.00133	mg/Kg	U	R
Pesticides - 8081	Aldrin	K1497	J18164	12/12/2008	0.00133	mg/Kg	U	R
Pesticides - 8081	Aldrin	K1497	J18168	12/12/2008	0.00133	mg/Kg	U	R

Table 3-3. Summary of Rejected Sediment Data by Method. (19 Pages)

Analytical Method	Analyte	SDG Number	Sample Identification	Sample Date	Results	Units	Laboratory Qualifier	Validation Qualifier
Pesticides - 8081	Aldrin	K1497	J18167	12/12/2008	0.00133	mg/Kg	U	R
Pesticides - 8081	Alpha-BHC	K1497	J18167	12/12/2008	0.00133	mg/Kg	U	R
Pesticides - 8081	Alpha-BHC	K1497	J18168	12/12/2008	0.00133	mg/Kg	U	R
Pesticides - 8081	Alpha-BHC	K1497	J18164	12/12/2008	0.00133	mg/Kg	U	R
Pesticides - 8081	Alpha-BHC	K1497	J18165	12/12/2008	0.00133	mg/Kg	U	R
Pesticides - 8081	Alpha-BHC	K1497	J18166	12/12/2008	0.00133	mg/Kg	U	R
Pesticides - 8081	alpha-Chlordane	K1497	J18166	12/12/2008	0.00133	mg/Kg	U	R
Pesticides - 8081	alpha-Chlordane	K1497	J18165	12/12/2008	0.00133	mg/Kg	U	R
Pesticides - 8081	alpha-Chlordane	K1497	J18164	12/12/2008	0.00133	mg/Kg	U	R
Pesticides - 8081	alpha-Chlordane	K1497	J18168	12/12/2008	0.00133	mg/Kg	U	R
Pesticides - 8081	alpha-Chlordane	K1497	J18167	12/12/2008	0.00133	mg/Kg	U	R
Pesticides - 8081	beta-1,2,3,4,5,6-Hexachlorocyclohexane	K1497	J18166	12/12/2008	0.00133	mg/Kg	U	R
Pesticides - 8081	beta-1,2,3,4,5,6-Hexachlorocyclohexane	K1497	J18165	12/12/2008	0.00133	mg/Kg	U	R
Pesticides - 8081	beta-1,2,3,4,5,6-Hexachlorocyclohexane	K1497	J18164	12/12/2008	0.00133	mg/Kg	U	R
Pesticides - 8081	beta-1,2,3,4,5,6-Hexachlorocyclohexane	K1497	J18168	12/12/2008	0.00133	mg/Kg	U	R
Pesticides - 8081	beta-1,2,3,4,5,6-Hexachlorocyclohexane	K1497	J18167	12/12/2008	0.00133	mg/Kg	U	R
Pesticides - 8081	Delta-BHC	K1497	J18167	12/12/2008	0.00133	mg/Kg	U	R
Pesticides - 8081	Delta-BHC	K1497	J18168	12/12/2008	1.33E-03	mg/Kg	U	R
Pesticides - 8081	Delta-BHC	K1497	J18164	12/12/2008	0.00133	mg/Kg	U	R
Pesticides - 8081	Delta-BHC	K1497	J18165	12/12/2008	0.00133	mg/Kg	U	R
Pesticides - 8081	Delta-BHC	K1497	J18166	12/12/2008	0.00133	mg/Kg	U	R
Pesticides - 8081	Dichlorodiphenyldichloroethane	K1497	J18166	12/12/2008	0.00133	mg/Kg	U	R
Pesticides - 8081	Dichlorodiphenyldichloroethane	K1497	J18165	12/12/2008	0.00133	mg/Kg	U	R
Pesticides - 8081	Dichlorodiphenyldichloroethane	K1497	J18164	12/12/2008	0.00133	mg/Kg	U	R
Pesticides - 8081	Dichlorodiphenyldichloroethane	K1497	J18168	12/12/2008	0.00133	mg/Kg	U	R
Pesticides - 8081	Dichlorodiphenyldichloroethane	K1497	J18167	12/12/2008	0.00133	mg/Kg	U	R
Pesticides - 8081	Dichlorodiphenyldichloroethylene	K1497	J18167	12/12/2008	0.00133	mg/Kg	U	R
Pesticides - 8081	Dichlorodiphenyldichloroethylene	K1497	J18168	12/12/2008	1.33E-03	mg/Kg	U	R
Pesticides - 8081	Dichlorodiphenyldichloroethylene	K1497	J18164	12/12/2008	1.33E-03	mg/Kg	U	R
Pesticides - 8081	Dichlorodiphenyldichloroethylene	K1497	J18165	12/12/2008	0.00133	mg/Kg	U	R
Pesticides - 8081	Dichlorodiphenyldichloroethylene	K1497	J18166	12/12/2008	0.00133	mg/Kg	U	R
Pesticides - 8081	Dichlorodiphenyltrichloroethane	K1497	J18167	12/12/2008	0.00133	mg/Kg	U	R
Pesticides - 8081	Dichlorodiphenyltrichloroethane	K1497	J18168	12/12/2008	0.00133	mg/Kg	U	R
Pesticides - 8081	Dichlorodiphenyltrichloroethane	K1497	J18164	12/12/2008	0.00133	mg/Kg	U	R
Pesticides - 8081	Dichlorodiphenyltrichloroethane	K1497	J18165	12/12/2008	0.00133	mg/Kg	U	R
Pesticides - 8081	Dichlorodiphenyltrichloroethane	K1497	J18166	12/12/2008	0.00133	mg/Kg	U	R
Pesticides - 8081	Dieldrin	K1497	J18166	12/12/2008	0.00133	mg/Kg	U	R
Pesticides - 8081	Dieldrin	K1497	J18165	12/12/2008	0.00133	mg/Kg	U	R
Pesticides - 8081	Dieldrin	K1497	J18164	12/12/2008	0.00133	mg/Kg	U	R

Table 3-3. Summary of Rejected Sediment Data by Method. (19 Pages)

Analytical Method	Analyte	SDG Number	Sample Identification	Sample Date	Results	Units	Laboratory Qualifier	Validation Qualifier
Pesticides - 8081	Dieldrin	K1497	J18168	12/12/2008	0.00133	mg/Kg	U	R
Pesticides - 8081	Dieldrin	K1497	J18167	12/12/2008	1.33E-03	mg/Kg	U	R
Pesticides - 8081	Endosulfan I	K1497	J18166	12/12/2008	0.00133	mg/Kg	U	R
Pesticides - 8081	Endosulfan I	K1497	J18165	12/12/2008	0.00133	mg/Kg	U	R
Pesticides - 8081	Endosulfan I	K1497	J18164	12/12/2008	0.00133	mg/Kg	U	R
Pesticides - 8081	Endosulfan I	K1497	J18168	12/12/2008	0.00133	mg/Kg	U	R
Pesticides - 8081	Endosulfan I	K1497	J18167	12/12/2008	0.00133	mg/Kg	U	R
Pesticides - 8081	Endosulfan II	K1497	J18166	12/12/2008	0.00133	mg/Kg	U	R
Pesticides - 8081	Endosulfan II	K1497	J18165	12/12/2008	0.00133	mg/Kg	U	R
Pesticides - 8081	Endosulfan II	K1497	J18164	12/12/2008	0.00133	mg/Kg	U	R
Pesticides - 8081	Endosulfan II	K1497	J18168	12/12/2008	0.00133	mg/Kg	U	R
Pesticides - 8081	Endosulfan II	K1497	J18167	12/12/2008	0.00133	mg/Kg	U	R
Pesticides - 8081	Endosulfan sulfate	K1497	J18164	12/12/2008	0.00133	mg/Kg	U	R
Pesticides - 8081	Endosulfan sulfate	K1497	J18165	12/12/2008	0.00133	mg/Kg	U	R
Pesticides - 8081	Endosulfan sulfate	K1497	J18166	12/12/2008	0.00133	mg/Kg	U	R
Pesticides - 8081	Endosulfan sulfate	K1497	J18167	12/12/2008	0.00133	mg/Kg	U	R
Pesticides - 8081	Endosulfan sulfate	K1497	J18168	12/12/2008	0.00133	mg/Kg	U	R
Pesticides - 8081	Endrin	K1497	J18166	12/12/2008	0.00133	mg/Kg	U	R
Pesticides - 8081	Endrin	K1497	J18165	12/12/2008	0.00133	mg/Kg	U	R
Pesticides - 8081	Endrin	K1497	J18164	12/12/2008	0.00133	mg/Kg	U	R
Pesticides - 8081	Endrin	K1497	J18168	12/12/2008	0.00133	mg/Kg	U	R
Pesticides - 8081	Endrin	K1497	J18167	12/12/2008	0.00133	mg/Kg	U	R
Pesticides - 8081	Endrin aldehyde	K1497	J18166	12/12/2008	1.33E-03	mg/Kg	U	R
Pesticides - 8081	Endrin aldehyde	K1497	J18165	12/12/2008	1.33E-03	mg/Kg	U	R
Pesticides - 8081	Endrin aldehyde	K1497	J18164	12/12/2008	0.00133	mg/Kg	U	R
Pesticides - 8081	Endrin aldehyde	K1497	J18168	12/12/2008	0.00133	mg/Kg	U	R
Pesticides - 8081	Endrin aldehyde	K1497	J18167	12/12/2008	0.00133	mg/Kg	U	R
Pesticides - 8081	Endrin ketone	K1497	J18167	12/12/2008	0.00133	mg/Kg	U	R
Pesticides - 8081	Endrin ketone	K1497	J18168	12/12/2008	0.00133	mg/Kg	U	R
Pesticides - 8081	Endrin ketone	K1497	J18164	12/12/2008	1.33E-03	mg/Kg	U	R
Pesticides - 8081	Endrin ketone	K1497	J18165	12/12/2008	1.33E-03	mg/Kg	U	R
Pesticides - 8081	Endrin ketone	K1497	J18166	12/12/2008	0.00133	mg/Kg	U	R
Pesticides - 8081	Gamma-BHC (lindane)	K1497	J18166	12/12/2008	0.00133	mg/Kg	U	R
Pesticides - 8081	Gamma-BHC (lindane)	K1497	J18165	12/12/2008	0.00133	mg/Kg	U	R
Pesticides - 8081	Gamma-BHC (lindane)	K1497	J18164	12/12/2008	0.00133	mg/Kg	U	R
Pesticides - 8081	Gamma-BHC (lindane)	K1497	J18168	12/12/2008	0.00133	mg/Kg	U	R
Pesticides - 8081	Gamma-BHC (lindane)	K1497	J18167	12/12/2008	0.00133	mg/Kg	U	R
Pesticides - 8081	gamma-Chlordane	K1497	J18167	12/12/2008	0.00133	mg/Kg	U	R
Pesticides - 8081	gamma-Chlordane	K1497	J18168	12/12/2008	0.00133	mg/Kg	U	R

Table 3-3. Summary of Rejected Sediment Data by Method. (19 Pages)

Analytical Method	Analyte	SDG Number	Sample Identification	Sample Date	Results	Units	Laboratory Qualifier	Validation Qualifier
Pesticides - 8081	gamma-Chlordane	K1497	J18164	12/12/2008	0.00133	mg/Kg	U	R
Pesticides - 8081	gamma-Chlordane	K1497	J18165	12/12/2008	0.00133	mg/Kg	U	R
Pesticides - 8081	gamma-Chlordane	K1497	J18166	12/12/2008	0.00133	mg/Kg	U	R
Pesticides - 8081	Heptachlor	K1497	J18167	12/12/2008	0.00133	mg/Kg	U	R
Pesticides - 8081	Heptachlor	K1497	J18168	12/12/2008	0.00133	mg/Kg	U	R
Pesticides - 8081	Heptachlor	K1497	J18164	12/12/2008	0.00133	mg/Kg	U	R
Pesticides - 8081	Heptachlor	K1497	J18165	12/12/2008	0.00133	mg/Kg	U	R
Pesticides - 8081	Heptachlor	K1497	J18166	12/12/2008	0.00133	mg/Kg	U	R
Pesticides - 8081	Heptachlor epoxide	K1497	J18168	12/12/2008	0.00133	mg/Kg	U	R
Pesticides - 8081	Heptachlor epoxide	K1497	J18167	12/12/2008	0.00133	mg/Kg	U	R
Pesticides - 8081	Heptachlor epoxide	K1497	J18166	12/12/2008	0.00133	mg/Kg	U	R
Pesticides - 8081	Heptachlor epoxide	K1497	J18165	12/12/2008	0.00133	mg/Kg	U	R
Pesticides - 8081	Heptachlor epoxide	K1497	J18164	12/12/2008	0.00133	mg/Kg	U	R
Pesticides - 8081	Methoxychlor	K1497	J18167	12/12/2008	0.00133	mg/Kg	U	R
Pesticides - 8081	Methoxychlor	K1497	J18168	12/12/2008	0.00133	mg/Kg	U	R
Pesticides - 8081	Methoxychlor	K1497	J18164	12/12/2008	0.00133	mg/Kg	U	R
Pesticides - 8081	Methoxychlor	K1497	J18165	12/12/2008	0.00133	mg/Kg	U	R
Pesticides - 8081	Methoxychlor	K1497	J18166	12/12/2008	0.00133	mg/Kg	U	R
Pesticides - 8081	Toxaphene	K1497	J18166	12/12/2008	0.02	mg/Kg	U	R
Pesticides - 8081	Toxaphene	K1497	J18165	12/12/2008	0.02	mg/Kg	U	R
Pesticides - 8081	Toxaphene	K1497	J18164	12/12/2008	0.02	mg/Kg	U	R
Pesticides - 8081	Toxaphene	K1497	J18168	12/12/2008	0.02	mg/Kg	U	R
Pesticides - 8081	Toxaphene	K1497	J18167	12/12/2008	0.02	mg/Kg	U	R
SVOC - 8270	1,2,4-Trichlorobenzene	K1479	J17VC3	12/1/2008	3.30E-01	mg/Kg	U	R
SVOC - 8270	1,2,4-Trichlorobenzene	K1497	J18164	12/12/2008	3.30E-01	mg/Kg	U	R
SVOC - 8270	1,2,4-Trichlorobenzene	K1497	J18165	12/12/2008	0.33	mg/Kg	U	R
SVOC - 8270	1,2,4-Trichlorobenzene	K1497	J18166	12/12/2008	0.33	mg/Kg	U	R
SVOC - 8270	1,2,4-Trichlorobenzene	K1497	J18167	12/12/2008	0.33	mg/Kg	U	R
SVOC - 8270	1,2,4-Trichlorobenzene	K1497	J18168	12/12/2008	0.66	mg/Kg	U	R
SVOC - 8270	1,2,4-Trichlorobenzene	K1580	J18MR6	4/2/2009	0.66	mg/Kg	U	R
SVOC - 8270	1,2-Dichlorobenzene	K1479	J17VC3	12/1/2008	0.33	mg/Kg	U	R
SVOC - 8270	1,2-Dichlorobenzene	K1497	J18167	12/12/2008	0.33	mg/Kg	U	R
SVOC - 8270	1,2-Dichlorobenzene	K1497	J18168	12/12/2008	0.66	mg/Kg	U	R
SVOC - 8270	1,2-Dichlorobenzene	K1497	J18164	12/12/2008	0.33	mg/Kg	U	R
SVOC - 8270	1,2-Dichlorobenzene	K1497	J18165	12/12/2008	0.33	mg/Kg	U	R
SVOC - 8270	1,2-Dichlorobenzene	K1497	J18166	12/12/2008	0.33	mg/Kg	U	R
SVOC - 8270	1,2-Dichlorobenzene	K1580	J18MR6	4/2/2009	0.66	mg/Kg	U	R
SVOC - 8270	1,3-Dichlorobenzene	K1479	J17VC3	12/1/2008	0.33	mg/Kg	U	R
SVOC - 8270	1,3-Dichlorobenzene	K1497	J18166	12/12/2008	0.33	mg/Kg	U	R

Table 3-3. Summary of Rejected Sediment Data by Method. (19 Pages)

Analytical Method	Analyte	SDG Number	Sample Identification	Sample Date	Results	Units	Laboratory Qualifier	Validation Qualifier
SVOC - 8270	1,3-Dichlorobenzene	K1497	J18165	12/12/2008	0.33	mg/Kg	U	R
SVOC - 8270	1,3-Dichlorobenzene	K1497	J18164	12/12/2008	0.33	mg/Kg	U	R
SVOC - 8270	1,3-Dichlorobenzene	K1497	J18168	12/12/2008	0.66	mg/Kg	U	R
SVOC - 8270	1,3-Dichlorobenzene	K1497	J18167	12/12/2008	0.33	mg/Kg	U	R
SVOC - 8270	1,3-Dichlorobenzene	K1580	J18MR6	4/2/2009	6.60E-01	mg/Kg	U	R
SVOC - 8270	1,4-Dichlorobenzene	K1479	J17VC3	12/1/2008	0.33	mg/Kg	U	R
SVOC - 8270	1,4-Dichlorobenzene	K1497	J18164	12/12/2008	0.33	mg/Kg	U	R
SVOC - 8270	1,4-Dichlorobenzene	K1497	J18165	12/12/2008	0.33	mg/Kg	U	R
SVOC - 8270	1,4-Dichlorobenzene	K1497	J18166	12/12/2008	0.33	mg/Kg	U	R
SVOC - 8270	1,4-Dichlorobenzene	K1497	J18167	12/12/2008	0.33	mg/Kg	U	R
SVOC - 8270	1,4-Dichlorobenzene	K1497	J18168	12/12/2008	0.66	mg/Kg	U	R
SVOC - 8270	1,4-Dichlorobenzene	K1580	J18MR6	4/2/2009	0.66	mg/Kg	U	R
SVOC - 8270	2,4,5-Trichlorophenol	K1479	J17VC3	12/1/2008	0.33	mg/Kg	U	R
SVOC - 8270	2,4,5-Trichlorophenol	K1491	J18030	12/9/2008	0.33	mg/Kg	U	R
SVOC - 8270	2,4,5-Trichlorophenol	K1497	J18167	12/12/2008	0.33	mg/Kg	U	R
SVOC - 8270	2,4,5-Trichlorophenol	K1497	J18168	12/12/2008	0.66	mg/Kg	U	R
SVOC - 8270	2,4,5-Trichlorophenol	K1497	J18164	12/12/2008	0.33	mg/Kg	U	R
SVOC - 8270	2,4,5-Trichlorophenol	K1497	J18165	12/12/2008	0.33	mg/Kg	U	R
SVOC - 8270	2,4,5-Trichlorophenol	K1497	J18166	12/12/2008	0.33	mg/Kg	U	R
SVOC - 8270	2,4,5-Trichlorophenol	K1542	J18807	2/17/2009	0.66	mg/Kg	U	R
SVOC - 8270	2,4,5-Trichlorophenol	K1542	J18808	2/17/2009	0.66	mg/Kg	U	R
SVOC - 8270	2,4,5-Trichlorophenol	K1580	J18MR6	4/2/2009	0.66	mg/Kg	U	R
SVOC - 8270	2,4,6-Trichlorophenol	K1479	J17VC3	12/1/2008	0.33	mg/Kg	U	R
SVOC - 8270	2,4,6-Trichlorophenol	K1491	J18030	12/9/2008	0.33	mg/Kg	U	R
SVOC - 8270	2,4,6-Trichlorophenol	K1497	J18167	12/12/2008	0.33	mg/Kg	U	R
SVOC - 8270	2,4,6-Trichlorophenol	K1497	J18168	12/12/2008	0.66	mg/Kg	U	R
SVOC - 8270	2,4,6-Trichlorophenol	K1497	J18164	12/12/2008	0.33	mg/Kg	U	R
SVOC - 8270	2,4,6-Trichlorophenol	K1497	J18165	12/12/2008	0.33	mg/Kg	U	R
SVOC - 8270	2,4,6-Trichlorophenol	K1497	J18166	12/12/2008	0.33	mg/Kg	U	R
SVOC - 8270	2,4,6-Trichlorophenol	K1542	J18808	2/17/2009	0.66	mg/Kg	U	R
SVOC - 8270	2,4,6-Trichlorophenol	K1542	J18807	2/17/2009	0.66	mg/Kg	U	R
SVOC - 8270	2,4,6-Trichlorophenol	K1580	J18MR6	4/2/2009	0.66	mg/Kg	U	R
SVOC - 8270	2,4-Dichlorophenol	K1479	J17VC3	12/1/2008	0.33	mg/Kg	U	R
SVOC - 8270	2,4-Dichlorophenol	K1491	J18030	12/9/2008	0.33	mg/Kg	U	R
SVOC - 8270	2,4-Dichlorophenol	K1497	J18168	12/12/2008	6.60E-01	mg/Kg	U	R
SVOC - 8270	2,4-Dichlorophenol	K1497	J18167	12/12/2008	0.33	mg/Kg	U	R
SVOC - 8270	2,4-Dichlorophenol	K1497	J18166	12/12/2008	0.33	mg/Kg	U	R
SVOC - 8270	2,4-Dichlorophenol	K1497	J18165	12/12/2008	0.33	mg/Kg	U	R
SVOC - 8270	2,4-Dichlorophenol	K1497	J18164	12/12/2008	0.33	mg/Kg	U	R

Table 3-3. Summary of Rejected Sediment Data by Method. (19 Pages)

Analytical Method	Analyte	SDG Number	Sample Identification	Sample Date	Results	Units	Laboratory Qualifier	Validation Qualifier
SVOC - 8270	2,4-Dichlorophenol	K1542	J18807	2/17/2009	6.60E-01	mg/Kg	U	R
SVOC - 8270	2,4-Dichlorophenol	K1542	J18808	2/17/2009	0.66	mg/Kg	U	R
SVOC - 8270	2,4-Dichlorophenol	K1580	J18MR6	4/2/2009	0.66	mg/Kg	U	R
SVOC - 8270	2,4-Dimethylphenol	K1479	J17VC3	12/1/2008	0.33	mg/Kg	U	R
SVOC - 8270	2,4-Dimethylphenol	K1497	J18168	12/12/2008	0.66	mg/Kg	U	R
SVOC - 8270	2,4-Dimethylphenol	K1497	J18167	12/12/2008	0.33	mg/Kg	U	R
SVOC - 8270	2,4-Dimethylphenol	K1497	J18166	12/12/2008	0.33	mg/Kg	U	R
SVOC - 8270	2,4-Dimethylphenol	K1497	J18165	12/12/2008	0.33	mg/Kg	U	R
SVOC - 8270	2,4-Dimethylphenol	K1497	J18164	12/12/2008	0.33	mg/Kg	U	R
SVOC - 8270	2,4-Dimethylphenol	K1580	J18MR6	4/2/2009	0.66	mg/Kg	U	R
SVOC - 8270	2,4-Dinitrophenol	K1479	J17VC3	12/1/2008	1.65	mg/Kg	U	R
SVOC - 8270	2,4-Dinitrophenol	K1497	J18167	12/12/2008	1.65	mg/Kg	U	R
SVOC - 8270	2,4-Dinitrophenol	K1497	J18168	12/12/2008	3.3	mg/Kg	U	R
SVOC - 8270	2,4-Dinitrophenol	K1497	J18164	12/12/2008	1.65	mg/Kg	U	R
SVOC - 8270	2,4-Dinitrophenol	K1497	J18165	12/12/2008	1.65	mg/Kg	U	R
SVOC - 8270	2,4-Dinitrophenol	K1497	J18166	12/12/2008	1.65	mg/Kg	U	R
SVOC - 8270	2,4-Dinitrophenol	K1580	J18MR6	4/2/2009	3.3	mg/Kg	U	R
SVOC - 8270	2,4-Dinitrotoluene	K1479	J17VC3	12/1/2008	0.33	mg/Kg	U	R
SVOC - 8270	2,4-Dinitrotoluene	K1497	J18164	12/12/2008	0.33	mg/Kg	U	R
SVOC - 8270	2,4-Dinitrotoluene	K1497	J18165	12/12/2008	0.33	mg/Kg	U	R
SVOC - 8270	2,4-Dinitrotoluene	K1497	J18166	12/12/2008	0.33	mg/Kg	U	R
SVOC - 8270	2,4-Dinitrotoluene	K1497	J18167	12/12/2008	0.33	mg/Kg	U	R
SVOC - 8270	2,4-Dinitrotoluene	K1497	J18168	12/12/2008	0.66	mg/Kg	U	R
SVOC - 8270	2,4-Dinitrotoluene	K1580	J18MR6	4/2/2009	0.66	mg/Kg	U	R
SVOC - 8270	2,6-Dinitrotoluene	K1479	J17VC3	12/1/2008	0.33	mg/Kg	U	R
SVOC - 8270	2,6-Dinitrotoluene	K1497	J18167	12/12/2008	0.33	mg/Kg	U	R
SVOC - 8270	2,6-Dinitrotoluene	K1497	J18168	12/12/2008	0.66	mg/Kg	U	R
SVOC - 8270	2,6-Dinitrotoluene	K1497	J18164	12/12/2008	0.33	mg/Kg	U	R
SVOC - 8270	2,6-Dinitrotoluene	K1497	J18165	12/12/2008	0.33	mg/Kg	U	R
SVOC - 8270	2,6-Dinitrotoluene	K1497	J18166	12/12/2008	0.33	mg/Kg	U	R
SVOC - 8270	2,6-Dinitrotoluene	K1580	J18MR6	4/2/2009	0.66	mg/Kg	U	R
SVOC - 8270	2-Chloronaphthalene	K1479	J17VC3	12/1/2008	0.33	mg/Kg	U	R
SVOC - 8270	2-Chloronaphthalene	K1497	J18166	12/12/2008	0.33	mg/Kg	U	R
SVOC - 8270	2-Chloronaphthalene	K1497	J18165	12/12/2008	0.33	mg/Kg	U	R
SVOC - 8270	2-Chloronaphthalene	K1497	J18164	12/12/2008	0.33	mg/Kg	U	R
SVOC - 8270	2-Chloronaphthalene	K1497	J18168	12/12/2008	0.66	mg/Kg	U	R
SVOC - 8270	2-Chloronaphthalene	K1497	J18167	12/12/2008	0.33	mg/Kg	U	R
SVOC - 8270	2-Chloronaphthalene	K1580	J18MR6	4/2/2009	0.66	mg/Kg	U	R
SVOC - 8270	2-Chlorophenol	K1479	J17VC3	12/1/2008	0.33	mg/Kg	U	R

Table 3-3. Summary of Rejected Sediment Data by Method. (19 Pages)

Analytical Method	Analyte	SDG Number	Sample Identification	Sample Date	Results	Units	Laboratory Qualifier	Validation Qualifier
SVOC - 8270	2-Chlorophenol	K1497	J18166	12/12/2008	0.33	mg/Kg	U	R
SVOC - 8270	2-Chlorophenol	K1497	J18165	12/12/2008	0.33	mg/Kg	U	R
SVOC - 8270	2-Chlorophenol	K1497	J18164	12/12/2008	0.33	mg/Kg	U	R
SVOC - 8270	2-Chlorophenol	K1497	J18168	12/12/2008	0.66	mg/Kg	U	R
SVOC - 8270	2-Chlorophenol	K1497	J18167	12/12/2008	0.33	mg/Kg	U	R
SVOC - 8270	2-Chlorophenol	K1580	J18MR6	4/2/2009	0.66	mg/Kg	U	R
SVOC - 8270	2-Methylnaphthalene	K1479	J17VC3	12/1/2008	0.33	mg/Kg	U	R
SVOC - 8270	2-Methylnaphthalene	K1497	J18167	12/12/2008	0.33	mg/Kg	U	R
SVOC - 8270	2-Methylnaphthalene	K1497	J18168	12/12/2008	0.66	mg/Kg	U	R
SVOC - 8270	2-Methylnaphthalene	K1497	J18164	12/12/2008	0.33	mg/Kg	U	R
SVOC - 8270	2-Methylnaphthalene	K1497	J18165	12/12/2008	0.33	mg/Kg	U	R
SVOC - 8270	2-Methylnaphthalene	K1497	J18166	12/12/2008	0.33	mg/Kg	U	R
SVOC - 8270	2-Methylnaphthalene	K1580	J18MR6	4/2/2009	0.66	mg/Kg	U	R
SVOC - 8270	2-Methylphenol (cresol, o-)	K1479	J17VC3	12/1/2008	0.33	mg/Kg	U	R
SVOC - 8270	2-Methylphenol (cresol, o-)	K1497	J18166	12/12/2008	0.33	mg/Kg	U	R
SVOC - 8270	2-Methylphenol (cresol, o-)	K1497	J18165	12/12/2008	0.33	mg/Kg	U	R
SVOC - 8270	2-Methylphenol (cresol, o-)	K1497	J18164	12/12/2008	0.33	mg/Kg	U	R
SVOC - 8270	2-Methylphenol (cresol, o-)	K1497	J18168	12/12/2008	0.66	mg/Kg	U	R
SVOC - 8270	2-Methylphenol (cresol, o-)	K1497	J18167	12/12/2008	0.33	mg/Kg	U	R
SVOC - 8270	2-Methylphenol (cresol, o-)	K1580	J18MR6	4/2/2009	0.66	mg/Kg	U	R
SVOC - 8270	2-Nitroaniline	K1479	J17VC3	12/1/2008	1.65	mg/Kg	U	R
SVOC - 8270	2-Nitroaniline	K1497	J18166	12/12/2008	1.65	mg/Kg	U	R
SVOC - 8270	2-Nitroaniline	K1497	J18165	12/12/2008	1.65	mg/Kg	U	R
SVOC - 8270	2-Nitroaniline	K1497	J18164	12/12/2008	1.65	mg/Kg	U	R
SVOC - 8270	2-Nitroaniline	K1497	J18168	12/12/2008	3.3	mg/Kg	U	R
SVOC - 8270	2-Nitroaniline	K1497	J18167	12/12/2008	1.65	mg/Kg	U	R
SVOC - 8270	2-Nitroaniline	K1580	J18MR6	4/2/2009	3.3	mg/Kg	U	R
SVOC - 8270	2-Nitrophenol	K1479	J17VC3	12/1/2008	0.33	mg/Kg	U	R
SVOC - 8270	2-Nitrophenol	K1497	J18167	12/12/2008	0.33	mg/Kg	U	R
SVOC - 8270	2-Nitrophenol	K1497	J18168	12/12/2008	0.66	mg/Kg	U	R
SVOC - 8270	2-Nitrophenol	K1497	J18164	12/12/2008	0.33	mg/Kg	U	R
SVOC - 8270	2-Nitrophenol	K1497	J18165	12/12/2008	0.33	mg/Kg	U	R
SVOC - 8270	2-Nitrophenol	K1497	J18166	12/12/2008	0.33	mg/Kg	U	R
SVOC - 8270	2-Nitrophenol	K1580	J18MR6	4/2/2009	0.66	mg/Kg	U	R
SVOC - 8270	3,3'-Dichlorobenzidine	K1479	J17VC3	12/1/2008	0.66	mg/Kg	U	R
SVOC - 8270	3,3'-Dichlorobenzidine	K1497	J18167	12/12/2008	0.66	mg/Kg	U	R
SVOC - 8270	3,3'-Dichlorobenzidine	K1497	J18168	12/12/2008	1.32	mg/Kg	U	R
SVOC - 8270	3,3'-Dichlorobenzidine	K1497	J18164	12/12/2008	0.66	mg/Kg	U	R
SVOC - 8270	3,3'-Dichlorobenzidine	K1497	J18165	12/12/2008	0.66	mg/Kg	U	R

Table 3-3. Summary of Rejected Sediment Data by Method. (19 Pages)

Analytical Method	Analyte	SDG Number	Sample Identification	Sample Date	Results	Units	Laboratory Qualifier	Validation Qualifier
SVOC - 8270	3,3'-Dichlorobenzidine	K1497	J18166	12/12/2008	0.66	mg/Kg	U	R
SVOC - 8270	3,3'-Dichlorobenzidine	K1580	J18MR6	4/2/2009	1.32	mg/Kg	U	R
SVOC - 8270	3+4 Methylphenol (cresol, m+p)	K1479	J17VC3	12/1/2008	0.33	mg/Kg	U	R
SVOC - 8270	3+4 Methylphenol (cresol, m+p)	K1497	J18167	12/12/2008	0.33	mg/Kg	U	R
SVOC - 8270	3+4 Methylphenol (cresol, m+p)	K1497	J18168	12/12/2008	0.66	mg/Kg	U	R
SVOC - 8270	3+4 Methylphenol (cresol, m+p)	K1497	J18164	12/12/2008	0.33	mg/Kg	U	R
SVOC - 8270	3+4 Methylphenol (cresol, m+p)	K1497	J18165	12/12/2008	0.33	mg/Kg	U	R
SVOC - 8270	3+4 Methylphenol (cresol, m+p)	K1497	J18166	12/12/2008	0.33	mg/Kg	U	R
SVOC - 8270	3+4 Methylphenol (cresol, m+p)	K1580	J18MR6	4/2/2009	0.66	mg/Kg	U	R
SVOC - 8270	3-Nitroaniline	K1479	J17VC3	12/1/2008	1.65	mg/Kg	U	R
SVOC - 8270	3-Nitroaniline	K1497	J18166	12/12/2008	1.65	mg/Kg	U	R
SVOC - 8270	3-Nitroaniline	K1497	J18165	12/12/2008	1.65	mg/Kg	U	R
SVOC - 8270	3-Nitroaniline	K1497	J18164	12/12/2008	1.65	mg/Kg	U	R
SVOC - 8270	3-Nitroaniline	K1497	J18168	12/12/2008	3.3	mg/Kg	U	R
SVOC - 8270	3-Nitroaniline	K1497	J18167	12/12/2008	1.65	mg/Kg	U	R
SVOC - 8270	3-Nitroaniline	K1580	J18MR6	4/2/2009	3.3	mg/Kg	U	R
SVOC - 8270	4,6-Dinitro-2-methylphenol	K1479	J17VC3	12/1/2008	0.33	mg/Kg	U	R
SVOC - 8270	4,6-Dinitro-2-methylphenol	K1497	J18167	12/12/2008	0.33	mg/Kg	U	R
SVOC - 8270	4,6-Dinitro-2-methylphenol	K1497	J18168	12/12/2008	0.66	mg/Kg	U	R
SVOC - 8270	4,6-Dinitro-2-methylphenol	K1497	J18164	12/12/2008	0.33	mg/Kg	U	R
SVOC - 8270	4,6-Dinitro-2-methylphenol	K1497	J18165	12/12/2008	0.33	mg/Kg	U	R
SVOC - 8270	4,6-Dinitro-2-methylphenol	K1497	J18166	12/12/2008	0.33	mg/Kg	U	R
SVOC - 8270	4,6-Dinitro-2-methylphenol	K1580	J18MR6	4/2/2009	0.66	mg/Kg	U	R
SVOC - 8270	4-Bromophenylphenyl ether	K1479	J17VC3	12/1/2008	0.33	mg/Kg	U	R
SVOC - 8270	4-Bromophenylphenyl ether	K1491	J18030	12/9/2008	0.33	mg/Kg	U	R
SVOC - 8270	4-Bromophenylphenyl ether	K1497	J18164	12/12/2008	0.33	mg/Kg	U	R
SVOC - 8270	4-Bromophenylphenyl ether	K1497	J18165	12/12/2008	0.33	mg/Kg	U	R
SVOC - 8270	4-Bromophenylphenyl ether	K1497	J18166	12/12/2008	0.33	mg/Kg	U	R
SVOC - 8270	4-Bromophenylphenyl ether	K1497	J18167	12/12/2008	0.33	mg/Kg	U	R
SVOC - 8270	4-Bromophenylphenyl ether	K1497	J18168	12/12/2008	0.66	mg/Kg	U	R
SVOC - 8270	4-Bromophenylphenyl ether	K1542	J18807	2/17/2009	0.66	mg/Kg	U	R
SVOC - 8270	4-Bromophenylphenyl ether	K1542	J18808	2/17/2009	0.66	mg/Kg	U	R
SVOC - 8270	4-Bromophenylphenyl ether	K1580	J18MR6	4/2/2009	0.66	mg/Kg	U	R
SVOC - 8270	4-Chloro-3-methylphenol	K1479	J17VC3	12/1/2008	0.33	mg/Kg	U	R
SVOC - 8270	4-Chloro-3-methylphenol	K1497	J18167	12/12/2008	0.33	mg/Kg	U	R
SVOC - 8270	4-Chloro-3-methylphenol	K1497	J18168	12/12/2008	0.66	mg/Kg	U	R
SVOC - 8270	4-Chloro-3-methylphenol	K1497	J18164	12/12/2008	0.33	mg/Kg	U	R
SVOC - 8270	4-Chloro-3-methylphenol	K1497	J18165	12/12/2008	0.33	mg/Kg	U	R
SVOC - 8270	4-Chloro-3-methylphenol	K1497	J18166	12/12/2008	0.33	mg/Kg	U	R

Table 3-3. Summary of Rejected Sediment Data by Method. (19 Pages)

Analytical Method	Analyte	SDG Number	Sample Identification	Sample Date	Results	Units	Laboratory Qualifier	Validation Qualifier
SVOC - 8270	4-Chloro-3-methylphenol	K1580	J18MR6	4/2/2009	0.66	mg/Kg	U	R
SVOC - 8270	4-Chloroaniline	K1479	J17VC3	12/1/2008	0.33	mg/Kg	U	R
SVOC - 8270	4-Chloroaniline	K1497	J18168	12/12/2008	0.66	mg/Kg	U	R
SVOC - 8270	4-Chloroaniline	K1497	J18167	12/12/2008	0.33	mg/Kg	U	R
SVOC - 8270	4-Chloroaniline	K1497	J18166	12/12/2008	0.33	mg/Kg	U	R
SVOC - 8270	4-Chloroaniline	K1497	J18165	12/12/2008	0.33	mg/Kg	U	R
SVOC - 8270	4-Chloroaniline	K1497	J18164	12/12/2008	0.33	mg/Kg	U	R
SVOC - 8270	4-Chloroaniline	K1580	J18MR6	4/2/2009	0.66	mg/Kg	U	R
SVOC - 8270	4-Chlorophenylphenyl ether	K1479	J17VC3	12/1/2008	0.33	mg/Kg	U	R
SVOC - 8270	4-Chlorophenylphenyl ether	K1491	J18030	12/9/2008	0.33	mg/Kg	U	R
SVOC - 8270	4-Chlorophenylphenyl ether	K1497	J18167	12/12/2008	0.33	mg/Kg	U	R
SVOC - 8270	4-Chlorophenylphenyl ether	K1497	J18168	12/12/2008	0.66	mg/Kg	U	R
SVOC - 8270	4-Chlorophenylphenyl ether	K1497	J18164	12/12/2008	0.33	mg/Kg	U	R
SVOC - 8270	4-Chlorophenylphenyl ether	K1497	J18165	12/12/2008	0.33	mg/Kg	U	R
SVOC - 8270	4-Chlorophenylphenyl ether	K1497	J18166	12/12/2008	0.33	mg/Kg	U	R
SVOC - 8270	4-Chlorophenylphenyl ether	K1542	J18807	2/17/2009	0.66	mg/Kg	U	R
SVOC - 8270	4-Chlorophenylphenyl ether	K1542	J18808	2/17/2009	0.66	mg/Kg	U	R
SVOC - 8270	4-Chlorophenylphenyl ether	K1580	J18MR6	4/2/2009	0.66	mg/Kg	U	R
SVOC - 8270	4-Nitroaniline	K1479	J17VC3	12/1/2008	1.65	mg/Kg	U	R
SVOC - 8270	4-Nitroaniline	K1497	J18164	12/12/2008	1.65	mg/Kg	U	R
SVOC - 8270	4-Nitroaniline	K1497	J18165	12/12/2008	1.65	mg/Kg	U	R
SVOC - 8270	4-Nitroaniline	K1497	J18166	12/12/2008	1.65	mg/Kg	U	R
SVOC - 8270	4-Nitroaniline	K1497	J18167	12/12/2008	1.65	mg/Kg	U	R
SVOC - 8270	4-Nitroaniline	K1497	J18168	12/12/2008	3.3	mg/Kg	U	R
SVOC - 8270	4-Nitroaniline	K1580	J18MR6	4/2/2009	3.3	mg/Kg	U	R
SVOC - 8270	4-Nitrophenol	K1479	J17VC3	12/1/2008	1.65	mg/Kg	U	R
SVOC - 8270	4-Nitrophenol	K1497	J18168	12/12/2008	3.3	mg/Kg	U	R
SVOC - 8270	4-Nitrophenol	K1497	J18167	12/12/2008	1.65	mg/Kg	U	R
SVOC - 8270	4-Nitrophenol	K1497	J18166	12/12/2008	1.65	mg/Kg	U	R
SVOC - 8270	4-Nitrophenol	K1497	J18165	12/12/2008	1.65	mg/Kg	U	R
SVOC - 8270	4-Nitrophenol	K1497	J18164	12/12/2008	1.65	mg/Kg	U	R
SVOC - 8270	4-Nitrophenol	K1580	J18MR6	4/2/2009	3.3	mg/Kg	U	R
SVOC - 8270	Acenaphthene	K1479	J17VC3	12/1/2008	0.33	mg/Kg	U	R
SVOC - 8270	Acenaphthene	K1497	J18167	12/12/2008	0.33	mg/Kg	U	R
SVOC - 8270	Acenaphthene	K1497	J18168	12/12/2008	0.66	mg/Kg	U	R
SVOC - 8270	Acenaphthene	K1497	J18164	12/12/2008	0.33	mg/Kg	U	R
SVOC - 8270	Acenaphthene	K1497	J18165	12/12/2008	0.33	mg/Kg	U	R
SVOC - 8270	Acenaphthene	K1497	J18166	12/12/2008	0.33	mg/Kg	U	R
SVOC - 8270	Acenaphthene	K1580	J18MR6	4/2/2009	0.66	mg/Kg	U	R

Table 3-3. Summary of Rejected Sediment Data by Method. (19 Pages)

Analytical Method	Analyte	SDG Number	Sample Identification	Sample Date	Results	Units	Laboratory Qualifier	Validation Qualifier
SVOC - 8270	Acenaphthylene	K1479	J17VC3	12/1/2008	0.33	mg/Kg	U	R
SVOC - 8270	Acenaphthylene	K1497	J18166	12/12/2008	0.33	mg/Kg	U	R
SVOC - 8270	Acenaphthylene	K1497	J18165	12/12/2008	0.33	mg/Kg	U	R
SVOC - 8270	Acenaphthylene	K1497	J18164	12/12/2008	0.33	mg/Kg	U	R
SVOC - 8270	Acenaphthylene	K1497	J18168	12/12/2008	0.66	mg/Kg	U	R
SVOC - 8270	Acenaphthylene	K1497	J18167	12/12/2008	0.33	mg/Kg	U	R
SVOC - 8270	Acenaphthylene	K1580	J18MR6	4/2/2009	6.60E-01	mg/Kg	U	R
SVOC - 8270	Anthracene	K1479	J17VC3	12/1/2008	0.33	mg/Kg	U	R
SVOC - 8270	Anthracene	K1497	J18168	12/12/2008	0.66	mg/Kg	U	R
SVOC - 8270	Anthracene	K1497	J18167	12/12/2008	0.33	mg/Kg	U	R
SVOC - 8270	Anthracene	K1497	J18166	12/12/2008	3.30E-01	mg/Kg	U	R
SVOC - 8270	Anthracene	K1497	J18165	12/12/2008	3.30E-01	mg/Kg	U	R
SVOC - 8270	Anthracene	K1497	J18164	12/12/2008	0.33	mg/Kg	U	R
SVOC - 8270	Anthracene	K1580	J18MR6	4/2/2009	0.66	mg/Kg	U	R
SVOC - 8270	Benzo(a)anthracene	K1479	J17VC3	12/1/2008	0.33	mg/Kg	U	R
SVOC - 8270	Benzo(a)anthracene	K1497	J18167	12/12/2008	0.33	mg/Kg	U	R
SVOC - 8270	Benzo(a)anthracene	K1497	J18168	12/12/2008	0.66	mg/Kg	U	R
SVOC - 8270	Benzo(a)anthracene	K1497	J18164	12/12/2008	0.33	mg/Kg	U	R
SVOC - 8270	Benzo(a)anthracene	K1497	J18165	12/12/2008	0.33	mg/Kg	U	R
SVOC - 8270	Benzo(a)anthracene	K1497	J18166	12/12/2008	0.33	mg/Kg	U	R
SVOC - 8270	Benzo(a)anthracene	K1580	J18MR6	4/2/2009	6.60E-01	mg/Kg	U	R
SVOC - 8270	Benzo(a)pyrene	K1479	J17VC3	12/1/2008	0.33	mg/Kg	U	R
SVOC - 8270	Benzo(a)pyrene	K1497	J18166	12/12/2008	0.33	mg/Kg	U	R
SVOC - 8270	Benzo(a)pyrene	K1497	J18165	12/12/2008	0.33	mg/Kg	U	R
SVOC - 8270	Benzo(a)pyrene	K1497	J18164	12/12/2008	0.33	mg/Kg	U	R
SVOC - 8270	Benzo(a)pyrene	K1497	J18168	12/12/2008	0.66	mg/Kg	U	R
SVOC - 8270	Benzo(a)pyrene	K1497	J18167	12/12/2008	0.33	mg/Kg	U	R
SVOC - 8270	Benzo(a)pyrene	K1580	J18MR6	4/2/2009	0.66	mg/Kg	U	R
SVOC - 8270	Benzo(b)fluoranthene	K1479	J17VC3	12/1/2008	0.33	mg/Kg	U	R
SVOC - 8270	Benzo(b)fluoranthene	K1497	J18167	12/12/2008	0.33	mg/Kg	U	R
SVOC - 8270	Benzo(b)fluoranthene	K1497	J18168	12/12/2008	0.66	mg/Kg	U	R
SVOC - 8270	Benzo(b)fluoranthene	K1497	J18164	12/12/2008	0.33	mg/Kg	U	R
SVOC - 8270	Benzo(b)fluoranthene	K1497	J18165	12/12/2008	0.33	mg/Kg	U	R
SVOC - 8270	Benzo(b)fluoranthene	K1497	J18166	12/12/2008	0.33	mg/Kg	U	R
SVOC - 8270	Benzo(b)fluoranthene	K1580	J18MR6	4/2/2009	0.66	mg/Kg	U	R
SVOC - 8270	Benzo(ghi)perylene	K1479	J17VC3	12/1/2008	0.33	mg/Kg	U	R
SVOC - 8270	Benzo(ghi)perylene	K1497	J18167	12/12/2008	0.33	mg/Kg	U	R
SVOC - 8270	Benzo(ghi)perylene	K1497	J18168	12/12/2008	0.66	mg/Kg	U	R
SVOC - 8270	Benzo(ghi)perylene	K1497	J18164	12/12/2008	0.33	mg/Kg	U	R

Table 3-3. Summary of Rejected Sediment Data by Method. (19 Pages)

Analytical Method	Analyte	SDG Number	Sample Identification	Sample Date	Results	Units	Laboratory Qualifier	Validation Qualifier
SVOC - 8270	Benzo(ghi)perylene	K1497	J18165	12/12/2008	0.33	mg/Kg	U	R
SVOC - 8270	Benzo(ghi)perylene	K1497	J18166	12/12/2008	0.33	mg/Kg	U	R
SVOC - 8270	Benzo(ghi)perylene	K1580	J18MR6	4/2/2009	0.66	mg/Kg	U	R
SVOC - 8270	Benzo(k)fluoranthene	K1479	J17VC3	12/1/2008	0.33	mg/Kg	U	R
SVOC - 8270	Benzo(k)fluoranthene	K1497	J18167	12/12/2008	3.30E-01	mg/Kg	U	R
SVOC - 8270	Benzo(k)fluoranthene	K1497	J18168	12/12/2008	0.66	mg/Kg	U	R
SVOC - 8270	Benzo(k)fluoranthene	K1497	J18164	12/12/2008	3.30E-01	mg/Kg	U	R
SVOC - 8270	Benzo(k)fluoranthene	K1497	J18165	12/12/2008	3.30E-01	mg/Kg	U	R
SVOC - 8270	Benzo(k)fluoranthene	K1497	J18166	12/12/2008	0.33	mg/Kg	U	R
SVOC - 8270	Benzo(k)fluoranthene	K1580	J18MR6	4/2/2009	6.60E-01	mg/Kg	U	R
SVOC - 8270	Bis(2-chloro-1-methylethyl)ether	K1479	J17VC3	12/1/2008	0.33	mg/Kg	U	R
SVOC - 8270	Bis(2-chloro-1-methylethyl)ether	K1491	J18030	12/9/2008	0.33	mg/Kg	U	R
SVOC - 8270	Bis(2-chloro-1-methylethyl)ether	K1497	J18164	12/12/2008	0.33	mg/Kg	U	R
SVOC - 8270	Bis(2-chloro-1-methylethyl)ether	K1497	J18165	12/12/2008	0.33	mg/Kg	U	R
SVOC - 8270	Bis(2-chloro-1-methylethyl)ether	K1497	J18166	12/12/2008	0.33	mg/Kg	U	R
SVOC - 8270	Bis(2-chloro-1-methylethyl)ether	K1497	J18167	12/12/2008	0.33	mg/Kg	U	R
SVOC - 8270	Bis(2-chloro-1-methylethyl)ether	K1497	J18168	12/12/2008	0.66	mg/Kg	U	R
SVOC - 8270	Bis(2-chloro-1-methylethyl)ether	K1542	J18807	2/17/2009	0.66	mg/Kg	U	R
SVOC - 8270	Bis(2-chloro-1-methylethyl)ether	K1542	J18808	2/17/2009	0.66	mg/Kg	U	R
SVOC - 8270	Bis(2-chloro-1-methylethyl)ether	K1580	J18MR6	4/2/2009	0.66	mg/Kg	U	R
SVOC - 8270	Bis(2-Chloroethoxy)methane	K1479	J17VC3	12/1/2008	0.33	mg/Kg	U	R
SVOC - 8270	Bis(2-Chloroethoxy)methane	K1491	J18030	12/9/2008	0.33	mg/Kg	U	R
SVOC - 8270	Bis(2-Chloroethoxy)methane	K1497	J18168	12/12/2008	0.66	mg/Kg	U	R
SVOC - 8270	Bis(2-Chloroethoxy)methane	K1497	J18167	12/12/2008	0.33	mg/Kg	U	R
SVOC - 8270	Bis(2-Chloroethoxy)methane	K1497	J18166	12/12/2008	0.33	mg/Kg	U	R
SVOC - 8270	Bis(2-Chloroethoxy)methane	K1497	J18165	12/12/2008	0.33	mg/Kg	U	R
SVOC - 8270	Bis(2-Chloroethoxy)methane	K1497	J18164	12/12/2008	0.33	mg/Kg	U	R
SVOC - 8270	Bis(2-Chloroethoxy)methane	K1542	J18808	2/17/2009	0.66	mg/Kg	U	R
SVOC - 8270	Bis(2-Chloroethoxy)methane	K1542	J18807	2/17/2009	0.66	mg/Kg	U	R
SVOC - 8270	Bis(2-Chloroethoxy)methane	K1580	J18MR6	4/2/2009	0.66	mg/Kg	U	R
SVOC - 8270	Bis(2-chloroethyl) ether	K1479	J17VC3	12/1/2008	0.33	mg/Kg	U	R
SVOC - 8270	Bis(2-chloroethyl) ether	K1491	J18030	12/9/2008	0.33	mg/Kg	U	R
SVOC - 8270	Bis(2-chloroethyl) ether	K1497	J18164	12/12/2008	0.33	mg/Kg	U	R
SVOC - 8270	Bis(2-chloroethyl) ether	K1497	J18165	12/12/2008	0.33	mg/Kg	U	R
SVOC - 8270	Bis(2-chloroethyl) ether	K1497	J18166	12/12/2008	0.33	mg/Kg	U	R
SVOC - 8270	Bis(2-chloroethyl) ether	K1497	J18167	12/12/2008	0.33	mg/Kg	U	R
SVOC - 8270	Bis(2-chloroethyl) ether	K1497	J18168	12/12/2008	0.66	mg/Kg	U	R
SVOC - 8270	Bis(2-chloroethyl) ether	K1542	J18807	2/17/2009	0.66	mg/Kg	U	R
SVOC - 8270	Bis(2-chloroethyl) ether	K1542	J18808	2/17/2009	0.66	mg/Kg	U	R

Table 3-3. Summary of Rejected Sediment Data by Method. (19 Pages)

Analytical Method	Analyte	SDG Number	Sample Identification	Sample Date	Results	Units	Laboratory Qualifier	Validation Qualifier
SVOC - 8270	Bis(2-chloroethyl) ether	K1580	J18MR6	4/2/2009	0.66	mg/Kg	U	R
SVOC - 8270	Bis(2-ethylhexyl) phthalate	K1479	J17VC3	12/1/2008	0.33	mg/Kg	U	R
SVOC - 8270	Bis(2-ethylhexyl) phthalate	K1497	J18164	12/12/2008	0.33	mg/Kg	U	R
SVOC - 8270	Bis(2-ethylhexyl) phthalate	K1497	J18165	12/12/2008	0.33	mg/Kg	U	R
SVOC - 8270	Bis(2-ethylhexyl) phthalate	K1497	J18166	12/12/2008	0.33	mg/Kg	U	R
SVOC - 8270	Bis(2-ethylhexyl) phthalate	K1497	J18167	12/12/2008	0.33	mg/Kg	U	R
SVOC - 8270	Bis(2-ethylhexyl) phthalate	K1497	J18168	12/12/2008	0.66	mg/Kg	U	R
SVOC - 8270	Bis(2-ethylhexyl) phthalate	K1580	J18MR6	4/2/2009	0.66	mg/Kg	U	R
SVOC - 8270	Butylbenzylphthalate	K1479	J17VC3	12/1/2008	0.3	mg/Kg	U	R
SVOC - 8270	Butylbenzylphthalate	K1497	J18167	12/12/2008	0.3	mg/Kg	U	R
SVOC - 8270	Butylbenzylphthalate	K1497	J18168	12/12/2008	0.6	mg/Kg	U	R
SVOC - 8270	Butylbenzylphthalate	K1497	J18164	12/12/2008	0.3	mg/Kg	U	R
SVOC - 8270	Butylbenzylphthalate	K1497	J18165	12/12/2008	0.3	mg/Kg	U	R
SVOC - 8270	Butylbenzylphthalate	K1497	J18166	12/12/2008	0.3	mg/Kg	U	R
SVOC - 8270	Butylbenzylphthalate	K1580	J18MR6	4/2/2009	0.66	mg/Kg	U	R
SVOC - 8270	Carbazole	K1479	J17VC3	12/1/2008	0.33	mg/Kg	U	R
SVOC - 8270	Carbazole	K1497	J18166	12/12/2008	0.33	mg/Kg	U	R
SVOC - 8270	Carbazole	K1497	J18165	12/12/2008	0.33	mg/Kg	U	R
SVOC - 8270	Carbazole	K1497	J18164	12/12/2008	0.33	mg/Kg	U	R
SVOC - 8270	Carbazole	K1497	J18168	12/12/2008	0.66	mg/Kg	U	R
SVOC - 8270	Carbazole	K1497	J18167	12/12/2008	0.33	mg/Kg	U	R
SVOC - 8270	Carbazole	K1580	J18MR6	4/2/2009	0.66	mg/Kg	U	R
SVOC - 8270	Chrysene	K1479	J17VC3	12/1/2008	0.33	mg/Kg	U	R
SVOC - 8270	Chrysene	K1497	J18167	12/12/2008	0.33	mg/Kg	U	R
SVOC - 8270	Chrysene	K1497	J18168	12/12/2008	0.66	mg/Kg	U	R
SVOC - 8270	Chrysene	K1497	J18164	12/12/2008	0.33	mg/Kg	U	R
SVOC - 8270	Chrysene	K1497	J18165	12/12/2008	0.33	mg/Kg	U	R
SVOC - 8270	Chrysene	K1497	J18166	12/12/2008	0.33	mg/Kg	U	R
SVOC - 8270	Chrysene	K1580	J18MR6	4/2/2009	6.60E-01	mg/Kg	U	R
SVOC - 8270	Dibenz[a,h]anthracene	K1479	J17VC3	12/1/2008	0.33	mg/Kg	U	R
SVOC - 8270	Dibenz[a,h]anthracene	K1497	J18166	12/12/2008	0.33	mg/Kg	U	R
SVOC - 8270	Dibenz[a,h]anthracene	K1497	J18165	12/12/2008	0.33	mg/Kg	U	R
SVOC - 8270	Dibenz[a,h]anthracene	K1497	J18164	12/12/2008	0.33	mg/Kg	U	R
SVOC - 8270	Dibenz[a,h]anthracene	K1497	J18168	12/12/2008	0.66	mg/Kg	U	R
SVOC - 8270	Dibenz[a,h]anthracene	K1497	J18167	12/12/2008	0.33	mg/Kg	U	R
SVOC - 8270	Dibenz[a,h]anthracene	K1580	J18MR6	4/2/2009	0.66	mg/Kg	U	R
SVOC - 8270	Dibenzofuran	K1479	J17VC3	12/1/2008	0.33	mg/Kg	U	R
SVOC - 8270	Dibenzofuran	K1497	J18168	12/12/2008	0.66	mg/Kg	U	R
SVOC - 8270	Dibenzofuran	K1497	J18167	12/12/2008	0.33	mg/Kg	U	R

Table 3-3. Summary of Rejected Sediment Data by Method. (19 Pages)

Analytical Method	Analyte	SDG Number	Sample Identification	Sample Date	Results	Units	Laboratory Qualifier	Validation Qualifier
SVOC - 8270	Dibenzofuran	K1497	J18166	12/12/2008	0.33	mg/Kg	U	R
SVOC - 8270	Dibenzofuran	K1497	J18165	12/12/2008	0.33	mg/Kg	U	R
SVOC - 8270	Dibenzofuran	K1497	J18164	12/12/2008	0.33	mg/Kg	U	R
SVOC - 8270	Dibenzofuran	K1580	J18MR6	4/2/2009	0.66	mg/Kg	U	R
SVOC - 8270	Diethylphthalate	K1479	J17VC3	12/1/2008	0.33	mg/Kg	U	R
SVOC - 8270	Diethylphthalate	K1497	J18166	12/12/2008	0.33	mg/Kg	U	R
SVOC - 8270	Diethylphthalate	K1497	J18165	12/12/2008	0.33	mg/Kg	U	R
SVOC - 8270	Diethylphthalate	K1497	J18164	12/12/2008	0.33	mg/Kg	U	R
SVOC - 8270	Diethylphthalate	K1497	J18168	12/12/2008	0.66	mg/Kg	U	R
SVOC - 8270	Diethylphthalate	K1497	J18167	12/12/2008	0.33	mg/Kg	U	R
SVOC - 8270	Diethylphthalate	K1580	J18MR6	4/2/2009	0.66	mg/Kg	U	R
SVOC - 8270	Dimethyl phthalate	K1479	J17VC3	12/1/2008	0.33	mg/Kg	U	R
SVOC - 8270	Dimethyl phthalate	K1497	J18164	12/12/2008	0.33	mg/Kg	U	R
SVOC - 8270	Dimethyl phthalate	K1497	J18165	12/12/2008	0.33	mg/Kg	U	R
SVOC - 8270	Dimethyl phthalate	K1497	J18166	12/12/2008	0.33	mg/Kg	U	R
SVOC - 8270	Dimethyl phthalate	K1497	J18167	12/12/2008	0.33	mg/Kg	U	R
SVOC - 8270	Dimethyl phthalate	K1497	J18168	12/12/2008	0.66	mg/Kg	U	R
SVOC - 8270	Dimethyl phthalate	K1580	J18MR6	4/2/2009	0.66	mg/Kg	U	R
SVOC - 8270	Di-n-butylphthalate	K1479	J17VC3	12/1/2008	0.33	mg/Kg	U	R
SVOC - 8270	Di-n-butylphthalate	K1497	J18167	12/12/2008	0.33	mg/Kg	U	R
SVOC - 8270	Di-n-butylphthalate	K1497	J18168	12/12/2008	0.66	mg/Kg	U	R
SVOC - 8270	Di-n-butylphthalate	K1497	J18164	12/12/2008	0.33	mg/Kg	U	R
SVOC - 8270	Di-n-butylphthalate	K1497	J18165	12/12/2008	0.33	mg/Kg	U	R
SVOC - 8270	Di-n-butylphthalate	K1497	J18166	12/12/2008	0.33	mg/Kg	U	R
SVOC - 8270	Di-n-butylphthalate	K1580	J18MR6	4/2/2009	0.66	mg/Kg	U	R
SVOC - 8270	Di-n-octylphthalate	K1479	J17VC3	12/1/2008	0.33	mg/Kg	U	R
SVOC - 8270	Di-n-octylphthalate	K1497	J18168	12/12/2008	0.66	mg/Kg	U	R
SVOC - 8270	Di-n-octylphthalate	K1497	J18167	12/12/2008	0.33	mg/Kg	U	R
SVOC - 8270	Di-n-octylphthalate	K1497	J18166	12/12/2008	0.33	mg/Kg	U	R
SVOC - 8270	Di-n-octylphthalate	K1497	J18165	12/12/2008	0.33	mg/Kg	U	R
SVOC - 8270	Di-n-octylphthalate	K1497	J18164	12/12/2008	0.33	mg/Kg	U	R
SVOC - 8270	Di-n-octylphthalate	K1580	J18MR6	4/2/2009	0.66	mg/Kg	U	R
SVOC - 8270	Fluoranthene	K1479	J17VC3	12/1/2008	0.33	mg/Kg	U	R
SVOC - 8270	Fluoranthene	K1497	J18166	12/12/2008	0.33	mg/Kg	U	R
SVOC - 8270	Fluoranthene	K1497	J18165	12/12/2008	0.33	mg/Kg	U	R
SVOC - 8270	Fluoranthene	K1497	J18164	12/12/2008	0.33	mg/Kg	U	R
SVOC - 8270	Fluoranthene	K1497	J18168	12/12/2008	0.66	mg/Kg	U	R
SVOC - 8270	Fluoranthene	K1497	J18167	12/12/2008	0.33	mg/Kg	U	R
SVOC - 8270	Fluoranthene	K1580	J18MR6	4/2/2009	0.66	mg/Kg	U	R

Table 3-3. Summary of Rejected Sediment Data by Method. (19 Pages)

Analytical Method	Analyte	SDG Number	Sample Identification	Sample Date	Results	Units	Laboratory Qualifier	Validation Qualifier
SVOC - 8270	Fluorene	K1479	J17VC3	12/1/2008	0.33	mg/Kg	U	R
SVOC - 8270	Fluorene	K1497	J18167	12/12/2008	0.33	mg/Kg	U	R
SVOC - 8270	Fluorene	K1497	J18168	12/12/2008	0.66	mg/Kg	U	R
SVOC - 8270	Fluorene	K1497	J18164	12/12/2008	0.33	mg/Kg	U	R
SVOC - 8270	Fluorene	K1497	J18165	12/12/2008	0.33	mg/Kg	U	R
SVOC - 8270	Fluorene	K1497	J18166	12/12/2008	0.33	mg/Kg	U	R
SVOC - 8270	Fluorene	K1580	J18MR6	4/2/2009	0.66	mg/Kg	U	R
SVOC - 8270	Hexachlorobenzene	K1479	J17VC3	12/1/2008	0.33	mg/Kg	U	R
SVOC - 8270	Hexachlorobenzene	K1497	J18164	12/12/2008	0.33	mg/Kg	U	R
SVOC - 8270	Hexachlorobenzene	K1497	J18165	12/12/2008	0.33	mg/Kg	U	R
SVOC - 8270	Hexachlorobenzene	K1497	J18166	12/12/2008	0.33	mg/Kg	U	R
SVOC - 8270	Hexachlorobenzene	K1497	J18167	12/12/2008	0.33	mg/Kg	U	R
SVOC - 8270	Hexachlorobenzene	K1497	J18168	12/12/2008	0.66	mg/Kg	U	R
SVOC - 8270	Hexachlorobenzene	K1580	J18MR6	4/2/2009	0.66	mg/Kg	U	R
SVOC - 8270	Hexachlorobutadiene	K1479	J17VC3	12/1/2008	0.33	mg/Kg	U	R
SVOC - 8270	Hexachlorobutadiene	K1497	J18167	12/12/2008	0.33	mg/Kg	U	R
SVOC - 8270	Hexachlorobutadiene	K1497	J18168	12/12/2008	0.66	mg/Kg	U	R
SVOC - 8270	Hexachlorobutadiene	K1497	J18164	12/12/2008	0.33	mg/Kg	U	R
SVOC - 8270	Hexachlorobutadiene	K1497	J18165	12/12/2008	0.33	mg/Kg	U	R
SVOC - 8270	Hexachlorobutadiene	K1497	J18166	12/12/2008	0.33	mg/Kg	U	R
SVOC - 8270	Hexachlorobutadiene	K1580	J18MR6	4/2/2009	0.66	mg/Kg	U	R
SVOC - 8270	Hexachlorocyclopentadiene	K1479	J17VC3	12/1/2008	3.30E-01	mg/Kg	U	R
SVOC - 8270	Hexachlorocyclopentadiene	K1497	J18166	12/12/2008	0.33	mg/Kg	U	R
SVOC - 8270	Hexachlorocyclopentadiene	K1497	J18165	12/12/2008	0.33	mg/Kg	U	R
SVOC - 8270	Hexachlorocyclopentadiene	K1497	J18164	12/12/2008	0.33	mg/Kg	U	R
SVOC - 8270	Hexachlorocyclopentadiene	K1497	J18168	12/12/2008	0.66	mg/Kg	U	R
SVOC - 8270	Hexachlorocyclopentadiene	K1497	J18167	12/12/2008	0.33	mg/Kg	U	R
SVOC - 8270	Hexachlorocyclopentadiene	K1580	J18MR6	4/2/2009	0.66	mg/Kg	U	R
SVOC - 8270	Hexachloroethane	K1479	J17VC3	12/1/2008	0.33	mg/Kg	U	R
SVOC - 8270	Hexachloroethane	K1497	J18166	12/12/2008	0.33	mg/Kg	U	R
SVOC - 8270	Hexachloroethane	K1497	J18165	12/12/2008	0.33	mg/Kg	U	R
SVOC - 8270	Hexachloroethane	K1497	J18164	12/12/2008	0.33	mg/Kg	U	R
SVOC - 8270	Hexachloroethane	K1497	J18168	12/12/2008	0.66	mg/Kg	U	R
SVOC - 8270	Hexachloroethane	K1497	J18167	12/12/2008	0.33	mg/Kg	U	R
SVOC - 8270	Hexachloroethane	K1580	J18MR6	4/2/2009	0.66	mg/Kg	U	R
SVOC - 8270	Indeno(1,2,3-cd)pyrene	K1479	J17VC3	12/1/2008	0.33	mg/Kg	U	R
SVOC - 8270	Indeno(1,2,3-cd)pyrene	K1497	J18166	12/12/2008	0.33	mg/Kg	U	R
SVOC - 8270	Indeno(1,2,3-cd)pyrene	K1497	J18165	12/12/2008	0.33	mg/Kg	U	R
SVOC - 8270	Indeno(1,2,3-cd)pyrene	K1497	J18164	12/12/2008	0.33	mg/Kg	U	R

Table 3-3. Summary of Rejected Sediment Data by Method. (19 Pages)

Analytical Method	Analyte	SDG Number	Sample Identification	Sample Date	Results	Units	Laboratory Qualifier	Validation Qualifier
SVOC - 8270	Indeno(1,2,3-cd)pyrene	K1497	J18168	12/12/2008	0.66	mg/Kg	U	R
SVOC - 8270	Indeno(1,2,3-cd)pyrene	K1497	J18167	12/12/2008	0.33	mg/Kg	U	R
SVOC - 8270	Indeno(1,2,3-cd)pyrene	K1580	J18MR6	4/2/2009	0.66	mg/Kg	U	R
SVOC - 8270	Isophorone	K1479	J17VC3	12/1/2008	0.33	mg/Kg	U	R
SVOC - 8270	Isophorone	K1497	J18167	12/12/2008	0.33	mg/Kg	U	R
SVOC - 8270	Isophorone	K1497	J18168	12/12/2008	0.66	mg/Kg	U	R
SVOC - 8270	Isophorone	K1497	J18164	12/12/2008	0.33	mg/Kg	U	R
SVOC - 8270	Isophorone	K1497	J18165	12/12/2008	0.33	mg/Kg	U	R
SVOC - 8270	Isophorone	K1497	J18166	12/12/2008	0.33	mg/Kg	U	R
SVOC - 8270	Isophorone	K1580	J18MR6	4/2/2009	0.66	mg/Kg	U	R
SVOC - 8270	Naphthalene	K1479	J17VC3	12/1/2008	0.33	mg/Kg	U	R
SVOC - 8270	Naphthalene	K1497	J18166	12/12/2008	0.33	mg/Kg	U	R
SVOC - 8270	Naphthalene	K1497	J18165	12/12/2008	0.33	mg/Kg	U	R
SVOC - 8270	Naphthalene	K1497	J18164	12/12/2008	0.33	mg/Kg	U	R
SVOC - 8270	Naphthalene	K1497	J18168	12/12/2008	0.66	mg/Kg	U	R
SVOC - 8270	Naphthalene	K1497	J18167	12/12/2008	0.33	mg/Kg	U	R
SVOC - 8270	Naphthalene	K1580	J18MR6	4/2/2009	0.66	mg/Kg	U	R
SVOC - 8270	Nitrobenzene	K1479	J17VC3	12/1/2008	0.33	mg/Kg	U	R
SVOC - 8270	Nitrobenzene	K1497	J18167	12/12/2008	0.33	mg/Kg	U	R
SVOC - 8270	Nitrobenzene	K1497	J18168	12/12/2008	0.66	mg/Kg	U	R
SVOC - 8270	Nitrobenzene	K1497	J18164	12/12/2008	0.33	mg/Kg	U	R
SVOC - 8270	Nitrobenzene	K1497	J18165	12/12/2008	0.33	mg/Kg	U	R
SVOC - 8270	Nitrobenzene	K1497	J18166	12/12/2008	0.33	mg/Kg	U	R
SVOC - 8270	Nitrobenzene	K1580	J18MR6	4/2/2009	0.66	mg/Kg	U	R
SVOC - 8270	N-Nitroso-di-n-dipropylamine	K1479	J17VC3	12/1/2008	0.33	mg/Kg	U	R
SVOC - 8270	N-Nitroso-di-n-dipropylamine	K1497	J18166	12/12/2008	0.33	mg/Kg	U	R
SVOC - 8270	N-Nitroso-di-n-dipropylamine	K1497	J18165	12/12/2008	0.33	mg/Kg	U	R
SVOC - 8270	N-Nitroso-di-n-dipropylamine	K1497	J18164	12/12/2008	0.33	mg/Kg	U	R
SVOC - 8270	N-Nitroso-di-n-dipropylamine	K1497	J18168	12/12/2008	0.66	mg/Kg	U	R
SVOC - 8270	N-Nitroso-di-n-dipropylamine	K1497	J18167	12/12/2008	0.33	mg/Kg	U	R
SVOC - 8270	N-Nitroso-di-n-dipropylamine	K1580	J18MR6	4/2/2009	0.66	mg/Kg	U	R
SVOC - 8270	N-Nitrosodiphenylamine	K1479	J17VC3	12/1/2008	0.33	mg/Kg	U	R
SVOC - 8270	N-Nitrosodiphenylamine	K1497	J18166	12/12/2008	0.33	mg/Kg	U	R
SVOC - 8270	N-Nitrosodiphenylamine	K1497	J18165	12/12/2008	0.33	mg/Kg	U	R
SVOC - 8270	N-Nitrosodiphenylamine	K1497	J18164	12/12/2008	0.33	mg/Kg	U	R
SVOC - 8270	N-Nitrosodiphenylamine	K1497	J18168	12/12/2008	0.66	mg/Kg	U	R
SVOC - 8270	N-Nitrosodiphenylamine	K1497	J18167	12/12/2008	0.33	mg/Kg	U	R
SVOC - 8270	N-Nitrosodiphenylamine	K1580	J18MR6	4/2/2009	0.66	mg/Kg	U	R
SVOC - 8270	Pentachlorophenol	K1479	J17VC3	12/1/2008	1.65	mg/Kg	U	R

Table 3-3. Summary of Rejected Sediment Data by Method. (19 Pages)

Analytical Method	Analyte	SDG Number	Sample Identification	Sample Date	Results	Units	Laboratory Qualifier	Validation Qualifier
SVOC - 8270	Pentachlorophenol	K1491	J18030	12/9/2008	1.65	mg/Kg	U	R
SVOC - 8270	Pentachlorophenol	K1497	J18166	12/12/2008	1.65	mg/Kg	U	R
SVOC - 8270	Pentachlorophenol	K1497	J18165	12/12/2008	1.65	mg/Kg	U	R
SVOC - 8270	Pentachlorophenol	K1497	J18164	12/12/2008	1.65	mg/Kg	U	R
SVOC - 8270	Pentachlorophenol	K1497	J18168	12/12/2008	3.3	mg/Kg	U	R
SVOC - 8270	Pentachlorophenol	K1497	J18167	12/12/2008	1.65	mg/Kg	U	R
SVOC - 8270	Pentachlorophenol	K1542	J18807	2/17/2009	3.3	mg/Kg	U	R
SVOC - 8270	Pentachlorophenol	K1542	J18808	2/17/2009	3.3	mg/Kg	U	R
SVOC - 8270	Pentachlorophenol	K1580	J18MR6	4/2/2009	3.3	mg/Kg	U	R
SVOC - 8270	Phenanthrene	K1479	J17VC3	12/1/2008	0.33	mg/Kg	U	R
SVOC - 8270	Phenanthrene	K1497	J18166	12/12/2008	0.33	mg/Kg	U	R
SVOC - 8270	Phenanthrene	K1497	J18165	12/12/2008	0.33	mg/Kg	U	R
SVOC - 8270	Phenanthrene	K1497	J18164	12/12/2008	0.33	mg/Kg	U	R
SVOC - 8270	Phenanthrene	K1497	J18168	12/12/2008	0.66	mg/Kg	U	R
SVOC - 8270	Phenanthrene	K1497	J18167	12/12/2008	0.33	mg/Kg	U	R
SVOC - 8270	Phenanthrene	K1580	J18MR6	4/2/2009	0.66	mg/Kg	U	R
SVOC - 8270	Phenol	K1479	J17VC3	12/1/2008	0.33	mg/Kg	U	R
SVOC - 8270	Phenol	K1497	J18168	12/12/2008	0.66	mg/Kg	U	R
SVOC - 8270	Phenol	K1497	J18167	12/12/2008	0.33	mg/Kg	U	R
SVOC - 8270	Phenol	K1497	J18166	12/12/2008	0.33	mg/Kg	U	R
SVOC - 8270	Phenol	K1497	J18165	12/12/2008	0.33	mg/Kg	U	R
SVOC - 8270	Phenol	K1497	J18164	12/12/2008	0.33	mg/Kg	U	R
SVOC - 8270	Phenol	K1580	J18MR6	4/2/2009	0.66	mg/Kg	U	R
SVOC - 8270	Pyrene	K1479	J17VC3	12/1/2008	0.33	mg/Kg	U	R
SVOC - 8270	Pyrene	K1497	J18168	12/12/2008	0.66	mg/Kg	U	R
SVOC - 8270	Pyrene	K1497	J18167	12/12/2008	0.33	mg/Kg	U	R
SVOC - 8270	Pyrene	K1497	J18166	12/12/2008	0.33	mg/Kg	U	R
SVOC - 8270	Pyrene	K1497	J18165	12/12/2008	0.33	mg/Kg	U	R
SVOC - 8270	Pyrene	K1497	J18164	12/12/2008	0.33	mg/Kg	U	R
SVOC - 8270	Pyrene	K1580	J18MR6	4/2/2009	0.66	mg/Kg	U	R

B = estimated
J = estimated
PCB = polychlorinated biphenyl
R = rejected
SDG = sample delivery group
SVOC = semivolatile organic compound
U = nondetect
µg/kg = micrograms per kilogram

3.1.2.2 Volatile Organic Compounds – Sediment. For the VOC data, QC results were compliant for most QC parameters. None of the sediment VOC results were rejected and therefore all data are sufficient for their intended project use. The following is a summary of the results of the assessment and minor QC deficiencies noted during the assessment.

Analysis of the samples took place prior to the expiration of the associated holding time. Detection limits for all compounds that are reported with this analysis are the same or below those specified in the SAP (DOE/RL-2008-11, Appendix A), with the exception of 1,1,1-trichloroethane in most SDGs. Laboratory blanks were analyzed for target VOCs to identify potential contamination resulting from laboratory processing and analyses. Methylene chloride was detected in many of these blanks at trace concentrations. Associated samples also contained similar concentrations of methylene chloride, and detected sample concentrations less than 10 times the blank concentration were qualified as estimated nondetect (UJ). If the sample concentration of the blank contaminant was below the RDL, it was replaced with the RDL as part of this action. Equipment blanks contained concentrations of methylene chloride and 2-butanone. Trip blanks contained concentrations of methylene chloride, acetone, and 2-butanone. There was no action taken with respect to equipment blank or trip blank contamination. Field blanks were collected in association with core sediment samples. These were deionized water samples collected at the core processing facility to assess the potential for cross-contamination. The field blanks were analyzed with SDGs K1594, K1595, and K1596. No VOCs were detected in these field blanks.

LCS and matrix spike recoveries were generally compliant, indicating that accuracy requirements were satisfied; however, recoveries for 2-butanone and acetone exceeded the upper control limit in many SDGs, indicating a potential high bias. Detected sample results were qualified as estimated (J) based on these recoveries.

Surrogate recoveries exceeded the criteria in two SDGs; however, no action was taken since the associated compounds were nondetect. With the exception of methylene chloride detections in the associated blanks and subsequent qualification of associated sample results as estimated nondetect, there were very few data quality issues. The field duplicate and laboratory duplicate results demonstrated that there was little variability and acceptable levels of precision in reported results.

Data from the VOC analyses are acceptable for their intended project use.

3.1.2.3 Semivolatile Organic Compounds – Sediment. For the SVOCs, QC results were compliant for most QC parameters. Although a small fraction of the data (associated results from 10 samples) was rejected based on holding time exceedances and low surrogate recoveries, the QC results from the SVOC analyses indicate that the majority of the results are of acceptable quality for their intended project use. The following is a summary of the results of the assessment and the QC deficiencies noted during the assessment. The data that were rejected are provided in Table 3-3.

Detection limits were reviewed and found to be generally at or below those specified in the SAP (DOE/RL-2008-11, Appendix A). Reported detection limits that exceeded those specified in the SAP include hexachlorobenzene, 2-chloroaniline, 2-nitroaniline, 2,4-dinitrophenol, 3-nitroaniline, 4-nitrophenol, 4-nitroaniline, pentachlorophenol, 3,3'-dichlorobenzidine. The majority of the sediment samples were extracted and analyzed prior to holding time expirations. In most instances when the holding times had been exceeded, the sample results were qualified as estimated (J) because the holding time exceedance was less than twice the limit. In SDG K1497, five samples were qualified as rejected because the period from sample collection to extraction exceeded twice the holding time limit and all results were nondetect.

The majority of surrogate recoveries were compliant for all samples, indicating that instrument performance during sample analysis was acceptable. However, the recovery of the surrogate 2,4,6-tribromophenol at less than 10% resulted in the rejection of results for several associated acid fraction compounds for some samples in SDGs K1491, K1497, and K1542. For the sample J18MR6 in SDG K1580, the recoveries of one acid fraction and one base neutral surrogate at less than 10% were the bases for the rejection of all SVOC results. All SVOC results for J17VC3 (SDG K1479) were also rejected because all surrogate recoveries were below 10%.

Bis(2-ethylhexyl)phthalate, di-n-butyl phthalate, and diethyl phthalate, classified by EPA as common laboratory contaminants, were detected in several laboratory blanks, indicating potential introductions from the laboratory during sample preparation and analysis. Diethyl phthalate was detected in one field blank in SDG K1594 at 3.54 ug/L. This blank was collected in association with core sediment samples. In general, there were no impacts from the blank detections since these constituents were not detected in any of the associated samples.

LCS and matrix spike recovery results indicate generally compliant results, but also indicate some extraction difficulties for some SVOCs. Compounds including 4-chloroaniline, 4-nitrophenol, 3-nitroaniline, 3,3'-dichlorobenzidine, hexachlorocyclopentadiene, hexabutadiene, pentachlorophenol, and hexachloroethane frequently had recoveries that were below the lower control limit, demonstrating a potential low bias to sample results. LCS and matrix spike recoveries below the lower control limit resulted in associated data being qualified as estimated (J).

Field duplicate and laboratory duplicate comparisons with the conjugate samples generally indicate acceptable precision.

The DQA identified compounds with extraction problems resulting in extremely low recoveries. Although associated results from 10 samples were rejected based on holding time exceedances and low surrogate recoveries, the QC results from the SVOC analyses indicate that the remaining data are of acceptable quality for their intended project use.

3.1.2.4 Polychlorinated Biphenyls – Sediment. For the PCB data, QC results were compliant for most QC parameters. Although data for one SDG were rejected based on holding time exceedances, the QC results from the PCB analyses indicate that the majority of the results are of acceptable quality for their intended project use. The following is a summary of the results of the assessment and the QC deficiencies noted during the assessment. The data that were rejected are provided in Table 3-3.

Detection limits reported for all Aroclors were below the specifications listed in the SAP (DOE/RL-2008-11, Appendix A). PCB sample extractions on all samples analyzed in SDG K1497 were performed beyond twice the holding time limit. All of the nondetect sample results (from five samples) were qualified as unusable or rejected (R) based on this finding. PCB results for many other samples were qualified as estimated (J) due to holding time exceedances at less than twice the holding time limit. Other QC parameters including method blank, laboratory duplicate, field duplicate, equipment blank, surrogate, LCS, and matrix spike recoveries were generally compliant.

Although the results from all five samples in SDG K1497 were rejected based on holding time exceedances, the PCB data for all other SDGs were acceptable for their intended use.

3.1.2.5 Chlorinated Pesticides – Sediment. For the pesticide data, QC results were compliant for most QC parameters. Although data from SDG K1497 were rejected based on holding time exceedances, the QC results from the pesticide analyses indicate that the majority of the results are of acceptable quality for their intended project use. The following is a summary of the results of the assessment and the QC deficiencies noted during the assessment. The data that were rejected are provided in Table 3-3.

Detection limits were at or below those specified in the SAP (DOE/RL-2008-11, Appendix A) with the exception of alpha-BHC, gamma-BHC, delta-BHC, heptachlor, heptachlor epoxide, gamma-chlordane, alpha-chlordane, endosulfan I, and toxaphene in some SDGs. The holding time limits were exceeded for samples analyzed in SDGs K1480, K1482, K1491, K1495, and K1497. For SDG K1497, the holding time was exceeded by more than twice the limit, and therefore all sample results associated with SDG K1497 (five samples) were qualified as rejected (R) and are considered unusable.

Aldrin was the most commonly detected pesticide in the method blanks. In addition, trace levels of endrin aldehyde, beta-BHC, and gamma-BHC were detected in one or more laboratory blanks. Beta-BHC was also detected at 0.026J ug/L in one field blank (in SDG K1594) collected in association with the core sediment samples. There was no impact to associated sample results from the blank detections because associated results were nondetect.

Matrix spike and LCS results had several noncompliant recoveries for several SDGs. In many of the cases there was no impact since the recoveries exceeded the upper control limit and associated sample results were nondetect. LCS and matrix spike QC results for toxaphene were not provided, and therefore toxaphene results for all samples in all SDGs were qualified as estimated (J). The field duplicate and laboratory duplicate results indicated acceptable precision.

Although results from five samples in SDG K1497 were rejected based on holding time exceedances, the majority of the pesticide sample results are acceptable for their intended use.

3.1.2.6 Metals – Sediment. For the metals data, QC results were compliant for most QC parameters. Antimony and calcium data for two SDGs were rejected based on low matrix spike recoveries. All other QC results indicate that the metals results are of acceptable quality for their intended project use. The following is a summary of the results of the assessment and the QC deficiencies noted during the assessment. The data that were rejected are provided in Table 3-3.

Detection limits for most metals were generally at or below those specified in the project SAP (DOE/RL-2008-11, Appendix A) with the exception of the following elements: calcium, iron, phosphorus, and zinc. In accordance with the guidance used for this DQA (HNF-20433), no action was taken with respect to the elevated detection limits.

The majority of the samples were analyzed within the holding times specified in the project SAP (DOE/RL-2008-11, Appendix A). Holding times were exceeded for mercury, which has a shorter holding time. For mercury, the holding time limit from collection to digestion was exceeded for samples in SDGs K1480, K1482, K1484, K1486, K1491, K1495, and K1497.

Mercury results for all samples in these SDGs were qualified as estimated (J) since the amount of time that had elapsed before they were processed was less than twice the holding time limit of 28 days.

Nickel, molybdenum, lead, and tin were the most common elements detected in the preparation blanks, indicating potential interferences during sample preparation and analysis. Since almost all of the detections were at trace levels, those elements detected at similar levels in samples (less than five times the blank concentration) were qualified as estimated nondetect (UJ). The elements detected in the preparation blanks that had the biggest impacts on detected sample results qualified as estimated nondetect were molybdenum, tin, and lead. SDG K1598 contained a field blank collected in association with sediment core samples in K1584. This was a deionized water sample collected to assess potential cross-contamination at the core processing facility. Although titanium was detected in the field blank at a concentration of 1.25 ug/L, titanium was not analyzed for in the sediment samples.

Equipment blanks were analyzed in association with SDGs K1480, K1557, K1580, and K1667. The results of the equipment blank were used to assess the effectiveness of decontamination procedures and the potential for carry-over contamination to transfer from the sampling equipment to the samples. No action was taken based on the equipment blank detections.

For many of the SDGs, LCS results for several elements exceeded the control limits and as a result, detected results for associated samples were qualified as estimated (J). In many cases, LCS results for lead, antimony, and silicon were below the lower control limit and associated sample results were qualified as estimated (J).

Matrix spike analysis was completed for sediment samples to identify any potential matrix effects on the concentrations of target elements. Most of the matrix spikes had recoveries of antimony below the lower control limit, suggesting a potential low bias to reported sample concentrations. Since the recovery of antimony was below 30% for the matrix spike sample analyzed with SDG K1524, the results for the six associated samples were qualified as rejected. For 14 samples in SDG K1491, calcium concentrations were also rejected based on a recovery below 30%. For other noncompliant results, the concentrations of the elements (i.e., iron and silicon) in the sample used for the spike analyses exceeded four times the spike concentration making the contributions from the spike insignificant relative to native amounts. No action was taken with respect to sample qualification in these cases. For several thallium matrix spike samples, the recovery was zero percent. The sample results associated with the low spike recovery would normally be rejected based on the low spike level. However, because the spike concentration was just above the instrument detection level (IDL), no action was taken. The spike concentrations used for all of the other analytes were significantly larger than the IDLs.

The RPDs between sample/duplicate pairs were acceptable for most of the laboratory and field duplicates. No action was taken based on noncompliant field duplicate results.

The majority of the QC results reviewed in association with the metals were compliant with specifications contained in the project SAP (DOE/RL-2008-11, Appendix A) and other guidance (HNF-20433), indicating that the metals data are acceptable for their intended project use. Antimony data reported in SDG K1524 and calcium data reported in SDG K1491 were rejected based on low matrix spike recoveries.

3.1.2.7 Hexavalent Chromium – Sediment. For the hexavalent chromium data, results from 12 SDGs were rejected based on holding time exceedances and/or low matrix spike recoveries. The remainder of the data is acceptable for its intended project use. The following is a summary of the results of the assessment and the QC deficiencies noted during the assessment. The data that were rejected are provided in Table 3-3.

Laboratory detection limits for hexavalent chromium met the level specified in the SAP (DOE/RL-2008-11, Appendix A). Holding times were exceeded for a number of SDGs. Nondetect sample results for the following SDGs were rejected due to holding time exceedances of more than twice the required limit of 24 hours: J00259, J00262, and J00263. Detected hexavalent chromium results for the following SDGs were qualified as estimated (J): J00256, J00257, J00258, J00263, and J00435. Holding time limits were exceeded by less than twice the holding time limit for SDGs J00544 and J00546. Associated results were qualified as estimated (J) based on this finding.

Laboratory preparation blank and LCS results were compliant for all SDGs. Matrix spike recoveries below 30% resulted in nondetect results being qualified as rejected (R) for many samples, including those in the following SDGs: J00242, J00246, J00259, J00334, J00342, J00355, J00425, J00544, and J00546. Detected sample results included in these SDGs were qualified as estimated (J). The matrix spike results indicate potential low bias to the reported sediment sample concentrations.

In summary, a significant number of hexavalent chromium results were rejected based on holding time exceedances and low matrix spike recoveries.

3.1.2.8 Diesel Range Organics – Sediment. DRO QC results were compliant for most QC parameters. None of the DRO data was rejected, and the data are acceptable for their intended project use. The following is a summary of the results of the assessment and minor QC deficiencies noted during the assessment.

With the exception of SDG K1495, samples in all SDGs were extracted prior to expiration of the 14-day holding time. Samples in SDG K1495 were extracted beyond the holding time, but not more than twice the holding time, and therefore all samples in this SDG were qualified as estimated (J). Detection limits were at or below the level specified in the SAP (DOE/RL-2008-11, Appendix A). Surrogate recoveries were in control for most sample analyses. Laboratory blanks were analyzed to determine potential interferences from preparation and analysis of the samples. DRO and motor oil were detected in several of these blanks. Several samples were impacted from the blank detections through the qualification of detected results as estimated nondetect. LCS recoveries were below the lower control limit for many samples, suggesting a low bias to sample concentrations. The recoveries of spiked concentrations of DRO were generally acceptable, suggesting that matrix interferences were not present in significant amounts. Field duplicate results suggest a high degree of variability in the concentrations reported for the DRO analyses. Based on comparisons to project QC criteria identified in the SAP, no major QC deficiencies were identified, and the data are acceptable for their intended project use.

3.1.2.9 Total Organic Carbon – Sediment. Total organic carbon (TOC) QC results were compliant for most QC parameters. None of the TOC data was rejected, and the data are acceptable for their intended project use. The following is a summary of the results of the assessment and minor QC deficiencies noted during the assessment.

Detection limit values reported for all samples were at or below the specification included in the SAP (DOE/RL-2008-11, Appendix A). Samples in the following SDGs were analyzed beyond the specified holding time of 28 days: K1482, K1491, K1495, K1497, K1557, K1558, and K1574. All samples in these groups were qualified as estimated (J) as a result of this finding. Trace TOC concentrations were detected in many of the associated laboratory blanks. There was no impact from these detections since all of the TOC concentrations were much greater than five times the blank concentrations. LCS, surrogate, and matrix spike recoveries were generally compliant. The results from comparison of sample results from those of corresponding duplicates indicate a high degree of variability. The results reflect heterogeneous concentrations of this analyte throughout the sediment matrix. Lab duplicate results were generally acceptable. Overall, the results of the DQA indicate that the data are acceptable for their intended project use.

3.1.3 Summary of Data Assessment Results for Island Soil

The following subsections present a summary of the results of the data assessment and the major and minor QC deficiencies identified during the data assessment for the island soil data. Five SDGs were included in this assessment. The majority of the data are acceptable for their intended project use. Those data that were rejected and unusable based on a major QC deficiency identified during the assessment are provided in Table 3-4.

3.1.3.1 Radionuclides – Soil. For radionuclides, QC results were compliant for most QC parameters. None of the radionuclide data was rejected, and the data are acceptable for their intended project use. The following is a summary of the results of the assessment and minor QC deficiencies identified during the assessment.

All samples were analyzed prior to expiration of the associated 6-month required holding time. RDLs and MDA levels were reviewed and determined to be at or below the levels specified in the project SAP (DOE/RL-2008-11, Appendix A). None of the method blanks contained concentrations of target analytes above corresponding detection limits. LCS results were compliant with respective criteria, indicating a positive correlation to the accuracy of reported sample concentrations. Several noncompliant tracer recovery results were reported for samples in several SDGs. The recoveries generally exceeded the 105% upper control limit and were generally associated with the isotopic analyses for thorium and uranium. Isotopic thorium tracer recoveries for several samples in SDG K1556 exceed the upper control limit, suggesting a potential high bias to thorium concentrations for these samples. For SDG K1554 the tracer recoveries for thorium and uranium also exceeded this limit. As a result, detected results for associated samples were qualified as estimated (J) based on this finding. Potential high bias was also indicated based on the thorium-230 tracer recovery for sample J18J33 in SDG K1566. The reported sample concentration was qualified as estimated (J) based on this result.

Laboratory duplicate samples were analyzed to measure the precision of reported results. The RPDs between the duplicate pairs generally indicated that there was an acceptable level of analytical precision. Matrix spike analyses were for the carbon-14 and tritium analyses. All carbon-14 and tritium sample results were qualified as estimated (J) based on this finding.

None of the radionuclide data was rejected, and the data are acceptable for their intended project use.

Table 3-4. Summary of Rejected Soil Data by Method. (2 Pages)

Analytical Method	Analyte	SDG Number	Sample Identification	Sample Date	Result	Units	Laboratory Qualifier	Validation Qualifier
Hexavalent chromium - 7196	Hexavalent chromium	K1554	J18B52	2/27/2009	0.22	mg/Kg	U	R
Hexavalent chromium - 7196	Hexavalent chromium	K1554	J18B54	2/27/2009	0.22	mg/Kg	U	R
Hexavalent chromium - 7196	Hexavalent chromium	K1554	J18B56	2/27/2009	0.22	mg/Kg	U	R
Hexavalent chromium - 7196	Hexavalent chromium	K1554	J18B57	2/27/2009	0.22	mg/Kg	U	R
Hexavalent chromium - 7196	Hexavalent chromium	K1554	J18B58	2/27/2009	0.23	mg/Kg	U	R
Hexavalent chromium - 7196	Hexavalent chromium	K1554	J18B59	2/27/2009	0.21	mg/Kg	U	R
Hexavalent chromium - 7196	Hexavalent chromium	K1554	J18B60	2/27/2009	0.22	mg/Kg	U	R
Hexavalent chromium - 7196	Hexavalent chromium	K1554	J18B62	2/27/2009	0.21	mg/Kg	U	R
Hexavalent chromium - 7196	Hexavalent chromium	K1554	J18B63	2/27/2009	0.23	mg/Kg	U	R
Hexavalent chromium - 7196	Hexavalent chromium	K1554	J18B64	2/27/2009	0.21	mg/Kg	U	R
Hexavalent chromium - 7196	Hexavalent chromium	K1554	J18B65	2/27/2009	0.21	mg/Kg	U	R
Hexavalent chromium - 7196	Hexavalent chromium	K1554	J18B66	2/27/2009	0.22	mg/Kg	U	R
Hexavalent chromium - 7196	Hexavalent chromium	K1554	J189W0	2/27/2009	0.23	mg/Kg	U	R
Hexavalent chromium - 7196	Hexavalent chromium	K1554	J189W1	3/2/2009	1.05	mg/Kg	U	R
Hexavalent chromium - 7196	Hexavalent chromium	K1554	J189Y1	3/2/2009	0.22	mg/Kg	U	R
Hexavalent chromium - 7196	Hexavalent chromium	K1556	J18B10	3/3/2009	0.23	mg/Kg	U	R
Hexavalent chromium - 7196	Hexavalent chromium	K1556	J18B11	3/3/2009	0.22	mg/Kg	U	R
Hexavalent chromium - 7196	Hexavalent chromium	K1556	J18B12	3/3/2009	0.21	mg/Kg	U	R
Hexavalent chromium - 7196	Hexavalent chromium	K1556	J18B13	3/3/2009	0.22	mg/Kg	U	R
Hexavalent chromium - 7196	Hexavalent chromium	K1556	J18B14	3/3/2009	0.22	mg/Kg	U	R
Hexavalent chromium - 7196	Hexavalent chromium	K1556	J18B20	3/3/2009	0.21	mg/Kg	U	R
Hexavalent chromium - 7196	Hexavalent chromium	K1556	J18B21	3/3/2009	0.22	mg/Kg	U	R
Hexavalent chromium - 7196	Hexavalent chromium	K1556	J18B22	3/3/2009	0.22	mg/Kg	U	R
Hexavalent chromium - 7196	Hexavalent chromium	K1556	J18B23	3/3/2009	0.22	mg/Kg	U	R
Hexavalent chromium - 7196	Hexavalent chromium	K1556	J18B24	3/3/2009	0.22	mg/Kg	U	R
Hexavalent chromium - 7196	Hexavalent chromium	K1556	J18B25	3/3/2009	0.22	mg/Kg	U	R
Hexavalent chromium - 7196	Hexavalent chromium	K1556	J18B26	3/3/2009	0.21	mg/Kg	U	R
Hexavalent chromium - 7196	Hexavalent chromium	K1556	J18B27	3/3/2009	0.23	mg/Kg	U	R
Hexavalent chromium - 7196	Hexavalent chromium	K1556	J18B28	3/3/2009	0.22	mg/Kg	U	R
Hexavalent chromium - 7196	Hexavalent chromium	K1556	J18B29	3/3/2009	0.22	mg/Kg	U	R
Hexavalent chromium - 7196	Hexavalent chromium	K1556	J18B32	3/3/2009	0.24	mg/Kg	U	R
Hexavalent chromium - 7196	Hexavalent chromium	K1556	J18B33	3/3/2009	0.22	mg/Kg	U	R
Hexavalent chromium - 7196	Hexavalent chromium	K1556	J18B34	3/3/2009	0.22	mg/Kg	U	R
Hexavalent chromium - 7196	Hexavalent chromium	K1556	J18B35	3/3/2009	0.45	mg/Kg	U	R
Hexavalent chromium - 7196	Hexavalent chromium	K1556	J18B36	3/3/2009	0.23	mg/Kg	U	R
SVOC - 8270	2,4,5-Trichlorophenol	K1551	J189X4	2/26/2009	1.86	mg/Kg	U	R
SVOC - 8270	2,4,5-Trichlorophenol	K1551	J189X5	2/26/2009	1.76	mg/Kg	U	R
SVOC - 8270	2,4,6-Trichlorophenol	K1551	J189X5	2/26/2009	1.76	mg/Kg	U	R
SVOC - 8270	2,4,6-Trichlorophenol	K1551	J189X4	2/26/2009	1.86	mg/Kg	U	R

Table 3-4. Summary of Rejected Soil Data by Method. (2 Pages)

Analytical Method	Analyte	SDG Number	Sample Identification	Sample Date	Result	Units	Laboratory Qualifier	Validation Qualifier
SVOC - 8270	2,4-Dichlorophenol	K1551	J189X4	2/26/2009	1.86	mg/Kg	U	R
SVOC - 8270	2,4-Dichlorophenol	K1551	J189X5	2/26/2009	1.76	mg/Kg	U	R
SVOC - 8270	4-Bromophenylphenyl ether	K1551	J189X4	2/26/2009	1.86	mg/Kg	U	R
SVOC - 8270	4-Bromophenylphenyl ether	K1551	J189X5	2/26/2009	1.76	mg/Kg	U	R
SVOC - 8270	4-Chlorophenylphenyl ether	K1551	J189X5	2/26/2009	1.76	mg/Kg	U	R
SVOC - 8270	4-Chlorophenylphenyl ether	K1551	J189X4	2/26/2009	1.86	mg/Kg	U	R
SVOC - 8270	Acenaphthene	K1554	J18B48	2/27/2009	0.361	mg/Kg	U	R
SVOC - 8270	Acenaphthylene	K1554	J18B48	2/27/2009	0.361	mg/Kg	U	R
SVOC - 8270	Anthracene	K1554	J18B48	2/27/2009	0.361	mg/Kg	U	R
SVOC - 8270	Benzo(a)anthracene	K1554	J18B48	2/27/2009	0.361	mg/Kg	U	R
SVOC - 8270	Benzo(a)pyrene	K1554	J18B48	2/27/2009	0.361	mg/Kg	U	R
SVOC - 8270	Benzo(b)fluoranthene	K1554	J18B48	2/27/2009	0.361	mg/Kg	U	R
SVOC - 8270	Benzo(ghi)perylene	K1554	J18B48	2/27/2009	0.361	mg/Kg	U	R
SVOC - 8270	Benzo(k)fluoranthene	K1554	J18B48	2/27/2009	0.361	mg/Kg	U	R
SVOC - 8270	Bis(2-chloro-1-methylethyl)ether	K1551	J189X5	2/26/2009	1.76	mg/Kg	U	R
SVOC - 8270	Bis(2-chloro-1-methylethyl)ether	K1551	J189X4	2/26/2009	1.86	mg/Kg	U	R
SVOC - 8270	Bis(2-Chloroethoxy)methane	K1551	J189X5	2/26/2009	1.76	mg/Kg	U	R
SVOC - 8270	Bis(2-Chloroethoxy)methane	K1551	J189X4	2/26/2009	1.86	mg/Kg	U	R
SVOC - 8270	Bis(2-chloroethyl) ether	K1551	J189X4	2/26/2009	1.86	mg/Kg	U	R
SVOC - 8270	Bis(2-chloroethyl) ether	K1551	J189X5	2/26/2009	1.76	mg/Kg	U	R
SVOC - 8270	Chrysene	K1554	J18B48	2/27/2009	0.361	mg/Kg	U	R
SVOC - 8270	Fluoranthene	K1554	J18B48	2/27/2009	0.361	mg/Kg	U	R
SVOC - 8270	Fluorene	K1554	J18B48	2/27/2009	0.361	mg/Kg	U	R
SVOC - 8270	Indeno(1,2,3-cd)pyrene	K1554	J18B48	2/27/2009	0.361	mg/Kg	U	R
SVOC - 8270	Naphthalene	K1554	J18B48	2/27/2009	0.361	mg/Kg	U	R
SVOC - 8270	Pentachlorophenol	K1551	J189X4	2/26/2009	9.28	mg/Kg	U	R
SVOC - 8270	Pentachlorophenol	K1551	J189X5	2/26/2009	8.81	mg/Kg	U	R
SVOC - 8270	Phenanthrene	K1554	J18B48	2/27/2009	0.361	mg/Kg	U	R
SVOC - 8270	Pyrene	K1554	J18B48	2/27/2009	0.361	mg/Kg	U	R

J = estimated
R = rejected
SDG = sample deliver group
SVOC = semivolatile organic compound
U = nondetect
µg/kg = micrograms per kilogram

3.1.3.2 Semivolatile Organic Compounds – Soil. For the SVOCs, QC results were compliant for most QC parameters. Some of the soil data (associated results from three samples) were rejected based on surrogate recoveries below 10%; however, the QC results from the SVOC analyses indicate that the majority of the results are of acceptable quality for their intended project use. The following is a summary of the results of the assessment and QC deficiencies noted during the assessment. The data that were rejected are provided in Table 3-4.

Detection limits were reviewed and found to be generally at or below those specified in the SAP (DOE/RL-2008-11, Appendix A). RDLs which exceeded those specified in the SAP include hexachlorobenzene, 2-chloroaniline, 2-nitroaniline, 2,4-dinitrophenol, 4-nitrophenol, 4-nitroaniline, pentachlorophenol, and 3,3'-dichlorobenzidine. All of the soil samples were extracted and analyzed prior to holding time expirations.

The majority of surrogate recoveries were compliant for all samples, indicating that instrument performance during sample analysis was acceptable. However, since the recovery of the surrogate 2,4,6-tribromophenol was less than 10% for samples J189X4 and J189X5 (SDG K1551), sample results for several associated acid fraction compounds were rejected. Recovery of the surrogate terphenyl – d14 was also less than 10% for the sample J18B48 (SDG K1554). Based on the noncompliant recovery, compounds associated with this surrogate, consisting primarily of polycyclic aromatic hydrocarbons, were qualified as rejected (R).

Bis(2-ethylhexyl)phthalate was detected in one laboratory blank associated with SDG K1554, indicating potential introductions from the laboratory during sample preparation and analysis. Phthalates have been classified by the EPA as common laboratory contaminants. Based on the blank detection, several samples with concentrations less than 10 times the concentration detected in the blank, were qualified as estimated nondetect (UJ).

LCS and matrix spike recoveries indicate generally compliant results but also indicate extraction difficulties for some of the target SVOCs. In particular, compounds including 1,3-dichlorobenzene, 1,4-dichlorobenzene, 2,4-dinitrophenol, 4-chloroaniline, 4-methylphenol, 3-nitroaniline, 3,3'-dichlorobenzidine, hexachlorocyclopentadiene, hexachlorobutadiene, pentachlorophenol, and hexachloroethane, frequently had recoveries that were below the lower control limit, demonstrating a potential low bias to sample results. LCS and matrix spike recoveries below the lower control limit resulted in associated data being qualified as estimated (J).

Field duplicate comparisons with the conjugate samples generally indicate favorable precision because almost all of the compounds were nondetect in both samples. Laboratory duplicates were not analyzed.

The DQA identified compounds with extraction problems resulting in extremely low recoveries. A relatively small percentage of the data was rejected based on surrogate recoveries, and the QC results from the SVOC analyses indicate that the remaining data are of sufficient quality for their intended project use.

3.1.3.3 Polychlorinated Biphenyls – Soil. For the PCB data, QC results were compliant for most QC parameters. The QC results demonstrate that the data are of acceptable quality for their intended project use. None of the PCB data was rejected. The following is a summary of the results of the assessment and the QC deficiencies noted during the assessment.

Detection limits reported for all Aroclors were below the specifications listed in the SAP (DOE/RL-2008-11, Appendix A). Samples were generally extracted within specified holding times with the exception of sample J18B00 in SDG K1554. Concentrations of all Aroclors were qualified as estimated for J18B00 based on the holding time exceedance. Other QC parameters including field duplicate, surrogate, LCS and matrix spike recoveries were generally compliant.

Based on satisfactory QC results, the data associated with the PCB analyses are acceptable for their intended project use.

3.1.3.4 Chlorinated Pesticides – Soil. For the pesticide data, QC results were compliant for most QC parameters. All of the QC results from the pesticide analyses indicate that the results are of acceptable quality for their intended project use. None of the pesticide data was rejected. The following is a summary of the results of the assessment and QC deficiencies noted during the assessment.

Detection limits were generally at or below those specified in the SAP (DOE/RL-2008-11, Appendix A). The holding time limit was exceeded for one sample; J18B00 (SDG K1554). Since the elapsed time prior to sample extraction was less than twice the limit, all pesticide compounds associated with the sample J18B00 were qualified as estimated (J).

Aldrin and beta-BHC were detected in laboratory blanks associated with SDG K1554 and K1551, respectively. There was no impact to any sample results since neither compound was detected in any samples. Matrix spike and LCS results for some samples had noncompliant recoveries of methoxychlor, 4,4’-DDD, and/or 4,4’-DDE that exceeded the upper control limit, indicating a potential high bias to sample concentrations. In most of the cases there was no impact to sample results since these compounds were not detected. However, a detected concentration of methoxychlor for sample J189X6 (SDG K1551) was qualified as estimated (J) based on the matrix spike results. For SDG K1566, the matrix spike recovery of delta-BHC was below the lower control limit. All associated sample results were qualified as estimated (J) to reflect the potential low bias indicated by the matrix spike result. LCS and matrix spike QC results for toxaphene were not provided, and therefore toxaphene results for all samples in all SDGs were qualified as estimated (J).

Laboratory duplicates were not analyzed in any of the soil SDGs. In most cases, the field duplicate results indicated acceptable levels of precision. However, RPDs exceeded criteria for 4,4’-DDD, 4,4’-DDT, and methoxychlor indicating potential heterogeneity in the soil matrix where these samples were collected. No action was taken based on RPDs that exceeded QC criteria.

Since none of the data was rejected, the pesticide sample results are acceptable for their intended project use.

3.1.3.5 Metals – Soil. For the metals data, QC results were compliant for most QC parameters. None of the metals data was rejected during the data assessment, and the data are sufficient for their intended project use. The following is a summary of the results of the assessment and QC deficiencies noted during the assessment.

Detection limits for most metals were generally at or below those specified in the SAP with the exception of the following elements: calcium, iron, phosphorus, and zinc. There was no action taken based on the detection limit values. The samples were analyzed within the holding times specified in the project SAP (DOE/RL-2008-11, Appendix A).

Beryllium, nickel, molybdenum, lead, and tin were the most common elements detected in the preparation blank, indicating potential interferences during sample preparation and analysis. Since almost all of the detections were at trace levels, those elements detected at similar levels in samples (less than five times the blank concentration) were qualified as estimated nondetect (UJ).

Equipment blanks were analyzed in association with SDGs K1551, K1556, and K1668. The equipment blank results were used to assess the potential for contamination of the samples from the sampling equipment. Based on the guidance used for this DQA (HNF-20433), no action was taken based on the equipment blank detections.

LCS results associated with the metals analyses in all SDGs were greater than the upper control limit for several elements including antimony, arsenic, chromium, cobalt, iron, manganese, titanium, vanadium, and/or zinc. Based on these findings, associated detected sample concentrations were qualified as estimated (J) based on the LCS results. A low bias was indicated for lead with a recovery below the lower control limit and associated results were qualified as estimated (J).

Matrix spike analysis was completed to identify any potential matrix effects on the concentrations of target elements. Almost all of the matrix spikes had recoveries of antimony below the lower control limit, and associated sample results were qualified as estimated (J) to reflect a potential low bias.

The RPDs between sample/duplicate pairs were acceptable for most of the laboratory duplicates. If the RPD was greater than 30% for a particular element, all associated results were qualified as estimated (J). The field duplicate associated with the SDG K1556 analyses indicated poor precision for the silicon concentrations. No action was taken based on the noncompliant field duplicate results.

No major QC deficiencies were identified, and the data are of sufficient quality for their intended project use.

3.1.3.6 Hexavalent Chromium – Soil. For the hexavalent chromium data, QC results were compliant for most QC parameters, although results were qualified as rejected for 35 of 82 samples based on low matrix spike recoveries. The following is a summary of the results of the assessment and QC deficiencies noted during the assessment. The rejected data are summarized in Table 3-4.

Detection limits were at or below the level specified in the SAP (DOE/RL-2008-11, Appendix A). Analysis for hexavalent chromium for samples in SDGs K1556 and K1566 took place after a period of less than two times the holding time limit had elapsed. Based on this finding, all results for associated samples were qualified as estimated (J).

Hexavalent chromium method blank and LCS results were compliant for all SDGs. Matrix spike recoveries of hexavalent chromium for analyses completed with SDG K1554 and K1556 were below 30%, suggesting a strong matrix effect. Nondetect results for associated samples were qualified as rejected (R) and detected results as estimated (J). Results from 35 samples were rejected.

While QC results were compliant for most QC parameters, results were qualified as rejected (R) for several samples based on low matrix spike recoveries.

3.1.3.7 Diesel Range Organics – Soil. DRO QC results were compliant for most QC parameters. None of the DRO data was rejected, and the data are acceptable for their intended project use. The following is a summary of the results of the assessment and QC deficiencies noted during the assessment.

The majority of the samples were extracted prior to expiration of the 14 day holding time. The only sample that was extracted beyond the holding time limit was J18JC0-A. Because this sample was analyzed less than twice the holding time limit, the DRO result was qualified as estimated (J). Detection limits were at or below the level specified in the SAP (DOE/RL-2008-11, Appendix A).

Surrogate recoveries were acceptable for most sample analyses. The surrogate recovery for one sample in SDG K1556 (J18B23) exceeded the upper control limit, indicating a potential high bias to the reported concentration. Since DRO were reported as nondetect in this sample there was no action related to this result. Laboratory blanks were analyzed to determine potential interferences from preparation and analysis of the samples. Motor oil was detected in several of these blanks including ones associated with SDGs K1551, K1554, and K1556. Detected motor oil results for several samples were qualified as estimated nondetect (UJ) to eliminate the false-positive potential indicated by the blank data. Matrix spike sample recoveries were below the lower control limit for SDG K1566, suggesting a potential low bias to some of the sample concentrations. The recoveries of LCS for all SDGs were acceptable, indicating that sample concentrations were accurately quantified. Based on the field duplicate results associated with SDG K1554, a high degree of variability is indicated for sample collection of the DRO and motor oil soil samples. The results may be indicative of heterogeneous concentrations of these analytes in the soil matrix.

No major QC deficiencies were identified, and the data are of sufficient quality for their intended project use.

3.1.3.8 Total Organic Carbon – Soil. TOC QC results were compliant for most QC parameters. None of the TOC data was rejected, and the data are acceptable for their intended project use. The following is a summary of the results of the assessment and minor QC deficiencies noted during the assessment.

Detection limit values reported for all samples were at or below the specification included in the SAP (DOE/RL-2008-11, Appendix A). Samples analyzed in SDGs K1556 and K1566 were analyzed beyond the specified holding time of 28 days. TOC results for samples in these SDGs were qualified as estimated (J) based on this finding. Trace TOC concentrations were detected in many of the associated laboratory blanks. There was no impact from these detections since all of the TOC concentrations were greater than five times the blank concentrations. LCS, surrogate and matrix spike recoveries were generally compliant. However, SDG K1566 TOC sample results were qualified as estimated (J) since no matrix spike sample was analyzed. For TOC analyses associated with SDG K1554, a comparison of sample results with those of corresponding field duplicates indicate a high degree of variability. No action was taken based on the field duplicate results. Laboratory duplicate results were generally acceptable. Overall, the results of the DQA indicate that the data are acceptable for their intended project use.

3.1.4 Summary of Data Validation Results for Surface Water, Sediment, and Soil

The third-party data validation packages for surface water, sediment, and soil samples collected in 2008/2009 (excluding PCB congener data packages) are included in Appendix F (on CD). Twelve SDGs were validated as listed in Table 2-5. These validation packages summarize the data validation that was completed for a given SDG along with the QC deficiencies, if any, that were identified. With few exceptions, only minor QC deficiencies were identified in the data reviewed, and the data are suitable for their intended use in the human health and ecological risk assessments. Data that were deemed unusable for decision-making purposes were rejected (qualified “R”) based on a major QC deficiency identified during data validation. The only data rejected as a result of validation were the hexavalent chromium results from sediment samples in SDG J00350. These results were rejected based on low matrix spike recoveries. A summary of this rejected data is presented in Table 3-2.

3.1.4.1 Summary of PCB Congener Data Validation Results. The third-party data validation report prepared for PCB congeners is included in Appendix G (on CD). This report summarizes the data validation that was completed along with the QC deficiencies that were identified. Two surface water samples, four sediment samples, and two soil samples (from four SDGs) were validated as presented in Table 2-6. Only minor QC deficiencies were identified in the data reviewed. The maximum holding time from collection to extraction as specified in the SAP (7 days for aqueous samples and 14 days for solids) was exceeded for all samples (DOE/RL-2008-11, Appendix A). However, EPA Method 1668B specifies a maximum holding time of 1 year from sample collection to extraction if the samples are stored in accordance with the specified requirements. Based on the professional judgment of the validator, the samples were not qualified based on holding time exceedances. The data are suitable for their intended use in the human health and ecological risk assessments.

3.1.5 Summary of PCB Congener Preliminary QC Review

Surface water (SDG J00543), sediment (SDG J00264), and island soil (SDG J00420) SDGs that were analyzed for PCB congeners and were not otherwise assessed or third-party validated are listed in Table 2-8. A preliminary review was completed for these SDGs that consisted of a review of tabulated quality control results; the narrative provided by the analytical laboratory, and the method blank results was performed as described in Section 2.1.2. Based on the quality control review results, data qualifiers were applied to the results as described in Section 2.1. The QC review worksheets are provided in Appendix H.

All samples were extracted and analyzed within an acceptable holding time period. Surrogate recoveries for all samples were also satisfactory. LCS recoveries of target PCB congeners were compliant. Several target PCB congeners were detected in the laboratory method blanks. In most cases these concentrations were near the detection limit values. In order to differentiate similar results of the same congeners in associated samples, sample concentrations less than five times the blank detection were qualified as nondetect (UJ).

The QC review did not reveal any major quality control deficiencies for any of the samples. None of the data was rejected, and the data are acceptable for their intended project use.

3.1.6 Split-Sample Results for Surface Water and Sediment Samples

Comparison of Washington Closure Hanford (WCH) surface water and sediment data relative to split-samples collected by EPA and Ecology was performed as part of the data quality assessment. Five surface water split-samples were collected by EPA and analyzed for inductively coupled plasma metals, and radionuclides including gross alpha/beta, GEA, isotopic americium, isotopic plutonium, isotopic thorium, isotopic uranium, and tritium. Analytical results were provided by EPA on September 14, 2009. Four surface water split-samples were collected by Ecology in October and November 2008, and analyzed by Paragon Analytics for inductively coupled plasma metals, total mercury, total uranium, and SVOCs. Eight sediment split-samples were collected by EPA and analyzed for metals, and radionuclides including GEA and isotopic uranium. Analytical results were provided by EPA on September 14, 2009. Five sediment split-samples were collected by Ecology in December 2008, and February 2009, and analyzed for metals, total mercury, total uranium, and SVOCs.

While there are no specific criteria for the comparison of inter-laboratory or inter-agency splits set forth in the SAP (DOE/RL-2008-11, Appendix A), a common means of evaluating comparability between data sets is calculating the RPD. The formula for calculating the RPD is RPD = 100* Absolute Value(X1-X2)/((X1+X2)/2) where X1 and X2 are the two measurements being compared. For this evaluation RPDs were not calculated if either or both of the two measurements (WCH data, EPA/Ecology split-sample result) were negative, zero, or nondetect. As outlined in the SAP (DOE/RL-2008-11, Appendix A), calculated RPDs acceptance criteria (for two detected results) should be less than or equal to 20% for water field duplicates and 30% for solids. Split samples were handled by separate field crews, shipped to different locations and analyzed by independent laboratories, and in the case of EPA radionuclides, these samples were analyzed by different methods. Therefore, the acceptance criterion is expanded to 35% for water and 45% for solids to accommodate the inherent variability introduced.

For the majority of analytes at each sample location, either the WCH result and/or the split-sample result were nondetect, and results were negative or zero for several radiological analyses. Therefore, RPDs were not calculated for these analytes.

Surface water sample RPDs were calculated for the analytes presented in Table 3-5. In general, RPDs for metals have good agreement. Thorium-230, uranium-233/234, and uranium-238 RPDs had wider variability exceeding both the 20% and 35% RPD acceptance criteria. This is most likely the result of the use of different analytical methods by EPA for radioisotope-specific analysis of radionuclides. Therefore, the use of RPDs to assess data comparability may be limited for the radioisotope-specific radionuclide evaluation.

Sediment split-sample RPDs were calculated for the analytes presented in Table 3-5. The majority of the RPDs calculated (86%) were within the 45% criterion. The criterion was exceeded for the following elements in one or more samples: aluminum, arsenic, barium, beryllium, calcium, chromium, manganese, potassium, sodium, vanadium and zinc, cesium-137, potassium-40, radium-226, and uranium-238. RPDs that exceeded criteria ranged from 46% to168%.

Table 3-5. Surface Water and Sediment Split-Sample Relative Percent Difference. (9 Pages)

Sample Number	SDG Number	Analyte	Concentration	Units	Split-Sample Collected By	Split-Sample Number	Split-Sample Concentration	Relative % Difference
Surface Water								
J17RJ2	K1421	Calcium	18,700	µg/L	EPA	J17RX9	18,800	0.5%
J17RJ2	K1421	Magnesium	4,510	µg/L	EPA	J17RX9	4,920	8.7%
J17RJ2	K1421	Uranium-233/234	0.208	pCi/L	EPA	J17RX9	0.277	28.5%
J17RJ2	K1421	Uranium-238	0.233	pCi/L	EPA	J17RX9	0.179	26.2%
J17RJ3	K1421	Calcium	18,800	µg/L	EPA	J17RX8	18,700	0.5%
J17RJ3	K1421	Magnesium	4,490	µg/L	EPA	J17RX8	4,810	6.9%
J17RJ3	K1421	Uranium-233/234	0.123	pCi/L	EPA	J17RX8	0.265	73.2%
J17RJ3	K1421	Uranium-238	0.218	pCi/L	EPA	J17RX8	0.089	84.0%
J17RP1	K1427	Calcium	18,600	µg/L	WDOE	J17RX5	18,000	3.3%
J17RP1	K1427	Magnesium	4,430	µg/L	WDOE	J17RX5	4,300	3.0%
J17RP1	K1427	Sodium	2,040	µg/L	WDOE	J17RX5	1,900	7.1%
J17RR1	K1427	Calcium	18,700	µg/L	WDOE	J17RX6	19,000	1.6%
J17RR1	K1427	Magnesium	4,450	µg/L	WDOE	J17RX6	4,400	1.1%
J17RR1	K1427	Sodium	2,050	µg/L	WDOE	J17RX6	2,000	2.5%
J17RR2	K1455	Aluminum	26.8	µg/L	EPA	J17RY0	26.1	2.6%
J17RR2	K1455	Barium	29.5	µg/L	EPA	J17RY0	27.6	6.7%
J17RR2	K1455	Calcium	18,300	µg/L	EPA	J17RY0	18,700	2.2%
J17RR2	K1455	Iron	34	µg/L	EPA	J17RY0	43.2	23.8%
J17RR2	K1455	Magnesium	4,780	µg/L	EPA	J17RY0	4,990	4.3%
J17RR2	K1455	Manganese	2.9	µg/L	EPA	J17RY0	2.81	3.2%
J17RR2	K1455	Potassium	760	µg/L	EPA	J17RY0	791	4.0%
J17RR2	K1455	Sodium	2,200	µg/L	EPA	J17RY0	2,400	8.7%
J17RR2	K1455	Vanadium	1.8	µg/L	EPA	J17RY0	0.52	110.3%
J17RR2	K1455	Uranium-238	0.234	pCi/L	EPA	J17RY0	0.151	43.1%
J17RT9	K1430	Calcium	17,000	µg/L	WDOE	J17RX7	18,000	5.7%
J17RT9	K1430	Magnesium	4,300	µg/L	WDOE	J17RX7	4,500	4.5%
J17RT9	K1430	Sodium	2,380	µg/L	WDOE	J17RX7	2,100	12.5%
J17TJ4	K1428	Aluminum	41.4	µg/L	EPA	J17TD5	36.8	11.8%
J17TJ4	K1428	Barium	28.9	µg/L	EPA	J17TD5	28.4	1.7%
J17TJ4	K1428	Calcium	17,600	µg/L	EPA	J17TD5	18,700	6.1%
J17TJ4	K1428	Iron	59.9	µg/L	EPA	J17TD5	65.3	8.6%
J17TJ4	K1428	Magnesium	4,380	µg/L	EPA	J17TD5	4,830	9.8%
J17TJ4	K1428	Manganese	4	µg/L	EPA	J17TD5	4.29	7.0%
J17TJ4	K1428	Potassium	799	µg/L	EPA	J17TD5	780	2.4%
J17TJ4	K1428	Sodium	2,460	µg/L	EPA	J17TD5	2,370	3.7%

Table 3-5. Surface Water and Sediment Split-Sample Relative Percent Difference. (9 Pages)

Sample Number	SDG Number	Analyte	Concentration	Units	Split-Sample Collected By	Split-Sample Number	Split-Sample Concentration	Relative % Difference
J17TJ4	K1428	Zinc	4.9	µg/L	EPA	J17TD5	1.53	104.8%
J17TJ4	K1428	Thorium-230	0.286	pCi/L	EPA	J17TD5	0.0384	152.7%
J17TJ4	K1428	Uranium-233/234	0.3	pCi/L	EPA	J17TD5	0.279	7.3%
J17TJ4	K1428	Uranium-238	0.236	pCi/L	EPA	J17TD5	0.126	60.8%
J17TJ6	K1439	Calcium	17,700	µg/L	WDOE	J17TD4	21,000	17.1%
J17TJ6	K1439	Magnesium	4,420	µg/L	WDOE	J17TD4	5,200	16.2%
J17TJ6	K1439	Sodium	2,380	µg/L	WDOE	J17TD4	2,300	3.4%
J17TK8	K1453	Aluminum	112	µg/L	EPA	J17TD6	86.4	25.8%
J17TK8	K1453	Barium	29.4	µg/L	EPA	J17TD6	28.1	4.5%
J17TK8	K1453	Calcium	20,200	µg/L	EPA	J17TD6	19,800	2.0%
J17TK8	K1453	Copper	2.1	µg/L	EPA	J17TD6	0.8	89.7%
J17TK8	K1453	Iron	130	µg/L	EPA	J17TD6	104	22.2%
J17TK8	K1453	Magnesium	5,730	µg/L	EPA	J17TD6	5,980	4.3%
J17TK8	K1453	Manganese	9.3	µg/L	EPA	J17TD6	9.1	2.2%
J17TK8	K1453	Potassium	1,390	µg/L	EPA	J17TD6	1,410	1.4%
J17TK8	K1453	Sodium	7,040	µg/L	EPA	J17TD6	7,230	2.7%
J17TK8	K1453	Vanadium	4.3	µg/L	EPA	J17TD6	1.73	85.2%
J17TK8	K1453	Thorium-230	0.123	pCi/L	EPA	J17TD6	0.0136	160.2%
J17TK8	K1453	Uranium-233/234	0.401	pCi/L	EPA	J17TD6	0.524	26.6%
J17TK8	K1453	Uranium-238	0.401	pCi/L	EPA	J17TD6	0.44	9.3%
Sediment								
J17V94	K1479	Potassium	2,022.1	mg/kg	EPA	J17Y57	4,390	73.86%
J17V94	K1479	Aluminum	15,549.6	mg/kg	EPA	J17Y57	3,020	134.95%
J17V94	K1479	Iron	23,801.8	mg/kg	EPA	J17Y57	33,000	32.39%
J17V94	K1479	Lead	31.4	mg/kg	EPA	J17Y57	41.3	27.32%
J17V94	K1479	Magnesium	8,286.3	mg/kg	EPA	J17Y57	11,500	32.48%
J17V94	K1479	Manganese	405.8	mg/kg	EPA	J17Y57	558	31.59%
J17V94	K1479	Nickel	34.1	mg/kg	EPA	J17Y57	40.3	16.67%
J17V94	K1479	Sodium	299.4	mg/kg	EPA	J17Y57	1,320	126.05%
J17V94	K1479	Barium	130.9	mg/kg	EPA	J17Y57	214	48.16%
J17V94	K1479	Beryllium	0.3	mg/kg	EPA	J17Y57	0.8	76.11%
J17V94	K1479	Cadmium	4.8	mg/kg	EPA	J17Y57	5.4	12.12%
J17V94	K1479	Chromium	34.1	mg/kg	EPA	J17Y57	54.3	45.70%
J17V94	K1479	Cobalt	8.9	mg/kg	EPA	J17Y57	11.9	29.22%
J17V94	K1479	Copper	39.9	mg/kg	EPA	J17Y57	45	12.02%
J17V94	K1479	Vanadium	49.8	mg/kg	EPA	J17Y57	72.1	36.61%

Table 3-5. Surface Water and Sediment Split-Sample Relative Percent Difference. (9 Pages)

Sample Number	SDG Number	Analyte	Concentration	Units	Split-Sample Collected By	Split-Sample Number	Split-Sample Concentration	Relative % Difference
J17V94	K1479	Zinc	402.4	mg/kg	EPA	J17Y57	500	21.64%
J17V94	K1479	Calcium	5,660.6	mg/kg	EPA	J17Y57	9,860	54.11%
J17V94	K1479	Cesium-137	0.24	pCi/g	EPA	J17Y57	0.27	10.89%
J17V94	K1479	Potassium-40	13.0	pCi/g	EPA	J17Y57	13.70	5.57%
J17V94	K1479	Radium-228	1.09	pCi/g	EPA	J17Y57	1.10	0.80%
J17WB0	K1482	Potassium	1,992.7	mg/kg	WDOE	J17YR4	1,400	34.94%
J17WB0	K1482	Aluminum	24,265.7	mg/kg	WDOE	J17YR4	12,000	67.64%
J17WB0	K1482	Iron	28,122.5	mg/kg	WDOE	J17YR4	18,000	43.89%
J17WB0	K1482	Lead	13.2	mg/kg	WDOE	J17YR4	12	9.47%
J17WB0	K1482	Magnesium	7,167.2	mg/kg	WDOE	J17YR4	5,000	35.62%
J17WB0	K1482	Manganese	744.0	mg/kg	WDOE	J17YR4	270	93.50%
J17WB0	K1482	Nickel	17.2	mg/kg	WDOE	J17YR4	14	20.48%
J17WB0	K1482	Sodium	202.5	mg/kg	WDOE	J17YR4	200	1.23%
J17WB0	K1482	Arsenic	7.9	mg/kg	WDOE	J17YR4	4	58.53%
J17WB0	K1482	Barium	173.6	mg/kg	WDOE	J17YR4	110	44.83%
J17WB0	K1482	Beryllium	1.2	mg/kg	WDOE	J17YR4	1	19.80%
J17WB0	K1482	Chromium	25.4	mg/kg	WDOE	J17YR4	14	57.83%
J17WB0	K1482	Cobalt	7.8	mg/kg	WDOE	J17YR4	7.1	9.32%
J17WB0	K1482	Copper	21.2	mg/kg	WDOE	J17YR4	16	28.01%
J17WB0	K1482	Vanadium	55.4	mg/kg	WDOE	J17YR4	30	59.55%
J17WB0	K1482	Zinc	65.9	mg/kg	WDOE	J17YR4	41	46.57%
J17WB0	K1482	Calcium	11,875.7	mg/kg	WDOE	J17YR4	10,000	17.15%
J17WJ3	K1482	Potassium	1,948.2	mg/kg	EPA	J17Y58	2,690	31.99%
J17WJ3	K1482	Aluminum	17,350.8	mg/kg	EPA	J17Y58	34,600	66.41%
J17WJ3	K1482	Iron	21,155.8	mg/kg	EPA	J17Y58	30,200	35.22%
J17WJ3	K1482	Lead	12.7	mg/kg	EPA	J17Y58	14	8.47%
J17WJ3	K1482	Magnesium	5,327.0	mg/kg	EPA	J17Y58	6,260	16.10%
J17WJ3	K1482	Manganese	162.9	mg/kg	EPA	J17Y58	181	10.55%
J17WJ3	K1482	Nickel	13.5	mg/kg	EPA	J17Y58	13	2.78%
J17WJ3	K1482	Sodium	640.8	mg/kg	EPA	J17Y58	923	36.10%
J17WJ3	K1482	Barium	75.5	mg/kg	EPA	J17Y58	102	29.87%
J17WJ3	K1482	Beryllium	1.1	mg/kg	EPA	J17Y58	1.4	21.88%
J17WJ3	K1482	Cadmium	0.2	mg/kg	EPA	J17Y58	0.12	48.10%
J17WJ3	K1482	Chromium	24.0	mg/kg	EPA	J17Y58	28	13.39%
J17WJ3	K1482	Cobalt	8.1	mg/kg	EPA	J17Y58	7.9	2.78%
J17WJ3	K1482	Copper	17.5	mg/kg	EPA	J17Y58	16	8.97%

Table 3-5. Surface Water and Sediment Split-Sample Relative Percent Difference. (9 Pages)

Sample Number	SDG Number	Analyte	Concentration	Units	Split-Sample Collected By	Split-Sample Number	Split-Sample Concentration	Relative % Difference
J17WJ3	K1482	Vanadium	40.8	mg/kg	EPA	J17Y58	62	40.49%
J17WJ3	K1482	Zinc	63.2	mg/kg	EPA	J17Y58	78	21.15%
J17WJ3	K1482	Calcium	4,961.7	mg/kg	EPA	J17Y58	5,900	17.28%
J17WJ3	K1482	Potassium-40	17.2	pCi/g	EPA	J17Y58	20.10	15.56%
J17WJ3	K1482	Radium-228	1.4	pCi/g	EPA	J17Y58	1.71	16.53%
J17XR9	K1524	Potassium	2,147.3	mg/kg	WDOE	J17YR8	1,600	29.21%
J17XR9	K1524	Aluminum	17,241.9	mg/kg	WDOE	J17YR8	11,000	44.20%
J17XR9	K1524	Iron	28,275.8	mg/kg	WDOE	J17YR8	27,000	4.62%
J17XR9	K1524	Lead	19.6	mg/kg	WDOE	J17YR8	19	3.33%
J17XR9	K1524	Magnesium	6,378.0	mg/kg	WDOE	J17YR8	5,400	16.61%
J17XR9	K1524	Manganese	793.0	mg/kg	WDOE	J17YR8	700	12.46%
J17XR9	K1524	Nickel	22.5	mg/kg	WDOE	J17YR8	21	7.05%
J17XR9	K1524	Sodium	391.2	mg/kg	WDOE	J17YR8	220	56.02%
J17XR9	K1524	Arsenic	7.9	mg/kg	WDOE	J17YR8	6.3	22.64%
J17XR9	K1524	Barium	147.5	mg/kg	WDOE	J17YR8	130.0	12.64%
J17XR9	K1524	Cadmium	2.4	mg/kg	WDOE	J17YR8	2.0	17.40%
J17XR9	K1524	Chromium	25.7	mg/kg	WDOE	J17YR8	20	25.04%
J17XR9	K1524	Cobalt	9.9	mg/kg	WDOE	J17YR8	11	10.67%
J17XR9	K1524	Copper	24.7	mg/kg	WDOE	J17YR8	22	11.41%
J17XR9	K1524	Vanadium	60.0	mg/kg	WDOE	J17YR8	47	24.22%
J17XR9	K1524	Zinc	287.0	mg/kg	WDOE	J17YR8	260	9.88%
J17XR9	K1524	Calcium	5,846.5	mg/kg	WDOE	J17YR8	4,800	19.66%
J17XR9	K1524	Mercury	0.1	mg/kg	WDOE	J17YR8	0.1	9.67%
J17Y96	K1484	Potassium	1,012.6	mg/kg	WDOE	J17YR5	850	17.46%
J17Y96	K1484	Aluminum	6,916.5	mg/kg	WDOE	J17YR5	5,600	21.04%
J17Y96	K1484	Lead	25.8	mg/kg	WDOE	J17YR5	24	7.17%
J17Y96	K1484	Magnesium	4,217.0	mg/kg	WDOE	J17YR5	3,800	10.40%
J17Y96	K1484	Manganese	190.7	mg/kg	WDOE	J17YR5	170	11.48%
J17Y96	K1484	Nickel	13.7	mg/kg	WDOE	J17YR5	13	5.23%
J17Y96	K1484	Sodium	343.8	mg/kg	WDOE	J17YR5	320	7.17%
J17Y96	K1484	Barium	47.7	mg/kg	WDOE	J17YR5	43	10.31%
J17Y96	K1484	Cadmium	1.9	mg/kg	WDOE	J17YR5	1.4	28.58%
J17Y96	K1484	Chromium	17.1	mg/kg	WDOE	J17YR5	14	19.68%
J17Y96	K1484	Cobalt	6.2	mg/kg	WDOE	J17YR5	6	2.18%
J17Y96	K1484	Copper	34.8	mg/kg	WDOE	J17YR5	31	11.50%
J17Y96	K1484	Zinc	326.3	mg/kg	WDOE	J17YR5	290	11.79%

Table 3-5. Surface Water and Sediment Split-Sample Relative Percent Difference. (9 Pages)

Sample Number	SDG Number	Analyte	Concentration	Units	Split-Sample Collected By	Split-Sample Number	Split-Sample Concentration	Relative % Difference
J17Y96	K1484	Calcium	4,848.2	mg/kg	WDOE	J17YR5	3,700	26.86%
J17YT4	K1489	Potassium	1,138.0	mg/kg	WDOE	J17YR7	830	31.30%
J17YT4	K1489	Aluminum	9,662.4	mg/kg	WDOE	J17YR7	5,800	49.96%
J17YT4	K1489	Iron	18,922.2	mg/kg	WDOE	J17YR7	16,000	16.74%
J17YT4	K1489	Lead	7.5	mg/kg	WDOE	J17YR7	7	11.65%
J17YT4	K1489	Magnesium	4,415.2	mg/kg	WDOE	J17YR7	3,500	23.12%
J17YT4	K1489	Manganese	268.4	mg/kg	WDOE	J17YR7	200	29.21%
J17YT4	K1489	Nickel	12.5	mg/kg	WDOE	J17YR7	10	24.17%
J17YT4	K1489	Sodium	213.4	mg/kg	WDOE	J17YR7	170	22.63%
J17YT4	K1489	Barium	60.8	mg/kg	WDOE	J17YR7	51	17.52%
J17YT4	K1489	Chromium	18.1	mg/kg	WDOE	J17YR7	11	48.89%
J17YT4	K1489	Cobalt	5.3	mg/kg	WDOE	J17YR7	5	1.35%
J17YT4	K1489	Copper	15.8	mg/kg	WDOE	J17YR7	14	12.30%
J17YT4	K1489	Vanadium	43.3	mg/kg	WDOE	J17YR7	29	39.66%
J17YT4	K1489	Zinc	74.7	mg/kg	WDOE	J17YR7	67	10.93%
J17YT4	K1489	Calcium	4,374.9	mg/kg	WDOE	J17YR7	3,400	25.08%
J180B0	K1491	Potassium	733.4	mg/kg	EPA	J17Y59	1,490	68.05%
J180B0	K1491	Aluminum	5,645.8	mg/kg	EPA	J17Y59	9,270	48.60%
J180B0	K1491	Iron	9,151.9	mg/kg	EPA	J17Y59	11,500	22.74%
J180B0	K1491	Lead	3.0	mg/kg	EPA	J17Y59	3.9	25.89%
J180B0	K1491	Magnesium	2,449.1	mg/kg	EPA	J17Y59	3,000	20.22%
J180B0	K1491	Manganese	185.6	mg/kg	EPA	J17Y59	242	26.37%
J180B0	K1491	Nickel	7.8	mg/kg	EPA	J17Y59	7.1	8.79%
J180B0	K1491	Sodium	60.7	mg/kg	EPA	J17Y59	277	128.09%
J180B0	K1491	Arsenic	2.3	mg/kg	EPA	J17Y59	2.6	11.79%
J180B0	K1491	Barium	63.0	mg/kg	EPA	J17Y59	75.5	18.00%
J180B0	K1491	Beryllium	0.2	mg/kg	EPA	J17Y59	0.3	35.02%
J180B0	K1491	Cadmium	0.1	mg/kg	EPA	J17Y59	1	168.61%
J180B0	K1491	Chromium	10.5	mg/kg	EPA	J17Y59	11	4.72%
J180B0	K1491	Cobalt	3.6	mg/kg	EPA	J17Y59	3.9	8.72%
J180B0	K1491	Copper	5.2	mg/kg	EPA	J17Y59	4.9	6.09%
J180B0	K1491	Vanadium	18.0	mg/kg	EPA	J17Y59	22.4	21.53%
J180B0	K1491	Zinc	28.9	mg/kg	EPA	J17Y59	32.8	12.73%
J180B0	K1491	Potassium-40	18.3	pCi/g	EPA	J17Y59	18.70	2.14%
J180B0	K1491	Radium-228	0.7	pCi/g	EPA	J17Y59	0.74	1.09%
J180R0	K1495	Potassium	1,320.1	mg/kg	WDOE	J17YR6	980	29.57%

Table 3-5. Surface Water and Sediment Split-Sample Relative Percent Difference. (9 Pages)

Sample Number	SDG Number	Analyte	Concentration	Units	Split-Sample Collected By	Split-Sample Number	Split-Sample Concentration	Relative % Difference
J180R0	K1495	Aluminum	12,395.8	mg/kg	WDOE	J17YR6	8,000	43.10%
J180R0	K1495	Iron	24,660.0	mg/kg	WDOE	J17YR6	23,000	6.97%
J180R0	K1495	Lead	13.6	mg/kg	WDOE	J17YR6	12	12.83%
J180R0	K1495	Magnesium	5,540.3	mg/kg	WDOE	J17YR6	4,200	27.52%
J180R0	K1495	Manganese	317.3	mg/kg	WDOE	J17YR6	240	27.74%
J180R0	K1495	Nickel	22.0	mg/kg	WDOE	J17YR6	18	20.13%
J180R0	K1495	Sodium	402.8	mg/kg	WDOE	J17YR6	240	50.65%
J180R0	K1495	Arsenic	4.1	mg/kg	WDOE	J17YR6	4	13.23%
J180R0	K1495	Barium	100.0	mg/kg	WDOE	J17YR6	87	13.86%
J180R0	K1495	Chromium	22.4	mg/kg	WDOE	J17YR6	15	39.39%
J180R0	K1495	Cobalt	8.9	mg/kg	WDOE	J17YR6	10	6.77%
J180R0	K1495	Copper	18.6	mg/kg	WDOE	J17YR6	16	14.91%
J180R0	K1495	Vanadium	56.9	mg/kg	WDOE	J17YR6	41	32.45%
J180R0	K1495	Zinc	164.4	mg/kg	WDOE	J17YR6	140	16.03%
J180R0	K1495	Calcium	5,819.8	mg/kg	WDOE	J17YR6	4,100	34.67%
J180R0	K1495	Uranium-233/234	0.63	pCi/g	WDOE	J17YR6	0.80	23.06%
J180R0	K1495	Uranium-238	0.32	pCi/g	WDOE	J17YR6	0.57	56.96%
J181B1	K1525	Potassium	2,847.7	mg/kg	EPA	J17Y61	2,960	3.87%
J181B1	K1525	Aluminum	23,631.1	mg/kg	EPA	J17Y61	26,600	11.82%
J181B1	K1525	Iron	34,222.6	mg/kg	EPA	J17Y61	35,900	4.78%
J181B1	K1525	Lead	19.8	mg/kg	EPA	J17Y61	20.4	3.07%
J181B1	K1525	Magnesium	7,194.2	mg/kg	EPA	J17Y61	6,820	5.34%
J181B1	K1525	Manganese	444.6	mg/kg	EPA	J17Y61	475	6.60%
J181B1	K1525	Nickel	24.5	mg/kg	EPA	J17Y61	25	2.20%
J181B1	K1525	Sodium	427.2	mg/kg	EPA	J17Y61	896	70.87%
J181B1	K1525	Arsenic	8.6	mg/kg	EPA	J17Y61	6.9	21.71%
J181B1	K1525	Barium	163.4	mg/kg	EPA	J17Y61	174	6.30%
J181B1	K1525	Beryllium	0.9	mg/kg	EPA	J17Y61	0.9	0.14%
J181B1	K1525	Cadmium	1.8	mg/kg	EPA	J17Y61	1.7	10.01%
J181B1	K1525	Chromium	30.2	mg/kg	EPA	J17Y61	32	5.70%
J181B1	K1525	Cobalt	10.6	mg/kg	EPA	J17Y61	12.6	16.85%
J181B1	K1525	Copper	35.2	mg/kg	EPA	J17Y61	31.7	10.53%
J181B1	K1525	Vanadium	75.9	mg/kg	EPA	J17Y61	79.1	4.08%
J181B1	K1525	Zinc	213.6	mg/kg	EPA	J17Y61	211	1.21%
J181B1	K1525	Calcium	6,544.8	mg/kg	EPA	J17Y61	7,240	10.09%
J181B1	K1525	Cesium-137	0.27	pCi/g	EPA	J17Y61	0.26	5.14%

Table 3-5. Surface Water and Sediment Split-Sample Relative Percent Difference. (9 Pages)

Sample Number	SDG Number	Analyte	Concentration	Units	Split-Sample Collected By	Split-Sample Number	Split-Sample Concentration	Relative % Difference
J181B1	K1525	Potassium-40	11.22	pCi/g	EPA	J17Y61	14.60	26.22%
J181B1	K1525	Radium-228	0.91	pCi/g	EPA	J17Y61	1.10	18.98%
J186X2	K1537	Potassium	1,092.6	mg/kg	EPA	J188L8	1,400	24.66%
J186X2	K1537	Aluminum	9,876.2	mg/kg	EPA	J188L8	13,000	27.31%
J186X2	K1537	Iron	23,697.3	mg/kg	EPA	J188L8	25,500	7.33%
J186X2	K1537	Lead	19.6	mg/kg	EPA	J188L8	26.5	30.02%
J186X2	K1537	Magnesium	5,917.2	mg/kg	EPA	J188L8	6,150	3.86%
J186X2	K1537	Manganese	368.9	mg/kg	EPA	J188L8	421	13.18%
J186X2	K1537	Nickel	21.3	mg/kg	EPA	J188L8	23.3	9.04%
J186X2	K1537	Sodium	283.8	mg/kg	EPA	J188L8	628	75.50%
J186X2	K1537	Arsenic	5.7	mg/kg	EPA	J188L8	5	12.61%
J186X2	K1537	Barium	80.9	mg/kg	EPA	J188L8	102	23.09%
J186X2	K1537	Beryllium	0.3	mg/kg	EPA	J188L8	0.4	26.16%
J186X2	K1537	Cadmium	0.9	mg/kg	EPA	J188L8	0.8	16.67%
J186X2	K1537	Chromium	25.3	mg/kg	EPA	J188L8	24.8	1.83%
J186X2	K1537	Cobalt	5.9	mg/kg	EPA	J188L8	7	16.15%
J186X2	K1537	Copper	20.9	mg/kg	EPA	J188L8	22	5.32%
J186X2	K1537	Vanadium	52.4	mg/kg	EPA	J188L8	53.3	1.78%
J186X2	K1537	Zinc	208.6	mg/kg	EPA	J188L8	232	10.63%
J186X2	K1537	Calcium	5,165.2	mg/kg	EPA	J188L8	6,410	21.51%
J186X2	K1537	Cesium-137	0.12	pCi/g	EPA	J188L8	0.19	42.96%
J186X2	K1537	Potassium-40	14.19	pCi/g	EPA	J188L8	11.90	17.55%
J186X2	K1537	Radium-228	1.16	pCi/g	EPA	J188L8	0.90	25.27%
J187P8	K1542	Potassium	760.2	mg/kg	EPA	J188L9	1,090	35.65%
J187P8	K1542	Aluminum	6,960.6	mg/kg	EPA	J188L9	11,600	49.99%
J187P8	K1542	Iron	16,165.6	mg/kg	EPA	J188L9	20,200	22.19%
J187P8	K1542	Lead	31.5	mg/kg	EPA	J188L9	35.4	11.57%
J187P8	K1542	Magnesium	3,874.4	mg/kg	EPA	J188L9	4,470	14.28%
J187P8	K1542	Manganese	173.7	mg/kg	EPA	J188L9	218	22.63%
J187P8	K1542	Nickel	12.1	mg/kg	EPA	J188L9	13.9	14.14%
J187P8	K1542	Sodium	196.4	mg/kg	EPA	J188L9	636	105.63%
J187P8	K1542	Arsenic	4.6	mg/kg	EPA	J188L9	4.3	6.07%
J187P8	K1542	Barium	52.6	mg/kg	EPA	J188L9	69.7	27.89%
J187P8	K1542	Beryllium	0.2	mg/kg	EPA	J188L9	0.3	34.04%
J187P8	K1542	Cadmium	0.6	mg/kg	EPA	J188L9	0.6	5.63%
J187P8	K1542	Chromium	15.6	mg/kg	EPA	J188L9	21.1	29.78%

Table 3-5. Surface Water and Sediment Split-Sample Relative Percent Difference. (9 Pages)

Sample Number	SDG Number	Analyte	Concentration	Units	Split-Sample Collected By	Split-Sample Number	Split-Sample Concentration	Relative % Difference
J187P8	K1542	Cobalt	3.8	mg/kg	EPA	J188L9	5.3	31.72%
J187P8	K1542	Copper	17.9	mg/kg	EPA	J188L9	17.6	1.70%
J187P8	K1542	Vanadium	36.6	mg/kg	EPA	J188L9	44.8	20.13%
J187P8	K1542	Zinc	224.4	mg/kg	EPA	J188L9	256	13.13%
J187P8	K1542	Calcium	3,740.8	mg/kg	EPA	J188L9	5,220	33.01%
J187P8	K1542	Cesium-137	0.24	pCi/g	EPA	J188L9	0.23	2.04%
J187P8	K1542	Potassium-40	13.12	pCi/g	EPA	J188L9	16.00	19.78%
J187P8	K1542	Radium-228	1.15	pCi/g	EPA	J188L9	1.29	11.10%
J189T8	K1547	Potassium	604.5	mg/kg	EPA	J188M0	668	9.98%
J189T8	K1547	Aluminum	5,877.3	mg/kg	EPA	J188M0	8,840	40.26%
J189T8	K1547	Iron	27,770.4	mg/kg	EPA	J188M0	33,800	19.59%
J189T8	K1547	Magnesium	4,345.1	mg/kg	EPA	J188M0	4,240	2.45%
J189T8	K1547	Manganese	334.0	mg/kg	EPA	J188M0	516	42.83%
J189T8	K1547	Nickel	7.5	mg/kg	EPA	J188M0	7	7.35%
J189T8	K1547	Sodium	508.7	mg/kg	EPA	J188M0	1,360	91.11%
J189T8	K1547	Arsenic	1.9	mg/kg	EPA	J188M0	1.8	1.38%
J189T8	K1547	Barium	65.5	mg/kg	EPA	J188M0	89	30.46%
J189T8	K1547	Chromium	6.1	mg/kg	EPA	J188M0	5	19.50%
J189T8	K1547	Cobalt	8.2	mg/kg	EPA	J188M0	8.2	0.08%
J189T8	K1547	Copper	11.5	mg/kg	EPA	J188M0	9.1	22.90%
J189T8	K1547	Vanadium	86.9	mg/kg	EPA	J188M0	91.8	5.48%
J189T8	K1547	Zinc	52.4	mg/kg	EPA	J188M0	57.5	9.23%
J189T8	K1547	Calcium	7,241.9	mg/kg	EPA	J188M0	10,700	38.55%
J189T8	K1547	Potassium-40	9.84	pCi/g	EPA	J188M0	1.50	147.09%
J189T8	K1547	Radium-226	0.36	pCi/g	EPA	J188M0	0.87	83.40%
J189T8	K1547	Radium-228	0.58	pCi/g	EPA	J188M0	0.67	15.22%
J18KH5	K1557	Potassium	767.2	mg/kg	EPA	J188L7	1,370	56.41%
J18KH5	K1557	Aluminum	5,914.6	mg/kg	EPA	J188L7	9,800	49.45%
J18KH5	K1557	Iron	13,471.5	mg/kg	EPA	J188L7	17,100	23.74%
J18KH5	K1557	Lead	42.9	mg/kg	EPA	J188L7	45	4.89%
J18KH5	K1557	Magnesium	3,566.7	mg/kg	EPA	J188L7	4,840	30.29%
J18KH5	K1557	Manganese	206.6	mg/kg	EPA	J188L7	293	34.61%
J18KH5	K1557	Nickel	10.3	mg/kg	EPA	J188L7	12.7	21.34%
J18KH5	K1557	Sodium	255.3	mg/kg	EPA	J188L7	679	90.69%
J18KH5	K1557	Antimony	0.4	mg/kg	EPA	J188L7	0.5	29.46%
J18KH5	K1557	Arsenic	5.6	mg/kg	EPA	J188L7	5.8	3.56%

Table 3-5. Surface Water and Sediment Split-Sample Relative Percent Difference. (9 Pages)

Sample Number	SDG Number	Analyte	Concentration	Units	Split-Sample Collected By	Split-Sample Number	Split-Sample Concentration	Relative % Difference
J18KH5	K1557	Barium	53.1	mg/kg	EPA	J188L7	75.5	34.81%
J18KH5	K1557	Cadmium	0.7	mg/kg	EPA	J188L7	0.9	16.17%
J18KH5	K1557	Chromium	10.3	mg/kg	EPA	J188L7	15.1	38.01%
J18KH5	K1557	Cobalt	4.8	mg/kg	EPA	J188L7	5.7	17.17%
J18KH5	K1557	Copper	34.1	mg/kg	EPA	J188L7	36.3	6.17%
J18KH5	K1557	Vanadium	25.7	mg/kg	EPA	J188L7	32.4	23.22%
J18KH5	K1557	Zinc	270.7	mg/kg	EPA	J188L7	323	17.61%
J18KH5	K1557	Calcium	3,669.4	mg/kg	EPA	J188L7	5,030	31.28%
J18KH5	K1557	Potassium-40	16.94	pCi/g	EPA	J188L7	19.40	13.56%
J18KH5	K1557	Radium-228	0.76	pCi/g	EPA	J188L7	0.83	8.09%

EPA = U.S. Environmental Protection Agency
pCi/L = picocuries per liter
SDG = sample delivery group
µg/L = micrograms per liter
WDOE = Washington Department of Ecology

3.2 SUMMARY OF RESULTS FOR GROUNDWATER UPWELLING DATA

The following subsections present by medium and analytical parameter a summary of the QC deficiencies identified during the assessment of the groundwater upwelling data, which consists of pore water, surface water, and sediment data.

3.2.1 Summary of Data Assessment Results for Groundwater Upwelling – Pore Water

The following subsections present a summary of the results of the assessment and the major and minor QC deficiencies identified during the data assessment of the groundwater upwelling pore water data. As part of this assessment, 105 SDGs were evaluated. The majority of the data are acceptable for their intended project use. Those data that were rejected and determined to be unusable based on a major QC deficiency identified during the assessment are provided in Table 3-6.

3.2.1.1 Radionuclides – Groundwater Upwelling (Pore Water). For radionuclide data, QC results were compliant for most QC parameters. None of the radionuclide data was rejected, and the data are acceptable for their intended project use. The following is a summary of the results of the assessment and minor QC deficiencies noted during the assessment.

All samples were analyzed prior to expiration of the associated 6-month required holding time. Reported detection limits and MDA levels were reviewed and determined to be in exceedance of the levels specified in the SAP (DOE/RL 2008-11, Appendix A) for total uranium and strontium for the majority of the SDGs. In accordance with the guidance (HNF-20434), no action was taken based on this finding.

Method blanks did not contain concentrations of target analytes above corresponding detection limits, except for SDG J00653 which contained trace levels of total uranium. No qualification was performed based on this finding because the sample results were greater than five times the blank concentration. No equipment blanks were analyzed for radionuclides.

Generally, LCS results were compliant with respective criteria, indicating a positive correlation to the accuracy of reported sample concentrations. No LCS for strontium was analyzed for SDG J00694, and therefore all results were qualified as estimated (J). For SDGs J00717 and J00719, LCS recoveries for tritium were below the lower control limit, indicating a potential low bias to sample concentrations. The associated sample results were qualified as estimated (J) based on this finding. Matrix spikes were not analyzed for tritium in the majority of the SDGs. If a matrix spike was not analyzed for tritium, all sample results were qualified as estimated (J). Laboratory duplicate samples were analyzed to measure the precision of reported results. Many SDGs had laboratory duplicate RPDs that exceeded the criteria for this assessment. However, for the majority of these SDGs, no qualification was performed because both the initial and replicate sample results were nondetect. For some SDGs, a lab duplicate was not analyzed due to insufficient sample volume. For these SDGs, all associated radionuclide results were qualified as estimated (J). SDG J00642 contained a field duplicate with an RPD that exceeded criteria. However, based on the guidance used for this assessment (HNF-20434), no qualification was performed.

In summary, QC results for the radionuclides were compliant for most QC parameters and none of the radionuclide data was rejected. Radionuclide data for groundwater upwelling pore water are of sufficient quality for their intended project use.

Table 3-6. Summary of Rejected Groundwater Upwelling Data by Method. (4 Pages)

Medium	Analytical Method	Analyte	SDG Number	Sample Identification	Sample Date	Result	Units	Laboratory Qualifier	Validation Qualifier
PW	Anions - 300.0	Nitrate	K1926	J19JD9	1/30/2010	0.25	mg/L	U	R
PW	Anions - 300.0	Nitrate	K1962	J19H08	2/19/2010	0.25	mg/L	U	R
PW	Anions - 300.0	Nitrate	K1963	J19KF0	2/28/2010	0.25	mg/L	U	R
PW	Anions - 300.0	Nitrite	K1908	J19H09	1/18/2010	0.25	mg/L	U	R
PW	Anions - 300.0	Nitrite	K1908	J19F76	1/11/2010	0.25	mg/L	U	R
PW	Anions - 300.0	Nitrite	K1908	J19F75	1/11/2010	0.25	mg/L	U	R
PW	Anions - 300.0	Nitrite	K1908	J19F40	1/16/2010	0.25	mg/L	U	R
PW	Anions - 300.0	Nitrite	K1908	J19F39	1/15/2010	0.25	mg/L	U	R
PW	Anions - 300.0	Nitrite	K1908	J19F38	1/17/2010	0.25	mg/L	U	R
PW	Anions - 300.0	Nitrite	K1908	J19F37	1/17/2010	0.25	mg/L	U	R
PW	Anions - 300.0	Nitrite	K1913	J19HJ5	1/22/2010	0.25	mg/L	U	R
PW	Anions - 300.0	Nitrite	K1913	J19HJ4	1/23/2010	0.25	mg/L	U	R
PW	Anions - 300.0	Nitrite	K1913	J19FF7	1/24/2010	0.25	mg/L	U	R
PW	Anions - 300.0	Nitrite	K1913	J19FF6	1/24/2010	0.5	mg/L	U	R
PW	Anions - 300.0	Nitrite	K1926	J19JD9	1/30/2010	0.25	mg/L	U	R
PW	Anions - 300.0	Nitrite	K1926	J19JD8	1/29/2010	0.25	mg/L	U	R
PW	Anions - 300.0	Nitrite	K1926	J19JD7	1/29/2010	0.25	mg/L	U	R
PW	Anions - 300.0	Nitrite	K1940	J19J66	2/5/2010	2.5	mg/L	U	R
PW	Anions - 300.0	Nitrite	K1940	J19J65	2/5/2010	0.25	mg/L	U	R
PW	Anions - 300.0	Nitrite	K1940	J19JP4	2/6/2010	0.25	mg/L	U	R
PW	Anions - 300.0	Nitrite	K1940	J19JP5	2/6/2010	2.5	mg/L	U	R
PW	Anions - 300.0	Nitrite	K1940	J19JP3	2/7/2010	2.5	mg/L	U	R
PW	Anions - 300.0	Nitrite	K1940	J19JP6	2/7/2010	5	mg/L	U	R
PW	Anions - 300.0	Nitrite	K1946	J19J67	2/13/2010	0.25	mg/L	U	R
PW	Anions - 300.0	Nitrite	K1946	J19J64	2/13/2010	1.25	mg/L	U	R
PW	Anions - 300.0	Nitrite	K1946	J19JM2	2/14/2010	0.25	mg/L	U	R
PW	Anions - 300.0	Nitrite	K1946	J19JM1	2/14/2010	0.25	mg/L	U	R
PW	Anions - 300.0	Nitrite	K1946	J19K36	2/15/2010	0.25	mg/L	U	R
PW	Anions - 300.0	Nitrite	K1946	J19K35	2/15/2010	0.25	mg/L	U	R
PW	Anions - 300.0	Nitrite	K1946	J19K01	2/12/2010	0.25	mg/L	U	R
PW	Anions - 300.0	Nitrite	K1946	J19K00	2/12/2010	0.25	mg/L	U	R
PW	Anions - 300.0	Nitrite	K1962	J19H08	2/19/2010	0.25	mg/L	U	R
PW	Anions - 300.0	Nitrite	K1962	J19K96	2/20/2010	0.25	mg/L	U	R
PW	Anions - 300.0	Nitrite	K1962	J19K31	2/21/2010	0.25	mg/L	U	R
PW	Anions - 300.0	Nitrite	K1962	J19K97	2/19/2010	0.25	mg/L	U	R
PW	Anions - 300.0	Nitrite	K1962	J19KW8	2/22/2010	0.25	mg/L	U	R
PW	Anions - 300.0	Nitrite	K1963	J19JF0	2/27/2010	2.5	mg/L	U	R
PW	Anions - 300.0	Nitrite	K1963	J19K33	2/26/2010	2.5	mg/L	U	R
PW	Anions - 300.0	Nitrite	K1963	J19KF0	2/28/2010	0.25	mg/L	U	R

Table 3-6. Summary of Rejected Groundwater Upwelling Data by Method. (4 Pages)

Medium	Analytical Method	Analyte	SDG Number	Sample Identification	Sample Date	Result	Units	Laboratory Qualifier	Validation Qualifier
PW	Anions - 300.0	Nitrite	K1963	J19KW7	2/26/2010	2.5	mg/L	U	R
PW	Anions - 300.0	Phosphate	K1908	J19F37	1/17/2010	2.50E-01	mg/L	U	R
PW	Anions - 300.0	Phosphate	K1908	J19F38	1/17/2010	0.25	mg/L	U	R
PW	Anions - 300.0	Phosphate	K1908	J19F39	1/15/2010	0.25	mg/L	U	R
PW	Anions - 300.0	Phosphate	K1908	J19F40	1/16/2010	0.25	mg/L	U	R
PW	Anions - 300.0	Phosphate	K1908	J19F75	1/11/2010	0.25	mg/L	U	R
PW	Anions - 300.0	Phosphate	K1908	J19F76	1/11/2010	0.25	mg/L	U	R
PW	Anions - 300.0	Phosphate	K1908	J19H09	1/18/2010	0.25	mg/L	U	R
PW	Anions - 300.0	Phosphate	K1913	J19FF6	1/24/2010	0.25	mg/L	U	R
PW	Anions - 300.0	Phosphate	K1913	J19FF7	1/24/2010	0.25	mg/L	U	R
PW	Anions - 300.0	Phosphate	K1913	J19HJ4	1/23/2010	0.25	mg/L	U	R
PW	Anions - 300.0	Phosphate	K1913	J19HJ5	1/22/2010	0.25	mg/L	U	R
PW	Anions - 300.0	Phosphate	K1926	J19JD7	1/29/2010	0.25	mg/L	U	R
PW	Anions - 300.0	Phosphate	K1926	J19JD8	1/29/2010	0.25	mg/L	U	R
PW	Anions - 300.0	Phosphate	K1926	J19JD9	1/30/2010	0.25	mg/L	U	R
PW	Anions - 300.0	Phosphate	K1940	J19J65	2/5/2010	0.25	mg/L	U	R
PW	Anions - 300.0	Phosphate	K1940	J19J66	2/5/2010	0.25	mg/L	U	R
PW	Anions - 300.0	Phosphate	K1940	J19JP3	2/7/2010	0.25	mg/L	U	R
PW	Anions - 300.0	Phosphate	K1940	J19JP4	2/6/2010	0.25	mg/L	U	R
PW	Anions - 300.0	Phosphate	K1940	J19JP6	2/7/2010	0.25	mg/L	U	R
PW	Anions - 300.0	Phosphate	K1946	J19J64	2/13/2010	0.25	mg/L	U	R
PW	Anions - 300.0	Phosphate	K1946	J19J67	2/13/2010	0.25	mg/L	U	R
PW	Anions - 300.0	Phosphate	K1946	J19JM1	2/14/2010	0.25	mg/L	U	R
PW	Anions - 300.0	Phosphate	K1946	J19JM2	2/14/2010	0.25	mg/L	U	R
PW	Anions - 300.0	Phosphate	K1946	J19K00	2/12/2010	0.25	mg/L	U	R
PW	Anions - 300.0	Phosphate	K1946	J19K01	2/12/2010	0.25	mg/L	U	R
PW	Anions - 300.0	Phosphate	K1946	J19K35	2/15/2010	0.25	mg/L	U	R
PW	Anions - 300.0	Phosphate	K1946	J19K36	2/15/2010	0.25	mg/L	U	R
PW	Anions - 300.0	Phosphate	K1962	J19H08	2/19/2010	0.25	mg/L	U	R
PW	Anions - 300.0	Phosphate	K1962	J19K31	2/21/2010	0.25	mg/L	U	R
PW	Anions - 300.0	Phosphate	K1962	J19K32	2/21/2010	0.25	mg/L	U	R
PW	Anions - 300.0	Phosphate	K1962	J19K96	2/20/2010	0.25	mg/L	U	R
PW	Anions - 300.0	Phosphate	K1962	J19K97	2/19/2010	0.25	mg/L	U	R
PW	Anions - 300.0	Phosphate	K1962	J19KW8	2/22/2010	0.25	mg/L	U	R
PW	Anions - 300.0	Phosphate	K1963	J19JF0	2/27/2010	0.25	mg/L	U	R
PW	Anions - 300.0	Phosphate	K1963	J19K33	2/26/2010	0.25	mg/L	U	R
PW	Anions - 300.0	Phosphate	K1963	J19KW7	2/26/2010	0.25	mg/L	U	R
PW	Hexavalent chromium - 7196	Hexavalent chromium	J00557	J192P4	7/30/2009	3.70E-03	mg/L	U	R
SW	Anions - 300.0	Nitrite	K1905	J19F50	1/16/2010	0.25	mg/L	U	R

Table 3-6. Summary of Rejected Groundwater Upwelling Data by Method. (4 Pages)

Medium	Analytical Method	Analyte	SDG Number	Sample Identification	Sample Date	Result	Units	Laboratory Qualifier	Validation Qualifier
SW	Anions - 300.0	Nitrite	K1905	J19F49	1/15/2010	0.25	mg/L	U	R
SW	Anions - 300.0	Nitrite	K1907	J19F51	1/17/2010	0.25	mg/L	U	R
SW	Anions - 300.0	Nitrite	K1907	J19H23	1/18/2010	0.25	mg/L	U	R
SW	Anions - 300.0	Nitrite	K1944	J19K54	2/15/2010	0.25	mg/L	U	R
SW	Anions - 300.0	Nitrite	K1944	J19K53	2/15/2010	0.25	mg/L	U	R
SW	Anions - 300.0	Nitrite	K1944	J19K13	2/12/2010	0.25	mg/L	U	R
SW	Anions - 300.0	Nitrite	K1944	J19K12	2/12/2010	0.25	mg/L	U	R
SW	Anions - 300.0	Nitrite	K1952	J19K63	2/19/2010	0.25	mg/L	U	R
SW	Anions - 300.0	Nitrite	K1952	J19K62	2/20/2010	0.25	mg/L	U	R
SW	Anions - 300.0	Nitrite	K1952	J19K52	2/21/2010	0.25	mg/L	U	R
SW	Anions - 300.0	Nitrite	K1952	J19K50	2/21/2010	0.25	mg/L	U	R
SW	Anions - 300.0	Nitrite	K1952	J19K49	2/21/2010	0.25	mg/L	U	R
SW	Anions - 300.0	Nitrite	K1952	J19H22	2/19/2010	0.25	mg/L	U	R
SW	Anions - 300.0	Nitrite	K1955	J19K61	2/28/2010	0.25	mg/L	U	R
SW	Anions - 300.0	Phosphate	K1905	J19F49	1/15/2010	0.25	mg/L	U	R
SW	Anions - 300.0	Phosphate	K1905	J19F50	1/16/2010	0.25	mg/L	U	R
SW	Anions - 300.0	Phosphate	K1907	J19F52	1/17/2010	0.25	mg/L	U	R
SW	Anions - 300.0	Phosphate	K1907	J19F51	1/17/2010	0.25	mg/L	U	R
SW	Anions - 300.0	Phosphate	K1944	J19K12	2/12/2010	0.25	mg/L	U	R
SW	Anions - 300.0	Phosphate	K1944	J19K13	2/12/2010	0.25	mg/L	U	R
SW	Anions - 300.0	Phosphate	K1944	J19K53	2/15/2010	0.25	mg/L	U	R
SW	Anions - 300.0	Phosphate	K1944	J19K54	2/15/2010	0.25	mg/L	U	R
SW	Anions - 300.0	Phosphate	K1952	J19H22	2/19/2010	0.25	mg/L	U	R
SW	Anions - 300.0	Phosphate	K1952	J19K49	2/21/2010	0.25	mg/L	U	R
SW	Anions - 300.0	Phosphate	K1952	J19K50	2/21/2010	0.25	mg/L	U	R
SW	Anions - 300.0	Phosphate	K1952	J19K52	2/21/2010	0.25	mg/L	U	R
SW	Anions - 300.0	Phosphate	K1952	J19K62	2/20/2010	0.25	mg/L	U	R
SW	Anions - 300.0	Phosphate	K1952	J19K63	2/19/2010	0.25	mg/L	U	R
SW	Anions - 300.0	Phosphate	K1955	J19K51	2/26/2010	2.5	mg/L	U	R
SW	Anions - 300.0	Phosphate	K1955	J19K61	2/28/2010	0.25	mg/L	U	R
SD	Hexavalent chromium - 7196	Hexavalent chromium	J00660	J19F67	1/15/2010	0.15	mg/Kg	U	R
SD	Hexavalent chromium - 7196	Hexavalent chromium	J00705	J19FB4	2/1/2010	0.153	mg/Kg	U	R
SD	Hexavalent chromium - 7196	Hexavalent chromium	J00705	J19HX8	2/1/2010	0.154	mg/Kg	U	R
SD	Hexavalent chromium - 7196	Hexavalent chromium	J00757	J19K85	2/26/2010	0.151	mg/Kg	U	R
SD	Hexavalent chromium - 7196	Hexavalent chromium	J00757	J19K86	2/26/2010	0.148	mg/Kg	U	R
SD	Hexavalent chromium - 7196	Hexavalent chromium	J00757	J19L01	2/26/2010	0.153	mg/Kg	U	R
SD	Metals - 6010	Bismuth	K1953	J19H34	2/19/2010	7.14	mg/Kg	U	R
SD	Metals - 6010	Bismuth	K1953	J19K72	2/21/2010	7.14	mg/Kg	U	R
SD	Metals - 6010	Bismuth	K1953	J19K71	2/21/2010	7.94	mg/Kg	U	R

Table 3-6. Summary of Rejected Groundwater Upwelling Data by Method. (4 Pages)

Medium	Analytical Method	Analyte	SDG Number	Sample Identification	Sample Date	Result	Units	Laboratory Qualifier	Validation Qualifier
SD	Metals - 6010	Bismuth	K1953	J19KC5	2/20/2010	8.06	mg/Kg	U	R
SD	Metals - 6010	Bismuth	K1953	J19KC6	2/19/2010	7.94	mg/Kg	U	R
SD	Metals - 6010	Bismuth	K1953	J19KY6	2/22/2010	7.81	mg/Kg	U	R
SD	Metals - 6010	Uranium	K1953	J19KC6	2/19/2010	15.9	mg/Kg	U	R
SD	Metals - 6010	Uranium	K1953	J19KC5	2/20/2010	16.1	mg/Kg	U	R
SD	Metals - 6010	Uranium	K1953	J19K71	2/21/2010	15.9	mg/Kg	U	R
SD	Metals - 6010	Uranium	K1953	J19K72	2/21/2010	14.3	mg/Kg	U	R
SD	Metals - 6010	Uranium	K1953	J19H34	2/19/2010	14.3	mg/Kg	U	R

mg/L = milligrams per liter
mg/kg = milligrams per kilogram
PW = pore water
R = rejected
SD = sediment
SDG = sample delivery group
SW = surface water
U = nondetect

3.2.1.2 Volatile Organic Compounds – Groundwater Upwelling (Pore Water). For the groundwater upwelling pore water VOC data, QC results were compliant for most QC parameters. None of the VOC data was rejected, and the data are acceptable for their intended project use. The following is a summary of the results of the assessment and minor QC deficiencies noted during the assessment.

Analysis of the samples in all SDGs took place prior to the expiration of the associated holding time. Detection limits for all compounds that are reported with this analysis are the same or below those specified in the SAP (DOE/RL-2008-11, Appendix A), with the exception of methylene chloride. In accordance with the guidance for this assessment (HNF-20433), no action was taken based on this finding.

Laboratory blanks were analyzed for target VOCs to identify potential false-positive concentrations resulting from laboratory processing and analyses. Acetone, classified by the EPA as a common laboratory contaminant, was detected in SDG K1777 at a trace concentration. Sample concentrations for acetone less than 10 times the blank concentration were qualified as estimated nondetect (UJ). If the sample concentration of the blank contaminant was below the RDL, it was raised to that value as part of this action.

One equipment blank associated with SDG K1913 contained trace concentrations of acetone. Acetone was also detected in the trip blank associated with SDG K1777. However, based on the guidance used for this DQA (HNF-20433), no action was taken with respect to equipment or trip blank detections.

LCS recoveries were compliant for all samples, indicating that accuracy requirements were satisfied. Matrix spike recoveries were compliant for all SDGs; however, several matrix spike RPDs (1,1,2,2-tetrachloroethane, 2-butanone, 2-hexanone, 4-methyl-2-pentanone, acetone, and bromoform) in SDG K1777 had recoveries that were below the lower control limit, demonstrating a potential low bias to sample results. As a result, analytical results for associated samples were qualified as estimated (J). The field duplicate results demonstrated that there was little variability and acceptable levels of precision of reported results. Laboratory duplicates were not analyzed in association with any of the SDGs.

Since only minor QC deficiencies were identified during the assessment, results from the VOC data are of sufficient quality for their intended project use.

3.2.1.3 Metals – Groundwater Upwelling (Pore Water). For the metals data, QC results were compliant for most QC parameters. The QC results for metals analyses indicate that the results are of acceptable quality for their intended project use. No major deficiencies were identified and therefore no data were rejected. The following is a summary of the results of the assessment and the minor QC deficiencies noted during the assessment.

Detection limits for metals were at or below those specified in the SAP, and samples were analyzed within the holding times specified in the project SAP (DOE/RL-2008-11, Appendix A).

A number of elements were detected in the preparation blanks associated with the pore water SDGs, indicating potential interferences during sample preparation and analysis. Since almost all of the detections were at trace levels, those elements detected at similar levels in samples (less than five times the blank concentration) were qualified as estimated nondetect (UJ).

An equipment blank was analyzed in association with SDG K1943. Several elements were detected in the equipment blank. In accordance with the guidance used for this DQA (HNF-20433), no action was taken based on the equipment blank detections.

LCS recoveries were compliant for all of the SDGs except SDG K1946, which had low LCS recoveries for the majority of metals analyzed resulting in some sample results getting qualified as estimated (J). A matrix spike recovery for aluminum in SDG K1908, exceeded criteria. For this SDG, detected aluminum results were qualified as estimated. No matrix spike was analyzed for uranium in SDG K1943, resulting in the qualification of all uranium sample results in the SDG as estimated (J). In addition, a matrix spike was not analyzed for one of the three sample batches in SDG K1946. All sample results associated with this sample batch were qualified as estimated (J).

The RPDs between sample/duplicate pairs for laboratory duplicates were generally compliant. In SDGs K1821, K1913, K1940, K1943, K1946, and K1963, RPDs for at least one metal exceeded criteria; however, no qualification was performed since the difference between results was less than one times the RDL. In SDG K1913, the RPD for arsenic exceeded criteria and all arsenic results were qualified as estimated (J). Similarly, the chromium RPD in SDG K1943 exceeded criteria; however, only detected chromium results were qualified as estimated (J). In addition, a lab duplicate was not analyzed for one of the three sample batches in SDG K1946. All sample results associated with this sample batch were qualified as estimated (J). Field duplicate RPDs were out of compliance in SDGs K1913 and K1943; however, based on the guidance for this assessment (HNF-20433), no action was taken.

No major deficiencies in the QC results were identified per the criteria contained in the SAP (DOE/RL-2008-11, Appendix A) and other guidance (HNF-20433), indicating that the metals data are of sufficient quality for their intended project use.

3.2.1.4 Hexavalent Chromium – Groundwater Upwelling (Pore Water). For the hexavalent chromium data, QC results were compliant for most parameters. Although the hexavalent chromium data from SDG J00557 (one sample) were rejected based on a low matrix spike recovery, the QC results from the hexavalent chromium analyses indicate that the majority of the results are of acceptable quality for their intended project use. The following is a summary of the results of the assessment and QC deficiencies noted during the assessment. The data that were rejected are provided in Table 3-6.

Most samples were analyzed within the holding times specified in the project SAP (DOE/RL-2008-11, Appendix A). Samples in SDG J00574 were analyzed out of holding time, but less than twice the limit. Associated samples were qualified as estimated (J). The detection limit for hexavalent chromium was not exceeded for any of the pore water samples.

Hexavalent chromium was not detected in any of the preparation blanks associated with the pore water SDGs. No equipment blanks were analyzed.

LCS recoveries were compliant for all of the SDGs. Noncompliant matrix spike results were identified for hexavalent chromium in several SDGs. In SDGs J00557 and J00580, matrix spike recoveries were below 30%, resulting in the qualification of nondetect results as rejected (R) and detected results as estimated (J). For SDG J00557, all of the results were qualified as estimated (J), except for sample J192P4 which had a nondetect result that was rejected. For SDG J00580, all results were positive and therefore qualified as estimated; no results were rejected in SDG J00580. No matrix spike was analyzed for SDGs J000596, J00600, J00606, J00609, J00613, J00619, J00622, J00630, and J00753, and all hexavalent chromium samples in these SDGs were qualified as estimated (J).

The RPDs between sample/duplicate pairs were acceptable for most of the elements in the laboratory duplicates. For several SDGs, the RPD value exceeded the limit, and because the difference between the initial and duplicate results was greater than the reporting limit by a factor of 1, all hexavalent chromium results were qualified as estimated (J). No laboratory duplicate was analyzed for SDGs J00596, J00600, J00606, J00609, J00613, J00619, J00622, J00630, and J00753, resulting in all hexavalent chromium samples in these SDGs getting qualified as estimated (J). Where field duplicates were collected, RPD values were compliant.

Although one sample in SDG J00557 was rejected based on a low matrix spike recovery, the majority of the QC results reviewed was compliant with criteria contained in the SAP (DOE/RL-2008-11, Appendix A) and other guidance (HNF-20433) and are of sufficient quality for their intended project use.

3.2.1.5 Diesel Range Organics – Groundwater Upwelling (Pore Water). Only samples within three SDGs were analyzed for DRO. DRO QC results were compliant for most QC parameters and the DRO data are acceptable for their intended project use. The following is a summary of the results of the assessment and the minor QC deficiencies noted during the assessment.

All samples were extracted prior to expiration of the holding time criteria. For DRO, the detection limit in each SDG met the level specified in the SAP (DOE/RL-2008-11, Appendix A). The detection limit for motor oil was not provided in the project SAP and therefore could not be compared.

Surrogate recoveries were in compliance for most sample analyses. Laboratory blanks were analyzed to determine potential interferences from preparation and analysis of the samples. DRO was not detected in any of the laboratory blanks associated with the three SDGs. One equipment blank was collected for SDG K1953 and the results were nondetect.

DRO LCS recoveries for SDGs K1940 and K1943 were below the lower control limit, resulting in the qualification of all associated results for DRO as estimated (J). DRO LCS duplicates were performed for SDGs K1825 and K1943, both of which had RPD values that exceeded the criteria. For these SDGs, all DRO results were qualified as estimated (J). No LCS was analyzed for motor oil in all three SDGs, and therefore associated motor oil results were qualified as estimated (J). Where field duplicates were collected and analyzed, RPD results were in compliance.

Since only minor QC deficiencies were identified during the assessment, results from the DRO data analyses are of sufficient quality for their intended project use.

3.2.1.6 Total Organic Carbon – Groundwater Upwelling (Pore Water). TOC QC results were compliant for most QC parameters. None of the TOC data was rejected, and the data are acceptable for their intended project use. The following is a summary of the results of the assessment and minor QC deficiencies noted during the assessment.

All samples were analyzed within the required holding time limits, and detection limit values reported for all samples were at or below the specification included in the SAP (DOE/RL-2008-11, Appendix A).

TOC concentrations were detected in the laboratory blanks for SDGs K1940, K1943, K1946, K1962, and K1963. If associated samples results were less than five times the blank concentration, results were qualified as estimated nondetect (UJ). Results were not qualified if the results were greater than five times the blank concentration. An equipment blank was collected and results were reported in SDG K1943 with low concentrations of TOC detected. However, based on the guidance used for this assessment (HNF-20433), no action was taken based on this finding.

LCS and matrix spike recoveries were compliant for all SDGs. Only one SDG (K1963) contained a lab duplicate that had an RPD that exceeded criteria; however, since the difference between the initial and duplicate results was less than the RDL by a factor of 1, no qualification was assigned. Only one field duplicate was collected and analyzed for TOC, and the RPD was out of compliance. However, based on the guidance used for this DQA (HNF-20433), no action was taken based on this finding.

No major QC deficiencies were identified during the assessment of TOC data quality, and the data are of sufficient quality for their intended project use.

3.2.1.7 Anions – Groundwater Upwelling (Pore Water). Anions that were analyzed in connection with the groundwater upwelling pore water consisted of bromide, chloride, fluoride, nitrate, nitrite, orthophosphate, sulfate, and combined nitrate/nitrite. Several of the SDGs with samples analyzed for anions had rejected data for nitrite, nitrate, and orthophosphate due to holding time exceedances. The following is a summary of the results of the assessment and QC deficiencies noted during the assessment. The data that were rejected are provided in Table 3-6.

Holding time limits were exceeded by more than twice the limit for nitrite, nitrate, and orthophosphate in SDGs K1908, K1913, K1940, K1943, K1946, K1962, and K1963. Detected results were qualified as estimated (J) and nondetect results were qualified as rejected (R). The majority of the nitrite and orthophosphate results were rejected, and most nitrate results were detected and therefore qualified as estimated.

Laboratory reporting limits for anions were not specified in the project SAP (DOE/RL-2008-11, Appendix A) and therefore could not be compared to actual reporting limits provided in the SDGs.

Nitrate/nitrite was detected in the equipment blank in SDG K1943; however, based on the guidance used for this assessment (HNF-20433), no qualification was performed. No other anions were detected in the method or equipment blanks.

LCS recoveries were compliant for all SDGs. Matrix spike recoveries were compliant for all SDGs except for nitrate/nitrite in SDG K1940. In this SDG, the matrix spike recovery was below the lower control limit, demonstrating a potential low bias to sample results, and all results for nitrate/nitrite were qualified as estimated.

For nitrate/nitrite, only one SDG (K1940) contained a laboratory duplicate with an RPD that exceeded criteria. Since the concentrations of both the initial and replicate results were greater than five times the reporting limit, all detected sample results were qualified as estimated for nitrate/nitrite. For the other anions, two SDGs had laboratory duplicate RPDs that exceeded the aqueous criteria of 20%; in SDG K1821, nitrate results were qualified as estimated; however, no results in SDG K1943 were qualified since the difference between both fluoride results was less than one times the reporting limit. The field duplicate results indicated acceptable levels of precision.

Other than the rejected data for nitrite, nitrate, and orthophosphate due to holding time exceedances, the majority of the anion sample results are of sufficient quality for their intended project use.

3.2.2 Summary of Data Assessment Results for Groundwater Upwelling – Surface Water

The following subsections present a summary of the results of the assessment and the major and minor QC deficiencies identified during the data assessment of the groundwater upwelling surface water data. Thirty-three SDGs were included in this assessment. The majority of the data are acceptable for their intended project use. Those data that were rejected and determined to be unusable based on a major QC deficiency identified during the assessment are provided in Table 3-6.

3.2.2.1 Radionuclides – Groundwater Upwelling (Surface Water). For radionuclide data, QC results were compliant for most parameters. None of the radionuclide data was rejected, and the data are acceptable for their intended project use. The following is a summary of the results of the assessment and minor QC deficiencies noted during the assessment.

All samples were analyzed prior to expiration of the associated 6-month required holding time. RDLs and MDA levels were reviewed and determined to be at or below the levels specified in the project SAP, with the exception of the RDLs for carbon-14 and strontium and the MDA levels for potassium-40, radium-226, radium-228, americium-241, beryllium-7, and ruthenium-106, which exceeded the limits specified in the SAP (DOE/RL 2008-11, Appendix A). In accordance with the guidance (HNF-20434), no action was taken based on this finding.

Method blanks did not contain concentrations of target analytes above corresponding detection limits. No equipment blanks were analyzed for radionuclides. LCS results were compliant with respective criteria, indicating a positive correlation to the accuracy of reported sample concentrations. Noncompliant tracer recovery results were reported for thorium-230 and uranium in SDG K1923. The recoveries were below the lower control limit, indicating a potential low bias to sample concentrations. The associated sample results were qualified as estimated based on this finding. Matrix spike analyses were compliant for tritium and carbon-14. Laboratory duplicate samples were analyzed to measure the precision of reported results. The RPDs between the duplicate pairs generally indicated that there was an acceptable level of analytical precision. One of the field duplicates collected for SDG K1952 had a RPD value that exceeded criteria; however, in accordance with the guidance (HNF-20434), no qualification was assigned based on this finding.

In summary, QC results for the radionuclides were compliant for most parameters and none of the radionuclide data was rejected. Radionuclide data for groundwater upwelling surface water are of sufficient quality for their intended project use.

3.2.2.2 Volatile Organic Compounds – Groundwater Upwelling (Surface Water). For the groundwater upwelling surface water VOC data, QC results were compliant for most QC parameters. None of the VOC data was rejected, and the data are acceptable for their intended project use. The following is a summary of the results of the assessment and minor QC deficiencies noted during the assessment.

Analysis of the samples in all SDGs took place prior to the expiration of the associated holding time. Detection limits for all compounds that are reported with this analysis are the same or below those specified in the SAP (DOE/RL-2008-11, Appendix A).

The results from the laboratory blanks were compliant with the criteria in all SDGs. Trip blanks were analyzed with all but one of the SDGs. The trip blank with SDG K1923 contained low-level concentrations of acetone. Based on the guidance used for this DQA (HNF-20433), no action was taken with respect to trip blank contamination. No equipment blanks were analyzed in association with these SDGs.

LCS recoveries were generally compliant for all samples, indicating that accuracy requirements were satisfied. LCS recoveries exceeding the upper control limit were reported for acetone in SDGs K1905 and K1907. Based on this finding, detected results for associated samples were qualified as estimated (J). Matrix spike recoveries and RPDs were compliant for all SDGs. Field duplicates for VOCs were not analyzed in association with any of the SDGs.

Since only minor QC deficiencies were identified during the assessment, results from the VOC data are of sufficient quality for their intended project use.

3.2.2.3 Metals – Groundwater Upwelling (Surface Water). For the metals data, QC results were compliant for most QC parameters. The QC results for metals analyses indicate that the results are of acceptable quality for their intended project use. No major deficiencies were identified, and therefore no data were rejected. The following is a summary of the results of the assessment and the minor QC deficiencies noted during the assessment.

Detection limits for most metals were generally at or below those specified in the SAP with the exception of silicon. There was no action taken with respect to the elevated detection limits. Samples were analyzed within the holding times specified in the project SAP (DOE/RL-2008-11, Appendix A).

A number of elements were detected in the preparation blanks associated with the groundwater upwelling surface water SDGs, indicating potential interferences during sample preparation and analysis. Since almost all of the detections were at trace levels, those elements detected at similar levels in samples (less than five times the blank concentration) were qualified as estimated nondetect (UJ).

An equipment blank was analyzed in association with SDG K1944. Boron, calcium, sodium, and zinc were detected the equipment blank. In accordance with the guidance used for this DQA (HNF-20433), no action was taken based on the equipment blank detections.

LCS recoveries were compliant for all of the SDGs. Noncompliant matrix spike results were identified for silicon in SDG K1944, and associated sample results were qualified as estimated (J).

The RPDs between sample/duplicate pairs were acceptable for most of the elements in the laboratory and field duplicates. Elevated RPDs for the laboratory duplicates did not impact sample results because the difference between the results was less than the RDL. In accordance with the guidance used for this DQA (HNF-20433), no action was taken based on noncompliant field duplicate results.

No major QC deficiencies were identified as part of the data assessment indicating that the metals data are of sufficient quality for their intended project use.

3.2.2.4 Hexavalent Chromium – Groundwater Upwelling (Surface Water). Hexavalent chromium QC results were compliant for most parameters assessed. None of the hexavalent chromium data was rejected during the data assessment, and the data are acceptable for their intended project use.

The holding time was exceeded by less than twice the limit for one sample in SDG J00704. The result for this sample was qualified as estimated (J) based on this finding. The detection limits were met for all samples.

The matrix spike recovery exceeded the criteria for one sample in SDG J00668, but there was no action taken since the associated sample result was nondetect. The RPD between the matrix spike and its duplicate was noncompliant resulting in this sample being qualified as estimated (J).

All other QC parameters that were assessed were compliant with the criteria. None of the hexavalent chromium data was rejected during the data assessment, and the data are acceptable for their intended project use.

3.2.2.5 Dissolved Organic Carbon – Groundwater Upwelling (Surface Water). DOC QC results were compliant for most QC parameters. None of the DOC data was rejected, and the data are acceptable for their intended project use. The following is a summary of the results of the assessment and minor QC deficiencies noted during the assessment.

Detection limit values reported for all samples were at or below the specification included in the SAP (DOE/RL-2008-11, Appendix A), and all samples were analyzed within the required holding time limits.

DOC concentrations were detected in laboratory blanks associated with three SDGs. One sample from SDG K1931 and all samples from SDG K1944 were qualified as estimated nondetect (UJ) based on blank results. Samples from SDG K1931 were not qualified since the sample results were greater than five times the blank concentration. DOC was detected in an equipment blank in SDG K1944. Based on the guidance used for this DQA (HNF-20433), no action was taken based on this finding. LCS results, matrix spike recoveries, and laboratory and field duplicate results were compliant for all SDGs.

Only minor QC deficiencies were identified during the assessment of DOC data quality, and the data are of sufficient quality for their intended project use.

3.2.2.6 Anions – Groundwater Upwelling (Surface Water). Anions that were analyzed include bromide, chloride, fluoride, nitrate, nitrite, orthophosphate, sulfate, and combined nitrate/nitrite. Quality control results were compliant for most QC parameters; however, all results for nitrite and orthophosphate and some for nitrate were rejected based on holding time exceedances. Results for other analytes were acceptable for their intended project use. The following is a summary of the results of the assessment and minor QC deficiencies noted during the assessment. Results that were qualified as rejected are presented in Table 3-6.

Detection limit values for these analytes were not specified in the SAP (DOE/RL-2008-11, Appendix A). Holding times were exceeded by more than twice the limit for nitrate, nitrite, and orthophosphate. Detected results were qualified as estimated (J) and nondetect results were qualified as rejected (R). This resulted in all nitrite and orthophosphate results being rejected for all SDGs assessed. The nitrate result for one sample in SDG K1944 was also rejected based on the holding time exceedance.

Anions were not detected in laboratory blanks or equipment blanks associated with the surface water data. LCS results were compliant for all SDGs. Fluoride results for samples in SDG K1955 and nitrate/nitrite as N results in SDG K1907 were qualified as estimated based on noncompliant matrix spike recoveries. Noncompliant RPDs for fluoride and chloride laboratory duplicate results were reported in SDG K1944, and noncompliant RPDs for nitrate and chloride laboratory duplicate results were reported in SDGs K1952 and K1955. Sample results associated with the RPD exceedance for nitrate in SDG K1955 were not qualified because the difference between the initial and replicate samples was less than the RDL. The field duplicate for SDG K1952 had a noncompliant RPD for nitrate and nitrate/nitrite as N. Based on the guidance (HNF-20433), no action was taken based on this finding.

Quality control results were compliant for most QC parameters; however, all results for nitrite and orthophosphate and some for nitrate were qualified as rejected (R) based on holding time exceedances. Results for other analytes were acceptable and are of sufficient quality for their intended project use.

3.2.3 Summary of Data Assessment Results for Groundwater Upwelling – Sediment

As part of the groundwater upwelling investigation, sediment samples were collected and analyzed for radionuclides, VOCs, metals, hexavalent chromium, and TOC. A DQA was conducted to identify potential bias or interferences that could impact sample results as reported by the analytical laboratory. Thirty-three SDGs were included in this assessment.

The majority of the data are acceptable for their intended project use. Those data that were rejected and unusable based on a major QC deficiency identified during the assessment are provided in Table 3-6. The following subsections present a summary by chemical parameter of the major and minor QC deficiencies identified during the data assessment of the groundwater upwelling sediment data.

3.2.3.1 Radionuclides – Groundwater Upwelling (Sediment). Radionuclide target analytes include carbon-14, tritium, total strontium, technetium-99, uranium, plutonium, thorium, and a gamma scan that provides results for 16 additional radionuclides. Quality control results were compliant for most QC parameters. None of the radionuclide data was rejected, and the data are acceptable for their intended project use. The following is a summary of the results of the assessment and minor QC deficiencies noted during the assessment.

All samples were analyzed prior to expiration of the associated 6-month required holding time. RDLs were reviewed and determined to be at or below the levels specified in the project SAP

(DOE/RL 2008-11, Appendix A). The MDAs exceeded specifications contained in the SAP for cobalt-60, radium-226, radium-228, europium-152, europium-154, and europium-155 for several samples. In accordance with the guidance used for this DQA (HNF-20434), no action was taken with respect to detection limit exceedances.

Method blanks did not contain concentrations of target analytes above corresponding detection limits. No equipment blanks were analyzed for radionuclides.

LCS and tracer results were compliant with respective criteria, indicating a positive correlation to the accuracy of reported sample concentrations. Matrix spike analyses were not performed in conjunction with the carbon-14 analysis in SDGs K1922 and K1956 or the tritium analysis in SDGs K1945, K1953, and K1956. Based on this finding, all associated sample results for carbon-14 and tritium from these SDGs were qualified as estimated (J).

Laboratory duplicate samples were analyzed to measure the precision of reported results. The RPDs between the duplicate pairs were compliant for all SDGs except K1932 and K1945. No qualification was required for the SDGs with noncompliant RPDs because the difference between the initial and replicate results were less than two times the RDL. When collected, field duplicate RPDs were compliant with the criteria.

Minor QC issues were identified because matrix spike analyses were not completed for carbon-14 or tritium; however, none of the radionuclide groundwater upwelling sediment data was rejected, and the data are of sufficient quality for their intended project use.

3.2.3.2 Volatile Organic Compounds – Groundwater Upwelling (Sediment). For the VOC data, QC results were compliant for most parameters, and the data are sufficient for their intended project use. The following is a summary of the results of the assessment and minor QC deficiencies noted during the assessment.

Analysis of the samples took place prior to the expiration of the associated holding time. Detection limits for all compounds that are reported with this analysis are the same or below those specified in the SAP (DOE/RL-2008-11, Appendix A), with the exception of 1,1,1-trichloroethane, 1,2-dichloroethane, 2-butanone, and methylene chloride in at least one SDG. Laboratory blanks were analyzed for target VOCs, and methylene chloride was detected in SDGs K1906 and K1956 at trace concentrations. Detected sample concentrations less than 10 times the blank concentration were qualified as estimated nondetect (UJ). If the sample concentration of the blank contaminant was below the RDL, it was raised to that value as part of this action. No equipment blanks were analyzed for VOCs. Trip blanks analyzed with SDGs K1906 and K1956 contained concentrations of methylene chloride. Based on the guidance (HNF-20433), no action was taken with respect to trip blank contamination.

LCS and matrix spike recoveries were out of compliance for 2-butanone, 2-hexanone, acetone, and bromomethane in at least one SDG. The recoveries exceeded the upper control limit, indicating a potential high bias. No action was taken because all of these compounds were nondetect in the associated samples. All results for 2-butanone and acetone in samples from SDG K1922 were qualified as estimated (J) based on noncompliant matrix spike/matrix spike duplicate RPDs. Surrogate recoveries were compliant for all SDGs. No field duplicates were collected or analyzed for VOCs.

Data from the VOC analyses are of sufficient quality for their intended project use.

3.2.3.3 Metals – Groundwater Upwelling (Sediment). For the metals data, QC results were compliant for most parameters. Nondetect results for bismuth and uranium in SDG K1953 were qualified as rejected (R) based on low matrix spike recoveries. With the exception of the rejected bismuth and uranium data (six samples), the data are sufficient for their intended project use. The following discussion summarizes the findings obtained from the assessment and identifies deficiencies indicated by the QC results. Those data that were rejected and unusable based on a major QC deficiency identified during the assessment are provided in Table 3-6.

All samples were analyzed within the required holding times. Detection limits for most metals were generally at or below those specified in the SAP (DOE/RL-2008-11, Appendix A) with the exception of the following elements: calcium, iron, phosphorus, uranium, and zinc. In accordance with the guidance used for this DQA (HNF-20433), no action was taken with respect to the elevated detection limits.

Several elements were detected in the majority of the preparation blanks. Since almost all of the detections were at trace levels, those elements detected at similar levels in samples (less than five times the blank concentration) were qualified as estimated nondetect (UJ). No equipment blanks were analyzed.

LCS recoveries were compliant for most SDGs; however, silicon had LCS recoveries that were below the lower control limit in most of the SDGs. All silicon results for many samples were qualified as estimated (J) based on the LCS recoveries. LCS recoveries for antimony were below the lower control limit for SDG K1906 and all associated sample results were qualified as estimated (J). For SDG K1945, the LCS recovery for antimony exceeded the upper control limit, and detected results were qualified as estimated (J).

Samples were spiked with known concentrations of the target elements to identify any potential matrix effects. Several elements had noncompliant recoveries in the sediment SDGs. For recoveries below the lower control limit, associated results were qualified as estimated (J). For recoveries that exceeded the upper control limit, detected results were qualified as estimated (J). Extremely low recoveries of bismuth (0%), phosphorus (4%), and uranium (0%) were reported for SDG K1953. Based on this finding, all nondetect results were qualified as rejected (R) and detected results were qualified as estimated (J). Very low recoveries of calcium (28%) and phosphorus (-8%) were also reported for SDG K1956; however, all results were detected and therefore qualified as estimated (J).

The RPDs between sample/duplicate pairs were acceptable for most of the laboratory duplicates, indicating that the analytical precision was satisfactory. In SDGs K1906, K1932, K1945, K1956, the RPD values exceeded criteria for various elements and associated results were qualified as estimated. Field duplicate results in SDG K1956 had RPDs greater than the criteria for chromium and sodium. In accordance with the guidance (HNF-20433), no action was taken based on this finding.

Nondetect results for bismuth and uranium in SDG K1953 were qualified as rejected (R) based on low matrix spike recoveries. All other metals data are of sufficient quality for their intended project use.

3.2.3.4 Hexavalent Chromium – Groundwater Upwelling (Sediment). For the hexavalent chromium data, six sample results were rejected based on low matrix spike recoveries.

The majority of the hexavalent chromium data in sediment samples associated with the groundwater upwelling investigation are of sufficient quality for their intended project use. The following is a summary of the results of the assessment and the QC deficiencies noted during the assessment. The data that were rejected are provided in Table 3-6.

Laboratory detection limits for hexavalent chromium met the level specified in the SAP (DOE/RL-2008-11, Appendix A). Samples from all SDGs were analyzed within the holding times.

Laboratory preparation blank results were compliant for all SDGs. LCS recoveries were compliant for all SDGs except J00657. All sample results in this SDG were qualified as estimated (J) based on this finding. Matrix spike recoveries below 30% resulted in nondetect results being qualified as rejected (R) for samples in the following SDGs: J00660, J00705, and J00757. Sample results associated with several other SDGs were qualified as estimated based on matrix spike recoveries between 30% and 70%.

Laboratory duplicate results were generally compliant, with only a few sample results being qualified as estimated based on elevated RPDs. The field duplicate RPD from SDG J00682 exceeded criteria; however, no qualification was performed based on the guidance for this assessment (HNF-20433).

The majority of the hexavalent chromium data in sediment samples associated with the groundwater upwelling investigation are of sufficient quality for their intended project use. Results for samples from three SDGs (total of six samples) were qualified as rejected (R) based on low matrix spike recoveries.

3.2.3.5 Total Organic Carbon – Groundwater Upwelling (Sediment). TOC QC results were compliant for most QC parameters. None of the TOC data was rejected, and the data are acceptable for their intended project use. The following is a summary of the results of the assessment and minor QC deficiencies noted during the assessment.

Detection limit values reported for all samples were at or below the specification included in the SAP (DOE/RL-2008-11, Appendix A). Samples in SDGs K1922 and K1932 were analyzed beyond the specified holding time of 28 days. All associated samples in these SDGs were qualified as estimated as a result of this finding. Trace TOC concentrations were detected in many of the associated laboratory blanks. There was no impact from these detections since all of the TOC concentrations were much greater than five times the blank concentrations. LCS, surrogate, and matrix spike recoveries were generally compliant. Noncompliant RPDs for the laboratory duplicate samples were found in most of the SDGs. If initial and replicate results were both greater than five times the RDL, all results were qualified as estimated. However, if the results were equal to or less than five times the RDL and the difference between the results was greater than two times the RDL, only detected results were qualified as estimated. The field duplicate RPD for SDG K1956 was out of compliance; however, no qualification was assigned based on the guidance for this assessment (HNF-20433).

The TOC data in sediment samples associated with the groundwater upwelling investigation are of sufficient quality for their intended project use.

3.2.4 Summary of Data Validation Results for Groundwater Upwelling Data

The third-party data validation packages for groundwater upwelling samples are included in Appendix F (on CD). These packages summarize the data validation that was completed for a given SDG along with the QC deficiencies, if any, that were identified. Seventeen SDGs as listed in Table 2-5 were validated. With few exceptions, only minor QC deficiencies were identified in the data reviewed, and the data are suitable for their intended use in the RI and human health and ecological risk assessments. Data that were deemed unusable for decision-making purposes were rejected (qualified "R") based on a major QC deficiency identified during data validation. The only data rejected as a result of validation were the nondetect nitrate, nitrite, and orthophosphate results from pore water samples in SDG K1926. These results were rejected because the holding time had been exceeded by more than twice the 48-hour limit. A summary of this rejected pore water data is presented in Table 3-6.

3.3 SUMMARY OF RESULTS FOR FISH TISSUE DATA

The following subsections present by analytical parameter a summary of the data assessment and the QC deficiencies, if any, that were identified during the evaluation of the fish tissue data.

3.3.1 Summary of Data Assessment Results for Fish Tissue

Several different species of fish indigenous to the Columbia River including whitefish, carp, sturgeon, bass, sucker, and walleye were analyzed for radionuclides, chlorinated pesticides, and metals. A DQA was conducted to identify potential bias or interferences that could impact sample results as reported by the analytical laboratory. Eighteen SDGs were included in this assessment. Several samples from additional SDGs were analyzed for PCB congeners, speciated arsenic, hexavalent chromium, and methyl mercury as discussed in subsection 3.3.4.

The majority of the data are sufficient for their intended project use. Those data that were rejected and unusable based on a major QC deficiency identified during the assessment are provided in Table 3-7. The following subsections present a summary by chemical parameter of the major and minor QC deficiencies identified during the data assessment of the fish tissue data.

3.3.1.1 Radionuclides – Fish Tissue. Radionuclide target analytes include carbon-14, tritium, total strontium, technetium-99, uranium, plutonium, thorium, and a gamma scan that provides results for 16 additional radionuclides. Quality control results were compliant for most QC parameters. None of the radionuclide data was rejected and all are acceptable for their intended project use. The following is a summary of the results of the assessment and minor QC deficiencies noted during the assessment.

All samples were analyzed prior to expiration of the associated 6-month required holding time. RDLs were reviewed and determined to be at or below the levels specified in the project SAP (DOE/RL 2008-11, Appendix A). The MDAs exceeded specifications contained in the SAP for cobalt-60, radium-226, radium-228, europium-152, europium-154, europium-155, cesium-137, ruthenium-106, uranium-238, and potassium-40 for several samples. In accordance with the guidance used for this DQA (HNF-20434), no action was taken with respect to detection limit exceedances.

Table 3-7. Summary of Rejected Fish Tissue Data by Method. (79 Pages)

Analytical Method	Analyte	SDG Number	Sample Identification	Sample Date	Result	Units	Laboratory Qualifier	Validation Qualifier
PCB Congeners - 1668A	4-Chlorobiphenyl	J00469	J18K87	4/15/2009	5.00E-05	mg/Kg	U	R
PCB Congeners - 1668A	4-Chlorobiphenyl	J00558	J19276	7/29/2009	5.00E-05	mg/Kg	U	R
PCB Congeners - 1668A	4-Chlorobiphenyl	J00558	J19289	7/3/2009	3.80E-04	mg/Kg	U	R
PCB Congeners - 1668A	4-Chlorobiphenyl	J00564	J19037	8/25/2009	1.00E-05	mg/Kg	U	R
PCB Congeners - 1668A	4-Chlorobiphenyl	J00564	J19464	8/17/2009	2.50E-04	mg/Kg	U	R
Pesticides - 8081	Aldrin	K1579	J18J59	4/1/2009	8.06E-03	mg/Kg	U	R
Pesticides - 8081	Aldrin	K1579	J18J60	4/1/2009	9.61E-03	mg/Kg	U	R
Pesticides - 8081	Aldrin	K1579	J18J61	4/1/2009	8.69E-03	mg/Kg	U	R
Pesticides - 8081	Aldrin	K1579	J18J62	4/1/2009	0.00826	mg/Kg	U	R
Pesticides - 8081	Aldrin	K1579	J18J63	4/1/2009	8.69E-03	mg/Kg	U	R
Pesticides - 8081	Aldrin	K1579	J18K11	4/1/2009	8.32E-03	mg/Kg	U	R
Pesticides - 8081	Aldrin	K1579	J18K12	4/1/2009	8.69E-03	mg/Kg	U	R
Pesticides - 8081	Aldrin	K1579	J18K13	4/1/2009	7.57E-03	mg/Kg	U	R
Pesticides - 8081	Aldrin	K1579	J18K14	4/1/2009	6.66E-03	mg/Kg	U	R
Pesticides - 8081	Aldrin	K1579	J18K15	4/1/2009	8.06E-03	mg/Kg	U	R
Pesticides - 8081	Aldrin	K1579	J18K52	4/1/2009	6.89E-03	mg/Kg	U	R
Pesticides - 8081	Aldrin	K1579	J18K53	4/1/2009	0.00662	mg/Kg	U	R
Pesticides - 8081	Aldrin	K1579	J18K54	4/1/2009	5.98E-03	mg/Kg	U	R
Pesticides - 8081	Aldrin	K1579	J18K55	4/1/2009	6.36E-03	mg/Kg	U	R
Pesticides - 8081	Aldrin	K1579	J18K56	4/1/2009	7.68E-03	mg/Kg	U	R
Pesticides - 8081	Aldrin	K1579	J18KD3	4/1/2009	7.09E-03	mg/Kg	U	R
Pesticides - 8081	Aldrin	K1579	J18KD4	4/1/2009	7.04E-03	mg/Kg	U	R
Pesticides - 8081	Aldrin	K1579	J18KD5	4/1/2009	6.17E-03	mg/Kg	U	R
Pesticides - 8081	Aldrin	K1579	J18KD6	4/1/2009	6.53E-03	mg/Kg	U	R
Pesticides - 8081	Aldrin	K1579	J18KD7	4/1/2009	5.00E-03	mg/Kg	U	R
Pesticides - 8081	Aldrin	K1714	J192D5	8/4/2009	8.92E-03	mg/Kg	U	R
Pesticides - 8081	Aldrin	K1714	J192D6	8/4/2009	7.93E-03	mg/Kg	U	R
Pesticides - 8081	Aldrin	K1714	J192F6	8/4/2009	8.84E-03	mg/Kg	U	R
Pesticides - 8081	Aldrin	K1714	J192F7	8/4/2009	5.18E-03	mg/Kg	U	R
Pesticides - 8081	Aldrin	K1714	J192Y8	8/5/2009	9.42E-03	mg/Kg	U	R
Pesticides - 8081	Aldrin	K1714	J192Y9	8/5/2009	6.17E-03	mg/Kg	U	R
Pesticides - 8081	Aldrin	K1714	J19308	8/5/2009	7.04E-03	mg/Kg	U	R
Pesticides - 8081	Aldrin	K1714	J19309	8/5/2009	9.17E-03	mg/Kg	U	R

Table 3-7. Summary of Rejected Fish Tissue Data by Method. (79 Pages)

Analytical Method	Analyte	SDG Number	Sample Identification	Sample Date	Result	Units	Laboratory Qualifier	Validation Qualifier
Pesticides - 8081	Aldrin	K1714	J19319	8/6/2009	9.34E-03	mg/Kg	U	R
Pesticides - 8081	Aldrin	K1714	J19320	8/6/2009	7.87E-03	mg/Kg	U	R
Pesticides - 8081	Aldrin	K1725	J193K6	8/6/2009	7.74E-03	mg/Kg	U	R
Pesticides - 8081	Aldrin	K1725	J193K7	8/6/2009	6.89E-03	mg/Kg	U	R
Pesticides - 8081	Aldrin	K1725	J193L6	8/10/2009	7.63E-03	mg/Kg	U	R
Pesticides - 8081	Aldrin	K1725	J193L7	8/10/2009	7.19E-03	mg/Kg	U	R
Pesticides - 8081	Aldrin	K1725	J193M8	8/11/2009	7.29E-03	mg/Kg	U	R
Pesticides - 8081	Aldrin	K1725	J193M9	8/11/2009	8.69E-03	mg/Kg	U	R
Pesticides - 8081	Aldrin	K1725	J19441	8/12/2009	6.84E-03	mg/Kg	U	R
Pesticides - 8081	Aldrin	K1758	J19047	9/1/2009	1.76E-02	mg/Kg	U	R
Pesticides - 8081	Aldrin	K1758	J19048	9/1/2009	1.75E-02	mg/Kg	U	R
Pesticides - 8081	Aldrin	K1758	J19049	9/1/2009	0.0178	mg/Kg	U	R
Pesticides - 8081	Aldrin	K1758	J19050	9/1/2009	0.0152	mg/Kg	U	R
Pesticides - 8081	Aldrin	K1758	J19051	9/1/2009	1.71E-02	mg/Kg	U	R
Pesticides - 8081	Aldrin	K1758	J190D0	9/1/2009	0.0161	mg/Kg	U	R
Pesticides - 8081	Aldrin	K1758	J190D1	9/1/2009	1.96E-02	mg/Kg	U	R
Pesticides - 8081	Aldrin	K1758	J190D2	9/1/2009	1.73E-02	mg/Kg	U	R
Pesticides - 8081	Aldrin	K1758	J190D3	9/1/2009	1.94E-02	mg/Kg	U	R
Pesticides - 8081	Aldrin	K1758	J190D4	9/1/2009	2.03E-02	mg/Kg	U	R
Pesticides - 8081	Aldrin	K1758	J190J5	9/1/2009	1.99E-02	mg/Kg	U	R
Pesticides - 8081	Aldrin	K1758	J190J6	9/1/2009	1.50E-02	mg/Kg	U	R
Pesticides - 8081	Aldrin	K1758	J190J7	9/1/2009	1.91E-02	mg/Kg	U	R
Pesticides - 8081	Aldrin	K1758	J190J8	9/1/2009	1.70E-02	mg/Kg	U	R
Pesticides - 8081	Aldrin	K1758	J190J9	9/1/2009	2.09E-02	mg/Kg	U	R
Pesticides - 8081	Aldrin	K1758	J190N1	9/1/2009	1.57E-02	mg/Kg	U	R
Pesticides - 8081	Aldrin	K1758	J190N2	9/1/2009	0.0161	mg/Kg	U	R
Pesticides - 8081	Aldrin	K1758	J190N3	9/1/2009	1.81E-02	mg/Kg	U	R
Pesticides - 8081	Aldrin	K1758	J190N4	9/1/2009	0.0178	mg/Kg	U	R
Pesticides - 8081	Aldrin	K1758	J190N5	9/1/2009	1.93E-02	mg/Kg	U	R
Pesticides - 8081	Aldrin	K1759	J19067	9/2/2009	0.0184	mg/Kg	U	R
Pesticides - 8081	Aldrin	K1759	J19069	9/2/2009	1.99E-02	mg/Kg	U	R
Pesticides - 8081	Aldrin	K1759	J19071	9/2/2009	1.99E-02	mg/Kg	U	R
Pesticides - 8081	Aldrin	K1759	J190D5	9/2/2009	0.0161	mg/Kg	U	R
Pesticides - 8081	Aldrin	K1759	J190D7	9/2/2009	0.0201	mg/Kg	U	R
Pesticides - 8081	Aldrin	K1759	J190D9	9/2/2009	0.0146	mg/Kg	U	R
Pesticides - 8081	Aldrin	K1759	J190H0	9/2/2009	1.50E-02	mg/Kg	U	R
Pesticides - 8081	Aldrin	K1759	J190H1	9/2/2009	2.09E-02	mg/Kg	U	R
Pesticides - 8081	Aldrin	K1759	J190H2	9/1/2009	0.0161	mg/Kg	U	R
Pesticides - 8081	Aldrin	K1759	J190H3	9/1/2009	0.0183	mg/Kg	U	R

Table 3-7. Summary of Rejected Fish Tissue Data by Method. (79 Pages)

Analytical Method	Analyte	SDG Number	Sample Identification	Sample Date	Result	Units	Laboratory Qualifier	Validation Qualifier
Pesticides - 8081	Aldrin	K1759	J190H4	9/1/2009	2.28E-02	mg/Kg	U	R
Pesticides - 8081	Aldrin	K1759	J190K0	9/2/2009	1.71E-02	mg/Kg	U	R
Pesticides - 8081	Aldrin	K1759	J190K1	9/2/2009	0.0184	mg/Kg	U	R
Pesticides - 8081	Aldrin	K1759	J190K2	9/1/2009	1.99E-02	mg/Kg	U	R
Pesticides - 8081	Aldrin	K1759	J190K3	9/1/2009	0.0166	mg/Kg	U	R
Pesticides - 8081	Aldrin	K1759	J190K4	9/1/2009	1.91E-02	mg/Kg	U	R
Pesticides - 8081	Aldrin	K1761	J19470	9/3/2009	1.99E-02	mg/Kg	U	R
Pesticides - 8081	Aldrin	K1761	J19471	9/3/2009	1.88E-02	mg/Kg	U	R
Pesticides - 8081	Aldrin	K1761	J19480	9/3/2009	1.45E-02	mg/Kg	U	R
Pesticides - 8081	Aldrin	K1761	J19481	9/3/2009	0.0184	mg/Kg	U	R
Pesticides - 8081	Aldrin	K1761	J19490	9/8/2009	1.71E-02	mg/Kg	U	R
Pesticides - 8081	Aldrin	K1761	J19491	9/8/2009	1.45E-02	mg/Kg	U	R
Pesticides - 8081	Aldrin	K1761	J194B1	9/8/2009	0.0184	mg/Kg	U	R
Pesticides - 8081	Aldrin	K1761	J194B2	9/8/2009	1.33E-02	mg/Kg	U	R
Pesticides - 8081	Aldrin	K1761	J194C2	9/9/2009	0.0195	mg/Kg	U	R
Pesticides - 8081	Aldrin	K1761	J194C3	9/9/2009	1.93E-02	mg/Kg	U	R
Pesticides - 8081	Aldrin	K1769	J194Y7	9/10/2009	1.91E-02	mg/Kg	U	R
Pesticides - 8081	Aldrin	K1769	J194Y8	9/10/2009	2.03E-02	mg/Kg	U	R
Pesticides - 8081	Aldrin	K1769	J195P4	9/10/2009	0.0161	mg/Kg	U	R
Pesticides - 8081	Aldrin	K1769	J195P5	9/10/2009	1.59E-02	mg/Kg	U	R
Pesticides - 8081	Aldrin	K1769	J195R6	9/14/2009	0.0229	mg/Kg	U	R
Pesticides - 8081	Aldrin	K1769	J195R7	9/14/2009	0.0201	mg/Kg	U	R
Pesticides - 8081	Aldrin	K1769	J195X3	9/15/2009	2.16E-02	mg/Kg	U	R
Pesticides - 8081	Aldrin	K1769	J195X4	9/15/2009	1.92E-02	mg/Kg	U	R
Pesticides - 8081	Aldrin	K1769	J19603	9/15/2009	0.0146	mg/Kg	U	R
Pesticides - 8081	Aldrin	K1769	J19604	9/15/2009	0.0195	mg/Kg	U	R
Pesticides - 8081	Aldrin	K1774	J19622	9/16/2009	0.0149	mg/Kg	U	R
Pesticides - 8081	Aldrin	K1774	J19623	9/16/2009	1.99E-02	mg/Kg	U	R
Pesticides - 8081	Aldrin	K1774	J19633	9/16/2009	0.0201	mg/Kg	U	R
Pesticides - 8081	Aldrin	K1774	J19643	9/17/2009	0.0166	mg/Kg	U	R
Pesticides - 8081	Aldrin	K1774	J19644	9/17/2009	1.80E-02	mg/Kg	U	R
Pesticides - 8081	Aldrin	K1774	J19653	9/17/2009	1.88E-02	mg/Kg	U	R
Pesticides - 8081	Aldrin	K1774	J19654	9/17/2009	2.05E-02	mg/Kg	U	R
Pesticides - 8081	Aldrin	K1785	J18XB1	9/24/2009	0.0184	mg/Kg	U	R
Pesticides - 8081	Aldrin	K1785	J18XB2	9/25/2009	1.93E-02	mg/Kg	U	R
Pesticides - 8081	Aldrin	K1785	J18XB3	9/25/2009	1.94E-02	mg/Kg	U	R
Pesticides - 8081	Aldrin	K1785	J18XB4	9/24/2009	1.81E-02	mg/Kg	U	R
Pesticides - 8081	Aldrin	K1785	J18XB5	9/24/2009	1.88E-02	mg/Kg	U	R
Pesticides - 8081	Aldrin	K1785	J18XF6	9/24/2009	1.81E-02	mg/Kg	U	R

Table 3-7. Summary of Rejected Fish Tissue Data by Method. (79 Pages)

Analytical Method	Analyte	SDG Number	Sample Identification	Sample Date	Result	Units	Laboratory Qualifier	Validation Qualifier
Pesticides - 8081	Aldrin	K1785	J18XF7	9/24/2009	1.70E-02	mg/Kg	U	R
Pesticides - 8081	Aldrin	K1785	J18XF8	9/24/2009	1.31E-02	mg/Kg	U	R
Pesticides - 8081	Aldrin	K1785	J18XF9	9/25/2009	0.0178	mg/Kg	U	R
Pesticides - 8081	Aldrin	K1785	J18XH0	9/25/2009	0.0126	mg/Kg	U	R
Pesticides - 8081	Aldrin	K1785	J195V7	9/21/2009	0.019	mg/Kg	U	R
Pesticides - 8081	Aldrin	K1785	J195V8	9/21/2009	0.0189	mg/Kg	U	R
Pesticides - 8081	Aldrin	K1785	J195V9	9/21/2009	0.016	mg/Kg	U	R
Pesticides - 8081	Aldrin	K1785	J195W0	9/24/2009	0.016	mg/Kg	U	R
Pesticides - 8081	Aldrin	K1785	J19661	9/24/2009	1.91E-02	mg/Kg	U	R
Pesticides - 8081	Aldrin	K1785	J19662	9/24/2009	0.0184	mg/Kg	U	R
Pesticides - 8081	Aldrin	K1785	J19747	9/24/2009	2.05E-02	mg/Kg	U	R
Pesticides - 8081	Aldrin	K1852	J191V0	12/7/2009	1.02E-02	mg/Kg	U	R
Pesticides - 8081	Aldrin	K1852	J191V1	12/7/2009	0.0184	mg/Kg	U	R
Pesticides - 8081	Aldrin	K1852	J191V2	12/7/2009	1.86E-02	mg/Kg	U	R
Pesticides - 8081	Aldrin	K1852	J191V3	12/7/2009	0.0132	mg/Kg	U	R
Pesticides - 8081	Aldrin	K1852	J191V4	12/7/2009	1.91E-02	mg/Kg	U	R
Pesticides - 8081	Aldrin	K1852	J191Y6	12/7/2009	1.45E-02	mg/Kg	U	R
Pesticides - 8081	Aldrin	K1852	J191Y7	12/7/2009	1.69E-02	mg/Kg	U	R
Pesticides - 8081	Aldrin	K1852	J191Y8	12/7/2009	1.31E-02	mg/Kg	U	R
Pesticides - 8081	Aldrin	K1852	J19251	12/8/2009	1.16E-02	mg/Kg	U	R
Pesticides - 8081	Aldrin	K1852	J19252	12/8/2009	0.0166	mg/Kg	U	R
Pesticides - 8081	Aldrin	K1852	J19256	12/8/2009	1.63E-02	mg/Kg	U	R
Pesticides - 8081	Aldrin	K1852	J19257	12/8/2009	0.0135	mg/Kg	U	R
Pesticides - 8081	Aldrin	K1852	J196B0	12/8/2009	1.74E-02	mg/Kg	U	R
Pesticides - 8081	Aldrin	K1852	J196B1	12/8/2009	1.76E-02	mg/Kg	U	R
Pesticides - 8081	Aldrin	K1852	J196B2	12/8/2009	0.0177	mg/Kg	U	R
Pesticides - 8081	Aldrin	K1852	J196B3	12/8/2009	0.0114	mg/Kg	U	R
Pesticides - 8081	Aldrin	K1852	J196B4	12/7/2009	1.76E-02	mg/Kg	U	R
Pesticides - 8081	Aldrin	K1852	J196B5	12/8/2009	0.0115	mg/Kg	U	R
Pesticides - 8081	Aldrin	K1852	J196B6	12/8/2009	1.94E-02	mg/Kg	U	R
Pesticides - 8081	Aldrin	K1852	J196B7	12/8/2009	1.91E-02	mg/Kg	U	R
Pesticides - 8081	Aldrin	K1852	J196B8	12/8/2009	0.0184	mg/Kg	U	R
Pesticides - 8081	Aldrin	K1852	J196B9	12/7/2009	1.63E-02	mg/Kg	U	R
Pesticides - 8081	Aldrin	K1852	J196H0	12/8/2009	0.016	mg/Kg	U	R
Pesticides - 8081	Aldrin	K1852	J196H4	12/7/2009	0.0206	mg/Kg	U	R
Pesticides - 8081	Aldrin	K1852	J196H5	12/8/2009	0.0134	mg/Kg	U	R
Pesticides - 8081	Aldrin	K1852	J196H9	12/7/2009	1.22E-02	mg/Kg	U	R
Pesticides - 8081	Aldrin	K1852	J196W7	12/8/2009	0.0178	mg/Kg	U	R
Pesticides - 8081	Aldrin	K1852	J196W8	12/8/2009	1.58E-02	mg/Kg	U	R

Table 3-7. Summary of Rejected Fish Tissue Data by Method. (79 Pages)

Analytical Method	Analyte	SDG Number	Sample Identification	Sample Date	Result	Units	Laboratory Qualifier	Validation Qualifier
Pesticides - 8081	Aldrin	K1852	J196W9	12/8/2009	0.0178	mg/Kg	U	R
Pesticides - 8081	Aldrin	K1852	J196X0	12/7/2009	1.58E-02	mg/Kg	U	R
Pesticides - 8081	Aldrin	K1852	J196X1	12/7/2009	1.70E-02	mg/Kg	U	R
Pesticides - 8081	Aldrin	K1852	J196X2	12/8/2009	0.0178	mg/Kg	U	R
Pesticides - 8081	Aldrin	K1852	J196X3	12/8/2009	1.36E-02	mg/Kg	U	R
Pesticides - 8081	Aldrin	K1852	J196X4	12/8/2009	0.0178	mg/Kg	U	R
Pesticides - 8081	Aldrin	K1852	J196X5	12/7/2009	1.57E-02	mg/Kg	U	R
Pesticides - 8081	Aldrin	K1852	J196X6	12/7/2009	1.39E-02	mg/Kg	U	R
Pesticides - 8081	Aldrin	K1863	J190V0	12/15/2009	1.36E-02	mg/Kg	U	R
Pesticides - 8081	Aldrin	K1863	J190V1	12/15/2009	0.0126	mg/Kg	U	R
Pesticides - 8081	Aldrin	K1863	J191N4	12/15/2009	1.68E-02	mg/Kg	U	R
Pesticides - 8081	Aldrin	K1863	J191N5	12/15/2009	1.56E-02	mg/Kg	U	R
Pesticides - 8081	Aldrin	K1863	J191N6	12/15/2009	0.014	mg/Kg	U	R
Pesticides - 8081	Aldrin	K1863	J191N7	12/15/2009	1.04E-02	mg/Kg	U	R
Pesticides - 8081	Aldrin	K1863	J191N8	12/15/2009	0.0146	mg/Kg	U	R
Pesticides - 8081	Aldrin	K1863	J191Y5	12/15/2009	1.25E-02	mg/Kg	U	R
Pesticides - 8081	Aldrin	K1863	J191Y9	12/15/2009	1.92E-02	mg/Kg	U	R
Pesticides - 8081	Aldrin	K1863	J19253	12/15/2009	0.012	mg/Kg	U	R
Pesticides - 8081	Aldrin	K1863	J19258	12/15/2009	1.22E-02	mg/Kg	U	R
Pesticides - 8081	Aldrin	K1863	J196H1	12/15/2009	1.53E-02	mg/Kg	U	R
Pesticides - 8081	Aldrin	K1863	J196H6	12/15/2009	1.38E-02	mg/Kg	U	R
Pesticides - 8081	Aldrin	K1919	J19254	1/21/2010	0.014	mg/Kg	U	R
Pesticides - 8081	Aldrin	K1919	J19259	1/21/2010	0.0146	mg/Kg	U	R
Pesticides - 8081	Alpha-BHC	K1579	J18J59	4/1/2009	8.06E-03	mg/Kg	U	R
Pesticides - 8081	Alpha-BHC	K1579	J18J60	4/1/2009	9.61E-03	mg/Kg	U	R
Pesticides - 8081	Alpha-BHC	K1579	J18J61	4/1/2009	8.69E-03	mg/Kg	U	R
Pesticides - 8081	Alpha-BHC	K1579	J18J62	4/1/2009	0.00826	mg/Kg	U	R
Pesticides - 8081	Alpha-BHC	K1579	J18J63	4/1/2009	8.69E-03	mg/Kg	U	R
Pesticides - 8081	Alpha-BHC	K1579	J18K11	4/1/2009	8.32E-03	mg/Kg	U	R
Pesticides - 8081	Alpha-BHC	K1579	J18K12	4/1/2009	8.69E-03	mg/Kg	U	R
Pesticides - 8081	Alpha-BHC	K1579	J18K13	4/1/2009	7.57E-03	mg/Kg	U	R
Pesticides - 8081	Alpha-BHC	K1579	J18K14	4/1/2009	6.66E-03	mg/Kg	U	R
Pesticides - 8081	Alpha-BHC	K1579	J18K15	4/1/2009	8.06E-03	mg/Kg	U	R
Pesticides - 8081	Alpha-BHC	K1579	J18K52	4/1/2009	6.89E-03	mg/Kg	U	R
Pesticides - 8081	Alpha-BHC	K1579	J18K53	4/1/2009	0.00662	mg/Kg	U	R
Pesticides - 8081	Alpha-BHC	K1579	J18K54	4/1/2009	5.98E-03	mg/Kg	U	R
Pesticides - 8081	Alpha-BHC	K1579	J18K55	4/1/2009	6.36E-03	mg/Kg	U	R
Pesticides - 8081	Alpha-BHC	K1579	J18K56	4/1/2009	7.68E-03	mg/Kg	U	R
Pesticides - 8081	Alpha-BHC	K1579	J18KD3	4/1/2009	7.09E-03	mg/Kg	U	R

Table 3-7. Summary of Rejected Fish Tissue Data by Method. (79 Pages)

Analytical Method	Analyte	SDG Number	Sample Identification	Sample Date	Result	Units	Laboratory Qualifier	Validation Qualifier
Pesticides - 8081	Alpha-BHC	K1579	J18KD4	4/1/2009	7.04E-03	mg/Kg	U	R
Pesticides - 8081	Alpha-BHC	K1579	J18KD5	4/1/2009	6.17E-03	mg/Kg	U	R
Pesticides - 8081	Alpha-BHC	K1579	J18KD6	4/1/2009	6.53E-03	mg/Kg	U	R
Pesticides - 8081	Alpha-BHC	K1579	J18KD7	4/1/2009	5.00E-03	mg/Kg	U	R
Pesticides - 8081	Alpha-BHC	K1714	J192D5	8/4/2009	8.92E-03	mg/Kg	U	R
Pesticides - 8081	Alpha-BHC	K1714	J192D6	8/4/2009	7.93E-03	mg/Kg	U	R
Pesticides - 8081	Alpha-BHC	K1714	J192F6	8/4/2009	8.84E-03	mg/Kg	U	R
Pesticides - 8081	Alpha-BHC	K1714	J192F7	8/4/2009	5.18E-03	mg/Kg	U	R
Pesticides - 8081	Alpha-BHC	K1714	J192Y8	8/5/2009	9.42E-03	mg/Kg	U	R
Pesticides - 8081	Alpha-BHC	K1714	J192Y9	8/5/2009	6.17E-03	mg/Kg	U	R
Pesticides - 8081	Alpha-BHC	K1714	J19308	8/5/2009	7.04E-03	mg/Kg	U	R
Pesticides - 8081	Alpha-BHC	K1714	J19309	8/5/2009	9.17E-03	mg/Kg	U	R
Pesticides - 8081	Alpha-BHC	K1714	J19319	8/6/2009	9.34E-03	mg/Kg	U	R
Pesticides - 8081	Alpha-BHC	K1714	J19320	8/6/2009	7.87E-03	mg/Kg	U	R
Pesticides - 8081	Alpha-BHC	K1725	J193K6	8/6/2009	7.74E-03	mg/Kg	U	R
Pesticides - 8081	Alpha-BHC	K1725	J193K7	8/6/2009	6.89E-03	mg/Kg	U	R
Pesticides - 8081	Alpha-BHC	K1725	J193L6	8/10/2009	7.63E-03	mg/Kg	U	R
Pesticides - 8081	Alpha-BHC	K1725	J193L7	8/10/2009	7.19E-03	mg/Kg	U	R
Pesticides - 8081	Alpha-BHC	K1725	J193M8	8/11/2009	7.29E-03	mg/Kg	U	R
Pesticides - 8081	Alpha-BHC	K1725	J193M9	8/11/2009	8.69E-03	mg/Kg	U	R
Pesticides - 8081	Alpha-BHC	K1725	J19441	8/12/2009	6.84E-03	mg/Kg	U	R
Pesticides - 8081	Alpha-BHC	K1758	J19047	9/1/2009	1.76E-02	mg/Kg	U	R
Pesticides - 8081	Alpha-BHC	K1758	J19048	9/1/2009	1.75E-02	mg/Kg	U	R
Pesticides - 8081	Alpha-BHC	K1758	J19049	9/1/2009	0.0178	mg/Kg	U	R
Pesticides - 8081	Alpha-BHC	K1758	J19050	9/1/2009	0.0152	mg/Kg	U	R
Pesticides - 8081	Alpha-BHC	K1758	J19051	9/1/2009	1.71E-02	mg/Kg	U	R
Pesticides - 8081	Alpha-BHC	K1758	J190D0	9/1/2009	0.0161	mg/Kg	U	R
Pesticides - 8081	Alpha-BHC	K1758	J190D1	9/1/2009	1.96E-02	mg/Kg	U	R
Pesticides - 8081	Alpha-BHC	K1758	J190D2	9/1/2009	1.73E-02	mg/Kg	U	R
Pesticides - 8081	Alpha-BHC	K1758	J190D3	9/1/2009	1.94E-02	mg/Kg	U	R
Pesticides - 8081	Alpha-BHC	K1758	J190D4	9/1/2009	2.03E-02	mg/Kg	U	R
Pesticides - 8081	Alpha-BHC	K1758	J190J5	9/1/2009	1.99E-02	mg/Kg	U	R
Pesticides - 8081	Alpha-BHC	K1758	J190J6	9/1/2009	1.50E-02	mg/Kg	U	R
Pesticides - 8081	Alpha-BHC	K1758	J190J7	9/1/2009	1.91E-02	mg/Kg	U	R
Pesticides - 8081	Alpha-BHC	K1758	J190J8	9/1/2009	1.70E-02	mg/Kg	U	R
Pesticides - 8081	Alpha-BHC	K1758	J190J9	9/1/2009	2.09E-02	mg/Kg	U	R
Pesticides - 8081	Alpha-BHC	K1758	J190N1	9/1/2009	1.57E-02	mg/Kg	U	R
Pesticides - 8081	Alpha-BHC	K1758	J190N2	9/1/2009	0.0161	mg/Kg	U	R
Pesticides - 8081	Alpha-BHC	K1758	J190N3	9/1/2009	1.81E-02	mg/Kg	U	R

Table 3-7. Summary of Rejected Fish Tissue Data by Method. (79 Pages)

Analytical Method	Analyte	SDG Number	Sample Identification	Sample Date	Result	Units	Laboratory Qualifier	Validation Qualifier
Pesticides - 8081	Alpha-BHC	K1758	J190N4	9/1/2009	0.0178	mg/Kg	U	R
Pesticides - 8081	Alpha-BHC	K1758	J190N5	9/1/2009	1.93E-02	mg/Kg	U	R
Pesticides - 8081	Alpha-BHC	K1759	J19067	9/2/2009	0.0184	mg/Kg	U	R
Pesticides - 8081	Alpha-BHC	K1759	J19069	9/2/2009	1.99E-02	mg/Kg	U	R
Pesticides - 8081	Alpha-BHC	K1759	J19071	9/2/2009	1.99E-02	mg/Kg	U	R
Pesticides - 8081	Alpha-BHC	K1759	J190D5	9/2/2009	0.0161	mg/Kg	U	R
Pesticides - 8081	Alpha-BHC	K1759	J190D7	9/2/2009	0.0201	mg/Kg	U	R
Pesticides - 8081	Alpha-BHC	K1759	J190D9	9/2/2009	0.0146	mg/Kg	U	R
Pesticides - 8081	Alpha-BHC	K1759	J190H0	9/2/2009	1.50E-02	mg/Kg	U	R
Pesticides - 8081	Alpha-BHC	K1759	J190H1	9/2/2009	2.09E-02	mg/Kg	U	R
Pesticides - 8081	Alpha-BHC	K1759	J190H2	9/1/2009	0.0161	mg/Kg	U	R
Pesticides - 8081	Alpha-BHC	K1759	J190H3	9/1/2009	0.0183	mg/Kg	U	R
Pesticides - 8081	Alpha-BHC	K1759	J190H4	9/1/2009	2.28E-02	mg/Kg	U	R
Pesticides - 8081	Alpha-BHC	K1759	J190K0	9/2/2009	1.71E-02	mg/Kg	U	R
Pesticides - 8081	Alpha-BHC	K1759	J190K1	9/2/2009	0.0184	mg/Kg	U	R
Pesticides - 8081	Alpha-BHC	K1759	J190K2	9/1/2009	1.99E-02	mg/Kg	U	R
Pesticides - 8081	Alpha-BHC	K1759	J190K3	9/1/2009	0.0166	mg/Kg	U	R
Pesticides - 8081	Alpha-BHC	K1759	J190K4	9/1/2009	1.91E-02	mg/Kg	U	R
Pesticides - 8081	Alpha-BHC	K1761	J19470	9/3/2009	1.99E-02	mg/Kg	U	R
Pesticides - 8081	Alpha-BHC	K1761	J19471	9/3/2009	1.88E-02	mg/Kg	U	R
Pesticides - 8081	Alpha-BHC	K1761	J19480	9/3/2009	1.45E-02	mg/Kg	U	R
Pesticides - 8081	Alpha-BHC	K1761	J19481	9/3/2009	0.0184	mg/Kg	U	R
Pesticides - 8081	Alpha-BHC	K1761	J19490	9/8/2009	1.71E-02	mg/Kg	U	R
Pesticides - 8081	Alpha-BHC	K1761	J19491	9/8/2009	1.45E-02	mg/Kg	U	R
Pesticides - 8081	Alpha-BHC	K1761	J194B1	9/8/2009	0.0184	mg/Kg	U	R
Pesticides - 8081	Alpha-BHC	K1761	J194B2	9/8/2009	1.33E-02	mg/Kg	U	R
Pesticides - 8081	Alpha-BHC	K1761	J194C2	9/9/2009	0.0195	mg/Kg	U	R
Pesticides - 8081	Alpha-BHC	K1761	J194C3	9/9/2009	1.93E-02	mg/Kg	U	R
Pesticides - 8081	Alpha-BHC	K1769	J194Y7	9/10/2009	1.91E-02	mg/Kg	U	R
Pesticides - 8081	Alpha-BHC	K1769	J194Y8	9/10/2009	2.03E-02	mg/Kg	U	R
Pesticides - 8081	Alpha-BHC	K1769	J195P4	9/10/2009	0.0161	mg/Kg	U	R
Pesticides - 8081	Alpha-BHC	K1769	J195P5	9/10/2009	1.59E-02	mg/Kg	U	R
Pesticides - 8081	Alpha-BHC	K1769	J195R6	9/14/2009	0.0229	mg/Kg	U	R
Pesticides - 8081	Alpha-BHC	K1769	J195R7	9/14/2009	0.0201	mg/Kg	U	R
Pesticides - 8081	Alpha-BHC	K1769	J195X3	9/15/2009	2.16E-02	mg/Kg	U	R
Pesticides - 8081	Alpha-BHC	K1769	J195X4	9/15/2009	1.92E-02	mg/Kg	U	R
Pesticides - 8081	Alpha-BHC	K1769	J19603	9/15/2009	0.0146	mg/Kg	U	R
Pesticides - 8081	Alpha-BHC	K1769	J19604	9/15/2009	0.0195	mg/Kg	U	R
Pesticides - 8081	Alpha-BHC	K1774	J19622	9/16/2009	0.0149	mg/Kg	U	R

Table 3-7. Summary of Rejected Fish Tissue Data by Method. (79 Pages)

Analytical Method	Analyte	SDG Number	Sample Identification	Sample Date	Result	Units	Laboratory Qualifier	Validation Qualifier
Pesticides - 8081	Alpha-BHC	K1774	J19623	9/16/2009	1.99E-02	mg/Kg	U	R
Pesticides - 8081	Alpha-BHC	K1774	J19633	9/16/2009	0.0201	mg/Kg	U	R
Pesticides - 8081	Alpha-BHC	K1774	J19634	9/16/2009	0.0161	mg/Kg	U	R
Pesticides - 8081	Alpha-BHC	K1774	J19643	9/17/2009	0.0166	mg/Kg	U	R
Pesticides - 8081	Alpha-BHC	K1774	J19644	9/17/2009	1.80E-02	mg/Kg	U	R
Pesticides - 8081	Alpha-BHC	K1774	J19653	9/17/2009	1.88E-02	mg/Kg	U	R
Pesticides - 8081	Alpha-BHC	K1774	J19654	9/17/2009	2.05E-02	mg/Kg	U	R
Pesticides - 8081	Alpha-BHC	K1785	J18XB1	9/24/2009	0.0184	mg/Kg	U	R
Pesticides - 8081	Alpha-BHC	K1785	J18XB2	9/25/2009	1.93E-02	mg/Kg	U	R
Pesticides - 8081	Alpha-BHC	K1785	J18XB3	9/25/2009	1.94E-02	mg/Kg	U	R
Pesticides - 8081	Alpha-BHC	K1785	J18XB4	9/24/2009	1.81E-02	mg/Kg	U	R
Pesticides - 8081	Alpha-BHC	K1785	J18XB5	9/24/2009	1.88E-02	mg/Kg	U	R
Pesticides - 8081	Alpha-BHC	K1785	J18XF6	9/24/2009	1.81E-02	mg/Kg	U	R
Pesticides - 8081	Alpha-BHC	K1785	J18XF7	9/24/2009	1.70E-02	mg/Kg	U	R
Pesticides - 8081	Alpha-BHC	K1785	J18XF8	9/24/2009	1.31E-02	mg/Kg	U	R
Pesticides - 8081	Alpha-BHC	K1785	J18XF9	9/25/2009	0.0178	mg/Kg	U	R
Pesticides - 8081	Alpha-BHC	K1785	J18XH0	9/25/2009	0.0126	mg/Kg	U	R
Pesticides - 8081	Alpha-BHC	K1785	J195V7	9/21/2009	0.019	mg/Kg	U	R
Pesticides - 8081	Alpha-BHC	K1785	J195V8	9/21/2009	0.0189	mg/Kg	U	R
Pesticides - 8081	Alpha-BHC	K1785	J195V9	9/21/2009	0.016	mg/Kg	U	R
Pesticides - 8081	Alpha-BHC	K1785	J195W0	9/24/2009	0.016	mg/Kg	U	R
Pesticides - 8081	Alpha-BHC	K1785	J19661	9/24/2009	1.91E-02	mg/Kg	U	R
Pesticides - 8081	Alpha-BHC	K1785	J19662	9/24/2009	0.0184	mg/Kg	U	R
Pesticides - 8081	Alpha-BHC	K1785	J19747	9/24/2009	2.05E-02	mg/Kg	U	R
Pesticides - 8081	Alpha-BHC	K1852	J191V0	12/7/2009	1.02E-02	mg/Kg	U	R
Pesticides - 8081	Alpha-BHC	K1852	J191V1	12/7/2009	0.0184	mg/Kg	U	R
Pesticides - 8081	Alpha-BHC	K1852	J191V2	12/7/2009	1.86E-02	mg/Kg	U	R
Pesticides - 8081	Alpha-BHC	K1852	J191V3	12/7/2009	0.0132	mg/Kg	U	R
Pesticides - 8081	Alpha-BHC	K1852	J191V4	12/7/2009	1.91E-02	mg/Kg	U	R
Pesticides - 8081	Alpha-BHC	K1852	J191Y6	12/7/2009	1.45E-02	mg/Kg	U	R
Pesticides - 8081	Alpha-BHC	K1852	J191Y7	12/7/2009	1.69E-02	mg/Kg	U	R
Pesticides - 8081	Alpha-BHC	K1852	J191Y8	12/7/2009	1.31E-02	mg/Kg	U	R
Pesticides - 8081	Alpha-BHC	K1852	J19251	12/8/2009	1.16E-02	mg/Kg	U	R
Pesticides - 8081	Alpha-BHC	K1852	J19252	12/8/2009	0.0166	mg/Kg	U	R
Pesticides - 8081	Alpha-BHC	K1852	J19256	12/8/2009	1.63E-02	mg/Kg	U	R
Pesticides - 8081	Alpha-BHC	K1852	J19257	12/8/2009	0.0135	mg/Kg	U	R
Pesticides - 8081	Alpha-BHC	K1852	J196B0	12/8/2009	1.74E-02	mg/Kg	U	R
Pesticides - 8081	Alpha-BHC	K1852	J196B1	12/8/2009	1.76E-02	mg/Kg	U	R
Pesticides - 8081	Alpha-BHC	K1852	J196B2	12/8/2009	0.0177	mg/Kg	U	R

Table 3-7. Summary of Rejected Fish Tissue Data by Method. (79 Pages)

Analytical Method	Analyte	SDG Number	Sample Identification	Sample Date	Result	Units	Laboratory Qualifier	Validation Qualifier
Pesticides - 8081	Alpha-BHC	K1852	J196B3	12/8/2009	0.0114	mg/Kg	U	R
Pesticides - 8081	Alpha-BHC	K1852	J196B4	12/7/2009	1.76E-02	mg/Kg	U	R
Pesticides - 8081	Alpha-BHC	K1852	J196B5	12/8/2009	0.0115	mg/Kg	U	R
Pesticides - 8081	Alpha-BHC	K1852	J196B6	12/8/2009	1.94E-02	mg/Kg	U	R
Pesticides - 8081	Alpha-BHC	K1852	J196B7	12/8/2009	1.91E-02	mg/Kg	U	R
Pesticides - 8081	Alpha-BHC	K1852	J196B8	12/8/2009	0.0184	mg/Kg	U	R
Pesticides - 8081	Alpha-BHC	K1852	J196B9	12/7/2009	1.63E-02	mg/Kg	U	R
Pesticides - 8081	Alpha-BHC	K1852	J196H0	12/8/2009	0.016	mg/Kg	U	R
Pesticides - 8081	Alpha-BHC	K1852	J196H4	12/7/2009	0.0206	mg/Kg	U	R
Pesticides - 8081	Alpha-BHC	K1852	J196H5	12/8/2009	0.0134	mg/Kg	U	R
Pesticides - 8081	Alpha-BHC	K1852	J196H9	12/7/2009	1.22E-02	mg/Kg	U	R
Pesticides - 8081	Alpha-BHC	K1852	J196W7	12/8/2009	0.0178	mg/Kg	U	R
Pesticides - 8081	Alpha-BHC	K1852	J196W8	12/8/2009	1.58E-02	mg/Kg	U	R
Pesticides - 8081	Alpha-BHC	K1852	J196W9	12/8/2009	0.0178	mg/Kg	U	R
Pesticides - 8081	Alpha-BHC	K1852	J196X0	12/7/2009	1.58E-02	mg/Kg	U	R
Pesticides - 8081	Alpha-BHC	K1852	J196X1	12/7/2009	1.70E-02	mg/Kg	U	R
Pesticides - 8081	Alpha-BHC	K1852	J196X2	12/8/2009	0.0178	mg/Kg	U	R
Pesticides - 8081	Alpha-BHC	K1852	J196X3	12/8/2009	1.36E-02	mg/Kg	U	R
Pesticides - 8081	Alpha-BHC	K1852	J196X4	12/8/2009	0.0178	mg/Kg	U	R
Pesticides - 8081	Alpha-BHC	K1852	J196X5	12/7/2009	1.57E-02	mg/Kg	U	R
Pesticides - 8081	Alpha-BHC	K1852	J196X6	12/7/2009	1.39E-02	mg/Kg	U	R
Pesticides - 8081	Alpha-BHC	K1863	J190V0	12/15/2009	1.36E-02	mg/Kg	U	R
Pesticides - 8081	Alpha-BHC	K1863	J190V1	12/15/2009	0.0126	mg/Kg	U	R
Pesticides - 8081	Alpha-BHC	K1863	J191N4	12/15/2009	1.68E-02	mg/Kg	U	R
Pesticides - 8081	Alpha-BHC	K1863	J191N5	12/15/2009	1.56E-02	mg/Kg	U	R
Pesticides - 8081	Alpha-BHC	K1863	J191N6	12/15/2009	0.014	mg/Kg	U	R
Pesticides - 8081	Alpha-BHC	K1863	J191N7	12/15/2009	1.04E-02	mg/Kg	U	R
Pesticides - 8081	Alpha-BHC	K1863	J191N8	12/15/2009	0.0146	mg/Kg	U	R
Pesticides - 8081	Alpha-BHC	K1863	J191Y5	12/15/2009	1.25E-02	mg/Kg	U	R
Pesticides - 8081	Alpha-BHC	K1863	J191Y9	12/15/2009	1.92E-02	mg/Kg	U	R
Pesticides - 8081	Alpha-BHC	K1863	J19253	12/15/2009	0.012	mg/Kg	U	R
Pesticides - 8081	Alpha-BHC	K1863	J19258	12/15/2009	1.22E-02	mg/Kg	U	R
Pesticides - 8081	Alpha-BHC	K1863	J196H1	12/15/2009	1.53E-02	mg/Kg	U	R
Pesticides - 8081	Alpha-BHC	K1863	J196H6	12/15/2009	1.38E-02	mg/Kg	U	R
Pesticides - 8081	Alpha-BHC	K1919	J19254	1/21/2010	0.014	mg/Kg	U	R
Pesticides - 8081	Alpha-BHC	K1919	J19259	1/21/2010	0.0146	mg/Kg	U	R
Pesticides - 8081	alpha-Chlordane	K1579	J18J60	4/1/2009	9.61E-03	mg/Kg	U	R
Pesticides - 8081	alpha-Chlordane	K1579	J18J61	4/1/2009	8.69E-03	mg/Kg	U	R
Pesticides - 8081	alpha-Chlordane	K1579	J18J62	4/1/2009	0.00826	mg/Kg	U	R

Table 3-7. Summary of Rejected Fish Tissue Data by Method. (79 Pages)

Analytical Method	Analyte	SDG Number	Sample Identification	Sample Date	Result	Units	Laboratory Qualifier	Validation Qualifier
Pesticides - 8081	alpha-Chlordane	K1579	J18J63	4/1/2009	8.69E-03	mg/Kg	U	R
Pesticides - 8081	alpha-Chlordane	K1714	J192D5	8/4/2009	8.92E-03	mg/Kg	U	R
Pesticides - 8081	alpha-Chlordane	K1714	J192D6	8/4/2009	7.93E-03	mg/Kg	U	R
Pesticides - 8081	alpha-Chlordane	K1714	J192F7	8/4/2009	5.18E-03	mg/Kg	U	R
Pesticides - 8081	alpha-Chlordane	K1714	J192Y8	8/5/2009	9.42E-03	mg/Kg	U	R
Pesticides - 8081	alpha-Chlordane	K1714	J192Y9	8/5/2009	6.17E-03	mg/Kg	U	R
Pesticides - 8081	alpha-Chlordane	K1714	J19308	8/5/2009	7.04E-03	mg/Kg	U	R
Pesticides - 8081	alpha-Chlordane	K1714	J19309	8/5/2009	9.17E-03	mg/Kg	U	R
Pesticides - 8081	alpha-Chlordane	K1714	J19319	8/6/2009	9.34E-03	mg/Kg	U	R
Pesticides - 8081	alpha-Chlordane	K1714	J19320	8/6/2009	7.87E-03	mg/Kg	U	R
Pesticides - 8081	alpha-Chlordane	K1725	J193K6	8/6/2009	7.74E-03	mg/Kg	U	R
Pesticides - 8081	alpha-Chlordane	K1725	J193K7	8/6/2009	6.89E-03	mg/Kg	U	R
Pesticides - 8081	alpha-Chlordane	K1725	J193L6	8/10/2009	7.63E-03	mg/Kg	U	R
Pesticides - 8081	alpha-Chlordane	K1725	J193L7	8/10/2009	7.19E-03	mg/Kg	U	R
Pesticides - 8081	alpha-Chlordane	K1725	J193M9	8/11/2009	8.69E-03	mg/Kg	U	R
Pesticides - 8081	alpha-Chlordane	K1725	J19441	8/12/2009	6.84E-03	mg/Kg	U	R
Pesticides - 8081	alpha-Chlordane	K1758	J19047	9/1/2009	1.76E-02	mg/Kg	U	R
Pesticides - 8081	alpha-Chlordane	K1758	J19048	9/1/2009	1.75E-02	mg/Kg	U	R
Pesticides - 8081	alpha-Chlordane	K1758	J19049	9/1/2009	0.0178	mg/Kg	U	R
Pesticides - 8081	alpha-Chlordane	K1758	J19051	9/1/2009	1.71E-02	mg/Kg	U	R
Pesticides - 8081	alpha-Chlordane	K1758	J190D0	9/1/2009	0.0161	mg/Kg	U	R
Pesticides - 8081	alpha-Chlordane	K1758	J190D1	9/1/2009	1.96E-02	mg/Kg	U	R
Pesticides - 8081	alpha-Chlordane	K1758	J190D2	9/1/2009	1.73E-02	mg/Kg	U	R
Pesticides - 8081	alpha-Chlordane	K1758	J190D3	9/1/2009	1.94E-02	mg/Kg	U	R
Pesticides - 8081	alpha-Chlordane	K1758	J190D4	9/1/2009	2.03E-02	mg/Kg	U	R
Pesticides - 8081	alpha-Chlordane	K1758	J190J5	9/1/2009	1.99E-02	mg/Kg	U	R
Pesticides - 8081	alpha-Chlordane	K1758	J190J6	9/1/2009	1.50E-02	mg/Kg	U	R
Pesticides - 8081	alpha-Chlordane	K1758	J190J7	9/1/2009	1.91E-02	mg/Kg	U	R
Pesticides - 8081	alpha-Chlordane	K1758	J190J8	9/1/2009	1.70E-02	mg/Kg	U	R
Pesticides - 8081	alpha-Chlordane	K1758	J190J9	9/1/2009	2.09E-02	mg/Kg	U	R
Pesticides - 8081	alpha-Chlordane	K1758	J190N1	9/1/2009	1.57E-02	mg/Kg	U	R
Pesticides - 8081	alpha-Chlordane	K1758	J190N2	9/1/2009	0.0161	mg/Kg	U	R
Pesticides - 8081	alpha-Chlordane	K1758	J190N3	9/1/2009	1.81E-02	mg/Kg	U	R
Pesticides - 8081	alpha-Chlordane	K1758	J190N4	9/1/2009	0.0178	mg/Kg	U	R
Pesticides - 8081	alpha-Chlordane	K1758	J190N5	9/1/2009	1.93E-02	mg/Kg	U	R
Pesticides - 8081	alpha-Chlordane	K1759	J19067	9/2/2009	0.0184	mg/Kg	U	R
Pesticides - 8081	alpha-Chlordane	K1759	J19069	9/2/2009	1.99E-02	mg/Kg	U	R
Pesticides - 8081	alpha-Chlordane	K1759	J19071	9/2/2009	1.99E-02	mg/Kg	U	R
Pesticides - 8081	alpha-Chlordane	K1759	J190D5	9/2/2009	0.0161	mg/Kg	U	R

Table 3-7. Summary of Rejected Fish Tissue Data by Method. (79 Pages)

Analytical Method	Analyte	SDG Number	Sample Identification	Sample Date	Result	Units	Laboratory Qualifier	Validation Qualifier
Pesticides - 8081	alpha-Chlordane	K1759	J190D7	9/2/2009	0.0201	mg/Kg	U	R
Pesticides - 8081	alpha-Chlordane	K1759	J190D9	9/2/2009	0.0146	mg/Kg	U	R
Pesticides - 8081	alpha-Chlordane	K1759	J190H0	9/2/2009	1.50E-02	mg/Kg	U	R
Pesticides - 8081	alpha-Chlordane	K1759	J190H1	9/2/2009	2.09E-02	mg/Kg	U	R
Pesticides - 8081	alpha-Chlordane	K1759	J190H2	9/1/2009	0.0161	mg/Kg	U	R
Pesticides - 8081	alpha-Chlordane	K1759	J190H3	9/1/2009	0.0183	mg/Kg	U	R
Pesticides - 8081	alpha-Chlordane	K1759	J190H4	9/1/2009	2.28E-02	mg/Kg	U	R
Pesticides - 8081	alpha-Chlordane	K1759	J190K0	9/2/2009	1.71E-02	mg/Kg	U	R
Pesticides - 8081	alpha-Chlordane	K1759	J190K1	9/2/2009	0.0184	mg/Kg	U	R
Pesticides - 8081	alpha-Chlordane	K1759	J190K2	9/1/2009	1.99E-02	mg/Kg	U	R
Pesticides - 8081	alpha-Chlordane	K1759	J190K3	9/1/2009	0.0166	mg/Kg	U	R
Pesticides - 8081	alpha-Chlordane	K1759	J190K4	9/1/2009	1.91E-02	mg/Kg	U	R
Pesticides - 8081	alpha-Chlordane	K1761	J19470	9/3/2009	1.99E-02	mg/Kg	U	R
Pesticides - 8081	alpha-Chlordane	K1761	J19471	9/3/2009	1.88E-02	mg/Kg	U	R
Pesticides - 8081	alpha-Chlordane	K1761	J19480	9/3/2009	1.45E-02	mg/Kg	U	R
Pesticides - 8081	alpha-Chlordane	K1761	J19481	9/3/2009	0.0184	mg/Kg	U	R
Pesticides - 8081	alpha-Chlordane	K1761	J19490	9/8/2009	1.71E-02	mg/Kg	U	R
Pesticides - 8081	alpha-Chlordane	K1761	J19491	9/8/2009	1.45E-02	mg/Kg	U	R
Pesticides - 8081	alpha-Chlordane	K1761	J194B1	9/8/2009	0.0184	mg/Kg	U	R
Pesticides - 8081	alpha-Chlordane	K1761	J194B2	9/8/2009	1.33E-02	mg/Kg	U	R
Pesticides - 8081	alpha-Chlordane	K1761	J194C2	9/9/2009	0.0195	mg/Kg	U	R
Pesticides - 8081	alpha-Chlordane	K1761	J194C3	9/9/2009	1.93E-02	mg/Kg	U	R
Pesticides - 8081	alpha-Chlordane	K1769	J194Y7	9/10/2009	1.91E-02	mg/Kg	U	R
Pesticides - 8081	alpha-Chlordane	K1769	J194Y8	9/10/2009	2.03E-02	mg/Kg	U	R
Pesticides - 8081	alpha-Chlordane	K1769	J195P4	9/10/2009	0.0161	mg/Kg	U	R
Pesticides - 8081	alpha-Chlordane	K1769	J195P5	9/10/2009	1.59E-02	mg/Kg	U	R
Pesticides - 8081	alpha-Chlordane	K1769	J195R6	9/14/2009	0.0229	mg/Kg	U	R
Pesticides - 8081	alpha-Chlordane	K1769	J195R7	9/14/2009	0.0201	mg/Kg	U	R
Pesticides - 8081	alpha-Chlordane	K1769	J195X3	9/15/2009	2.16E-02	mg/Kg	U	R
Pesticides - 8081	alpha-Chlordane	K1769	J195X4	9/15/2009	1.92E-02	mg/Kg	U	R
Pesticides - 8081	alpha-Chlordane	K1769	J19603	9/15/2009	0.0146	mg/Kg	U	R
Pesticides - 8081	alpha-Chlordane	K1769	J19604	9/15/2009	0.0195	mg/Kg	U	R
Pesticides - 8081	alpha-Chlordane	K1774	J19622	9/16/2009	0.0149	mg/Kg	U	R
Pesticides - 8081	alpha-Chlordane	K1774	J19623	9/16/2009	1.99E-02	mg/Kg	U	R
Pesticides - 8081	alpha-Chlordane	K1774	J19633	9/16/2009	0.0201	mg/Kg	U	R
Pesticides - 8081	alpha-Chlordane	K1774	J19634	9/16/2009	0.0161	mg/Kg	U	R
Pesticides - 8081	alpha-Chlordane	K1774	J19643	9/17/2009	0.0166	mg/Kg	U	R
Pesticides - 8081	alpha-Chlordane	K1774	J19644	9/17/2009	1.80E-02	mg/Kg	U	R
Pesticides - 8081	alpha-Chlordane	K1774	J19653	9/17/2009	1.88E-02	mg/Kg	U	R

Table 3-7. Summary of Rejected Fish Tissue Data by Method. (79 Pages)

Analytical Method	Analyte	SDG Number	Sample Identification	Sample Date	Result	Units	Laboratory Qualifier	Validation Qualifier
Pesticides - 8081	alpha-Chlordane	K1774	J19654	9/17/2009	2.05E-02	mg/Kg	U	R
Pesticides - 8081	alpha-Chlordane	K1785	J18XB2	9/25/2009	1.93E-02	mg/Kg	U	R
Pesticides - 8081	alpha-Chlordane	K1785	J18XB4	9/24/2009	1.81E-02	mg/Kg	U	R
Pesticides - 8081	alpha-Chlordane	K1785	J18XB5	9/24/2009	1.88E-02	mg/Kg	U	R
Pesticides - 8081	alpha-Chlordane	K1785	J18XF6	9/24/2009	1.81E-02	mg/Kg	U	R
Pesticides - 8081	alpha-Chlordane	K1785	J18XF7	9/24/2009	1.70E-02	mg/Kg	U	R
Pesticides - 8081	alpha-Chlordane	K1785	J18XF8	9/24/2009	1.31E-02	mg/Kg	U	R
Pesticides - 8081	alpha-Chlordane	K1785	J18XH0	9/25/2009	0.0126	mg/Kg	U	R
Pesticides - 8081	alpha-Chlordane	K1785	J195V7	9/21/2009	0.019	mg/Kg	U	R
Pesticides - 8081	alpha-Chlordane	K1785	J195V8	9/21/2009	0.0189	mg/Kg	U	R
Pesticides - 8081	alpha-Chlordane	K1785	J195V9	9/21/2009	0.016	mg/Kg	U	R
Pesticides - 8081	alpha-Chlordane	K1785	J195W0	9/24/2009	0.016	mg/Kg	U	R
Pesticides - 8081	alpha-Chlordane	K1785	J19661	9/24/2009	1.91E-02	mg/Kg	U	R
Pesticides - 8081	alpha-Chlordane	K1785	J19662	9/24/2009	0.0184	mg/Kg	U	R
Pesticides - 8081	alpha-Chlordane	K1852	J191V0	12/7/2009	1.02E-02	mg/Kg	U	R
Pesticides - 8081	alpha-Chlordane	K1852	J191V3	12/7/2009	0.0132	mg/Kg	U	R
Pesticides - 8081	alpha-Chlordane	K1852	J191V4	12/7/2009	1.91E-02	mg/Kg	U	R
Pesticides - 8081	alpha-Chlordane	K1852	J191Y7	12/7/2009	1.69E-02	mg/Kg	U	R
Pesticides - 8081	alpha-Chlordane	K1852	J191Y8	12/7/2009	1.31E-02	mg/Kg	U	R
Pesticides - 8081	alpha-Chlordane	K1852	J19251	12/8/2009	1.16E-02	mg/Kg	U	R
Pesticides - 8081	alpha-Chlordane	K1852	J19252	12/8/2009	0.0166	mg/Kg	U	R
Pesticides - 8081	alpha-Chlordane	K1852	J19256	12/8/2009	1.63E-02	mg/Kg	U	R
Pesticides - 8081	alpha-Chlordane	K1852	J19257	12/8/2009	0.0135	mg/Kg	U	R
Pesticides - 8081	alpha-Chlordane	K1852	J196B0	12/8/2009	1.74E-02	mg/Kg	U	R
Pesticides - 8081	alpha-Chlordane	K1852	J196B2	12/8/2009	0.0177	mg/Kg	U	R
Pesticides - 8081	alpha-Chlordane	K1852	J196B3	12/8/2009	0.0114	mg/Kg	U	R
Pesticides - 8081	alpha-Chlordane	K1852	J196B4	12/7/2009	1.76E-02	mg/Kg	U	R
Pesticides - 8081	alpha-Chlordane	K1852	J196B5	12/8/2009	0.0115	mg/Kg	U	R
Pesticides - 8081	alpha-Chlordane	K1852	J196B6	12/8/2009	1.94E-02	mg/Kg	U	R
Pesticides - 8081	alpha-Chlordane	K1852	J196B7	12/8/2009	1.91E-02	mg/Kg	U	R
Pesticides - 8081	alpha-Chlordane	K1852	J196B8	12/8/2009	0.0184	mg/Kg	U	R
Pesticides - 8081	alpha-Chlordane	K1852	J196B9	12/7/2009	1.63E-02	mg/Kg	U	R
Pesticides - 8081	alpha-Chlordane	K1852	J196H0	12/8/2009	0.016	mg/Kg	U	R
Pesticides - 8081	alpha-Chlordane	K1852	J196H4	12/7/2009	0.0206	mg/Kg	U	R
Pesticides - 8081	alpha-Chlordane	K1852	J196H5	12/8/2009	0.0134	mg/Kg	U	R
Pesticides - 8081	alpha-Chlordane	K1852	J196H9	12/7/2009	1.22E-02	mg/Kg	U	R
Pesticides - 8081	alpha-Chlordane	K1852	J196W7	12/8/2009	0.0178	mg/Kg	U	R
Pesticides - 8081	alpha-Chlordane	K1852	J196W8	12/8/2009	1.58E-02	mg/Kg	U	R
Pesticides - 8081	alpha-Chlordane	K1852	J196W9	12/8/2009	0.0178	mg/Kg	U	R

Table 3-7. Summary of Rejected Fish Tissue Data by Method. (79 Pages)

Analytical Method	Analyte	SDG Number	Sample Identification	Sample Date	Result	Units	Laboratory Qualifier	Validation Qualifier
Pesticides - 8081	alpha-Chlordane	K1852	J196X0	12/7/2009	1.58E-02	mg/Kg	U	R
Pesticides - 8081	alpha-Chlordane	K1852	J196X1	12/7/2009	1.70E-02	mg/Kg	U	R
Pesticides - 8081	alpha-Chlordane	K1852	J196X2	12/8/2009	0.0178	mg/Kg	U	R
Pesticides - 8081	alpha-Chlordane	K1852	J196X4	12/8/2009	0.0178	mg/Kg	U	R
Pesticides - 8081	alpha-Chlordane	K1852	J196X5	12/7/2009	1.57E-02	mg/Kg	U	R
Pesticides - 8081	alpha-Chlordane	K1852	J196X6	12/7/2009	1.39E-02	mg/Kg	U	R
Pesticides - 8081	alpha-Chlordane	K1863	J190V0	12/15/2009	1.36E-02	mg/Kg	U	R
Pesticides - 8081	alpha-Chlordane	K1863	J190V1	12/15/2009	0.0126	mg/Kg	U	R
Pesticides - 8081	alpha-Chlordane	K1863	J191N4	12/15/2009	1.68E-02	mg/Kg	U	R
Pesticides - 8081	alpha-Chlordane	K1863	J191N5	12/15/2009	1.56E-02	mg/Kg	U	R
Pesticides - 8081	alpha-Chlordane	K1863	J191N7	12/15/2009	1.04E-02	mg/Kg	U	R
Pesticides - 8081	alpha-Chlordane	K1863	J191N8	12/15/2009	0.0146	mg/Kg	U	R
Pesticides - 8081	alpha-Chlordane	K1863	J191Y5	12/15/2009	1.25E-02	mg/Kg	U	R
Pesticides - 8081	alpha-Chlordane	K1863	J191Y9	12/15/2009	1.92E-02	mg/Kg	U	R
Pesticides - 8081	alpha-Chlordane	K1863	J19253	12/15/2009	0.012	mg/Kg	U	R
Pesticides - 8081	alpha-Chlordane	K1863	J19258	12/15/2009	1.22E-02	mg/Kg	U	R
Pesticides - 8081	alpha-Chlordane	K1863	J196H1	12/15/2009	1.53E-02	mg/Kg	U	R
Pesticides - 8081	alpha-Chlordane	K1863	J196H6	12/15/2009	1.38E-02	mg/Kg	U	R
Pesticides - 8081	alpha-Chlordane	K1919	J19254	1/21/2010	0.014	mg/Kg	U	R
Pesticides - 8081	alpha-Chlordane	K1919	J19259	1/21/2010	0.0146	mg/Kg	U	R
Pesticides - 8081	beta-1,2,3,4,5,6-Hexachlorocyclohexane	K1579	J18J59	4/1/2009	8.06E-03	mg/Kg	U	R
Pesticides - 8081	beta-1,2,3,4,5,6-Hexachlorocyclohexane	K1579	J18J60	4/1/2009	9.61E-03	mg/Kg	U	R
Pesticides - 8081	beta-1,2,3,4,5,6-Hexachlorocyclohexane	K1579	J18J62	4/1/2009	0.00826	mg/Kg	U	R
Pesticides - 8081	beta-1,2,3,4,5,6-Hexachlorocyclohexane	K1579	J18J63	4/1/2009	8.69E-03	mg/Kg	U	R
Pesticides - 8081	beta-1,2,3,4,5,6-Hexachlorocyclohexane	K1579	J18K11	4/1/2009	8.32E-03	mg/Kg	U	R
Pesticides - 8081	beta-1,2,3,4,5,6-Hexachlorocyclohexane	K1579	J18K12	4/1/2009	8.69E-03	mg/Kg	U	R
Pesticides - 8081	beta-1,2,3,4,5,6-Hexachlorocyclohexane	K1579	J18K13	4/1/2009	7.57E-03	mg/Kg	U	R
Pesticides - 8081	beta-1,2,3,4,5,6-Hexachlorocyclohexane	K1579	J18K14	4/1/2009	6.66E-03	mg/Kg	U	R
Pesticides - 8081	beta-1,2,3,4,5,6-Hexachlorocyclohexane	K1579	J18K15	4/1/2009	8.06E-03	mg/Kg	U	R

Table 3-7. Summary of Rejected Fish Tissue Data by Method. (79 Pages)

Analytical Method	Analyte	SDG Number	Sample Identification	Sample Date	Result	Units	Laboratory Qualifier	Validation Qualifier
Pesticides - 8081	beta-1,2,3,4,5,6-Hexachlorocyclohexane	K1579	J18K52	4/1/2009	6.89E-03	mg/Kg	U	R
Pesticides - 8081	beta-1,2,3,4,5,6-Hexachlorocyclohexane	K1579	J18K53	4/1/2009	0.00662	mg/Kg	U	R
Pesticides - 8081	beta-1,2,3,4,5,6-Hexachlorocyclohexane	K1579	J18K54	4/1/2009	5.98E-03	mg/Kg	U	R
Pesticides - 8081	beta-1,2,3,4,5,6-Hexachlorocyclohexane	K1579	J18K55	4/1/2009	6.36E-03	mg/Kg	U	R
Pesticides - 8081	beta-1,2,3,4,5,6-Hexachlorocyclohexane	K1579	J18K56	4/1/2009	7.68E-03	mg/Kg	U	R
Pesticides - 8081	beta-1,2,3,4,5,6-Hexachlorocyclohexane	K1579	J18KD3	4/1/2009	7.09E-03	mg/Kg	U	R
Pesticides - 8081	beta-1,2,3,4,5,6-Hexachlorocyclohexane	K1579	J18KD4	4/1/2009	7.04E-03	mg/Kg	U	R
Pesticides - 8081	beta-1,2,3,4,5,6-Hexachlorocyclohexane	K1579	J18KD5	4/1/2009	6.17E-03	mg/Kg	U	R
Pesticides - 8081	beta-1,2,3,4,5,6-Hexachlorocyclohexane	K1579	J18KD6	4/1/2009	6.53E-03	mg/Kg	U	R
Pesticides - 8081	beta-1,2,3,4,5,6-Hexachlorocyclohexane	K1579	J18KD7	4/1/2009	5.00E-03	mg/Kg	U	R
Pesticides - 8081	beta-1,2,3,4,5,6-Hexachlorocyclohexane	K1714	J192D5	8/4/2009	8.92E-03	mg/Kg	U	R
Pesticides - 8081	beta-1,2,3,4,5,6-Hexachlorocyclohexane	K1714	J192F6	8/4/2009	8.84E-03	mg/Kg	U	R
Pesticides - 8081	beta-1,2,3,4,5,6-Hexachlorocyclohexane	K1714	J192F7	8/4/2009	5.18E-03	mg/Kg	U	R
Pesticides - 8081	beta-1,2,3,4,5,6-Hexachlorocyclohexane	K1714	J192Y8	8/5/2009	9.42E-03	mg/Kg	U	R
Pesticides - 8081	beta-1,2,3,4,5,6-Hexachlorocyclohexane	K1714	J19309	8/5/2009	9.17E-03	mg/Kg	U	R
Pesticides - 8081	beta-1,2,3,4,5,6-Hexachlorocyclohexane	K1714	J19319	8/6/2009	9.34E-03	mg/Kg	U	R
Pesticides - 8081	beta-1,2,3,4,5,6-Hexachlorocyclohexane	K1714	J19320	8/6/2009	7.87E-03	mg/Kg	U	R
Pesticides - 8081	beta-1,2,3,4,5,6-Hexachlorocyclohexane	K1725	J193K7	8/6/2009	6.89E-03	mg/Kg	U	R
Pesticides - 8081	beta-1,2,3,4,5,6-Hexachlorocyclohexane	K1725	J193L6	8/10/2009	7.63E-03	mg/Kg	U	R
Pesticides - 8081	beta-1,2,3,4,5,6-Hexachlorocyclohexane	K1725	J193M8	8/11/2009	7.29E-03	mg/Kg	U	R

Table 3-7. Summary of Rejected Fish Tissue Data by Method. (79 Pages)

Analytical Method	Analyte	SDG Number	Sample Identification	Sample Date	Result	Units	Laboratory Qualifier	Validation Qualifier
Pesticides - 8081	beta-1,2,3,4,5,6-Hexachlorocyclohexane	K1758	J19047	9/1/2009	1.76E-02	mg/Kg	U	R
Pesticides - 8081	beta-1,2,3,4,5,6-Hexachlorocyclohexane	K1758	J19048	9/1/2009	1.75E-02	mg/Kg	U	R
Pesticides - 8081	beta-1,2,3,4,5,6-Hexachlorocyclohexane	K1758	J19049	9/1/2009	0.0178	mg/Kg	U	R
Pesticides - 8081	beta-1,2,3,4,5,6-Hexachlorocyclohexane	K1758	J19050	9/1/2009	0.0152	mg/Kg	U	R
Pesticides - 8081	beta-1,2,3,4,5,6-Hexachlorocyclohexane	K1758	J19051	9/1/2009	1.71E-02	mg/Kg	U	R
Pesticides - 8081	beta-1,2,3,4,5,6-Hexachlorocyclohexane	K1758	J190D0	9/1/2009	0.0161	mg/Kg	U	R
Pesticides - 8081	beta-1,2,3,4,5,6-Hexachlorocyclohexane	K1758	J190D1	9/1/2009	1.96E-02	mg/Kg	U	R
Pesticides - 8081	beta-1,2,3,4,5,6-Hexachlorocyclohexane	K1758	J190D2	9/1/2009	1.73E-02	mg/Kg	U	R
Pesticides - 8081	beta-1,2,3,4,5,6-Hexachlorocyclohexane	K1758	J190D3	9/1/2009	1.94E-02	mg/Kg	U	R
Pesticides - 8081	beta-1,2,3,4,5,6-Hexachlorocyclohexane	K1758	J190D4	9/1/2009	2.03E-02	mg/Kg	U	R
Pesticides - 8081	beta-1,2,3,4,5,6-Hexachlorocyclohexane	K1758	J190J5	9/1/2009	1.99E-02	mg/Kg	U	R
Pesticides - 8081	beta-1,2,3,4,5,6-Hexachlorocyclohexane	K1758	J190J6	9/1/2009	1.50E-02	mg/Kg	U	R
Pesticides - 8081	beta-1,2,3,4,5,6-Hexachlorocyclohexane	K1758	J190J7	9/1/2009	1.91E-02	mg/Kg	U	R
Pesticides - 8081	beta-1,2,3,4,5,6-Hexachlorocyclohexane	K1758	J190J8	9/1/2009	1.70E-02	mg/Kg	U	R
Pesticides - 8081	beta-1,2,3,4,5,6-Hexachlorocyclohexane	K1758	J190J9	9/1/2009	2.09E-02	mg/Kg	U	R
Pesticides - 8081	beta-1,2,3,4,5,6-Hexachlorocyclohexane	K1758	J190N1	9/1/2009	1.57E-02	mg/Kg	U	R
Pesticides - 8081	beta-1,2,3,4,5,6-Hexachlorocyclohexane	K1758	J190N2	9/1/2009	0.0161	mg/Kg	U	R
Pesticides - 8081	beta-1,2,3,4,5,6-Hexachlorocyclohexane	K1758	J190N3	9/1/2009	1.81E-02	mg/Kg	U	R
Pesticides - 8081	beta-1,2,3,4,5,6-Hexachlorocyclohexane	K1758	J190N4	9/1/2009	0.0178	mg/Kg	U	R
Pesticides - 8081	beta-1,2,3,4,5,6-Hexachlorocyclohexane	K1758	J190N5	9/1/2009	1.93E-02	mg/Kg	U	R

Table 3-7. Summary of Rejected Fish Tissue Data by Method. (79 Pages)

Analytical Method	Analyte	SDG Number	Sample Identification	Sample Date	Result	Units	Laboratory Qualifier	Validation Qualifier
Pesticides - 8081	beta-1,2,3,4,5,6-Hexachlorocyclohexane	K1759	J19067	9/2/2009	0.0184	mg/Kg	U	R
Pesticides - 8081	beta-1,2,3,4,5,6-Hexachlorocyclohexane	K1759	J19069	9/2/2009	1.99E-02	mg/Kg	U	R
Pesticides - 8081	beta-1,2,3,4,5,6-Hexachlorocyclohexane	K1759	J19071	9/2/2009	1.99E-02	mg/Kg	U	R
Pesticides - 8081	beta-1,2,3,4,5,6-Hexachlorocyclohexane	K1759	J190D7	9/2/2009	0.0201	mg/Kg	U	R
Pesticides - 8081	beta-1,2,3,4,5,6-Hexachlorocyclohexane	K1759	J190D9	9/2/2009	0.0146	mg/Kg	U	R
Pesticides - 8081	beta-1,2,3,4,5,6-Hexachlorocyclohexane	K1759	J190H0	9/2/2009	1.50E-02	mg/Kg	U	R
Pesticides - 8081	beta-1,2,3,4,5,6-Hexachlorocyclohexane	K1759	J190H1	9/2/2009	2.09E-02	mg/Kg	U	R
Pesticides - 8081	beta-1,2,3,4,5,6-Hexachlorocyclohexane	K1759	J190H2	9/1/2009	0.0161	mg/Kg	U	R
Pesticides - 8081	beta-1,2,3,4,5,6-Hexachlorocyclohexane	K1759	J190H3	9/1/2009	0.0183	mg/Kg	U	R
Pesticides - 8081	beta-1,2,3,4,5,6-Hexachlorocyclohexane	K1759	J190H4	9/1/2009	2.28E-02	mg/Kg	U	R
Pesticides - 8081	beta-1,2,3,4,5,6-Hexachlorocyclohexane	K1759	J190K0	9/2/2009	1.71E-02	mg/Kg	U	R
Pesticides - 8081	beta-1,2,3,4,5,6-Hexachlorocyclohexane	K1759	J190K1	9/2/2009	0.0184	mg/Kg	U	R
Pesticides - 8081	beta-1,2,3,4,5,6-Hexachlorocyclohexane	K1759	J190K2	9/1/2009	1.99E-02	mg/Kg	U	R
Pesticides - 8081	beta-1,2,3,4,5,6-Hexachlorocyclohexane	K1759	J190K3	9/1/2009	0.0166	mg/Kg	U	R
Pesticides - 8081	beta-1,2,3,4,5,6-Hexachlorocyclohexane	K1759	J190K4	9/1/2009	1.91E-02	mg/Kg	U	R
Pesticides - 8081	beta-1,2,3,4,5,6-Hexachlorocyclohexane	K1761	J19470	9/3/2009	1.99E-02	mg/Kg	U	R
Pesticides - 8081	beta-1,2,3,4,5,6-Hexachlorocyclohexane	K1761	J19481	9/3/2009	0.0184	mg/Kg	U	R
Pesticides - 8081	beta-1,2,3,4,5,6-Hexachlorocyclohexane	K1761	J19491	9/8/2009	1.45E-02	mg/Kg	U	R
Pesticides - 8081	beta-1,2,3,4,5,6-Hexachlorocyclohexane	K1761	J194B2	9/8/2009	1.33E-02	mg/Kg	U	R
Pesticides - 8081	beta-1,2,3,4,5,6-Hexachlorocyclohexane	K1761	J194C2	9/9/2009	0.0195	mg/Kg	U	R

Table 3-7. Summary of Rejected Fish Tissue Data by Method. (79 Pages)

Analytical Method	Analyte	SDG Number	Sample Identification	Sample Date	Result	Units	Laboratory Qualifier	Validation Qualifier
Pesticides - 8081	beta-1,2,3,4,5,6-Hexachlorocyclohexane	K1761	J194C3	9/9/2009	1.93E-02	mg/Kg	U	R
Pesticides - 8081	beta-1,2,3,4,5,6-Hexachlorocyclohexane	K1769	J194Y7	9/10/2009	1.91E-02	mg/Kg	U	R
Pesticides - 8081	beta-1,2,3,4,5,6-Hexachlorocyclohexane	K1769	J194Y8	9/10/2009	2.03E-02	mg/Kg	U	R
Pesticides - 8081	beta-1,2,3,4,5,6-Hexachlorocyclohexane	K1769	J195P4	9/10/2009	0.0161	mg/Kg	U	R
Pesticides - 8081	beta-1,2,3,4,5,6-Hexachlorocyclohexane	K1769	J195P5	9/10/2009	1.59E-02	mg/Kg	U	R
Pesticides - 8081	beta-1,2,3,4,5,6-Hexachlorocyclohexane	K1769	J195R6	9/14/2009	0.0229	mg/Kg	U	R
Pesticides - 8081	beta-1,2,3,4,5,6-Hexachlorocyclohexane	K1769	J195R7	9/14/2009	0.0201	mg/Kg	U	R
Pesticides - 8081	beta-1,2,3,4,5,6-Hexachlorocyclohexane	K1769	J195X3	9/15/2009	2.16E-02	mg/Kg	U	R
Pesticides - 8081	beta-1,2,3,4,5,6-Hexachlorocyclohexane	K1769	J195X4	9/15/2009	1.92E-02	mg/Kg	U	R
Pesticides - 8081	beta-1,2,3,4,5,6-Hexachlorocyclohexane	K1769	J19603	9/15/2009	0.0146	mg/Kg	U	R
Pesticides - 8081	beta-1,2,3,4,5,6-Hexachlorocyclohexane	K1769	J19604	9/15/2009	0.0195	mg/Kg	U	R
Pesticides - 8081	beta-1,2,3,4,5,6-Hexachlorocyclohexane	K1774	J19622	9/16/2009	0.0149	mg/Kg	U	R
Pesticides - 8081	beta-1,2,3,4,5,6-Hexachlorocyclohexane	K1774	J19623	9/16/2009	1.99E-02	mg/Kg	U	R
Pesticides - 8081	beta-1,2,3,4,5,6-Hexachlorocyclohexane	K1774	J19633	9/16/2009	0.0201	mg/Kg	U	R
Pesticides - 8081	beta-1,2,3,4,5,6-Hexachlorocyclohexane	K1774	J19634	9/16/2009	0.0161	mg/Kg	U	R
Pesticides - 8081	beta-1,2,3,4,5,6-Hexachlorocyclohexane	K1774	J19643	9/17/2009	0.0166	mg/Kg	U	R
Pesticides - 8081	beta-1,2,3,4,5,6-Hexachlorocyclohexane	K1774	J19644	9/17/2009	1.80E-02	mg/Kg	U	R
Pesticides - 8081	beta-1,2,3,4,5,6-Hexachlorocyclohexane	K1774	J19653	9/17/2009	1.88E-02	mg/Kg	U	R
Pesticides - 8081	beta-1,2,3,4,5,6-Hexachlorocyclohexane	K1774	J19654	9/17/2009	2.05E-02	mg/Kg	U	R
Pesticides - 8081	beta-1,2,3,4,5,6-Hexachlorocyclohexane	K1785	J18XB1	9/24/2009	0.0184	mg/Kg	U	R

Table 3-7. Summary of Rejected Fish Tissue Data by Method. (79 Pages)

Analytical Method	Analyte	SDG Number	Sample Identification	Sample Date	Result	Units	Laboratory Qualifier	Validation Qualifier
Pesticides - 8081	beta-1,2,3,4,5,6-Hexachlorocyclohexane	K1785	J18XB2	9/25/2009	1.93E-02	mg/Kg	U	R
Pesticides - 8081	beta-1,2,3,4,5,6-Hexachlorocyclohexane	K1785	J18XB4	9/24/2009	1.81E-02	mg/Kg	U	R
Pesticides - 8081	beta-1,2,3,4,5,6-Hexachlorocyclohexane	K1785	J18XF6	9/24/2009	1.81E-02	mg/Kg	U	R
Pesticides - 8081	beta-1,2,3,4,5,6-Hexachlorocyclohexane	K1785	J18XF7	9/24/2009	1.70E-02	mg/Kg	U	R
Pesticides - 8081	beta-1,2,3,4,5,6-Hexachlorocyclohexane	K1785	J18XF8	9/24/2009	1.31E-02	mg/Kg	U	R
Pesticides - 8081	beta-1,2,3,4,5,6-Hexachlorocyclohexane	K1785	J18XF9	9/25/2009	0.0178	mg/Kg	U	R
Pesticides - 8081	beta-1,2,3,4,5,6-Hexachlorocyclohexane	K1785	J18XH0	9/25/2009	0.0126	mg/Kg	U	R
Pesticides - 8081	beta-1,2,3,4,5,6-Hexachlorocyclohexane	K1785	J195V7	9/21/2009	0.019	mg/Kg	U	R
Pesticides - 8081	beta-1,2,3,4,5,6-Hexachlorocyclohexane	K1785	J195V9	9/21/2009	0.016	mg/Kg	U	R
Pesticides - 8081	beta-1,2,3,4,5,6-Hexachlorocyclohexane	K1785	J195W0	9/24/2009	0.016	mg/Kg	U	R
Pesticides - 8081	beta-1,2,3,4,5,6-Hexachlorocyclohexane	K1785	J19747	9/24/2009	2.05E-02	mg/Kg	U	R
Pesticides - 8081	beta-1,2,3,4,5,6-Hexachlorocyclohexane	K1852	J191V0	12/7/2009	1.02E-02	mg/Kg	U	R
Pesticides - 8081	beta-1,2,3,4,5,6-Hexachlorocyclohexane	K1852	J191Y7	12/7/2009	1.69E-02	mg/Kg	U	R
Pesticides - 8081	beta-1,2,3,4,5,6-Hexachlorocyclohexane	K1852	J19256	12/8/2009	1.63E-02	mg/Kg	U	R
Pesticides - 8081	beta-1,2,3,4,5,6-Hexachlorocyclohexane	K1852	J19257	12/8/2009	0.0135	mg/Kg	U	R
Pesticides - 8081	beta-1,2,3,4,5,6-Hexachlorocyclohexane	K1852	J196B0	12/8/2009	1.74E-02	mg/Kg	U	R
Pesticides - 8081	beta-1,2,3,4,5,6-Hexachlorocyclohexane	K1852	J196B1	12/8/2009	1.76E-02	mg/Kg	U	R
Pesticides - 8081	beta-1,2,3,4,5,6-Hexachlorocyclohexane	K1852	J196B2	12/8/2009	0.0177	mg/Kg	U	R
Pesticides - 8081	beta-1,2,3,4,5,6-Hexachlorocyclohexane	K1852	J196B3	12/8/2009	0.0114	mg/Kg	U	R
Pesticides - 8081	beta-1,2,3,4,5,6-Hexachlorocyclohexane	K1852	J196B4	12/7/2009	1.76E-02	mg/Kg	U	R

Table 3-7. Summary of Rejected Fish Tissue Data by Method. (79 Pages)

Analytical Method	Analyte	SDG Number	Sample Identification	Sample Date	Result	Units	Laboratory Qualifier	Validation Qualifier
Pesticides - 8081	beta-1,2,3,4,5,6-Hexachlorocyclohexane	K1852	J196H0	12/8/2009	0.016	mg/Kg	U	R
Pesticides - 8081	beta-1,2,3,4,5,6-Hexachlorocyclohexane	K1852	J196H4	12/7/2009	0.0206	mg/Kg	U	R
Pesticides - 8081	beta-1,2,3,4,5,6-Hexachlorocyclohexane	K1852	J196W8	12/8/2009	1.58E-02	mg/Kg	U	R
Pesticides - 8081	beta-1,2,3,4,5,6-Hexachlorocyclohexane	K1852	J196W9	12/8/2009	0.0178	mg/Kg	U	R
Pesticides - 8081	beta-1,2,3,4,5,6-Hexachlorocyclohexane	K1852	J196X1	12/7/2009	1.70E-02	mg/Kg	U	R
Pesticides - 8081	beta-1,2,3,4,5,6-Hexachlorocyclohexane	K1852	J196X2	12/8/2009	0.0178	mg/Kg	U	R
Pesticides - 8081	beta-1,2,3,4,5,6-Hexachlorocyclohexane	K1852	J196X4	12/8/2009	0.0178	mg/Kg	U	R
Pesticides - 8081	beta-1,2,3,4,5,6-Hexachlorocyclohexane	K1852	J196X6	12/7/2009	1.39E-02	mg/Kg	U	R
Pesticides - 8081	beta-1,2,3,4,5,6-Hexachlorocyclohexane	K1863	J19253	12/15/2009	0.012	mg/Kg	U	R
Pesticides - 8081	beta-1,2,3,4,5,6-Hexachlorocyclohexane	K1863	J19258	12/15/2009	1.22E-02	mg/Kg	U	R
Pesticides - 8081	beta-1,2,3,4,5,6-Hexachlorocyclohexane	K1863	J196H1	12/15/2009	1.53E-02	mg/Kg	U	R
Pesticides - 8081	beta-1,2,3,4,5,6-Hexachlorocyclohexane	K1863	J196H6	12/15/2009	1.38E-02	mg/Kg	U	R
Pesticides - 8081	Delta-BHC	K1579	J18J62	4/1/2009	0.00826	mg/Kg	U	R
Pesticides - 8081	Delta-BHC	K1579	J18K11	4/1/2009	8.32E-03	mg/Kg	U	R
Pesticides - 8081	Delta-BHC	K1579	J18K12	4/1/2009	8.69E-03	mg/Kg	U	R
Pesticides - 8081	Delta-BHC	K1579	J18K13	4/1/2009	7.57E-03	mg/Kg	U	R
Pesticides - 8081	Delta-BHC	K1579	J18K14	4/1/2009	6.66E-03	mg/Kg	U	R
Pesticides - 8081	Delta-BHC	K1579	J18K15	4/1/2009	8.06E-03	mg/Kg	U	R
Pesticides - 8081	Delta-BHC	K1579	J18K53	4/1/2009	0.00662	mg/Kg	U	R
Pesticides - 8081	Delta-BHC	K1579	J18K54	4/1/2009	5.98E-03	mg/Kg	U	R
Pesticides - 8081	Delta-BHC	K1579	J18K56	4/1/2009	7.68E-03	mg/Kg	U	R
Pesticides - 8081	Delta-BHC	K1579	J18KD4	4/1/2009	7.04E-03	mg/Kg	U	R
Pesticides - 8081	Delta-BHC	K1579	J18KD6	4/1/2009	6.53E-03	mg/Kg	U	R
Pesticides - 8081	Delta-BHC	K1714	J192D5	8/4/2009	8.92E-03	mg/Kg	U	R
Pesticides - 8081	Delta-BHC	K1714	J192D6	8/4/2009	7.93E-03	mg/Kg	U	R
Pesticides - 8081	Delta-BHC	K1714	J192F6	8/4/2009	8.84E-03	mg/Kg	U	R
Pesticides - 8081	Delta-BHC	K1714	J192F7	8/4/2009	5.18E-03	mg/Kg	U	R

Table 3-7. Summary of Rejected Fish Tissue Data by Method. (79 Pages)

Analytical Method	Analyte	SDG Number	Sample Identification	Sample Date	Result	Units	Laboratory Qualifier	Validation Qualifier
Pesticides - 8081	Delta-BHC	K1714	J192Y8	8/5/2009	9.42E-03	mg/Kg	U	R
Pesticides - 8081	Delta-BHC	K1714	J192Y9	8/5/2009	6.17E-03	mg/Kg	U	R
Pesticides - 8081	Delta-BHC	K1714	J19308	8/5/2009	7.04E-03	mg/Kg	U	R
Pesticides - 8081	Delta-BHC	K1714	J19309	8/5/2009	9.17E-03	mg/Kg	U	R
Pesticides - 8081	Delta-BHC	K1714	J19319	8/6/2009	9.34E-03	mg/Kg	U	R
Pesticides - 8081	Delta-BHC	K1714	J19320	8/6/2009	7.87E-03	mg/Kg	U	R
Pesticides - 8081	Delta-BHC	K1725	J193K6	8/6/2009	7.74E-03	mg/Kg	U	R
Pesticides - 8081	Delta-BHC	K1725	J193K7	8/6/2009	6.89E-03	mg/Kg	U	R
Pesticides - 8081	Delta-BHC	K1725	J193L6	8/10/2009	7.63E-03	mg/Kg	U	R
Pesticides - 8081	Delta-BHC	K1725	J193L7	8/10/2009	7.19E-03	mg/Kg	U	R
Pesticides - 8081	Delta-BHC	K1725	J193M8	8/11/2009	7.29E-03	mg/Kg	U	R
Pesticides - 8081	Delta-BHC	K1725	J19441	8/12/2009	6.84E-03	mg/Kg	U	R
Pesticides - 8081	Delta-BHC	K1758	J19047	9/1/2009	1.76E-02	mg/Kg	U	R
Pesticides - 8081	Delta-BHC	K1758	J19048	9/1/2009	1.75E-02	mg/Kg	U	R
Pesticides - 8081	Delta-BHC	K1758	J19049	9/1/2009	0.0178	mg/Kg	U	R
Pesticides - 8081	Delta-BHC	K1758	J19050	9/1/2009	0.0152	mg/Kg	U	R
Pesticides - 8081	Delta-BHC	K1758	J19051	9/1/2009	1.71E-02	mg/Kg	U	R
Pesticides - 8081	Delta-BHC	K1758	J190D0	9/1/2009	0.0161	mg/Kg	U	R
Pesticides - 8081	Delta-BHC	K1758	J190D1	9/1/2009	1.96E-02	mg/Kg	U	R
Pesticides - 8081	Delta-BHC	K1758	J190D2	9/1/2009	1.73E-02	mg/Kg	U	R
Pesticides - 8081	Delta-BHC	K1758	J190D3	9/1/2009	1.94E-02	mg/Kg	U	R
Pesticides - 8081	Delta-BHC	K1758	J190D4	9/1/2009	2.03E-02	mg/Kg	U	R
Pesticides - 8081	Delta-BHC	K1758	J190J5	9/1/2009	1.99E-02	mg/Kg	U	R
Pesticides - 8081	Delta-BHC	K1758	J190J6	9/1/2009	1.50E-02	mg/Kg	U	R
Pesticides - 8081	Delta-BHC	K1758	J190J7	9/1/2009	1.91E-02	mg/Kg	U	R
Pesticides - 8081	Delta-BHC	K1758	J190J8	9/1/2009	1.70E-02	mg/Kg	U	R
Pesticides - 8081	Delta-BHC	K1758	J190J9	9/1/2009	2.09E-02	mg/Kg	U	R
Pesticides - 8081	Delta-BHC	K1758	J190N1	9/1/2009	1.57E-02	mg/Kg	U	R
Pesticides - 8081	Delta-BHC	K1758	J190N2	9/1/2009	0.0161	mg/Kg	U	R
Pesticides - 8081	Delta-BHC	K1758	J190N3	9/1/2009	1.81E-02	mg/Kg	U	R
Pesticides - 8081	Delta-BHC	K1758	J190N4	9/1/2009	0.0178	mg/Kg	U	R
Pesticides - 8081	Delta-BHC	K1758	J190N5	9/1/2009	1.93E-02	mg/Kg	U	R
Pesticides - 8081	Delta-BHC	K1759	J19067	9/2/2009	0.0184	mg/Kg	U	R
Pesticides - 8081	Delta-BHC	K1759	J19069	9/2/2009	1.99E-02	mg/Kg	U	R
Pesticides - 8081	Delta-BHC	K1759	J19071	9/2/2009	1.99E-02	mg/Kg	U	R
Pesticides - 8081	Delta-BHC	K1759	J190D5	9/2/2009	0.0161	mg/Kg	U	R
Pesticides - 8081	Delta-BHC	K1759	J190D7	9/2/2009	0.0201	mg/Kg	U	R
Pesticides - 8081	Delta-BHC	K1759	J190D9	9/2/2009	0.0146	mg/Kg	U	R
Pesticides - 8081	Delta-BHC	K1759	J190H0	9/2/2009	1.50E-02	mg/Kg	U	R

Table 3-7. Summary of Rejected Fish Tissue Data by Method. (79 Pages)

Analytical Method	Analyte	SDG Number	Sample Identification	Sample Date	Result	Units	Laboratory Qualifier	Validation Qualifier
Pesticides - 8081	Delta-BHC	K1759	J190H1	9/2/2009	2.09E-02	mg/Kg	U	R
Pesticides - 8081	Delta-BHC	K1759	J190H2	9/1/2009	0.0161	mg/Kg	U	R
Pesticides - 8081	Delta-BHC	K1759	J190H3	9/1/2009	0.0183	mg/Kg	U	R
Pesticides - 8081	Delta-BHC	K1759	J190H4	9/1/2009	2.28E-02	mg/Kg	U	R
Pesticides - 8081	Delta-BHC	K1759	J190K0	9/2/2009	1.71E-02	mg/Kg	U	R
Pesticides - 8081	Delta-BHC	K1759	J190K1	9/2/2009	0.0184	mg/Kg	U	R
Pesticides - 8081	Delta-BHC	K1759	J190K2	9/1/2009	1.99E-02	mg/Kg	U	R
Pesticides - 8081	Delta-BHC	K1759	J190K3	9/1/2009	0.0166	mg/Kg	U	R
Pesticides - 8081	Delta-BHC	K1759	J190K4	9/1/2009	1.91E-02	mg/Kg	U	R
Pesticides - 8081	Delta-BHC	K1761	J19470	9/3/2009	1.99E-02	mg/Kg	U	R
Pesticides - 8081	Delta-BHC	K1761	J19471	9/3/2009	1.88E-02	mg/Kg	U	R
Pesticides - 8081	Delta-BHC	K1761	J19480	9/3/2009	1.45E-02	mg/Kg	U	R
Pesticides - 8081	Delta-BHC	K1761	J19481	9/3/2009	0.0184	mg/Kg	U	R
Pesticides - 8081	Delta-BHC	K1761	J19490	9/8/2009	1.71E-02	mg/Kg	U	R
Pesticides - 8081	Delta-BHC	K1761	J19491	9/8/2009	1.45E-02	mg/Kg	U	R
Pesticides - 8081	Delta-BHC	K1761	J194B1	9/8/2009	0.0184	mg/Kg	U	R
Pesticides - 8081	Delta-BHC	K1761	J194B2	9/8/2009	1.33E-02	mg/Kg	U	R
Pesticides - 8081	Delta-BHC	K1761	J194C2	9/9/2009	0.0195	mg/Kg	U	R
Pesticides - 8081	Delta-BHC	K1761	J194C3	9/9/2009	1.93E-02	mg/Kg	U	R
Pesticides - 8081	Delta-BHC	K1769	J194Y7	9/10/2009	1.91E-02	mg/Kg	U	R
Pesticides - 8081	Delta-BHC	K1769	J194Y8	9/10/2009	2.03E-02	mg/Kg	U	R
Pesticides - 8081	Delta-BHC	K1769	J195P4	9/10/2009	0.0161	mg/Kg	U	R
Pesticides - 8081	Delta-BHC	K1769	J195P5	9/10/2009	1.59E-02	mg/Kg	U	R
Pesticides - 8081	Delta-BHC	K1769	J195R6	9/14/2009	0.0229	mg/Kg	U	R
Pesticides - 8081	Delta-BHC	K1769	J195R7	9/14/2009	0.0201	mg/Kg	U	R
Pesticides - 8081	Delta-BHC	K1769	J195X3	9/15/2009	2.16E-02	mg/Kg	U	R
Pesticides - 8081	Delta-BHC	K1769	J195X4	9/15/2009	1.92E-02	mg/Kg	U	R
Pesticides - 8081	Delta-BHC	K1769	J19603	9/15/2009	0.0146	mg/Kg	U	R
Pesticides - 8081	Delta-BHC	K1769	J19604	9/15/2009	0.0195	mg/Kg	U	R
Pesticides - 8081	Delta-BHC	K1774	J19622	9/16/2009	0.0149	mg/Kg	U	R
Pesticides - 8081	Delta-BHC	K1774	J19623	9/16/2009	1.99E-02	mg/Kg	U	R
Pesticides - 8081	Delta-BHC	K1774	J19633	9/16/2009	0.0201	mg/Kg	U	R
Pesticides - 8081	Delta-BHC	K1774	J19634	9/16/2009	0.0161	mg/Kg	U	R
Pesticides - 8081	Delta-BHC	K1774	J19643	9/17/2009	0.0166	mg/Kg	U	R
Pesticides - 8081	Delta-BHC	K1774	J19644	9/17/2009	1.80E-02	mg/Kg	U	R
Pesticides - 8081	Delta-BHC	K1774	J19653	9/17/2009	1.88E-02	mg/Kg	U	R
Pesticides - 8081	Delta-BHC	K1774	J19654	9/17/2009	2.05E-02	mg/Kg	U	R
Pesticides - 8081	Delta-BHC	K1785	J18XB1	9/24/2009	0.0184	mg/Kg	U	R
Pesticides - 8081	Delta-BHC	K1785	J18XB2	9/25/2009	1.93E-02	mg/Kg	U	R

Table 3-7. Summary of Rejected Fish Tissue Data by Method. (79 Pages)

Analytical Method	Analyte	SDG Number	Sample Identification	Sample Date	Result	Units	Laboratory Qualifier	Validation Qualifier
Pesticides - 8081	Delta-BHC	K1785	J18XB3	9/25/2009	1.94E-02	mg/Kg	U	R
Pesticides - 8081	Delta-BHC	K1785	J18XB4	9/24/2009	1.81E-02	mg/Kg	U	R
Pesticides - 8081	Delta-BHC	K1785	J18XB5	9/24/2009	1.88E-02	mg/Kg	U	R
Pesticides - 8081	Delta-BHC	K1785	J18XF6	9/24/2009	1.81E-02	mg/Kg	U	R
Pesticides - 8081	Delta-BHC	K1785	J18XF7	9/24/2009	1.70E-02	mg/Kg	U	R
Pesticides - 8081	Delta-BHC	K1785	J18XF8	9/24/2009	1.31E-02	mg/Kg	U	R
Pesticides - 8081	Delta-BHC	K1785	J18XF9	9/25/2009	0.0178	mg/Kg	U	R
Pesticides - 8081	Delta-BHC	K1785	J18XH0	9/25/2009	0.0126	mg/Kg	U	R
Pesticides - 8081	Delta-BHC	K1785	J195V7	9/21/2009	0.019	mg/Kg	U	R
Pesticides - 8081	Delta-BHC	K1785	J195V8	9/21/2009	0.0189	mg/Kg	U	R
Pesticides - 8081	Delta-BHC	K1785	J195V9	9/21/2009	0.016	mg/Kg	U	R
Pesticides - 8081	Delta-BHC	K1785	J195W0	9/24/2009	0.016	mg/Kg	U	R
Pesticides - 8081	Delta-BHC	K1785	J19661	9/24/2009	1.91E-02	mg/Kg	U	R
Pesticides - 8081	Delta-BHC	K1785	J19662	9/24/2009	0.0184	mg/Kg	U	R
Pesticides - 8081	Delta-BHC	K1785	J19747	9/24/2009	2.05E-02	mg/Kg	U	R
Pesticides - 8081	Delta-BHC	K1852	J191V0	12/7/2009	1.02E-02	mg/Kg	U	R
Pesticides - 8081	Delta-BHC	K1852	J191V1	12/7/2009	0.0184	mg/Kg	U	R
Pesticides - 8081	Delta-BHC	K1852	J191V2	12/7/2009	1.86E-02	mg/Kg	U	R
Pesticides - 8081	Delta-BHC	K1852	J191V3	12/7/2009	0.0132	mg/Kg	U	R
Pesticides - 8081	Delta-BHC	K1852	J191V4	12/7/2009	1.91E-02	mg/Kg	U	R
Pesticides - 8081	Delta-BHC	K1852	J191Y6	12/7/2009	1.45E-02	mg/Kg	U	R
Pesticides - 8081	Delta-BHC	K1852	J191Y7	12/7/2009	1.69E-02	mg/Kg	U	R
Pesticides - 8081	Delta-BHC	K1852	J191Y8	12/7/2009	1.31E-02	mg/Kg	U	R
Pesticides - 8081	Delta-BHC	K1852	J19251	12/8/2009	1.16E-02	mg/Kg	U	R
Pesticides - 8081	Delta-BHC	K1852	J19252	12/8/2009	0.0166	mg/Kg	U	R
Pesticides - 8081	Delta-BHC	K1852	J19256	12/8/2009	1.63E-02	mg/Kg	U	R
Pesticides - 8081	Delta-BHC	K1852	J19257	12/8/2009	0.0135	mg/Kg	U	R
Pesticides - 8081	Delta-BHC	K1852	J196B0	12/8/2009	1.74E-02	mg/Kg	U	R
Pesticides - 8081	Delta-BHC	K1852	J196B1	12/8/2009	1.76E-02	mg/Kg	U	R
Pesticides - 8081	Delta-BHC	K1852	J196B2	12/8/2009	0.0177	mg/Kg	U	R
Pesticides - 8081	Delta-BHC	K1852	J196B3	12/8/2009	0.0114	mg/Kg	U	R
Pesticides - 8081	Delta-BHC	K1852	J196B4	12/7/2009	1.76E-02	mg/Kg	U	R
Pesticides - 8081	Delta-BHC	K1852	J196B5	12/8/2009	0.0115	mg/Kg	U	R
Pesticides - 8081	Delta-BHC	K1852	J196B6	12/8/2009	1.94E-02	mg/Kg	U	R
Pesticides - 8081	Delta-BHC	K1852	J196B7	12/8/2009	1.91E-02	mg/Kg	U	R
Pesticides - 8081	Delta-BHC	K1852	J196B8	12/8/2009	0.0184	mg/Kg	U	R
Pesticides - 8081	Delta-BHC	K1852	J196B9	12/7/2009	1.63E-02	mg/Kg	U	R
Pesticides - 8081	Delta-BHC	K1852	J196H0	12/8/2009	0.016	mg/Kg	U	R
Pesticides - 8081	Delta-BHC	K1852	J196H4	12/7/2009	0.0206	mg/Kg	U	R

Table 3-7. Summary of Rejected Fish Tissue Data by Method. (79 Pages)

Analytical Method	Analyte	SDG Number	Sample Identification	Sample Date	Result	Units	Laboratory Qualifier	Validation Qualifier
Pesticides - 8081	Delta-BHC	K1852	J196H5	12/8/2009	0.0134	mg/Kg	U	R
Pesticides - 8081	Delta-BHC	K1852	J196H9	12/7/2009	1.22E-02	mg/Kg	U	R
Pesticides - 8081	Delta-BHC	K1852	J196W7	12/8/2009	0.0178	mg/Kg	U	R
Pesticides - 8081	Delta-BHC	K1852	J196W8	12/8/2009	1.58E-02	mg/Kg	U	R
Pesticides - 8081	Delta-BHC	K1852	J196W9	12/8/2009	0.0178	mg/Kg	U	R
Pesticides - 8081	Delta-BHC	K1852	J196X0	12/7/2009	1.58E-02	mg/Kg	U	R
Pesticides - 8081	Delta-BHC	K1852	J196X1	12/7/2009	1.70E-02	mg/Kg	U	R
Pesticides - 8081	Delta-BHC	K1852	J196X2	12/8/2009	0.0178	mg/Kg	U	R
Pesticides - 8081	Delta-BHC	K1852	J196X3	12/8/2009	1.36E-02	mg/Kg	U	R
Pesticides - 8081	Delta-BHC	K1852	J196X4	12/8/2009	0.0178	mg/Kg	U	R
Pesticides - 8081	Delta-BHC	K1852	J196X5	12/7/2009	1.57E-02	mg/Kg	U	R
Pesticides - 8081	Delta-BHC	K1852	J196X6	12/7/2009	1.39E-02	mg/Kg	U	R
Pesticides - 8081	Delta-BHC	K1863	J190V0	12/15/2009	1.36E-02	mg/Kg	U	R
Pesticides - 8081	Delta-BHC	K1863	J190V1	12/15/2009	0.0126	mg/Kg	U	R
Pesticides - 8081	Delta-BHC	K1863	J191N4	12/15/2009	1.68E-02	mg/Kg	U	R
Pesticides - 8081	Delta-BHC	K1863	J191N5	12/15/2009	1.56E-02	mg/Kg	U	R
Pesticides - 8081	Delta-BHC	K1863	J191N6	12/15/2009	0.014	mg/Kg	U	R
Pesticides - 8081	Delta-BHC	K1863	J191N7	12/15/2009	1.04E-02	mg/Kg	U	R
Pesticides - 8081	Delta-BHC	K1863	J191N8	12/15/2009	0.0146	mg/Kg	U	R
Pesticides - 8081	Delta-BHC	K1863	J191Y5	12/15/2009	1.25E-02	mg/Kg	U	R
Pesticides - 8081	Delta-BHC	K1863	J191Y9	12/15/2009	1.92E-02	mg/Kg	U	R
Pesticides - 8081	Delta-BHC	K1863	J19253	12/15/2009	0.012	mg/Kg	U	R
Pesticides - 8081	Delta-BHC	K1863	J19258	12/15/2009	1.22E-02	mg/Kg	U	R
Pesticides - 8081	Delta-BHC	K1863	J196H1	12/15/2009	1.53E-02	mg/Kg	U	R
Pesticides - 8081	Delta-BHC	K1863	J196H6	12/15/2009	1.38E-02	mg/Kg	U	R
Pesticides - 8081	Delta-BHC	K1919	J19254	1/21/2010	0.014	mg/Kg	U	R
Pesticides - 8081	Delta-BHC	K1919	J19259	1/21/2010	0.0146	mg/Kg	U	R
Pesticides - 8081	Dichlorodiphenyldichloroethane	K1714	J19320	8/6/2009	7.87E-03	mg/Kg	U	R
Pesticides - 8081	Dichlorodiphenyldichloroethane	K1725	J193K7	8/6/2009	6.89E-03	mg/Kg	U	R
Pesticides - 8081	Dichlorodiphenyldichloroethane	K1725	J193L7	8/10/2009	7.19E-03	mg/Kg	U	R
Pesticides - 8081	Dichlorodiphenyldichloroethane	K1774	J19643	9/17/2009	0.0166	mg/Kg	U	R
Pesticides - 8081	Dichlorodiphenyldichloroethane	K1785	J195V7	9/21/2009	0.019	mg/Kg	U	R
Pesticides - 8081	Dichlorodiphenyldichloroethane	K1852	J196H4	12/7/2009	0.0206	mg/Kg	U	R
Pesticides - 8081	Dichlorodiphenyldichloroethane	K1863	J190V1	12/15/2009	0.0126	mg/Kg	U	R
Pesticides - 8081	Dichlorodiphenyldichloroethylene	K1852	J196H4	12/7/2009	0.0206	mg/Kg	U	R
Pesticides - 8081	Dichlorodiphenyltrichloroethane	K1579	J18J59	4/1/2009	8.06E-03	mg/Kg	U	R
Pesticides - 8081	Dichlorodiphenyltrichloroethane	K1579	J18J60	4/1/2009	9.61E-03	mg/Kg	U	R
Pesticides - 8081	Dichlorodiphenyltrichloroethane	K1579	J18J61	4/1/2009	8.69E-03	mg/Kg	U	R
Pesticides - 8081	Dichlorodiphenyltrichloroethane	K1579	J18J62	4/1/2009	0.00826	mg/Kg	U	R

Table 3-7. Summary of Rejected Fish Tissue Data by Method. (79 Pages)

Analytical Method	Analyte	SDG Number	Sample Identification	Sample Date	Result	Units	Laboratory Qualifier	Validation Qualifier
Pesticides - 8081	Dichlorodiphenyltrichloroethane	K1579	J18J63	4/1/2009	8.69E-03	mg/Kg	U	R
Pesticides - 8081	Dichlorodiphenyltrichloroethane	K1579	J18K11	4/1/2009	8.32E-03	mg/Kg	U	R
Pesticides - 8081	Dichlorodiphenyltrichloroethane	K1579	J18K14	4/1/2009	6.66E-03	mg/Kg	U	R
Pesticides - 8081	Dichlorodiphenyltrichloroethane	K1579	J18K54	4/1/2009	5.98E-03	mg/Kg	U	R
Pesticides - 8081	Dichlorodiphenyltrichloroethane	K1579	J18K55	4/1/2009	6.36E-03	mg/Kg	U	R
Pesticides - 8081	Dichlorodiphenyltrichloroethane	K1579	J18KD3	4/1/2009	7.09E-03	mg/Kg	U	R
Pesticides - 8081	Dichlorodiphenyltrichloroethane	K1579	J18KD5	4/1/2009	6.17E-03	mg/Kg	U	R
Pesticides - 8081	Dichlorodiphenyltrichloroethane	K1579	J18KD6	4/1/2009	6.53E-03	mg/Kg	U	R
Pesticides - 8081	Dichlorodiphenyltrichloroethane	K1714	J192D5	8/4/2009	8.92E-03	mg/Kg	U	R
Pesticides - 8081	Dichlorodiphenyltrichloroethane	K1714	J192Y8	8/5/2009	9.42E-03	mg/Kg	U	R
Pesticides - 8081	Dichlorodiphenyltrichloroethane	K1714	J19319	8/6/2009	9.34E-03	mg/Kg	U	R
Pesticides - 8081	Dichlorodiphenyltrichloroethane	K1725	J193K7	8/6/2009	6.89E-03	mg/Kg	U	R
Pesticides - 8081	Dichlorodiphenyltrichloroethane	K1725	J193L6	8/10/2009	7.63E-03	mg/Kg	U	R
Pesticides - 8081	Dichlorodiphenyltrichloroethane	K1725	J193M8	8/11/2009	7.29E-03	mg/Kg	U	R
Pesticides - 8081	Dichlorodiphenyltrichloroethane	K1725	J193M9	8/11/2009	8.69E-03	mg/Kg	U	R
Pesticides - 8081	Dichlorodiphenyltrichloroethane	K1759	J19067	9/2/2009	0.0184	mg/Kg	U	R
Pesticides - 8081	Dichlorodiphenyltrichloroethane	K1759	J19069	9/2/2009	1.99E-02	mg/Kg	U	R
Pesticides - 8081	Dichlorodiphenyltrichloroethane	K1759	J19071	9/2/2009	1.99E-02	mg/Kg	U	R
Pesticides - 8081	Dichlorodiphenyltrichloroethane	K1759	J190D5	9/2/2009	0.0161	mg/Kg	U	R
Pesticides - 8081	Dichlorodiphenyltrichloroethane	K1759	J190D7	9/2/2009	0.0201	mg/Kg	U	R
Pesticides - 8081	Dichlorodiphenyltrichloroethane	K1759	J190D9	9/2/2009	0.0146	mg/Kg	U	R
Pesticides - 8081	Dichlorodiphenyltrichloroethane	K1759	J190H0	9/2/2009	1.50E-02	mg/Kg	U	R
Pesticides - 8081	Dichlorodiphenyltrichloroethane	K1759	J190H1	9/2/2009	2.09E-02	mg/Kg	U	R
Pesticides - 8081	Dichlorodiphenyltrichloroethane	K1759	J190H2	9/1/2009	0.0161	mg/Kg	U	R
Pesticides - 8081	Dichlorodiphenyltrichloroethane	K1759	J190H3	9/1/2009	0.0183	mg/Kg	U	R
Pesticides - 8081	Dichlorodiphenyltrichloroethane	K1759	J190H4	9/1/2009	2.28E-02	mg/Kg	U	R
Pesticides - 8081	Dichlorodiphenyltrichloroethane	K1759	J190K0	9/2/2009	1.71E-02	mg/Kg	U	R
Pesticides - 8081	Dichlorodiphenyltrichloroethane	K1759	J190K1	9/2/2009	0.0184	mg/Kg	U	R
Pesticides - 8081	Dichlorodiphenyltrichloroethane	K1759	J190K3	9/1/2009	0.0166	mg/Kg	U	R
Pesticides - 8081	Dichlorodiphenyltrichloroethane	K1761	J19470	9/3/2009	1.99E-02	mg/Kg	U	R
Pesticides - 8081	Dichlorodiphenyltrichloroethane	K1761	J19481	9/3/2009	0.0184	mg/Kg	U	R
Pesticides - 8081	Dichlorodiphenyltrichloroethane	K1761	J194B1	9/8/2009	0.0184	mg/Kg	U	R
Pesticides - 8081	Dichlorodiphenyltrichloroethane	K1769	J194Y7	9/10/2009	1.91E-02	mg/Kg	U	R
Pesticides - 8081	Dichlorodiphenyltrichloroethane	K1769	J194Y8	9/10/2009	2.03E-02	mg/Kg	U	R
Pesticides - 8081	Dichlorodiphenyltrichloroethane	K1769	J195P4	9/10/2009	0.0161	mg/Kg	U	R
Pesticides - 8081	Dichlorodiphenyltrichloroethane	K1769	J195P5	9/10/2009	1.59E-02	mg/Kg	U	R
Pesticides - 8081	Dichlorodiphenyltrichloroethane	K1769	J195R6	9/14/2009	0.0229	mg/Kg	U	R
Pesticides - 8081	Dichlorodiphenyltrichloroethane	K1769	J195X3	9/15/2009	2.16E-02	mg/Kg	U	R
Pesticides - 8081	Dichlorodiphenyltrichloroethane	K1769	J19604	9/15/2009	0.0195	mg/Kg	U	R

Table 3-7. Summary of Rejected Fish Tissue Data by Method. (79 Pages)

Analytical Method	Analyte	SDG Number	Sample Identification	Sample Date	Result	Units	Laboratory Qualifier	Validation Qualifier
Pesticides - 8081	Dichlorodiphenyltrichloroethane	K1774	J19622	9/16/2009	0.0149	mg/Kg	U	R
Pesticides - 8081	Dichlorodiphenyltrichloroethane	K1774	J19623	9/16/2009	1.99E-02	mg/Kg	U	R
Pesticides - 8081	Dichlorodiphenyltrichloroethane	K1774	J19644	9/17/2009	1.80E-02	mg/Kg	U	R
Pesticides - 8081	Dichlorodiphenyltrichloroethane	K1774	J19653	9/17/2009	1.88E-02	mg/Kg	U	R
Pesticides - 8081	Dichlorodiphenyltrichloroethane	K1785	J18XF6	9/24/2009	1.81E-02	mg/Kg	U	R
Pesticides - 8081	Dichlorodiphenyltrichloroethane	K1785	J18XF7	9/24/2009	1.70E-02	mg/Kg	U	R
Pesticides - 8081	Dichlorodiphenyltrichloroethane	K1785	J18XF8	9/24/2009	1.31E-02	mg/Kg	U	R
Pesticides - 8081	Dichlorodiphenyltrichloroethane	K1785	J18XF9	9/25/2009	0.0178	mg/Kg	U	R
Pesticides - 8081	Dichlorodiphenyltrichloroethane	K1785	J18XH0	9/25/2009	0.0126	mg/Kg	U	R
Pesticides - 8081	Dichlorodiphenyltrichloroethane	K1785	J195V7	9/21/2009	0.019	mg/Kg	U	R
Pesticides - 8081	Dichlorodiphenyltrichloroethane	K1785	J195V8	9/21/2009	0.0189	mg/Kg	U	R
Pesticides - 8081	Dichlorodiphenyltrichloroethane	K1785	J195V9	9/21/2009	0.016	mg/Kg	U	R
Pesticides - 8081	Dichlorodiphenyltrichloroethane	K1785	J19661	9/24/2009	1.91E-02	mg/Kg	U	R
Pesticides - 8081	Dichlorodiphenyltrichloroethane	K1852	J191V0	12/7/2009	1.02E-02	mg/Kg	U	R
Pesticides - 8081	Dichlorodiphenyltrichloroethane	K1852	J191V2	12/7/2009	1.86E-02	mg/Kg	U	R
Pesticides - 8081	Dichlorodiphenyltrichloroethane	K1852	J191V3	12/7/2009	0.0132	mg/Kg	U	R
Pesticides - 8081	Dichlorodiphenyltrichloroethane	K1852	J191V4	12/7/2009	1.91E-02	mg/Kg	U	R
Pesticides - 8081	Dichlorodiphenyltrichloroethane	K1852	J191Y6	12/7/2009	1.45E-02	mg/Kg	U	R
Pesticides - 8081	Dichlorodiphenyltrichloroethane	K1852	J191Y7	12/7/2009	1.69E-02	mg/Kg	U	R
Pesticides - 8081	Dichlorodiphenyltrichloroethane	K1852	J191Y8	12/7/2009	1.31E-02	mg/Kg	U	R
Pesticides - 8081	Dichlorodiphenyltrichloroethane	K1852	J19251	12/8/2009	1.16E-02	mg/Kg	U	R
Pesticides - 8081	Dichlorodiphenyltrichloroethane	K1852	J19252	12/8/2009	0.0166	mg/Kg	U	R
Pesticides - 8081	Dichlorodiphenyltrichloroethane	K1852	J19256	12/8/2009	1.63E-02	mg/Kg	U	R
Pesticides - 8081	Dichlorodiphenyltrichloroethane	K1852	J19257	12/8/2009	0.0135	mg/Kg	U	R
Pesticides - 8081	Dichlorodiphenyltrichloroethane	K1852	J196B0	12/8/2009	1.74E-02	mg/Kg	U	R
Pesticides - 8081	Dichlorodiphenyltrichloroethane	K1852	J196B1	12/8/2009	1.76E-02	mg/Kg	U	R
Pesticides - 8081	Dichlorodiphenyltrichloroethane	K1852	J196B2	12/8/2009	0.0177	mg/Kg	U	R
Pesticides - 8081	Dichlorodiphenyltrichloroethane	K1852	J196B4	12/7/2009	1.76E-02	mg/Kg	U	R
Pesticides - 8081	Dichlorodiphenyltrichloroethane	K1852	J196B5	12/8/2009	0.0115	mg/Kg	U	R
Pesticides - 8081	Dichlorodiphenyltrichloroethane	K1852	J196B6	12/8/2009	1.94E-02	mg/Kg	U	R
Pesticides - 8081	Dichlorodiphenyltrichloroethane	K1852	J196B7	12/8/2009	1.91E-02	mg/Kg	U	R
Pesticides - 8081	Dichlorodiphenyltrichloroethane	K1852	J196B9	12/7/2009	1.63E-02	mg/Kg	U	R
Pesticides - 8081	Dichlorodiphenyltrichloroethane	K1852	J196H0	12/8/2009	0.016	mg/Kg	U	R
Pesticides - 8081	Dichlorodiphenyltrichloroethane	K1852	J196H4	12/7/2009	0.0206	mg/Kg	U	R
Pesticides - 8081	Dichlorodiphenyltrichloroethane	K1852	J196H5	12/8/2009	0.0134	mg/Kg	U	R
Pesticides - 8081	Dichlorodiphenyltrichloroethane	K1852	J196H9	12/7/2009	1.22E-02	mg/Kg	U	R
Pesticides - 8081	Dichlorodiphenyltrichloroethane	K1852	J196W7	12/8/2009	0.0178	mg/Kg	U	R
Pesticides - 8081	Dichlorodiphenyltrichloroethane	K1852	J196W8	12/8/2009	1.58E-02	mg/Kg	U	R
Pesticides - 8081	Dichlorodiphenyltrichloroethane	K1852	J196W9	12/8/2009	0.0178	mg/Kg	U	R

Table 3-7. Summary of Rejected Fish Tissue Data by Method. (79 Pages)

Analytical Method	Analyte	SDG Number	Sample Identification	Sample Date	Result	Units	Laboratory Qualifier	Validation Qualifier
Pesticides - 8081	Dichlorodiphenyltrichloroethane	K1852	J196X0	12/7/2009	1.58E-02	mg/Kg	U	R
Pesticides - 8081	Dichlorodiphenyltrichloroethane	K1852	J196X1	12/7/2009	1.70E-02	mg/Kg	U	R
Pesticides - 8081	Dichlorodiphenyltrichloroethane	K1852	J196X2	12/8/2009	0.0178	mg/Kg	U	R
Pesticides - 8081	Dichlorodiphenyltrichloroethane	K1852	J196X3	12/8/2009	1.36E-02	mg/Kg	U	R
Pesticides - 8081	Dichlorodiphenyltrichloroethane	K1852	J196X4	12/8/2009	0.0178	mg/Kg	U	R
Pesticides - 8081	Dichlorodiphenyltrichloroethane	K1852	J196X5	12/7/2009	1.57E-02	mg/Kg	U	R
Pesticides - 8081	Dichlorodiphenyltrichloroethane	K1863	J190V0	12/15/2009	1.36E-02	mg/Kg	U	R
Pesticides - 8081	Dichlorodiphenyltrichloroethane	K1863	J190V1	12/15/2009	0.0126	mg/Kg	U	R
Pesticides - 8081	Dichlorodiphenyltrichloroethane	K1863	J191N4	12/15/2009	1.68E-02	mg/Kg	U	R
Pesticides - 8081	Dichlorodiphenyltrichloroethane	K1863	J191N5	12/15/2009	1.56E-02	mg/Kg	U	R
Pesticides - 8081	Dichlorodiphenyltrichloroethane	K1863	J191N6	12/15/2009	0.014	mg/Kg	U	R
Pesticides - 8081	Dichlorodiphenyltrichloroethane	K1863	J191N7	12/15/2009	1.04E-02	mg/Kg	U	R
Pesticides - 8081	Dichlorodiphenyltrichloroethane	K1863	J191Y5	12/15/2009	1.25E-02	mg/Kg	U	R
Pesticides - 8081	Dichlorodiphenyltrichloroethane	K1863	J191Y9	12/15/2009	1.92E-02	mg/Kg	U	R
Pesticides - 8081	Dichlorodiphenyltrichloroethane	K1863	J19253	12/15/2009	0.012	mg/Kg	U	R
Pesticides - 8081	Dichlorodiphenyltrichloroethane	K1863	J19258	12/15/2009	1.22E-02	mg/Kg	U	R
Pesticides - 8081	Dichlorodiphenyltrichloroethane	K1863	J196H1	12/15/2009	1.53E-02	mg/Kg	U	R
Pesticides - 8081	Dichlorodiphenyltrichloroethane	K1863	J196H6	12/15/2009	1.38E-02	mg/Kg	U	R
Pesticides - 8081	Dichlorodiphenyltrichloroethane	K1919	J19254	1/21/2010	0.014	mg/Kg	U	R
Pesticides - 8081	Dichlorodiphenyltrichloroethane	K1919	J19259	1/21/2010	0.0146	mg/Kg	U	R
Pesticides - 8081	Dieldrin	K1579	J18J59	4/1/2009	8.06E-03	mg/Kg	U	R
Pesticides - 8081	Dieldrin	K1579	J18J60	4/1/2009	9.61E-03	mg/Kg	U	R
Pesticides - 8081	Dieldrin	K1579	J18J62	4/1/2009	0.00826	mg/Kg	U	R
Pesticides - 8081	Dieldrin	K1579	J18J63	4/1/2009	8.69E-03	mg/Kg	U	R
Pesticides - 8081	Dieldrin	K1579	J18K11	4/1/2009	8.32E-03	mg/Kg	U	R
Pesticides - 8081	Dieldrin	K1579	J18K13	4/1/2009	7.57E-03	mg/Kg	U	R
Pesticides - 8081	Dieldrin	K1579	J18K14	4/1/2009	6.66E-03	mg/Kg	U	R
Pesticides - 8081	Dieldrin	K1579	J18K15	4/1/2009	8.06E-03	mg/Kg	U	R
Pesticides - 8081	Dieldrin	K1579	J18K53	4/1/2009	0.00662	mg/Kg	U	R
Pesticides - 8081	Dieldrin	K1579	J18K54	4/1/2009	5.98E-03	mg/Kg	U	R
Pesticides - 8081	Dieldrin	K1579	J18K55	4/1/2009	6.36E-03	mg/Kg	U	R
Pesticides - 8081	Dieldrin	K1579	J18K56	4/1/2009	7.68E-03	mg/Kg	U	R
Pesticides - 8081	Dieldrin	K1579	J18KD3	4/1/2009	7.09E-03	mg/Kg	U	R
Pesticides - 8081	Dieldrin	K1579	J18KD5	4/1/2009	6.17E-03	mg/Kg	U	R
Pesticides - 8081	Dieldrin	K1579	J18KD6	4/1/2009	6.53E-03	mg/Kg	U	R
Pesticides - 8081	Dieldrin	K1579	J18KD7	4/1/2009	5.00E-03	mg/Kg	U	R
Pesticides - 8081	Dieldrin	K1714	J192D5	8/4/2009	8.92E-03	mg/Kg	U	R
Pesticides - 8081	Dieldrin	K1714	J192D6	8/4/2009	7.93E-03	mg/Kg	U	R
Pesticides - 8081	Dieldrin	K1714	J192F6	8/4/2009	8.84E-03	mg/Kg	U	R

Table 3-7. Summary of Rejected Fish Tissue Data by Method. (79 Pages)

Analytical Method	Analyte	SDG Number	Sample Identification	Sample Date	Result	Units	Laboratory Qualifier	Validation Qualifier
Pesticides - 8081	Dieldrin	K1714	J192F7	8/4/2009	5.18E-03	mg/Kg	U	R
Pesticides - 8081	Dieldrin	K1714	J192Y8	8/5/2009	9.42E-03	mg/Kg	U	R
Pesticides - 8081	Dieldrin	K1714	J192Y9	8/5/2009	6.17E-03	mg/Kg	U	R
Pesticides - 8081	Dieldrin	K1714	J19308	8/5/2009	7.04E-03	mg/Kg	U	R
Pesticides - 8081	Dieldrin	K1714	J19309	8/5/2009	9.17E-03	mg/Kg	U	R
Pesticides - 8081	Dieldrin	K1714	J19320	8/6/2009	7.87E-03	mg/Kg	U	R
Pesticides - 8081	Dieldrin	K1725	J193K6	8/6/2009	7.74E-03	mg/Kg	U	R
Pesticides - 8081	Dieldrin	K1725	J193K7	8/6/2009	6.89E-03	mg/Kg	U	R
Pesticides - 8081	Dieldrin	K1725	J193L6	8/10/2009	7.63E-03	mg/Kg	U	R
Pesticides - 8081	Dieldrin	K1725	J193L7	8/10/2009	7.19E-03	mg/Kg	U	R
Pesticides - 8081	Dieldrin	K1725	J193M9	8/11/2009	8.69E-03	mg/Kg	U	R
Pesticides - 8081	Dieldrin	K1725	J19441	8/12/2009	6.84E-03	mg/Kg	U	R
Pesticides - 8081	Dieldrin	K1758	J19047	9/1/2009	1.76E-02	mg/Kg	U	R
Pesticides - 8081	Dieldrin	K1758	J19048	9/1/2009	1.75E-02	mg/Kg	U	R
Pesticides - 8081	Dieldrin	K1758	J19049	9/1/2009	0.0178	mg/Kg	U	R
Pesticides - 8081	Dieldrin	K1758	J19050	9/1/2009	0.0152	mg/Kg	U	R
Pesticides - 8081	Dieldrin	K1758	J19051	9/1/2009	1.71E-02	mg/Kg	U	R
Pesticides - 8081	Dieldrin	K1758	J190D0	9/1/2009	0.0161	mg/Kg	U	R
Pesticides - 8081	Dieldrin	K1758	J190D1	9/1/2009	1.96E-02	mg/Kg	U	R
Pesticides - 8081	Dieldrin	K1758	J190D2	9/1/2009	1.73E-02	mg/Kg	U	R
Pesticides - 8081	Dieldrin	K1758	J190D3	9/1/2009	1.94E-02	mg/Kg	U	R
Pesticides - 8081	Dieldrin	K1758	J190D4	9/1/2009	2.03E-02	mg/Kg	U	R
Pesticides - 8081	Dieldrin	K1758	J190J5	9/1/2009	1.99E-02	mg/Kg	U	R
Pesticides - 8081	Dieldrin	K1758	J190J6	9/1/2009	1.50E-02	mg/Kg	U	R
Pesticides - 8081	Dieldrin	K1758	J190J7	9/1/2009	1.91E-02	mg/Kg	U	R
Pesticides - 8081	Dieldrin	K1758	J190J8	9/1/2009	1.70E-02	mg/Kg	U	R
Pesticides - 8081	Dieldrin	K1758	J190J9	9/1/2009	2.09E-02	mg/Kg	U	R
Pesticides - 8081	Dieldrin	K1758	J190N1	9/1/2009	1.57E-02	mg/Kg	U	R
Pesticides - 8081	Dieldrin	K1758	J190N2	9/1/2009	0.0161	mg/Kg	U	R
Pesticides - 8081	Dieldrin	K1758	J190N3	9/1/2009	1.81E-02	mg/Kg	U	R
Pesticides - 8081	Dieldrin	K1758	J190N4	9/1/2009	0.0178	mg/Kg	U	R
Pesticides - 8081	Dieldrin	K1758	J190N5	9/1/2009	1.93E-02	mg/Kg	U	R
Pesticides - 8081	Dieldrin	K1759	J19067	9/2/2009	0.0184	mg/Kg	U	R
Pesticides - 8081	Dieldrin	K1759	J19069	9/2/2009	1.99E-02	mg/Kg	U	R
Pesticides - 8081	Dieldrin	K1759	J19071	9/2/2009	1.99E-02	mg/Kg	U	R
Pesticides - 8081	Dieldrin	K1759	J190D5	9/2/2009	0.0161	mg/Kg	U	R
Pesticides - 8081	Dieldrin	K1759	J190D7	9/2/2009	0.0201	mg/Kg	U	R
Pesticides - 8081	Dieldrin	K1759	J190D9	9/2/2009	0.0146	mg/Kg	U	R
Pesticides - 8081	Dieldrin	K1759	J190H0	9/2/2009	1.50E-02	mg/Kg	U	R

Table 3-7. Summary of Rejected Fish Tissue Data by Method. (79 Pages)

Analytical Method	Analyte	SDG Number	Sample Identification	Sample Date	Result	Units	Laboratory Qualifier	Validation Qualifier
Pesticides - 8081	Dieldrin	K1759	J190H1	9/2/2009	2.09E-02	mg/Kg	U	R
Pesticides - 8081	Dieldrin	K1759	J190H2	9/1/2009	0.0161	mg/Kg	U	R
Pesticides - 8081	Dieldrin	K1759	J190H3	9/1/2009	0.0183	mg/Kg	U	R
Pesticides - 8081	Dieldrin	K1759	J190H4	9/1/2009	2.28E-02	mg/Kg	U	R
Pesticides - 8081	Dieldrin	K1759	J190K0	9/2/2009	1.71E-02	mg/Kg	U	R
Pesticides - 8081	Dieldrin	K1759	J190K1	9/2/2009	0.0184	mg/Kg	U	R
Pesticides - 8081	Dieldrin	K1759	J190K2	9/1/2009	1.99E-02	mg/Kg	U	R
Pesticides - 8081	Dieldrin	K1759	J190K3	9/1/2009	0.0166	mg/Kg	U	R
Pesticides - 8081	Dieldrin	K1759	J190K4	9/1/2009	1.91E-02	mg/Kg	U	R
Pesticides - 8081	Dieldrin	K1761	J19470	9/3/2009	1.99E-02	mg/Kg	U	R
Pesticides - 8081	Dieldrin	K1761	J19471	9/3/2009	1.88E-02	mg/Kg	U	R
Pesticides - 8081	Dieldrin	K1761	J19480	9/3/2009	1.45E-02	mg/Kg	U	R
Pesticides - 8081	Dieldrin	K1761	J19481	9/3/2009	0.0184	mg/Kg	U	R
Pesticides - 8081	Dieldrin	K1761	J19490	9/8/2009	1.71E-02	mg/Kg	U	R
Pesticides - 8081	Dieldrin	K1761	J19491	9/8/2009	1.45E-02	mg/Kg	U	R
Pesticides - 8081	Dieldrin	K1761	J194B1	9/8/2009	0.0184	mg/Kg	U	R
Pesticides - 8081	Dieldrin	K1761	J194B2	9/8/2009	1.33E-02	mg/Kg	U	R
Pesticides - 8081	Dieldrin	K1761	J194C2	9/9/2009	0.0195	mg/Kg	U	R
Pesticides - 8081	Dieldrin	K1761	J194C3	9/9/2009	1.93E-02	mg/Kg	U	R
Pesticides - 8081	Dieldrin	K1769	J194Y7	9/10/2009	1.91E-02	mg/Kg	U	R
Pesticides - 8081	Dieldrin	K1769	J194Y8	9/10/2009	2.03E-02	mg/Kg	U	R
Pesticides - 8081	Dieldrin	K1769	J195P4	9/10/2009	0.0161	mg/Kg	U	R
Pesticides - 8081	Dieldrin	K1769	J195P5	9/10/2009	1.59E-02	mg/Kg	U	R
Pesticides - 8081	Dieldrin	K1769	J195R6	9/14/2009	0.0229	mg/Kg	U	R
Pesticides - 8081	Dieldrin	K1769	J195R7	9/14/2009	0.0201	mg/Kg	U	R
Pesticides - 8081	Dieldrin	K1769	J195X3	9/15/2009	2.16E-02	mg/Kg	U	R
Pesticides - 8081	Dieldrin	K1769	J195X4	9/15/2009	1.92E-02	mg/Kg	U	R
Pesticides - 8081	Dieldrin	K1769	J19603	9/15/2009	0.0146	mg/Kg	U	R
Pesticides - 8081	Dieldrin	K1769	J19604	9/15/2009	0.0195	mg/Kg	U	R
Pesticides - 8081	Dieldrin	K1774	J19622	9/16/2009	0.0149	mg/Kg	U	R
Pesticides - 8081	Dieldrin	K1774	J19623	9/16/2009	1.99E-02	mg/Kg	U	R
Pesticides - 8081	Dieldrin	K1774	J19633	9/16/2009	0.0201	mg/Kg	U	R
Pesticides - 8081	Dieldrin	K1774	J19634	9/16/2009	0.0161	mg/Kg	U	R
Pesticides - 8081	Dieldrin	K1774	J19643	9/17/2009	0.0166	mg/Kg	U	R
Pesticides - 8081	Dieldrin	K1774	J19644	9/17/2009	1.80E-02	mg/Kg	U	R
Pesticides - 8081	Dieldrin	K1774	J19653	9/17/2009	1.88E-02	mg/Kg	U	R
Pesticides - 8081	Dieldrin	K1774	J19654	9/17/2009	2.05E-02	mg/Kg	U	R
Pesticides - 8081	Dieldrin	K1785	J18XB1	9/24/2009	0.0184	mg/Kg	U	R
Pesticides - 8081	Dieldrin	K1785	J18XB2	9/25/2009	1.93E-02	mg/Kg	U	R

Table 3-7. Summary of Rejected Fish Tissue Data by Method. (79 Pages)

Analytical Method	Analyte	SDG Number	Sample Identification	Sample Date	Result	Units	Laboratory Qualifier	Validation Qualifier
Pesticides - 8081	Dieldrin	K1785	J18XB3	9/25/2009	1.94E-02	mg/Kg	U	R
Pesticides - 8081	Dieldrin	K1785	J18XB4	9/24/2009	1.81E-02	mg/Kg	U	R
Pesticides - 8081	Dieldrin	K1785	J18XB5	9/24/2009	1.88E-02	mg/Kg	U	R
Pesticides - 8081	Dieldrin	K1785	J18XF6	9/24/2009	1.81E-02	mg/Kg	U	R
Pesticides - 8081	Dieldrin	K1785	J18XF7	9/24/2009	1.70E-02	mg/Kg	U	R
Pesticides - 8081	Dieldrin	K1785	J18XF8	9/24/2009	1.31E-02	mg/Kg	U	R
Pesticides - 8081	Dieldrin	K1785	J18XF9	9/25/2009	0.0178	mg/Kg	U	R
Pesticides - 8081	Dieldrin	K1785	J18XH0	9/25/2009	0.0126	mg/Kg	U	R
Pesticides - 8081	Dieldrin	K1785	J195V7	9/21/2009	0.019	mg/Kg	U	R
Pesticides - 8081	Dieldrin	K1785	J195V8	9/21/2009	0.0189	mg/Kg	U	R
Pesticides - 8081	Dieldrin	K1785	J195V9	9/21/2009	0.016	mg/Kg	U	R
Pesticides - 8081	Dieldrin	K1785	J195W0	9/24/2009	0.016	mg/Kg	U	R
Pesticides - 8081	Dieldrin	K1785	J19661	9/24/2009	1.91E-02	mg/Kg	U	R
Pesticides - 8081	Dieldrin	K1785	J19662	9/24/2009	0.0184	mg/Kg	U	R
Pesticides - 8081	Dieldrin	K1785	J19747	9/24/2009	2.05E-02	mg/Kg	U	R
Pesticides - 8081	Dieldrin	K1852	J191V0	12/7/2009	1.02E-02	mg/Kg	U	R
Pesticides - 8081	Dieldrin	K1852	J191V1	12/7/2009	0.0184	mg/Kg	U	R
Pesticides - 8081	Dieldrin	K1852	J191V2	12/7/2009	1.86E-02	mg/Kg	U	R
Pesticides - 8081	Dieldrin	K1852	J191V3	12/7/2009	0.0132	mg/Kg	U	R
Pesticides - 8081	Dieldrin	K1852	J191V4	12/7/2009	1.91E-02	mg/Kg	U	R
Pesticides - 8081	Dieldrin	K1852	J191Y6	12/7/2009	1.45E-02	mg/Kg	U	R
Pesticides - 8081	Dieldrin	K1852	J191Y7	12/7/2009	1.69E-02	mg/Kg	U	R
Pesticides - 8081	Dieldrin	K1852	J191Y8	12/7/2009	1.31E-02	mg/Kg	U	R
Pesticides - 8081	Dieldrin	K1852	J19251	12/8/2009	1.16E-02	mg/Kg	U	R
Pesticides - 8081	Dieldrin	K1852	J19252	12/8/2009	0.0166	mg/Kg	U	R
Pesticides - 8081	Dieldrin	K1852	J19256	12/8/2009	1.63E-02	mg/Kg	U	R
Pesticides - 8081	Dieldrin	K1852	J19257	12/8/2009	0.0135	mg/Kg	U	R
Pesticides - 8081	Dieldrin	K1852	J196B0	12/8/2009	1.74E-02	mg/Kg	U	R
Pesticides - 8081	Dieldrin	K1852	J196B1	12/8/2009	1.76E-02	mg/Kg	U	R
Pesticides - 8081	Dieldrin	K1852	J196B2	12/8/2009	0.0177	mg/Kg	U	R
Pesticides - 8081	Dieldrin	K1852	J196B3	12/8/2009	0.0114	mg/Kg	U	R
Pesticides - 8081	Dieldrin	K1852	J196B4	12/7/2009	1.76E-02	mg/Kg	U	R
Pesticides - 8081	Dieldrin	K1852	J196B5	12/8/2009	0.0115	mg/Kg	U	R
Pesticides - 8081	Dieldrin	K1852	J196B6	12/8/2009	1.94E-02	mg/Kg	U	R
Pesticides - 8081	Dieldrin	K1852	J196B7	12/8/2009	1.91E-02	mg/Kg	U	R
Pesticides - 8081	Dieldrin	K1852	J196B8	12/8/2009	0.0184	mg/Kg	U	R
Pesticides - 8081	Dieldrin	K1852	J196B9	12/7/2009	1.63E-02	mg/Kg	U	R
Pesticides - 8081	Dieldrin	K1852	J196H0	12/8/2009	0.016	mg/Kg	U	R
Pesticides - 8081	Dieldrin	K1852	J196H4	12/7/2009	0.0206	mg/Kg	U	R

Table 3-7. Summary of Rejected Fish Tissue Data by Method. (79 Pages)

Analytical Method	Analyte	SDG Number	Sample Identification	Sample Date	Result	Units	Laboratory Qualifier	Validation Qualifier
Pesticides - 8081	Dieldrin	K1852	J196H5	12/8/2009	0.0134	mg/Kg	U	R
Pesticides - 8081	Dieldrin	K1852	J196H9	12/7/2009	1.22E-02	mg/Kg	U	R
Pesticides - 8081	Dieldrin	K1852	J196W7	12/8/2009	0.0178	mg/Kg	U	R
Pesticides - 8081	Dieldrin	K1852	J196W8	12/8/2009	1.58E-02	mg/Kg	U	R
Pesticides - 8081	Dieldrin	K1852	J196W9	12/8/2009	0.0178	mg/Kg	U	R
Pesticides - 8081	Dieldrin	K1852	J196X0	12/7/2009	1.58E-02	mg/Kg	U	R
Pesticides - 8081	Dieldrin	K1852	J196X1	12/7/2009	1.70E-02	mg/Kg	U	R
Pesticides - 8081	Dieldrin	K1852	J196X2	12/8/2009	0.0178	mg/Kg	U	R
Pesticides - 8081	Dieldrin	K1852	J196X3	12/8/2009	1.36E-02	mg/Kg	U	R
Pesticides - 8081	Dieldrin	K1852	J196X4	12/8/2009	0.0178	mg/Kg	U	R
Pesticides - 8081	Dieldrin	K1852	J196X5	12/7/2009	1.57E-02	mg/Kg	U	R
Pesticides - 8081	Dieldrin	K1852	J196X6	12/7/2009	1.39E-02	mg/Kg	U	R
Pesticides - 8081	Dieldrin	K1863	J190V0	12/15/2009	1.36E-02	mg/Kg	U	R
Pesticides - 8081	Dieldrin	K1863	J190V1	12/15/2009	0.0126	mg/Kg	U	R
Pesticides - 8081	Dieldrin	K1863	J191N4	12/15/2009	1.68E-02	mg/Kg	U	R
Pesticides - 8081	Dieldrin	K1863	J191N5	12/15/2009	1.56E-02	mg/Kg	U	R
Pesticides - 8081	Dieldrin	K1863	J191N6	12/15/2009	0.014	mg/Kg	U	R
Pesticides - 8081	Dieldrin	K1863	J191N7	12/15/2009	1.04E-02	mg/Kg	U	R
Pesticides - 8081	Dieldrin	K1863	J191N8	12/15/2009	0.0146	mg/Kg	U	R
Pesticides - 8081	Dieldrin	K1863	J191Y5	12/15/2009	1.25E-02	mg/Kg	U	R
Pesticides - 8081	Dieldrin	K1863	J191Y9	12/15/2009	1.92E-02	mg/Kg	U	R
Pesticides - 8081	Dieldrin	K1863	J19253	12/15/2009	0.012	mg/Kg	U	R
Pesticides - 8081	Dieldrin	K1863	J19258	12/15/2009	1.22E-02	mg/Kg	U	R
Pesticides - 8081	Dieldrin	K1863	J196H1	12/15/2009	1.53E-02	mg/Kg	U	R
Pesticides - 8081	Dieldrin	K1863	J196H6	12/15/2009	1.38E-02	mg/Kg	U	R
Pesticides - 8081	Dieldrin	K1919	J19254	1/21/2010	0.014	mg/Kg	U	R
Pesticides - 8081	Dieldrin	K1919	J19259	1/21/2010	0.0146	mg/Kg	U	R
Pesticides - 8081	Endosulfan I	K1579	J18J59	4/1/2009	8.06E-03	mg/Kg	U	R
Pesticides - 8081	Endosulfan I	K1579	J18J60	4/1/2009	9.61E-03	mg/Kg	U	R
Pesticides - 8081	Endosulfan I	K1579	J18J61	4/1/2009	8.69E-03	mg/Kg	U	R
Pesticides - 8081	Endosulfan I	K1579	J18J62	4/1/2009	0.00826	mg/Kg	U	R
Pesticides - 8081	Endosulfan I	K1579	J18J63	4/1/2009	8.69E-03	mg/Kg	U	R
Pesticides - 8081	Endosulfan I	K1579	J18K11	4/1/2009	8.32E-03	mg/Kg	U	R
Pesticides - 8081	Endosulfan I	K1579	J18K12	4/1/2009	8.69E-03	mg/Kg	U	R
Pesticides - 8081	Endosulfan I	K1579	J18K13	4/1/2009	7.57E-03	mg/Kg	U	R
Pesticides - 8081	Endosulfan I	K1579	J18K14	4/1/2009	6.66E-03	mg/Kg	U	R
Pesticides - 8081	Endosulfan I	K1579	J18K15	4/1/2009	8.06E-03	mg/Kg	U	R
Pesticides - 8081	Endosulfan I	K1579	J18K52	4/1/2009	6.89E-03	mg/Kg	U	R
Pesticides - 8081	Endosulfan I	K1579	J18K53	4/1/2009	0.00662	mg/Kg	U	R

Table 3-7. Summary of Rejected Fish Tissue Data by Method. (79 Pages)

Analytical Method	Analyte	SDG Number	Sample Identification	Sample Date	Result	Units	Laboratory Qualifier	Validation Qualifier
Pesticides - 8081	Endosulfan I	K1579	J18K54	4/1/2009	5.98E-03	mg/Kg	U	R
Pesticides - 8081	Endosulfan I	K1579	J18K55	4/1/2009	6.36E-03	mg/Kg	U	R
Pesticides - 8081	Endosulfan I	K1579	J18K56	4/1/2009	7.68E-03	mg/Kg	U	R
Pesticides - 8081	Endosulfan I	K1579	J18KD3	4/1/2009	7.09E-03	mg/Kg	U	R
Pesticides - 8081	Endosulfan I	K1579	J18KD4	4/1/2009	7.04E-03	mg/Kg	U	R
Pesticides - 8081	Endosulfan I	K1579	J18KD6	4/1/2009	6.53E-03	mg/Kg	U	R
Pesticides - 8081	Endosulfan I	K1579	J18KD7	4/1/2009	5.00E-03	mg/Kg	U	R
Pesticides - 8081	Endosulfan I	K1714	J192D5	8/4/2009	8.92E-03	mg/Kg	U	R
Pesticides - 8081	Endosulfan I	K1714	J192D6	8/4/2009	7.93E-03	mg/Kg	U	R
Pesticides - 8081	Endosulfan I	K1714	J192F6	8/4/2009	8.84E-03	mg/Kg	U	R
Pesticides - 8081	Endosulfan I	K1714	J192F7	8/4/2009	5.18E-03	mg/Kg	U	R
Pesticides - 8081	Endosulfan I	K1714	J192Y8	8/5/2009	9.42E-03	mg/Kg	U	R
Pesticides - 8081	Endosulfan I	K1714	J192Y9	8/5/2009	6.17E-03	mg/Kg	U	R
Pesticides - 8081	Endosulfan I	K1714	J19309	8/5/2009	9.17E-03	mg/Kg	U	R
Pesticides - 8081	Endosulfan I	K1714	J19319	8/6/2009	9.34E-03	mg/Kg	U	R
Pesticides - 8081	Endosulfan I	K1714	J19320	8/6/2009	7.87E-03	mg/Kg	U	R
Pesticides - 8081	Endosulfan I	K1725	J193K7	8/6/2009	6.89E-03	mg/Kg	U	R
Pesticides - 8081	Endosulfan I	K1725	J193L6	8/10/2009	7.63E-03	mg/Kg	U	R
Pesticides - 8081	Endosulfan I	K1725	J193L7	8/10/2009	7.19E-03	mg/Kg	U	R
Pesticides - 8081	Endosulfan I	K1725	J193M8	8/11/2009	7.29E-03	mg/Kg	U	R
Pesticides - 8081	Endosulfan I	K1725	J193M9	8/11/2009	8.69E-03	mg/Kg	U	R
Pesticides - 8081	Endosulfan I	K1758	J19047	9/1/2009	1.76E-02	mg/Kg	U	R
Pesticides - 8081	Endosulfan I	K1758	J19048	9/1/2009	1.75E-02	mg/Kg	U	R
Pesticides - 8081	Endosulfan I	K1758	J19049	9/1/2009	0.0178	mg/Kg	U	R
Pesticides - 8081	Endosulfan I	K1758	J19050	9/1/2009	0.0152	mg/Kg	U	R
Pesticides - 8081	Endosulfan I	K1758	J19051	9/1/2009	1.71E-02	mg/Kg	U	R
Pesticides - 8081	Endosulfan I	K1758	J190D0	9/1/2009	0.0161	mg/Kg	U	R
Pesticides - 8081	Endosulfan I	K1758	J190D1	9/1/2009	1.96E-02	mg/Kg	U	R
Pesticides - 8081	Endosulfan I	K1758	J190D2	9/1/2009	1.73E-02	mg/Kg	U	R
Pesticides - 8081	Endosulfan I	K1758	J190D3	9/1/2009	1.94E-02	mg/Kg	U	R
Pesticides - 8081	Endosulfan I	K1758	J190D4	9/1/2009	2.03E-02	mg/Kg	U	R
Pesticides - 8081	Endosulfan I	K1758	J190J5	9/1/2009	1.99E-02	mg/Kg	U	R
Pesticides - 8081	Endosulfan I	K1758	J190J6	9/1/2009	1.50E-02	mg/Kg	U	R
Pesticides - 8081	Endosulfan I	K1758	J190J7	9/1/2009	1.91E-02	mg/Kg	U	R
Pesticides - 8081	Endosulfan I	K1758	J190J8	9/1/2009	1.70E-02	mg/Kg	U	R
Pesticides - 8081	Endosulfan I	K1758	J190J9	9/1/2009	2.09E-02	mg/Kg	U	R
Pesticides - 8081	Endosulfan I	K1758	J190N1	9/1/2009	1.57E-02	mg/Kg	U	R
Pesticides - 8081	Endosulfan I	K1758	J190N2	9/1/2009	0.0161	mg/Kg	U	R
Pesticides - 8081	Endosulfan I	K1758	J190N3	9/1/2009	1.81E-02	mg/Kg	U	R

Table 3-7. Summary of Rejected Fish Tissue Data by Method. (79 Pages)

Analytical Method	Analyte	SDG Number	Sample Identification	Sample Date	Result	Units	Laboratory Qualifier	Validation Qualifier
Pesticides - 8081	Endosulfan I	K1758	J190N4	9/1/2009	0.0178	mg/Kg	U	R
Pesticides - 8081	Endosulfan I	K1758	J190N5	9/1/2009	1.93E-02	mg/Kg	U	R
Pesticides - 8081	Endosulfan I	K1759	J19067	9/2/2009	0.0184	mg/Kg	U	R
Pesticides - 8081	Endosulfan I	K1759	J19069	9/2/2009	1.99E-02	mg/Kg	U	R
Pesticides - 8081	Endosulfan I	K1759	J19071	9/2/2009	1.99E-02	mg/Kg	U	R
Pesticides - 8081	Endosulfan I	K1759	J190D5	9/2/2009	0.0161	mg/Kg	U	R
Pesticides - 8081	Endosulfan I	K1759	J190D7	9/2/2009	0.0201	mg/Kg	U	R
Pesticides - 8081	Endosulfan I	K1759	J190D9	9/2/2009	0.0146	mg/Kg	U	R
Pesticides - 8081	Endosulfan I	K1759	J190H0	9/2/2009	1.50E-02	mg/Kg	U	R
Pesticides - 8081	Endosulfan I	K1759	J190H1	9/2/2009	2.09E-02	mg/Kg	U	R
Pesticides - 8081	Endosulfan I	K1759	J190H2	9/1/2009	0.0161	mg/Kg	U	R
Pesticides - 8081	Endosulfan I	K1759	J190H3	9/1/2009	0.0183	mg/Kg	U	R
Pesticides - 8081	Endosulfan I	K1759	J190H4	9/1/2009	2.28E-02	mg/Kg	U	R
Pesticides - 8081	Endosulfan I	K1759	J190K0	9/2/2009	1.71E-02	mg/Kg	U	R
Pesticides - 8081	Endosulfan I	K1759	J190K1	9/2/2009	0.0184	mg/Kg	U	R
Pesticides - 8081	Endosulfan I	K1759	J190K2	9/1/2009	1.99E-02	mg/Kg	U	R
Pesticides - 8081	Endosulfan I	K1759	J190K3	9/1/2009	0.0166	mg/Kg	U	R
Pesticides - 8081	Endosulfan I	K1759	J190K4	9/1/2009	1.91E-02	mg/Kg	U	R
Pesticides - 8081	Endosulfan I	K1761	J19470	9/3/2009	1.99E-02	mg/Kg	U	R
Pesticides - 8081	Endosulfan I	K1761	J19471	9/3/2009	1.88E-02	mg/Kg	U	R
Pesticides - 8081	Endosulfan I	K1761	J19481	9/3/2009	0.0184	mg/Kg	U	R
Pesticides - 8081	Endosulfan I	K1761	J19490	9/8/2009	1.71E-02	mg/Kg	U	R
Pesticides - 8081	Endosulfan I	K1761	J19491	9/8/2009	1.45E-02	mg/Kg	U	R
Pesticides - 8081	Endosulfan I	K1761	J194B1	9/8/2009	0.0184	mg/Kg	U	R
Pesticides - 8081	Endosulfan I	K1761	J194B2	9/8/2009	1.33E-02	mg/Kg	U	R
Pesticides - 8081	Endosulfan I	K1761	J194C2	9/9/2009	0.0195	mg/Kg	U	R
Pesticides - 8081	Endosulfan I	K1761	J194C3	9/9/2009	1.93E-02	mg/Kg	U	R
Pesticides - 8081	Endosulfan I	K1769	J194Y8	9/10/2009	2.03E-02	mg/Kg	U	R
Pesticides - 8081	Endosulfan I	K1769	J195P4	9/10/2009	0.0161	mg/Kg	U	R
Pesticides - 8081	Endosulfan I	K1769	J195P5	9/10/2009	1.59E-02	mg/Kg	U	R
Pesticides - 8081	Endosulfan I	K1769	J195R6	9/14/2009	0.0229	mg/Kg	U	R
Pesticides - 8081	Endosulfan I	K1769	J195R7	9/14/2009	0.0201	mg/Kg	U	R
Pesticides - 8081	Endosulfan I	K1769	J195X3	9/15/2009	2.16E-02	mg/Kg	U	R
Pesticides - 8081	Endosulfan I	K1769	J195X4	9/15/2009	1.92E-02	mg/Kg	U	R
Pesticides - 8081	Endosulfan I	K1769	J19603	9/15/2009	0.0146	mg/Kg	U	R
Pesticides - 8081	Endosulfan I	K1769	J19604	9/15/2009	0.0195	mg/Kg	U	R
Pesticides - 8081	Endosulfan I	K1774	J19622	9/16/2009	0.0149	mg/Kg	U	R
Pesticides - 8081	Endosulfan I	K1774	J19623	9/16/2009	1.99E-02	mg/Kg	U	R
Pesticides - 8081	Endosulfan I	K1774	J19633	9/16/2009	0.0201	mg/Kg	U	R

Table 3-7. Summary of Rejected Fish Tissue Data by Method. (79 Pages)

Analytical Method	Analyte	SDG Number	Sample Identification	Sample Date	Result	Units	Laboratory Qualifier	Validation Qualifier
Pesticides - 8081	Endosulfan I	K1774	J19634	9/16/2009	0.0161	mg/Kg	U	R
Pesticides - 8081	Endosulfan I	K1774	J19643	9/17/2009	0.0166	mg/Kg	U	R
Pesticides - 8081	Endosulfan I	K1774	J19644	9/17/2009	1.80E-02	mg/Kg	U	R
Pesticides - 8081	Endosulfan I	K1774	J19653	9/17/2009	1.88E-02	mg/Kg	U	R
Pesticides - 8081	Endosulfan I	K1774	J19654	9/17/2009	2.05E-02	mg/Kg	U	R
Pesticides - 8081	Endosulfan I	K1785	J18XB1	9/24/2009	0.0184	mg/Kg	U	R
Pesticides - 8081	Endosulfan I	K1785	J18XF6	9/24/2009	1.81E-02	mg/Kg	U	R
Pesticides - 8081	Endosulfan I	K1785	J18XF7	9/24/2009	1.70E-02	mg/Kg	U	R
Pesticides - 8081	Endosulfan I	K1785	J18XF8	9/24/2009	1.31E-02	mg/Kg	U	R
Pesticides - 8081	Endosulfan I	K1785	J18XF9	9/25/2009	0.0178	mg/Kg	U	R
Pesticides - 8081	Endosulfan I	K1785	J195V7	9/21/2009	0.019	mg/Kg	U	R
Pesticides - 8081	Endosulfan I	K1785	J195V9	9/21/2009	0.016	mg/Kg	U	R
Pesticides - 8081	Endosulfan I	K1785	J195W0	9/24/2009	0.016	mg/Kg	U	R
Pesticides - 8081	Endosulfan I	K1785	J19661	9/24/2009	1.91E-02	mg/Kg	U	R
Pesticides - 8081	Endosulfan I	K1785	J19662	9/24/2009	0.0184	mg/Kg	U	R
Pesticides - 8081	Endosulfan I	K1785	J19747	9/24/2009	2.05E-02	mg/Kg	U	R
Pesticides - 8081	Endosulfan I	K1852	J191V2	12/7/2009	1.86E-02	mg/Kg	U	R
Pesticides - 8081	Endosulfan I	K1852	J191V4	12/7/2009	1.91E-02	mg/Kg	U	R
Pesticides - 8081	Endosulfan I	K1852	J191Y6	12/7/2009	1.45E-02	mg/Kg	U	R
Pesticides - 8081	Endosulfan I	K1852	J191Y7	12/7/2009	1.69E-02	mg/Kg	U	R
Pesticides - 8081	Endosulfan I	K1852	J191Y8	12/7/2009	1.31E-02	mg/Kg	U	R
Pesticides - 8081	Endosulfan I	K1852	J19251	12/8/2009	1.16E-02	mg/Kg	U	R
Pesticides - 8081	Endosulfan I	K1852	J19252	12/8/2009	0.0166	mg/Kg	U	R
Pesticides - 8081	Endosulfan I	K1852	J19256	12/8/2009	1.63E-02	mg/Kg	U	R
Pesticides - 8081	Endosulfan I	K1852	J19257	12/8/2009	0.0135	mg/Kg	U	R
Pesticides - 8081	Endosulfan I	K1852	J196B0	12/8/2009	1.74E-02	mg/Kg	U	R
Pesticides - 8081	Endosulfan I	K1852	J196B1	12/8/2009	1.76E-02	mg/Kg	U	R
Pesticides - 8081	Endosulfan I	K1852	J196B2	12/8/2009	0.0177	mg/Kg	U	R
Pesticides - 8081	Endosulfan I	K1852	J196B3	12/8/2009	0.0114	mg/Kg	U	R
Pesticides - 8081	Endosulfan I	K1852	J196B4	12/7/2009	1.76E-02	mg/Kg	U	R
Pesticides - 8081	Endosulfan I	K1852	J196B5	12/8/2009	0.0115	mg/Kg	U	R
Pesticides - 8081	Endosulfan I	K1852	J196B6	12/8/2009	1.94E-02	mg/Kg	U	R
Pesticides - 8081	Endosulfan I	K1852	J196B7	12/8/2009	1.91E-02	mg/Kg	U	R
Pesticides - 8081	Endosulfan I	K1852	J196B8	12/8/2009	0.0184	mg/Kg	U	R
Pesticides - 8081	Endosulfan I	K1852	J196H4	12/7/2009	0.0206	mg/Kg	U	R
Pesticides - 8081	Endosulfan I	K1852	J196W7	12/8/2009	0.0178	mg/Kg	U	R
Pesticides - 8081	Endosulfan I	K1852	J196W8	12/8/2009	1.58E-02	mg/Kg	U	R
Pesticides - 8081	Endosulfan I	K1852	J196W9	12/8/2009	0.0178	mg/Kg	U	R
Pesticides - 8081	Endosulfan I	K1852	J196X0	12/7/2009	1.58E-02	mg/Kg	U	R

Table 3-7. Summary of Rejected Fish Tissue Data by Method. (79 Pages)

Analytical Method	Analyte	SDG Number	Sample Identification	Sample Date	Result	Units	Laboratory Qualifier	Validation Qualifier
Pesticides - 8081	Endosulfan I	K1852	J196X1	12/7/2009	1.70E-02	mg/Kg	U	R
Pesticides - 8081	Endosulfan I	K1852	J196X2	12/8/2009	0.0178	mg/Kg	U	R
Pesticides - 8081	Endosulfan I	K1852	J196X3	12/8/2009	1.36E-02	mg/Kg	U	R
Pesticides - 8081	Endosulfan I	K1852	J196X4	12/8/2009	0.0178	mg/Kg	U	R
Pesticides - 8081	Endosulfan I	K1852	J196X5	12/7/2009	1.57E-02	mg/Kg	U	R
Pesticides - 8081	Endosulfan I	K1852	J196X6	12/7/2009	1.39E-02	mg/Kg	U	R
Pesticides - 8081	Endosulfan I	K1863	J190V0	12/15/2009	1.36E-02	mg/Kg	U	R
Pesticides - 8081	Endosulfan I	K1863	J190V1	12/15/2009	0.0126	mg/Kg	U	R
Pesticides - 8081	Endosulfan I	K1863	J191N4	12/15/2009	1.68E-02	mg/Kg	U	R
Pesticides - 8081	Endosulfan I	K1863	J191N5	12/15/2009	1.56E-02	mg/Kg	U	R
Pesticides - 8081	Endosulfan I	K1863	J191N6	12/15/2009	0.014	mg/Kg	U	R
Pesticides - 8081	Endosulfan I	K1863	J191N7	12/15/2009	1.04E-02	mg/Kg	U	R
Pesticides - 8081	Endosulfan I	K1863	J191N8	12/15/2009	0.0146	mg/Kg	U	R
Pesticides - 8081	Endosulfan I	K1863	J191Y5	12/15/2009	1.25E-02	mg/Kg	U	R
Pesticides - 8081	Endosulfan I	K1863	J191Y9	12/15/2009	1.92E-02	mg/Kg	U	R
Pesticides - 8081	Endosulfan I	K1863	J19253	12/15/2009	0.012	mg/Kg	U	R
Pesticides - 8081	Endosulfan I	K1863	J19258	12/15/2009	1.22E-02	mg/Kg	U	R
Pesticides - 8081	Endosulfan I	K1863	J196H1	12/15/2009	1.53E-02	mg/Kg	U	R
Pesticides - 8081	Endosulfan I	K1863	J196H6	12/15/2009	1.38E-02	mg/Kg	U	R
Pesticides - 8081	Endosulfan I	K1919	J19254	1/21/2010	0.014	mg/Kg	U	R
Pesticides - 8081	Endosulfan I	K1919	J19259	1/21/2010	0.0146	mg/Kg	U	R
Pesticides - 8081	Endosulfan II	K1579	J18J59	4/1/2009	8.06E-03	mg/Kg	U	R
Pesticides - 8081	Endosulfan II	K1579	J18J60	4/1/2009	9.61E-03	mg/Kg	U	R
Pesticides - 8081	Endosulfan II	K1579	J18J61	4/1/2009	8.69E-03	mg/Kg	U	R
Pesticides - 8081	Endosulfan II	K1579	J18J62	4/1/2009	0.00826	mg/Kg	U	R
Pesticides - 8081	Endosulfan II	K1579	J18J63	4/1/2009	8.69E-03	mg/Kg	U	R
Pesticides - 8081	Endosulfan II	K1579	J18K11	4/1/2009	8.32E-03	mg/Kg	U	R
Pesticides - 8081	Endosulfan II	K1579	J18K12	4/1/2009	8.69E-03	mg/Kg	U	R
Pesticides - 8081	Endosulfan II	K1579	J18K14	4/1/2009	6.66E-03	mg/Kg	U	R
Pesticides - 8081	Endosulfan II	K1579	J18K15	4/1/2009	8.06E-03	mg/Kg	U	R
Pesticides - 8081	Endosulfan II	K1579	J18K55	4/1/2009	6.36E-03	mg/Kg	U	R
Pesticides - 8081	Endosulfan II	K1579	J18K56	4/1/2009	7.68E-03	mg/Kg	U	R
Pesticides - 8081	Endosulfan II	K1579	J18KD3	4/1/2009	7.09E-03	mg/Kg	U	R
Pesticides - 8081	Endosulfan II	K1579	J18KD4	4/1/2009	7.04E-03	mg/Kg	U	R
Pesticides - 8081	Endosulfan II	K1579	J18KD6	4/1/2009	6.53E-03	mg/Kg	U	R
Pesticides - 8081	Endosulfan II	K1714	J192D5	8/4/2009	8.92E-03	mg/Kg	U	R
Pesticides - 8081	Endosulfan II	K1714	J192D6	8/4/2009	7.93E-03	mg/Kg	U	R
Pesticides - 8081	Endosulfan II	K1714	J192F6	8/4/2009	8.84E-03	mg/Kg	U	R
Pesticides - 8081	Endosulfan II	K1714	J192F7	8/4/2009	5.18E-03	mg/Kg	U	R

Table 3-7. Summary of Rejected Fish Tissue Data by Method. (79 Pages)

Analytical Method	Analyte	SDG Number	Sample Identification	Sample Date	Result	Units	Laboratory Qualifier	Validation Qualifier
Pesticides - 8081	Endosulfan II	K1714	J192Y8	8/5/2009	9.42E-03	mg/Kg	U	R
Pesticides - 8081	Endosulfan II	K1714	J192Y9	8/5/2009	6.17E-03	mg/Kg	U	R
Pesticides - 8081	Endosulfan II	K1714	J19308	8/5/2009	7.04E-03	mg/Kg	U	R
Pesticides - 8081	Endosulfan II	K1714	J19309	8/5/2009	9.17E-03	mg/Kg	U	R
Pesticides - 8081	Endosulfan II	K1714	J19319	8/6/2009	9.34E-03	mg/Kg	U	R
Pesticides - 8081	Endosulfan II	K1714	J19320	8/6/2009	7.87E-03	mg/Kg	U	R
Pesticides - 8081	Endosulfan II	K1725	J193K6	8/6/2009	7.74E-03	mg/Kg	U	R
Pesticides - 8081	Endosulfan II	K1725	J193K7	8/6/2009	6.89E-03	mg/Kg	U	R
Pesticides - 8081	Endosulfan II	K1725	J193L6	8/10/2009	7.63E-03	mg/Kg	U	R
Pesticides - 8081	Endosulfan II	K1725	J193L7	8/10/2009	7.19E-03	mg/Kg	U	R
Pesticides - 8081	Endosulfan II	K1725	J193M8	8/11/2009	7.29E-03	mg/Kg	U	R
Pesticides - 8081	Endosulfan II	K1725	J193M9	8/11/2009	8.69E-03	mg/Kg	U	R
Pesticides - 8081	Endosulfan II	K1725	J19441	8/12/2009	6.84E-03	mg/Kg	U	R
Pesticides - 8081	Endosulfan II	K1758	J19047	9/1/2009	1.76E-02	mg/Kg	U	R
Pesticides - 8081	Endosulfan II	K1758	J19048	9/1/2009	1.75E-02	mg/Kg	U	R
Pesticides - 8081	Endosulfan II	K1758	J19049	9/1/2009	0.0178	mg/Kg	U	R
Pesticides - 8081	Endosulfan II	K1758	J19050	9/1/2009	0.0152	mg/Kg	U	R
Pesticides - 8081	Endosulfan II	K1758	J19051	9/1/2009	1.71E-02	mg/Kg	U	R
Pesticides - 8081	Endosulfan II	K1758	J190D0	9/1/2009	0.0161	mg/Kg	U	R
Pesticides - 8081	Endosulfan II	K1758	J190D1	9/1/2009	1.96E-02	mg/Kg	U	R
Pesticides - 8081	Endosulfan II	K1758	J190D2	9/1/2009	1.73E-02	mg/Kg	U	R
Pesticides - 8081	Endosulfan II	K1758	J190D3	9/1/2009	1.94E-02	mg/Kg	U	R
Pesticides - 8081	Endosulfan II	K1758	J190D4	9/1/2009	2.03E-02	mg/Kg	U	R
Pesticides - 8081	Endosulfan II	K1758	J190J5	9/1/2009	1.99E-02	mg/Kg	U	R
Pesticides - 8081	Endosulfan II	K1758	J190J6	9/1/2009	1.50E-02	mg/Kg	U	R
Pesticides - 8081	Endosulfan II	K1758	J190J7	9/1/2009	1.91E-02	mg/Kg	U	R
Pesticides - 8081	Endosulfan II	K1758	J190J8	9/1/2009	1.70E-02	mg/Kg	U	R
Pesticides - 8081	Endosulfan II	K1758	J190J9	9/1/2009	2.09E-02	mg/Kg	U	R
Pesticides - 8081	Endosulfan II	K1758	J190N1	9/1/2009	1.57E-02	mg/Kg	U	R
Pesticides - 8081	Endosulfan II	K1758	J190N2	9/1/2009	0.0161	mg/Kg	U	R
Pesticides - 8081	Endosulfan II	K1758	J190N3	9/1/2009	1.81E-02	mg/Kg	U	R
Pesticides - 8081	Endosulfan II	K1758	J190N4	9/1/2009	0.0178	mg/Kg	U	R
Pesticides - 8081	Endosulfan II	K1758	J190N5	9/1/2009	1.93E-02	mg/Kg	U	R
Pesticides - 8081	Endosulfan II	K1759	J19067	9/2/2009	0.0184	mg/Kg	U	R
Pesticides - 8081	Endosulfan II	K1759	J19069	9/2/2009	1.99E-02	mg/Kg	U	R
Pesticides - 8081	Endosulfan II	K1759	J19071	9/2/2009	1.99E-02	mg/Kg	U	R
Pesticides - 8081	Endosulfan II	K1759	J190D5	9/2/2009	0.0161	mg/Kg	U	R
Pesticides - 8081	Endosulfan II	K1759	J190D7	9/2/2009	0.0201	mg/Kg	U	R
Pesticides - 8081	Endosulfan II	K1759	J190D9	9/2/2009	0.0146	mg/Kg	U	R

Table 3-7. Summary of Rejected Fish Tissue Data by Method. (79 Pages)

Analytical Method	Analyte	SDG Number	Sample Identification	Sample Date	Result	Units	Laboratory Qualifier	Validation Qualifier
Pesticides - 8081	Endosulfan II	K1759	J190H0	9/2/2009	1.50E-02	mg/Kg	U	R
Pesticides - 8081	Endosulfan II	K1759	J190H1	9/2/2009	2.09E-02	mg/Kg	U	R
Pesticides - 8081	Endosulfan II	K1759	J190H2	9/1/2009	0.0161	mg/Kg	U	R
Pesticides - 8081	Endosulfan II	K1759	J190H3	9/1/2009	0.0183	mg/Kg	U	R
Pesticides - 8081	Endosulfan II	K1759	J190H4	9/1/2009	2.28E-02	mg/Kg	U	R
Pesticides - 8081	Endosulfan II	K1759	J190K0	9/2/2009	1.71E-02	mg/Kg	U	R
Pesticides - 8081	Endosulfan II	K1759	J190K1	9/2/2009	0.0184	mg/Kg	U	R
Pesticides - 8081	Endosulfan II	K1759	J190K2	9/1/2009	1.99E-02	mg/Kg	U	R
Pesticides - 8081	Endosulfan II	K1759	J190K3	9/1/2009	0.0166	mg/Kg	U	R
Pesticides - 8081	Endosulfan II	K1759	J190K4	9/1/2009	1.91E-02	mg/Kg	U	R
Pesticides - 8081	Endosulfan II	K1761	J19470	9/3/2009	1.99E-02	mg/Kg	U	R
Pesticides - 8081	Endosulfan II	K1761	J19471	9/3/2009	1.88E-02	mg/Kg	U	R
Pesticides - 8081	Endosulfan II	K1761	J19480	9/3/2009	1.45E-02	mg/Kg	U	R
Pesticides - 8081	Endosulfan II	K1761	J19481	9/3/2009	0.0184	mg/Kg	U	R
Pesticides - 8081	Endosulfan II	K1761	J19490	9/8/2009	1.71E-02	mg/Kg	U	R
Pesticides - 8081	Endosulfan II	K1761	J19491	9/8/2009	1.45E-02	mg/Kg	U	R
Pesticides - 8081	Endosulfan II	K1761	J194B1	9/8/2009	0.0184	mg/Kg	U	R
Pesticides - 8081	Endosulfan II	K1761	J194B2	9/8/2009	1.33E-02	mg/Kg	U	R
Pesticides - 8081	Endosulfan II	K1761	J194C2	9/9/2009	0.0195	mg/Kg	U	R
Pesticides - 8081	Endosulfan II	K1761	J194C3	9/9/2009	1.93E-02	mg/Kg	U	R
Pesticides - 8081	Endosulfan II	K1769	J194Y7	9/10/2009	1.91E-02	mg/Kg	U	R
Pesticides - 8081	Endosulfan II	K1769	J194Y8	9/10/2009	2.03E-02	mg/Kg	U	R
Pesticides - 8081	Endosulfan II	K1769	J195P4	9/10/2009	0.0161	mg/Kg	U	R
Pesticides - 8081	Endosulfan II	K1769	J195P5	9/10/2009	1.59E-02	mg/Kg	U	R
Pesticides - 8081	Endosulfan II	K1769	J195R6	9/14/2009	0.0229	mg/Kg	U	R
Pesticides - 8081	Endosulfan II	K1769	J195R7	9/14/2009	0.0201	mg/Kg	U	R
Pesticides - 8081	Endosulfan II	K1769	J195X3	9/15/2009	2.16E-02	mg/Kg	U	R
Pesticides - 8081	Endosulfan II	K1769	J195X4	9/15/2009	1.92E-02	mg/Kg	U	R
Pesticides - 8081	Endosulfan II	K1769	J19603	9/15/2009	0.0146	mg/Kg	U	R
Pesticides - 8081	Endosulfan II	K1769	J19604	9/15/2009	0.0195	mg/Kg	U	R
Pesticides - 8081	Endosulfan II	K1774	J19623	9/16/2009	1.99E-02	mg/Kg	U	R
Pesticides - 8081	Endosulfan II	K1774	J19633	9/16/2009	0.0201	mg/Kg	U	R
Pesticides - 8081	Endosulfan II	K1774	J19634	9/16/2009	0.0161	mg/Kg	U	R
Pesticides - 8081	Endosulfan II	K1774	J19643	9/17/2009	0.0166	mg/Kg	U	R
Pesticides - 8081	Endosulfan II	K1774	J19644	9/17/2009	1.80E-02	mg/Kg	U	R
Pesticides - 8081	Endosulfan II	K1774	J19653	9/17/2009	1.88E-02	mg/Kg	U	R
Pesticides - 8081	Endosulfan II	K1774	J19654	9/17/2009	2.05E-02	mg/Kg	U	R
Pesticides - 8081	Endosulfan II	K1785	J18XB1	9/24/2009	0.0184	mg/Kg	U	R
Pesticides - 8081	Endosulfan II	K1785	J18XB2	9/25/2009	1.93E-02	mg/Kg	U	R

Table 3-7. Summary of Rejected Fish Tissue Data by Method. (79 Pages)

Analytical Method	Analyte	SDG Number	Sample Identification	Sample Date	Result	Units	Laboratory Qualifier	Validation Qualifier
Pesticides - 8081	Endosulfan II	K1785	J18XB3	9/25/2009	1.94E-02	mg/Kg	U	R
Pesticides - 8081	Endosulfan II	K1785	J18XB4	9/24/2009	1.81E-02	mg/Kg	U	R
Pesticides - 8081	Endosulfan II	K1785	J18XB5	9/24/2009	1.88E-02	mg/Kg	U	R
Pesticides - 8081	Endosulfan II	K1785	J18XF6	9/24/2009	1.81E-02	mg/Kg	U	R
Pesticides - 8081	Endosulfan II	K1785	J18XF7	9/24/2009	1.70E-02	mg/Kg	U	R
Pesticides - 8081	Endosulfan II	K1785	J18XF8	9/24/2009	1.31E-02	mg/Kg	U	R
Pesticides - 8081	Endosulfan II	K1785	J18XF9	9/25/2009	0.0178	mg/Kg	U	R
Pesticides - 8081	Endosulfan II	K1785	J195V7	9/21/2009	0.019	mg/Kg	U	R
Pesticides - 8081	Endosulfan II	K1785	J195V8	9/21/2009	0.0189	mg/Kg	U	R
Pesticides - 8081	Endosulfan II	K1785	J195V9	9/21/2009	0.016	mg/Kg	U	R
Pesticides - 8081	Endosulfan II	K1785	J195W0	9/24/2009	0.016	mg/Kg	U	R
Pesticides - 8081	Endosulfan II	K1785	J19661	9/24/2009	1.91E-02	mg/Kg	U	R
Pesticides - 8081	Endosulfan II	K1785	J19662	9/24/2009	0.0184	mg/Kg	U	R
Pesticides - 8081	Endosulfan II	K1785	J19747	9/24/2009	2.05E-02	mg/Kg	U	R
Pesticides - 8081	Endosulfan II	K1852	J191V0	12/7/2009	1.02E-02	mg/Kg	U	R
Pesticides - 8081	Endosulfan II	K1852	J191V1	12/7/2009	0.0184	mg/Kg	U	R
Pesticides - 8081	Endosulfan II	K1852	J191V2	12/7/2009	1.86E-02	mg/Kg	U	R
Pesticides - 8081	Endosulfan II	K1852	J191V3	12/7/2009	0.0132	mg/Kg	U	R
Pesticides - 8081	Endosulfan II	K1852	J191V4	12/7/2009	1.91E-02	mg/Kg	U	R
Pesticides - 8081	Endosulfan II	K1852	J191Y6	12/7/2009	1.45E-02	mg/Kg	U	R
Pesticides - 8081	Endosulfan II	K1852	J191Y7	12/7/2009	1.69E-02	mg/Kg	U	R
Pesticides - 8081	Endosulfan II	K1852	J191Y8	12/7/2009	1.31E-02	mg/Kg	U	R
Pesticides - 8081	Endosulfan II	K1852	J19251	12/8/2009	1.16E-02	mg/Kg	U	R
Pesticides - 8081	Endosulfan II	K1852	J19252	12/8/2009	0.0166	mg/Kg	U	R
Pesticides - 8081	Endosulfan II	K1852	J19256	12/8/2009	1.63E-02	mg/Kg	U	R
Pesticides - 8081	Endosulfan II	K1852	J19257	12/8/2009	0.0135	mg/Kg	U	R
Pesticides - 8081	Endosulfan II	K1852	J196B0	12/8/2009	1.74E-02	mg/Kg	U	R
Pesticides - 8081	Endosulfan II	K1852	J196B1	12/8/2009	1.76E-02	mg/Kg	U	R
Pesticides - 8081	Endosulfan II	K1852	J196B2	12/8/2009	0.0177	mg/Kg	U	R
Pesticides - 8081	Endosulfan II	K1852	J196B3	12/8/2009	0.0114	mg/Kg	U	R
Pesticides - 8081	Endosulfan II	K1852	J196B4	12/7/2009	1.76E-02	mg/Kg	U	R
Pesticides - 8081	Endosulfan II	K1852	J196B5	12/8/2009	0.0115	mg/Kg	U	R
Pesticides - 8081	Endosulfan II	K1852	J196B6	12/8/2009	1.94E-02	mg/Kg	U	R
Pesticides - 8081	Endosulfan II	K1852	J196B7	12/8/2009	1.91E-02	mg/Kg	U	R
Pesticides - 8081	Endosulfan II	K1852	J196B8	12/8/2009	0.0184	mg/Kg	U	R
Pesticides - 8081	Endosulfan II	K1852	J196B9	12/7/2009	1.63E-02	mg/Kg	U	R
Pesticides - 8081	Endosulfan II	K1852	J196H0	12/8/2009	0.016	mg/Kg	U	R
Pesticides - 8081	Endosulfan II	K1852	J196H4	12/7/2009	0.0206	mg/Kg	U	R
Pesticides - 8081	Endosulfan II	K1852	J196H5	12/8/2009	0.0134	mg/Kg	U	R

Table 3-7. Summary of Rejected Fish Tissue Data by Method. (79 Pages)

Analytical Method	Analyte	SDG Number	Sample Identification	Sample Date	Result	Units	Laboratory Qualifier	Validation Qualifier
Pesticides - 8081	Endosulfan II	K1852	J196H9	12/7/2009	1.22E-02	mg/Kg	U	R
Pesticides - 8081	Endosulfan II	K1852	J196W7	12/8/2009	0.0178	mg/Kg	U	R
Pesticides - 8081	Endosulfan II	K1852	J196W8	12/8/2009	1.58E-02	mg/Kg	U	R
Pesticides - 8081	Endosulfan II	K1852	J196W9	12/8/2009	0.0178	mg/Kg	U	R
Pesticides - 8081	Endosulfan II	K1852	J196X0	12/7/2009	1.58E-02	mg/Kg	U	R
Pesticides - 8081	Endosulfan II	K1852	J196X1	12/7/2009	1.70E-02	mg/Kg	U	R
Pesticides - 8081	Endosulfan II	K1852	J196X2	12/8/2009	0.0178	mg/Kg	U	R
Pesticides - 8081	Endosulfan II	K1852	J196X3	12/8/2009	1.36E-02	mg/Kg	U	R
Pesticides - 8081	Endosulfan II	K1852	J196X4	12/8/2009	0.0178	mg/Kg	U	R
Pesticides - 8081	Endosulfan II	K1852	J196X5	12/7/2009	1.57E-02	mg/Kg	U	R
Pesticides - 8081	Endosulfan II	K1852	J196X6	12/7/2009	1.39E-02	mg/Kg	U	R
Pesticides - 8081	Endosulfan II	K1863	J190V0	12/15/2009	1.36E-02	mg/Kg	U	R
Pesticides - 8081	Endosulfan II	K1863	J190V1	12/15/2009	0.0126	mg/Kg	U	R
Pesticides - 8081	Endosulfan II	K1863	J191N4	12/15/2009	1.68E-02	mg/Kg	U	R
Pesticides - 8081	Endosulfan II	K1863	J191N5	12/15/2009	1.56E-02	mg/Kg	U	R
Pesticides - 8081	Endosulfan II	K1863	J191N6	12/15/2009	0.014	mg/Kg	U	R
Pesticides - 8081	Endosulfan II	K1863	J191N7	12/15/2009	1.04E-02	mg/Kg	U	R
Pesticides - 8081	Endosulfan II	K1863	J191N8	12/15/2009	0.0146	mg/Kg	U	R
Pesticides - 8081	Endosulfan II	K1863	J191Y5	12/15/2009	1.25E-02	mg/Kg	U	R
Pesticides - 8081	Endosulfan II	K1863	J191Y9	12/15/2009	1.92E-02	mg/Kg	U	R
Pesticides - 8081	Endosulfan II	K1863	J19253	12/15/2009	0.012	mg/Kg	U	R
Pesticides - 8081	Endosulfan II	K1863	J19258	12/15/2009	1.22E-02	mg/Kg	U	R
Pesticides - 8081	Endosulfan II	K1863	J196H1	12/15/2009	1.53E-02	mg/Kg	U	R
Pesticides - 8081	Endosulfan II	K1863	J196H6	12/15/2009	1.38E-02	mg/Kg	U	R
Pesticides - 8081	Endosulfan II	K1919	J19254	1/21/2010	0.014	mg/Kg	U	R
Pesticides - 8081	Endosulfan II	K1919	J19259	1/21/2010	0.0146	mg/Kg	U	R
Pesticides - 8081	Endosulfan sulfate	K1579	J18J59	4/1/2009	8.06E-03	mg/Kg	U	R
Pesticides - 8081	Endosulfan sulfate	K1579	J18J60	4/1/2009	9.61E-03	mg/Kg	U	R
Pesticides - 8081	Endosulfan sulfate	K1579	J18J61	4/1/2009	8.69E-03	mg/Kg	U	R
Pesticides - 8081	Endosulfan sulfate	K1579	J18J62	4/1/2009	0.00826	mg/Kg	U	R
Pesticides - 8081	Endosulfan sulfate	K1579	J18J63	4/1/2009	8.69E-03	mg/Kg	U	R
Pesticides - 8081	Endosulfan sulfate	K1579	J18K11	4/1/2009	8.32E-03	mg/Kg	U	R
Pesticides - 8081	Endosulfan sulfate	K1579	J18K12	4/1/2009	8.69E-03	mg/Kg	U	R
Pesticides - 8081	Endosulfan sulfate	K1579	J18K13	4/1/2009	7.57E-03	mg/Kg	U	R
Pesticides - 8081	Endosulfan sulfate	K1579	J18K14	4/1/2009	6.66E-03	mg/Kg	U	R
Pesticides - 8081	Endosulfan sulfate	K1579	J18K15	4/1/2009	8.06E-03	mg/Kg	U	R
Pesticides - 8081	Endosulfan sulfate	K1579	J18K52	4/1/2009	6.89E-03	mg/Kg	U	R
Pesticides - 8081	Endosulfan sulfate	K1579	J18K53	4/1/2009	0.00662	mg/Kg	U	R
Pesticides - 8081	Endosulfan sulfate	K1579	J18K54	4/1/2009	5.98E-03	mg/Kg	U	R

Table 3-7. Summary of Rejected Fish Tissue Data by Method. (79 Pages)

Analytical Method	Analyte	SDG Number	Sample Identification	Sample Date	Result	Units	Laboratory Qualifier	Validation Qualifier
Pesticides - 8081	Endosulfan sulfate	K1579	J18K55	4/1/2009	6.36E-03	mg/Kg	U	R
Pesticides - 8081	Endosulfan sulfate	K1579	J18K56	4/1/2009	7.68E-03	mg/Kg	U	R
Pesticides - 8081	Endosulfan sulfate	K1579	J18KD3	4/1/2009	7.09E-03	mg/Kg	U	R
Pesticides - 8081	Endosulfan sulfate	K1579	J18KD4	4/1/2009	7.04E-03	mg/Kg	U	R
Pesticides - 8081	Endosulfan sulfate	K1579	J18KD5	4/1/2009	6.17E-03	mg/Kg	U	R
Pesticides - 8081	Endosulfan sulfate	K1579	J18KD6	4/1/2009	6.53E-03	mg/Kg	U	R
Pesticides - 8081	Endosulfan sulfate	K1579	J18KD7	4/1/2009	5.00E-03	mg/Kg	U	R
Pesticides - 8081	Endosulfan sulfate	K1714	J192D5	8/4/2009	8.92E-03	mg/Kg	U	R
Pesticides - 8081	Endosulfan sulfate	K1714	J192D6	8/4/2009	7.93E-03	mg/Kg	U	R
Pesticides - 8081	Endosulfan sulfate	K1714	J192F6	8/4/2009	8.84E-03	mg/Kg	U	R
Pesticides - 8081	Endosulfan sulfate	K1714	J192F7	8/4/2009	5.18E-03	mg/Kg	U	R
Pesticides - 8081	Endosulfan sulfate	K1714	J192Y8	8/5/2009	9.42E-03	mg/Kg	U	R
Pesticides - 8081	Endosulfan sulfate	K1714	J192Y9	8/5/2009	6.17E-03	mg/Kg	U	R
Pesticides - 8081	Endosulfan sulfate	K1714	J19308	8/5/2009	7.04E-03	mg/Kg	U	R
Pesticides - 8081	Endosulfan sulfate	K1714	J19309	8/5/2009	9.17E-03	mg/Kg	U	R
Pesticides - 8081	Endosulfan sulfate	K1714	J19319	8/6/2009	9.34E-03	mg/Kg	U	R
Pesticides - 8081	Endosulfan sulfate	K1714	J19320	8/6/2009	7.87E-03	mg/Kg	U	R
Pesticides - 8081	Endosulfan sulfate	K1725	J193K6	8/6/2009	7.74E-03	mg/Kg	U	R
Pesticides - 8081	Endosulfan sulfate	K1725	J193K7	8/6/2009	6.89E-03	mg/Kg	U	R
Pesticides - 8081	Endosulfan sulfate	K1725	J193L6	8/10/2009	7.63E-03	mg/Kg	U	R
Pesticides - 8081	Endosulfan sulfate	K1725	J193L7	8/10/2009	7.19E-03	mg/Kg	U	R
Pesticides - 8081	Endosulfan sulfate	K1725	J193M8	8/11/2009	7.29E-03	mg/Kg	U	R
Pesticides - 8081	Endosulfan sulfate	K1725	J193M9	8/11/2009	8.69E-03	mg/Kg	U	R
Pesticides - 8081	Endosulfan sulfate	K1725	J19441	8/12/2009	6.84E-03	mg/Kg	U	R
Pesticides - 8081	Endosulfan sulfate	K1758	J19047	9/1/2009	1.76E-02	mg/Kg	U	R
Pesticides - 8081	Endosulfan sulfate	K1758	J19048	9/1/2009	1.75E-02	mg/Kg	U	R
Pesticides - 8081	Endosulfan sulfate	K1758	J19049	9/1/2009	0.0178	mg/Kg	U	R
Pesticides - 8081	Endosulfan sulfate	K1758	J19050	9/1/2009	0.0152	mg/Kg	U	R
Pesticides - 8081	Endosulfan sulfate	K1758	J19051	9/1/2009	1.71E-02	mg/Kg	U	R
Pesticides - 8081	Endosulfan sulfate	K1758	J190D1	9/1/2009	1.96E-02	mg/Kg	U	R
Pesticides - 8081	Endosulfan sulfate	K1758	J190D2	9/1/2009	1.73E-02	mg/Kg	U	R
Pesticides - 8081	Endosulfan sulfate	K1758	J190D3	9/1/2009	1.94E-02	mg/Kg	U	R
Pesticides - 8081	Endosulfan sulfate	K1758	J190D4	9/1/2009	2.03E-02	mg/Kg	U	R
Pesticides - 8081	Endosulfan sulfate	K1758	J190J5	9/1/2009	1.99E-02	mg/Kg	U	R
Pesticides - 8081	Endosulfan sulfate	K1758	J190J6	9/1/2009	1.50E-02	mg/Kg	U	R
Pesticides - 8081	Endosulfan sulfate	K1758	J190J7	9/1/2009	1.91E-02	mg/Kg	U	R
Pesticides - 8081	Endosulfan sulfate	K1758	J190J8	9/1/2009	1.70E-02	mg/Kg	U	R
Pesticides - 8081	Endosulfan sulfate	K1758	J190J9	9/1/2009	2.09E-02	mg/Kg	U	R
Pesticides - 8081	Endosulfan sulfate	K1758	J190N1	9/1/2009	1.57E-02	mg/Kg	U	R

Table 3-7. Summary of Rejected Fish Tissue Data by Method. (79 Pages)

Analytical Method	Analyte	SDG Number	Sample Identification	Sample Date	Result	Units	Laboratory Qualifier	Validation Qualifier
Pesticides - 8081	Endosulfan sulfate	K1758	J190N2	9/1/2009	0.0161	mg/Kg	U	R
Pesticides - 8081	Endosulfan sulfate	K1758	J190N3	9/1/2009	1.81E-02	mg/Kg	U	R
Pesticides - 8081	Endosulfan sulfate	K1758	J190N4	9/1/2009	0.0178	mg/Kg	U	R
Pesticides - 8081	Endosulfan sulfate	K1758	J190N5	9/1/2009	1.93E-02	mg/Kg	U	R
Pesticides - 8081	Endosulfan sulfate	K1759	J19067	9/2/2009	0.0184	mg/Kg	U	R
Pesticides - 8081	Endosulfan sulfate	K1759	J19069	9/2/2009	1.99E-02	mg/Kg	U	R
Pesticides - 8081	Endosulfan sulfate	K1759	J19071	9/2/2009	1.99E-02	mg/Kg	U	R
Pesticides - 8081	Endosulfan sulfate	K1759	J190D5	9/2/2009	0.0161	mg/Kg	U	R
Pesticides - 8081	Endosulfan sulfate	K1759	J190D7	9/2/2009	0.0201	mg/Kg	U	R
Pesticides - 8081	Endosulfan sulfate	K1759	J190D9	9/2/2009	0.0146	mg/Kg	U	R
Pesticides - 8081	Endosulfan sulfate	K1759	J190H0	9/2/2009	1.50E-02	mg/Kg	U	R
Pesticides - 8081	Endosulfan sulfate	K1759	J190H1	9/2/2009	2.09E-02	mg/Kg	U	R
Pesticides - 8081	Endosulfan sulfate	K1759	J190H2	9/1/2009	0.0161	mg/Kg	U	R
Pesticides - 8081	Endosulfan sulfate	K1759	J190H3	9/1/2009	0.0183	mg/Kg	U	R
Pesticides - 8081	Endosulfan sulfate	K1759	J190H4	9/1/2009	2.28E-02	mg/Kg	U	R
Pesticides - 8081	Endosulfan sulfate	K1759	J190K0	9/2/2009	1.71E-02	mg/Kg	U	R
Pesticides - 8081	Endosulfan sulfate	K1759	J190K1	9/2/2009	0.0184	mg/Kg	U	R
Pesticides - 8081	Endosulfan sulfate	K1759	J190K2	9/1/2009	1.99E-02	mg/Kg	U	R
Pesticides - 8081	Endosulfan sulfate	K1759	J190K3	9/1/2009	0.0166	mg/Kg	U	R
Pesticides - 8081	Endosulfan sulfate	K1759	J190K4	9/1/2009	1.91E-02	mg/Kg	U	R
Pesticides - 8081	Endosulfan sulfate	K1761	J19470	9/3/2009	1.99E-02	mg/Kg	U	R
Pesticides - 8081	Endosulfan sulfate	K1761	J19471	9/3/2009	1.88E-02	mg/Kg	U	R
Pesticides - 8081	Endosulfan sulfate	K1761	J19480	9/3/2009	1.45E-02	mg/Kg	U	R
Pesticides - 8081	Endosulfan sulfate	K1761	J19481	9/3/2009	0.0184	mg/Kg	U	R
Pesticides - 8081	Endosulfan sulfate	K1761	J19490	9/8/2009	1.71E-02	mg/Kg	U	R
Pesticides - 8081	Endosulfan sulfate	K1761	J19491	9/8/2009	1.45E-02	mg/Kg	U	R
Pesticides - 8081	Endosulfan sulfate	K1761	J194B1	9/8/2009	0.0184	mg/Kg	U	R
Pesticides - 8081	Endosulfan sulfate	K1761	J194B2	9/8/2009	1.33E-02	mg/Kg	U	R
Pesticides - 8081	Endosulfan sulfate	K1761	J194C2	9/9/2009	0.0195	mg/Kg	U	R
Pesticides - 8081	Endosulfan sulfate	K1761	J194C3	9/9/2009	1.93E-02	mg/Kg	U	R
Pesticides - 8081	Endosulfan sulfate	K1769	J194Y7	9/10/2009	1.91E-02	mg/Kg	U	R
Pesticides - 8081	Endosulfan sulfate	K1769	J194Y8	9/10/2009	2.03E-02	mg/Kg	U	R
Pesticides - 8081	Endosulfan sulfate	K1769	J195P4	9/10/2009	0.0161	mg/Kg	U	R
Pesticides - 8081	Endosulfan sulfate	K1769	J195P5	9/10/2009	1.59E-02	mg/Kg	U	R
Pesticides - 8081	Endosulfan sulfate	K1769	J195R6	9/14/2009	0.0229	mg/Kg	U	R
Pesticides - 8081	Endosulfan sulfate	K1769	J195R7	9/14/2009	0.0201	mg/Kg	U	R
Pesticides - 8081	Endosulfan sulfate	K1769	J195X3	9/15/2009	2.16E-02	mg/Kg	U	R
Pesticides - 8081	Endosulfan sulfate	K1769	J195X4	9/15/2009	1.92E-02	mg/Kg	U	R
Pesticides - 8081	Endosulfan sulfate	K1769	J19603	9/15/2009	0.0146	mg/Kg	U	R

Table 3-7. Summary of Rejected Fish Tissue Data by Method. (79 Pages)

Analytical Method	Analyte	SDG Number	Sample Identification	Sample Date	Result	Units	Laboratory Qualifier	Validation Qualifier
Pesticides - 8081	Endosulfan sulfate	K1769	J19604	9/15/2009	0.0195	mg/Kg	U	R
Pesticides - 8081	Endosulfan sulfate	K1774	J19622	9/16/2009	0.0149	mg/Kg	U	R
Pesticides - 8081	Endosulfan sulfate	K1774	J19623	9/16/2009	1.99E-02	mg/Kg	U	R
Pesticides - 8081	Endosulfan sulfate	K1774	J19633	9/16/2009	0.0201	mg/Kg	U	R
Pesticides - 8081	Endosulfan sulfate	K1774	J19634	9/16/2009	0.0161	mg/Kg	U	R
Pesticides - 8081	Endosulfan sulfate	K1774	J19643	9/17/2009	0.0166	mg/Kg	U	R
Pesticides - 8081	Endosulfan sulfate	K1774	J19644	9/17/2009	1.80E-02	mg/Kg	U	R
Pesticides - 8081	Endosulfan sulfate	K1774	J19653	9/17/2009	1.88E-02	mg/Kg	U	R
Pesticides - 8081	Endosulfan sulfate	K1774	J19654	9/17/2009	2.05E-02	mg/Kg	U	R
Pesticides - 8081	Endosulfan sulfate	K1785	J18XB1	9/24/2009	0.0184	mg/Kg	U	R
Pesticides - 8081	Endosulfan sulfate	K1785	J18XB2	9/25/2009	1.93E-02	mg/Kg	U	R
Pesticides - 8081	Endosulfan sulfate	K1785	J18XB3	9/25/2009	1.94E-02	mg/Kg	U	R
Pesticides - 8081	Endosulfan sulfate	K1785	J18XB4	9/24/2009	1.81E-02	mg/Kg	U	R
Pesticides - 8081	Endosulfan sulfate	K1785	J18XB5	9/24/2009	1.88E-02	mg/Kg	U	R
Pesticides - 8081	Endosulfan sulfate	K1785	J18XF6	9/24/2009	1.81E-02	mg/Kg	U	R
Pesticides - 8081	Endosulfan sulfate	K1785	J18XF7	9/24/2009	1.70E-02	mg/Kg	U	R
Pesticides - 8081	Endosulfan sulfate	K1785	J18XF8	9/24/2009	1.31E-02	mg/Kg	U	R
Pesticides - 8081	Endosulfan sulfate	K1785	J18XF9	9/25/2009	0.0178	mg/Kg	U	R
Pesticides - 8081	Endosulfan sulfate	K1785	J18XH0	9/25/2009	0.0126	mg/Kg	U	R
Pesticides - 8081	Endosulfan sulfate	K1785	J195V7	9/21/2009	0.019	mg/Kg	U	R
Pesticides - 8081	Endosulfan sulfate	K1785	J195V8	9/21/2009	0.0189	mg/Kg	U	R
Pesticides - 8081	Endosulfan sulfate	K1785	J195V9	9/21/2009	0.016	mg/Kg	U	R
Pesticides - 8081	Endosulfan sulfate	K1785	J195W0	9/24/2009	0.016	mg/Kg	U	R
Pesticides - 8081	Endosulfan sulfate	K1785	J19661	9/24/2009	1.91E-02	mg/Kg	U	R
Pesticides - 8081	Endosulfan sulfate	K1785	J19662	9/24/2009	0.0184	mg/Kg	U	R
Pesticides - 8081	Endosulfan sulfate	K1785	J19747	9/24/2009	2.05E-02	mg/Kg	U	R
Pesticides - 8081	Endosulfan sulfate	K1852	J191V0	12/7/2009	1.02E-02	mg/Kg	U	R
Pesticides - 8081	Endosulfan sulfate	K1852	J191V1	12/7/2009	0.0184	mg/Kg	U	R
Pesticides - 8081	Endosulfan sulfate	K1852	J191V2	12/7/2009	1.86E-02	mg/Kg	U	R
Pesticides - 8081	Endosulfan sulfate	K1852	J191V3	12/7/2009	0.0132	mg/Kg	U	R
Pesticides - 8081	Endosulfan sulfate	K1852	J191V4	12/7/2009	1.91E-02	mg/Kg	U	R
Pesticides - 8081	Endosulfan sulfate	K1852	J191Y6	12/7/2009	1.45E-02	mg/Kg	U	R
Pesticides - 8081	Endosulfan sulfate	K1852	J191Y7	12/7/2009	1.69E-02	mg/Kg	U	R
Pesticides - 8081	Endosulfan sulfate	K1852	J191Y8	12/7/2009	1.31E-02	mg/Kg	U	R
Pesticides - 8081	Endosulfan sulfate	K1852	J19251	12/8/2009	1.16E-02	mg/Kg	U	R
Pesticides - 8081	Endosulfan sulfate	K1852	J19252	12/8/2009	0.0166	mg/Kg	U	R
Pesticides - 8081	Endosulfan sulfate	K1852	J19256	12/8/2009	1.63E-02	mg/Kg	U	R
Pesticides - 8081	Endosulfan sulfate	K1852	J19257	12/8/2009	0.0135	mg/Kg	U	R
Pesticides - 8081	Endosulfan sulfate	K1852	J196B0	12/8/2009	1.74E-02	mg/Kg	U	R

Table 3-7. Summary of Rejected Fish Tissue Data by Method. (79 Pages)

Analytical Method	Analyte	SDG Number	Sample Identification	Sample Date	Result	Units	Laboratory Qualifier	Validation Qualifier
Pesticides - 8081	Endosulfan sulfate	K1852	J196B1	12/8/2009	1.76E-02	mg/Kg	U	R
Pesticides - 8081	Endosulfan sulfate	K1852	J196B2	12/8/2009	0.0177	mg/Kg	U	R
Pesticides - 8081	Endosulfan sulfate	K1852	J196B3	12/8/2009	0.0114	mg/Kg	U	R
Pesticides - 8081	Endosulfan sulfate	K1852	J196B4	12/7/2009	1.76E-02	mg/Kg	U	R
Pesticides - 8081	Endosulfan sulfate	K1852	J196B5	12/8/2009	0.0115	mg/Kg	U	R
Pesticides - 8081	Endosulfan sulfate	K1852	J196B6	12/8/2009	1.94E-02	mg/Kg	U	R
Pesticides - 8081	Endosulfan sulfate	K1852	J196B7	12/8/2009	1.91E-02	mg/Kg	U	R
Pesticides - 8081	Endosulfan sulfate	K1852	J196B8	12/8/2009	0.0184	mg/Kg	U	R
Pesticides - 8081	Endosulfan sulfate	K1852	J196B9	12/7/2009	1.63E-02	mg/Kg	U	R
Pesticides - 8081	Endosulfan sulfate	K1852	J196H0	12/8/2009	0.016	mg/Kg	U	R
Pesticides - 8081	Endosulfan sulfate	K1852	J196H4	12/7/2009	0.0206	mg/Kg	U	R
Pesticides - 8081	Endosulfan sulfate	K1852	J196H5	12/8/2009	0.0134	mg/Kg	U	R
Pesticides - 8081	Endosulfan sulfate	K1852	J196H9	12/7/2009	1.22E-02	mg/Kg	U	R
Pesticides - 8081	Endosulfan sulfate	K1852	J196W7	12/8/2009	0.0178	mg/Kg	U	R
Pesticides - 8081	Endosulfan sulfate	K1852	J196W8	12/8/2009	1.58E-02	mg/Kg	U	R
Pesticides - 8081	Endosulfan sulfate	K1852	J196W9	12/8/2009	0.0178	mg/Kg	U	R
Pesticides - 8081	Endosulfan sulfate	K1852	J196X0	12/7/2009	1.58E-02	mg/Kg	U	R
Pesticides - 8081	Endosulfan sulfate	K1852	J196X1	12/7/2009	1.70E-02	mg/Kg	U	R
Pesticides - 8081	Endosulfan sulfate	K1852	J196X2	12/8/2009	0.0178	mg/Kg	U	R
Pesticides - 8081	Endosulfan sulfate	K1852	J196X3	12/8/2009	1.36E-02	mg/Kg	U	R
Pesticides - 8081	Endosulfan sulfate	K1852	J196X4	12/8/2009	0.0178	mg/Kg	U	R
Pesticides - 8081	Endosulfan sulfate	K1852	J196X5	12/7/2009	1.57E-02	mg/Kg	U	R
Pesticides - 8081	Endosulfan sulfate	K1852	J196X6	12/7/2009	1.39E-02	mg/Kg	U	R
Pesticides - 8081	Endosulfan sulfate	K1863	J190V0	12/15/2009	1.36E-02	mg/Kg	U	R
Pesticides - 8081	Endosulfan sulfate	K1863	J190V1	12/15/2009	0.0126	mg/Kg	U	R
Pesticides - 8081	Endosulfan sulfate	K1863	J191N4	12/15/2009	1.68E-02	mg/Kg	U	R
Pesticides - 8081	Endosulfan sulfate	K1863	J191N5	12/15/2009	1.56E-02	mg/Kg	U	R
Pesticides - 8081	Endosulfan sulfate	K1863	J191N6	12/15/2009	0.014	mg/Kg	U	R
Pesticides - 8081	Endosulfan sulfate	K1863	J191N7	12/15/2009	1.04E-02	mg/Kg	U	R
Pesticides - 8081	Endosulfan sulfate	K1863	J191N8	12/15/2009	0.0146	mg/Kg	U	R
Pesticides - 8081	Endosulfan sulfate	K1863	J191Y5	12/15/2009	1.25E-02	mg/Kg	U	R
Pesticides - 8081	Endosulfan sulfate	K1863	J191Y9	12/15/2009	1.92E-02	mg/Kg	U	R
Pesticides - 8081	Endosulfan sulfate	K1863	J19253	12/15/2009	0.012	mg/Kg	U	R
Pesticides - 8081	Endosulfan sulfate	K1863	J19258	12/15/2009	1.22E-02	mg/Kg	U	R
Pesticides - 8081	Endosulfan sulfate	K1863	J196H1	12/15/2009	1.53E-02	mg/Kg	U	R
Pesticides - 8081	Endosulfan sulfate	K1863	J196H6	12/15/2009	1.38E-02	mg/Kg	U	R
Pesticides - 8081	Endosulfan sulfate	K1919	J19254	1/21/2010	0.014	mg/Kg	U	R
Pesticides - 8081	Endosulfan sulfate	K1919	J19259	1/21/2010	0.0146	mg/Kg	U	R
Pesticides - 8081	Endrin	K1579	J18J59	4/1/2009	8.06E-03	mg/Kg	U	R

Table 3-7. Summary of Rejected Fish Tissue Data by Method. (79 Pages)

Analytical Method	Analyte	SDG Number	Sample Identification	Sample Date	Result	Units	Laboratory Qualifier	Validation Qualifier
Pesticides - 8081	Endrin	K1579	J18J60	4/1/2009	9.61E-03	mg/Kg	U	R
Pesticides - 8081	Endrin	K1579	J18J61	4/1/2009	8.69E-03	mg/Kg	U	R
Pesticides - 8081	Endrin	K1579	J18J62	4/1/2009	0.00826	mg/Kg	U	R
Pesticides - 8081	Endrin	K1579	J18J63	4/1/2009	8.69E-03	mg/Kg	U	R
Pesticides - 8081	Endrin	K1579	J18K11	4/1/2009	8.32E-03	mg/Kg	U	R
Pesticides - 8081	Endrin	K1579	J18K12	4/1/2009	8.69E-03	mg/Kg	U	R
Pesticides - 8081	Endrin	K1579	J18K13	4/1/2009	7.57E-03	mg/Kg	U	R
Pesticides - 8081	Endrin	K1579	J18K14	4/1/2009	6.66E-03	mg/Kg	U	R
Pesticides - 8081	Endrin	K1579	J18K15	4/1/2009	8.06E-03	mg/Kg	U	R
Pesticides - 8081	Endrin	K1579	J18K53	4/1/2009	0.00662	mg/Kg	U	R
Pesticides - 8081	Endrin	K1579	J18K54	4/1/2009	5.98E-03	mg/Kg	U	R
Pesticides - 8081	Endrin	K1579	J18K55	4/1/2009	6.36E-03	mg/Kg	U	R
Pesticides - 8081	Endrin	K1579	J18K56	4/1/2009	7.68E-03	mg/Kg	U	R
Pesticides - 8081	Endrin	K1579	J18KD3	4/1/2009	7.09E-03	mg/Kg	U	R
Pesticides - 8081	Endrin	K1579	J18KD4	4/1/2009	7.04E-03	mg/Kg	U	R
Pesticides - 8081	Endrin	K1579	J18KD5	4/1/2009	6.17E-03	mg/Kg	U	R
Pesticides - 8081	Endrin	K1579	J18KD6	4/1/2009	6.53E-03	mg/Kg	U	R
Pesticides - 8081	Endrin	K1579	J18KD7	4/1/2009	5.00E-03	mg/Kg	U	R
Pesticides - 8081	Endrin	K1714	J192D5	8/4/2009	8.92E-03	mg/Kg	U	R
Pesticides - 8081	Endrin	K1714	J192D6	8/4/2009	7.93E-03	mg/Kg	U	R
Pesticides - 8081	Endrin	K1714	J192F6	8/4/2009	8.84E-03	mg/Kg	U	R
Pesticides - 8081	Endrin	K1714	J192F7	8/4/2009	5.18E-03	mg/Kg	U	R
Pesticides - 8081	Endrin	K1714	J192Y9	8/5/2009	6.17E-03	mg/Kg	U	R
Pesticides - 8081	Endrin	K1714	J19308	8/5/2009	7.04E-03	mg/Kg	U	R
Pesticides - 8081	Endrin	K1714	J19309	8/5/2009	9.17E-03	mg/Kg	U	R
Pesticides - 8081	Endrin	K1714	J19319	8/6/2009	9.34E-03	mg/Kg	U	R
Pesticides - 8081	Endrin	K1714	J19320	8/6/2009	7.87E-03	mg/Kg	U	R
Pesticides - 8081	Endrin	K1725	J193K6	8/6/2009	7.74E-03	mg/Kg	U	R
Pesticides - 8081	Endrin	K1725	J193K7	8/6/2009	6.89E-03	mg/Kg	U	R
Pesticides - 8081	Endrin	K1725	J193L6	8/10/2009	7.63E-03	mg/Kg	U	R
Pesticides - 8081	Endrin	K1725	J193M8	8/11/2009	7.29E-03	mg/Kg	U	R
Pesticides - 8081	Endrin	K1725	J193M9	8/11/2009	8.69E-03	mg/Kg	U	R
Pesticides - 8081	Endrin	K1725	J19441	8/12/2009	6.84E-03	mg/Kg	U	R
Pesticides - 8081	Endrin	K1758	J19047	9/1/2009	1.76E-02	mg/Kg	U	R
Pesticides - 8081	Endrin	K1758	J19048	9/1/2009	1.75E-02	mg/Kg	U	R
Pesticides - 8081	Endrin	K1758	J19049	9/1/2009	0.0178	mg/Kg	U	R
Pesticides - 8081	Endrin	K1758	J19050	9/1/2009	0.0152	mg/Kg	U	R
Pesticides - 8081	Endrin	K1758	J19051	9/1/2009	1.71E-02	mg/Kg	U	R
Pesticides - 8081	Endrin	K1758	J190D0	9/1/2009	0.0161	mg/Kg	U	R

Table 3-7. Summary of Rejected Fish Tissue Data by Method. (79 Pages)

Analytical Method	Analyte	SDG Number	Sample Identification	Sample Date	Result	Units	Laboratory Qualifier	Validation Qualifier
Pesticides - 8081	Endrin	K1758	J190D1	9/1/2009	1.96E-02	mg/Kg	U	R
Pesticides - 8081	Endrin	K1758	J190D2	9/1/2009	1.73E-02	mg/Kg	U	R
Pesticides - 8081	Endrin	K1758	J190D3	9/1/2009	1.94E-02	mg/Kg	U	R
Pesticides - 8081	Endrin	K1758	J190D4	9/1/2009	2.03E-02	mg/Kg	U	R
Pesticides - 8081	Endrin	K1758	J190J5	9/1/2009	1.99E-02	mg/Kg	U	R
Pesticides - 8081	Endrin	K1758	J190J6	9/1/2009	1.50E-02	mg/Kg	U	R
Pesticides - 8081	Endrin	K1758	J190J7	9/1/2009	1.91E-02	mg/Kg	U	R
Pesticides - 8081	Endrin	K1758	J190J8	9/1/2009	1.70E-02	mg/Kg	U	R
Pesticides - 8081	Endrin	K1758	J190J9	9/1/2009	2.09E-02	mg/Kg	U	R
Pesticides - 8081	Endrin	K1758	J190N1	9/1/2009	1.57E-02	mg/Kg	U	R
Pesticides - 8081	Endrin	K1758	J190N2	9/1/2009	0.0161	mg/Kg	U	R
Pesticides - 8081	Endrin	K1758	J190N3	9/1/2009	1.81E-02	mg/Kg	U	R
Pesticides - 8081	Endrin	K1758	J190N5	9/1/2009	1.93E-02	mg/Kg	U	R
Pesticides - 8081	Endrin	K1759	J19067	9/2/2009	0.0184	mg/Kg	U	R
Pesticides - 8081	Endrin	K1759	J19069	9/2/2009	1.99E-02	mg/Kg	U	R
Pesticides - 8081	Endrin	K1759	J19071	9/2/2009	1.99E-02	mg/Kg	U	R
Pesticides - 8081	Endrin	K1759	J190D5	9/2/2009	0.0161	mg/Kg	U	R
Pesticides - 8081	Endrin	K1759	J190D7	9/2/2009	0.0201	mg/Kg	U	R
Pesticides - 8081	Endrin	K1759	J190D9	9/2/2009	0.0146	mg/Kg	U	R
Pesticides - 8081	Endrin	K1759	J190H0	9/2/2009	1.50E-02	mg/Kg	U	R
Pesticides - 8081	Endrin	K1759	J190H1	9/2/2009	2.09E-02	mg/Kg	U	R
Pesticides - 8081	Endrin	K1759	J190H2	9/1/2009	0.0161	mg/Kg	U	R
Pesticides - 8081	Endrin	K1759	J190H3	9/1/2009	0.0183	mg/Kg	U	R
Pesticides - 8081	Endrin	K1759	J190H4	9/1/2009	2.28E-02	mg/Kg	U	R
Pesticides - 8081	Endrin	K1759	J190K0	9/2/2009	1.71E-02	mg/Kg	U	R
Pesticides - 8081	Endrin	K1759	J190K1	9/2/2009	0.0184	mg/Kg	U	R
Pesticides - 8081	Endrin	K1759	J190K2	9/1/2009	1.99E-02	mg/Kg	U	R
Pesticides - 8081	Endrin	K1759	J190K3	9/1/2009	0.0166	mg/Kg	U	R
Pesticides - 8081	Endrin	K1759	J190K4	9/1/2009	1.91E-02	mg/Kg	U	R
Pesticides - 8081	Endrin	K1761	J19470	9/3/2009	1.99E-02	mg/Kg	U	R
Pesticides - 8081	Endrin	K1761	J19471	9/3/2009	1.88E-02	mg/Kg	U	R
Pesticides - 8081	Endrin	K1761	J19480	9/3/2009	1.45E-02	mg/Kg	U	R
Pesticides - 8081	Endrin	K1761	J19481	9/3/2009	0.0184	mg/Kg	U	R
Pesticides - 8081	Endrin	K1761	J19490	9/8/2009	1.71E-02	mg/Kg	U	R
Pesticides - 8081	Endrin	K1761	J19491	9/8/2009	1.45E-02	mg/Kg	U	R
Pesticides - 8081	Endrin	K1761	J194B1	9/8/2009	0.0184	mg/Kg	U	R
Pesticides - 8081	Endrin	K1761	J194B2	9/8/2009	1.33E-02	mg/Kg	U	R
Pesticides - 8081	Endrin	K1761	J194C2	9/9/2009	0.0195	mg/Kg	U	R
Pesticides - 8081	Endrin	K1761	J194C3	9/9/2009	1.93E-02	mg/Kg	U	R

Table 3-7. Summary of Rejected Fish Tissue Data by Method. (79 Pages)

Analytical Method	Analyte	SDG Number	Sample Identification	Sample Date	Result	Units	Laboratory Qualifier	Validation Qualifier
Pesticides - 8081	Endrin	K1769	J194Y7	9/10/2009	1.91E-02	mg/Kg	U	R
Pesticides - 8081	Endrin	K1769	J194Y8	9/10/2009	2.03E-02	mg/Kg	U	R
Pesticides - 8081	Endrin	K1769	J195P4	9/10/2009	0.0161	mg/Kg	U	R
Pesticides - 8081	Endrin	K1769	J195P5	9/10/2009	1.59E-02	mg/Kg	U	R
Pesticides - 8081	Endrin	K1769	J195R6	9/14/2009	0.0229	mg/Kg	U	R
Pesticides - 8081	Endrin	K1769	J195R7	9/14/2009	0.0201	mg/Kg	U	R
Pesticides - 8081	Endrin	K1769	J195X3	9/15/2009	2.16E-02	mg/Kg	U	R
Pesticides - 8081	Endrin	K1769	J195X4	9/15/2009	1.92E-02	mg/Kg	U	R
Pesticides - 8081	Endrin	K1769	J19603	9/15/2009	0.0146	mg/Kg	U	R
Pesticides - 8081	Endrin	K1769	J19604	9/15/2009	0.0195	mg/Kg	U	R
Pesticides - 8081	Endrin	K1774	J19622	9/16/2009	0.0149	mg/Kg	U	R
Pesticides - 8081	Endrin	K1774	J19623	9/16/2009	1.99E-02	mg/Kg	U	R
Pesticides - 8081	Endrin	K1774	J19633	9/16/2009	0.0201	mg/Kg	U	R
Pesticides - 8081	Endrin	K1774	J19634	9/16/2009	0.0161	mg/Kg	U	R
Pesticides - 8081	Endrin	K1774	J19643	9/17/2009	0.0166	mg/Kg	U	R
Pesticides - 8081	Endrin	K1774	J19644	9/17/2009	1.80E-02	mg/Kg	U	R
Pesticides - 8081	Endrin	K1774	J19653	9/17/2009	1.88E-02	mg/Kg	U	R
Pesticides - 8081	Endrin	K1774	J19654	9/17/2009	2.05E-02	mg/Kg	U	R
Pesticides - 8081	Endrin	K1785	J18XB1	9/24/2009	0.0184	mg/Kg	U	R
Pesticides - 8081	Endrin	K1785	J18XB2	9/25/2009	1.93E-02	mg/Kg	U	R
Pesticides - 8081	Endrin	K1785	J18XB3	9/25/2009	1.94E-02	mg/Kg	U	R
Pesticides - 8081	Endrin	K1785	J18XB4	9/24/2009	1.81E-02	mg/Kg	U	R
Pesticides - 8081	Endrin	K1785	J18XB5	9/24/2009	1.88E-02	mg/Kg	U	R
Pesticides - 8081	Endrin	K1785	J18XF6	9/24/2009	1.81E-02	mg/Kg	U	R
Pesticides - 8081	Endrin	K1785	J18XF7	9/24/2009	1.70E-02	mg/Kg	U	R
Pesticides - 8081	Endrin	K1785	J18XF8	9/24/2009	1.31E-02	mg/Kg	U	R
Pesticides - 8081	Endrin	K1785	J18XF9	9/25/2009	0.0178	mg/Kg	U	R
Pesticides - 8081	Endrin	K1785	J18XH0	9/25/2009	0.0126	mg/Kg	U	R
Pesticides - 8081	Endrin	K1785	J195V7	9/21/2009	0.019	mg/Kg	U	R
Pesticides - 8081	Endrin	K1785	J195V8	9/21/2009	0.0189	mg/Kg	U	R
Pesticides - 8081	Endrin	K1785	J195V9	9/21/2009	0.016	mg/Kg	U	R
Pesticides - 8081	Endrin	K1785	J195W0	9/24/2009	0.016	mg/Kg	U	R
Pesticides - 8081	Endrin	K1785	J19661	9/24/2009	1.91E-02	mg/Kg	U	R
Pesticides - 8081	Endrin	K1785	J19662	9/24/2009	0.0184	mg/Kg	U	R
Pesticides - 8081	Endrin	K1785	J19747	9/24/2009	2.05E-02	mg/Kg	U	R
Pesticides - 8081	Endrin	K1852	J191V0	12/7/2009	1.02E-02	mg/Kg	U	R
Pesticides - 8081	Endrin	K1852	J191V1	12/7/2009	0.0184	mg/Kg	U	R
Pesticides - 8081	Endrin	K1852	J191V2	12/7/2009	1.86E-02	mg/Kg	U	R
Pesticides - 8081	Endrin	K1852	J191V3	12/7/2009	0.0132	mg/Kg	U	R

Table 3-7. Summary of Rejected Fish Tissue Data by Method. (79 Pages)

Analytical Method	Analyte	SDG Number	Sample Identification	Sample Date	Result	Units	Laboratory Qualifier	Validation Qualifier
Pesticides - 8081	Endrin	K1852	J191V4	12/7/2009	1.91E-02	mg/Kg	U	R
Pesticides - 8081	Endrin	K1852	J191Y6	12/7/2009	1.45E-02	mg/Kg	U	R
Pesticides - 8081	Endrin	K1852	J191Y7	12/7/2009	1.69E-02	mg/Kg	U	R
Pesticides - 8081	Endrin	K1852	J191Y8	12/7/2009	1.31E-02	mg/Kg	U	R
Pesticides - 8081	Endrin	K1852	J19251	12/8/2009	1.16E-02	mg/Kg	U	R
Pesticides - 8081	Endrin	K1852	J19252	12/8/2009	0.0166	mg/Kg	U	R
Pesticides - 8081	Endrin	K1852	J19256	12/8/2009	1.63E-02	mg/Kg	U	R
Pesticides - 8081	Endrin	K1852	J19257	12/8/2009	0.0135	mg/Kg	U	R
Pesticides - 8081	Endrin	K1852	J196B0	12/8/2009	1.74E-02	mg/Kg	U	R
Pesticides - 8081	Endrin	K1852	J196B1	12/8/2009	1.76E-02	mg/Kg	U	R
Pesticides - 8081	Endrin	K1852	J196B2	12/8/2009	0.0177	mg/Kg	U	R
Pesticides - 8081	Endrin	K1852	J196B3	12/8/2009	0.0114	mg/Kg	U	R
Pesticides - 8081	Endrin	K1852	J196B4	12/7/2009	1.76E-02	mg/Kg	U	R
Pesticides - 8081	Endrin	K1852	J196B5	12/8/2009	0.0115	mg/Kg	U	R
Pesticides - 8081	Endrin	K1852	J196B6	12/8/2009	1.94E-02	mg/Kg	U	R
Pesticides - 8081	Endrin	K1852	J196B7	12/8/2009	1.91E-02	mg/Kg	U	R
Pesticides - 8081	Endrin	K1852	J196B8	12/8/2009	0.0184	mg/Kg	U	R
Pesticides - 8081	Endrin	K1852	J196B9	12/7/2009	1.63E-02	mg/Kg	U	R
Pesticides - 8081	Endrin	K1852	J196H0	12/8/2009	0.016	mg/Kg	U	R
Pesticides - 8081	Endrin	K1852	J196H4	12/7/2009	0.0206	mg/Kg	U	R
Pesticides - 8081	Endrin	K1852	J196H5	12/8/2009	0.0134	mg/Kg	U	R
Pesticides - 8081	Endrin	K1852	J196H9	12/7/2009	1.22E-02	mg/Kg	U	R
Pesticides - 8081	Endrin	K1852	J196W7	12/8/2009	0.0178	mg/Kg	U	R
Pesticides - 8081	Endrin	K1852	J196W8	12/8/2009	1.58E-02	mg/Kg	U	R
Pesticides - 8081	Endrin	K1852	J196W9	12/8/2009	0.0178	mg/Kg	U	R
Pesticides - 8081	Endrin	K1852	J196X0	12/7/2009	1.58E-02	mg/Kg	U	R
Pesticides - 8081	Endrin	K1852	J196X1	12/7/2009	1.70E-02	mg/Kg	U	R
Pesticides - 8081	Endrin	K1852	J196X2	12/8/2009	0.0178	mg/Kg	U	R
Pesticides - 8081	Endrin	K1852	J196X3	12/8/2009	1.36E-02	mg/Kg	U	R
Pesticides - 8081	Endrin	K1852	J196X4	12/8/2009	0.0178	mg/Kg	U	R
Pesticides - 8081	Endrin	K1852	J196X5	12/7/2009	1.57E-02	mg/Kg	U	R
Pesticides - 8081	Endrin	K1852	J196X6	12/7/2009	1.39E-02	mg/Kg	U	R
Pesticides - 8081	Endrin	K1863	J190V0	12/15/2009	1.36E-02	mg/Kg	U	R
Pesticides - 8081	Endrin	K1863	J190V1	12/15/2009	0.0126	mg/Kg	U	R
Pesticides - 8081	Endrin	K1863	J191N5	12/15/2009	1.56E-02	mg/Kg	U	R
Pesticides - 8081	Endrin	K1863	J191N7	12/15/2009	1.04E-02	mg/Kg	U	R
Pesticides - 8081	Endrin	K1863	J191N8	12/15/2009	0.0146	mg/Kg	U	R
Pesticides - 8081	Endrin	K1863	J191Y5	12/15/2009	1.25E-02	mg/Kg	U	R
Pesticides - 8081	Endrin	K1863	J191Y9	12/15/2009	1.92E-02	mg/Kg	U	R

Table 3-7. Summary of Rejected Fish Tissue Data by Method. (79 Pages)

Analytical Method	Analyte	SDG Number	Sample Identification	Sample Date	Result	Units	Laboratory Qualifier	Validation Qualifier
Pesticides - 8081	Endrin	K1863	J19253	12/15/2009	0.012	mg/Kg	U	R
Pesticides - 8081	Endrin	K1863	J19258	12/15/2009	1.22E-02	mg/Kg	U	R
Pesticides - 8081	Endrin	K1863	J196H1	12/15/2009	1.53E-02	mg/Kg	U	R
Pesticides - 8081	Endrin	K1863	J196H6	12/15/2009	1.38E-02	mg/Kg	U	R
Pesticides - 8081	Endrin	K1919	J19254	1/21/2010	0.014	mg/Kg	U	R
Pesticides - 8081	Endrin	K1919	J19259	1/21/2010	0.0146	mg/Kg	U	R
Pesticides - 8081	Endrin aldehyde	K1579	J18J59	4/1/2009	8.06E-03	mg/Kg	U	R
Pesticides - 8081	Endrin aldehyde	K1579	J18J60	4/1/2009	9.61E-03	mg/Kg	U	R
Pesticides - 8081	Endrin aldehyde	K1579	J18J61	4/1/2009	8.69E-03	mg/Kg	U	R
Pesticides - 8081	Endrin aldehyde	K1579	J18J62	4/1/2009	0.00826	mg/Kg	U	R
Pesticides - 8081	Endrin aldehyde	K1579	J18J63	4/1/2009	8.69E-03	mg/Kg	U	R
Pesticides - 8081	Endrin aldehyde	K1579	J18K11	4/1/2009	8.32E-03	mg/Kg	U	R
Pesticides - 8081	Endrin aldehyde	K1579	J18K12	4/1/2009	8.69E-03	mg/Kg	U	R
Pesticides - 8081	Endrin aldehyde	K1579	J18K13	4/1/2009	7.57E-03	mg/Kg	U	R
Pesticides - 8081	Endrin aldehyde	K1579	J18K14	4/1/2009	6.66E-03	mg/Kg	U	R
Pesticides - 8081	Endrin aldehyde	K1579	J18K15	4/1/2009	8.06E-03	mg/Kg	U	R
Pesticides - 8081	Endrin aldehyde	K1579	J18K52	4/1/2009	6.89E-03	mg/Kg	U	R
Pesticides - 8081	Endrin aldehyde	K1579	J18K53	4/1/2009	0.00662	mg/Kg	U	R
Pesticides - 8081	Endrin aldehyde	K1579	J18K54	4/1/2009	5.98E-03	mg/Kg	U	R
Pesticides - 8081	Endrin aldehyde	K1579	J18K55	4/1/2009	6.36E-03	mg/Kg	U	R
Pesticides - 8081	Endrin aldehyde	K1579	J18K56	4/1/2009	7.68E-03	mg/Kg	U	R
Pesticides - 8081	Endrin aldehyde	K1579	J18KD3	4/1/2009	7.09E-03	mg/Kg	U	R
Pesticides - 8081	Endrin aldehyde	K1579	J18KD4	4/1/2009	7.04E-03	mg/Kg	U	R
Pesticides - 8081	Endrin aldehyde	K1579	J18KD5	4/1/2009	6.17E-03	mg/Kg	U	R
Pesticides - 8081	Endrin aldehyde	K1579	J18KD6	4/1/2009	6.53E-03	mg/Kg	U	R
Pesticides - 8081	Endrin aldehyde	K1579	J18KD7	4/1/2009	5.00E-03	mg/Kg	U	R
Pesticides - 8081	Endrin aldehyde	K1714	J192D5	8/4/2009	8.92E-03	mg/Kg	U	R
Pesticides - 8081	Endrin aldehyde	K1714	J192D6	8/4/2009	7.93E-03	mg/Kg	U	R
Pesticides - 8081	Endrin aldehyde	K1714	J192F6	8/4/2009	8.84E-03	mg/Kg	U	R
Pesticides - 8081	Endrin aldehyde	K1714	J192F7	8/4/2009	5.18E-03	mg/Kg	U	R
Pesticides - 8081	Endrin aldehyde	K1714	J192Y8	8/5/2009	9.42E-03	mg/Kg	U	R
Pesticides - 8081	Endrin aldehyde	K1714	J192Y9	8/5/2009	6.17E-03	mg/Kg	U	R
Pesticides - 8081	Endrin aldehyde	K1714	J19308	8/5/2009	7.04E-03	mg/Kg	U	R
Pesticides - 8081	Endrin aldehyde	K1714	J19309	8/5/2009	9.17E-03	mg/Kg	U	R
Pesticides - 8081	Endrin aldehyde	K1714	J19319	8/6/2009	9.34E-03	mg/Kg	U	R
Pesticides - 8081	Endrin aldehyde	K1714	J19320	8/6/2009	7.87E-03	mg/Kg	U	R
Pesticides - 8081	Endrin aldehyde	K1725	J193K6	8/6/2009	7.74E-03	mg/Kg	U	R
Pesticides - 8081	Endrin aldehyde	K1725	J193K7	8/6/2009	6.89E-03	mg/Kg	U	R
Pesticides - 8081	Endrin aldehyde	K1725	J193L7	8/10/2009	7.19E-03	mg/Kg	U	R

Table 3-7. Summary of Rejected Fish Tissue Data by Method. (79 Pages)

Analytical Method	Analyte	SDG Number	Sample Identification	Sample Date	Result	Units	Laboratory Qualifier	Validation Qualifier
Pesticides - 8081	Endrin aldehyde	K1725	J193M9	8/11/2009	8.69E-03	mg/Kg	U	R
Pesticides - 8081	Endrin aldehyde	K1725	J19441	8/12/2009	6.84E-03	mg/Kg	U	R
Pesticides - 8081	Endrin aldehyde	K1758	J19047	9/1/2009	1.76E-02	mg/Kg	U	R
Pesticides - 8081	Endrin aldehyde	K1758	J19048	9/1/2009	1.75E-02	mg/Kg	U	R
Pesticides - 8081	Endrin aldehyde	K1758	J19049	9/1/2009	0.0178	mg/Kg	U	R
Pesticides - 8081	Endrin aldehyde	K1758	J19050	9/1/2009	0.0152	mg/Kg	U	R
Pesticides - 8081	Endrin aldehyde	K1758	J19051	9/1/2009	1.71E-02	mg/Kg	U	R
Pesticides - 8081	Endrin aldehyde	K1758	J190D0	9/1/2009	0.0161	mg/Kg	U	R
Pesticides - 8081	Endrin aldehyde	K1758	J190D1	9/1/2009	1.96E-02	mg/Kg	U	R
Pesticides - 8081	Endrin aldehyde	K1758	J190D2	9/1/2009	1.73E-02	mg/Kg	U	R
Pesticides - 8081	Endrin aldehyde	K1758	J190D3	9/1/2009	1.94E-02	mg/Kg	U	R
Pesticides - 8081	Endrin aldehyde	K1758	J190D4	9/1/2009	2.03E-02	mg/Kg	U	R
Pesticides - 8081	Endrin aldehyde	K1758	J190J5	9/1/2009	1.99E-02	mg/Kg	U	R
Pesticides - 8081	Endrin aldehyde	K1758	J190J6	9/1/2009	1.50E-02	mg/Kg	U	R
Pesticides - 8081	Endrin aldehyde	K1758	J190J7	9/1/2009	1.91E-02	mg/Kg	U	R
Pesticides - 8081	Endrin aldehyde	K1758	J190J8	9/1/2009	1.70E-02	mg/Kg	U	R
Pesticides - 8081	Endrin aldehyde	K1758	J190J9	9/1/2009	2.09E-02	mg/Kg	U	R
Pesticides - 8081	Endrin aldehyde	K1758	J190N1	9/1/2009	1.57E-02	mg/Kg	U	R
Pesticides - 8081	Endrin aldehyde	K1758	J190N2	9/1/2009	0.0161	mg/Kg	U	R
Pesticides - 8081	Endrin aldehyde	K1758	J190N3	9/1/2009	1.81E-02	mg/Kg	U	R
Pesticides - 8081	Endrin aldehyde	K1758	J190N4	9/1/2009	0.0178	mg/Kg	U	R
Pesticides - 8081	Endrin aldehyde	K1758	J190N5	9/1/2009	1.93E-02	mg/Kg	U	R
Pesticides - 8081	Endrin aldehyde	K1759	J19067	9/2/2009	0.0184	mg/Kg	U	R
Pesticides - 8081	Endrin aldehyde	K1759	J19069	9/2/2009	1.99E-02	mg/Kg	U	R
Pesticides - 8081	Endrin aldehyde	K1759	J19071	9/2/2009	1.99E-02	mg/Kg	U	R
Pesticides - 8081	Endrin aldehyde	K1759	J190D5	9/2/2009	0.0161	mg/Kg	U	R
Pesticides - 8081	Endrin aldehyde	K1759	J190D7	9/2/2009	0.0201	mg/Kg	U	R
Pesticides - 8081	Endrin aldehyde	K1759	J190D9	9/2/2009	0.0146	mg/Kg	U	R
Pesticides - 8081	Endrin aldehyde	K1759	J190H0	9/2/2009	1.50E-02	mg/Kg	U	R
Pesticides - 8081	Endrin aldehyde	K1759	J190H1	9/2/2009	2.09E-02	mg/Kg	U	R
Pesticides - 8081	Endrin aldehyde	K1759	J190H2	9/1/2009	0.0161	mg/Kg	U	R
Pesticides - 8081	Endrin aldehyde	K1759	J190H3	9/1/2009	0.0183	mg/Kg	U	R
Pesticides - 8081	Endrin aldehyde	K1759	J190H4	9/1/2009	2.28E-02	mg/Kg	U	R
Pesticides - 8081	Endrin aldehyde	K1759	J190K0	9/2/2009	1.71E-02	mg/Kg	U	R
Pesticides - 8081	Endrin aldehyde	K1759	J190K1	9/2/2009	0.0184	mg/Kg	U	R
Pesticides - 8081	Endrin aldehyde	K1759	J190K2	9/1/2009	1.99E-02	mg/Kg	U	R
Pesticides - 8081	Endrin aldehyde	K1759	J190K3	9/1/2009	0.0166	mg/Kg	U	R
Pesticides - 8081	Endrin aldehyde	K1759	J190K4	9/1/2009	1.91E-02	mg/Kg	U	R
Pesticides - 8081	Endrin aldehyde	K1761	J19470	9/3/2009	1.99E-02	mg/Kg	U	R

Table 3-7. Summary of Rejected Fish Tissue Data by Method. (79 Pages)

Analytical Method	Analyte	SDG Number	Sample Identification	Sample Date	Result	Units	Laboratory Qualifier	Validation Qualifier
Pesticides - 8081	Endrin aldehyde	K1761	J19471	9/3/2009	1.88E-02	mg/Kg	U	R
Pesticides - 8081	Endrin aldehyde	K1761	J19480	9/3/2009	1.45E-02	mg/Kg	U	R
Pesticides - 8081	Endrin aldehyde	K1761	J19481	9/3/2009	0.0184	mg/Kg	U	R
Pesticides - 8081	Endrin aldehyde	K1761	J19490	9/8/2009	1.71E-02	mg/Kg	U	R
Pesticides - 8081	Endrin aldehyde	K1761	J19491	9/8/2009	1.45E-02	mg/Kg	U	R
Pesticides - 8081	Endrin aldehyde	K1761	J194B1	9/8/2009	0.0184	mg/Kg	U	R
Pesticides - 8081	Endrin aldehyde	K1761	J194B2	9/8/2009	1.33E-02	mg/Kg	U	R
Pesticides - 8081	Endrin aldehyde	K1761	J194C2	9/9/2009	0.0195	mg/Kg	U	R
Pesticides - 8081	Endrin aldehyde	K1761	J194C3	9/9/2009	1.93E-02	mg/Kg	U	R
Pesticides - 8081	Endrin aldehyde	K1769	J194Y7	9/10/2009	1.91E-02	mg/Kg	U	R
Pesticides - 8081	Endrin aldehyde	K1769	J194Y8	9/10/2009	2.03E-02	mg/Kg	U	R
Pesticides - 8081	Endrin aldehyde	K1769	J195P4	9/10/2009	0.0161	mg/Kg	U	R
Pesticides - 8081	Endrin aldehyde	K1769	J195P5	9/10/2009	1.59E-02	mg/Kg	U	R
Pesticides - 8081	Endrin aldehyde	K1769	J195R6	9/14/2009	0.0229	mg/Kg	U	R
Pesticides - 8081	Endrin aldehyde	K1769	J195R7	9/14/2009	0.0201	mg/Kg	U	R
Pesticides - 8081	Endrin aldehyde	K1769	J195X3	9/15/2009	2.16E-02	mg/Kg	U	R
Pesticides - 8081	Endrin aldehyde	K1769	J195X4	9/15/2009	1.92E-02	mg/Kg	U	R
Pesticides - 8081	Endrin aldehyde	K1769	J19603	9/15/2009	0.0146	mg/Kg	U	R
Pesticides - 8081	Endrin aldehyde	K1769	J19604	9/15/2009	0.0195	mg/Kg	U	R
Pesticides - 8081	Endrin aldehyde	K1774	J19623	9/16/2009	1.99E-02	mg/Kg	U	R
Pesticides - 8081	Endrin aldehyde	K1774	J19633	9/16/2009	0.0201	mg/Kg	U	R
Pesticides - 8081	Endrin aldehyde	K1774	J19634	9/16/2009	0.0161	mg/Kg	U	R
Pesticides - 8081	Endrin aldehyde	K1774	J19643	9/17/2009	0.0166	mg/Kg	U	R
Pesticides - 8081	Endrin aldehyde	K1774	J19644	9/17/2009	1.80E-02	mg/Kg	U	R
Pesticides - 8081	Endrin aldehyde	K1774	J19653	9/17/2009	1.88E-02	mg/Kg	U	R
Pesticides - 8081	Endrin aldehyde	K1774	J19654	9/17/2009	2.05E-02	mg/Kg	U	R
Pesticides - 8081	Endrin aldehyde	K1785	J18XB1	9/24/2009	0.0184	mg/Kg	U	R
Pesticides - 8081	Endrin aldehyde	K1785	J18XB2	9/25/2009	1.93E-02	mg/Kg	U	R
Pesticides - 8081	Endrin aldehyde	K1785	J18XB3	9/25/2009	1.94E-02	mg/Kg	U	R
Pesticides - 8081	Endrin aldehyde	K1785	J18XB4	9/24/2009	1.81E-02	mg/Kg	U	R
Pesticides - 8081	Endrin aldehyde	K1785	J18XB5	9/24/2009	1.88E-02	mg/Kg	U	R
Pesticides - 8081	Endrin aldehyde	K1785	J18XF6	9/24/2009	1.81E-02	mg/Kg	U	R
Pesticides - 8081	Endrin aldehyde	K1785	J18XF7	9/24/2009	1.70E-02	mg/Kg	U	R
Pesticides - 8081	Endrin aldehyde	K1785	J18XF8	9/24/2009	1.31E-02	mg/Kg	U	R
Pesticides - 8081	Endrin aldehyde	K1785	J18XF9	9/25/2009	0.0178	mg/Kg	U	R
Pesticides - 8081	Endrin aldehyde	K1785	J18XH0	9/25/2009	0.0126	mg/Kg	U	R
Pesticides - 8081	Endrin aldehyde	K1785	J195V7	9/21/2009	0.019	mg/Kg	U	R
Pesticides - 8081	Endrin aldehyde	K1785	J195V8	9/21/2009	0.0189	mg/Kg	U	R
Pesticides - 8081	Endrin aldehyde	K1785	J195V9	9/21/2009	0.016	mg/Kg	U	R

Table 3-7. Summary of Rejected Fish Tissue Data by Method. (79 Pages)

Analytical Method	Analyte	SDG Number	Sample Identification	Sample Date	Result	Units	Laboratory Qualifier	Validation Qualifier
Pesticides - 8081	Endrin aldehyde	K1785	J195W0	9/24/2009	0.016	mg/Kg	U	R
Pesticides - 8081	Endrin aldehyde	K1785	J19661	9/24/2009	1.91E-02	mg/Kg	U	R
Pesticides - 8081	Endrin aldehyde	K1785	J19662	9/24/2009	0.0184	mg/Kg	U	R
Pesticides - 8081	Endrin aldehyde	K1785	J19747	9/24/2009	2.05E-02	mg/Kg	U	R
Pesticides - 8081	Endrin aldehyde	K1852	J191V0	12/7/2009	1.02E-02	mg/Kg	U	R
Pesticides - 8081	Endrin aldehyde	K1852	J191V1	12/7/2009	0.0184	mg/Kg	U	R
Pesticides - 8081	Endrin aldehyde	K1852	J191V2	12/7/2009	1.86E-02	mg/Kg	U	R
Pesticides - 8081	Endrin aldehyde	K1852	J191V3	12/7/2009	0.0132	mg/Kg	U	R
Pesticides - 8081	Endrin aldehyde	K1852	J191V4	12/7/2009	1.91E-02	mg/Kg	U	R
Pesticides - 8081	Endrin aldehyde	K1852	J191Y6	12/7/2009	1.45E-02	mg/Kg	U	R
Pesticides - 8081	Endrin aldehyde	K1852	J191Y7	12/7/2009	1.69E-02	mg/Kg	U	R
Pesticides - 8081	Endrin aldehyde	K1852	J191Y8	12/7/2009	1.31E-02	mg/Kg	U	R
Pesticides - 8081	Endrin aldehyde	K1852	J19251	12/8/2009	1.16E-02	mg/Kg	U	R
Pesticides - 8081	Endrin aldehyde	K1852	J19252	12/8/2009	0.0166	mg/Kg	U	R
Pesticides - 8081	Endrin aldehyde	K1852	J19256	12/8/2009	1.63E-02	mg/Kg	U	R
Pesticides - 8081	Endrin aldehyde	K1852	J19257	12/8/2009	0.0135	mg/Kg	U	R
Pesticides - 8081	Endrin aldehyde	K1852	J196B0	12/8/2009	1.74E-02	mg/Kg	U	R
Pesticides - 8081	Endrin aldehyde	K1852	J196B1	12/8/2009	1.76E-02	mg/Kg	U	R
Pesticides - 8081	Endrin aldehyde	K1852	J196B2	12/8/2009	0.0177	mg/Kg	U	R
Pesticides - 8081	Endrin aldehyde	K1852	J196B3	12/8/2009	0.0114	mg/Kg	U	R
Pesticides - 8081	Endrin aldehyde	K1852	J196B4	12/7/2009	1.76E-02	mg/Kg	U	R
Pesticides - 8081	Endrin aldehyde	K1852	J196B5	12/8/2009	0.0115	mg/Kg	U	R
Pesticides - 8081	Endrin aldehyde	K1852	J196B6	12/8/2009	1.94E-02	mg/Kg	U	R
Pesticides - 8081	Endrin aldehyde	K1852	J196B7	12/8/2009	1.91E-02	mg/Kg	U	R
Pesticides - 8081	Endrin aldehyde	K1852	J196B8	12/8/2009	0.0184	mg/Kg	U	R
Pesticides - 8081	Endrin aldehyde	K1852	J196B9	12/7/2009	1.63E-02	mg/Kg	U	R
Pesticides - 8081	Endrin aldehyde	K1852	J196H0	12/8/2009	0.016	mg/Kg	U	R
Pesticides - 8081	Endrin aldehyde	K1852	J196H4	12/7/2009	0.0206	mg/Kg	U	R
Pesticides - 8081	Endrin aldehyde	K1852	J196H5	12/8/2009	0.0134	mg/Kg	U	R
Pesticides - 8081	Endrin aldehyde	K1852	J196H9	12/7/2009	1.22E-02	mg/Kg	U	R
Pesticides - 8081	Endrin aldehyde	K1852	J196W7	12/8/2009	0.0178	mg/Kg	U	R
Pesticides - 8081	Endrin aldehyde	K1852	J196W8	12/8/2009	1.58E-02	mg/Kg	U	R
Pesticides - 8081	Endrin aldehyde	K1852	J196W9	12/8/2009	0.0178	mg/Kg	U	R
Pesticides - 8081	Endrin aldehyde	K1852	J196X0	12/7/2009	1.58E-02	mg/Kg	U	R
Pesticides - 8081	Endrin aldehyde	K1852	J196X1	12/7/2009	1.70E-02	mg/Kg	U	R
Pesticides - 8081	Endrin aldehyde	K1852	J196X2	12/8/2009	0.0178	mg/Kg	U	R
Pesticides - 8081	Endrin aldehyde	K1852	J196X3	12/8/2009	1.36E-02	mg/Kg	U	R
Pesticides - 8081	Endrin aldehyde	K1852	J196X4	12/8/2009	0.0178	mg/Kg	U	R
Pesticides - 8081	Endrin aldehyde	K1852	J196X5	12/7/2009	1.57E-02	mg/Kg	U	R

Table 3-7. Summary of Rejected Fish Tissue Data by Method. (79 Pages)

Analytical Method	Analyte	SDG Number	Sample Identification	Sample Date	Result	Units	Laboratory Qualifier	Validation Qualifier
Pesticides - 8081	Endrin aldehyde	K1852	J196X6	12/7/2009	1.39E-02	mg/Kg	U	R
Pesticides - 8081	Endrin aldehyde	K1863	J190V0	12/15/2009	1.36E-02	mg/Kg	U	R
Pesticides - 8081	Endrin aldehyde	K1863	J190V1	12/15/2009	0.0126	mg/Kg	U	R
Pesticides - 8081	Endrin aldehyde	K1863	J191N4	12/15/2009	1.68E-02	mg/Kg	U	R
Pesticides - 8081	Endrin aldehyde	K1863	J191N5	12/15/2009	1.56E-02	mg/Kg	U	R
Pesticides - 8081	Endrin aldehyde	K1863	J191N6	12/15/2009	0.014	mg/Kg	U	R
Pesticides - 8081	Endrin aldehyde	K1863	J191N7	12/15/2009	1.04E-02	mg/Kg	U	R
Pesticides - 8081	Endrin aldehyde	K1863	J191N8	12/15/2009	0.0146	mg/Kg	U	R
Pesticides - 8081	Endrin aldehyde	K1863	J191Y5	12/15/2009	1.25E-02	mg/Kg	U	R
Pesticides - 8081	Endrin aldehyde	K1863	J191Y9	12/15/2009	1.92E-02	mg/Kg	U	R
Pesticides - 8081	Endrin aldehyde	K1863	J19253	12/15/2009	0.012	mg/Kg	U	R
Pesticides - 8081	Endrin aldehyde	K1863	J19258	12/15/2009	1.22E-02	mg/Kg	U	R
Pesticides - 8081	Endrin aldehyde	K1863	J196H1	12/15/2009	1.53E-02	mg/Kg	U	R
Pesticides - 8081	Endrin aldehyde	K1863	J196H6	12/15/2009	1.38E-02	mg/Kg	U	R
Pesticides - 8081	Endrin aldehyde	K1919	J19254	1/21/2010	0.014	mg/Kg	U	R
Pesticides - 8081	Endrin aldehyde	K1919	J19259	1/21/2010	0.0146	mg/Kg	U	R
Pesticides - 8081	Endrin ketone	K1579	J18J59	4/1/2009	8.06E-03	mg/Kg	U	R
Pesticides - 8081	Endrin ketone	K1579	J18J60	4/1/2009	9.61E-03	mg/Kg	U	R
Pesticides - 8081	Endrin ketone	K1579	J18J61	4/1/2009	8.69E-03	mg/Kg	U	R
Pesticides - 8081	Endrin ketone	K1579	J18J62	4/1/2009	0.00826	mg/Kg	U	R
Pesticides - 8081	Endrin ketone	K1579	J18J63	4/1/2009	8.69E-03	mg/Kg	U	R
Pesticides - 8081	Endrin ketone	K1579	J18K11	4/1/2009	8.32E-03	mg/Kg	U	R
Pesticides - 8081	Endrin ketone	K1579	J18K12	4/1/2009	8.69E-03	mg/Kg	U	R
Pesticides - 8081	Endrin ketone	K1579	J18K13	4/1/2009	7.57E-03	mg/Kg	U	R
Pesticides - 8081	Endrin ketone	K1579	J18K14	4/1/2009	6.66E-03	mg/Kg	U	R
Pesticides - 8081	Endrin ketone	K1579	J18K15	4/1/2009	8.06E-03	mg/Kg	U	R
Pesticides - 8081	Endrin ketone	K1579	J18K52	4/1/2009	6.89E-03	mg/Kg	U	R
Pesticides - 8081	Endrin ketone	K1579	J18K53	4/1/2009	0.00662	mg/Kg	U	R
Pesticides - 8081	Endrin ketone	K1579	J18K54	4/1/2009	5.98E-03	mg/Kg	U	R
Pesticides - 8081	Endrin ketone	K1579	J18K55	4/1/2009	6.36E-03	mg/Kg	U	R
Pesticides - 8081	Endrin ketone	K1579	J18KD3	4/1/2009	7.09E-03	mg/Kg	U	R
Pesticides - 8081	Endrin ketone	K1579	J18KD4	4/1/2009	7.04E-03	mg/Kg	U	R
Pesticides - 8081	Endrin ketone	K1579	J18KD5	4/1/2009	6.17E-03	mg/Kg	U	R
Pesticides - 8081	Endrin ketone	K1579	J18KD6	4/1/2009	6.53E-03	mg/Kg	U	R
Pesticides - 8081	Endrin ketone	K1579	J18KD7	4/1/2009	5.00E-03	mg/Kg	U	R
Pesticides - 8081	Endrin ketone	K1714	J192D5	8/4/2009	8.92E-03	mg/Kg	U	R
Pesticides - 8081	Endrin ketone	K1714	J192D6	8/4/2009	7.93E-03	mg/Kg	U	R
Pesticides - 8081	Endrin ketone	K1714	J192F6	8/4/2009	8.84E-03	mg/Kg	U	R
Pesticides - 8081	Endrin ketone	K1714	J192F7	8/4/2009	5.18E-03	mg/Kg	U	R

Table 3-7. Summary of Rejected Fish Tissue Data by Method. (79 Pages)

Analytical Method	Analyte	SDG Number	Sample Identification	Sample Date	Result	Units	Laboratory Qualifier	Validation Qualifier
Pesticides - 8081	Endrin ketone	K1714	J192Y8	8/5/2009	9.42E-03	mg/Kg	U	R
Pesticides - 8081	Endrin ketone	K1714	J192Y9	8/5/2009	6.17E-03	mg/Kg	U	R
Pesticides - 8081	Endrin ketone	K1714	J19308	8/5/2009	7.04E-03	mg/Kg	U	R
Pesticides - 8081	Endrin ketone	K1714	J19309	8/5/2009	9.17E-03	mg/Kg	U	R
Pesticides - 8081	Endrin ketone	K1714	J19319	8/6/2009	9.34E-03	mg/Kg	U	R
Pesticides - 8081	Endrin ketone	K1714	J19320	8/6/2009	7.87E-03	mg/Kg	U	R
Pesticides - 8081	Endrin ketone	K1725	J193K6	8/6/2009	7.74E-03	mg/Kg	U	R
Pesticides - 8081	Endrin ketone	K1725	J193K7	8/6/2009	6.89E-03	mg/Kg	U	R
Pesticides - 8081	Endrin ketone	K1725	J193L6	8/10/2009	7.63E-03	mg/Kg	U	R
Pesticides - 8081	Endrin ketone	K1725	J193L7	8/10/2009	7.19E-03	mg/Kg	U	R
Pesticides - 8081	Endrin ketone	K1725	J193M8	8/11/2009	7.29E-03	mg/Kg	U	R
Pesticides - 8081	Endrin ketone	K1725	J193M9	8/11/2009	8.69E-03	mg/Kg	U	R
Pesticides - 8081	Endrin ketone	K1725	J19441	8/12/2009	6.84E-03	mg/Kg	U	R
Pesticides - 8081	Endrin ketone	K1758	J19047	9/1/2009	1.76E-02	mg/Kg	U	R
Pesticides - 8081	Endrin ketone	K1758	J19048	9/1/2009	1.75E-02	mg/Kg	U	R
Pesticides - 8081	Endrin ketone	K1758	J19049	9/1/2009	0.0178	mg/Kg	U	R
Pesticides - 8081	Endrin ketone	K1758	J19050	9/1/2009	0.0152	mg/Kg	U	R
Pesticides - 8081	Endrin ketone	K1758	J19051	9/1/2009	1.71E-02	mg/Kg	U	R
Pesticides - 8081	Endrin ketone	K1758	J190D0	9/1/2009	0.0161	mg/Kg	U	R
Pesticides - 8081	Endrin ketone	K1758	J190D1	9/1/2009	1.96E-02	mg/Kg	U	R
Pesticides - 8081	Endrin ketone	K1758	J190D2	9/1/2009	1.73E-02	mg/Kg	U	R
Pesticides - 8081	Endrin ketone	K1758	J190D3	9/1/2009	1.94E-02	mg/Kg	U	R
Pesticides - 8081	Endrin ketone	K1758	J190D4	9/1/2009	2.03E-02	mg/Kg	U	R
Pesticides - 8081	Endrin ketone	K1758	J190J5	9/1/2009	1.99E-02	mg/Kg	U	R
Pesticides - 8081	Endrin ketone	K1758	J190J6	9/1/2009	1.50E-02	mg/Kg	U	R
Pesticides - 8081	Endrin ketone	K1758	J190J7	9/1/2009	1.91E-02	mg/Kg	U	R
Pesticides - 8081	Endrin ketone	K1758	J190J8	9/1/2009	1.70E-02	mg/Kg	U	R
Pesticides - 8081	Endrin ketone	K1758	J190J9	9/1/2009	2.09E-02	mg/Kg	U	R
Pesticides - 8081	Endrin ketone	K1758	J190N1	9/1/2009	1.57E-02	mg/Kg	U	R
Pesticides - 8081	Endrin ketone	K1758	J190N2	9/1/2009	0.0161	mg/Kg	U	R
Pesticides - 8081	Endrin ketone	K1758	J190N3	9/1/2009	1.81E-02	mg/Kg	U	R
Pesticides - 8081	Endrin ketone	K1758	J190N4	9/1/2009	0.0178	mg/Kg	U	R
Pesticides - 8081	Endrin ketone	K1759	J19067	9/2/2009	0.0184	mg/Kg	U	R
Pesticides - 8081	Endrin ketone	K1759	J19069	9/2/2009	1.99E-02	mg/Kg	U	R
Pesticides - 8081	Endrin ketone	K1759	J19071	9/2/2009	1.99E-02	mg/Kg	U	R
Pesticides - 8081	Endrin ketone	K1759	J190D5	9/2/2009	0.0161	mg/Kg	U	R
Pesticides - 8081	Endrin ketone	K1759	J190D7	9/2/2009	0.0201	mg/Kg	U	R
Pesticides - 8081	Endrin ketone	K1759	J190D9	9/2/2009	0.0146	mg/Kg	U	R
Pesticides - 8081	Endrin ketone	K1759	J190H0	9/2/2009	1.50E-02	mg/Kg	U	R

Table 3-7. Summary of Rejected Fish Tissue Data by Method. (79 Pages)

Analytical Method	Analyte	SDG Number	Sample Identification	Sample Date	Result	Units	Laboratory Qualifier	Validation Qualifier
Pesticides - 8081	Endrin ketone	K1759	J190H1	9/2/2009	2.09E-02	mg/Kg	U	R
Pesticides - 8081	Endrin ketone	K1759	J190H2	9/1/2009	0.0161	mg/Kg	U	R
Pesticides - 8081	Endrin ketone	K1759	J190H3	9/1/2009	0.0183	mg/Kg	U	R
Pesticides - 8081	Endrin ketone	K1759	J190H4	9/1/2009	2.28E-02	mg/Kg	U	R
Pesticides - 8081	Endrin ketone	K1759	J190K0	9/2/2009	1.71E-02	mg/Kg	U	R
Pesticides - 8081	Endrin ketone	K1759	J190K1	9/2/2009	0.0184	mg/Kg	U	R
Pesticides - 8081	Endrin ketone	K1759	J190K2	9/1/2009	1.99E-02	mg/Kg	U	R
Pesticides - 8081	Endrin ketone	K1759	J190K3	9/1/2009	0.0166	mg/Kg	U	R
Pesticides - 8081	Endrin ketone	K1759	J190K4	9/1/2009	1.91E-02	mg/Kg	U	R
Pesticides - 8081	Endrin ketone	K1761	J19470	9/3/2009	1.99E-02	mg/Kg	U	R
Pesticides - 8081	Endrin ketone	K1761	J19471	9/3/2009	1.88E-02	mg/Kg	U	R
Pesticides - 8081	Endrin ketone	K1761	J19480	9/3/2009	1.45E-02	mg/Kg	U	R
Pesticides - 8081	Endrin ketone	K1761	J19481	9/3/2009	0.0184	mg/Kg	U	R
Pesticides - 8081	Endrin ketone	K1761	J19490	9/8/2009	1.71E-02	mg/Kg	U	R
Pesticides - 8081	Endrin ketone	K1761	J19491	9/8/2009	1.45E-02	mg/Kg	U	R
Pesticides - 8081	Endrin ketone	K1761	J194B1	9/8/2009	0.0184	mg/Kg	U	R
Pesticides - 8081	Endrin ketone	K1761	J194B2	9/8/2009	1.33E-02	mg/Kg	U	R
Pesticides - 8081	Endrin ketone	K1761	J194C2	9/9/2009	0.0195	mg/Kg	U	R
Pesticides - 8081	Endrin ketone	K1761	J194C3	9/9/2009	1.93E-02	mg/Kg	U	R
Pesticides - 8081	Endrin ketone	K1769	J194Y7	9/10/2009	1.91E-02	mg/Kg	U	R
Pesticides - 8081	Endrin ketone	K1769	J194Y8	9/10/2009	2.03E-02	mg/Kg	U	R
Pesticides - 8081	Endrin ketone	K1769	J195P4	9/10/2009	0.0161	mg/Kg	U	R
Pesticides - 8081	Endrin ketone	K1769	J195P5	9/10/2009	1.59E-02	mg/Kg	U	R
Pesticides - 8081	Endrin ketone	K1769	J195R6	9/14/2009	0.0229	mg/Kg	U	R
Pesticides - 8081	Endrin ketone	K1769	J195R7	9/14/2009	0.0201	mg/Kg	U	R
Pesticides - 8081	Endrin ketone	K1769	J195X3	9/15/2009	2.16E-02	mg/Kg	U	R
Pesticides - 8081	Endrin ketone	K1769	J195X4	9/15/2009	1.92E-02	mg/Kg	U	R
Pesticides - 8081	Endrin ketone	K1769	J19603	9/15/2009	0.0146	mg/Kg	U	R
Pesticides - 8081	Endrin ketone	K1769	J19604	9/15/2009	0.0195	mg/Kg	U	R
Pesticides - 8081	Endrin ketone	K1774	J19622	9/16/2009	0.0149	mg/Kg	U	R
Pesticides - 8081	Endrin ketone	K1774	J19623	9/16/2009	1.99E-02	mg/Kg	U	R
Pesticides - 8081	Endrin ketone	K1774	J19633	9/16/2009	0.0201	mg/Kg	U	R
Pesticides - 8081	Endrin ketone	K1774	J19634	9/16/2009	0.0161	mg/Kg	U	R
Pesticides - 8081	Endrin ketone	K1774	J19643	9/17/2009	0.0166	mg/Kg	U	R
Pesticides - 8081	Endrin ketone	K1774	J19644	9/17/2009	1.80E-02	mg/Kg	U	R
Pesticides - 8081	Endrin ketone	K1774	J19653	9/17/2009	1.88E-02	mg/Kg	U	R
Pesticides - 8081	Endrin ketone	K1774	J19654	9/17/2009	2.05E-02	mg/Kg	U	R
Pesticides - 8081	Endrin ketone	K1785	J18XB1	9/24/2009	0.0184	mg/Kg	U	R
Pesticides - 8081	Endrin ketone	K1785	J18XB2	9/25/2009	1.93E-02	mg/Kg	U	R

Table 3-7. Summary of Rejected Fish Tissue Data by Method. (79 Pages)

Analytical Method	Analyte	SDG Number	Sample Identification	Sample Date	Result	Units	Laboratory Qualifier	Validation Qualifier
Pesticides - 8081	Endrin ketone	K1785	J18XB3	9/25/2009	1.94E-02	mg/Kg	U	R
Pesticides - 8081	Endrin ketone	K1785	J18XB4	9/24/2009	1.81E-02	mg/Kg	U	R
Pesticides - 8081	Endrin ketone	K1785	J18XB5	9/24/2009	1.88E-02	mg/Kg	U	R
Pesticides - 8081	Endrin ketone	K1785	J18XF6	9/24/2009	1.81E-02	mg/Kg	U	R
Pesticides - 8081	Endrin ketone	K1785	J18XF7	9/24/2009	1.70E-02	mg/Kg	U	R
Pesticides - 8081	Endrin ketone	K1785	J18XF8	9/24/2009	1.31E-02	mg/Kg	U	R
Pesticides - 8081	Endrin ketone	K1785	J18XF9	9/25/2009	0.0178	mg/Kg	U	R
Pesticides - 8081	Endrin ketone	K1785	J18XH0	9/25/2009	0.0126	mg/Kg	U	R
Pesticides - 8081	Endrin ketone	K1785	J195V7	9/21/2009	0.019	mg/Kg	U	R
Pesticides - 8081	Endrin ketone	K1785	J195V8	9/21/2009	0.0189	mg/Kg	U	R
Pesticides - 8081	Endrin ketone	K1785	J195V9	9/21/2009	0.016	mg/Kg	U	R
Pesticides - 8081	Endrin ketone	K1785	J195W0	9/24/2009	0.016	mg/Kg	U	R
Pesticides - 8081	Endrin ketone	K1785	J19661	9/24/2009	1.91E-02	mg/Kg	U	R
Pesticides - 8081	Endrin ketone	K1785	J19662	9/24/2009	0.0184	mg/Kg	U	R
Pesticides - 8081	Endrin ketone	K1785	J19747	9/24/2009	2.05E-02	mg/Kg	U	R
Pesticides - 8081	Endrin ketone	K1852	J191V0	12/7/2009	1.02E-02	mg/Kg	U	R
Pesticides - 8081	Endrin ketone	K1852	J191V1	12/7/2009	0.0184	mg/Kg	U	R
Pesticides - 8081	Endrin ketone	K1852	J191V2	12/7/2009	1.86E-02	mg/Kg	U	R
Pesticides - 8081	Endrin ketone	K1852	J191V3	12/7/2009	0.0132	mg/Kg	U	R
Pesticides - 8081	Endrin ketone	K1852	J191V4	12/7/2009	1.91E-02	mg/Kg	U	R
Pesticides - 8081	Endrin ketone	K1852	J191Y6	12/7/2009	1.45E-02	mg/Kg	U	R
Pesticides - 8081	Endrin ketone	K1852	J191Y7	12/7/2009	1.69E-02	mg/Kg	U	R
Pesticides - 8081	Endrin ketone	K1852	J191Y8	12/7/2009	1.31E-02	mg/Kg	U	R
Pesticides - 8081	Endrin ketone	K1852	J19251	12/8/2009	1.16E-02	mg/Kg	U	R
Pesticides - 8081	Endrin ketone	K1852	J19252	12/8/2009	0.0166	mg/Kg	U	R
Pesticides - 8081	Endrin ketone	K1852	J19256	12/8/2009	1.63E-02	mg/Kg	U	R
Pesticides - 8081	Endrin ketone	K1852	J19257	12/8/2009	0.0135	mg/Kg	U	R
Pesticides - 8081	Endrin ketone	K1852	J196B0	12/8/2009	1.74E-02	mg/Kg	U	R
Pesticides - 8081	Endrin ketone	K1852	J196B1	12/8/2009	1.76E-02	mg/Kg	U	R
Pesticides - 8081	Endrin ketone	K1852	J196B2	12/8/2009	0.0177	mg/Kg	U	R
Pesticides - 8081	Endrin ketone	K1852	J196B3	12/8/2009	0.0114	mg/Kg	U	R
Pesticides - 8081	Endrin ketone	K1852	J196B4	12/7/2009	1.76E-02	mg/Kg	U	R
Pesticides - 8081	Endrin ketone	K1852	J196B5	12/8/2009	0.0115	mg/Kg	U	R
Pesticides - 8081	Endrin ketone	K1852	J196B6	12/8/2009	1.94E-02	mg/Kg	U	R
Pesticides - 8081	Endrin ketone	K1852	J196B7	12/8/2009	1.91E-02	mg/Kg	U	R
Pesticides - 8081	Endrin ketone	K1852	J196B8	12/8/2009	0.0184	mg/Kg	U	R
Pesticides - 8081	Endrin ketone	K1852	J196B9	12/7/2009	1.63E-02	mg/Kg	U	R
Pesticides - 8081	Endrin ketone	K1852	J196H0	12/8/2009	0.016	mg/Kg	U	R
Pesticides - 8081	Endrin ketone	K1852	J196H4	12/7/2009	0.0206	mg/Kg	U	R

Table 3-7. Summary of Rejected Fish Tissue Data by Method. (79 Pages)

Analytical Method	Analyte	SDG Number	Sample Identification	Sample Date	Result	Units	Laboratory Qualifier	Validation Qualifier
Pesticides - 8081	Endrin ketone	K1852	J196H5	12/8/2009	0.0134	mg/Kg	U	R
Pesticides - 8081	Endrin ketone	K1852	J196H9	12/7/2009	1.22E-02	mg/Kg	U	R
Pesticides - 8081	Endrin ketone	K1852	J196W7	12/8/2009	0.0178	mg/Kg	U	R
Pesticides - 8081	Endrin ketone	K1852	J196W8	12/8/2009	1.58E-02	mg/Kg	U	R
Pesticides - 8081	Endrin ketone	K1852	J196W9	12/8/2009	0.0178	mg/Kg	U	R
Pesticides - 8081	Endrin ketone	K1852	J196X0	12/7/2009	1.58E-02	mg/Kg	U	R
Pesticides - 8081	Endrin ketone	K1852	J196X1	12/7/2009	1.70E-02	mg/Kg	U	R
Pesticides - 8081	Endrin ketone	K1852	J196X2	12/8/2009	0.0178	mg/Kg	U	R
Pesticides - 8081	Endrin ketone	K1852	J196X4	12/8/2009	0.0178	mg/Kg	U	R
Pesticides - 8081	Endrin ketone	K1852	J196X5	12/7/2009	1.57E-02	mg/Kg	U	R
Pesticides - 8081	Endrin ketone	K1852	J196X6	12/7/2009	1.39E-02	mg/Kg	U	R
Pesticides - 8081	Endrin ketone	K1863	J190V0	12/15/2009	1.36E-02	mg/Kg	U	R
Pesticides - 8081	Endrin ketone	K1863	J190V1	12/15/2009	0.0126	mg/Kg	U	R
Pesticides - 8081	Endrin ketone	K1863	J191N4	12/15/2009	1.68E-02	mg/Kg	U	R
Pesticides - 8081	Endrin ketone	K1863	J191N5	12/15/2009	1.56E-02	mg/Kg	U	R
Pesticides - 8081	Endrin ketone	K1863	J191N6	12/15/2009	0.014	mg/Kg	U	R
Pesticides - 8081	Endrin ketone	K1863	J191N7	12/15/2009	1.04E-02	mg/Kg	U	R
Pesticides - 8081	Endrin ketone	K1863	J191Y5	12/15/2009	1.25E-02	mg/Kg	U	R
Pesticides - 8081	Endrin ketone	K1863	J19253	12/15/2009	0.012	mg/Kg	U	R
Pesticides - 8081	Endrin ketone	K1863	J19258	12/15/2009	1.22E-02	mg/Kg	U	R
Pesticides - 8081	Endrin ketone	K1863	J196H1	12/15/2009	1.53E-02	mg/Kg	U	R
Pesticides - 8081	Endrin ketone	K1863	J196H6	12/15/2009	1.38E-02	mg/Kg	U	R
Pesticides - 8081	Endrin ketone	K1919	J19254	1/21/2010	0.014	mg/Kg	U	R
Pesticides - 8081	Endrin ketone	K1919	J19259	1/21/2010	0.0146	mg/Kg	U	R
Pesticides - 8081	Gamma-BHC (lindane)	K1579	J18J60	4/1/2009	9.61E-03	mg/Kg	U	R
Pesticides - 8081	Gamma-BHC (lindane)	K1579	J18J61	4/1/2009	8.69E-03	mg/Kg	U	R
Pesticides - 8081	Gamma-BHC (lindane)	K1579	J18J62	4/1/2009	0.00826	mg/Kg	U	R
Pesticides - 8081	Gamma-BHC (lindane)	K1579	J18J63	4/1/2009	8.69E-03	mg/Kg	U	R
Pesticides - 8081	Gamma-BHC (lindane)	K1579	J18K11	4/1/2009	8.32E-03	mg/Kg	U	R
Pesticides - 8081	Gamma-BHC (lindane)	K1579	J18K12	4/1/2009	8.69E-03	mg/Kg	U	R
Pesticides - 8081	Gamma-BHC (lindane)	K1579	J18K13	4/1/2009	7.57E-03	mg/Kg	U	R
Pesticides - 8081	Gamma-BHC (lindane)	K1579	J18K14	4/1/2009	6.66E-03	mg/Kg	U	R
Pesticides - 8081	Gamma-BHC (lindane)	K1579	J18K15	4/1/2009	8.06E-03	mg/Kg	U	R
Pesticides - 8081	Gamma-BHC (lindane)	K1579	J18K53	4/1/2009	0.00662	mg/Kg	U	R
Pesticides - 8081	Gamma-BHC (lindane)	K1579	J18K54	4/1/2009	5.98E-03	mg/Kg	U	R
Pesticides - 8081	Gamma-BHC (lindane)	K1579	J18K55	4/1/2009	6.36E-03	mg/Kg	U	R
Pesticides - 8081	Gamma-BHC (lindane)	K1579	J18K56	4/1/2009	7.68E-03	mg/Kg	U	R
Pesticides - 8081	Gamma-BHC (lindane)	K1579	J18KD3	4/1/2009	7.09E-03	mg/Kg	U	R
Pesticides - 8081	Gamma-BHC (lindane)	K1579	J18KD4	4/1/2009	7.04E-03	mg/Kg	U	R

Table 3-7. Summary of Rejected Fish Tissue Data by Method. (79 Pages)

Analytical Method	Analyte	SDG Number	Sample Identification	Sample Date	Result	Units	Laboratory Qualifier	Validation Qualifier
Pesticides - 8081	Gamma-BHC (lindane)	K1579	J18KD5	4/1/2009	6.17E-03	mg/Kg	U	R
Pesticides - 8081	Gamma-BHC (lindane)	K1579	J18KD6	4/1/2009	6.53E-03	mg/Kg	U	R
Pesticides - 8081	Gamma-BHC (lindane)	K1579	J18KD7	4/1/2009	5.00E-03	mg/Kg	U	R
Pesticides - 8081	Gamma-BHC (lindane)	K1714	J192D6	8/4/2009	7.93E-03	mg/Kg	U	R
Pesticides - 8081	Gamma-BHC (lindane)	K1714	J192F6	8/4/2009	8.84E-03	mg/Kg	U	R
Pesticides - 8081	Gamma-BHC (lindane)	K1714	J192Y8	8/5/2009	9.42E-03	mg/Kg	U	R
Pesticides - 8081	Gamma-BHC (lindane)	K1714	J192Y9	8/5/2009	6.17E-03	mg/Kg	U	R
Pesticides - 8081	Gamma-BHC (lindane)	K1714	J19308	8/5/2009	7.04E-03	mg/Kg	U	R
Pesticides - 8081	Gamma-BHC (lindane)	K1714	J19309	8/5/2009	9.17E-03	mg/Kg	U	R
Pesticides - 8081	Gamma-BHC (lindane)	K1714	J19319	8/6/2009	9.34E-03	mg/Kg	U	R
Pesticides - 8081	Gamma-BHC (lindane)	K1714	J19320	8/6/2009	7.87E-03	mg/Kg	U	R
Pesticides - 8081	Gamma-BHC (lindane)	K1725	J193K6	8/6/2009	7.74E-03	mg/Kg	U	R
Pesticides - 8081	Gamma-BHC (lindane)	K1725	J193K7	8/6/2009	6.89E-03	mg/Kg	U	R
Pesticides - 8081	Gamma-BHC (lindane)	K1725	J193L6	8/10/2009	7.63E-03	mg/Kg	U	R
Pesticides - 8081	Gamma-BHC (lindane)	K1725	J193L7	8/10/2009	7.19E-03	mg/Kg	U	R
Pesticides - 8081	Gamma-BHC (lindane)	K1725	J193M8	8/11/2009	7.29E-03	mg/Kg	U	R
Pesticides - 8081	Gamma-BHC (lindane)	K1725	J193M9	8/11/2009	8.69E-03	mg/Kg	U	R
Pesticides - 8081	Gamma-BHC (lindane)	K1725	J19441	8/12/2009	6.84E-03	mg/Kg	U	R
Pesticides - 8081	Gamma-BHC (lindane)	K1758	J19047	9/1/2009	1.76E-02	mg/Kg	U	R
Pesticides - 8081	Gamma-BHC (lindane)	K1758	J19048	9/1/2009	1.75E-02	mg/Kg	U	R
Pesticides - 8081	Gamma-BHC (lindane)	K1758	J19049	9/1/2009	0.0178	mg/Kg	U	R
Pesticides - 8081	Gamma-BHC (lindane)	K1758	J19050	9/1/2009	0.0152	mg/Kg	U	R
Pesticides - 8081	Gamma-BHC (lindane)	K1758	J19051	9/1/2009	1.71E-02	mg/Kg	U	R
Pesticides - 8081	Gamma-BHC (lindane)	K1758	J190D0	9/1/2009	0.0161	mg/Kg	U	R
Pesticides - 8081	Gamma-BHC (lindane)	K1758	J190D1	9/1/2009	1.96E-02	mg/Kg	U	R
Pesticides - 8081	Gamma-BHC (lindane)	K1758	J190D2	9/1/2009	1.73E-02	mg/Kg	U	R
Pesticides - 8081	Gamma-BHC (lindane)	K1758	J190D3	9/1/2009	1.94E-02	mg/Kg	U	R
Pesticides - 8081	Gamma-BHC (lindane)	K1758	J190D4	9/1/2009	2.03E-02	mg/Kg	U	R
Pesticides - 8081	Gamma-BHC (lindane)	K1758	J190J5	9/1/2009	1.99E-02	mg/Kg	U	R
Pesticides - 8081	Gamma-BHC (lindane)	K1758	J190J6	9/1/2009	1.50E-02	mg/Kg	U	R
Pesticides - 8081	Gamma-BHC (lindane)	K1758	J190J7	9/1/2009	1.91E-02	mg/Kg	U	R
Pesticides - 8081	Gamma-BHC (lindane)	K1758	J190J8	9/1/2009	1.70E-02	mg/Kg	U	R
Pesticides - 8081	Gamma-BHC (lindane)	K1758	J190J9	9/1/2009	2.09E-02	mg/Kg	U	R
Pesticides - 8081	Gamma-BHC (lindane)	K1758	J190N1	9/1/2009	1.57E-02	mg/Kg	U	R
Pesticides - 8081	Gamma-BHC (lindane)	K1758	J190N2	9/1/2009	0.0161	mg/Kg	U	R
Pesticides - 8081	Gamma-BHC (lindane)	K1758	J190N3	9/1/2009	1.81E-02	mg/Kg	U	R
Pesticides - 8081	Gamma-BHC (lindane)	K1758	J190N4	9/1/2009	0.0178	mg/Kg	U	R
Pesticides - 8081	Gamma-BHC (lindane)	K1758	J190N5	9/1/2009	1.93E-02	mg/Kg	U	R
Pesticides - 8081	Gamma-BHC (lindane)	K1759	J19067	9/2/2009	0.0184	mg/Kg	U	R

Table 3-7. Summary of Rejected Fish Tissue Data by Method. (79 Pages)

Analytical Method	Analyte	SDG Number	Sample Identification	Sample Date	Result	Units	Laboratory Qualifier	Validation Qualifier
Pesticides - 8081	Gamma-BHC (lindane)	K1759	J19071	9/2/2009	1.99E-02	mg/Kg	U	R
Pesticides - 8081	Gamma-BHC (lindane)	K1759	J190D5	9/2/2009	0.0161	mg/Kg	U	R
Pesticides - 8081	Gamma-BHC (lindane)	K1759	J190D7	9/2/2009	0.0201	mg/Kg	U	R
Pesticides - 8081	Gamma-BHC (lindane)	K1759	J190D9	9/2/2009	0.0146	mg/Kg	U	R
Pesticides - 8081	Gamma-BHC (lindane)	K1759	J190H0	9/2/2009	1.50E-02	mg/Kg	U	R
Pesticides - 8081	Gamma-BHC (lindane)	K1759	J190H1	9/2/2009	2.09E-02	mg/Kg	U	R
Pesticides - 8081	Gamma-BHC (lindane)	K1759	J190H2	9/1/2009	0.0161	mg/Kg	U	R
Pesticides - 8081	Gamma-BHC (lindane)	K1759	J190H3	9/1/2009	0.0183	mg/Kg	U	R
Pesticides - 8081	Gamma-BHC (lindane)	K1759	J190H4	9/1/2009	2.28E-02	mg/Kg	U	R
Pesticides - 8081	Gamma-BHC (lindane)	K1759	J190K0	9/2/2009	1.71E-02	mg/Kg	U	R
Pesticides - 8081	Gamma-BHC (lindane)	K1759	J190K1	9/2/2009	0.0184	mg/Kg	U	R
Pesticides - 8081	Gamma-BHC (lindane)	K1759	J190K2	9/1/2009	1.99E-02	mg/Kg	U	R
Pesticides - 8081	Gamma-BHC (lindane)	K1759	J190K3	9/1/2009	0.0166	mg/Kg	U	R
Pesticides - 8081	Gamma-BHC (lindane)	K1759	J190K4	9/1/2009	1.91E-02	mg/Kg	U	R
Pesticides - 8081	Gamma-BHC (lindane)	K1761	J19470	9/3/2009	1.99E-02	mg/Kg	U	R
Pesticides - 8081	Gamma-BHC (lindane)	K1761	J19471	9/3/2009	1.88E-02	mg/Kg	U	R
Pesticides - 8081	Gamma-BHC (lindane)	K1761	J19480	9/3/2009	1.45E-02	mg/Kg	U	R
Pesticides - 8081	Gamma-BHC (lindane)	K1761	J19481	9/3/2009	0.0184	mg/Kg	U	R
Pesticides - 8081	Gamma-BHC (lindane)	K1761	J19490	9/8/2009	1.71E-02	mg/Kg	U	R
Pesticides - 8081	Gamma-BHC (lindane)	K1761	J19491	9/8/2009	1.45E-02	mg/Kg	U	R
Pesticides - 8081	Gamma-BHC (lindane)	K1761	J194B1	9/8/2009	0.0184	mg/Kg	U	R
Pesticides - 8081	Gamma-BHC (lindane)	K1761	J194B2	9/8/2009	1.33E-02	mg/Kg	U	R
Pesticides - 8081	Gamma-BHC (lindane)	K1761	J194C2	9/9/2009	0.0195	mg/Kg	U	R
Pesticides - 8081	Gamma-BHC (lindane)	K1761	J194C3	9/9/2009	1.93E-02	mg/Kg	U	R
Pesticides - 8081	Gamma-BHC (lindane)	K1769	J194Y7	9/10/2009	1.91E-02	mg/Kg	U	R
Pesticides - 8081	Gamma-BHC (lindane)	K1769	J194Y8	9/10/2009	2.03E-02	mg/Kg	U	R
Pesticides - 8081	Gamma-BHC (lindane)	K1769	J195P4	9/10/2009	0.0161	mg/Kg	U	R
Pesticides - 8081	Gamma-BHC (lindane)	K1769	J195P5	9/10/2009	1.59E-02	mg/Kg	U	R
Pesticides - 8081	Gamma-BHC (lindane)	K1769	J195R6	9/14/2009	0.0229	mg/Kg	U	R
Pesticides - 8081	Gamma-BHC (lindane)	K1769	J195R7	9/14/2009	0.0201	mg/Kg	U	R
Pesticides - 8081	Gamma-BHC (lindane)	K1769	J195X3	9/15/2009	2.16E-02	mg/Kg	U	R
Pesticides - 8081	Gamma-BHC (lindane)	K1769	J195X4	9/15/2009	1.92E-02	mg/Kg	U	R
Pesticides - 8081	Gamma-BHC (lindane)	K1769	J19604	9/15/2009	0.0195	mg/Kg	U	R
Pesticides - 8081	Gamma-BHC (lindane)	K1774	J19622	9/16/2009	0.0149	mg/Kg	U	R
Pesticides - 8081	Gamma-BHC (lindane)	K1774	J19623	9/16/2009	1.99E-02	mg/Kg	U	R
Pesticides - 8081	Gamma-BHC (lindane)	K1774	J19633	9/16/2009	0.0201	mg/Kg	U	R
Pesticides - 8081	Gamma-BHC (lindane)	K1774	J19634	9/16/2009	0.0161	mg/Kg	U	R
Pesticides - 8081	Gamma-BHC (lindane)	K1774	J19643	9/17/2009	0.0166	mg/Kg	U	R
Pesticides - 8081	Gamma-BHC (lindane)	K1774	J19644	9/17/2009	1.80E-02	mg/Kg	U	R

Table 3-7. Summary of Rejected Fish Tissue Data by Method. (79 Pages)

Analytical Method	Analyte	SDG Number	Sample Identification	Sample Date	Result	Units	Laboratory Qualifier	Validation Qualifier
Pesticides - 8081	Gamma-BHC (lindane)	K1774	J19653	9/17/2009	1.88E-02	mg/Kg	U	R
Pesticides - 8081	Gamma-BHC (lindane)	K1774	J19654	9/17/2009	2.05E-02	mg/Kg	U	R
Pesticides - 8081	Gamma-BHC (lindane)	K1785	J18XB1	9/24/2009	0.0184	mg/Kg	U	R
Pesticides - 8081	Gamma-BHC (lindane)	K1785	J18XB2	9/25/2009	1.93E-02	mg/Kg	U	R
Pesticides - 8081	Gamma-BHC (lindane)	K1785	J18XB3	9/25/2009	1.94E-02	mg/Kg	U	R
Pesticides - 8081	Gamma-BHC (lindane)	K1785	J18XB4	9/24/2009	1.81E-02	mg/Kg	U	R
Pesticides - 8081	Gamma-BHC (lindane)	K1785	J18XB5	9/24/2009	1.88E-02	mg/Kg	U	R
Pesticides - 8081	Gamma-BHC (lindane)	K1785	J18XF6	9/24/2009	1.81E-02	mg/Kg	U	R
Pesticides - 8081	Gamma-BHC (lindane)	K1785	J18XF7	9/24/2009	1.70E-02	mg/Kg	U	R
Pesticides - 8081	Gamma-BHC (lindane)	K1785	J18XF8	9/24/2009	1.31E-02	mg/Kg	U	R
Pesticides - 8081	Gamma-BHC (lindane)	K1785	J18XF9	9/25/2009	0.0178	mg/Kg	U	R
Pesticides - 8081	Gamma-BHC (lindane)	K1785	J18XH0	9/25/2009	0.0126	mg/Kg	U	R
Pesticides - 8081	Gamma-BHC (lindane)	K1785	J195V7	9/21/2009	0.019	mg/Kg	U	R
Pesticides - 8081	Gamma-BHC (lindane)	K1785	J195V8	9/21/2009	0.0189	mg/Kg	U	R
Pesticides - 8081	Gamma-BHC (lindane)	K1785	J195V9	9/21/2009	0.016	mg/Kg	U	R
Pesticides - 8081	Gamma-BHC (lindane)	K1785	J195W0	9/24/2009	0.016	mg/Kg	U	R
Pesticides - 8081	Gamma-BHC (lindane)	K1785	J19661	9/24/2009	1.91E-02	mg/Kg	U	R
Pesticides - 8081	Gamma-BHC (lindane)	K1785	J19662	9/24/2009	0.0184	mg/Kg	U	R
Pesticides - 8081	Gamma-BHC (lindane)	K1785	J19747	9/24/2009	2.05E-02	mg/Kg	U	R
Pesticides - 8081	Gamma-BHC (lindane)	K1852	J191V0	12/7/2009	1.02E-02	mg/Kg	U	R
Pesticides - 8081	Gamma-BHC (lindane)	K1852	J191V1	12/7/2009	0.0184	mg/Kg	U	R
Pesticides - 8081	Gamma-BHC (lindane)	K1852	J191V2	12/7/2009	1.86E-02	mg/Kg	U	R
Pesticides - 8081	Gamma-BHC (lindane)	K1852	J191V3	12/7/2009	0.0132	mg/Kg	U	R
Pesticides - 8081	Gamma-BHC (lindane)	K1852	J191V4	12/7/2009	1.91E-02	mg/Kg	U	R
Pesticides - 8081	Gamma-BHC (lindane)	K1852	J191Y6	12/7/2009	1.45E-02	mg/Kg	U	R
Pesticides - 8081	Gamma-BHC (lindane)	K1852	J191Y7	12/7/2009	1.69E-02	mg/Kg	U	R
Pesticides - 8081	Gamma-BHC (lindane)	K1852	J191Y8	12/7/2009	1.31E-02	mg/Kg	U	R
Pesticides - 8081	Gamma-BHC (lindane)	K1852	J19251	12/8/2009	1.16E-02	mg/Kg	U	R
Pesticides - 8081	Gamma-BHC (lindane)	K1852	J19252	12/8/2009	0.0166	mg/Kg	U	R
Pesticides - 8081	Gamma-BHC (lindane)	K1852	J19256	12/8/2009	1.63E-02	mg/Kg	U	R
Pesticides - 8081	Gamma-BHC (lindane)	K1852	J19257	12/8/2009	0.0135	mg/Kg	U	R
Pesticides - 8081	Gamma-BHC (lindane)	K1852	J196B0	12/8/2009	1.74E-02	mg/Kg	U	R
Pesticides - 8081	Gamma-BHC (lindane)	K1852	J196B1	12/8/2009	1.76E-02	mg/Kg	U	R
Pesticides - 8081	Gamma-BHC (lindane)	K1852	J196B2	12/8/2009	0.0177	mg/Kg	U	R
Pesticides - 8081	Gamma-BHC (lindane)	K1852	J196B3	12/8/2009	0.0114	mg/Kg	U	R
Pesticides - 8081	Gamma-BHC (lindane)	K1852	J196B4	12/7/2009	1.76E-02	mg/Kg	U	R
Pesticides - 8081	Gamma-BHC (lindane)	K1852	J196B5	12/8/2009	0.0115	mg/Kg	U	R
Pesticides - 8081	Gamma-BHC (lindane)	K1852	J196B6	12/8/2009	1.94E-02	mg/Kg	U	R
Pesticides - 8081	Gamma-BHC (lindane)	K1852	J196B7	12/8/2009	1.91E-02	mg/Kg	U	R

Table 3-7. Summary of Rejected Fish Tissue Data by Method. (79 Pages)

Analytical Method	Analyte	SDG Number	Sample Identification	Sample Date	Result	Units	Laboratory Qualifier	Validation Qualifier
Pesticides - 8081	Gamma-BHC (lindane)	K1852	J196B8	12/8/2009	0.0184	mg/Kg	U	R
Pesticides - 8081	Gamma-BHC (lindane)	K1852	J196B9	12/7/2009	1.63E-02	mg/Kg	U	R
Pesticides - 8081	Gamma-BHC (lindane)	K1852	J196H0	12/8/2009	0.016	mg/Kg	U	R
Pesticides - 8081	Gamma-BHC (lindane)	K1852	J196H4	12/7/2009	0.0206	mg/Kg	U	R
Pesticides - 8081	Gamma-BHC (lindane)	K1852	J196H5	12/8/2009	0.0134	mg/Kg	U	R
Pesticides - 8081	Gamma-BHC (lindane)	K1852	J196H9	12/7/2009	1.22E-02	mg/Kg	U	R
Pesticides - 8081	Gamma-BHC (lindane)	K1852	J196W7	12/8/2009	0.0178	mg/Kg	U	R
Pesticides - 8081	Gamma-BHC (lindane)	K1852	J196W8	12/8/2009	1.58E-02	mg/Kg	U	R
Pesticides - 8081	Gamma-BHC (lindane)	K1852	J196W9	12/8/2009	0.0178	mg/Kg	U	R
Pesticides - 8081	Gamma-BHC (lindane)	K1852	J196X0	12/7/2009	1.58E-02	mg/Kg	U	R
Pesticides - 8081	Gamma-BHC (lindane)	K1852	J196X1	12/7/2009	1.70E-02	mg/Kg	U	R
Pesticides - 8081	Gamma-BHC (lindane)	K1852	J196X2	12/8/2009	0.0178	mg/Kg	U	R
Pesticides - 8081	Gamma-BHC (lindane)	K1852	J196X3	12/8/2009	1.36E-02	mg/Kg	U	R
Pesticides - 8081	Gamma-BHC (lindane)	K1852	J196X4	12/8/2009	0.0178	mg/Kg	U	R
Pesticides - 8081	Gamma-BHC (lindane)	K1852	J196X5	12/7/2009	1.57E-02	mg/Kg	U	R
Pesticides - 8081	Gamma-BHC (lindane)	K1852	J196X6	12/7/2009	1.39E-02	mg/Kg	U	R
Pesticides - 8081	Gamma-BHC (lindane)	K1863	J190V0	12/15/2009	1.36E-02	mg/Kg	U	R
Pesticides - 8081	Gamma-BHC (lindane)	K1863	J190V1	12/15/2009	0.0126	mg/Kg	U	R
Pesticides - 8081	Gamma-BHC (lindane)	K1863	J191N4	12/15/2009	1.68E-02	mg/Kg	U	R
Pesticides - 8081	Gamma-BHC (lindane)	K1863	J191N5	12/15/2009	1.56E-02	mg/Kg	U	R
Pesticides - 8081	Gamma-BHC (lindane)	K1863	J191N6	12/15/2009	0.014	mg/Kg	U	R
Pesticides - 8081	Gamma-BHC (lindane)	K1863	J191N7	12/15/2009	1.04E-02	mg/Kg	U	R
Pesticides - 8081	Gamma-BHC (lindane)	K1863	J191N8	12/15/2009	0.0146	mg/Kg	U	R
Pesticides - 8081	Gamma-BHC (lindane)	K1863	J191Y5	12/15/2009	1.25E-02	mg/Kg	U	R
Pesticides - 8081	Gamma-BHC (lindane)	K1863	J191Y9	12/15/2009	1.92E-02	mg/Kg	U	R
Pesticides - 8081	Gamma-BHC (lindane)	K1863	J19253	12/15/2009	0.012	mg/Kg	U	R
Pesticides - 8081	Gamma-BHC (lindane)	K1863	J19258	12/15/2009	1.22E-02	mg/Kg	U	R
Pesticides - 8081	Gamma-BHC (lindane)	K1863	J196H1	12/15/2009	1.53E-02	mg/Kg	U	R
Pesticides - 8081	Gamma-BHC (lindane)	K1863	J196H6	12/15/2009	1.38E-02	mg/Kg	U	R
Pesticides - 8081	Gamma-BHC (lindane)	K1919	J19254	1/21/2010	0.014	mg/Kg	U	R
Pesticides - 8081	Gamma-BHC (lindane)	K1919	J19259	1/21/2010	0.0146	mg/Kg	U	R
Pesticides - 8081	gamma-Chlordane	K1579	J18J59	4/1/2009	8.06E-03	mg/Kg	U	R
Pesticides - 8081	gamma-Chlordane	K1579	J18J60	4/1/2009	9.61E-03	mg/Kg	U	R
Pesticides - 8081	gamma-Chlordane	K1579	J18J61	4/1/2009	8.69E-03	mg/Kg	U	R
Pesticides - 8081	gamma-Chlordane	K1579	J18J62	4/1/2009	0.00826	mg/Kg	U	R
Pesticides - 8081	gamma-Chlordane	K1579	J18J63	4/1/2009	8.69E-03	mg/Kg	U	R
Pesticides - 8081	gamma-Chlordane	K1579	J18K11	4/1/2009	8.32E-03	mg/Kg	U	R
Pesticides - 8081	gamma-Chlordane	K1579	J18K12	4/1/2009	8.69E-03	mg/Kg	U	R
Pesticides - 8081	gamma-Chlordane	K1579	J18K13	4/1/2009	7.57E-03	mg/Kg	U	R

Table 3-7. Summary of Rejected Fish Tissue Data by Method. (79 Pages)

Analytical Method	Analyte	SDG Number	Sample Identification	Sample Date	Result	Units	Laboratory Qualifier	Validation Qualifier
Pesticides - 8081	gamma-Chlordane	K1579	J18K14	4/1/2009	6.66E-03	mg/Kg	U	R
Pesticides - 8081	gamma-Chlordane	K1579	J18K15	4/1/2009	8.06E-03	mg/Kg	U	R
Pesticides - 8081	gamma-Chlordane	K1579	J18K52	4/1/2009	6.89E-03	mg/Kg	U	R
Pesticides - 8081	gamma-Chlordane	K1579	J18K53	4/1/2009	0.00662	mg/Kg	U	R
Pesticides - 8081	gamma-Chlordane	K1579	J18K54	4/1/2009	5.98E-03	mg/Kg	U	R
Pesticides - 8081	gamma-Chlordane	K1579	J18K55	4/1/2009	6.36E-03	mg/Kg	U	R
Pesticides - 8081	gamma-Chlordane	K1579	J18K56	4/1/2009	7.68E-03	mg/Kg	U	R
Pesticides - 8081	gamma-Chlordane	K1579	J18KD3	4/1/2009	7.09E-03	mg/Kg	U	R
Pesticides - 8081	gamma-Chlordane	K1579	J18KD4	4/1/2009	7.04E-03	mg/Kg	U	R
Pesticides - 8081	gamma-Chlordane	K1579	J18KD5	4/1/2009	6.17E-03	mg/Kg	U	R
Pesticides - 8081	gamma-Chlordane	K1579	J18KD6	4/1/2009	6.53E-03	mg/Kg	U	R
Pesticides - 8081	gamma-Chlordane	K1579	J18KD7	4/1/2009	5.00E-03	mg/Kg	U	R
Pesticides - 8081	gamma-Chlordane	K1714	J192D5	8/4/2009	8.92E-03	mg/Kg	U	R
Pesticides - 8081	gamma-Chlordane	K1714	J192D6	8/4/2009	7.93E-03	mg/Kg	U	R
Pesticides - 8081	gamma-Chlordane	K1714	J192F6	8/4/2009	8.84E-03	mg/Kg	U	R
Pesticides - 8081	gamma-Chlordane	K1714	J192Y8	8/5/2009	9.42E-03	mg/Kg	U	R
Pesticides - 8081	gamma-Chlordane	K1714	J192Y9	8/5/2009	6.17E-03	mg/Kg	U	R
Pesticides - 8081	gamma-Chlordane	K1714	J19308	8/5/2009	7.04E-03	mg/Kg	U	R
Pesticides - 8081	gamma-Chlordane	K1714	J19309	8/5/2009	9.17E-03	mg/Kg	U	R
Pesticides - 8081	gamma-Chlordane	K1714	J19319	8/6/2009	9.34E-03	mg/Kg	U	R
Pesticides - 8081	gamma-Chlordane	K1714	J19320	8/6/2009	7.87E-03	mg/Kg	U	R
Pesticides - 8081	gamma-Chlordane	K1725	J193K6	8/6/2009	7.74E-03	mg/Kg	U	R
Pesticides - 8081	gamma-Chlordane	K1725	J193K7	8/6/2009	6.89E-03	mg/Kg	U	R
Pesticides - 8081	gamma-Chlordane	K1725	J193L6	8/10/2009	7.63E-03	mg/Kg	U	R
Pesticides - 8081	gamma-Chlordane	K1725	J193L7	8/10/2009	7.19E-03	mg/Kg	U	R
Pesticides - 8081	gamma-Chlordane	K1725	J193M8	8/11/2009	7.29E-03	mg/Kg	U	R
Pesticides - 8081	gamma-Chlordane	K1725	J193M9	8/11/2009	8.69E-03	mg/Kg	U	R
Pesticides - 8081	gamma-Chlordane	K1725	J19441	8/12/2009	6.84E-03	mg/Kg	U	R
Pesticides - 8081	gamma-Chlordane	K1758	J19047	9/1/2009	1.76E-02	mg/Kg	U	R
Pesticides - 8081	gamma-Chlordane	K1758	J19048	9/1/2009	1.75E-02	mg/Kg	U	R
Pesticides - 8081	gamma-Chlordane	K1758	J19049	9/1/2009	0.0178	mg/Kg	U	R
Pesticides - 8081	gamma-Chlordane	K1758	J19050	9/1/2009	0.0152	mg/Kg	U	R
Pesticides - 8081	gamma-Chlordane	K1758	J19051	9/1/2009	1.71E-02	mg/Kg	U	R
Pesticides - 8081	gamma-Chlordane	K1758	J190D0	9/1/2009	0.0161	mg/Kg	U	R
Pesticides - 8081	gamma-Chlordane	K1758	J190D1	9/1/2009	1.96E-02	mg/Kg	U	R
Pesticides - 8081	gamma-Chlordane	K1758	J190D2	9/1/2009	1.73E-02	mg/Kg	U	R
Pesticides - 8081	gamma-Chlordane	K1758	J190D3	9/1/2009	1.94E-02	mg/Kg	U	R
Pesticides - 8081	gamma-Chlordane	K1758	J190D4	9/1/2009	2.03E-02	mg/Kg	U	R
Pesticides - 8081	gamma-Chlordane	K1758	J190J5	9/1/2009	1.99E-02	mg/Kg	U	R

Table 3-7. Summary of Rejected Fish Tissue Data by Method. (79 Pages)

Analytical Method	Analyte	SDG Number	Sample Identification	Sample Date	Result	Units	Laboratory Qualifier	Validation Qualifier
Pesticides - 8081	gamma-Chlordane	K1758	J190J6	9/1/2009	1.50E-02	mg/Kg	U	R
Pesticides - 8081	gamma-Chlordane	K1758	J190J7	9/1/2009	1.91E-02	mg/Kg	U	R
Pesticides - 8081	gamma-Chlordane	K1758	J190J8	9/1/2009	1.70E-02	mg/Kg	U	R
Pesticides - 8081	gamma-Chlordane	K1758	J190J9	9/1/2009	2.09E-02	mg/Kg	U	R
Pesticides - 8081	gamma-Chlordane	K1758	J190N1	9/1/2009	1.57E-02	mg/Kg	U	R
Pesticides - 8081	gamma-Chlordane	K1758	J190N2	9/1/2009	0.0161	mg/Kg	U	R
Pesticides - 8081	gamma-Chlordane	K1758	J190N3	9/1/2009	1.81E-02	mg/Kg	U	R
Pesticides - 8081	gamma-Chlordane	K1758	J190N4	9/1/2009	0.0178	mg/Kg	U	R
Pesticides - 8081	gamma-Chlordane	K1758	J190N5	9/1/2009	1.93E-02	mg/Kg	U	R
Pesticides - 8081	gamma-Chlordane	K1759	J19067	9/2/2009	0.0184	mg/Kg	U	R
Pesticides - 8081	gamma-Chlordane	K1759	J19069	9/2/2009	1.99E-02	mg/Kg	U	R
Pesticides - 8081	gamma-Chlordane	K1759	J19071	9/2/2009	1.99E-02	mg/Kg	U	R
Pesticides - 8081	gamma-Chlordane	K1759	J190D5	9/2/2009	0.0161	mg/Kg	U	R
Pesticides - 8081	gamma-Chlordane	K1759	J190D7	9/2/2009	0.0201	mg/Kg	U	R
Pesticides - 8081	gamma-Chlordane	K1759	J190D9	9/2/2009	0.0146	mg/Kg	U	R
Pesticides - 8081	gamma-Chlordane	K1759	J190H0	9/2/2009	1.50E-02	mg/Kg	U	R
Pesticides - 8081	gamma-Chlordane	K1759	J190H1	9/2/2009	2.09E-02	mg/Kg	U	R
Pesticides - 8081	gamma-Chlordane	K1759	J190H2	9/1/2009	0.0161	mg/Kg	U	R
Pesticides - 8081	gamma-Chlordane	K1759	J190H3	9/1/2009	0.0183	mg/Kg	U	R
Pesticides - 8081	gamma-Chlordane	K1759	J190H4	9/1/2009	2.28E-02	mg/Kg	U	R
Pesticides - 8081	gamma-Chlordane	K1759	J190K0	9/2/2009	1.71E-02	mg/Kg	U	R
Pesticides - 8081	gamma-Chlordane	K1759	J190K1	9/2/2009	0.0184	mg/Kg	U	R
Pesticides - 8081	gamma-Chlordane	K1759	J190K2	9/1/2009	1.99E-02	mg/Kg	U	R
Pesticides - 8081	gamma-Chlordane	K1759	J190K3	9/1/2009	0.0166	mg/Kg	U	R
Pesticides - 8081	gamma-Chlordane	K1759	J190K4	9/1/2009	1.91E-02	mg/Kg	U	R
Pesticides - 8081	gamma-Chlordane	K1761	J19470	9/3/2009	1.99E-02	mg/Kg	U	R
Pesticides - 8081	gamma-Chlordane	K1761	J19471	9/3/2009	1.88E-02	mg/Kg	U	R
Pesticides - 8081	gamma-Chlordane	K1761	J19480	9/3/2009	1.45E-02	mg/Kg	U	R
Pesticides - 8081	gamma-Chlordane	K1761	J19481	9/3/2009	0.0184	mg/Kg	U	R
Pesticides - 8081	gamma-Chlordane	K1761	J19490	9/8/2009	1.71E-02	mg/Kg	U	R
Pesticides - 8081	gamma-Chlordane	K1761	J19491	9/8/2009	1.45E-02	mg/Kg	U	R
Pesticides - 8081	gamma-Chlordane	K1761	J194B1	9/8/2009	0.0184	mg/Kg	U	R
Pesticides - 8081	gamma-Chlordane	K1761	J194B2	9/8/2009	1.33E-02	mg/Kg	U	R
Pesticides - 8081	gamma-Chlordane	K1761	J194C2	9/9/2009	0.0195	mg/Kg	U	R
Pesticides - 8081	gamma-Chlordane	K1761	J194C3	9/9/2009	1.93E-02	mg/Kg	U	R
Pesticides - 8081	gamma-Chlordane	K1769	J194Y7	9/10/2009	1.91E-02	mg/Kg	U	R
Pesticides - 8081	gamma-Chlordane	K1769	J194Y8	9/10/2009	2.03E-02	mg/Kg	U	R
Pesticides - 8081	gamma-Chlordane	K1769	J195P4	9/10/2009	0.0161	mg/Kg	U	R
Pesticides - 8081	gamma-Chlordane	K1769	J195P5	9/10/2009	1.59E-02	mg/Kg	U	R

Table 3-7. Summary of Rejected Fish Tissue Data by Method. (79 Pages)

Analytical Method	Analyte	SDG Number	Sample Identification	Sample Date	Result	Units	Laboratory Qualifier	Validation Qualifier
Pesticides - 8081	gamma-Chlordane	K1769	J195R6	9/14/2009	0.0229	mg/Kg	U	R
Pesticides - 8081	gamma-Chlordane	K1769	J195R7	9/14/2009	0.0201	mg/Kg	U	R
Pesticides - 8081	gamma-Chlordane	K1769	J195X3	9/15/2009	2.16E-02	mg/Kg	U	R
Pesticides - 8081	gamma-Chlordane	K1769	J195X4	9/15/2009	1.92E-02	mg/Kg	U	R
Pesticides - 8081	gamma-Chlordane	K1769	J19604	9/15/2009	0.0195	mg/Kg	U	R
Pesticides - 8081	gamma-Chlordane	K1774	J19622	9/16/2009	0.0149	mg/Kg	U	R
Pesticides - 8081	gamma-Chlordane	K1774	J19623	9/16/2009	1.99E-02	mg/Kg	U	R
Pesticides - 8081	gamma-Chlordane	K1774	J19633	9/16/2009	0.0201	mg/Kg	U	R
Pesticides - 8081	gamma-Chlordane	K1774	J19634	9/16/2009	0.0161	mg/Kg	U	R
Pesticides - 8081	gamma-Chlordane	K1774	J19643	9/17/2009	0.0166	mg/Kg	U	R
Pesticides - 8081	gamma-Chlordane	K1774	J19644	9/17/2009	1.80E-02	mg/Kg	U	R
Pesticides - 8081	gamma-Chlordane	K1774	J19653	9/17/2009	1.88E-02	mg/Kg	U	R
Pesticides - 8081	gamma-Chlordane	K1774	J19654	9/17/2009	2.05E-02	mg/Kg	U	R
Pesticides - 8081	gamma-Chlordane	K1785	J18XB1	9/24/2009	0.0184	mg/Kg	U	R
Pesticides - 8081	gamma-Chlordane	K1785	J18XB2	9/25/2009	1.93E-02	mg/Kg	U	R
Pesticides - 8081	gamma-Chlordane	K1785	J18XB3	9/25/2009	1.94E-02	mg/Kg	U	R
Pesticides - 8081	gamma-Chlordane	K1785	J18XB4	9/24/2009	1.81E-02	mg/Kg	U	R
Pesticides - 8081	gamma-Chlordane	K1785	J18XB5	9/24/2009	1.88E-02	mg/Kg	U	R
Pesticides - 8081	gamma-Chlordane	K1785	J18XF6	9/24/2009	1.81E-02	mg/Kg	U	R
Pesticides - 8081	gamma-Chlordane	K1785	J18XF7	9/24/2009	1.70E-02	mg/Kg	U	R
Pesticides - 8081	gamma-Chlordane	K1785	J18XF8	9/24/2009	1.31E-02	mg/Kg	U	R
Pesticides - 8081	gamma-Chlordane	K1785	J18XF9	9/25/2009	0.0178	mg/Kg	U	R
Pesticides - 8081	gamma-Chlordane	K1785	J18XH0	9/25/2009	0.0126	mg/Kg	U	R
Pesticides - 8081	gamma-Chlordane	K1785	J195V7	9/21/2009	0.019	mg/Kg	U	R
Pesticides - 8081	gamma-Chlordane	K1785	J195V8	9/21/2009	0.0189	mg/Kg	U	R
Pesticides - 8081	gamma-Chlordane	K1785	J195V9	9/21/2009	0.016	mg/Kg	U	R
Pesticides - 8081	gamma-Chlordane	K1785	J195W0	9/24/2009	0.016	mg/Kg	U	R
Pesticides - 8081	gamma-Chlordane	K1785	J19661	9/24/2009	1.91E-02	mg/Kg	U	R
Pesticides - 8081	gamma-Chlordane	K1785	J19662	9/24/2009	0.0184	mg/Kg	U	R
Pesticides - 8081	gamma-Chlordane	K1785	J19747	9/24/2009	2.05E-02	mg/Kg	U	R
Pesticides - 8081	gamma-Chlordane	K1852	J191V0	12/7/2009	1.02E-02	mg/Kg	U	R
Pesticides - 8081	gamma-Chlordane	K1852	J191V1	12/7/2009	0.0184	mg/Kg	U	R
Pesticides - 8081	gamma-Chlordane	K1852	J191V2	12/7/2009	1.86E-02	mg/Kg	U	R
Pesticides - 8081	gamma-Chlordane	K1852	J191V3	12/7/2009	0.0132	mg/Kg	U	R
Pesticides - 8081	gamma-Chlordane	K1852	J191V4	12/7/2009	1.91E-02	mg/Kg	U	R
Pesticides - 8081	gamma-Chlordane	K1852	J191Y6	12/7/2009	1.45E-02	mg/Kg	U	R
Pesticides - 8081	gamma-Chlordane	K1852	J191Y7	12/7/2009	1.69E-02	mg/Kg	U	R
Pesticides - 8081	gamma-Chlordane	K1852	J191Y8	12/7/2009	1.31E-02	mg/Kg	U	R
Pesticides - 8081	gamma-Chlordane	K1852	J19251	12/8/2009	1.16E-02	mg/Kg	U	R

Table 3-7. Summary of Rejected Fish Tissue Data by Method. (79 Pages)

Analytical Method	Analyte	SDG Number	Sample Identification	Sample Date	Result	Units	Laboratory Qualifier	Validation Qualifier
Pesticides - 8081	gamma-Chlordane	K1852	J19252	12/8/2009	0.0166	mg/Kg	U	R
Pesticides - 8081	gamma-Chlordane	K1852	J19256	12/8/2009	1.63E-02	mg/Kg	U	R
Pesticides - 8081	gamma-Chlordane	K1852	J19257	12/8/2009	0.0135	mg/Kg	U	R
Pesticides - 8081	gamma-Chlordane	K1852	J196B0	12/8/2009	1.74E-02	mg/Kg	U	R
Pesticides - 8081	gamma-Chlordane	K1852	J196B1	12/8/2009	1.76E-02	mg/Kg	U	R
Pesticides - 8081	gamma-Chlordane	K1852	J196B2	12/8/2009	0.0177	mg/Kg	U	R
Pesticides - 8081	gamma-Chlordane	K1852	J196B3	12/8/2009	0.0114	mg/Kg	U	R
Pesticides - 8081	gamma-Chlordane	K1852	J196B4	12/7/2009	1.76E-02	mg/Kg	U	R
Pesticides - 8081	gamma-Chlordane	K1852	J196B5	12/8/2009	0.0115	mg/Kg	U	R
Pesticides - 8081	gamma-Chlordane	K1852	J196B6	12/8/2009	1.94E-02	mg/Kg	U	R
Pesticides - 8081	gamma-Chlordane	K1852	J196B7	12/8/2009	1.91E-02	mg/Kg	U	R
Pesticides - 8081	gamma-Chlordane	K1852	J196B8	12/8/2009	0.0184	mg/Kg	U	R
Pesticides - 8081	gamma-Chlordane	K1852	J196B9	12/7/2009	1.63E-02	mg/Kg	U	R
Pesticides - 8081	gamma-Chlordane	K1852	J196H0	12/8/2009	0.016	mg/Kg	U	R
Pesticides - 8081	gamma-Chlordane	K1852	J196H4	12/7/2009	0.0206	mg/Kg	U	R
Pesticides - 8081	gamma-Chlordane	K1852	J196H5	12/8/2009	0.0134	mg/Kg	U	R
Pesticides - 8081	gamma-Chlordane	K1852	J196H9	12/7/2009	1.22E-02	mg/Kg	U	R
Pesticides - 8081	gamma-Chlordane	K1852	J196W7	12/8/2009	0.0178	mg/Kg	U	R
Pesticides - 8081	gamma-Chlordane	K1852	J196W8	12/8/2009	1.58E-02	mg/Kg	U	R
Pesticides - 8081	gamma-Chlordane	K1852	J196W9	12/8/2009	0.0178	mg/Kg	U	R
Pesticides - 8081	gamma-Chlordane	K1852	J196X0	12/7/2009	1.58E-02	mg/Kg	U	R
Pesticides - 8081	gamma-Chlordane	K1852	J196X1	12/7/2009	1.70E-02	mg/Kg	U	R
Pesticides - 8081	gamma-Chlordane	K1852	J196X2	12/8/2009	0.0178	mg/Kg	U	R
Pesticides - 8081	gamma-Chlordane	K1852	J196X3	12/8/2009	1.36E-02	mg/Kg	U	R
Pesticides - 8081	gamma-Chlordane	K1852	J196X4	12/8/2009	0.0178	mg/Kg	U	R
Pesticides - 8081	gamma-Chlordane	K1852	J196X5	12/7/2009	1.57E-02	mg/Kg	U	R
Pesticides - 8081	gamma-Chlordane	K1852	J196X6	12/7/2009	1.39E-02	mg/Kg	U	R
Pesticides - 8081	gamma-Chlordane	K1863	J190V0	12/15/2009	1.36E-02	mg/Kg	U	R
Pesticides - 8081	gamma-Chlordane	K1863	J190V1	12/15/2009	0.0126	mg/Kg	U	R
Pesticides - 8081	gamma-Chlordane	K1863	J191N4	12/15/2009	1.68E-02	mg/Kg	U	R
Pesticides - 8081	gamma-Chlordane	K1863	J191N5	12/15/2009	1.56E-02	mg/Kg	U	R
Pesticides - 8081	gamma-Chlordane	K1863	J191N6	12/15/2009	0.014	mg/Kg	U	R
Pesticides - 8081	gamma-Chlordane	K1863	J191N7	12/15/2009	1.04E-02	mg/Kg	U	R
Pesticides - 8081	gamma-Chlordane	K1863	J191N8	12/15/2009	0.0146	mg/Kg	U	R
Pesticides - 8081	gamma-Chlordane	K1863	J191Y5	12/15/2009	1.25E-02	mg/Kg	U	R
Pesticides - 8081	gamma-Chlordane	K1863	J191Y9	12/15/2009	1.92E-02	mg/Kg	U	R
Pesticides - 8081	gamma-Chlordane	K1863	J19253	12/15/2009	0.012	mg/Kg	U	R
Pesticides - 8081	gamma-Chlordane	K1863	J19258	12/15/2009	1.22E-02	mg/Kg	U	R
Pesticides - 8081	gamma-Chlordane	K1863	J196H1	12/15/2009	1.53E-02	mg/Kg	U	R

Table 3-7. Summary of Rejected Fish Tissue Data by Method. (79 Pages)

Analytical Method	Analyte	SDG Number	Sample Identification	Sample Date	Result	Units	Laboratory Qualifier	Validation Qualifier
Pesticides - 8081	gamma-Chlordane	K1863	J196H6	12/15/2009	1.38E-02	mg/Kg	U	R
Pesticides - 8081	gamma-Chlordane	K1919	J19254	1/21/2010	0.014	mg/Kg	U	R
Pesticides - 8081	gamma-Chlordane	K1919	J19259	1/21/2010	0.0146	mg/Kg	U	R
Pesticides - 8081	Heptachlor	K1579	J18J59	4/1/2009	8.06E-03	mg/Kg	U	R
Pesticides - 8081	Heptachlor	K1579	J18J60	4/1/2009	9.61E-03	mg/Kg	U	R
Pesticides - 8081	Heptachlor	K1579	J18J61	4/1/2009	8.69E-03	mg/Kg	U	R
Pesticides - 8081	Heptachlor	K1579	J18J62	4/1/2009	0.00826	mg/Kg	U	R
Pesticides - 8081	Heptachlor	K1579	J18J63	4/1/2009	8.69E-03	mg/Kg	U	R
Pesticides - 8081	Heptachlor	K1579	J18K11	4/1/2009	8.32E-03	mg/Kg	U	R
Pesticides - 8081	Heptachlor	K1579	J18K12	4/1/2009	8.69E-03	mg/Kg	U	R
Pesticides - 8081	Heptachlor	K1579	J18K13	4/1/2009	7.57E-03	mg/Kg	U	R
Pesticides - 8081	Heptachlor	K1579	J18K14	4/1/2009	6.66E-03	mg/Kg	U	R
Pesticides - 8081	Heptachlor	K1579	J18K15	4/1/2009	8.06E-03	mg/Kg	U	R
Pesticides - 8081	Heptachlor	K1579	J18K52	4/1/2009	6.89E-03	mg/Kg	U	R
Pesticides - 8081	Heptachlor	K1579	J18K53	4/1/2009	0.00662	mg/Kg	U	R
Pesticides - 8081	Heptachlor	K1579	J18K54	4/1/2009	5.98E-03	mg/Kg	U	R
Pesticides - 8081	Heptachlor	K1579	J18K55	4/1/2009	6.36E-03	mg/Kg	U	R
Pesticides - 8081	Heptachlor	K1579	J18K56	4/1/2009	7.68E-03	mg/Kg	U	R
Pesticides - 8081	Heptachlor	K1579	J18KD3	4/1/2009	7.09E-03	mg/Kg	U	R
Pesticides - 8081	Heptachlor	K1579	J18KD4	4/1/2009	7.04E-03	mg/Kg	U	R
Pesticides - 8081	Heptachlor	K1579	J18KD5	4/1/2009	6.17E-03	mg/Kg	U	R
Pesticides - 8081	Heptachlor	K1579	J18KD6	4/1/2009	6.53E-03	mg/Kg	U	R
Pesticides - 8081	Heptachlor	K1579	J18KD7	4/1/2009	5.00E-03	mg/Kg	U	R
Pesticides - 8081	Heptachlor	K1714	J192D5	8/4/2009	8.92E-03	mg/Kg	U	R
Pesticides - 8081	Heptachlor	K1714	J192D6	8/4/2009	7.93E-03	mg/Kg	U	R
Pesticides - 8081	Heptachlor	K1714	J192F6	8/4/2009	8.84E-03	mg/Kg	U	R
Pesticides - 8081	Heptachlor	K1714	J192F7	8/4/2009	5.18E-03	mg/Kg	U	R
Pesticides - 8081	Heptachlor	K1714	J192Y8	8/5/2009	9.42E-03	mg/Kg	U	R
Pesticides - 8081	Heptachlor	K1714	J192Y9	8/5/2009	6.17E-03	mg/Kg	U	R
Pesticides - 8081	Heptachlor	K1714	J19309	8/5/2009	9.17E-03	mg/Kg	U	R
Pesticides - 8081	Heptachlor	K1714	J19319	8/6/2009	9.34E-03	mg/Kg	U	R
Pesticides - 8081	Heptachlor	K1714	J19320	8/6/2009	7.87E-03	mg/Kg	U	R
Pesticides - 8081	Heptachlor	K1725	J193K6	8/6/2009	7.74E-03	mg/Kg	U	R
Pesticides - 8081	Heptachlor	K1725	J193K7	8/6/2009	6.89E-03	mg/Kg	U	R
Pesticides - 8081	Heptachlor	K1725	J193L6	8/10/2009	7.63E-03	mg/Kg	U	R
Pesticides - 8081	Heptachlor	K1725	J193L7	8/10/2009	7.19E-03	mg/Kg	U	R
Pesticides - 8081	Heptachlor	K1725	J193M8	8/11/2009	7.29E-03	mg/Kg	U	R
Pesticides - 8081	Heptachlor	K1725	J193M9	8/11/2009	8.69E-03	mg/Kg	U	R
Pesticides - 8081	Heptachlor	K1725	J19441	8/12/2009	6.84E-03	mg/Kg	U	R

Table 3-7. Summary of Rejected Fish Tissue Data by Method. (79 Pages)

Analytical Method	Analyte	SDG Number	Sample Identification	Sample Date	Result	Units	Laboratory Qualifier	Validation Qualifier
Pesticides - 8081	Heptachlor	K1758	J19047	9/1/2009	1.76E-02	mg/Kg	U	R
Pesticides - 8081	Heptachlor	K1758	J19048	9/1/2009	1.75E-02	mg/Kg	U	R
Pesticides - 8081	Heptachlor	K1758	J19050	9/1/2009	0.0152	mg/Kg	U	R
Pesticides - 8081	Heptachlor	K1758	J19051	9/1/2009	1.71E-02	mg/Kg	U	R
Pesticides - 8081	Heptachlor	K1758	J190D0	9/1/2009	0.0161	mg/Kg	U	R
Pesticides - 8081	Heptachlor	K1758	J190D1	9/1/2009	1.96E-02	mg/Kg	U	R
Pesticides - 8081	Heptachlor	K1758	J190D2	9/1/2009	1.73E-02	mg/Kg	U	R
Pesticides - 8081	Heptachlor	K1758	J190D3	9/1/2009	1.94E-02	mg/Kg	U	R
Pesticides - 8081	Heptachlor	K1758	J190D4	9/1/2009	2.03E-02	mg/Kg	U	R
Pesticides - 8081	Heptachlor	K1758	J190J5	9/1/2009	1.99E-02	mg/Kg	U	R
Pesticides - 8081	Heptachlor	K1758	J190J6	9/1/2009	1.50E-02	mg/Kg	U	R
Pesticides - 8081	Heptachlor	K1758	J190J7	9/1/2009	1.91E-02	mg/Kg	U	R
Pesticides - 8081	Heptachlor	K1758	J190J8	9/1/2009	1.70E-02	mg/Kg	U	R
Pesticides - 8081	Heptachlor	K1758	J190J9	9/1/2009	2.09E-02	mg/Kg	U	R
Pesticides - 8081	Heptachlor	K1758	J190N1	9/1/2009	1.57E-02	mg/Kg	U	R
Pesticides - 8081	Heptachlor	K1758	J190N2	9/1/2009	0.0161	mg/Kg	U	R
Pesticides - 8081	Heptachlor	K1758	J190N3	9/1/2009	1.81E-02	mg/Kg	U	R
Pesticides - 8081	Heptachlor	K1758	J190N4	9/1/2009	0.0178	mg/Kg	U	R
Pesticides - 8081	Heptachlor	K1758	J190N5	9/1/2009	1.93E-02	mg/Kg	U	R
Pesticides - 8081	Heptachlor	K1759	J19067	9/2/2009	0.0184	mg/Kg	U	R
Pesticides - 8081	Heptachlor	K1759	J19069	9/2/2009	1.99E-02	mg/Kg	U	R
Pesticides - 8081	Heptachlor	K1759	J19071	9/2/2009	1.99E-02	mg/Kg	U	R
Pesticides - 8081	Heptachlor	K1759	J190D5	9/2/2009	0.0161	mg/Kg	U	R
Pesticides - 8081	Heptachlor	K1759	J190D7	9/2/2009	0.0201	mg/Kg	U	R
Pesticides - 8081	Heptachlor	K1759	J190D9	9/2/2009	0.0146	mg/Kg	U	R
Pesticides - 8081	Heptachlor	K1759	J190H0	9/2/2009	1.50E-02	mg/Kg	U	R
Pesticides - 8081	Heptachlor	K1759	J190H1	9/2/2009	2.09E-02	mg/Kg	U	R
Pesticides - 8081	Heptachlor	K1759	J190H2	9/1/2009	0.0161	mg/Kg	U	R
Pesticides - 8081	Heptachlor	K1759	J190H3	9/1/2009	0.0183	mg/Kg	U	R
Pesticides - 8081	Heptachlor	K1759	J190H4	9/1/2009	2.28E-02	mg/Kg	U	R
Pesticides - 8081	Heptachlor	K1759	J190K0	9/2/2009	1.71E-02	mg/Kg	U	R
Pesticides - 8081	Heptachlor	K1759	J190K1	9/2/2009	0.0184	mg/Kg	U	R
Pesticides - 8081	Heptachlor	K1759	J190K2	9/1/2009	1.99E-02	mg/Kg	U	R
Pesticides - 8081	Heptachlor	K1759	J190K3	9/1/2009	0.0166	mg/Kg	U	R
Pesticides - 8081	Heptachlor	K1759	J190K4	9/1/2009	1.91E-02	mg/Kg	U	R
Pesticides - 8081	Heptachlor	K1761	J19470	9/3/2009	1.99E-02	mg/Kg	U	R
Pesticides - 8081	Heptachlor	K1761	J19471	9/3/2009	1.88E-02	mg/Kg	U	R
Pesticides - 8081	Heptachlor	K1761	J19480	9/3/2009	1.45E-02	mg/Kg	U	R
Pesticides - 8081	Heptachlor	K1761	J19481	9/3/2009	0.0184	mg/Kg	U	R

Table 3-7. Summary of Rejected Fish Tissue Data by Method. (79 Pages)

Analytical Method	Analyte	SDG Number	Sample Identification	Sample Date	Result	Units	Laboratory Qualifier	Validation Qualifier
Pesticides - 8081	Heptachlor	K1761	J19490	9/8/2009	1.71E-02	mg/Kg	U	R
Pesticides - 8081	Heptachlor	K1761	J19491	9/8/2009	1.45E-02	mg/Kg	U	R
Pesticides - 8081	Heptachlor	K1761	J194B1	9/8/2009	0.0184	mg/Kg	U	R
Pesticides - 8081	Heptachlor	K1761	J194B2	9/8/2009	1.33E-02	mg/Kg	U	R
Pesticides - 8081	Heptachlor	K1761	J194C2	9/9/2009	0.0195	mg/Kg	U	R
Pesticides - 8081	Heptachlor	K1761	J194C3	9/9/2009	1.93E-02	mg/Kg	U	R
Pesticides - 8081	Heptachlor	K1769	J194Y7	9/10/2009	1.91E-02	mg/Kg	U	R
Pesticides - 8081	Heptachlor	K1769	J194Y8	9/10/2009	2.03E-02	mg/Kg	U	R
Pesticides - 8081	Heptachlor	K1769	J195P4	9/10/2009	0.0161	mg/Kg	U	R
Pesticides - 8081	Heptachlor	K1769	J195P5	9/10/2009	1.59E-02	mg/Kg	U	R
Pesticides - 8081	Heptachlor	K1769	J195R6	9/14/2009	0.0229	mg/Kg	U	R
Pesticides - 8081	Heptachlor	K1769	J195R7	9/14/2009	0.0201	mg/Kg	U	R
Pesticides - 8081	Heptachlor	K1769	J195X3	9/15/2009	2.16E-02	mg/Kg	U	R
Pesticides - 8081	Heptachlor	K1769	J195X4	9/15/2009	1.92E-02	mg/Kg	U	R
Pesticides - 8081	Heptachlor	K1769	J19604	9/15/2009	0.0195	mg/Kg	U	R
Pesticides - 8081	Heptachlor	K1774	J19622	9/16/2009	0.0149	mg/Kg	U	R
Pesticides - 8081	Heptachlor	K1774	J19623	9/16/2009	1.99E-02	mg/Kg	U	R
Pesticides - 8081	Heptachlor	K1774	J19633	9/16/2009	0.0201	mg/Kg	U	R
Pesticides - 8081	Heptachlor	K1774	J19634	9/16/2009	0.0161	mg/Kg	U	R
Pesticides - 8081	Heptachlor	K1774	J19643	9/17/2009	0.0166	mg/Kg	U	R
Pesticides - 8081	Heptachlor	K1774	J19644	9/17/2009	1.80E-02	mg/Kg	U	R
Pesticides - 8081	Heptachlor	K1774	J19653	9/17/2009	1.88E-02	mg/Kg	U	R
Pesticides - 8081	Heptachlor	K1774	J19654	9/17/2009	2.05E-02	mg/Kg	U	R
Pesticides - 8081	Heptachlor	K1785	J18XB1	9/24/2009	0.0184	mg/Kg	U	R
Pesticides - 8081	Heptachlor	K1785	J18XB2	9/25/2009	1.93E-02	mg/Kg	U	R
Pesticides - 8081	Heptachlor	K1785	J18XB3	9/25/2009	1.94E-02	mg/Kg	U	R
Pesticides - 8081	Heptachlor	K1785	J18XB5	9/24/2009	1.88E-02	mg/Kg	U	R
Pesticides - 8081	Heptachlor	K1785	J18XF6	9/24/2009	1.81E-02	mg/Kg	U	R
Pesticides - 8081	Heptachlor	K1785	J18XF7	9/24/2009	1.70E-02	mg/Kg	U	R
Pesticides - 8081	Heptachlor	K1785	J18XF8	9/24/2009	1.31E-02	mg/Kg	U	R
Pesticides - 8081	Heptachlor	K1785	J18XF9	9/25/2009	0.0178	mg/Kg	U	R
Pesticides - 8081	Heptachlor	K1785	J18XH0	9/25/2009	0.0126	mg/Kg	U	R
Pesticides - 8081	Heptachlor	K1785	J195V7	9/21/2009	0.019	mg/Kg	U	R
Pesticides - 8081	Heptachlor	K1785	J195V8	9/21/2009	0.0189	mg/Kg	U	R
Pesticides - 8081	Heptachlor	K1785	J195V9	9/21/2009	0.016	mg/Kg	U	R
Pesticides - 8081	Heptachlor	K1785	J195W0	9/24/2009	0.016	mg/Kg	U	R
Pesticides - 8081	Heptachlor	K1785	J19661	9/24/2009	1.91E-02	mg/Kg	U	R
Pesticides - 8081	Heptachlor	K1785	J19662	9/24/2009	0.0184	mg/Kg	U	R
Pesticides - 8081	Heptachlor	K1785	J19747	9/24/2009	2.05E-02	mg/Kg	U	R

Table 3-7. Summary of Rejected Fish Tissue Data by Method. (79 Pages)

Analytical Method	Analyte	SDG Number	Sample Identification	Sample Date	Result	Units	Laboratory Qualifier	Validation Qualifier
Pesticides - 8081	Heptachlor	K1852	J191V0	12/7/2009	1.02E-02	mg/Kg	U	R
Pesticides - 8081	Heptachlor	K1852	J191V1	12/7/2009	0.0184	mg/Kg	U	R
Pesticides - 8081	Heptachlor	K1852	J191V2	12/7/2009	1.86E-02	mg/Kg	U	R
Pesticides - 8081	Heptachlor	K1852	J191V3	12/7/2009	0.0132	mg/Kg	U	R
Pesticides - 8081	Heptachlor	K1852	J191V4	12/7/2009	1.91E-02	mg/Kg	U	R
Pesticides - 8081	Heptachlor	K1852	J191Y6	12/7/2009	1.45E-02	mg/Kg	U	R
Pesticides - 8081	Heptachlor	K1852	J191Y7	12/7/2009	1.69E-02	mg/Kg	U	R
Pesticides - 8081	Heptachlor	K1852	J191Y8	12/7/2009	1.31E-02	mg/Kg	U	R
Pesticides - 8081	Heptachlor	K1852	J19251	12/8/2009	1.16E-02	mg/Kg	U	R
Pesticides - 8081	Heptachlor	K1852	J19252	12/8/2009	0.0166	mg/Kg	U	R
Pesticides - 8081	Heptachlor	K1852	J19256	12/8/2009	1.63E-02	mg/Kg	U	R
Pesticides - 8081	Heptachlor	K1852	J19257	12/8/2009	0.0135	mg/Kg	U	R
Pesticides - 8081	Heptachlor	K1852	J196B0	12/8/2009	1.74E-02	mg/Kg	U	R
Pesticides - 8081	Heptachlor	K1852	J196B1	12/8/2009	1.76E-02	mg/Kg	U	R
Pesticides - 8081	Heptachlor	K1852	J196B2	12/8/2009	0.0177	mg/Kg	U	R
Pesticides - 8081	Heptachlor	K1852	J196B3	12/8/2009	0.0114	mg/Kg	U	R
Pesticides - 8081	Heptachlor	K1852	J196B4	12/7/2009	1.76E-02	mg/Kg	U	R
Pesticides - 8081	Heptachlor	K1852	J196B5	12/8/2009	0.0115	mg/Kg	U	R
Pesticides - 8081	Heptachlor	K1852	J196B6	12/8/2009	1.94E-02	mg/Kg	U	R
Pesticides - 8081	Heptachlor	K1852	J196B7	12/8/2009	1.91E-02	mg/Kg	U	R
Pesticides - 8081	Heptachlor	K1852	J196B8	12/8/2009	0.0184	mg/Kg	U	R
Pesticides - 8081	Heptachlor	K1852	J196B9	12/7/2009	1.63E-02	mg/Kg	U	R
Pesticides - 8081	Heptachlor	K1852	J196H0	12/8/2009	0.016	mg/Kg	U	R
Pesticides - 8081	Heptachlor	K1852	J196H4	12/7/2009	0.0206	mg/Kg	U	R
Pesticides - 8081	Heptachlor	K1852	J196H5	12/8/2009	0.0134	mg/Kg	U	R
Pesticides - 8081	Heptachlor	K1852	J196H9	12/7/2009	1.22E-02	mg/Kg	U	R
Pesticides - 8081	Heptachlor	K1852	J196W7	12/8/2009	0.0178	mg/Kg	U	R
Pesticides - 8081	Heptachlor	K1852	J196W8	12/8/2009	1.58E-02	mg/Kg	U	R
Pesticides - 8081	Heptachlor	K1852	J196W9	12/8/2009	0.0178	mg/Kg	U	R
Pesticides - 8081	Heptachlor	K1852	J196X0	12/7/2009	1.58E-02	mg/Kg	U	R
Pesticides - 8081	Heptachlor	K1852	J196X1	12/7/2009	1.70E-02	mg/Kg	U	R
Pesticides - 8081	Heptachlor	K1852	J196X2	12/8/2009	0.0178	mg/Kg	U	R
Pesticides - 8081	Heptachlor	K1852	J196X3	12/8/2009	1.36E-02	mg/Kg	U	R
Pesticides - 8081	Heptachlor	K1852	J196X4	12/8/2009	0.0178	mg/Kg	U	R
Pesticides - 8081	Heptachlor	K1852	J196X5	12/7/2009	1.57E-02	mg/Kg	U	R
Pesticides - 8081	Heptachlor	K1852	J196X6	12/7/2009	1.39E-02	mg/Kg	U	R
Pesticides - 8081	Heptachlor	K1863	J190V0	12/15/2009	1.36E-02	mg/Kg	U	R
Pesticides - 8081	Heptachlor	K1863	J190V1	12/15/2009	0.0126	mg/Kg	U	R
Pesticides - 8081	Heptachlor	K1863	J191N4	12/15/2009	1.68E-02	mg/Kg	U	R

Table 3-7. Summary of Rejected Fish Tissue Data by Method. (79 Pages)

Analytical Method	Analyte	SDG Number	Sample Identification	Sample Date	Result	Units	Laboratory Qualifier	Validation Qualifier
Pesticides - 8081	Heptachlor	K1863	J191N5	12/15/2009	1.56E-02	mg/Kg	U	R
Pesticides - 8081	Heptachlor	K1863	J191N6	12/15/2009	0.014	mg/Kg	U	R
Pesticides - 8081	Heptachlor	K1863	J191N7	12/15/2009	1.04E-02	mg/Kg	U	R
Pesticides - 8081	Heptachlor	K1863	J191N8	12/15/2009	0.0146	mg/Kg	U	R
Pesticides - 8081	Heptachlor	K1863	J191Y5	12/15/2009	1.25E-02	mg/Kg	U	R
Pesticides - 8081	Heptachlor	K1863	J191Y9	12/15/2009	1.92E-02	mg/Kg	U	R
Pesticides - 8081	Heptachlor	K1863	J19253	12/15/2009	0.012	mg/Kg	U	R
Pesticides - 8081	Heptachlor	K1863	J19258	12/15/2009	1.22E-02	mg/Kg	U	R
Pesticides - 8081	Heptachlor	K1863	J196H1	12/15/2009	1.53E-02	mg/Kg	U	R
Pesticides - 8081	Heptachlor	K1863	J196H6	12/15/2009	1.38E-02	mg/Kg	U	R
Pesticides - 8081	Heptachlor	K1919	J19254	1/21/2010	0.014	mg/Kg	U	R
Pesticides - 8081	Heptachlor	K1919	J19259	1/21/2010	0.0146	mg/Kg	U	R
Pesticides - 8081	Heptachlor epoxide	K1579	J18J59	4/1/2009	8.06E-03	mg/Kg	U	R
Pesticides - 8081	Heptachlor epoxide	K1579	J18J60	4/1/2009	9.61E-03	mg/Kg	U	R
Pesticides - 8081	Heptachlor epoxide	K1579	J18J62	4/1/2009	0.00826	mg/Kg	U	R
Pesticides - 8081	Heptachlor epoxide	K1579	J18J63	4/1/2009	8.69E-03	mg/Kg	U	R
Pesticides - 8081	Heptachlor epoxide	K1579	J18K11	4/1/2009	8.32E-03	mg/Kg	U	R
Pesticides - 8081	Heptachlor epoxide	K1579	J18K12	4/1/2009	8.69E-03	mg/Kg	U	R
Pesticides - 8081	Heptachlor epoxide	K1579	J18K13	4/1/2009	7.57E-03	mg/Kg	U	R
Pesticides - 8081	Heptachlor epoxide	K1579	J18K14	4/1/2009	6.66E-03	mg/Kg	U	R
Pesticides - 8081	Heptachlor epoxide	K1579	J18K15	4/1/2009	8.06E-03	mg/Kg	U	R
Pesticides - 8081	Heptachlor epoxide	K1579	J18K52	4/1/2009	6.89E-03	mg/Kg	U	R
Pesticides - 8081	Heptachlor epoxide	K1579	J18K53	4/1/2009	0.00662	mg/Kg	U	R
Pesticides - 8081	Heptachlor epoxide	K1579	J18K54	4/1/2009	5.98E-03	mg/Kg	U	R
Pesticides - 8081	Heptachlor epoxide	K1579	J18K55	4/1/2009	6.36E-03	mg/Kg	U	R
Pesticides - 8081	Heptachlor epoxide	K1579	J18K56	4/1/2009	7.68E-03	mg/Kg	U	R
Pesticides - 8081	Heptachlor epoxide	K1579	J18KD3	4/1/2009	7.09E-03	mg/Kg	U	R
Pesticides - 8081	Heptachlor epoxide	K1579	J18KD4	4/1/2009	7.04E-03	mg/Kg	U	R
Pesticides - 8081	Heptachlor epoxide	K1579	J18KD5	4/1/2009	6.17E-03	mg/Kg	U	R
Pesticides - 8081	Heptachlor epoxide	K1579	J18KD6	4/1/2009	6.53E-03	mg/Kg	U	R
Pesticides - 8081	Heptachlor epoxide	K1579	J18KD7	4/1/2009	5.00E-03	mg/Kg	U	R
Pesticides - 8081	Heptachlor epoxide	K1714	J192D5	8/4/2009	8.92E-03	mg/Kg	U	R
Pesticides - 8081	Heptachlor epoxide	K1714	J192D6	8/4/2009	7.93E-03	mg/Kg	U	R
Pesticides - 8081	Heptachlor epoxide	K1714	J192F6	8/4/2009	8.84E-03	mg/Kg	U	R
Pesticides - 8081	Heptachlor epoxide	K1714	J192F7	8/4/2009	5.18E-03	mg/Kg	U	R
Pesticides - 8081	Heptachlor epoxide	K1714	J192Y8	8/5/2009	9.42E-03	mg/Kg	U	R
Pesticides - 8081	Heptachlor epoxide	K1714	J192Y9	8/5/2009	6.17E-03	mg/Kg	U	R
Pesticides - 8081	Heptachlor epoxide	K1714	J19308	8/5/2009	7.04E-03	mg/Kg	U	R
Pesticides - 8081	Heptachlor epoxide	K1714	J19309	8/5/2009	9.17E-03	mg/Kg	U	R

Table 3-7. Summary of Rejected Fish Tissue Data by Method. (79 Pages)

Analytical Method	Analyte	SDG Number	Sample Identification	Sample Date	Result	Units	Laboratory Qualifier	Validation Qualifier
Pesticides - 8081	Heptachlor epoxide	K1714	J19319	8/6/2009	9.34E-03	mg/Kg	U	R
Pesticides - 8081	Heptachlor epoxide	K1714	J19320	8/6/2009	7.87E-03	mg/Kg	U	R
Pesticides - 8081	Heptachlor epoxide	K1725	J193K6	8/6/2009	7.74E-03	mg/Kg	U	R
Pesticides - 8081	Heptachlor epoxide	K1725	J193K7	8/6/2009	6.89E-03	mg/Kg	U	R
Pesticides - 8081	Heptachlor epoxide	K1725	J193L6	8/10/2009	7.63E-03	mg/Kg	U	R
Pesticides - 8081	Heptachlor epoxide	K1725	J193L7	8/10/2009	7.19E-03	mg/Kg	U	R
Pesticides - 8081	Heptachlor epoxide	K1725	J193M9	8/11/2009	8.69E-03	mg/Kg	U	R
Pesticides - 8081	Heptachlor epoxide	K1725	J19441	8/12/2009	6.84E-03	mg/Kg	U	R
Pesticides - 8081	Heptachlor epoxide	K1758	J19047	9/1/2009	1.76E-02	mg/Kg	U	R
Pesticides - 8081	Heptachlor epoxide	K1758	J19048	9/1/2009	1.75E-02	mg/Kg	U	R
Pesticides - 8081	Heptachlor epoxide	K1758	J19049	9/1/2009	0.0178	mg/Kg	U	R
Pesticides - 8081	Heptachlor epoxide	K1758	J19050	9/1/2009	0.0152	mg/Kg	U	R
Pesticides - 8081	Heptachlor epoxide	K1758	J19051	9/1/2009	1.71E-02	mg/Kg	U	R
Pesticides - 8081	Heptachlor epoxide	K1758	J190D0	9/1/2009	0.0161	mg/Kg	U	R
Pesticides - 8081	Heptachlor epoxide	K1758	J190D1	9/1/2009	1.96E-02	mg/Kg	U	R
Pesticides - 8081	Heptachlor epoxide	K1758	J190D2	9/1/2009	1.73E-02	mg/Kg	U	R
Pesticides - 8081	Heptachlor epoxide	K1758	J190D3	9/1/2009	1.94E-02	mg/Kg	U	R
Pesticides - 8081	Heptachlor epoxide	K1758	J190D4	9/1/2009	2.03E-02	mg/Kg	U	R
Pesticides - 8081	Heptachlor epoxide	K1758	J190J5	9/1/2009	1.99E-02	mg/Kg	U	R
Pesticides - 8081	Heptachlor epoxide	K1758	J190J6	9/1/2009	1.50E-02	mg/Kg	U	R
Pesticides - 8081	Heptachlor epoxide	K1758	J190J7	9/1/2009	1.91E-02	mg/Kg	U	R
Pesticides - 8081	Heptachlor epoxide	K1758	J190J8	9/1/2009	1.70E-02	mg/Kg	U	R
Pesticides - 8081	Heptachlor epoxide	K1758	J190J9	9/1/2009	2.09E-02	mg/Kg	U	R
Pesticides - 8081	Heptachlor epoxide	K1758	J190N1	9/1/2009	1.57E-02	mg/Kg	U	R
Pesticides - 8081	Heptachlor epoxide	K1758	J190N3	9/1/2009	1.81E-02	mg/Kg	U	R
Pesticides - 8081	Heptachlor epoxide	K1758	J190N4	9/1/2009	0.0178	mg/Kg	U	R
Pesticides - 8081	Heptachlor epoxide	K1758	J190N5	9/1/2009	1.93E-02	mg/Kg	U	R
Pesticides - 8081	Heptachlor epoxide	K1759	J19067	9/2/2009	0.0184	mg/Kg	U	R
Pesticides - 8081	Heptachlor epoxide	K1759	J19069	9/2/2009	1.99E-02	mg/Kg	U	R
Pesticides - 8081	Heptachlor epoxide	K1759	J19071	9/2/2009	1.99E-02	mg/Kg	U	R
Pesticides - 8081	Heptachlor epoxide	K1759	J190D5	9/2/2009	0.0161	mg/Kg	U	R
Pesticides - 8081	Heptachlor epoxide	K1759	J190D7	9/2/2009	0.0201	mg/Kg	U	R
Pesticides - 8081	Heptachlor epoxide	K1759	J190D9	9/2/2009	0.0146	mg/Kg	U	R
Pesticides - 8081	Heptachlor epoxide	K1759	J190H0	9/2/2009	1.50E-02	mg/Kg	U	R
Pesticides - 8081	Heptachlor epoxide	K1759	J190H1	9/2/2009	2.09E-02	mg/Kg	U	R
Pesticides - 8081	Heptachlor epoxide	K1759	J190H2	9/1/2009	0.0161	mg/Kg	U	R
Pesticides - 8081	Heptachlor epoxide	K1759	J190H3	9/1/2009	0.0183	mg/Kg	U	R
Pesticides - 8081	Heptachlor epoxide	K1759	J190H4	9/1/2009	2.28E-02	mg/Kg	U	R
Pesticides - 8081	Heptachlor epoxide	K1759	J190K0	9/2/2009	1.71E-02	mg/Kg	U	R

Table 3-7. Summary of Rejected Fish Tissue Data by Method. (79 Pages)

Analytical Method	Analyte	SDG Number	Sample Identification	Sample Date	Result	Units	Laboratory Qualifier	Validation Qualifier
Pesticides - 8081	Heptachlor epoxide	K1759	J190K1	9/2/2009	0.0184	mg/Kg	U	R
Pesticides - 8081	Heptachlor epoxide	K1759	J190K2	9/1/2009	1.99E-02	mg/Kg	U	R
Pesticides - 8081	Heptachlor epoxide	K1759	J190K3	9/1/2009	0.0166	mg/Kg	U	R
Pesticides - 8081	Heptachlor epoxide	K1759	J190K4	9/1/2009	1.91E-02	mg/Kg	U	R
Pesticides - 8081	Heptachlor epoxide	K1761	J19470	9/3/2009	1.99E-02	mg/Kg	U	R
Pesticides - 8081	Heptachlor epoxide	K1761	J19471	9/3/2009	1.88E-02	mg/Kg	U	R
Pesticides - 8081	Heptachlor epoxide	K1761	J19480	9/3/2009	1.45E-02	mg/Kg	U	R
Pesticides - 8081	Heptachlor epoxide	K1769	J194Y7	9/10/2009	1.91E-02	mg/Kg	U	R
Pesticides - 8081	Heptachlor epoxide	K1769	J194Y8	9/10/2009	2.03E-02	mg/Kg	U	R
Pesticides - 8081	Heptachlor epoxide	K1769	J195P4	9/10/2009	0.0161	mg/Kg	U	R
Pesticides - 8081	Heptachlor epoxide	K1769	J195P5	9/10/2009	1.59E-02	mg/Kg	U	R
Pesticides - 8081	Heptachlor epoxide	K1769	J195R6	9/14/2009	0.0229	mg/Kg	U	R
Pesticides - 8081	Heptachlor epoxide	K1769	J195R7	9/14/2009	0.0201	mg/Kg	U	R
Pesticides - 8081	Heptachlor epoxide	K1769	J195X3	9/15/2009	2.16E-02	mg/Kg	U	R
Pesticides - 8081	Heptachlor epoxide	K1769	J195X4	9/15/2009	1.92E-02	mg/Kg	U	R
Pesticides - 8081	Heptachlor epoxide	K1769	J19604	9/15/2009	0.0195	mg/Kg	U	R
Pesticides - 8081	Heptachlor epoxide	K1774	J19622	9/16/2009	0.0149	mg/Kg	U	R
Pesticides - 8081	Heptachlor epoxide	K1774	J19623	9/16/2009	1.99E-02	mg/Kg	U	R
Pesticides - 8081	Heptachlor epoxide	K1774	J19633	9/16/2009	0.0201	mg/Kg	U	R
Pesticides - 8081	Heptachlor epoxide	K1774	J19634	9/16/2009	0.0161	mg/Kg	U	R
Pesticides - 8081	Heptachlor epoxide	K1774	J19643	9/17/2009	0.0166	mg/Kg	U	R
Pesticides - 8081	Heptachlor epoxide	K1774	J19644	9/17/2009	1.80E-02	mg/Kg	U	R
Pesticides - 8081	Heptachlor epoxide	K1774	J19653	9/17/2009	1.88E-02	mg/Kg	U	R
Pesticides - 8081	Heptachlor epoxide	K1774	J19654	9/17/2009	2.05E-02	mg/Kg	U	R
Pesticides - 8081	Heptachlor epoxide	K1785	J18XB1	9/24/2009	0.0184	mg/Kg	U	R
Pesticides - 8081	Heptachlor epoxide	K1785	J18XB2	9/25/2009	1.93E-02	mg/Kg	U	R
Pesticides - 8081	Heptachlor epoxide	K1785	J18XB3	9/25/2009	1.94E-02	mg/Kg	U	R
Pesticides - 8081	Heptachlor epoxide	K1785	J18XB4	9/24/2009	1.81E-02	mg/Kg	U	R
Pesticides - 8081	Heptachlor epoxide	K1785	J18XB5	9/24/2009	1.88E-02	mg/Kg	U	R
Pesticides - 8081	Heptachlor epoxide	K1785	J18XF8	9/24/2009	1.31E-02	mg/Kg	U	R
Pesticides - 8081	Heptachlor epoxide	K1785	J18XH0	9/25/2009	0.0126	mg/Kg	U	R
Pesticides - 8081	Heptachlor epoxide	K1785	J195V7	9/21/2009	0.019	mg/Kg	U	R
Pesticides - 8081	Heptachlor epoxide	K1785	J195V8	9/21/2009	0.0189	mg/Kg	U	R
Pesticides - 8081	Heptachlor epoxide	K1785	J195V9	9/21/2009	0.016	mg/Kg	U	R
Pesticides - 8081	Heptachlor epoxide	K1785	J195W0	9/24/2009	0.016	mg/Kg	U	R
Pesticides - 8081	Heptachlor epoxide	K1785	J19661	9/24/2009	1.91E-02	mg/Kg	U	R
Pesticides - 8081	Heptachlor epoxide	K1785	J19662	9/24/2009	0.0184	mg/Kg	U	R
Pesticides - 8081	Heptachlor epoxide	K1785	J19747	9/24/2009	2.05E-02	mg/Kg	U	R
Pesticides - 8081	Heptachlor epoxide	K1852	J191V0	12/7/2009	1.02E-02	mg/Kg	U	R

Table 3-7. Summary of Rejected Fish Tissue Data by Method. (79 Pages)

Analytical Method	Analyte	SDG Number	Sample Identification	Sample Date	Result	Units	Laboratory Qualifier	Validation Qualifier
Pesticides - 8081	Heptachlor epoxide	K1852	J191V1	12/7/2009	0.0184	mg/Kg	U	R
Pesticides - 8081	Heptachlor epoxide	K1852	J191V2	12/7/2009	1.86E-02	mg/Kg	U	R
Pesticides - 8081	Heptachlor epoxide	K1852	J191V3	12/7/2009	0.0132	mg/Kg	U	R
Pesticides - 8081	Heptachlor epoxide	K1852	J191V4	12/7/2009	1.91E-02	mg/Kg	U	R
Pesticides - 8081	Heptachlor epoxide	K1852	J191Y6	12/7/2009	1.45E-02	mg/Kg	U	R
Pesticides - 8081	Heptachlor epoxide	K1852	J191Y7	12/7/2009	1.69E-02	mg/Kg	U	R
Pesticides - 8081	Heptachlor epoxide	K1852	J191Y8	12/7/2009	1.31E-02	mg/Kg	U	R
Pesticides - 8081	Heptachlor epoxide	K1852	J19251	12/8/2009	1.16E-02	mg/Kg	U	R
Pesticides - 8081	Heptachlor epoxide	K1852	J19252	12/8/2009	0.0166	mg/Kg	U	R
Pesticides - 8081	Heptachlor epoxide	K1852	J19256	12/8/2009	1.63E-02	mg/Kg	U	R
Pesticides - 8081	Heptachlor epoxide	K1852	J19257	12/8/2009	0.0135	mg/Kg	U	R
Pesticides - 8081	Heptachlor epoxide	K1852	J196B0	12/8/2009	1.74E-02	mg/Kg	U	R
Pesticides - 8081	Heptachlor epoxide	K1852	J196B1	12/8/2009	1.76E-02	mg/Kg	U	R
Pesticides - 8081	Heptachlor epoxide	K1852	J196B2	12/8/2009	0.0177	mg/Kg	U	R
Pesticides - 8081	Heptachlor epoxide	K1852	J196B3	12/8/2009	0.0114	mg/Kg	U	R
Pesticides - 8081	Heptachlor epoxide	K1852	J196B4	12/7/2009	1.76E-02	mg/Kg	U	R
Pesticides - 8081	Heptachlor epoxide	K1852	J196B5	12/8/2009	0.0115	mg/Kg	U	R
Pesticides - 8081	Heptachlor epoxide	K1852	J196B6	12/8/2009	1.94E-02	mg/Kg	U	R
Pesticides - 8081	Heptachlor epoxide	K1852	J196B7	12/8/2009	1.91E-02	mg/Kg	U	R
Pesticides - 8081	Heptachlor epoxide	K1852	J196B8	12/8/2009	0.0184	mg/Kg	U	R
Pesticides - 8081	Heptachlor epoxide	K1852	J196B9	12/7/2009	1.63E-02	mg/Kg	U	R
Pesticides - 8081	Heptachlor epoxide	K1852	J196H0	12/8/2009	0.016	mg/Kg	U	R
Pesticides - 8081	Heptachlor epoxide	K1852	J196H4	12/7/2009	0.0206	mg/Kg	U	R
Pesticides - 8081	Heptachlor epoxide	K1852	J196H5	12/8/2009	0.0134	mg/Kg	U	R
Pesticides - 8081	Heptachlor epoxide	K1852	J196H9	12/7/2009	1.22E-02	mg/Kg	U	R
Pesticides - 8081	Heptachlor epoxide	K1852	J196W7	12/8/2009	0.0178	mg/Kg	U	R
Pesticides - 8081	Heptachlor epoxide	K1852	J196W8	12/8/2009	1.58E-02	mg/Kg	U	R
Pesticides - 8081	Heptachlor epoxide	K1852	J196W9	12/8/2009	0.0178	mg/Kg	U	R
Pesticides - 8081	Heptachlor epoxide	K1852	J196X0	12/7/2009	1.58E-02	mg/Kg	U	R
Pesticides - 8081	Heptachlor epoxide	K1852	J196X1	12/7/2009	1.70E-02	mg/Kg	U	R
Pesticides - 8081	Heptachlor epoxide	K1852	J196X2	12/8/2009	0.0178	mg/Kg	U	R
Pesticides - 8081	Heptachlor epoxide	K1852	J196X3	12/8/2009	1.36E-02	mg/Kg	U	R
Pesticides - 8081	Heptachlor epoxide	K1852	J196X4	12/8/2009	0.0178	mg/Kg	U	R
Pesticides - 8081	Heptachlor epoxide	K1852	J196X5	12/7/2009	1.57E-02	mg/Kg	U	R
Pesticides - 8081	Heptachlor epoxide	K1852	J196X6	12/7/2009	1.39E-02	mg/Kg	U	R
Pesticides - 8081	Heptachlor epoxide	K1863	J190V0	12/15/2009	1.36E-02	mg/Kg	U	R
Pesticides - 8081	Heptachlor epoxide	K1863	J190V1	12/15/2009	0.0126	mg/Kg	U	R
Pesticides - 8081	Heptachlor epoxide	K1863	J191N4	12/15/2009	1.68E-02	mg/Kg	U	R
Pesticides - 8081	Heptachlor epoxide	K1863	J191N5	12/15/2009	1.56E-02	mg/Kg	U	R

Table 3-7. Summary of Rejected Fish Tissue Data by Method. (79 Pages)

Analytical Method	Analyte	SDG Number	Sample Identification	Sample Date	Result	Units	Laboratory Qualifier	Validation Qualifier
Pesticides - 8081	Heptachlor epoxide	K1863	J191N6	12/15/2009	0.014	mg/Kg	U	R
Pesticides - 8081	Heptachlor epoxide	K1863	J191N7	12/15/2009	1.04E-02	mg/Kg	U	R
Pesticides - 8081	Heptachlor epoxide	K1863	J191N8	12/15/2009	0.0146	mg/Kg	U	R
Pesticides - 8081	Heptachlor epoxide	K1863	J191Y5	12/15/2009	1.25E-02	mg/Kg	U	R
Pesticides - 8081	Heptachlor epoxide	K1863	J191Y9	12/15/2009	1.92E-02	mg/Kg	U	R
Pesticides - 8081	Heptachlor epoxide	K1863	J19253	12/15/2009	0.012	mg/Kg	U	R
Pesticides - 8081	Heptachlor epoxide	K1863	J19258	12/15/2009	1.22E-02	mg/Kg	U	R
Pesticides - 8081	Heptachlor epoxide	K1863	J196H1	12/15/2009	1.53E-02	mg/Kg	U	R
Pesticides - 8081	Heptachlor epoxide	K1863	J196H6	12/15/2009	1.38E-02	mg/Kg	U	R
Pesticides - 8081	Heptachlor epoxide	K1919	J19254	1/21/2010	0.014	mg/Kg	U	R
Pesticides - 8081	Heptachlor epoxide	K1919	J19259	1/21/2010	0.0146	mg/Kg	U	R
Pesticides - 8081	Methoxychlor	K1579	J18J59	4/1/2009	8.06E-03	mg/Kg	U	R
Pesticides - 8081	Methoxychlor	K1579	J18J60	4/1/2009	9.61E-03	mg/Kg	U	R
Pesticides - 8081	Methoxychlor	K1579	J18J61	4/1/2009	8.69E-03	mg/Kg	U	R
Pesticides - 8081	Methoxychlor	K1579	J18J62	4/1/2009	0.00826	mg/Kg	U	R
Pesticides - 8081	Methoxychlor	K1579	J18J63	4/1/2009	8.69E-03	mg/Kg	U	R
Pesticides - 8081	Methoxychlor	K1579	J18K11	4/1/2009	8.32E-03	mg/Kg	U	R
Pesticides - 8081	Methoxychlor	K1579	J18K12	4/1/2009	8.69E-03	mg/Kg	U	R
Pesticides - 8081	Methoxychlor	K1579	J18K13	4/1/2009	7.57E-03	mg/Kg	U	R
Pesticides - 8081	Methoxychlor	K1579	J18K14	4/1/2009	6.66E-03	mg/Kg	U	R
Pesticides - 8081	Methoxychlor	K1579	J18K15	4/1/2009	8.06E-03	mg/Kg	U	R
Pesticides - 8081	Methoxychlor	K1579	J18K52	4/1/2009	6.89E-03	mg/Kg	U	R
Pesticides - 8081	Methoxychlor	K1579	J18K54	4/1/2009	5.98E-03	mg/Kg	U	R
Pesticides - 8081	Methoxychlor	K1579	J18K55	4/1/2009	6.36E-03	mg/Kg	U	R
Pesticides - 8081	Methoxychlor	K1579	J18K56	4/1/2009	7.68E-03	mg/Kg	U	R
Pesticides - 8081	Methoxychlor	K1579	J18KD3	4/1/2009	7.09E-03	mg/Kg	U	R
Pesticides - 8081	Methoxychlor	K1579	J18KD4	4/1/2009	7.04E-03	mg/Kg	U	R
Pesticides - 8081	Methoxychlor	K1579	J18KD5	4/1/2009	6.17E-03	mg/Kg	U	R
Pesticides - 8081	Methoxychlor	K1579	J18KD6	4/1/2009	6.53E-03	mg/Kg	U	R
Pesticides - 8081	Methoxychlor	K1579	J18KD7	4/1/2009	5.00E-03	mg/Kg	U	R
Pesticides - 8081	Methoxychlor	K1714	J192D5	8/4/2009	8.92E-03	mg/Kg	U	R
Pesticides - 8081	Methoxychlor	K1714	J192D6	8/4/2009	7.93E-03	mg/Kg	U	R
Pesticides - 8081	Methoxychlor	K1714	J192F6	8/4/2009	8.84E-03	mg/Kg	U	R
Pesticides - 8081	Methoxychlor	K1714	J192F7	8/4/2009	5.18E-03	mg/Kg	U	R
Pesticides - 8081	Methoxychlor	K1714	J192Y8	8/5/2009	9.42E-03	mg/Kg	U	R
Pesticides - 8081	Methoxychlor	K1714	J192Y9	8/5/2009	6.17E-03	mg/Kg	U	R
Pesticides - 8081	Methoxychlor	K1714	J19308	8/5/2009	7.04E-03	mg/Kg	U	R
Pesticides - 8081	Methoxychlor	K1714	J19309	8/5/2009	9.17E-03	mg/Kg	U	R
Pesticides - 8081	Methoxychlor	K1714	J19320	8/6/2009	7.87E-03	mg/Kg	U	R

Table 3-7. Summary of Rejected Fish Tissue Data by Method. (79 Pages)

Analytical Method	Analyte	SDG Number	Sample Identification	Sample Date	Result	Units	Laboratory Qualifier	Validation Qualifier
Pesticides - 8081	Methoxychlor	K1725	J193K6	8/6/2009	7.74E-03	mg/Kg	U	R
Pesticides - 8081	Methoxychlor	K1725	J193K7	8/6/2009	6.89E-03	mg/Kg	U	R
Pesticides - 8081	Methoxychlor	K1725	J193L6	8/10/2009	7.63E-03	mg/Kg	U	R
Pesticides - 8081	Methoxychlor	K1725	J193L7	8/10/2009	7.19E-03	mg/Kg	U	R
Pesticides - 8081	Methoxychlor	K1725	J193M8	8/11/2009	7.29E-03	mg/Kg	U	R
Pesticides - 8081	Methoxychlor	K1725	J193M9	8/11/2009	8.69E-03	mg/Kg	U	R
Pesticides - 8081	Methoxychlor	K1725	J19441	8/12/2009	6.84E-03	mg/Kg	U	R
Pesticides - 8081	Methoxychlor	K1758	J19047	9/1/2009	1.76E-02	mg/Kg	U	R
Pesticides - 8081	Methoxychlor	K1758	J19048	9/1/2009	1.75E-02	mg/Kg	U	R
Pesticides - 8081	Methoxychlor	K1758	J19049	9/1/2009	0.0178	mg/Kg	U	R
Pesticides - 8081	Methoxychlor	K1758	J19050	9/1/2009	0.0152	mg/Kg	U	R
Pesticides - 8081	Methoxychlor	K1758	J19051	9/1/2009	1.71E-02	mg/Kg	U	R
Pesticides - 8081	Methoxychlor	K1758	J190D0	9/1/2009	0.0161	mg/Kg	U	R
Pesticides - 8081	Methoxychlor	K1758	J190D1	9/1/2009	1.96E-02	mg/Kg	U	R
Pesticides - 8081	Methoxychlor	K1758	J190D2	9/1/2009	1.73E-02	mg/Kg	U	R
Pesticides - 8081	Methoxychlor	K1758	J190D3	9/1/2009	1.94E-02	mg/Kg	U	R
Pesticides - 8081	Methoxychlor	K1758	J190D4	9/1/2009	2.03E-02	mg/Kg	U	R
Pesticides - 8081	Methoxychlor	K1758	J190J5	9/1/2009	1.99E-02	mg/Kg	U	R
Pesticides - 8081	Methoxychlor	K1758	J190J6	9/1/2009	1.50E-02	mg/Kg	U	R
Pesticides - 8081	Methoxychlor	K1758	J190J7	9/1/2009	1.91E-02	mg/Kg	U	R
Pesticides - 8081	Methoxychlor	K1758	J190J8	9/1/2009	1.70E-02	mg/Kg	U	R
Pesticides - 8081	Methoxychlor	K1758	J190J9	9/1/2009	2.09E-02	mg/Kg	U	R
Pesticides - 8081	Methoxychlor	K1758	J190N1	9/1/2009	1.57E-02	mg/Kg	U	R
Pesticides - 8081	Methoxychlor	K1758	J190N2	9/1/2009	0.0161	mg/Kg	U	R
Pesticides - 8081	Methoxychlor	K1758	J190N3	9/1/2009	1.81E-02	mg/Kg	U	R
Pesticides - 8081	Methoxychlor	K1758	J190N4	9/1/2009	0.0178	mg/Kg	U	R
Pesticides - 8081	Methoxychlor	K1758	J190N5	9/1/2009	1.93E-02	mg/Kg	U	R
Pesticides - 8081	Methoxychlor	K1759	J19067	9/2/2009	0.0184	mg/Kg	U	R
Pesticides - 8081	Methoxychlor	K1759	J19069	9/2/2009	1.99E-02	mg/Kg	U	R
Pesticides - 8081	Methoxychlor	K1759	J19071	9/2/2009	1.99E-02	mg/Kg	U	R
Pesticides - 8081	Methoxychlor	K1759	J190D5	9/2/2009	0.0161	mg/Kg	U	R
Pesticides - 8081	Methoxychlor	K1759	J190D7	9/2/2009	0.0201	mg/Kg	U	R
Pesticides - 8081	Methoxychlor	K1759	J190D9	9/2/2009	0.0146	mg/Kg	U	R
Pesticides - 8081	Methoxychlor	K1759	J190H0	9/2/2009	1.50E-02	mg/Kg	U	R
Pesticides - 8081	Methoxychlor	K1759	J190H1	9/2/2009	2.09E-02	mg/Kg	U	R
Pesticides - 8081	Methoxychlor	K1759	J190H2	9/1/2009	0.0161	mg/Kg	U	R
Pesticides - 8081	Methoxychlor	K1759	J190H3	9/1/2009	0.0183	mg/Kg	U	R
Pesticides - 8081	Methoxychlor	K1759	J190H4	9/1/2009	2.28E-02	mg/Kg	U	R
Pesticides - 8081	Methoxychlor	K1759	J190K0	9/2/2009	1.71E-02	mg/Kg	U	R

Table 3-7. Summary of Rejected Fish Tissue Data by Method. (79 Pages)

Analytical Method	Analyte	SDG Number	Sample Identification	Sample Date	Result	Units	Laboratory Qualifier	Validation Qualifier
Pesticides - 8081	Methoxychlor	K1759	J190K1	9/2/2009	0.0184	mg/Kg	U	R
Pesticides - 8081	Methoxychlor	K1759	J190K2	9/1/2009	1.99E-02	mg/Kg	U	R
Pesticides - 8081	Methoxychlor	K1759	J190K3	9/1/2009	0.0166	mg/Kg	U	R
Pesticides - 8081	Methoxychlor	K1759	J190K4	9/1/2009	1.91E-02	mg/Kg	U	R
Pesticides - 8081	Methoxychlor	K1761	J19470	9/3/2009	1.99E-02	mg/Kg	U	R
Pesticides - 8081	Methoxychlor	K1761	J19471	9/3/2009	1.88E-02	mg/Kg	U	R
Pesticides - 8081	Methoxychlor	K1761	J19480	9/3/2009	1.45E-02	mg/Kg	U	R
Pesticides - 8081	Methoxychlor	K1761	J19481	9/3/2009	0.0184	mg/Kg	U	R
Pesticides - 8081	Methoxychlor	K1761	J19490	9/8/2009	1.71E-02	mg/Kg	U	R
Pesticides - 8081	Methoxychlor	K1761	J19491	9/8/2009	1.45E-02	mg/Kg	U	R
Pesticides - 8081	Methoxychlor	K1761	J194B1	9/8/2009	0.0184	mg/Kg	U	R
Pesticides - 8081	Methoxychlor	K1761	J194B2	9/8/2009	1.33E-02	mg/Kg	U	R
Pesticides - 8081	Methoxychlor	K1761	J194C2	9/9/2009	0.0195	mg/Kg	U	R
Pesticides - 8081	Methoxychlor	K1761	J194C3	9/9/2009	1.93E-02	mg/Kg	U	R
Pesticides - 8081	Methoxychlor	K1769	J194Y7	9/10/2009	1.91E-02	mg/Kg	U	R
Pesticides - 8081	Methoxychlor	K1769	J194Y8	9/10/2009	2.03E-02	mg/Kg	U	R
Pesticides - 8081	Methoxychlor	K1769	J195P4	9/10/2009	0.0161	mg/Kg	U	R
Pesticides - 8081	Methoxychlor	K1769	J195P5	9/10/2009	1.59E-02	mg/Kg	U	R
Pesticides - 8081	Methoxychlor	K1769	J195R6	9/14/2009	0.0229	mg/Kg	U	R
Pesticides - 8081	Methoxychlor	K1769	J195R7	9/14/2009	0.0201	mg/Kg	U	R
Pesticides - 8081	Methoxychlor	K1769	J195X3	9/15/2009	2.16E-02	mg/Kg	U	R
Pesticides - 8081	Methoxychlor	K1769	J195X4	9/15/2009	1.92E-02	mg/Kg	U	R
Pesticides - 8081	Methoxychlor	K1769	J19603	9/15/2009	0.0146	mg/Kg	U	R
Pesticides - 8081	Methoxychlor	K1769	J19604	9/15/2009	0.0195	mg/Kg	U	R
Pesticides - 8081	Methoxychlor	K1774	J19622	9/16/2009	0.0149	mg/Kg	U	R
Pesticides - 8081	Methoxychlor	K1774	J19623	9/16/2009	1.99E-02	mg/Kg	U	R
Pesticides - 8081	Methoxychlor	K1774	J19633	9/16/2009	0.0201	mg/Kg	U	R
Pesticides - 8081	Methoxychlor	K1774	J19634	9/16/2009	0.0161	mg/Kg	U	R
Pesticides - 8081	Methoxychlor	K1774	J19643	9/17/2009	0.0166	mg/Kg	U	R
Pesticides - 8081	Methoxychlor	K1774	J19644	9/17/2009	1.80E-02	mg/Kg	U	R
Pesticides - 8081	Methoxychlor	K1774	J19653	9/17/2009	1.88E-02	mg/Kg	U	R
Pesticides - 8081	Methoxychlor	K1774	J19654	9/17/2009	2.05E-02	mg/Kg	U	R
Pesticides - 8081	Methoxychlor	K1785	J18XB1	9/24/2009	0.0184	mg/Kg	U	R
Pesticides - 8081	Methoxychlor	K1785	J18XB2	9/25/2009	1.93E-02	mg/Kg	U	R
Pesticides - 8081	Methoxychlor	K1785	J18XB3	9/25/2009	1.94E-02	mg/Kg	U	R
Pesticides - 8081	Methoxychlor	K1785	J18XB4	9/24/2009	1.81E-02	mg/Kg	U	R
Pesticides - 8081	Methoxychlor	K1785	J18XB5	9/24/2009	1.88E-02	mg/Kg	U	R
Pesticides - 8081	Methoxychlor	K1785	J18XF6	9/24/2009	1.81E-02	mg/Kg	U	R
Pesticides - 8081	Methoxychlor	K1785	J18XF7	9/24/2009	1.70E-02	mg/Kg	U	R

Table 3-7. Summary of Rejected Fish Tissue Data by Method. (79 Pages)

Analytical Method	Analyte	SDG Number	Sample Identification	Sample Date	Result	Units	Laboratory Qualifier	Validation Qualifier
Pesticides - 8081	Methoxychlor	K1785	J18XF8	9/24/2009	1.31E-02	mg/Kg	U	R
Pesticides - 8081	Methoxychlor	K1785	J18XF9	9/25/2009	0.0178	mg/Kg	U	R
Pesticides - 8081	Methoxychlor	K1785	J18XH0	9/25/2009	0.0126	mg/Kg	U	R
Pesticides - 8081	Methoxychlor	K1785	J195V7	9/21/2009	0.019	mg/Kg	U	R
Pesticides - 8081	Methoxychlor	K1785	J195V8	9/21/2009	0.0189	mg/Kg	U	R
Pesticides - 8081	Methoxychlor	K1785	J195V9	9/21/2009	0.016	mg/Kg	U	R
Pesticides - 8081	Methoxychlor	K1785	J195W0	9/24/2009	0.016	mg/Kg	U	R
Pesticides - 8081	Methoxychlor	K1785	J19661	9/24/2009	1.91E-02	mg/Kg	U	R
Pesticides - 8081	Methoxychlor	K1785	J19662	9/24/2009	0.0184	mg/Kg	U	R
Pesticides - 8081	Methoxychlor	K1785	J19747	9/24/2009	2.05E-02	mg/Kg	U	R
Pesticides - 8081	Methoxychlor	K1852	J191V0	12/7/2009	1.02E-02	mg/Kg	U	R
Pesticides - 8081	Methoxychlor	K1852	J191V1	12/7/2009	0.0184	mg/Kg	U	R
Pesticides - 8081	Methoxychlor	K1852	J191V2	12/7/2009	1.86E-02	mg/Kg	U	R
Pesticides - 8081	Methoxychlor	K1852	J191V3	12/7/2009	0.0132	mg/Kg	U	R
Pesticides - 8081	Methoxychlor	K1852	J191V4	12/7/2009	1.91E-02	mg/Kg	U	R
Pesticides - 8081	Methoxychlor	K1852	J191Y6	12/7/2009	1.45E-02	mg/Kg	U	R
Pesticides - 8081	Methoxychlor	K1852	J191Y7	12/7/2009	1.69E-02	mg/Kg	U	R
Pesticides - 8081	Methoxychlor	K1852	J191Y8	12/7/2009	1.31E-02	mg/Kg	U	R
Pesticides - 8081	Methoxychlor	K1852	J19251	12/8/2009	1.16E-02	mg/Kg	U	R
Pesticides - 8081	Methoxychlor	K1852	J19252	12/8/2009	0.0166	mg/Kg	U	R
Pesticides - 8081	Methoxychlor	K1852	J19256	12/8/2009	1.63E-02	mg/Kg	U	R
Pesticides - 8081	Methoxychlor	K1852	J19257	12/8/2009	0.0135	mg/Kg	U	R
Pesticides - 8081	Methoxychlor	K1852	J196B0	12/8/2009	1.74E-02	mg/Kg	U	R
Pesticides - 8081	Methoxychlor	K1852	J196B1	12/8/2009	1.76E-02	mg/Kg	U	R
Pesticides - 8081	Methoxychlor	K1852	J196B2	12/8/2009	0.0177	mg/Kg	U	R
Pesticides - 8081	Methoxychlor	K1852	J196B3	12/8/2009	0.0114	mg/Kg	U	R
Pesticides - 8081	Methoxychlor	K1852	J196B4	12/7/2009	1.76E-02	mg/Kg	U	R
Pesticides - 8081	Methoxychlor	K1852	J196B5	12/8/2009	0.0115	mg/Kg	U	R
Pesticides - 8081	Methoxychlor	K1852	J196B6	12/8/2009	1.94E-02	mg/Kg	U	R
Pesticides - 8081	Methoxychlor	K1852	J196B7	12/8/2009	1.91E-02	mg/Kg	U	R
Pesticides - 8081	Methoxychlor	K1852	J196B8	12/8/2009	0.0184	mg/Kg	U	R
Pesticides - 8081	Methoxychlor	K1852	J196B9	12/7/2009	1.63E-02	mg/Kg	U	R
Pesticides - 8081	Methoxychlor	K1852	J196H0	12/8/2009	0.016	mg/Kg	U	R
Pesticides - 8081	Methoxychlor	K1852	J196H4	12/7/2009	0.0206	mg/Kg	U	R
Pesticides - 8081	Methoxychlor	K1852	J196H5	12/8/2009	0.0134	mg/Kg	U	R
Pesticides - 8081	Methoxychlor	K1852	J196H9	12/7/2009	1.22E-02	mg/Kg	U	R
Pesticides - 8081	Methoxychlor	K1852	J196W7	12/8/2009	0.0178	mg/Kg	U	R
Pesticides - 8081	Methoxychlor	K1852	J196W8	12/8/2009	1.58E-02	mg/Kg	U	R
Pesticides - 8081	Methoxychlor	K1852	J196W9	12/8/2009	0.0178	mg/Kg	U	R

Table 3-7. Summary of Rejected Fish Tissue Data by Method. (79 Pages)

Analytical Method	Analyte	SDG Number	Sample Identification	Sample Date	Result	Units	Laboratory Qualifier	Validation Qualifier
Pesticides - 8081	Methoxychlor	K1852	J196X0	12/7/2009	1.58E-02	mg/Kg	U	R
Pesticides - 8081	Methoxychlor	K1852	J196X1	12/7/2009	1.70E-02	mg/Kg	U	R
Pesticides - 8081	Methoxychlor	K1852	J196X2	12/8/2009	0.0178	mg/Kg	U	R
Pesticides - 8081	Methoxychlor	K1852	J196X3	12/8/2009	1.36E-02	mg/Kg	U	R
Pesticides - 8081	Methoxychlor	K1852	J196X4	12/8/2009	0.0178	mg/Kg	U	R
Pesticides - 8081	Methoxychlor	K1852	J196X5	12/7/2009	1.57E-02	mg/Kg	U	R
Pesticides - 8081	Methoxychlor	K1852	J196X6	12/7/2009	1.39E-02	mg/Kg	U	R
Pesticides - 8081	Methoxychlor	K1863	J190V0	12/15/2009	1.36E-02	mg/Kg	U	R
Pesticides - 8081	Methoxychlor	K1863	J190V1	12/15/2009	0.0126	mg/Kg	U	R
Pesticides - 8081	Methoxychlor	K1863	J191N4	12/15/2009	1.68E-02	mg/Kg	U	R
Pesticides - 8081	Methoxychlor	K1863	J191N5	12/15/2009	1.56E-02	mg/Kg	U	R
Pesticides - 8081	Methoxychlor	K1863	J191N6	12/15/2009	0.014	mg/Kg	U	R
Pesticides - 8081	Methoxychlor	K1863	J191N7	12/15/2009	1.04E-02	mg/Kg	U	R
Pesticides - 8081	Methoxychlor	K1863	J191N8	12/15/2009	0.0146	mg/Kg	U	R
Pesticides - 8081	Methoxychlor	K1863	J191Y5	12/15/2009	1.25E-02	mg/Kg	U	R
Pesticides - 8081	Methoxychlor	K1863	J191Y9	12/15/2009	1.92E-02	mg/Kg	U	R
Pesticides - 8081	Methoxychlor	K1863	J19253	12/15/2009	0.012	mg/Kg	U	R
Pesticides - 8081	Methoxychlor	K1863	J19258	12/15/2009	1.22E-02	mg/Kg	U	R
Pesticides - 8081	Methoxychlor	K1863	J196H1	12/15/2009	1.53E-02	mg/Kg	U	R
Pesticides - 8081	Methoxychlor	K1863	J196H6	12/15/2009	1.38E-02	mg/Kg	U	R
Pesticides - 8081	Methoxychlor	K1919	J19254	1/21/2010	0.014	mg/Kg	U	R
Pesticides - 8081	Methoxychlor	K1919	J19259	1/21/2010	0.0146	mg/Kg	U	R
Pesticides - 8081	Toxaphene	K1579	J18J59	4/1/2009	0.121	mg/Kg	U	R
Pesticides - 8081	Toxaphene	K1579	J18J60	4/1/2009	0.144	mg/Kg	U	R
Pesticides - 8081	Toxaphene	K1579	J18J61	4/1/2009	0.13	mg/Kg	U	R
Pesticides - 8081	Toxaphene	K1579	J18J62	4/1/2009	0.124	mg/Kg	U	R
Pesticides - 8081	Toxaphene	K1579	J18J63	4/1/2009	0.13	mg/Kg	U	R
Pesticides - 8081	Toxaphene	K1579	J18K11	4/1/2009	0.125	mg/Kg	U	R
Pesticides - 8081	Toxaphene	K1579	J18K12	4/1/2009	0.13	mg/Kg	U	R
Pesticides - 8081	Toxaphene	K1579	J18K13	4/1/2009	0.114	mg/Kg	U	R
Pesticides - 8081	Toxaphene	K1579	J18K14	4/1/2009	0.1	mg/Kg	U	R
Pesticides - 8081	Toxaphene	K1579	J18K15	4/1/2009	0.121	mg/Kg	U	R
Pesticides - 8081	Toxaphene	K1579	J18K52	4/1/2009	0.103	mg/Kg	U	R
Pesticides - 8081	Toxaphene	K1579	J18K53	4/1/2009	9.93E-02	mg/Kg	U	R
Pesticides - 8081	Toxaphene	K1579	J18K54	4/1/2009	8.98E-02	mg/Kg	U	R
Pesticides - 8081	Toxaphene	K1579	J18K55	4/1/2009	9.55E-02	mg/Kg	U	R
Pesticides - 8081	Toxaphene	K1579	J18K56	4/1/2009	0.115	mg/Kg	U	R
Pesticides - 8081	Toxaphene	K1579	J18KD3	4/1/2009	0.106	mg/Kg	U	R
Pesticides - 8081	Toxaphene	K1579	J18KD4	4/1/2009	0.106	mg/Kg	U	R

Table 3-7. Summary of Rejected Fish Tissue Data by Method. (79 Pages)

Analytical Method	Analyte	SDG Number	Sample Identification	Sample Date	Result	Units	Laboratory Qualifier	Validation Qualifier
Pesticides - 8081	Toxaphene	K1579	J18KD5	4/1/2009	9.26E-02	mg/Kg	U	R
Pesticides - 8081	Toxaphene	K1579	J18KD6	4/1/2009	9.80E-02	mg/Kg	U	R
Pesticides - 8081	Toxaphene	K1579	J18KD7	4/1/2009	7.50E-02	mg/Kg	U	R
Pesticides - 8081	Toxaphene	K1714	J192D5	8/4/2009	0.134	mg/Kg	U	R
Pesticides - 8081	Toxaphene	K1714	J192D6	8/4/2009	0.119	mg/Kg	U	R
Pesticides - 8081	Toxaphene	K1714	J192F6	8/4/2009	0.133	mg/Kg	U	R
Pesticides - 8081	Toxaphene	K1714	J192F7	8/4/2009	7.77E-02	mg/Kg	U	R
Pesticides - 8081	Toxaphene	K1714	J192Y8	8/5/2009	0.142	mg/Kg	U	R
Pesticides - 8081	Toxaphene	K1714	J192Y9	8/5/2009	9.26E-02	mg/Kg	U	R
Pesticides - 8081	Toxaphene	K1714	J19308	8/5/2009	0.106	mg/Kg	U	R
Pesticides - 8081	Toxaphene	K1714	J19309	8/5/2009	0.138	mg/Kg	U	R
Pesticides - 8081	Toxaphene	K1714	J19319	8/6/2009	0.14	mg/Kg	U	R
Pesticides - 8081	Toxaphene	K1714	J19320	8/6/2009	0.118	mg/Kg	U	R
Pesticides - 8081	Toxaphene	K1725	J193K6	8/6/2009	0.116	mg/Kg	U	R
Pesticides - 8081	Toxaphene	K1725	J193K7	8/6/2009	0.103	mg/Kg	U	R
Pesticides - 8081	Toxaphene	K1725	J193L6	8/10/2009	0.115	mg/Kg	U	R
Pesticides - 8081	Toxaphene	K1725	J193L7	8/10/2009	0.108	mg/Kg	U	R
Pesticides - 8081	Toxaphene	K1725	J193M8	8/11/2009	0.109	mg/Kg	U	R
Pesticides - 8081	Toxaphene	K1725	J193M9	8/11/2009	0.13	mg/Kg	U	R
Pesticides - 8081	Toxaphene	K1725	J19441	8/12/2009	0.103	mg/Kg	U	R
Pesticides - 8081	Toxaphene	K1758	J19047	9/1/2009	0.264	mg/Kg	U	R
Pesticides - 8081	Toxaphene	K1758	J19048	9/1/2009	0.263	mg/Kg	U	R
Pesticides - 8081	Toxaphene	K1758	J19049	9/1/2009	0.267	mg/Kg	U	R
Pesticides - 8081	Toxaphene	K1758	J19050	9/1/2009	0.228	mg/Kg	U	R
Pesticides - 8081	Toxaphene	K1758	J19051	9/1/2009	0.256	mg/Kg	U	R
Pesticides - 8081	Toxaphene	K1758	J190D0	9/1/2009	0.241	mg/Kg	U	R
Pesticides - 8081	Toxaphene	K1758	J190D1	9/1/2009	0.294	mg/Kg	U	R
Pesticides - 8081	Toxaphene	K1758	J190D2	9/1/2009	0.259	mg/Kg	U	R
Pesticides - 8081	Toxaphene	K1758	J190D3	9/1/2009	0.291	mg/Kg	U	R
Pesticides - 8081	Toxaphene	K1758	J190D4	9/1/2009	0.305	mg/Kg	U	R
Pesticides - 8081	Toxaphene	K1758	J190J5	9/1/2009	0.299	mg/Kg	U	R
Pesticides - 8081	Toxaphene	K1758	J190J6	9/1/2009	0.226	mg/Kg	U	R
Pesticides - 8081	Toxaphene	K1758	J190J7	9/1/2009	0.287	mg/Kg	U	R
Pesticides - 8081	Toxaphene	K1758	J190J8	9/1/2009	0.256	mg/Kg	U	R
Pesticides - 8081	Toxaphene	K1758	J190J9	9/1/2009	0.313	mg/Kg	U	R
Pesticides - 8081	Toxaphene	K1758	J190N1	9/1/2009	0.235	mg/Kg	U	R
Pesticides - 8081	Toxaphene	K1758	J190N2	9/1/2009	0.241	mg/Kg	U	R
Pesticides - 8081	Toxaphene	K1758	J190N3	9/1/2009	0.272	mg/Kg	U	R
Pesticides - 8081	Toxaphene	K1758	J190N4	9/1/2009	0.267	mg/Kg	U	R

Table 3-7. Summary of Rejected Fish Tissue Data by Method. (79 Pages)

Analytical Method	Analyte	SDG Number	Sample Identification	Sample Date	Result	Units	Laboratory Qualifier	Validation Qualifier
Pesticides - 8081	Toxaphene	K1758	J190N5	9/1/2009	0.29	mg/Kg	U	R
Pesticides - 8081	Toxaphene	K1759	J19067	9/2/2009	0.276	mg/Kg	U	R
Pesticides - 8081	Toxaphene	K1759	J19069	9/2/2009	0.299	mg/Kg	U	R
Pesticides - 8081	Toxaphene	K1759	J19071	9/2/2009	0.298	mg/Kg	U	R
Pesticides - 8081	Toxaphene	K1759	J190D5	9/2/2009	0.242	mg/Kg	U	R
Pesticides - 8081	Toxaphene	K1759	J190D7	9/2/2009	0.301	mg/Kg	U	R
Pesticides - 8081	Toxaphene	K1759	J190D9	9/2/2009	0.22	mg/Kg	U	R
Pesticides - 8081	Toxaphene	K1759	J190H0	9/2/2009	0.225	mg/Kg	U	R
Pesticides - 8081	Toxaphene	K1759	J190H1	9/2/2009	0.313	mg/Kg	U	R
Pesticides - 8081	Toxaphene	K1759	J190H2	9/1/2009	0.242	mg/Kg	U	R
Pesticides - 8081	Toxaphene	K1759	J190H3	9/1/2009	0.275	mg/Kg	U	R
Pesticides - 8081	Toxaphene	K1759	J190H4	9/1/2009	0.342	mg/Kg	U	R
Pesticides - 8081	Toxaphene	K1759	J190K0	9/2/2009	0.257	mg/Kg	U	R
Pesticides - 8081	Toxaphene	K1759	J190K1	9/2/2009	0.277	mg/Kg	U	R
Pesticides - 8081	Toxaphene	K1759	J190K2	9/1/2009	0.299	mg/Kg	U	R
Pesticides - 8081	Toxaphene	K1759	J190K3	9/1/2009	0.249	mg/Kg	U	R
Pesticides - 8081	Toxaphene	K1759	J190K4	9/1/2009	0.286	mg/Kg	U	R
Pesticides - 8081	Toxaphene	K1761	J19470	9/3/2009	0.299	mg/Kg	U	R
Pesticides - 8081	Toxaphene	K1761	J19471	9/3/2009	0.282	mg/Kg	U	R
Pesticides - 8081	Toxaphene	K1761	J19480	9/3/2009	0.218	mg/Kg	U	R
Pesticides - 8081	Toxaphene	K1761	J19481	9/3/2009	0.276	mg/Kg	U	R
Pesticides - 8081	Toxaphene	K1761	J19490	9/8/2009	0.257	mg/Kg	U	R
Pesticides - 8081	Toxaphene	K1761	J19491	9/8/2009	0.217	mg/Kg	U	R
Pesticides - 8081	Toxaphene	K1761	J194B1	9/8/2009	0.276	mg/Kg	U	R
Pesticides - 8081	Toxaphene	K1761	J194B2	9/8/2009	0.199	mg/Kg	U	R
Pesticides - 8081	Toxaphene	K1761	J194C2	9/9/2009	0.293	mg/Kg	U	R
Pesticides - 8081	Toxaphene	K1761	J194C3	9/9/2009	0.29	mg/Kg	U	R
Pesticides - 8081	Toxaphene	K1769	J194Y7	9/10/2009	0.286	mg/Kg	U	R
Pesticides - 8081	Toxaphene	K1769	J194Y8	9/10/2009	0.305	mg/Kg	U	R
Pesticides - 8081	Toxaphene	K1769	J195P4	9/10/2009	0.242	mg/Kg	U	R
Pesticides - 8081	Toxaphene	K1769	J195P5	9/10/2009	0.239	mg/Kg	U	R
Pesticides - 8081	Toxaphene	K1769	J195R6	9/14/2009	0.343	mg/Kg	U	R
Pesticides - 8081	Toxaphene	K1769	J195R7	9/14/2009	0.302	mg/Kg	U	R
Pesticides - 8081	Toxaphene	K1769	J195X3	9/15/2009	0.324	mg/Kg	U	R
Pesticides - 8081	Toxaphene	K1769	J195X4	9/15/2009	0.288	mg/Kg	U	R
Pesticides - 8081	Toxaphene	K1769	J19603	9/15/2009	0.22	mg/Kg	U	R
Pesticides - 8081	Toxaphene	K1769	J19604	9/15/2009	0.293	mg/Kg	U	R
Pesticides - 8081	Toxaphene	K1774	J19622	9/16/2009	0.223	mg/Kg	U	R
Pesticides - 8081	Toxaphene	K1774	J19623	9/16/2009	0.298	mg/Kg	U	R

Table 3-7. Summary of Rejected Fish Tissue Data by Method. (79 Pages)

Analytical Method	Analyte	SDG Number	Sample Identification	Sample Date	Result	Units	Laboratory Qualifier	Validation Qualifier
Pesticides - 8081	Toxaphene	K1774	J19633	9/16/2009	0.301	mg/Kg	U	R
Pesticides - 8081	Toxaphene	K1774	J19634	9/16/2009	0.241	mg/Kg	U	R
Pesticides - 8081	Toxaphene	K1774	J19643	9/17/2009	0.25	mg/Kg	U	R
Pesticides - 8081	Toxaphene	K1774	J19644	9/17/2009	0.271	mg/Kg	U	R
Pesticides - 8081	Toxaphene	K1774	J19653	9/17/2009	0.283	mg/Kg	U	R
Pesticides - 8081	Toxaphene	K1774	J19654	9/17/2009	0.308	mg/Kg	U	R
Pesticides - 8081	Toxaphene	K1785	J18XB1	9/24/2009	0.277	mg/Kg	U	R
Pesticides - 8081	Toxaphene	K1785	J18XB2	9/25/2009	0.29	mg/Kg	U	R
Pesticides - 8081	Toxaphene	K1785	J18XB3	9/25/2009	0.291	mg/Kg	U	R
Pesticides - 8081	Toxaphene	K1785	J18XB4	9/24/2009	0.272	mg/Kg	U	R
Pesticides - 8081	Toxaphene	K1785	J18XB5	9/24/2009	0.282	mg/Kg	U	R
Pesticides - 8081	Toxaphene	K1785	J18XF6	9/24/2009	0.272	mg/Kg	U	R
Pesticides - 8081	Toxaphene	K1785	J18XF7	9/24/2009	0.256	mg/Kg	U	R
Pesticides - 8081	Toxaphene	K1785	J18XF8	9/24/2009	0.197	mg/Kg	U	R
Pesticides - 8081	Toxaphene	K1785	J18XF9	9/25/2009	0.267	mg/Kg	U	R
Pesticides - 8081	Toxaphene	K1785	J18XH0	9/25/2009	0.189	mg/Kg	U	R
Pesticides - 8081	Toxaphene	K1785	J195V7	9/21/2009	0.285	mg/Kg	U	R
Pesticides - 8081	Toxaphene	K1785	J195V8	9/21/2009	0.284	mg/Kg	U	R
Pesticides - 8081	Toxaphene	K1785	J195V9	9/21/2009	0.241	mg/Kg	U	R
Pesticides - 8081	Toxaphene	K1785	J195W0	9/24/2009	0.24	mg/Kg	U	R
Pesticides - 8081	Toxaphene	K1785	J19661	9/24/2009	0.286	mg/Kg	U	R
Pesticides - 8081	Toxaphene	K1785	J19662	9/24/2009	0.276	mg/Kg	U	R
Pesticides - 8081	Toxaphene	K1785	J19747	9/24/2009	0.308	mg/Kg	U	R
Pesticides - 8081	Toxaphene	K1852	J191V0	12/7/2009	0.153	mg/Kg	U	R
Pesticides - 8081	Toxaphene	K1852	J191V1	12/7/2009	0.276	mg/Kg	U	R
Pesticides - 8081	Toxaphene	K1852	J191V2	12/7/2009	0.279	mg/Kg	U	R
Pesticides - 8081	Toxaphene	K1852	J191V3	12/7/2009	0.198	mg/Kg	U	R
Pesticides - 8081	Toxaphene	K1852	J191V4	12/7/2009	0.288	mg/Kg	U	R
Pesticides - 8081	Toxaphene	K1852	J191Y6	12/7/2009	0.217	mg/Kg	U	R
Pesticides - 8081	Toxaphene	K1852	J191Y7	12/7/2009	0.254	mg/Kg	U	R
Pesticides - 8081	Toxaphene	K1852	J191Y8	12/7/2009	0.197	mg/Kg	U	R
Pesticides - 8081	Toxaphene	K1852	J19251	12/8/2009	0.174	mg/Kg	U	R
Pesticides - 8081	Toxaphene	K1852	J19252	12/8/2009	0.25	mg/Kg	U	R
Pesticides - 8081	Toxaphene	K1852	J19256	12/8/2009	0.245	mg/Kg	U	R
Pesticides - 8081	Toxaphene	K1852	J19257	12/8/2009	0.202	mg/Kg	U	R
Pesticides - 8081	Toxaphene	K1852	J196B0	12/8/2009	0.262	mg/Kg	U	R
Pesticides - 8081	Toxaphene	K1852	J196B1	12/8/2009	0.264	mg/Kg	U	R
Pesticides - 8081	Toxaphene	K1852	J196B2	12/8/2009	0.266	mg/Kg	U	R
Pesticides - 8081	Toxaphene	K1852	J196B3	12/8/2009	0.172	mg/Kg	U	R

Table 3-7. Summary of Rejected Fish Tissue Data by Method. (79 Pages)

Analytical Method	Analyte	SDG Number	Sample Identification	Sample Date	Result	Units	Laboratory Qualifier	Validation Qualifier
Pesticides - 8081	Toxaphene	K1852	J196B4	12/7/2009	0.264	mg/Kg	U	R
Pesticides - 8081	Toxaphene	K1852	J196B5	12/8/2009	0.172	mg/Kg	U	R
Pesticides - 8081	Toxaphene	K1852	J196B6	12/8/2009	0.292	mg/Kg	U	R
Pesticides - 8081	Toxaphene	K1852	J196B7	12/8/2009	0.286	mg/Kg	U	R
Pesticides - 8081	Toxaphene	K1852	J196B8	12/8/2009	0.276	mg/Kg	U	R
Pesticides - 8081	Toxaphene	K1852	J196B9	12/7/2009	0.244	mg/Kg	U	R
Pesticides - 8081	Toxaphene	K1852	J196H0	12/8/2009	0.24	mg/Kg	U	R
Pesticides - 8081	Toxaphene	K1852	J196H4	12/7/2009	0.309	mg/Kg	U	R
Pesticides - 8081	Toxaphene	K1852	J196H5	12/8/2009	0.201	mg/Kg	U	R
Pesticides - 8081	Toxaphene	K1852	J196H9	12/7/2009	0.183	mg/Kg	U	R
Pesticides - 8081	Toxaphene	K1852	J196W7	12/8/2009	0.267	mg/Kg	U	R
Pesticides - 8081	Toxaphene	K1852	J196W8	12/8/2009	0.237	mg/Kg	U	R
Pesticides - 8081	Toxaphene	K1852	J196W9	12/8/2009	0.267	mg/Kg	U	R
Pesticides - 8081	Toxaphene	K1852	J196X0	12/7/2009	0.237	mg/Kg	U	R
Pesticides - 8081	Toxaphene	K1852	J196X1	12/7/2009	0.256	mg/Kg	U	R
Pesticides - 8081	Toxaphene	K1852	J196X2	12/8/2009	0.267	mg/Kg	U	R
Pesticides - 8081	Toxaphene	K1852	J196X3	12/8/2009	0.205	mg/Kg	U	R
Pesticides - 8081	Toxaphene	K1852	J196X4	12/8/2009	0.267	mg/Kg	U	R
Pesticides - 8081	Toxaphene	K1852	J196X5	12/7/2009	0.236	mg/Kg	U	R
Pesticides - 8081	Toxaphene	K1852	J196X6	12/7/2009	0.208	mg/Kg	U	R
Pesticides - 8081	Toxaphene	K1863	J190V0	12/15/2009	0.205	mg/Kg	U	R
Pesticides - 8081	Toxaphene	K1863	J190V1	12/15/2009	0.189	mg/Kg	U	R
Pesticides - 8081	Toxaphene	K1863	J191N4	12/15/2009	0.252	mg/Kg	U	R
Pesticides - 8081	Toxaphene	K1863	J191N5	12/15/2009	0.234	mg/Kg	U	R
Pesticides - 8081	Toxaphene	K1863	J191N6	12/15/2009	0.211	mg/Kg	U	R
Pesticides - 8081	Toxaphene	K1863	J191N7	12/15/2009	0.157	mg/Kg	U	R
Pesticides - 8081	Toxaphene	K1863	J191N8	12/15/2009	0.22	mg/Kg	U	R
Pesticides - 8081	Toxaphene	K1863	J191Y5	12/15/2009	0.187	mg/Kg	U	R
Pesticides - 8081	Toxaphene	K1863	J191Y9	12/15/2009	0.288	mg/Kg	U	R
Pesticides - 8081	Toxaphene	K1863	J19253	12/15/2009	0.181	mg/Kg	U	R
Pesticides - 8081	Toxaphene	K1863	J19258	12/15/2009	0.183	mg/Kg	U	R
Pesticides - 8081	Toxaphene	K1863	J196H1	12/15/2009	0.23	mg/Kg	U	R
Pesticides - 8081	Toxaphene	K1863	J196H6	12/15/2009	0.207	mg/Kg	U	R
Pesticides - 8081	Toxaphene	K1919	J19254	1/21/2010	0.21	mg/Kg	U	R
Pesticides - 8081	Toxaphene	K1919	J19259	1/21/2010	0.219	mg/Kg	U	R

PCB = polychlorinated biphenyl
R = rejected
SDG = sample delivery group
U = nondetect

Method blanks generally did not contain concentrations of target analytes above corresponding detection limits. However, thorium-230 was detected at trace levels below the MDA in a laboratory blank associated with SDG K1579. Associated samples were qualified as estimated (J) based on this finding.

LCS results were compliant with respective criteria, indicating a positive correlation to the accuracy of reported sample concentrations. Noncompliant tracer recovery results were reported for samples in SDG K1618. In SDG K1618, the isotopic thorium tracer recovery exceeded the 110% upper control limit for one sample, indicating a potential high bias to sample concentrations. Based on this finding, no qualification was assigned for nondetect results of associated radionuclides (thorium-228, thorium-230, and thorium-232) and detected sample results were qualified as estimated (J).

Laboratory duplicate samples were analyzed to measure the precision of reported results. The RPDs between the duplicate pairs were compliant, indicating that there was an acceptable level of analytical precision. Matrix spike analyses were not performed in conjunction with the carbon-14 and tritium analyses. Based on this finding, all sample results from all SDGs were qualified as estimated (J).

None of the radionuclide fish data was rejected and all are of sufficient quality for their intended project use.

3.3.1.2 Chlorinated Pesticides – Fish Tissue. Many of the fish samples were extracted beyond twice the holding time limit and consequently, associated nondetect pesticide results were qualified as rejected based on this finding. SDGs K1579, K1714, K1725, K1758, K1759, K1761, K1769, K1774, K1785, K1852, K1863, and K1919 contained nondetect results (from 169 samples) that were rejected due to these exceedances. Detected results for samples analyzed in these SDGs were qualified as estimated (J). Other than the hold time exceedances, QC results were generally compliant for most other parameters. The following is a summary of the other QC results included in the assessment and the deficiencies that were noted. A summary of the data that were rejected is provided in Table 3-7.

Detection limits for many of the pesticide compounds exceeded those specified in the SAP (DOE/RL-2008-11, Appendix A). In accordance with the guidance used for this DQA (HNF-20433), no action was taken based on this finding.

There were no pesticides detected in any of the laboratory method blanks. Samples J192Y3 and J192Y4 in SDG K1719 were equipments blanks for the large and small grinders used to process fish samples. None of the target chlorinated pesticides were detected in either of the equipment blanks, indicating that the transfer of these compounds between samples is not likely.

In two SDGs, the LCS recovery was below the lower control limit for delta-BHC, and in a third SDG, LCS recoveries for 4,4'-DDE and 4,4'-DDD exceeded the upper control limit. For all three SDGs, results were qualified as estimated (J). Matrix spike recoveries were out of QC control limits for several SDGs. In most cases the recoveries were below the lower control limit, suggesting a low bias to reported pesticide concentrations, most likely due to impacts from the matrix. The matrix effects theory is supported by reported recoveries of the surrogate decachlorobiphenyl below the lower control limit for many of the samples associated with the low matrix spike results. LCS and matrix spike QC results for toxaphene were not provided, and therefore toxaphene results for all samples in all SDGs were qualified as estimated (J). Matrix spike duplicate RPD values were out of criteria in several SDGs. All results that exceeded RPD criteria were qualified as estimated (J). No field duplicates were collected for pesticide analysis.

Although a significant number of results (from 169 samples) were rejected based on holding time exceedances, the remaining 264 samples that were analyzed for pesticides are acceptable for their intended project use.

3.3.1.3 Metals – Fish Tissue. For the metals data, QC results were compliant for most parameters. No data were rejected. The holding time for mercury analyses of several samples was exceeded by greater than twice the limit. Associated nondetect sample results would have been rejected; however, since all samples had detected mercury concentrations, they were all qualified as estimated (J). The QC results from the other metals analyses indicate that the data are of acceptable quality for their intended project use. The following discussion summarizes the findings obtained from the assessment and identifies deficiencies indicated by the QC results.

Detection limits for most metals were generally at or below those specified in the SAP (DOE/RL-2008-11, Appendix A) with the exception of the following elements in several SDGs: beryllium, calcium, chromium, copper, iron, lithium, magnesium, phosphorus, potassium, silicon, tin, uranium, and zinc. In accordance with the guidance used for this DQA (HNF-20433), no action was taken with respect to the elevated detection limits.

The majority of the samples were analyzed within the holding times specified in the project SAP (DOE/RL-2008-11, Appendix A). As indicated above, with the exception of four samples from SDG K1759 and the mercury analyses, samples were analyzed within the specified holding time of 6 months. SDG K1759 contained four samples (J190D6, J190D8, J19068, and J19070) that were analyzed for metals 7 months after the collection date. These samples were analyzed less than two times the holding time limit and were therefore qualified as estimated (J). For mercury, the holding time limit from collection to digestion was exceeded for samples in SDGs K1579, K1709, K1714, K1725, K1758, K1759, K1761, K1769, K1774, K1852, K1863, and K1919. Although for some samples the amount of time that elapsed prior to processing exceeded twice the holding time limit, mercury results for all samples in these SDGs were detected and, therefore, qualified as estimated (J).

Several elements were detected in the majority of the preparation blanks. Since almost all of the detections were at trace levels, those elements detected at similar levels in samples (less than five times the blank concentration) were qualified as estimated nondetect (UJ).

Four equipment blanks were analyzed for metals: J192Y3, J192Y4 within SDG K1719 and J18KH3 and J18KH4 with SDG K1602. Several elements including barium, calcium, cobalt, lead, magnesium, phosphorus, potassium, silicon, sodium, strontium, tin, and zinc were detected in these blanks. The equipment blank results represent potential residual concentrations of metals that were transferred from the grinders to the blanks. No action with respect to the addition of data qualifiers was taken as a result of detected equipment blank results.

LCS recoveries were compliant for most SDGs. The element with the most frequent out of compliance LCS recovery was silicon. Recoveries of silicon were both above and below the control limits. Silicon results for many samples were qualified as estimated (J) based on the LCS recoveries. LCS recoveries for antimony, arsenic, lead, vanadium, and mercury were noncompliant for at least one SDG. Antimony, arsenic, mercury, and vanadium recoveries exceeded the upper control limit, indicating a potential high bias to sample concentrations of these elements. Detected sample concentrations were qualified as estimated (J). The LCS recovery for lead in one SDG was below the lower control limit, and all results for lead in this SDG were qualified as estimated (J).

Fish samples were spiked with known concentrations of the target elements to identify any potential matrix effects. The matrix spike recoveries of target elements were compliant for most samples. The recoveries of calcium, iron, and phosphorus were below the lower control limit for a few of the matrix spike samples, and associated results were qualified as estimated (J). For some elements (e.g., potassium and calcium), recoveries exceeded the upper control limit, in which case only detected results were qualified as estimated (J).

The RPDs between sample/duplicate pairs were acceptable for most of the laboratory duplicates, indicating that the analytical precision was satisfactory. In some cases, the RPD values exceeded criteria and associated detected results were qualified as estimated. Field duplicate samples were not collected.

The fish tissue metals data are sufficient for their intended project use.

3.3.2 Summary of Third-Party Data Validation Results for Fish Tissue Data

The third-party data validation packages for fish tissue samples are included in Appendix F (on CD). The fish tissue SDGs and analytical methods that were validated are listed in Table 2-5. Four SDGs were validated for metals and radionuclides, and one of these for pesticides. These data validation reports in Appendix F summarize the data validation that was completed for a given SDG along with the QC deficiencies that were identified. Only minor QC deficiencies were found during this validation, and none of the fish tissue data was rejected, indicating that these data are of good quality and suitable for their intended project use.

3.3.2.1 PCB Congener Data Validation – Fish Tissue. The third-party data validation report prepared for PCB congeners is included in Appendix G (on CD). The 12 SDGs listed in Table 2-7 were validated. This report summarizes the data validation that was completed along with the QC deficiencies that were identified. Several fish tissue samples in a number of SDGs were validated as presented in Table 2-7. In general, only minor QC deficiencies were identified in the data reviewed; however, three PCB results were rejected from samples J18K87, J19037, J19276, J19289, and J19464 because of extremely low internal standard recoveries. These rejected results are listed in Table 3-7.

The maximum holding time from collection to extraction as specified in the SAP is 7 days for aqueous samples and 14 days for solids. This holding time was exceeded for all samples (DOE/RL-2008-11, Appendix A). However, EPA Method 1668B specifies a maximum holding time of 1 year from sample collection to extraction if the samples are stored in accordance with the specified requirements. Based on the professional judgment of the third-party validator, the samples were not qualified based on holding time exceedances. The data are suitable for their intended use in the human health and ecological risk assessments.

3.3.2.2 Speciated Arsenic Validation – Fish Tissue. The third-party data validation report discussing the speciated arsenic validation for fish tissue is included in Appendix G (on CD). Several fish tissue samples in a number of SDGs were validated as presented in Table 2-7. Only minor QC deficiencies were identified in the data reviewed, and the data are suitable for their project intended project use.

3.3.2.3 Methyl Mercury Validation – Fish Tissue. The third-party data validation report discussing the methyl mercury validation for fist tissue is included in Appendix G (on CD). Four fish tissue samples were validated as presented in Table 2-7. No QC deficiencies were identified that would result in qualifying the data. The data are suitable for their intended project use.

3.3.2.4 Hexavalent Chromium Validation – Fish Tissue. The third-party data validation report discussing the hexavalent chromium validation for fist tissue is included in Appendix G (on CD). Five fish tissue samples were validated as presented in Table 2-7. One minor QC deficiency was identified that resulted in one sample being qualified as estimated (J) based on a low matrix spike recovery. The data are suitable for their intended project use.

3.3.3 Summary of Preliminary QC Review of Fish Tissue Data

Fish tissue SDGs that were analyzed for PCB congeners, speciated arsenic, hexavalent chromium, and methyl mercury and that were not assessed or validated are listed in Table 2-8. The tabulated quality control results and the narrative provided by the analytical laboratory were reviewed as described in Section 2.1.2. Based on the quality control results, data qualifiers were applied to the results as they were in validation. Compliance with quality control specifications were based on a comparison with the criteria specific to each analytical method and the criteria that was used in the validation process. The following subsections provide a summary of the results from this quality control review for each of the analyses. The QC review worksheets are provided in Appendix H.

3.3.3.1 PCB Congener Analysis. A quality control review consisting of a review of the laboratory narratives was conducted for the following SDGs that were not validated: J00492, J00577, J00649, and J00686. Samples in all of these SDGs were extracted and analyzed within an acceptable holding time period. Surrogate recoveries for all samples were also satisfactory. LCS recoveries of target PCB congeners were compliant. Isotopic carbon is used as an internal standard for quantification of the sample concentrations. Recoveries of isotopes associated with PCB-3 were below the lower acceptance limit for samples in SDGs J00492, JJ00577, and J00649 indicating a potential low bias to sample concentrations. Results for this target congener were qualified as estimated (J) based on this finding.

Several target PCB congeners were detected in the laboratory method blanks. In most cases these concentrations were near the detection limit values. In order to differentiate similar results of the same congeners in associated samples, sample concentrations less than five times the blank detection were qualified as nondetect (UJ).

The QC review did not reveal any major quality control deficiencies for any of the SDGs. None of the data was rejected, and the data are acceptable for their intended project use.

3.3.3.2 Inorganic Arsenic. The scope of the QC review included SDGs SEQ12810A, SEQ081409, SEQ091109, SEQ121809, and SEQ070710 and covered the following parameters: holding times, method blanks, laboratory control samples, laboratory duplicates, field duplicates, and recoveries of standard reference material. Although both inorganic and organic species were reviewed, the laboratory reported only total inorganic arsenic results.

All samples were analyzed prior to the expiration of holding times. Arsenobetaine was detected in method blanks associated with SDGs SEQ12810A and SEQ121809.

Laboratory control samples had compliant results for all arsenic species indicating that the accuracy for the method was acceptable. Field duplicate and laboratory duplicate results had compliant RPDs. Three pairs of matrix spike/matrix spike duplicates were analyzed to evaluate if there were any impacts to sample concentrations within the fish tissue matrix. Two of the three pairs had compliant results. The sample J195W5 had a recovery of arsenate (As^{+5}) below the lower control limit. A standard reference material of a type of mussel with known, certified concentrations of arsenobetaine and total arsenic was analyzed to determine analytical accuracy. The analyses of this material had compliant recoveries which, along with the laboratory control results, provided additional evidence that sample concentrations were accurately quantified.

The preliminary QC review of the inorganic arsenic quality control results did not identify any major deficiencies. Based on this review the data are of acceptable quality for their intended project use.

3.3.3.3 Hexavalent Chromium. Quality control data associated with SDGs SEQ82009, SEQ091109, and SEQ093009 were reviewed to evaluate data quality. Results for the following parameters were included as part of the review: holding times, blank results, matrix spikes, field duplicate samples, laboratory duplicate samples, laboratory control samples and standard reference recoveries. All quality control parameters above had compliant results, and the data are of acceptable quality for their intended project use.

3.3.3.4 Methyl Mercury. A quality control review was conducted for one SDG, SEQ092309, in which the samples were analyzed for methyl mercury. Results for holding times, blank results, matrix spikes, field duplicate samples, laboratory duplicate samples, laboratory control samples, and standard reference recoveries were compared against criteria for compliance. All of the QC parameters associated with the methyl mercury analyses were compliant, and the data are of acceptable quality for their intended project use.

4.0 SUMMARY

This report has been prepared in support of the RI of Hanford Site Releases to the Columbia River and summarizes the results of the DQA that was performed on the analytical data generated in connection with the following data collection efforts:

- 2008/2009 surface water, sediment, and island soil data collection
- Groundwater upwelling investigation (e.g., pore water, surface water, sediment) sample collection
- Fish tissue sample collection.

The data are being used to allow regulators to make final decisions for cleaning up Hanford Site contamination that exists in and along the Columbia River. The DQA was required to verify that the data collected in support of the RI are suitable to meet project DQOs and specifically to support the Screening Level Ecological and the Baseline Human Health Risk Assessments.

With the exceptions discussed below, only minor QC deficiencies were identified during the data assessment, and the data are suitable for their intended project use. Data that are deemed unusable for decision-making purposes in the risk assessments are those that were rejected (qualified “R”) based on a major QC deficiency identified during data assessment. A summary of the rejected data including medium, SDG number, analytical class, number of rejected samples, and basis for rejection is presented in Table 3-1. This table provides an overview of rejected data. More detailed summaries of the rejected data by compound and sample identification number are presented in Tables 3-2 through 3-4, 3-6 and 3-7 for surface water, sediment, soil, groundwater upwelling, and fish tissue data, respectively.

4.1 SUMMARY OF DATA ASSESSMENT RESULTS FOR SURFACE WATER

The majority of the surface water data are acceptable for their intended project use. Those data that were rejected and determined to be unusable based on a major QC deficiency identified during the assessment are provided in Table 3-2.

- Radionuclides. Quality control results were compliant for most QC parameters. None of the radionuclide data was rejected, and the data are acceptable for their intended project use.
- Volatile organic compounds. Quality control results were compliant for most QC parameters. None of the VOC data was rejected, and the data are acceptable for their intended project use.
- Semivolatile organic compounds. Quality control results were compliant for most QC parameters. Although data from one sample were rejected based on low surrogate recoveries, the QC results from the SVOC analyses indicate that over 99% of the results are of acceptable quality for their intended project use.

- Polychlorinated biphenyls. Although data for two SDGs were rejected based on holding time exceedances, the QC results from the PCB analyses indicate that 93% of the results are of acceptable quality for their intended project use.

- PCB congeners. None of the data was rejected, and the QC results demonstrate that the data are of acceptable quality for their intended project use.

- Chlorinated pesticides. Although data from SDGs K1453 and K1455 were rejected based on holding time exceedances, the QC results from the pesticide analyses indicate that 93% of the results are of acceptable quality for their intended project use.

- Metals. Quality control results were compliant for most QC parameters. The QC results for metals analyses indicate that the results are of acceptable quality for their intended project use. No major deficiencies were identified and the data are acceptable for their intended project use.

- Hexavalent chromium. Quality control results were compliant for all QC parameters assessed. None of the hexavalent chromium data was rejected or otherwise qualified during the data assessment and are acceptable for their intended project use.

- Diesel range organics. Quality control results were compliant for most QC parameters. Most of the DRO data are acceptable for their intended project use. Only one sample result (1% of results) in SDG K1442 was qualified as rejected based on a low surrogate recovery.

- Dissolved organic carbon. Quality control results were compliant for most QC parameters. None of the DOC data was rejected, and the data are acceptable for their intended project use.

- Anions. No major QC deficiencies were identified during the assessment of anion data. None of the data was rejected, and the data are acceptable for their intended project use.

4.2 SUMMARY OF DATA ASSESSMENT RESULTS FOR SEDIMENT

The following discussion presents a summary of the major and minor QC deficiencies identified during the data assessment of the sediment data. The majority of the data are acceptable for their intended project use. Those data that were rejected and unusable based on a major QC deficiency identified during the assessment are provided in Table 3-3.

- Radionuclides. Radionuclide target analytes include carbon-14, total strontium, technetium-9, various isotopic forms of uranium, plutonium, and thorium, and a gamma scan that provides results for additional radionuclides. Quality control results were compliant for most QC parameters. None of the radionuclide data was rejected, and the data are acceptable for their intended project use.

- Volatile organic compounds. Quality control results were generally compliant for most QC parameters, and the data are acceptable for their intended project use.

- Semivolatile organic compounds. Quality control results were compliant for most QC parameters. Although a small amount of the data was rejected based on holding time and surrogate recoveries, the QC results from the SVOC analyses indicate that the majority of the results (97%) are of acceptable quality for their intended project use.

- Polychlorinated biphenyls. Quality control results were compliant for most QC parameters. Although data for five samples in SDG K1497 were rejected based on holding time exceedances, the QC results from the PCB analyses indicate that 98% of the results are of acceptable quality for their intended project use.

- PCB congeners. None of the data was rejected, and the QC results demonstrate that the data are of acceptable quality for their intended project use.

- Chlorinated pesticides. Although data from five samples in SDG K1497 were rejected based on holding time exceedances, the QC results from the pesticide analyses indicate that the majority of the results (98%) are of acceptable quality for their intended project use.

- Metals. Quality control results were compliant for most QC parameters. Antimony results (six samples) and calcium results (14 samples) were rejected based on low matrix spike recoveries. The QC results from the other metals analyses indicate that the majority of the results (99%) are of acceptable quality for their intended project use.

- Hexavalent chromium. Results from 12 SDGs were rejected based on holding time exceedances and/or low matrix spike recoveries. The remainder of the data (80%) is acceptable for its intended project use.

- Diesel range organics. Quality control results were compliant for most QC parameters. None of the DRO data was rejected, and the data are acceptable for their intended project use.

- Total organic carbon. Quality control results were compliant for most QC parameters. None of the TOC data was rejected, and the data are acceptable for their intended project use.

4.3 SUMMARY OF DATA ASSESSMENT RESULTS FOR SOIL

The following present a summary of the results of the data assessment and the major and minor QC deficiencies identified during the data assessment for the soil data. The majority of the data are acceptable for their intended project use. Those data that were rejected and unusable based on a major QC deficiency identified during the assessment are provided in Table 3-4.

- Radionuclides. Quality control results were compliant for most QC parameters. None of the radionuclide data was rejected, and the data are acceptable for their intended project use.

- Semivolatile organic compounds. Quality control results were acceptable for most QC parameters. Results from three samples were rejected based on surrogate recoveries below 10%; however, the QC results from the SVOC analyses indicate that the majority of the results (99%) are of acceptable quality for their intended project use.

- Polychlorinated biphenyls. Quality control results were compliant for most QC parameters. None of the data was rejected, and the QC results demonstrate that the data are of acceptable quality for their intended project use.

- PCB congeners. None of the data was rejected, and the QC results demonstrate that the data are of acceptable quality for their intended project use.

- Chlorinated pesticides. Quality control results were compliant for most QC parameters. The QC results from the pesticide analyses indicate that the results are of acceptable quality for their intended project use.

- Metals. Quality control results were compliant for most QC parameters. None of the metals data was rejected during the data assessment, and the data are acceptable for their intended project use.

- Hexavalent chromium. Quality control results were compliant for most QC parameters, although results were qualified as rejected for 35 samples based on low matrix spike recoveries. Matrix spike recoveries of hexavalent chromium for analyses completed with SDG K1554 and K1556 were below 30%, suggesting a strong matrix effect. Nondetect results for associated samples were qualified as rejected (R) and detected results as estimated (J). Forty-three percent of the results were rejected and the remaining 57% are acceptable for their intended project use.

- Diesel range organics. Quality control results were compliant for most QC parameters. None of the data was rejected, and the data are acceptable for their intended project use.

- Total organic carbon. Quality control results were compliant for most QC parameters. None of the data was rejected, and the data are acceptable for their intended project use.

4.4 SUMMARY OF DATA ASSESSMENT RESULTS FOR GROUNDWATER UPWELLING DATA

The following is a summary of the results of the data assessment and QC deficiencies identified during the assessment of the groundwater upwelling data, which consists of pore water, surface water, and sediment data.

4.4.1 Summary of Data Assessment Results for Groundwater Upwelling – Pore Water

The following present a summary of the results of the assessment and the major and minor QC deficiencies identified during the data assessment of the groundwater upwelling pore water data. The majority of the data are acceptable for their intended project use. Those data that were rejected and determined to be unusable based on a major QC deficiency identified during the assessment are provided in Table 3-6.

- Radionuclides. Quality control results were compliant for most QC parameters. No radionuclide data was rejected, and the data are acceptable for their intended project use.

- Volatile organic compounds. For the groundwater upwelling pore water VOC data, QC results were compliant for most QC parameters. No VOC data were rejected, and the data are acceptable for their intended project use.

- Metals. For the metals data, QC results were compliant for most parameters and no data were rejected. The QC results for metals analyses indicate that the results are of acceptable quality for their intended project use.

- Hexavalent chromium. For the hexavalent chromium data, QC results were generally compliant for most parameters. Although the hexavalent chromium result from one sample in SDG J00557 was rejected based on a low matrix spike recovery, the QC results from the hexavalent chromium analyses indicate that the majority of the results (more than 99%) are of acceptable quality for their intended project use.

- Diesel range organics. Only samples within three SDGs were analyzed for DRO. Diesel range organic QC results were compliant for most parameters. No DRO data were rejected, and the data are acceptable for their intended project use.

- Total organic carbon. Quality control results were compliant for most parameters. None of the TOC data was rejected, and the data are acceptable for their intended project use.

- Anions. Holding time limits were exceeded by more than twice the limit for nitrite, nitrate, and orthophosphate in SDGs K1908, K1913, K1940, K1943, K1946, K1962, and K1963. Detected results were qualified as estimated (J) and nondetect results were qualified as rejected (R). The majority of the nitrite and orthophosphate results were rejected, and most nitrate results were detected and therefore qualified as estimated. The remaining 79% of the data are acceptable for their intended project use.

4.4.2 Summary of Data Assessment Results for Groundwater Upwelling – Surface Water

The following present a summary of the results of the assessment and the major and minor QC deficiencies identified during the data assessment of the groundwater upwelling surface water data. The majority of the data are acceptable for their intended project use. Those data that were rejected and determined to be unusable based on a major QC deficiency identified during the assessment are provided in Table 3-6.

- Radionuclides. Quality control results were compliant for most QC parameters. None of the radionuclide data was rejected, and the data are acceptable for their intended project use.

- Volatile organic compounds. Quality control results were compliant for most QC parameters. None of the VOC data was rejected, and the data are acceptable for their intended project use.

- Metals. Quality control results were compliant for most QC parameters and no data were rejected. The QC results for metals analyses indicate that the results are of acceptable quality for their intended project use.

- Hexavalent chromium. Quality control results were compliant for most QC parameters assessed. None of the hexavalent chromium data was rejected during the data assessment, and the data are acceptable for their intended project use.

- Dissolved organic carbon. Quality control results were compliant for most QC parameters. None of the DOC data was rejected, and the data are acceptable for their intended project use.

- Anions. All results for nitrite and orthophosphate and some for nitrate were rejected based on holding time exceedances. The remaining 74% of the anion data are acceptable for their intended project use.

4.4.3 Summary of Data Assessment Results for Groundwater Upwelling – Sediment

Groundwater upwelling sediment samples were collected and analyzed for radionuclides, VOCs, metals, hexavalent chromium, and TOC. The majority of the data are acceptable for their intended project use. Those data that were rejected and unusable based on a major QC deficiency identified during the assessment are provided in Table 3-6.

- Radionuclides. Quality control results were compliant for most QC parameters, and all data are acceptable for their intended project use.

- Volatile organic compounds. Quality control results were compliant for most QC parameters, and the data are acceptable for their intended project use.

- Metals. Quality control results were compliant for most QC parameters. Nondetect results for bismuth and uranium in SDG K1953 were qualified as rejected based on low matrix spike recoveries. With the exception of the rejected bismuth and uranium data (six samples), the remaining 99% of the data are acceptable for their intended project use.

- Hexavalent chromium. Six sample results were rejected based on low matrix spike recoveries. The majority (87%) of the hexavalent chromium data in sediment samples associated with the groundwater upwelling investigation are acceptable for their intended project use.

- Total organic carbon. Quality control results were compliant for most QC parameters. None of the data was rejected, and all data are acceptable for their intended project use.

4.5 SUMMARY OF DATA ASSESSMENT RESULTS FOR FISH TISSUE DATA

Several different species of fish indigenous to the Columbia River including whitefish, carp, sturgeon, bass, suckers, and walleye were analyzed for radionuclides, chlorinated pesticides, metals, PCB congeners, speciated arsenic, hexavalent chromium, and methyl mercury. A DQA was conducted to identify potential bias or interferences that could impact sample results as reported by the analytical laboratory.

The majority of the data are acceptable for their intended project use. Those data that were rejected and unusable based on a major QC deficiency identified during the assessment are provided in Table 3-7.

- Radionuclides. Radionuclide target analytes include carbon-14, tritium, total strontium, technetium-99, various isotopic forms of uranium, plutonium, and thorium, and a gamma scan that provides results for 16 additional radionuclides. Quality control results were compliant for most QC parameters. None of the radionuclide data was rejected and all are acceptable for their intended project use.

- Chlorinated pesticides. Many of the fish samples were extracted beyond twice the holding time limit and associated nondetect pesticide results were qualified as rejected based on this finding. SDGs K1579, K1714, K1725, K1758, K1759, K1761, K1769, K1774, K1785, K1852, K1863, and K1919 contained 169 nondetect samples that were rejected due to these exceedances. There were 264 samples with pesticide results that were not rejected. Approximately 67% of the pesticide results in fish tissue are acceptable for their intended project use.

- Metals. For the metals data, QC results were compliant for most parameters. There were no data that were rejected. The QC results from the metals analyses indicate that all data are of acceptable quality for their intended project use.

- PCB congeners. PCB 3 results were rejected from five samples J18K87, J19037, J19276, J19289, and J19464 because of extremely low internal standard recoveries. The remaining 99% of the data are acceptable for their intended project use.

- Speciated arsenic. Only minor QC deficiencies were identified in the data reviewed, and the data are of acceptable quality for their intended project use.

- Hexavalent chromium. One minor QC deficiency was identified that resulted in one sample being qualified as estimated (J) based on a low matrix spike recovery. The remaining data are of acceptable quality for their intended project use.

- Methyl mercury. No QC deficiencies were identified in the data reviewed, and the data are of acceptable quality for their intended project use.

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APPENDIX A

SURFACE WATER DATA QUALITY ASSESSMENT WORKSHEETS

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APPENDIX A
SURFACE WATER DATA QUALITY ASSESSMENT WORKSHEETS

A.1 SDG J00209

SDG J00209 – Hexavalent Chromium QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** J00209	**W&C Project No.:**222007	
Medium: Surface Water		**Analytes:** Hexavalent Chromium	
Samples: J17K69			
Laboratory: Test America, Richland, WA	**Date Data Assessment Completed:** 01/28/10 **Completed By:** RDD	**Sample Collection Date:** 10/16/08	**Sample Analysis Date:** 10/16/08

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No action	
Detection Limits	Yes	None	-	No action	
Blanks					
Blanks - Method	Yes	None	-	No action	
Equipment Blank	Not Collected				
Other QC Results					
LCS Results	Yes	None	-	No action	
Matrix Spikes Sample ID: J17K69	Yes	None	-	No action	
Laboratory Duplicates	Yes	None	-	No action	
Field Duplicates	Not Collected				
Summary					
Validity of Data	Yes	No rejected results			

A.2 SDG J00211

SDG J00211 – Hexavalent Chromium QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** J00211	**W&C Project No.:**222007	
Medium: Surface Water		**Analytes:** Hexavalent Chromium	
Samples: J17K67, J17K68			
Laboratory: Test America, Richland, WA	**Date Data Assessment Completed:** 01/28/10 **Completed By:** RDD	**Sample Collection Date:** 10/16/08	**Sample Analysis Date:** 10/17/08

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No action	
Detection Limits	Yes	None	-	No action	
Blanks					
Blanks - Method	Yes	None	-	No action	
Equipment Blank	Not Collected				
Other QC Results					
LCS Results	Yes	None	-	No action	
Matrix Spikes Sample ID: J17K67	Yes	None	-	No action	
Laboratory Duplicates Sample ID: J17K67	Yes	None	-	No action	
Field Duplicates	Not Collected				
Summary					
Validity of Data	Yes	No rejected results			

A.3 SDG J00212

Validated by ELR - Included in Appendix F

A.4 SDG J00216

SDG J00216 – Hexavalent Chromium QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** J00216	**W&C Project No.:**222007	
Medium: Surface Water		**Analytes:** Hexavalent Chromium	
Samples: J17RK7			
Laboratory: Test America, Richland, WA	**Date Data Assessment Completed:** 01/28/10 **Completed By:** RDD	**Sample Collection Date:** 10/28/08	**Sample Analysis Date:** 10/28/08

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No action	
Detection Limits	Yes	None	-	No action	
Blanks					
Blanks - Method	Yes	None	-	No action	
Equipment Blank	Not Collected				
Other QC Results					
LCS Results	Yes	None	-	No action	
Matrix Spikes Sample ID:	Yes	None	-	No action	
Laboratory Duplicates Sample ID:	Yes	None	-	No action	
Field Duplicates	Not Collected				
Summary					
Validity of Data	Yes	No rejected results			

A.5 SDG J00217

Validated by ELR - Included in Appendix F

A.6 SDG J00219

SDG J00219 – Hexavalent Chromium QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** J00219	**W&C Project No.:**222007	
Medium: Surface Water		**Analytes:** Hexavalent Chromium	
Samples: J17RW9, J17TT1			
Laboratory: Test America, Richland, WA	**Date Data Assessment Completed:** 01/28/10 **Completed By:** RDD	**Sample Collection Date:** 10/31/08	**Sample Analysis Date:** 10/31/08

QC Parameter	**All in Spec.?**	**Non-Compliant Results**	**Flag**	**Action/ Notes**	**Associated Samples**
Holding Times	Yes	None	-	No action	
Detection Limits	Yes	None	-	No action	
Blanks					
Blanks - Method	Yes	None	-	No action	
Equipment Blank	Not Collected				
Other QC Results					
LCS Results	Yes	None	-	No action	
Matrix Spikes Sample ID: J17RW9	Yes	None	-	No action	
Laboratory Duplicates Sample ID: J17RW9	Yes	None	-	No action	
Field Duplicates Sample IDs: J17TT1/J17RW9	Yes	None	-	No action	
Summary					
Validity of Data	Yes	No rejected results			

A.7 SDG J00220

SDG J00220 – Hexavalent Chromium QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** J00220	**W&C Project No.:**222007	
Medium: Surface Water		**Analytes:** Hexavalent Chromium	
Samples: J17RP3, J17RT3, J17RP8, J17RP9			
Laboratory: Test America, Richland, WA	**Date Data Assessment Completed:** 2/2/2010 **Completed By:** RDD	**Sample Collection Date:** 10/30/2008	**Sample Analysis Date:** 10/31/2008

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No action	
Detection Limits	Yes	None	-	No action	
Blanks					
Blanks - Method	Yes	None	-	No action	
Equipment Blank	Not Collected				
Other QC Results					
LCS Results	Yes	None	-	No action	
Matrix Spikes Sample ID: J17RT3	Yes	None	-	No action	
Laboratory Duplicates Sample ID: J17RT3	Yes	None	-	No action	
Field Duplicates	Not Collected				
Summary					
Validity of Data	Yes	No rejected results			

A.8 SDG J00221

SDG J00221 – Hexavalent Chromium QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** J00221	**W&C Project No.:**222007
Medium: Surface Water		**Analytes:** Hexavalent Chromium
Samples: J17RW4, J17RW5, J17RW6		

Laboratory: Test America, Richland, WA	**Date Data Assessment Completed:** 2/2/2010 **Completed By:** KAM	**Sample Collection Date:** 11/3/2008	**Sample Analysis Date:** 11/4/2008

QC Parameter	**All in Spec.?**	**Non-Compliant Results**	**Flag**	**Action/ Notes**	**Associated Samples**
Holding Times	Yes	None	-	No action	
Detection Limits	Yes	None	-	No action	
Blanks					
Blanks - Method	Yes	None	-	No action	
Equipment Blank	Not Collected				
Other QC Results					
LCS Results	Yes	None	-	No action	
Matrix Spikes Sample ID: J17RW4	Yes	None	-	No action	
Laboratory Duplicates Sample ID: J17RW4	Yes	None	-	No action	
Field Duplicates	Not Collected				
Summary					
Validity of Data	Yes	No rejected results			

A.9 SDG J00222

SDG J00222 – Hexavalent Chromium QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** J00222	**W&C Project No.:**222007	
Medium: Surface Water		**Analytes:** Hexavalent Chromium	
Samples: J17TT2, J17TT5			
Laboratory: Test America, Richland, WA	**Date Data Assessment Completed:** 2/2/2010 **Completed By:** KAM	**Sample Collection Date:** 11/4/2008	**Sample Analysis Date:** 11/5/2008

QC Parameter	**All in Spec.?**	**Non-Compliant Results**	**Flag**	**Action/ Notes**	**Associated Samples**
Holding Times	Yes	None	-	No action	
Detection Limits	Yes	None	-	No action	
Blanks					
Blanks - Method	Yes	None	-	No action	
Equipment Blank	Not Collected				
Other QC Results					
LCS Results	Yes	None	-	No action	
Matrix Spikes Sample ID: J17TT2	Yes	None	-	No action	
Laboratory Duplicates Sample ID: J17TT2	Yes	None	-	No action	
Field Duplicates	Not Collected				
Summary					
Validity of Data	Yes	No rejected results			

A.10 SDG J00223

SDG J00223 – Hexavalent Chromium QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** J00223	**W&C Project No.:**222007	
Medium: Surface Water		**Analytes:** Hexavalent Chromium	
Samples: J17TT3, J17TT4, J17TT8			
Laboratory: Test America, Richland, WA	**Date Data Assessment Completed:** 2/2/2010 **Completed By:** KAM	**Sample Collection Date:** 11/4/2008	**Sample Analysis Date:** 11/5/2008

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No action	
Detection Limits	Yes	None	-	No action	
Blanks					
Blanks - Method	Yes	None	-	No action	
Equipment Blank	Not Collected				
Other QC Results					
LCS Results	Yes	None	-	No action	
Matrix Spikes Sample ID: J17TT3	Yes	None	-	No action	
Laboratory Duplicates Sample ID: J17TT3	Yes	None	-	No action	
Field Duplicates	Not Collected				
Summary					
Validity of Data	Yes	No rejected results			

A.11 SDG J00224

SDG J00224 – Hexavalent Chromium QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** J00224	**W&C Project No.:**222007
Medium: Surface Water		**Analytes:** Hexavalent Chromium
Samples: J17TT6, J17TV2		

Laboratory: Test America, Richland, WA	**Date Data Assessment Completed:** 2/2/2010 **Completed By:** KAM	**Sample Collection Date:** 11/5/2008	**Sample Analysis Date:** 11/5/2008

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No action	
Detection Limits	Yes	None	-	No action	
Blanks					
Blanks - Method	Yes	None	-	No action	
Equipment Blank	Not Collected				
Other QC Results					
LCS Results	Yes	None	-	No action	
Matrix Spikes Sample ID: J17TT6	Yes	None	-	No action	
Laboratory Duplicates Sample ID: J17TT6	Yes	None	-	No action	
Field Duplicates	Not Collected				
Summary					
Validity of Data	Yes	No rejected results			

A.12 SDG J00225

SDG J00225 – Hexavalent Chromium QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** J00225	**W&C Project No.:**222007	
Medium: Surface Water		**Analytes:** Hexavalent Chromium	
Samples: J17TT9, J17TV1			
Laboratory: Test America, Richland, WA	**Date Data Assessment Completed:** 2/2/2010 **Completed By:** KAM	**Sample Collection Date:** 11/5/2008	**Sample Analysis Date:** 11/6/2008

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No action	
Detection Limits	Yes	None	-	No action	
Blanks					
Blanks - Method	Yes	None	-	No action	
Equipment Blank	Not Collected				
Other QC Results					
LCS Results	Yes	None	-	No action	
Matrix Spikes Sample ID: J17TV1	Yes	None	-	No action	
Laboratory Duplicates Sample ID: J17TV1	Yes	None	-	No action	
Field Duplicates	Not Collected				
Summary					
Validity of Data	Yes	No rejected results			

A.13 SDG J00226

SDG J00226 – Hexavalent Chromium QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** J00226	**W&C Project No.:**222007
Medium: Surface Water		**Analytes:** Hexavalent Chromium
Samples: J17TT7		

Laboratory: Test America, Richland, WA	**Date Data Assessment Completed:** 2/2/2010 **Completed By:** KAM	**Sample Collection Date:** 11/6/2008	**Sample Analysis Date:** 11/6/2008

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No action	
Detection Limits	Yes	None	-	No action	
Blanks					
Blanks - Method	Yes	None	-	No action	
Equipment Blank	Not Collected				
Other QC Results					
LCS Results	Yes	None	-	No action	
Matrix Spikes	Yes	None	-	No action	
Laboratory Duplicates	Yes	None	-	No action	
Field Duplicates	Not Collected				
Summary					
Validity of Data	Yes	No rejected results			

A.14 SDG J00227

SDG J00227 – Hexavalent Chromium QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** J00227	**W&C Project No.:**222007
Medium: Surface Water		**Analytes:** Hexavalent Chromium
Samples: J17TV3, J17V46, J17TV4, J17V45		

Laboratory: Test America, Richland, WA	**Date Data Assessment Completed:** 2/2/2010 **Completed By:** KAM	**Sample Collection Date:** 11/6/2008	**Sample Analysis Date:** 11/7/2008

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No action	
Detection Limits	Yes	None	-	No action	
Blanks					
Blanks - Method	Yes	None	-	No action	
Equipment Blank	Not Collected				
Other QC Results					
LCS Results	Yes	None	-	No action	
Matrix Spikes Sample ID: J17V45	Yes	None	-	No action	
Laboratory Duplicates Sample ID: J17V45	Yes	None	-	No action	
Field Duplicates	Not Collected				
Summary					
Validity of Data	Yes	No rejected results			

A.15 SDG J00228

SDG J00228 – Hexavalent Chromium QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** J00228	**W&C Project No.:**222007
Medium: Surface Water		**Analytes:** Hexavalent Chromium
Samples: J17TV0, J17TV7		

Laboratory: Test America, Richland, WA	**Date Data Assessment Completed:** 2/2/2010 **Completed By:** KAM	**Sample Collection Date:** 11/7/2008	**Sample Analysis Date:** 11/7/2008

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No action	
Detection Limits	Yes	None	-	No action	
Blanks					
Blanks - Method	Yes	None	-	No action	
Equipment Blank	Not Collected				
Other QC Results					
LCS Results	Yes	None	-	No action	
Matrix Spikes Sample ID: J17TV7	Yes	None	-	No action	
Laboratory Duplicates Sample ID: J17TV7	Yes	None	-	No action	
Field Duplicate Sample IDs: J17TV0/ J17TV7	Yes	None	-	No action	
Summary					
Validity of Data	Yes	No rejected results			

A.16 SDG J00229

SDG J00229 – Hexavalent Chromium QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** J00229	**W&C Project No.:**222007
Medium: Surface Water		**Analytes:** Hexavalent Chromium
Samples: J17RK9, J17RL0		

Laboratory: Test America, Richland, WA	**Date Data Assessment Completed:** 2/2/2010 **Completed By:** KAM	**Sample Collection Date:** 11/10/2008	**Sample Analysis Date:** 11/10/2008

QC Parameter	**All in Spec.?**	**Non-Compliant Results**	**Flag**	**Action/ Notes**	**Associated Samples**
Holding Times	Yes	None	-	No action	
Detection Limits	Yes	None	-	No action	
Blanks					
Blanks - Method	Yes	None	-	No action	
Equipment Blank	Not Collected				
Other QC Results					
LCS Results	Yes	None	-	No action	
Matrix Spikes Sample ID: J17RK9	Yes	None	-	No action	
Laboratory Duplicates Sample ID: J17RK9	Yes	None	-	No action	
Field Duplicates	Not Collected				
Summary					
Validity of Data	Yes	No rejected results			

A.17 SDG J00231

SDG J00231 – Hexavalent Chromium QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** J00231	**W&C Project No.:**222007	
Medium: Surface Water		**Analytes:** Hexavalent Chromium	
Samples: J17RK8			
Laboratory: Test America, Richland, WA	**Date Data Assessment Completed:** 2/2/2010 **Completed By:** KAM	**Sample Collection Date:** 11/10/2008	**Sample Analysis Date:** 11/11/2008

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No action	
Detection Limits	Yes	None	-	No action	
Blanks					
Blanks - Method	Yes	None	-	No action	
Equipment Blank	Not Collected				
Other QC Results					
LCS Results	Yes	None	-	No action	
Matrix Spikes Sample ID: J17RK8	Yes	None	-	No action	
Laboratory Duplicates Sample ID: J17RK8	Yes	None	-	No action	
Field Duplicates	Not Collected				
Summary					
Validity of Data	Yes	No rejected results			

A.18 SDG J00232

SDG J00232 – Hexavalent Chromium QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** J00232	**W&C Project No.:**222007	
Medium: Surface Water		**Analytes:** Hexavalent Chromium	
Samples: J17TV5, J17TV6, J17V47			
Laboratory: Test America, Richland, WA	**Date Data Assessment Completed:** 2/2/2010 **Completed By:** KAM	**Sample Collection Date:** 11/11/2008	**Sample Analysis Date:** 11/11/2008

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No action	
Detection Limits	Yes	None	-	No action	
Blanks					
Blanks - Method	Yes	None	-	No action	
Equipment Blank	Not Collected				
Other QC Results					
LCS Results	Yes	None	-	No action	
Matrix Spikes Sample ID: J17TV5	Yes	None	-	No action	
Laboratory Duplicates Sample ID: J17TV5	Yes	None	-	No action	
Field Duplicates	Not Collected				
Summary					
Validity of Data	Yes	No rejected results			

A.19 SDG J00233

SDG J00233 – Hexavalent Chromium QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** J00233	**W&C Project No.:**222007
Medium: Surface Water		**Analytes:** Hexavalent Chromium
Samples: J17RT4, J17RT7, J17RT5, J17RT8, J17RT6		

Laboratory: Test America, Richland, WA	**Date Data Assessment Completed:** 2/2/2010 **Completed By:** KAM	**Sample Collection Date:** 11/12/2008	**Sample Analysis Date:** 11/13/2008

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No action	
Detection Limits	Yes	None	-	No action	
Blanks					
Blanks - Method	Yes	None	-	No action	
Equipment Blank	Not Collected				
Other QC Results					
LCS Results	Yes	None	-	No action	
Matrix Spikes Sample ID: J17RT5	Yes	None	-	No action	
Laboratory Duplicates Sample ID: J17RT5	Yes	None	-	No action	
Field Duplicates	Not Collected				
Summary					
Validity of Data	Yes	No rejected results			

A.20 SDG J00234

SDG J00234 – Hexavalent Chromium QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** J00234	**W&C Project No.:**222007	
Medium: Surface Water		**Analytes:** Hexavalent Chromium	
Samples: J17RW7			
Laboratory: Test America, Richland, WA	**Date Data Assessment Completed:** 2/2/2010 **Completed By:** KAM	**Sample Collection Date:** 11/13/2008	**Sample Analysis Date:** 11/13/2008

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No action	
Detection Limits	Yes	None	-	No action	
Blanks					
Blanks - Method	Yes	None	-	No action	
Equipment Blank	Not Collected				
Other QC Results					
LCS Results	Yes	None	-	No action	
Matrix Spikes Sample ID: J17RW7	Yes	None	-	No action	
Laboratory Duplicates Sample ID: J17RW7	Yes	None	-	No action	
Field Duplicates	Not Collected				
Summary					
Validity of Data	Yes	No rejected results			

A.21 SDG J00529

SDG J00529 – Hexavalent Chromium QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** J00529	**W&C Project No.:**222007
Medium: Surface Water		**Analytes:** Hexavalent Chromium
Samples: J18NT9		

Laboratory: Test America, Richland, WA	**Date Data Assessment Completed:** 2/2/2010 **Completed By:** KAM	**Sample Collection Date:** 6/1/2009	**Sample Analysis Date:** 6/2/2009

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No action	
Detection Limits	Yes	None	-	No action	
Blanks					
Blanks - Method	Yes	None	-	No action	
Equipment Blank	Not Collected				
Other QC Results					
LCS Results	Yes	None	-	No action	
Matrix Spikes Sample ID: J18NT9	Yes	None	-	No action	
Laboratory Duplicates Sample ID: J18NT9	Yes	None	-	No action	
Field Duplicates	Not Collected				
Summary					
Validity of Data	Yes	No rejected results			

A.22 SDG J00530

SDG J00530 – Hexavalent Chromium QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** J00530	**W&C Project No.:**222007	
Medium: Surface Water		**Analytes:** Hexavalent Chromium	
Samples: J18NP6			
Laboratory: Test America, Richland, WA	**Date Data Assessment Completed:** 2/2/2010 **Completed By:** KAM	**Sample Collection Date:** 6/1/2009	**Sample Analysis Date:** 6/2/2009

QC Parameter	**All in Spec.?**	**Non-Compliant Results**	**Flag**	**Action/ Notes**	**Associated Samples**
Holding Times	Yes	None	-	No action	
Detection Limits	Yes	None	-	No action	
Blanks					
Blanks - Method	Yes	None	-	No action	
Equipment Blank	Not Collected				
Other QC Results					
LCS Results	Yes	None	-	No action	
Matrix Spikes Sample ID: J18NP6	Yes	None	-	No action	
Laboratory Duplicates Sample ID: J18NP6	Yes	None	-	No action	
Field Duplicates	Not Collected				
Summary					
Validity of Data	Yes	No rejected results			

A.23 SDG J00531

SDG J00531 – Hexavalent Chromium QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** J00531	**W&C Project No.:**222007	
Medium: Surface Water		**Analytes:** Hexavalent Chromium	
Samples: J18NL8, J18P19, J18NN1, J18P22, J18NN4, J18P28			
Laboratory: Test America, Richland, WA	**Date Data Assessment Completed:** 2/2/2010 **Completed By:** KAM	**Sample Collection Date:** 6/2/2009	**Sample Analysis Date:** 6/3/2009

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No action	
Detection Limits	Yes	None	-	No action	
Blanks					
Blanks - Method	Yes	None	-	No action	
Equipment Blank	Not Collected				
Other QC Results					
LCS Results	Yes	None	-	No action	
Matrix Spikes Sample ID: J18P28	Yes	None	-	No action	
Laboratory Duplicates Sample ID: J18P28	Yes	None	-	No action	
Field Duplicates Sample IDs: J18NL8/ J18NN4	Yes	None	-	No action	
Summary					
Validity of Data	Yes	No rejected results			

A.24 SDG J00533

SDG J00533 – Hexavalent Chromium QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** J00533	**W&C Project No.:**222007
Medium: Surface Water		**Analytes:** Hexavalent Chromium
Samples: J18NN7, J18P25, J18NP0, J18NP3		

Laboratory: Test America, Richland, WA	**Date Data Assessment Completed:** 2/2/2010 **Completed By:** KAM	**Sample Collection Date:** 6/3/2009	**Sample Analysis Date:** 6/4/2009

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No action	
Detection Limits	Yes	None	-	No action	
Blanks					
Blanks - Method	Yes	None	-	No action	
Equipment Blank	Not Collected				
Other QC Results					
LCS Results	Yes	None	-	No action	
Matrix Spikes Sample ID: J18P25	Yes	None	-	No action	
Laboratory Duplicates Sample ID: J18P25	Yes	None	-	No action	
Field Duplicates	Not Collected				
Summary					
Validity of Data	Yes	No rejected results			

A.25 SDG J00535

SDG J00535 – Hexavalent Chromium QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** J00535	**W&C Project No.:**222007
Medium: Surface Water		**Analytes:** Hexavalent Chromium
Samples: J18P31, J18P34		

Laboratory: Test America, Richland, WA	**Date Data Assessment Completed:** 2/2/2010 **Completed By:** KAM	**Sample Collection Date:** 6/4/2009	**Sample Analysis Date:** 6/5/2009

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No action	
Detection Limits	Yes	None	-	No action	
Blanks					
Blanks - Method	Yes	None	-	No action	
Equipment Blank	Not Collected				
Other QC Results					
LCS Results	Yes	None	-	No action	
Matrix Spikes Sample ID: J18P31	Yes	None	-	No action	
Laboratory Duplicates Sample ID: J18P31	Yes	None	-	No action	
Field Duplicates	Not Collected				
Summary					
Validity of Data	Yes	No rejected results			

A.26 SDG J00537

SDG J00537 – Hexavalent Chromium QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** J00537	**W&C Project No.:**222007	
Medium: Surface Water		**Analytes:** Hexavalent Chromium	
Samples: J18P46			
Laboratory: Test America, Richland, WA	**Date Data Assessment Completed:** 2/2/2010 **Completed By:** KAM	**Sample Collection Date:** 6/5/2009	**Sample Analysis Date:** 6/5/2009

QC Parameter	**All in Spec.?**	**Non-Compliant Results**	**Flag**	**Action/ Notes**	**Associated Samples**
Holding Times	Yes	None	-	No action	
Detection Limits	Yes	None	-	No action	
Blanks					
Blanks - Method	Yes	None	-	No action	
Equipment Blank	Not Collected				
Other QC Results					
LCS Results	Yes	None	-	No action	
Matrix Spikes Sample ID: J18P46	Yes	None	-	No action	
Laboratory Duplicates Sample ID: J18P46	Yes	None	-	No action	
Field Duplicates	Not Collected				
Summary					
Validity of Data	Yes	No rejected results			

A.27 SDG J00545

SDG J00545 – Hexavalent Chromium QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** J00545	**W&C Project No.:**222007	
Medium: Surface Water		**Analytes:** Hexavalent Chromium	
Samples: J18P37, J18P43			
Laboratory: Test America, Richland, WA	**Date Data Assessment Completed:** 2/2/2010 **Completed By:** KAM	**Sample Collection Date:** 6/9/2009	**Sample Analysis Date:** 6/10/2009

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No action	
Detection Limits	Yes	None	-	No action	
Blanks					
Blanks - Method	Yes	None	-	No action	
Equipment Blank	Not Collected				
Other QC Results					
LCS Results	Yes	None	-	No action	
Matrix Spikes Sample ID: J18P43	Yes	None	-	No action	
Laboratory Duplicates Sample ID: J18P43	Yes	None	-	No action	
Field Duplicates	Not Collected				
Summary					
Validity of Data	Yes	No rejected results			

A.28 SDG J00548

SDG J00548 – Hexavalent Chromium QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** J00548	**W&C Project No.:**222007	
Medium: Surface Water		**Analytes:** Hexavalent Chromium	
Samples: J18P49, J18P95			
Laboratory: Test America, Richland, WA	**Date Data Assessment Completed:** 2/2/2010 **Completed By:** KAM	**Sample Collection Date:** 6/8/2009	**Sample Analysis Date:** 6/9/2009

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No action	
Detection Limits	Yes	None	-	No action	
Blanks					
Blanks - Method	Yes	None	-	No action	
Equipment Blank	Not Collected				
Other QC Results					
LCS Results	Yes	None	-	No action	
Matrix Spikes Sample ID: J18P49	Yes	None	-	No action	
Laboratory Duplicates Sample ID: J19P49	Yes	None	-	No action	
Field Duplicates	Not Collected				
Summary					
Validity of Data	Yes	No rejected results			

A.29 SDG K1399

SDG K1399 – VOC QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1399	**W&C Project No.:**222007	
Medium: Surface Water		**Analytes:** VOA	
Samples: J17K48, J17K55, J17K53, J17K70, J17K54			
Laboratory: Lionville	**Date Data Assessment Completed:** 2/10/10 **Completed By:** KAM	**Sample Collection Date:** 10/16/2008	**Sample Analysis Date:** 10/21/2008

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No Action	
Detection Limits	Yes	None	-	No Action	
Blanks					
Blanks - Method	No	Methylene Chloride = 4 ug/L	UJ	Qualify positive results below action level (40 ug/L) as non-detect (UJ) and raise reported value to RDL	Methylene Chloride: J17K53 J17K54 J17K55
Equipment Blank Sample ID: J17K48	Yes	None	-	No Action	
Trip Blank Sample ID: J17K70	No	Methylene Chloride = 4 ug/L	-	No Action based on guidance	
Other QC Results					
Surrogate Recoveries	Yes	None	-	No Action	
LCS Results	No	Chloroethane: 189% Acetone: 157%	J	Qualify positive results as estimated (J)	All samples. No impacts since all results ND.
Matrix Spikes Sample ID: J17K48	Yes	None	-	No Action	
Lab Duplicates	Not Analyzed				
Field Duplicates Sample ID:	Not Collected				
Summary					

SDG K1399 – VOC QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1399	**W&C Project No.:**222007	
Medium: Surface Water		**Analytes:** VOA	
Samples: J17K48, J17K55, J17K53, J17K70, J17K54			
Laboratory: Lionville	**Date Data Assessment Completed:** 2/10/10 **Completed By:** KAM	**Sample Collection Date:** 10/16/2008	**Sample Analysis Date:** 10/21/2008

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Validity of Data	Yes	No rejected results			
Additional Notes:					

SDG K1399 – SVOC QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1399	**W&C Project No.:**222007
Medium: Surface Water		**Analytes:** SVOCs
Samples: J17K48, J17K55, J17K53, J17K54		

Laboratory: Lionville	**Date Data Assessment Completed:** 2/10/2010 **Completed By:** KAM	**Sample Collection Date:** 10/16/2008	**Sample Analysis Date:** 10/22–11/4/2008 extr 10/31–11/7/2008 anal

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	No	J17K53 – extraction hold time outside criteria (less than 2x limit) due to cracked vial	J	Qualify results as estimated (J)	J17K53
Detection Limits	No	2,4,5-Trichlorophenol 2-Nitroaniline 3-Nitroaniline 4-Nitrophenol 4-Nitroaniline 4,6-Dinitro-2-methylphenol Pentachlorophenol	-	No Action	
Blanks					
Method Blanks	Yes	None	-	No Action	
Equipment Blank J17K48	No	Phenol – 1J ug/L	-	No Action based on guidance	
Other QC					
Surrogate Recoveries	Yes	None	-	No Action	
LCS Results	No	Hexachloroethane: 49% Bis(2-Chloroethoxy)methane: 7% 4-Chloroaniline: 0% Hexachlorocyclopentadiene: 38% 2-Nitroaniline: 44% 3-Nitroaniline: 0% 4-Nitroaniline: 0% N-Nitrosodiphenylamine: 20% Carbazole: 46% 3,3'-Dichlorobenzidine:0%	J	Qualify positive and non-detect results as estimated (J)	All samples

SDG K1399 – SVOC QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1399	**W&C Project No.:**222007	
Medium: Surface Water		**Analytes:** SVOCs	
Samples: J17K48, J17K55, J17K53, J17K54			
Laboratory: Lionville	**Date Data Assessment Completed:** 2/10/2010 **Completed By:** KAM	**Sample Collection Date:** 10/16/2008	**Sample Analysis Date:** 10/22–11/4/2008 extr 10/31–11/7/2008 anal

QC Parameter	**All in Spec.?**	**Non-Compliant Results**	**Flag**	**Action/ Notes**	**Associated Samples**
Matrix Spikes Sample ID: J17K48	No	Phenol: 29% 2-Chlorophenol: 15% 2-Nitrophenol: 8% 2,4 – Dichlorophenol: 11% 4-Chloroaniline: 7%/2% 2,4,6-Trichlorophenol: 9% 2,4,5-Trichlorophenol: 8% 3-Nitroaniline: 5%/4% 2,4-Dinitrophenol: 8% 4-Nitrophenol: 5%/40% 4-Nitroaniline: 11%/11% 4,6-Dinitro-2-methylphenol: 11% Pentachlorophenol: 10%/47% 3,3’-Dichlorobenzidine:0%/0% N-Nitrosodiphenylamine: 42%	J	Qualify positive and non-detect results as estimated (J)	All samples
Lab Duplicates	Not Analyzed				
Field Duplicates	Not Collected				
Summary					
Validity of Data	Yes	No rejected results			
Additional Notes:					

SDG K1399 – PCB QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1399	**W&C Project No.:**222007	
Medium: Surface Water		**Analytes:** PCBs	
Samples: J17K48, J17K55, J17K53, J17K54			
Laboratory: Lionville	**Date Data Assessment Completed:** 2/10/2010 **Completed By:** KAM	**Sample Collection Date:** 10/16/2008	**Sample Analysis Date:** 10/21/2008 extr 10/24/2008 anal

QC Parameter	**All in Spec.?**	**Non-Compliant Results**	**Flag**	**Action/ Notes**	**Associated Samples**
Holding Times	Yes	None	-	No Action	
Detection Limits	Yes	None	-	No Action	
Blanks					
Method Blank	Yes	None	-	No Action	
Equipment Blank Sample ID: J17K48	Yes	None	-	No Action	
Other QC Results					
Surrogate Recoveries	Yes	None	-	No Action	
LCS Results	Yes	None	-	No Action	
Matrix Spikes Sample ID: J17K53	Yes	None	-	No Action	
Lab Duplicates	Not Analyzed				
Field Duplicates	Not Collected				
Summary					
Validity of Data	Yes	No rejected results			
Additional Notes:					

SDG K1399 – Pesticides QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1399	**W&C Project No.:**222007	
Medium: Surface Water		**Analytes:** Pesticides	
Samples: J17K48, J17K55, J17K53, J17K54			
Laboratory: Lionville	**Date Data Assessment Completed:** 2/11/2010 **Completed By:** KAM	**Sample Collection Date:** 10/16/2008	**Sample Analysis Date:** 10/21/2008 extr 10/23/2008 anal

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No Action	
Detection Limits	Yes	None	-	No Action	
Blanks					
Method Blank	Yes	None	-	No Action	
Equipment Blank Sample ID: J17K48	Yes	None	-	No Action	
Other QC Results					
Surrogate Recoveries	Yes	None	-	No Action	
LCS Results	No	No LCS results for toxaphene	J	Qualify all associated results as estimated (J)	Impacts to all samples above.
Matrix Spikes Sample ID: J17K53	Yes	None	-	No Action	
Lab Duplicates	Not Analyzed				
Field Duplicate	Not Collected				
QC Summary					
Validity of Data	Yes	No reject results			
Additional Notes:					

SDG K1399 – Metals QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1399	**W&C Project No.:**222007	
Medium: Surface Water		**Analytes:** Metals	
Samples: J17K48, J17K55, J17K62, J17K53, J17K60, J17K54, J17K61			
Laboratory: Lionville	**Date Data Assessment Completed:** 2/11/2010 **Completed By:** KAM	**Sample Collection Date:** 10/16/2008	**Sample Analysis Date:** 11/12/2008 Hg: 11/4/2008

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No Action	
Detection Limits	No	Silicon	-	No Action	
Blanks					
Preparation Blank	No	Lithium = 0.45 ug/L Sodium = 21.5 ug/L	-	No Action because all sample results are greater than 5x the highest lithium and sodium result in the blanks	
Equipment Blank Sample ID: J17K48	No	Barium = 0.50 ug/L Calcium = 85.3 ug/L Potassium = 246 ug/L Magnesium = 43.6 ug/L Sodium = 86.9 ug/L Lead = 2.5 ug/L Strontium = 0.80 ug/L Zinc = 6.0 ug/L	-	No Action based on guidance	
Other QC Results					
LCS Results	Yes	None	-	No Action	
Matrix Spikes Sample ID: J17K53	No	Lithium = 123.1% Silicon = 138.7%	J	Qualify positive lithium results as estimated because the initial result (8.2 ug/L) is less than 4x the spiked amount (2000 ug/L)	All samples for Lithium

SDG K1399 – Metals QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1399	**W&C Project No.:**222007	
Medium: Surface Water		**Analytes:** Metals	
Samples: J17K48, J17K55, J17K62, J17K53, J17K60, J17K54, J17K61			
Laboratory: Lionville	**Date Data Assessment Completed:** 2/11/2010 **Completed By:** KAM	**Sample Collection Date:** 10/16/2008	**Sample Analysis Date:** 11/12/2008 Hg: 11/4/2008

QC Parameter	**All in Spec.?**	**Non-Compliant Results**	**Flag**	**Action/ Notes**	**Associated Samples**
Lab Duplicates Sample ID: J17K53	No	Aluminum = 45.7% Phosphorus = 200%	-	No qualification since the difference between results is less than 1x the RDL	
Field Duplicate Sample ID:	Not Collected				
QC Summary					
Validity of Data	Yes	No rejected data			
Additional Notes:					

SDG K1399 – Radionuclides QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1399	**W&C Project No.:**222007	
Medium: Surface Water		**Analytes:** Tritium, Carbon-14, Strontium-90, Technetium-99, Isotopic Thorium, Isotopic Uranium, Isotopic Plutonium, Gamma Spectroscopy	
Samples: J17K53, J17K54, J17K55			
Laboratory: Eberline	**Date Data Assessment Completed:** 2/11/2010 **Completed By:** KAM	**Sample Collection Date:** 10/16/2008	**Sample Analysis Date:** 11/2008

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No Action	
Detection Limits	No	**RDL** Carbon-14 Strontium **MDA** Radium-226 Radium-228	-	No Action	All samples
Blanks					
Method Blanks	Yes	None	-	No Action	
Other QC Results					
LCS Results	Yes	None	-	No Action	
Tracer Results	No	Technetium-99: 106%	-	Qualify positive results as estimated (J).	J17K54. No impacts to sample since Tc-99 was non-detect.
Matrix Spike Sample ID: J17K53	Yes	None	-	No Action	
Lab Duplicates Sample ID: J17K53	No	Uranium-235: 81%	-	No Action – the difference between both results is less than 1x the RDL	J17K53
Field Duplicate	Not Collected				
QC Summary					
Validity of Data	Yes	No rejected data			
Additional Notes:					

SDG K1399 – DRO QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1399	**W&C Project No.:**222007	
Medium: Surface Water		**Analytes:** DRO/Motor Oil	
Samples: J17K48, J17K55, J17K53, J17K54			
Laboratory: Lionville	**Date Data Assessment Completed:** 2/11/2010 **Completed By:** KAM	**Sample collection:** 10/16/2008	**Sample Analysis Date:** 10/22/2008 extr 10/27/2008 anal

QC Parameter	**All in Spec.?**	**Non-Compliant Results**	**Flag**	**Action/ Notes**	**Associated Samples**
Holding Times	Yes	None	-	No Action	
Surrogates	Yes	None	-	No Action	
Blanks					
Method Blank	Yes	None	-	No Action	
Equipment Blank Sample ID: J17K48	Yes	None	-	No Action	
Other QC					
LCS Results	No	DRO = 70%	J	Qualify positive and non-detect results as estimated (J)	All samples
Matrix Spikes J17K48	No	DRO = 63%	J	Qualify positive and non-detect results as estimated (J)	All samples
Lab Duplicates	Not Analyzed				
Field Duplicate	Not Collected				
QC Summary					
Validity of Data	Yes	No rejected data			
Additional Notes:					

SDG K1399 – DOC QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1399	**W&C Project No.:**222007
Medium: Surface Water		**Analytes:** DOC
Samples: J17K48, J17K55, J17K53, J17K54		

Laboratory: Lionville	**Date Data Assessment Completed:** 2/18/2010 **Completed By:** KAM	**Sample Collection Date:** 10/16/2008	**Sample Analysis Date:** 11/5/2008

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No Action	
Detection Limit	Yes	None	-	No Action	
Blanks					
Method Blank	Yes	None	-	No Action	
Other QC					
LCS Results	Not Analyzed				
Matrix Spikes J17K53	Yes	None	-	No Action	
Lab Duplicate Sample ID: J17K53	Yes	None	-	No Action	
Field Duplicate	Not Collected				
QC Summary					
Validity of Data	Yes	No rejected results			
Additional Notes:					

A.30 SDG K1401

Validated by ELR - Included in Appendix F

A.31 SDG K1419

SDG K1419 – VOC QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1419	**W&C Project No.:**222007	
Medium: Surface Water		**Analytes:** VOA	
Samples: J17RH7, J17K76			
Laboratory: Lionville	**Date Data Assessment Completed:** 2/11/2010 **Completed By:** KAM	**Sample Collection Date:** 10/28/2008	**Sample Analysis Date:** 11/3/2008

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No Action	
Detection Limits	Yes	None	-	No Action	
Blanks					
Blanks - Method	No	Methylene Chloride = 2 ug/L	UJ	Qualify positive results below action level (20 ug/L) as non-detect (UJ) and raise reported value to RDL	J17RH7 – methylene chloride
Equipment Blank	Not Collected				
Trip Blank Sample ID: J17K76	No	Methylene Chloride = 2 ug/L	-	No Action based on guidance	
Other QC Results					
Surrogate Recoveries	Yes	None	-	No Action	
LCS Results	No	Acetone = 175%	J	Qualify positive results as estimated (J).	All samples. No impacts since results ND.
Matrix Spikes Sample ID: J17RH7	Yes	None	-	No Action	
Lab Duplicates	Not Analyzed				
Summary					

SDG K1419 – VOC QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1419	**W&C Project No.:**222007
Medium: Surface Water		**Analytes:** VOA
Samples: J17RH7, J17K76		

Laboratory: Lionville	**Date Data Assessment Completed:** 2/11/2010 **Completed By:** KAM	**Sample Collection Date:** 10/28/2008	**Sample Analysis Date:** 11/3/2008

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Validity of Data	No rejected results				

SDG K1419 – SVOC QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1419	**W&C Project No.:**222007
Medium: Surface Water		**Analytes:** SVOCs
Samples: J17RH7		

Laboratory: Lionville	**Date Data Assessment Completed:** 2/11/2010 **Completed By:** KAM	**Sample Collection Date:** 10/28/2008	**Sample Analysis Date:** 11/4/2008 extr 11/7/2008 anal

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No Action	
Detection Limits	No	2,4,5-Trichlorophenol 2-Nitroaniline 3-Nitroaniline 4-Nitrophenol 4-Nitroaniline 4,6-Dinitro-2-methylphenol Pentachlorophenol	-	No Action	
Blanks					
Method Blanks	Yes	None	-	No Action	
Equipment Blank	Not Collected				
Other QC					
Surrogate Recoveries	Yes	None	-	No Action	
LCS Results	No	Hexachloroethane: 49% Bis(2-Chloroethoxy)methane: 7% 4-Chloroaniline: 0% Hexachlorocyclopentadiene: 38% 2-Nitroaniline: 44% 3-Nitroaniline: 0%	J	Qualify positive and non-detect results as estimated (J)	All samples

SDG K1419 – SVOC QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1419	**W&C Project No.:**222007	
Medium: Surface Water		**Analytes:** SVOCs	
Samples: J17RH7			
Laboratory: Lionville	**Date Data Assessment Completed:** 2/11/2010 **Completed By:** KAM	**Sample Collection Date:** 10/28/2008	**Sample Analysis Date:** 11/4/2008 extr 11/7/2008 anal

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
		4-Nitroaniline: 0% N-Nitrosodiphenylamine: 20% Carbazole: 46% 3,3’-Dichlorobenzidine:0%			
Matrix Spikes Sample ID: J17RH7		Hexachloroethane: 49% Bis(2-Chloroethoxy)methane: 30% 4-Chloroaniline: 24%/1% Hexachlorocyclopentadiene: 38%/49% 3-Nitroaniline: 25%/1% 4-Nitroaniline: 4% N-Nitrosodiphenylamine: 44%/29% Carbazole: 44% 3,3’-Dichlorobenzidine:1%/0%	J	Qualify positive and non-detect results as estimated (J)	All samples
Lab Duplicates	Not Analyzed				
Field Duplicates	Not Collected				
Summary					
Validity of Data	Yes	No rejected results			

SDG K1419 – PCB QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1419	**W&C Project No.:**222007	
Medium: Surface Water		**Analytes:** PCBs	
Samples: J17RH7			
Laboratory: Lionville	**Date Data Assessment Completed:** 2/11/2010 **Completed By:** KAM	**Sample Collection Date:** 10/28/2008	**Sample Analysis Date:** 11/4/2008 extr 11/11/2008 anal

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No Action	
Detection Limits	Yes	None	-	No Action	
Blanks					
Method Blank	Yes	None	-	No Action	
Equipment Blank	Not Collected				
Other QC Results					
Surrogate Recoveries	Yes	None	-	No Action	
LCS Results	Yes	None	-	No Action	
Matrix Spikes Sample ID: J17RH7	Yes	None	-	No Action	
Lab Duplicates	Not Analyzed				
Field Duplicates	Not Collected				
Summary					
Validity of Data	Yes	No rejected results			

SDG K1419 – Pesticides QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1419	**W&C Project No.:**222007
Medium: Surface Water		**Analytes:** Pesticides
Samples: J17RH7		

Laboratory: Lionville	**Date Data Assessment Completed:** 2/11/2010 **Completed By:** KAM	**Sample Collection Date:** 10/28/2008	**Sample Analysis Date:** 11/4/2008 extr 11/8-10/2008 anal

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No Action	
Detection Limits	Yes	None	-	No Action	
Blanks					
Method Blank	Yes	None	-	No Action	
Equipment Blank	Not Collected				
Other QC Results					
Surrogate Recoveries	Yes	None	-	No Action	
LCS Results	No	No LCS results for toxaphene	J	Qualify all associated results as estimated (J)	Impacts to all samples above.
Matrix Spikes Sample ID: J17RH7	Yes	None	-	No Action	
Lab Duplicates	Not Analyzed				
Field Duplicate	Not Collected				
QC Summary					
Validity of Data	No rejected results				

SDG K1419 – Metals QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1419	**W&C Project No.:**222007
Medium: Surface Water		**Analytes:** Metals
Samples: J17RH7, J17RJ4		

Laboratory: Lionville	**Date Data Assessment Completed:** 2/11/2010 **Completed By:** KAM	**Sample Collection Date:** 10/28/2008	**Sample Analysis Date:** 11/27/2008 Hg: 11/4/2008

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No Action	
Detection Limits	Yes	None	-	No Action	
Blanks					
Preparation Blank	No	Aluminum: 54.5 ug/L Lithium: 0.28 ug/L Sodium: 16.9 ug/L	UJ	Qualify positive results for Aluminum as estimated (UJ) since it was the only inorganic that was less than 5x the maximum blank detection value. No action for non-detect results.	All samples – Aluminum. Impacts Sample J17RH7.
Equipment Blank	Not Collected				
Other QC Results					
LCS Results	Yes	None	-	No Action	
Matrix Spikes Sample ID: J17RJ4	Yes	None	-	No Action	
Lab Duplicates Sample ID: J17RJ4	No	Silver = 200% Arsenic = 200% Titanium = 200%	-	No qualification since the difference between results is less than 1x the RDL	
Field Duplicate	Not Collected				
QC Summary					
Validity of Data	Yes	No rejected results			

SDG K1419 – Radionuclides QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1419	**W&C Project No.:**222007
Medium: Surface Water		**Analytes:** Tritium, Carbon-14, Strontium-90, Technetium-99, Isotopic Thorium, Isotopic Uranium, Isotopic Plutonium, Gamma Spectroscopy
Samples: J17RH7		

Laboratory: Eberline	**Date Data Assessment Completed:** 2/11/2010 **Completed By:** KAM	**Sample Collection Date:** 10/28/2008	**Sample Analysis Date:** 11/2008

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	NA	
Detection Limits	No	**RDL** Carbon-14 Strontium **MDA** Radium-226 Radium-228	-	No Action	
Blanks					
Method Blanks	Yes	None	-	No Action	
Other QC Results					
LCS Results	Yes	None	-	No Action	
Tracer Results	Yes	None	-	No Action	
Matrix Spike Sample ID: J17RH7	Yes	None	-	No Action	
Lab Duplicates Sample ID: J17RH7	No	Thorium-230 = 122% Uranium-238 = 81%	-	No Action – the difference between both results is less than 1x the RDL	
Field Duplicate	Not Collected				
QC Summary					
Validity of Data	Yes	No rejected results			

SDG K1419 – DOC QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1419	**W&C Project No.:**222007	
Medium: Surface Water		**Analytes:** DOC	
Samples: J17RH7			
Laboratory: Lionville	**Date Data Assessment Completed:** 2/18/2010 **Completed By:** KAM	**Sample Collection Date:** 10/28/2008	**Sample Analysis Date:** 11/5/2008

QC Parameter	**All in Spec.?**	**Non-Compliant Results**	**Flag**	**Action/ Notes**	**Associated Samples**
Holding Times	Yes	None	-	No Action	
Detection Limit	Yes	None	-	No Action	
Blanks					
Method Blank	Yes	None	-	No Action	
Other QC					
LCS Results	No	LCS not analyzed	J	Qualify all results as estimated (J)	All samples
Matrix Spikes Sample ID: J17RH7	Yes	None	-	No Action	
Lab Duplicate Sample ID: J17RH7	Yes	None	-	No Action	
Field Duplicate	Not Collected				
QC Summary					
Validity of Data	Yes	No rejected results			

A.32 SDG K1421

Validated by ELR - Included in Appendix F

A.33 SDG K1427

SDG K1427 – VOC QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1427	**W&C Project No.:**222007	
Medium: Surface Water		**Analytes:** VOA	
Samples: J17RP1, J17K74			
Laboratory: Lionville	**Date Data Assessment Completed:** 2/12/2010 **Completed By:** KAM	**Sample Collection Date:** 10/30/2008	**Sample Analysis Date:** 11/4-5/2008

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No Action	
Detection Limits	Yes	None	-	No Action	
Blanks					
Blanks - Method	No	Methylene Chloride = 5 ug/L	UJ	Qualify positive results below action level (50 ug/L) as non-detect (UJ) and raise reported value to RDL	Methylene Chloride: J17RP1
Equipment Blank	Not Collected				
Trip Blank Sample ID: J17K74	No	Methylene Chloride = 5 ug/L	-	No Action based on guidance	
Other QC Results					
Surrogate Recoveries	Yes	None	-	No Action	
LCS Results	Yes	None	-	No Action	
Matrix Spikes Sample ID: J17RP1	Yes	None	-	No Action	
Lab Duplicates	Not Analyzed				
Summary					
Validity of Data	Yes	No rejected results			

SDG K1427 – SVOC QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1427	**W&C Project No.:**222007	
Medium: Surface Water		**Analytes:** SVOCs	
Samples: J17RP1			
Laboratory: Lionville	**Date Data Assessment Completed:** 2/12/2010 **Completed By:** KAM	**Sample Collection Date:** 10/30/2008	**Sample Analysis Date:** 11/6/2008 extr 11/14,16/2008 anal

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No Action	
Detection Limits	No	2,4,5-Trichlorophenol 2-Nitroaniline 3-Nitroaniline 4-Nitrophenol 4-Nitroaniline 4,6-Dinitro-2-methylphenol Pentachlorophenol	-	No Action	
Blanks					
Method Blanks	Yes	None	-	No Action	
Equipment Blank	Not Collected				
Other QC					
Surrogate Recoveries	Yes	None	-	No Action	
LCS Results	No	Hexachloroethane: 49% 1,2,4-Trichlorobenzene: 48% 4-Chloroaniline: 25% Hexachlorobutadiene: 46% Hexachlorocyclopentadiene: 49% 3,3’-Dichlorobenzidine: 0%	J	Qualify positive and non-detect results as estimated (J)	All samples
Matrix Spikes Sample ID: J17RP1	No	Bis(2-Chloroethoxy)methane: 2%/2% 4-Chloroaniline: 2%/1% 2-Nitroaniline: 41% Acenaphthylene: 5%/22% 3-Nitroaniline: 1%/2% 4-Nitroaniline: 2%/1% N-Nitrosodiphenylamine: 34%/23% Carbazole: 36%/25% Butylbenzylphthalate: 39% 3,3-Dichlorobenzidine:	J	Qualify positive and non-detect results as estimated (J)	All samples

SDG K1427 – SVOC QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1427	**W&C Project No.:**222007	
Medium: Surface Water		**Analytes:** SVOCs	
Samples: J17RP1			
Laboratory: Lionville	**Date Data Assessment Completed:** 2/12/2010 **Completed By:** KAM	**Sample Collection Date:** 10/30/2008	**Sample Analysis Date:** 11/6/2008 extr 11/14,16/2008 anal

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
		0%/0%			
Lab Duplicates	Not Analyzed				
Field Duplicates	Not Collected				
Summary					
Validity of Data	Yes	No rejected results			

SDG K1427 – PCB QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1427	**W&C Project No.:**222007	
Medium: Surface Water		**Analytes:** PCBs	
Samples: J17RP1			
Laboratory: Lionville	**Date Data Assessment Completed:** 2/12/2010 **Completed By:** KAM	**Sample Collection Date:** 10/30/2008	**Sample Analysis Date:** 11/6/2008 extr 11/12/2008 anal

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No Action	
Detection Limits	Yes	None	-	No Action	
Blanks					
Method Blank	Yes	None	-	No Action	
Equipment Blank	Not Collected				
Other QC Results					
Surrogate Recoveries	Yes	None	-	No Action	
LCS Results	Yes	None	-	No Action	
Matrix Spikes Sample ID: J17RP1	Yes	None	-	No Action	
Lab Duplicates	Not Analyzed				
Field Duplicates	Not Collected				
Summary					
Validity of Data	Yes	No rejected results			

SDG K1427 – Pesticides QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1427	**W&C Project No.:**222007	
Medium: Surface Water		**Analytes:** Pesticides	
Samples: J17RP1			
Laboratory: Lionville	**Date Data Assessment Completed:** 2/12/2010 **Completed By:** KAM	**Sample Collection Date:** 10/30/2008	**Sample Analysis Date:** 11/6/2008 extr 11/12/2008 anal

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No Action	
Detection Limits	Yes	None	-	No Action	
Blanks					
Method Blank	Yes	None	-	No Action	
Equipment Blank	Not Collected				
Other QC Results					
Surrogate Recoveries	Yes	None	-	No Action	
LCS Results	No	No LCS results for toxaphene	J	Qualify all associated results as estimated (J)	Impacts to J17RP1.
Matrix Spikes Sample ID: J17RP1	Yes	None	-	No Action	
Lab Duplicates	Not Analyzed				
Field Duplicate	Not Collected				
QC Summary					
Validity of Data	Yes	No rejected results			

SDG K1427 – Metals QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1427	**W&C Project No.:**222007	
Medium: Surface Water		**Analytes:** Metals	
Samples: J17RR1, J17RP1, J17RP6, J17RP5, J17RR7, J17RP2, J17RP4, J17RP7			
Laboratory: Lionville	**Date Data Assessment Completed:** 2/12/2010 **Completed By:** KAM	**Sample Collection Date:** 10/30/2008	**Sample Analysis Date:** 11/26/2008 Hg: 11/18/2008

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No Action	
Detection Limits	Yes	None	-	No Action	
Blanks					
Preparation Blank	No	Aluminum: 54.5 ug/L Lithium: 0.28 ug/L Sodium: 16.9 ug/L	UJ	For aluminum and lithium, qualify positive results as UJ. No action on non-detect results. No action on sodium results because all sample results are greater than 5x the highest result in the blanks	Aluminum: J17RR1, J17RR7, J17RP5, J17RP4, J17RP6, J17RP1, J17RP2 Lithium: J17RR1, J17RP7, J17RP6
Equipment Blank	Not Collected				
Other QC Results					
LCS Results	Yes	None	-	No Action	
Matrix Spikes Sample ID: J17RR1	Yes	None	-	No Action	
Lab Duplicates Sample ID: J17RR1	No	Chromium = 200% Iron = 61.8% Nickel = 200% Lead = 200% Antimony = 200%	J	Qualify iron as estimated (J) since difference between results is greater than 1x the RDL and result is positive.	J17RR1: Iron
Field Duplicate	Not Collected				
QC Summary					
Validity of Data	Yes	No rejected results			

SDG K1427 – Radionuclides QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1427	**W&C Project No.:**222007	
Medium: Surface Water		**Analytes:** Tritium, Carbon-14, Strontium-90, Technetium-99, Isotopic Thorium, Isotopic Uranium, Isotopic Plutonium, Gamma Spectroscopy	
Samples: J17RP1, J17RR1, J17RP4, J17RP5			
Laboratory: Eberline	**Date Data Assessment Completed:** 2/12/2010 **Completed By:** KAM	**Sample Collection Date:** 10/30/2008	**Sample Analysis Date:** 11/2008

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No Action	
Detection Limits	No	**RDL** Carbon-14 Strontium **MDA** Radium-226 Radium-228 Americum-241 Beryllium-7 Ruthenium-106	-	No Action	
Blanks					
Method Blanks	Yes	None	-	No Action	
Other QC Results					
LCS Results	Yes	None	-	No Action	
Tracer Results	No	Technetium-99 = 107%	-	Qualify positive results as estimated (J).	J17RP5. No impact since Tc-99 is non-detect.
Matrix Spike Sample ID: J17RP1	No	Tritium = 79%	J	Qualify positive and non-detect results as estimated (J).	All samples.
Lab Duplicates Sample ID: J17RP1	No	Uranium-233/234: 75% Uranium-238: 50%	-	No Action – the difference between both results is less than 1x the RDL	J17RP1
Field Duplicate	Not Collected				
QC Summary					
Validity of Data	Yes	No rejected results			

SDG K1427 – DOC QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1427	**W&C Project No.:**222007	
Medium: Surface Water		**Analytes:** DOC	
Samples: J17RR1, J17RP1, J17RP5, J17RP4			
Laboratory: Lionville	**Date Data Assessment Completed:** 2/18/2010 **Completed By:** KAM	**Sample Collection Date:** 10/30/2008	**Sample Analysis Date:** 11/5/2008

QC Parameter	**All in Spec.?**	**Non-Compliant Results**	**Flag**	**Action/ Notes**	**Associated Samples**
Holding Times	Yes	None	-	No Action	
Detection Limit	Yes	None	-	No Action	
Blanks					
Method Blank	Yes	None	-	No Action	
Other QC					
LCS Results	No	LCS not analyzed	J	Qualify all results as estimated (J)	All samples
Matrix Spikes Sample ID: J17RP4	Yes	None	-	No Action	
Lab Duplicate Sample ID: J17RP4	Yes	None	-	No Action	
Field Duplicate	Not Collected				
QC Summary					
Validity of Data	Yes	No rejected results			

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SDG K1428 – VOC QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1428	**W&C Project No.:**222007	
Medium: Surface Water		**Analytes:** VOA	
Samples: J17RV8, J17TJ4, J17K79			
Laboratory: Lionville	**Date Data Assessment Completed:** 2/17/10 **Completed By:** SRK	**Sample Collection Date:** 10/31/08	**Sample Analysis Date:** 11/12/08, 11/14/08

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No action	
Detection Limits	Yes	None	-	No action	
Blanks					
Blanks - Method	No	Methylene Chloride = 0.5 ug/L	-	Qualify positive results below action level as non-detect (UJ) and raise reported value to RDL	All samples. No impact because all results are ND for methylene chloride
Equipment Blank Sample ID:	Not collected				
Trip Blank Sample ID: J17K79	No	Toluene = 1 ug/L	-	No action based on guidance	
Other QC Results					
Surrogate Recoveries	Yes	None	-	No action	
LCS Results	Yes	None	-	No action	
Matrix Spikes Sample ID: J17RV8	Yes	None	-	No action	
Lab Duplicates	Not analyzed				
Field Duplicates Sample ID: J17TJ4/J17RV8	Yes	None	-	No action	
Summary					
Validity of Data	No results qualified or rejected				
Additional Notes:					

SDG K1428 – SVOC QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1428	**W&C Project No.:**222007	
Medium: Surface Water		**Analytes:** SVOCs	
Samples: J17RV8 & J17TJ4			
Laboratory: Lionville	**Date Data Assessment Completed:** 2/17/10 **Completed By:** SRK	**Sample Collection Date:** 10/31/08	**Sample Analysis Date:** 11/7/08 extr 11/14-16/08 anal

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No action	
Detection Limits	No	2,4,5-Trichlorophenol 2-Nitroaniline 3-Nitroaniline 4-Nitrophenol 4-Nitroaniline 4,6-Dinitro-2-methylphenol Pentachlorophenol	-	No action	
Blanks					
Method Blanks	Yes	None	-	No action	
Equipment Blank Sample ID:	Not analyzed				
Other QC					
Surrogate Recoveries	Yes	None	-	No action	
LCS Results	No	Bis(2-Chloroethoxy)methane: 17% 4-Chloroaniline: 6% Acenaphthylene: 32% 3-Nitroaniline: 11% 4-Nitroaniline: 32% N-Nitrosodiphenylamine: 40% Carbazole: 40% 3,3'-Dichlorobenzidine: 0%	J	Qualify positive and non-detect results as estimated (J)	All samples.
Matrix Spikes Sample ID: J17TJ4	No	Hexachloroethane: 48% Bis(2-Chloroethoxy)methane: 46% 4-Chloroaniline: 4%/3% Hexachlorocyclopentadiene: 47%	J	Qualify positive and non-detect results as estimated (J)	All samples.

SDG K1428 – SVOC QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1428	**W&C Project No.:**222007	
Medium: Surface Water		**Analytes:** SVOCs	
Samples: J17RV8 & J17TJ4			
Laboratory: Lionville	**Date Data Assessment Completed:** 2/17/10 **Completed By:** SRK	**Sample Collection Date:** 10/31/08	**Sample Analysis Date:** 11/7/08 extr 11/14-16/08 anal

QC Parameter	**All in Spec.?**	**Non-Compliant Results**	**Flag**	**Action/ Notes**	**Associated Samples**
		3-Nitroaniline: 2%/2% 4-Nitroaniline: 4%/4% N-Nitrosodiphenylamine: 35%/35% 3,3’-Dichlorobenzidine: 0%/1%			
Lab Duplicates Sample ID:	Not analyzed				
Field Duplicates Sample ID: J17TJ4 / J17RV8	No	Benzo(a)anthracene: 200% Benzo(b)fluoranthene: 200% Benzo(k)fluoranthene: 200% Benzo(2-ethylhexyl)phthalate: 200% Chrysene: 200%	-	No action based on criteria	
Summary					
Validity of Data	No results qualified or rejected				
Additional Notes:					

SDG K1428 – PCB QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1428	**W&C Project No.:**222007	
Medium: Surface Water		**Analytes:** PCBs	
Samples: J17RV8 & J17TJ4			
Laboratory: Lionville	**Date Data Assessment Completed:** 2/17/10 **Completed By:** SRK	**Sample Collection Date:** 10/31/08	**Sample Analysis Date:** 11/7/08 extr 11/13/08 anal

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No action	
Detection Limits	Yes	None	-	No action	
Blanks					
Method Blank	Yes	None	-	No action	
Equipment Blank Sample ID:	Not analyzed				
Other QC Results					
Surrogate Recoveries	Yes	None	-	No action	
LCS Results	Yes	None	-	No action	
Matrix Spikes Sample ID: J17RV8	Yes	None	-	No action	
Lab Duplicates Sample ID:	Not analyzed				
Field Duplicates Sample ID: J17TJ4 / J17RV8	Yes	None	-	No action	
Summary					
Validity of Data	No results qualified or rejected				
Additional Notes:					

SDG K1428 – Pesticides QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1428	**W&C Project No.:**222007
Medium: Surface Water		**Analytes:** Pesticides
Samples: J17TJ4 & J17RV8		

Laboratory Lionville	**Date Data Assessment Completed:** 3/23/10 **Completed By:** SRK	**Sample Collection Date:** 10/31/08	**Sample Analysis Date:** Extraction: 10/7/08 Analysis:11/12/08 and 11/13/08

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No action	
Detection Limits	Yes	None	-	No action	
Blanks					
Method Blank	Yes	None	-	No action	
Equipment Blank Sample ID:	Not analyzed				
Other QC Results					
Surrogate Recoveries	Yes	None	-	No action	
LCS Results	No	No LCS results for toxaphene	J	Qualify all associated results as estimated (J)	Impacts to all samples above.
Matrix Spikes Sample ID: J17RV8	Yes	None	-	No action	
Lab Duplicates Sample ID:	Not analyzed				
Field Duplicate Sample ID:	Not collected				
QC Summary					
Validity of Data	No results qualified or rejected.				
Additional Notes:					

SDG K1428 – Metals QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1428	**W&C Project No.:**222007	
Medium: Surface Water		**Analytes:** Metals	
Samples: J17RW0, J17TL1, J17RV8 & J17TJ4			
Laboratory: Lionville	**Date Data Assessment Completed:** 2/17/10 **Completed By:** SRK	**Sample Collection Date:** 10/31/08	**Sample Analysis Date:** 12/4/08 and 12/5/08 Hg: 11/18/08

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No action	
Detection Limits	No	Silicon	-	No action	
Blanks					
Preparation Blank	No	Calcium: 64.6 ug/L Copper: 1.1 ug/L Lithium: 0.22 ug/L Magnesium: 25.9 ug/L Manganese: 0.48 ug/L Sodium: 168 ug/L Strontium: 0.42 ug/L Titanium: 0.98 ug/L	UJ	Qualify positive sample results < 5x highest blank concentration as non-detect (UJ)	All samples. Impacts the following: J17TJ4 – Copper and Titanium J17TL1 – Copper and Manganese J17RV8 – Copper and Titanium J17RW0 – Copper, Manganese, and Titanium
Equipment Blank Sample ID:	Not collected				
Other QC Results					
LCS Results	Yes	None	-	No action	
Matrix Spikes Sample ID: J17LT1	Yes	None	-	No action	
Lab Duplicates Sample ID: J17LT1	No	Manganese: 23.1% Zinc: 200%	-	No qualification since the difference between results is less than 1x the RDL	
Field Duplicates Sample IDs: J17TJ4/J17RV8 J17TL1/J17RW0	No	J17TJ4/J17RV8: Al: 62% Cu: 46% Fe: 26% K: 25% Zn: 36% J17TL1/J17RW0: Titanium: 64%	-	No action based on guidance	

SDG K1428 – Metals QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1428	**W&C Project No.:**222007	
Medium: Surface Water		**Analytes:** Metals	
Samples: J17RW0, J17TL1, J17RV8 & J17TJ4			
Laboratory: Lionville	**Date Data Assessment Completed:** 2/17/10 **Completed By:** SRK	**Sample Collection Date:** 10/31/08	**Sample Analysis Date:** 12/4/08 and 12/5/08 Hg: 11/18/08

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
QC Summary					
Validity of Data	Not all met QC criteria but no results rejected.				
Additional Notes:					

SDG K1428 – Radionuclides QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1428	**W&C Project No.:**222007	
Medium: Surface Water		**Analytes:** Tritium, Carbon-14, Strontium-90, Technetium-99, Isotopic Thorium, Isotopic Uranium, Isotopic Plutonium, Gamma Spectroscopy	
Samples: J17RV8, J17TJ4			
Laboratory: Eberline	**Date Data Assessment Completed:** 2/18/10 **Completed By:** SRK	**Sample Collection Date:** 10/31/08	**Sample Analysis Date:** 11/13/08 and 12/12/08

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No action	
Detection Limits	No	RDL and/or MDA above criteria for Tritium, C14, K40, Cs137, Ra226, Ra228, Eu154, Th232, U235, U238, Am241, Be7, and Ru106	-	No action	
Blanks					
Method Blanks	Yes	None	-	No action	
Other QC Results					
LCS Results	Yes	None	-	No action	
Tracer Results	Yes	None	-	No action	
Matrix Spike Sample ID: J17RV8	Yes	None	-	No action	
Lab Duplicates Sample ID: J17RV8	No	Strontium: 200% Thorium-230: 27% Uranium-233/234: 57%	-	No Action since the difference between both results is less than 1x the RDL	
Field Duplicate Sample ID: J17TJ4/J17RV8	No	Tot Strontium: 200% Thorium 230: 30% Thorium 232: 200% Uranium 233/234: 30% Uranium 238: 35%	-	No action based on guidance	
QC Summary					
Validity of Data	No results qualified or rejected				
Additional Notes:					

SDG K1428 – DRO QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1428	**W&C Project No.:**222007	
Medium: Surface Water		**Analytes:** DRO/Motor Oil	
Samples: J17RV8 & J17TJ4			
Laboratory: Lionville	**Date Assessment Completed:** 2/17/10 **Completed By:** SRK	**Sample collection:** 10/31/08	**Sample Analysis Date:** 11/7/08 extr 11/12/08 anal

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No action	
Surrogates	Yes	None	-	No action	
Blanks					
Method Blank	Yes	None	-	No action	
Equipment Blank Sample ID:	Not collected				
Other QC					
LCS Results	Yes	None	-	No action	
Matrix Spikes Sample ID: J17RV8	Yes	None	-	No action	
Lab Duplicates Sample ID:	Not analyzed				
Field Duplicate Sample ID: J17TJ4/J17RV8	Yes	None	-	No action	
QC Summary					
Validity of Data	No results qualified or rejected				
Additional Notes:					

SDG K1428 – DOC QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1428	**W&C Project No.:**222007	
Medium: Surface Water		**Analytes:** DOC	
Samples: J17RV8 & J17TJ4			
Laboratory: Lionville	**Date Data Assessment Completed:** 2/18/10 **Completed By:** SRK	**Sample Collection Date:** 10/31/08	**Sample Analysis Date:** 11/6/08 and 11/7/08

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No action	
Detection Limit	Yes	None	-	No action	
Blanks					
Method Blank	Yes	None	-	No action	
Other QC					
LCS Results	Not collected		J	Qualify as estimated since no LCS was analyzed	All samples
Matrix Spikes Sample ID: J17TJ4	Yes	None	-	No action	
Lab Duplicate Sample ID: J17TJ4	Yes	None	-	No action	
Field Duplicate Sample ID: J17TJ4 / J17RV8	No	Soluble Organic Carbon: 22%	-	No action based on guidance	
QC Summary					
Validity of Data	Not all QC criteria met but no results rejected				
Additional Notes:					

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SDG K1430 – VOC QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1430	**W&C Project No.:**222007	
Medium: Surface Water		**Analytes:** VOA	
Samples: J17TW4, J17RT9, J17RV1, & J17RV0			
Laboratory: **Lionville**	**Date Data Assessment Completed:** 2/17/10 **Complete By:** SRK	**Sample Collection Date:** 11/3/08	**Sample Analysis Date:** 11/12/08, 11/14/08

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No action	
Detection Limits	Yes	None	-	No action	
Blanks					
Blanks - Method	No	Methylene Chloride = 0.4 ug/L	-	Qualify positive results below action level (4 ug/L) as non-detect (UJ) and raise reported value to RDL	J17TW4, J17RT9, J17RV1, & J17RV0 No impact because all ND for methylene chloride
Equipment Blank Sample ID:	Not collected				
Trip Blank Sample ID: J17TW4	Yes	None	-	No action	
Other QC Results					
Surrogate Recoveries	Yes	None	-	No action	
LCS Results	Yes	None	-	No action	
Matrix Spikes Sample ID: J17RT9 MS J17RT9 MSD	Yes	None	-	No action	
Lab Duplicates	Not analyzed				
Field Duplicates Sample ID:	Not collected				
Summary					
Validity of Data	No results qualified or rejected				
Additional Notes:					

SDG K1430 – SVOC QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1430	**W&C Project No.:**222007	
Medium: Surface Water		**Analytes:** SVOCs	
Samples: J17RT9, J17RV0, J17RV1			
Laboratory: Lionville	**Date Data Assessment Completed:** 3/1/10 **Complete By:** SRK	**Sample Collection Date:** 11/3/09	**Sample Analysis Date:** Extraction - 11/9/08; Analysis – 11/15/08

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No action	
Detection Limits	No	2,4,5-Trichlorophenol, 2-Nitroaniline, 3-Nitroaniline, 4-Nitrophenol, 4-Nitroaniline, 4,6-Dinitro-2-methylphenol, and Pentachlorophenol	-	No action	
Blanks					
Method Blanks	No	Di-n-butylphthalate: 2 ug/L Bis(2-Ethylhexyl)phthalate: 6 ug/L	UJ	Qualify results below action levels as non-detect (UJ) and raise value to RDL	All samples. UJ for all, except for Di-n-butylphthalate for J17RV1 because ND.
Equipment Blank Sample ID:	Not collected.				
Other QC					
Surrogate Recoveries	Yes	None	-	No action	
LCS Results	No	4-Chloroaniline: 4% Hexachlorocyclopentadiene: 36% 3-Nitroaniline: 9% 4-Nitroaniline: 9% N-Nitrosodiphenylamine: 40% 3,3' –Dichlorobenzidine: 0%	J	Qualify positive and non-detect results as estimated (J)	All samples. J added.
Matrix Spikes Sample ID: J17RT9	No	Phenol: 48% 2-Chlorophenol: 44% 1,3-Dichlorobenzene: 44% 1,4-Dichlorobenzene: 49% 1,2-Dichlorobenzene: 49% Hexachloroethane: 46%	J	Qualify positive and non-detect results as estimated	All samples. J added.

SDG K1430 – SVOC QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1430	**W&C Project No.:**222007	
Medium: Surface Water		**Analytes:** SVOCs	
Samples: J17RT9, J17RV0, J17RV1			
Laboratory: Lionville	**Date Data Assessment Completed:** 3/1/10 **Complete By:** SRK	**Sample Collection Date:** 11/3/09	**Sample Analysis Date:** Extraction - 11/9/08; Analysis – 11/15/08

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
		2-Nitrophenol: 33% Bis(2-Chloroethoxy)methane: 14% 2,4-Dichlorophenol: 42% 4-Chloroaniline: 0%/3% Hexachlorocyclopentadiene: 28%/43% 2,4,6-Trichlorophenol: 37% 2,4,5-Trichlorophenol: 37% Acenaphthylene: 34% 3-Nitroaniline: 1%/2% 2,4-Dinitrophenol: 38% 4-Nitrophenol: 32% 4-Nitroaniline: 4%/2% N-Nitrosodiphenylamine: 37% 3,3'-Dichlorobenzidine: 0%/0%		(J)	
Lab Duplicates Sample ID:	Not analyzed				
Field Duplicates Sample ID:	Not collected.				
Summary					
Validity of Data	Some results qualified, none rejected.				
Additional Notes:					

SDG K1430 – PCB QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1430	**W&C Project No.:**222007
Medium: Surface Water		**Analytes:** PCBs
Samples: J17RT9, J17RV0, & J17RV1		

Laboratory: Lionville	**Date Data Assessment Completed:** 3/2/10 **Complete By:** SRK	**Sample Collection Date:** 11/3/09	**Sample Analysis Date:** Extraction – 11/10/09 Analysis – 11/13/09

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No action	
Detection Limits	Yes	None	-	No action	
Blanks					
Method Blank	Yes	None	-	No action	
Equipment Blank Sample ID:	Not collected				
Other QC Results					
Surrogate Recoveries	No	Tetrachloro-m-xylene: 34% for J17RV1	J	Qualify positive and ND results as estimated (J)	J17RV1 all analytes
LCS Results	Yes	None	-	No action	
Matrix Spikes Sample ID: J17RV0	Yes	None	-	No action	
Lab Duplicates Sample ID:	Not analyzed				
Field Duplicates Sample ID:	Not collected				
Summary					
Validity of Data	Some results qualified, none rejected.				
Additional Notes:					

SDG K1430 – Pesticides QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1430	**W&C Project No.:**222007	
Medium: Surface Water		**Analytes:** Pesticides	
Samples: J17RT9, J17RV0, & J17RV1			
Laboratory: Lionville	**Date Data Assessment Completed:** 3/2/10 **Complete By:** SRK	**Sample Collection Date:** 11/3/09	**Sample Analysis Date:** Extraction:11/10/09 Analysis: 11/13/09

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No action	
Detection Limits	Yes	None	-	No action	
Blanks					
Method Blank	Yes	None	-	No action	
Equipment Blank Sample ID:	Not collected				
Other QC Results					
Surrogate Recoveries	No	Tetrachloro-m-xylene: 30% for J17RV1	J	Qualify positive and ND as estimated (J)	J17RV1 all analytes
LCS Results	No	No LCS results for toxaphene	J	Qualify all associated results as estimated (J)	Impacts to all samples above.
Matrix Spikes Sample ID: J17RV0	No (MSD only)	Heptachlor: 48% Aldrin: 38%	J	Qualify non-detect and positive results < 5x detection limit as estimated (J)	All samples.
Lab Duplicates Sample ID:	Not analyzed				
Field Duplicate Sample ID:	Not collected				
QC Summary					
Validity of Data	Some results qualified, none rejected.				
Additional Notes:					

SDG K1430 – Metals QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1430	**W&C Project No.:**222007
Medium: Surface Water		**Analytes:** Metals
Samples: J17RT9, J17RV0, J17RV1, J17RV3, J17RV4, & J17RV5		

Laboratory: Lionville	**Date Data Assessment Completed:** 3/2/10 **Complete By:** SRK	**Sample Collection Date:** 11/3/08	**Sample Analysis Date:** 12/4-5/08 Hg: 11/25/08

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No action	
Detection Limits	No	Silicon	-	No action	
Blanks					
Preparation Blank	No	Calcium: 64.6 ug/L Copper: 1.1 ug/L Lithium: 0.22 ug/L Magnesium: 25.9 ug/L Manganese: 0.48 ug/L Sodium: 168 ug/L Strontium: 0.42 ug/L Titanium: 0.98 ug/L	UJ	Qualify all sample results < 5x highest blank concentration as non-detect (UJ)	All samples. J17RV5 – Copper and Manganese J17RV3 – Copper and Manganese J17RV4 – Copper and Manganese J17RV0 – Copper and Titanium J17RV1 – Copper and Titanium J17RT9 – Copper and Titanium
Equipment Blank Sample ID:	Not collected				
Other QC Results					
LCS Results	Yes	None	-	No action	
Matrix Spikes Sample ID: J17RT9	No	Silicon: 127.7%	-	For compounds where 4x spike level exceeds initial result, flag positive results >IDL as estimated (J)	All samples. No impact because initial result is greater than 4x spiked amount.
Lab Duplicates Sample ID: J17RT9	No	Aluminum: 29.1% RPD Selenium: 200% RPD	-	No qualification since the difference between results is less than 1x the RDL	

SDG K1430 – Metals QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1430	**W&C Project No.:**222007
Medium: Surface Water		**Analytes:** Metals
Samples: J17RT9, J17RV0, J17RV1, J17RV3, J17RV4, & J17RV5		

Laboratory: Lionville	**Date Data Assessment Completed:** 3/2/10 **Complete By:** SRK	**Sample Collection Date:** 11/3/08	**Sample Analysis Date:** 12/4-5/08 Hg: 11/25/08

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Field Duplicate Sample ID:	Not collected				
QC Summary					
Validity of Data	Some results qualified, none rejected.				
Additional Notes:					

SDG K1430 – Radionuclides QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1430	**W&C Project No.:**222007	
Medium: Surface Water		**Analytes:** Radionuclides (GEA, Tritium, C-14, Isotopic Pu, Sr-90, Tc-99, Isotopic Th, H-3, & Isotopic U)	
Samples: J17RT9, J17RV0, & J17RV1			
Laboratory: Eberline	**Date Data Assessment Completed:** 3/1/10 **Complete By:** SRK	**Sample Collection Date:** 11/3/08	**Sample Analysis Date:** 11/2008

QC Parameter	**All in Spec.?**	**Non-Compliant Results**	**Flag**	**Action/ Notes**	**Associated Samples**
Holding Times	Yes	None	-	No action	
Detection Limits	No	RDL and/or MDA above criteria for C14, Ra226, Ra228, Th232, U235, U238, Am241, Be7, and Ru106	-	No action	
Blanks					
Method Blanks	Yes	None	-	No action	
Other QC Results					
LCS Results	Yes	None	-	No action	
Tracer Results	No	Technetium 99: 107% for J17RV0	-	Qualify positive results as estimated (J)	J17RV0, but no action because ND
Matrix Spike Sample ID: J17RV0	Yes	None	-	No action	
Lab Duplicates Sample ID: J17RV0	Yes	None	-	No action	
Field Duplicate Sample ID:	Not collected				
QC Summary					
Validity of Data	No results qualified or rejected.				
Additional Notes:					

SDG K1430 – DRO QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1430	**W&C Project No.:**222007
Medium: Surface Water		**Analytes:** DRO/Motor Oil
Samples: J17RT9, J17RV0, & J17RV1		

Laboratory: Lionville	**Date Assessment Completed:** 3/2/10 **Complete By:** SRK	**Sample collection:** 11/3/08	**Sample Analysis Date:** Extracted – 11/10/08; Analyzed – 11/12/08

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No action	
Surrogates	Yes	None	-	No action	
Blanks					
Method Blank	Yes	None	-	No action	
Equipment Blank Sample ID:	Not collected				
Other QC					
LCS Results	Yes	None	-	No action	
Matrix Spikes Sample ID: J17RV1	Yes	None	-	No action	
Lab Duplicates Sample ID:	Not analyzed				
Field Duplicate Sample ID:	Not collected				
QC Summary					
Validity of Data	No results qualified or rejected.				
Additional Notes:					

SDG K1430 – DOC QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1430	**W&C Project No.:**222007
Medium: Surface Water		**Analytes:** DOC
Samples: J17RT9, J17RV0, & J17RV1		

Laboratory: Lionville	**Date Data Assessment Completed:** 3/2/10 **Complete By:** SRK	**Sample Collection Date:** 11/3/08	**Sample Analysis Date:** 11/7/08

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No action	
Detection Limit	Yes	None	-	No action	
Blanks					
Method Blank	Yes	None	-	No action	
Other QC					
LCS Results	Yes	None	-	No action	
Matrix Spikes Sample ID: J17RT9	Yes	None	-	No action	
Lab Duplicate Sample ID: J17RT9	Yes	None	-	No action	
Field Duplicate Sample ID:	Not collected				
QC Summary					
Validity of Data	No results qualified or rejected.				
Additional Notes:					

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SDG K1439 – VOC QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1439	**W&C Project No.:**222007
Medium: Surface Water		**Analytes:** VOA
Samples: J17K77, J17TK1, J17TJ8, J17TJ7, J17TJ5, & J17TJ6		

Laboratory: Lionville	**Date Data Assessment Completed:** 2/17/2010 **Complete By:** KAM	**Sample Collection Date:** 11/4/2008	**Sample Analysis Date:** 11/14/2008

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No Action	
Detection Limits	Yes	None	-	No Action	
Blanks					
Blanks - Method	No	Methylene chloride: 0.5 ug/L	-	Qualify positive results below action level as non-detect (UJ) and raise reported value to RDL.	All samples. No impacts since all results ND.
Equipment Blank Sample ID:	Not collected				
Trip Blank Sample ID: J17K77	Yes	None	-	No Action	
Other QC Results					
Surrogate Recoveries	Yes	None	-	No Action	
LCS Results	Yes	None	-	No Action	
Matrix Spikes Sample ID: J17TJ8	Yes	None	-	No Action	
Lab Duplicates	Not analyzed				
Field Duplicates Sample ID:	Not collected				
Summary					
Validity of Data	Yes	No rejected results			
Additional Notes:					

SDG K1439 – SVOC QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1439	**W&C Project No.:**222007	
Medium: Surface Water		**Analytes:** SVOCs	
Samples: J17TJ8, J17TJ7, J17TJ5, J17TJ6, & J17TK1			
Laboratory: Lionville	**Date Data Assessment Completed:** 2/17/2010 **Complete By:** KAM	**Sample Collection Date:** 11/4/2008	**Sample Analysis Date:** 11/9/2008 extr 11/14-19/2008 anal

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No Action	
Detection Limits	No	2,4,5-Trichlorophenol 2-Nitroaniline 3-Nitroaniline 4-Nitrophenol 4-Nitroaniline 4,6-Dinitro-2-methylphenol Pentachlorophenol	-	No Action	
Blanks					
Method Blanks	No	Di-n-butylphthalate: 2J ug/L Bis(2-ethylhexyl)phthalate: 6J ug/L	UJ	Qualify results below action level as non-detect (UJ). If result is <RDL qualify as ND (UJ) and raise value to RDL	J17TJ7 – Di-n-butylphthalate J17TJ7 – bis(2-ethylhexyl)phthalate J17TK1 - bis(2-ethylhexyl)phthalate
Equipment Blank Sample ID:	Not collected				
Other QC					
Surrogate Recoveries	No	Phenol-d5: 0% 2-Fluorophenol: 0% 2,4,6-Tribromophenol: 1%	J/R	Qualify positive results as estimated (J) and non-detect results as rejected (R)	All acid fraction compounds for J17TK1 (R)
LCS Results	No	4-Chloroaniline: 4% Hexachlorocyclopentadiene: 36% 3-Nitroaniline: 9% 4-Nitroaniline: 9% N-Nitrosodiphenylamine: 40% 3,3'-Dichlorobenzidine:0%	J	Qualify positive and non-detect results as estimated (J)	All samples

SDG K1439 – SVOC QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1439	**W&C Project No.:**222007	
Medium: Surface Water		**Analytes:** SVOCs	
Samples: J17TJ8, J17TJ7, J17TJ5, J17TJ6, & J17TK1			
Laboratory: Lionville	**Date Data Assessment Completed:** 2/17/2010 **Complete By:** KAM	**Sample Collection Date:** 11/4/2008	**Sample Analysis Date:** 11/9/2008 extr 11/14-19/2008 anal

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Matrix Spikes Sample ID: J17TJ8	No	Phenol: 23% 1,3-Dichlorobenzene: 37% 1,4-Dichlorobenzene: 38% 1,2-Dichlorobenzene: 41% 2-Methylphenol: 19% 3/4 –Methylphenol: 21% Hexachloroethane: 33% 2,4-Dimethylphenol: 28% Bis(2-chloroethoxy)methane: 2%/19% 1,2,4-Trichlorobenzene: 49% 4-Chloroaniline: 1%/1% Hexachlorobutadiene: 44% 4-chloro-3-methylphenol: 34% Hexachlorocyclopentadiene: 42%/38% 2-Nitroaniline: 37% Dimethylphthalate: 35% Acenaphthylene: 1% 3-Nitroaniline: 5%/0% Acenaphthene: 11% 4-Nitrophenol: 46% Diethylphthalate: 13% Fluorene: 28% 4-Nitroaniline: 13%/1% N-Nitrosodiphenylamine: 18%/29% Phenanthrene: 29% Anthracene: 9% Carbazole: 2% Di-n-butylphthalate: 12% Fluoranthene: 16% Pyrene: 7% Butylbenzylphthalate: 3% 3,3’-Dichlorobenzidine: 0%/0% Benzo(a)anthracene: 19%	J	Qualify positive and non-detect results as estimated (J)	All samples

SDG K1439 – SVOC QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1439	**W&C Project No.:**222007	
Medium: Surface Water		**Analytes:** SVOCs	
Samples: J17TJ8, J17TJ7, J17TJ5, J17TJ6, & J17TK1			
Laboratory: Lionville	**Date Data Assessment Completed:** 2/17/2010 **Complete By:** KAM	**Sample Collection Date:** 11/4/2008	**Sample Analysis Date:** 11/9/2008 extr 11/14-19/2008 anal

QC Parameter	**All in Spec.?**	**Non-Compliant Results**	**Flag**	**Action/ Notes**	**Associated Samples**
		Chrysene: 28% Bis(2-ethylhexyl)phthalate: 12% Di-n-octyl phthalate: 12% Benzo(b)fluoranthene: 26% Benzo(k)fluoranthene: 14% Benzo(a)pyrene: 6% Indeno(1,2,3-cd)pyrene: 11% Dibenz(a,h)anthracene: 26% Benzo(g,h,i)perylene: 8%			
Lab Duplicates Sample ID:	Not analyzed				
Field Duplicates Sample ID:	Not collected				
Summary					
Validity of Data	No	Surrogate Recoveries	R	Qualify non-detect results as rejected (R)	All acid fraction compounds for J17TK1
Additional Notes:					

SDG K1439 – PCB QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1439	**W&C Project No.:**222007	
Medium: Surface Water		**Analytes:** PCBs	
Samples: J17TJ8, J17TJ7, J17TJ5, J17TJ6, & J17TK1			
Laboratory: Lionville	**Date Data Assessment Completed:** 2/17/2010 **Complete By:** KAM	**Sample Collection Date:** 11/4/2008	**Sample Analysis Date:** 11/11/2008 extr 11/14-15/2008 anal

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No Action	
Detection Limits	Yes	None	-	No Action	
Blanks					
Method Blank	Yes	None	-	No Action	
Equipment Blank Sample ID:	Not collected				
Other QC Results					
Surrogate Recoveries	Yes	None	-	No Action	
LCS Results	Yes	None	-	No Action	
Matrix Spikes Sample ID: J17TK1	No	Aroclor-1016: 15% Aroclor-1260: 18%	J	Qualify positive and non-detect results as estimated (J)	All samples
Lab Duplicates Sample ID:	Not analyzed				
Field Duplicates Sample ID:	Not collected				
Summary					
Validity of Data	Yes	No rejected results			
Additional Notes:					

SDG K1439 – Pesticides QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1439	**W&C Project No.:**222007	
Medium: Surface Water		**Analytes:** Pesticides	
Samples: J17TJ8, J17TJ7, J17TJ5, J17TJ6, & J17TK1			
Laboratory: Lionville	**Date Data Assessment Completed:** 2/17/2010 **Complete By:** KAM	**Sample Collection Date:** 11/4/2008	**Sample Analysis Date:** 11/11/08 extr 11/13-14/08 anal

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No Action	
Detection Limits	Yes	None	-	No Action	
Blanks					
Method Blank	Yes	None	-	No Action	
Equipment Blank Sample ID:	Not collected				
Other QC Results					
Surrogate Recoveries	Yes	None	-	No Action	
LCS Results	No	No LCS results for toxaphene	J	Qualify all associated results as estimated (J)	Impacts to all samples above.
Matrix Spikes Sample ID: J17TK1	Yes	None	-	No Action	
Lab Duplicates Sample ID:	Not analyzed				
Field Duplicate Sample ID:	Not collected				
QC Summary					
Validity of Data	Yes	No rejected results			
Additional Notes:					

SDG K1439 – Metals QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1439	**W&C Project No.:**222007	
Medium: Surface Water		**Analytes:** Metals	
Samples[1]: J17TJ5, J17TJ8, J17TL2, J17TL3, J17TJ6, J17TK1, J17TL8, J17TJ7, J17TL5, & J17TL4			
Laboratory: Lionville	**Date Data Assessment Completed:** 2/17/2010 **Complete By:** KAM	**Sample Collection Date:** 11/4/2008	**Sample Analysis Date:** 12/4-5/2008 Hg: 11/18/2008

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No Action	
Detection Limits	Yes	None	-	No Action	
Blanks					
Preparation Blank	No	Calcium: 64.6 ug/L Copper: 1.1 ug/L Lithium: 0.22 ug/L Magnesium: 25.9 ug/L Manganese: 0.48 ug/L Sodium: 168 ug/L Strontium: 0.42 ug/L Titanium: 0.98 ug/L	UJ	For copper, titanium, and manganese, qualify positive results as UJ. No action for non-detect results. No action on calcium, lithium, magnesium, sodium, or strontium results because all sample results are greater than 5x the highest result in the blanks	Copper (UJ): J17TJ8, J17TL5, J17TJ5, J17TL2, J17TK1, J17TL8, J17TJ7, J17TL4 Titanium (UJ): J17TJ8, J17TL2, J17TK1, J17TJ7, J17TJ6 Manganese (UJ): J17TL5, J17TL2, J17TL8, J17TL4, J17TL3
Equipment Blank Sample ID:	Not collected				
Other QC Results					
LCS Results	Yes	None	-	No Action	
Matrix Spikes Sample ID: J17TL5	Yes	None	-	No Action	
Lab Duplicates Sample ID: J17TL5	No	Boron: 35.8% Copper: 200% Molybdenum: 200% Lead: 200% Selenium: 200% Vanadium: 200% Zinc: 52%	-	No Action – the difference between both results is less than 1x the RDL	J17TL5

SDG K1439 – Metals QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1439	**W&C Project No.:**222007
Medium: Surface Water		**Analytes:** Metals
Samples[1]: J17TJ5, J17TJ8, J17TL2, J17TL3, J17TJ6, J17TK1, J17TL8, J17TJ7, J17TL5, & J17TL4		

Laboratory: Lionville	**Date Data Assessment Completed:** 2/17/2010 **Complete By:** KAM	**Sample Collection Date:** 11/4/2008	**Sample Analysis Date:** 12/4-5/2008 Hg: 11/18/2008

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Field Duplicate Sample ID:	Not collected				
QC Summary					
Validity of Data	Yes	No rejected results			

Additional Notes:

[1] Metals Narrative indicates that 11 samples were analyzed for metals, however results for only 10 samples are provided in SDG.

SDG K1439 – Radionuclides QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1439	**W&C Project No.:**222007
Medium: Surface Water		**Analytes:** Tritium, Carbon-14, Strontium-90, Technetium-99, Isotopic Thorium, Isotopic Uranium, Isotopic Plutonium, Gamma Spectroscopy
Samples: J17TJ8, J17TJ7, J17TJ5, J17TJ6, & J17TK1		

Laboratory: Eberline	**Date Data Assessment Completed:** 2/17/2010 **Complete By:** KAM	**Sample Collection Date:** 11/4/2008	**Sample Analysis Date:** 12/2008

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No Action	
Detection Limits	No	**RDL** Carbon-14 Strontium **MDA** Potassium-40 Radium-226 Radium-228 Beryllium-7 Ruthenium-106	-	No Action	All samples
Blanks					
Method Blanks	Yes	None	-	No Action	
Other QC Results					
LCS Results	Yes	None	-	No Action	
Tracer Results	Yes	None	-	No Action	
Matrix Spike Sample ID: J17TJ8	Yes	None	-	No Action	
Lab Duplicates Sample ID: J17TJ8	No	Uranium-233/234: 57%	-	No Action since the difference between both results is less than 1x the RDL	J17TJ8
Field Duplicate Sample ID:	Not collected				
QC Summary					
Validity of Data	Yes	No rejected results			
Additional Notes:					

SDG K1439 – DRO QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1439	**W&C Project No.:**222007
Medium: Surface Water		**Analytes:** DRO/Motor Oil
Samples: J17TJ8, J17TJ7, J17TJ5, J17TJ6, & J17TK1		

Laboratory: Lionville	**Date Assessment Completed:** 2/17/2010 **Complete By:** KAM	**Sample collection:** 11/4/2008	**Sample Analysis Date:** 11/10/2008 extr 11/12-13/2008 anal

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No Action	
Surrogates	Yes	None	-	No Action	
Blanks					
Method Blank	Yes	None	-	No Action	.
Equipment Blank Sample ID:	Not collected				
Other QC					
LCS Results	Yes	None	-	No Action	
Matrix Spikes Sample ID: J17TK1	Yes	None	-	No Action	
Lab Duplicates Sample ID:	Not analyzed				
Field Duplicate Sample ID:	Not collected				
QC Summary					
Validity of Data	Yes	No rejected results			
Additional Notes:					

SDG K1439 – DOC QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1439	**W&C Project No.:**222007	
Medium: Surface Water		**Analytes:** DOC	
Samples: J17TJ8, J17TJ7, J17TJ5, J17TJ6, & J17TK1			
Laboratory: Lionville	**Date Data Assessment Completed:** 2/18/2010 **Complete By:** KAM	**Sample Collection Date:** 11/4/2008	**Sample Analysis Date:** 11/7/2008

QC Parameter	**All in Spec.?**	**Non-Compliant Results**	**Flag**	**Action/ Notes**	**Associated Samples**
Holding Times	Yes	None	-	No Action	
Detection Limit	Yes	None	-	No Action	
Blanks					
Method Blank	Yes	None	-	No Action	
Other QC					
LCS Results	Not collected				
Matrix Spikes Sample ID: J17TK1	Yes	None	-	No Action	
Lab Duplicate Sample ID: J17TK1	Yes	None	-	No Action	
Field Duplicate Sample ID:	Not collected				
QC Summary					
Validity of Data	Yes	No rejected results			
Additional Notes:					

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SDG K1441 – VOC QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1441	**W&C Project No.:**222007
Medium: Surface Water		**Analytes:** VOA
Samples: J17TV8, J17TK5, J17TJ9, J17TK4, & J17TK2		

Laboratory: Lionville	**Date Data Assessment Completed:** 2/18/2010 **Complete By**: KAM	**Sample Collection Date:** 11/5/2008	**Sample Analysis Date:** 11/15,19/2008

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No Action	
Detection Limits	Yes	None	-	No Action	
Blanks					
Blanks - Method	Yes	None	-	No Action	
Equipment Blank Sample ID:	Not collected				
Trip Blank Sample ID: J17TV8	Yes	None	-	No Action	
Other QC Results					
Surrogate Recoveries	Yes	None	-	No Action	
LCS Results	Yes	None	-	No Action	
Matrix Spikes Sample ID: J17TK2	Yes	None	-	No Action	
Lab Duplicates	Not analyzed				
Field Duplicates Sample ID:	Not collected				
Summary					
Validity of Data	Yes	No rejected results			
Additional Notes:					

SDG K1441 – SVOC QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1441	**W&C Project No.:**222007	
Medium: Surface Water		**Analytes:** SVOCs	
Samples: J17TJ9, J17TK4, J17TK2, & J17TK5			
Laboratory: Lionville	**Date Data Assessment Completed:** 2/18/2010 **Complete By**: KAM	**Sample Collection Date:** 11/5/2008	**Sample Analysis Date:** 11/12/2008 extr 11/20/2008 anal

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No Action	
Detection Limits	No	2,4,5-Trichlorophenol 2-Nitroaniline 3-Nitroaniline 4-Nitrophenol 4-Nitroaniline 4,6-Dinitro-2-methylphenol Pentachlorophenol	-	No Action	
Blanks					
Method Blanks	Yes	None	-	No Action	
Equipment Blank Sample ID:	Not collected				
Other QC					
Surrogate Recoveries	Yes	None	-	No Action	
LCS Results	No	1,3-Dichlorobenzene: 48% 1,4-Dichlorobenzene: 47% Hexachloroethane: 46% 4-Chloroaniline: 10% Hexachlorocyclopentadiene: 45% 3-Nitroaniline: 6% 4-Nitroaniline: 9% N-Nitrosodiphenylamine: 37% 3,3'-Dichlorobenzidine:4%	J	Qualify positive and non-detect results as estimated (J)	All samples
Matrix Spikes Sample ID: J17TK2		Hexachloroethane: 46% Bis(2-chloroethoxy)methane: 19%/5% 4-Chloroaniline: 1%/0% 2-Nitroaniline: 15%/30% Acenaphthylene: 42% 3-Nitroaniline: 0%/2% 4-Nitroaniline: 1%/1% N-Nitrosodiphenylamine: 26%/27% Carbazole: 37%/28% 3,3'-Dichlorobenzidine: 0%/0%	J	Qualify positive and non-detect results as estimated (J)	All samples

SDG K1441 – SVOC QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1441	**W&C Project No.:**222007	
Medium: Surface Water		**Analytes:** SVOCs	
Samples: J17TJ9, J17TK4, J17TK2, & J17TK5			
Laboratory: Lionville	**Date Data Assessment Completed:** 2/18/2010 **Complete By**: KAM	**Sample Collection Date:** 11/5/2008	**Sample Analysis Date:** 11/12/2008 extr 11/20/2008 anal

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Lab Duplicates Sample ID:	Not analyzed				
Field Duplicates Sample ID:	Not collected				
Summary					
Validity of Data	Yes	No rejected results			
Additional Notes:					

SDG K1441 – PCB QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1441	**W&C Project No.:**222007	
Medium: Surface Water		**Analytes:** PCBs	
Samples: J17TJ9, J17TK4, J17TK2, & J17TK5			
Laboratory: Lionville	**Date Data Assessment Completed:** 2/18/2010 **Complete By:** KAM	**Sample Collection Date:** 11/5/2008	**Sample Analysis Date:** 11/11/2008 extr 11/14-15/2008 anal

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No Action	
Detection Limits	Yes	None	-	No Action	
Blanks					
Method Blank	Yes	None	-	No Action	
Equipment Blank Sample ID:	Not collected				
Other QC Results					
Surrogate Recoveries	Yes	None	-	No Action	
LCS Results	Yes	None	-	No Action	
Matrix Spikes Sample ID: J17TK5	Yes	None	-	No Action	
Lab Duplicates Sample ID:	Not analyzed				
Field Duplicates Sample ID:	Not collected				
Summary					
Validity of Data	Yes	No rejected results			
Additional Notes:					

SDG K1441 – Pesticides QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1441	**W&C Project No.:**222007	
Medium: Surface Water		**Analytes:** Pesticides	
Samples: J17TJ9, J17TK4, J17TK2, & J17TK5			
Laboratory: Lionville	**Date Data Assessment Completed:** 2/18/2010 **Complete By:** KAM	**Sample Collection Date:** 11/5/2008	**Sample Analysis Date:** 11/11/2008 extr 11/13-14/2008 anal

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No Action	
Detection Limits	Yes	None	-	No Action	
Blanks					
Method Blank	Yes	None	-	No Action	
Equipment Blank Sample ID:	Not collected				
Other QC Results					
Surrogate Recoveries	Yes	None	-	No Action	
LCS Results	No	No LCS results for toxaphene	J	Qualify all associated results as estimated (J)	Impacts to all samples above.
Matrix Spikes Sample ID: J17TK5	Yes	None	-	No Action	
Lab Duplicates Sample ID:	Not analyzed				
Field Duplicate Sample ID:	Not collected				
QC Summary					
Validity of Data	Yes	No rejected results			
Additional Notes:					

SDG K1441 – Metals QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1441	**W&C Project No.:**222007	
Medium: Surface Water		**Analytes:** Metals	
Samples: J17TJ9, J17TL9, J17TK4, J17TL6, J17TK5, J17TM1, J17TK2, & J17TM2			
Laboratory: Lionville	**Date Data Assessment Completed:** 2/18/2010 **Complete By:** KAM	**Sample Collection Date:** 11/5/2008	**Sample Analysis Date:** 2/10/2009 Hg: 11/25/2008

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No Action	
Detection Limits	Yes	None	-	No Action	
Blanks					
Preparation Blank	No	Barium = 0.3 ug/L Chromium = 0.6 ug/L Nickel = 2.1 ug/L Zinc = 2.1 ug/L Molybdenum = 0.4 ug/L Phosphorus = 4.0 ug/L	UJ	Qualify positive chromium, nickel, zinc, molybdenum, and phosphorus results as UJ. No action on barium results since all sample results are greater than 5x the highest result in the blanks	Chromium: All samples Nickel: All samples Zinc: All samples Molybdenum: J17TK2, J17TL9, J17TK4, J17TM1 Phosphorous: J17TK2, J17TL9, J17TK4, J17TM1
Equipment Blank Sample ID:	Not collected				
Other QC Results					
LCS Results	Yes	None	-	No Action	
Matrix Spikes Sample ID: J17TJ9	No	Silicon = 277%	-	No Action since result is greater than 4x the spike amount	All samples
Lab Duplicates Sample ID: J17TJ9	Yes	None	-	No Action	
Field Duplicate Sample ID:	Not analyzed				
QC Summary					
Validity of Data	Yes	No rejected results			
Additional Notes:					

SDG K1441 – Radionuclides QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1441	**W&C Project No.:**222007	
Medium: Surface Water		**Analytes:** Tritium, Carbon-14, Strontium-90, Technetium-99, Isotopic Thorium, Isotopic Uranium, Isotopic Plutonium, Gamma Spectroscopy	
Samples: J17TJ9, J17TK5, & J17TK2, J17TK4			
Laboratory: Eberline	**Date Data Assessment Completed:** 2/18/2010 **Complete By:** KAM	**Sample Collection Date:** 11/5/2008	**Sample Analysis Date:** 12/2008

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No Action	
Detection Limits	No	**RDL** Carbon-14 Strontium **MDA** Radium-226 Radium-228 Beryllium-7 Ruthenium-106	-	No Action	All samples
Blanks					
Method Blanks	Yes	None	-	No Action	
Other QC Results					
LCS Results	Yes	None	-	No Action	
Tracer Results	Yes	None	-	No Action	
Matrix Spike Sample ID: J17TK2	Yes	None	-	No Action	
Lab Duplicates Sample ID: J17TK2	No	Thorium-230 = 25% Uranium-233/234 = 70%	-	No Action since the difference between both results is less than 1x the RDL	J17TK2
Field Duplicate Sample ID:	Not collected				
QC Summary					
Validity of Data	Yes	No rejected results			
Additional Notes:					

SDG K1441 – DRO QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1441	**W&C Project No.:**222007	
Medium: Surface Water		**Analytes:** DRO/Motor Oil	
Samples: J17TJ9, J17TK4, J17TK2, & J17TK5			
Laboratory: Lionville	**Date Assessment Completed:** 2/18/2010 **Complete By:** KAM	**Sample collection:** 11/5/2008	**Sample Analysis Date:** 11/11/2008 extr 11/17/2008 anal

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No Action	
Surrogates	Yes	None	-	No Action	
Blanks					
Method Blank	No	DRO = 33J ug/L	UJ	Qualify positive DRO results as non-detect (UJ)	All samples. Impacts samples J17TK5, J17TK4, and J17TJ9
Equipment Blank Sample ID:	Not collected				
Other QC					
LCS Results	Yes	None	-	No Action	
Matrix Spikes Sample ID: J17TJ9	No	DRO = 169%	J	Qualify positive DRO results as estimated (J).	All samples
Lab Duplicates Sample ID:	Not analyzed				
Field Duplicate Sample ID:	Not collected				
QC Summary					
Validity of Data	Yes	No rejected data			
Additional Notes:					

SDG K1441 – DOC QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1441	**W&C Project No.:**222007	
Medium: Surface Water		**Analytes:** DOC	
Samples: J17TJ9, J17TK4, J17TK2, & J17TK5			
Laboratory: Lionville	**Date Data Assessment Completed:** 2/18/2010 **Complete By:** KAM	**Sample Collection Date:** 11/5/2008	**Sample Analysis Date:** 11/7/2008

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No Action	
Detection Limit	Yes	None	-	No Action	
Blanks					
Method Blank	Yes	None	-	No Action	
Other QC					
LCS Results	Not collected				
Matrix Spikes Sample ID: J17TJ9	Yes	None	-	No Action	
Lab Duplicate Sample ID: T17TJ9	Yes	None	-	No Action	
Field Duplicate Sample ID:	Not collected				
QC Summary					
Validity of Data	Yes	No rejected results			
Additional Notes:					

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SDG K1442 – VOC QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1442	**W&C Project No.:**222007	
Medium: Surface Water		**Analytes:** VOA	
Samples: J17TW5, J17TK0, J17TK7, & J17TK6			
Laboratory: Lionville	**Date Data Assessment Completed:** 2/21/10 **Complete By:** SRK	**Sample Collection Date:** 11/6/08	**Sample Analysis Date:** 11/15,19/08

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No action	
Detection Limits	Yes	None	-	No action	
Blanks					
Blanks - Method	Yes	None	-	No action	
Equipment Blank Sample ID:	Not collected				
Trip Blank Sample ID: J17TW5	No	Toluene = 2 ug/L	-	No action based on guidance	
Other QC Results					
Surrogate Recoveries	Yes	None	-	No action	
LCS Results	Yes	None	-	No action	
Matrix Spikes Sample ID: J17TK6 MS and MSD	Yes	None	-	No action	
Lab Duplicates	Not analyzed				
Field Duplicates Sample ID:	Not collected				
Summary					
Validity of Data	No results qualified or rejected				
Additional Notes:					

SDG K1442 – SVOC QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1442	**W&C Project No.:**222007	
Medium: Surface Water		**Analytes:** SVOCs	
Samples: J17TK7, J17TK6, & J17TK0			
Laboratory: Lionville	**Date Data Assessment Completed:** 3/2/10 **Complete By:** SRK	**Sample Collection Date:** 11/6/08	**Sample Analysis Date:** Extracted – 11/12/08, Analyzed – 11/21/08

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No action	
Detection Limits	No	2,4,5-Trichlorophenol, 2-Nitroaniline, 3-Nitroaniline, 4-Nitrophenol, 4-Nitroaniline, 4,6-Dinitro-2-methylphenol, and Pentachlorophenol	-	No action	
Blanks					
Method Blanks	Yes	None	-	No action	
Equipment Blank Sample ID:	Not collected.				
Other QC					
Surrogate Recoveries	Yes	None	-	No action	
LCS Results	No	1,3-Dichlorobenzene: 48% 1,4-Dichlorobenzene: 47% Hexachloroethane: 46% Naphthalene: 10% Hexachlorocyclopentadiene: 45% 3-Nitroaniline: 6% 4-Nitroaniline: 9% 3,3’-Dichlorobenzidine: 4%	J	Qualify positive and non-detect results as estimated (J)	All samples. J added.
Matrix Spikes Sample ID: J17TK7	No	Bis(2-Chloroethoxy)methane: 30%/45% 4-Chloroaniline: 2%/8% 3-Nitroaniline: 3%/12% 4-Nitroaniline: 3%/36% N-Nitrosodiphenylamine: 31/40% Carbazole: 42% 3,3’-Dichlorobenzidine: 0%/0%	J	Qualify positive and non-detect results as estimated (J)	All samples. J added.
Lab Duplicates Sample ID:	Not analyzed				
Field Duplicates Sample ID:	Not collected.				
Summary					

SDG K1442 – SVOC QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1442	**W&C Project No.:**222007	
Medium: Surface Water		**Analytes:** SVOCs	
Samples: J17TK7, J17TK6, & J17TK0			
Laboratory: Lionville	**Date Data Assessment Completed:** 3/2/10 **Complete By:** SRK	**Sample Collection Date:** 11/6/08	**Sample Analysis Date:** Extracted – 11/12/08, Analyzed – 11/21/08

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Validity of Data	Some results qualified, none rejected.				
Additional Notes:					

SDG K1442 – PCB QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1442	**W&C Project No.:**222007	
Medium: Surface Water		**Analytes:** PCBs	
Samples: J17TK7, J17TK6, & J17TK0			
Laboratory: Lionville	**Date Data Assessment Completed:** 3/2/10 **Complete By:** SRK	**Sample Collection Date:** 11/6/08	**Sample Analysis Date:** Extracted – 11/13/08 Analyzed – 11/22/08

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No action	
Detection Limits	Yes	None	-	No action	
Blanks					
Method Blank	Yes	None	-	No action	
Equipment Blank Sample ID:	Not collected				
Other QC Results					
Surrogate Recoveries	Yes	None	-	No action	
LCS Results	Yes	None	-	No action	
Matrix Spikes Sample ID: J17TK0	Yes	None	-	No action	
Lab Duplicates Sample ID:	Not analyzed				
Field Duplicates Sample ID:	Not collected				
Summary					
Validity of Data	No results qualified or rejected.				
Additional Notes:					

SDG K1442 – Pesticides QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1442	**W&C Project No.:**222007	
Medium: Surface Water		**Analytes:** Pesticides	
Samples: J17TK7, J17TK6, & J17TK0			
Laboratory: Lionville	**Date Data Assessment Completed:** 3/2/10 **Complete By:** SRK	**Sample Collection Date:** 11/6/08	**Sample Analysis Date:** Extracted – 11/13/08 Analyzed – 11/22/08

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No action	
Detection Limits	Yes	None	-	No action	
Blanks					
Method Blank	Yes	None	-	No action	
Equipment Blank Sample ID:	Not collected				
Other QC Results					
Surrogate Recoveries	Yes	None	-	No action	
LCS Results	No	No LCS results for toxaphene	J	Qualify all associated results as estimated (J)	Impacts to all samples above.
Matrix Spikes Sample ID: J17TK0	Yes	None	-	No action	
Lab Duplicates Sample ID:	Not analyzed				
Field Duplicate Sample ID:	Not collected				
QC Summary					
Validity of Data	No results qualified or rejected.				
Additional Notes:					

SDG K1442 – Metals QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1442	**W&C Project No.:**222007	
Medium: Surface Water		**Analytes:** Metals	
Samples: J17V39, J17V42, J17TK7, J17TM4, J17TK6, J17TM3, J17V40, J17V43, J17TK0, & J17TL7			
Laboratory: Lionville	**Date Data Assessment Completed:** 3/2/10 **Complete By:** SRK	**Sample Collection Date:** 11/6/08	**Sample Analysis Date:** 2/11/09 Hg: 12/2/2008

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No action	
Detection Limits	Yes	None	-	No action	
Blanks					
Preparation Blank	No	Cr: 0.8 ug/L Mg: 7.1 ug/L Mo: 0.4 ug/L Ni: 2.1 ug/L P: 1.6 ug/L Tin: 0.4 ug/L V: 0.3 ug/L Zn: 1.7 ug/L	UJ	Qualify all sample results < 5x blank concentration as non-detect (UJ)	All samples. J17V39 – Cr, Mo, Ni, Sn, and Zn J17V42 – Cr, Mo, Ni, Sn, and Zn J17TK7 – Cr, Mo, Ni and Zn J17TM4 – Cr, Mo, Ni, Sn, and Zn J17TK6 – Cr, Mo, Ni, Sn, and Zn J17TM3 – Cr, Mo, Ni, Sn, and Zn J17V40 – Cr, Mo, Ni, Sn, and Zn J17V43 – Cr, Mo, Ni, Sn, and Zn J17TK0 – Cr, Mo, Ni and Zn J17TL7 – Cr, Mo, Ni, Sn, and Zn
Equipment Blank Sample ID:	Not collected				
Other QC Results					
LCS Results	Yes	None	-	No action	
Matrix Spikes Sample ID: J17V39	Yes	None	-	No action	
Lab Duplicates Sample ID: J17V39	No	Zinc: 29%	-	No qualification since the difference between results is less than 1x the RDL	

SDG K1442 – Metals QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1442	**W&C Project No.:**222007	
Medium: Surface Water		**Analytes:** Metals	
Samples: J17V39, J17V42, J17TK7, J17TM4, J17TK6, J17TM3, J17V40, J17V43, J17TK0, & J17TL7			
Laboratory: Lionville	**Date Data Assessment Completed:** 3/2/10 **Complete By:** SRK	**Sample Collection Date:** 11/6/08	**Sample Analysis Date:** 2/11/09 Hg: 12/2/2008

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Field Duplicate Sample ID:	Not collected				
QC Summary					
Validity of Data	Some results qualified, none rejected.				
Additional Notes:					

SDG K1442 – Radionuclides QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1442	**W&C Project No.:**222007	
Medium: Surface Water		**Analytes:** Radionuclides (GEA, Tritium, C-14, Isotopic Pu, Sr-90, Tc-99, Isotopic Th, H-3, & Isotopic U)	
Samples: J17TK0, J17TK6, J17TK7, J17V39, & J17V40			
Laboratory: Eberline	**Date Data Assessment Completed:** 3/1/10 **Complete By:** SRK	**Sample Collection Date:** 11/6/08	**Sample Analysis Date:** 12/10/08 – 1/2/09

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No action	
Detection Limits	No	RDL and/or MDA above criteria for Tritium, C14, Ra226, Ra228, Th232, U235, U238, Am241, Be7, and Ru106	-	No action	
Blanks					
Method Blanks	Yes	None	-	No action	
Other QC Results					
LCS Results	Yes	None	-	No action	
Tracer Results	Yes	None	-	No action	
Matrix Spike Sample ID: J17TK0	Yes	None	-	No action	
Lab Duplicates Sample ID: J17TK0	No	Th230: 43% U233/234: 20% U235: 79%	-	No Action – the difference between both results is less than 1x the RDL	
Field Duplicate Sample ID:	Not collected				
QC Summary					
Validity of Data	No results qualified or rejected.				
Additional Notes:					

SDG K1442 – DRO QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1442	**W&C Project No.:**222007	
Medium: Surface Water		**Analytes:** DRO/Motor Oil	
Samples: J17TK7, J17TK6, & J17TK0			
Laboratory: Lionville	**Date Assessment Completed:** 3/2/10 **Complete By:** SRK	**Sample collection:** 11/6/08	**Sample Analysis Date:** 11/11/2008 extr 11/17-18/08 anal

QC Parameter	**All in Spec.?**	**Non-Compliant Results**	**Flag**	**Action/ Notes**	**Associated Samples**
Holding Times	Yes	None	-	No action	
Surrogates	No	p-Terphenyl: 0% for J17TK0	R/J	Qualify positive results as estimated (J) and ND results as rejected (R).	J17TK0 was non-detect for DRO. Therefore, the result was rejected (R).
Blanks					
Method Blank	No	DRO: 33 ug/L	UJ	Qualify all sample results < 5x highest blank concentration as non-detect (UJ)	All samples. J17TK7, J17TK6, & J17TK0
Equipment Blank Sample ID:	Not collected				
Other QC					
LCS Results	Yes	None	-	No action	
Matrix Spikes Sample ID: J17TK6	Yes	None	-	No action	
Lab Duplicates Sample ID:	Not analyzed				
Field Duplicate Sample ID:	Not collected				
QC Summary					
Validity of Data	One sample result rejected. All other results are acceptable.	Surrogate recovery < 10%.	R		
Additional Notes:					

SDG K1442 – DOC QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1442	**W&C Project No.:**222007	
Medium: Surface Water		**Analytes:** DOC	
Samples: J17V39, J17TK7, J17TK6, J17V40, & J17TK0			
Laboratory: Lionville	**Date Data Assessment Completed:** 3/2/10 **Complete By:** SRK	**Sample Collection Date:** 11/6/08	**Sample Analysis Date:** 11/12/08

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No action	
Detection Limit	Yes	None	-	No action	
Blanks					
Method Blank	Yes	None	-	No action	
Other QC					
LCS Results	Yes	None	-	No action	
Matrix Spikes Sample ID: J17V39	Yes	None	-	No action	
Lab Duplicate Sample ID: J17V39	Yes	None	-	No action	
Field Duplicate Sample ID:	Not collected				
QC Summary					
Validity of Data	No results qualified or rejected.				
Additional Notes:					

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SGD K1447 – VOC QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1447	**W&C Project No.:**222007	
Medium: Surface Water		**Analytes:** VOA	
Samples: J17TL0, J17TK3, & J17TL0			
Laboratory: Lionville	**Date Data Assessment Completed:** 2/21/10 **Complete By**: SRK	**Sample Collection Date:** 11/7/08	**Sample Analysis Date:** 11/15,19/08

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No action	
Detection Limits	Yes	None	-	No action	
Blanks					
Blanks - Method	Yes	None	-	No action	
Equipment Blank Sample ID:	Not collected				
Trip Blank Sample ID: J17TW3	Yes	None	-	No action	
Other QC Results					
Surrogate Recoveries	Yes	None	-	No action	
LCS Results	Yes	None	-	No action	
Matrix Spikes Sample ID: J17TK3 MS and MSD	Yes	None	-	No action	
Lab Duplicates	Not analyzed				
Field Duplicates Sample ID: J17TL0/J17TK3	Yes	None	-	No action	
Summary					
Validity of Data	No results qualified or rejected.				
Additional Notes:					

SDG K1447 – SVOC QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1447	**W&C Project No.:**222007	
Medium: Surface Water		**Analytes:** SVOCs	
Samples: J17TL0 & J17TK3			
Laboratory: Lionville	**Date Data Assessment Completed:** 2/21/10 **Complete By**: SRK	**Sample Collection Date:** 11/7/08	**Sample Analysis Date:** extracted 11/14/08, analyzed 12/16/08

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No action	
Detection Limits	No	2,4,5-Trichlorophenol 2-Nitroaniline 3-Nitroaniline 2,4-Dinitrophenol 4-Nitrophenol 4-Nitroaniline 4,6-Dinitro-2-methylphenol Pentachlorophenol	-	No action	
Blanks					
Method Blanks	No	Di-n-butylphthalate: 0.6 J ug/L Bis(2-ethylhexyl)phthalate: 2 J ug/L	UJ	Qualify results below action levels (6 and 20 ug/L) as non-detect (UJ) and raise value to RDL	All samples. Impacts all samples except for Di-n-butylphthalate for J17TK3 because ND.
Equipment Blank Sample ID:	Not collected				
Other QC					
Surrogate Recoveries	Yes	None	-	No action	
LCS Results	No	Phenol: 26% 4-Nitrophenol: 31%	J	Qualify positive and non-detect results as estimated (J)	All samples.
Matrix Spikes Sample ID: J17TK3 MS and MSD	No	Phenol: 19%/25% 2-Methylphenol: 47% 3/4 Methylphenol: 46% 4-Nitrophenol: 27%/33%	J	Qualify positive and non-detect results as estimated (J)	All samples.
Lab Duplicates Sample ID:	Not analyzed				

SDG K1447 – SVOC QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1447	**W&C Project No.:**222007	
Medium: Surface Water		**Analytes:** SVOCs	
Samples: J17TL0 & J17TK3			
Laboratory: Lionville	**Date Data Assessment Completed:** 2/21/10 **Complete By**: SRK	**Sample Collection Date:** 11/7/08	**Sample Analysis Date:** extracted 11/14/08, analyzed 12/16/08

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Field Duplicates Sample ID: J17TL0/J17TK3	No	Di-n-butylphthalate: 200% RPD Bis(2-Ethylhexyl)phthalate: 67% RPD	-	No action based on guidance	
Summary					
Validity of Data	No results qualified or rejected.				
Additional Notes:					

SDG K1447 – PCB QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1447	**W&C Project No.:**222007	
Medium: Surface Water		**Analytes:** PCBs	
Samples: J17TL0 & J17TK3			
Laboratory: Lionville	**Date Data Assessment Completed:** 2/21/10 **Complete By**: SRK	**Sample Collection Date:** 11/07/08	**Sample Analysis Date:** 11/13/08 extr; 11/21-22,24/08 anal

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No action	
Detection Limits	Yes	None	-	No action	
Blanks					
Method Blank	Yes	None	-	No action	
Equipment Blank Sample ID:	Not collected				
Other QC Results					
Surrogate Recoveries	Yes	None	-	No action	
LCS Results	Yes	None	-	No action	
Matrix Spikes Sample ID: J17TL0 MS and MSD	Yes	None	-	No action	
Lab Duplicates Sample ID:	Not analyzed				
Field Duplicates Sample ID: J17TL0/J17TK3	Yes	None	-	No action	
Summary					
Validity of Data	No results qualified or rejected				
Additional Notes:					

SDG K1447 – Pesticides QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1447	**W&C Project No.:**222007	
Medium: Surface Water		**Analytes:** Pesticides	
Samples: J17TL0 & J17TK3			
Laboratory: Lionville	**Date Data Assessment Completed:** 2/21/10 **Complete By**: SRK	**Sample Collection Date:** 11/7/08	**Sample Analysis Date:** 11/13/08 extr 11/21,22/08 anal

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No action	
Detection Limits	Yes	None	-	No action	
Blanks					
Method Blank	Yes	None	-	No action	
Equipment Blank Sample ID:	Not collected				
Other QC Results					
Surrogate Recoveries	Yes	None	-	No action	
LCS Results	No	No LCS results for toxaphene	J	Qualify all associated results as estimated (J)	Impacts to all samples above.
Matrix Spikes Sample ID: J17TL0 MS and MSD	No (only MSD)	Delta-BHC: 48% Endrin: 14% 4,4'-DDT: 45% Endosulfan sulfate: 47% Methoxychlor: 31%	J	Qualify non-detect and positive results < 5x detection limit as estimated (J)	J17TK3 & J17TL0
Lab Duplicates Sample ID:	Not analyzed				
Field Duplicate Sample ID: J17TL0/J17TK3	Yes	None	-	No action	
QC Summary					
Validity of Data	Some qualified and no results rejected.				
Additional Notes:					

SDG K1447 – Metals QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1447	**W&C Project No.:**222007
Medium: Surface Water		**Analytes:** Metals
Samples: J17TL0, J17TK3, J17TM7, & J17TM0		

Laboratory: Lionville	**Date Data Assessment Completed:** 2/22/10 **Complete By**: SRK	**Sample Collection Date:** 11/7/08	**Sample Analysis Date:** 2/11/09 Hg: 12/2/08

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No action	
Detection Limits	Yes	None	-	No action	
Blanks					
Preparation Blank	No	Cr: 0.8 ug/L Mg: 7.1 ug/L Mo: 0.4 ug/L Ni: 2.1 ug/L P: 1.6 ug/L Tin: 0.4 ug/L V: 0.3 ug/L Zn: 1.7 ug/L	UJ	Qualify all sample results < 5x blank concentration as non-detect (UJ)	All samples. J17TM7 – Cr, Mo, Ni, P, Sn, and Zn J17TL0 – Cr, Ni, Sn, and Zn J17TM0 – Cr, Mo, Ni, P, and Zn J17TK3 – Cr, Mo, Ni, and Zn
Equipment Blank Sample ID:	Not collected				
Other QC Results					
LCS Results	Yes	None	-	No action	
Matrix Spikes Sample ID: J17TM0	Yes	None	-	No action	
Lab Duplicates Sample ID: J17TM0	No	Titanium: 59% Zinc: 29%	-	No qualification since the difference between results is less than 1x the RDL	
Field Duplicate Sample ID: J17TL0/J17TK3 J17TM0/J17TM7	No	J17TL0/J17TK3: Boron: 102% Chromium: 25% Tin: 200% Zinc: 57% Hg: 200%		No action based on guidance	

SDG K1447 – Metals QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA		**SDG No.:** K1447		**W&C Project No.:**222007	
Medium: Surface Water				**Analytes:** Metals	
Samples: J17TL0, J17TK3, J17TM7, & J17TM0					
Laboratory: Lionville	**Date Data Assessment Completed:** 2/22/10 **Complete By**: SRK		**Sample Collection Date:** 11/7/08		**Sample Analysis Date:** 2/11/09 Hg: 12/2/08
QC Parameter	**All in Spec.?**	**Non-Compliant Results**	**Flag**	**Action/ Notes**	**Associated Samples**
		J17TM0/J17TM7: Fe: 28% Tin: 200% Zinc: 24%			
QC Summary					
Validity of Data	Some qualified but none rejected.				
Additional Notes:					

SDG K1447 – Radionuclides QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1447	**W&C Project No.:**222007	
Medium: Surface Water		**Analytes:** Tritium, Carbon-14, Strontium-90, Technetium-99, Isotopic Thorium, Isotopic Uranium, Isotopic Plutonium, Gamma Spectroscopy	
Samples: J17TL0 & J17TK3			
Laboratory: Eberline	**Date Data Assessment Completed:** 2/22/10 **Complete by:** SRK	**Sample Collection Date:** 11/7/08	**Sample Analysis Date:** 11/22/08 – 1/5/09

QC Parameter	**All in Spec.?**	**Non-Compliant Results**	**Flag**	**Action/ Notes**	**Associated Samples**
Holding Times	Yes	None	-	No action	
Detection Limits	No	RDL and/or MDA above criteria for Tritium, Ra226, Ra228, Th232, U235, U238, Be7, and Ru106	-	No action	
Blanks					
Method Blanks	No	Thorium 230: 0.059 pCi/L	-	Qualify results <5x blank concentration as estimated (J) and below MDA as UJ.	No impact because ND for all samples for Thorium.
Other QC Results					
LCS Results	Yes	None	-	No action	
Tracer Results	Yes	None	-	No action	
Matrix Spikes Sample ID: J17TK3	Yes	None	-	No action	
Lab Duplicates Sample ID: J17TK3	No	Thorium 230: 79%	-	No Action – the difference between both results is less than 1x the RDL	
Field Duplicate Sample ID: J17TL0/J17TK3	No	Uranium 233/234: 27% Uranium 238: 27%	-	No action based on guidance	
QC Summary					
Validity of Data	No results qualified or rejected.				
Additional Notes:					

SDG K1447 – DRO QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1447	**W&C Project No.:**222007
Medium: Surface Water		**Analytes:** DRO/Motor Oil
Samples: J17TL0 & J17TK3		

Laboratory: Lionville	**Date Assessment Completed:** 2/21/10 **Completed By:** SRK	**Sample Collection Date:** 11/7/08	**Sample Analysis Date:** extracted 11/14/08, analyzed 11/20/08

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No action	
Surrogates	No	2 of 6 recoveries were outside lab acceptance criteria (p-Terphenyl).	-	No action because only the QC sample (MS) was out of criteria.	
Blanks					
Method Blank	No	DRO: 30 J ug/L	UJ	Qualify all sample results < 5x blank result as non-detect (UJ)	J17TK3 & J17TL0
Equipment Blank Sample ID:	Not collected				
Other QC					
LCS Results	No	DRO: 75%	J	Qualify positive and non-detect results as estimated (J)	J17TK3 & J17TL0
Matrix Spikes Sample ID: J17TK3 MS and MSD	No	DRO: 65%/70%	J	Qualify positive and non-detect results as estimated (J)	J17TK3 & J17TL0
Lab Duplicates Sample ID:	Not analyzed				
Field Duplicate Sample ID: J17TL0/J17TK3	No	DRO: 22%	-	No action based on guidance	
QC Summary					
Validity of Data	Results qualified, but no results rejected.				
Additional Notes:					

SDG K1447 – DOC QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1447	**W&C Project No.:**222007
Medium: Surface Water		**Analytes:** DOC
Samples: J17TK3 & J17TL0		

Laboratory: Lionville	**Date Data Assessment Completed:** 2/21/10 **Complete By**: SRK	**Sample Collection Date:** 11/7/08	**Sample Analysis Date:** 11/12/08 and 11/14/08

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No action	
Detection Limit	Yes	None	-	No action	
Blanks					
Method Blank	Yes	None	-	No action	
Other QC					
LCS Results	Yes	None	-	No action	
Matrix Spikes Sample ID: J17TK3	Yes	None	-	No action	
Lab Duplicate Sample ID: J17TK3	Yes	None	-	No action	
Field Duplicate Sample ID: J17TL0/J17TK3	Yes	None	-	No action	
QC Summary					
Validity of Data	No results qualified or rejected.				
Additional Notes:					

A.40 SDG K1452

SDG K1452 – VOC QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1452	**W&C Project No.:**222007	
Medium: Surface Water		**Analytes:** VOA	
Samples: J17TW2, J17RJ0, J17RH9, & J17RH8			
Laboratory: Lionville	**Date Data Assessment Completed:** 2/21/10 **Complete By**: SRK	**Sample Collection Date:** 11/10/08	**Sample Analysis Date:** 11/21/08

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No action	
Detection Limits	Yes	None	-	No action	
Blanks					
Blanks - Method	Yes	None	-	No action	
Equipment Blank Sample ID:	Not collected				
Trip Blank Sample ID: J17TW2	No	Toluene = 1 ug/L	-	No action based on guidance	
Other QC Results					
Surrogate Recoveries	Yes	None	-	No action	
LCS Results	Yes	None	-	No action	
Matrix Spikes Sample ID: J17RH9 MS and MSD	Yes	None	-	No action	
Lab Duplicates	Not analyzed				
Field Duplicates Sample ID:	Not collected				
Summary					
Validity of Data	No results qualified or rejected				
Additional Notes:					

SDG K1452 – SVOC QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1452	**W&C Project No.:**222007	
Medium: Surface Water		**Analytes:** SVOCs	
Samples: J17RH8, J17RH9, & J17RJ0			
Laboratory: Lionville	**Date Data Assessment Completed:** 3/1/10 **Complete By**: SRK	**Sample Collection Date:** 11/10/09	**Sample Analysis Date:** Extracted - 11/17/08; Analyzed – 12/6/08

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No action	
Detection Limits	No	2,4,5-Trichlorophenol, 2-Nitroaniline, 3-Nitroaniline, 4-Nitrophenol, 4-Nitroaniline, 4,6-Dinitro-2-methylphenol, and Pentachlorophenol	-	No action	
Blanks					
Method Blanks	No	Bis(2-Ethylhexyl)phthalate: 1 ug/L	UJ	Qualify results below action levels as non-detect (UJ) and raise value to RDL	All samples. UJ for all, except for J17RH9 because ND.
Equipment Blank Sample ID:	Not collected.				
Other QC					
Surrogate Recoveries	No	2-Fluorophenol: 111% for J17RH9	-	No action because only one surrogate out of range.	
LCS Results	No	4-Chloroaniline: 4% 3-Nitroaniline: 15% 4-Nitroaniline: 38% 3,3' –Dichlorobenzidine: 0%	J	Qualify positive and non-detect results as estimated (J)	All samples. J added.
		Pentachlorophenol: 151% Benzo(g,h,I)perylene: 152%	-	Qualify positive results as J	All samples. No impact since all ND.
Matrix Spikes Sample ID: J17RH8	No	1,3-Dichlorobenzene: 15% 1,4-Dichlorobenzene: 16% 1,2-Dichlorobenzene: 26% Hexachloroethane: 22% 2,4-Dimethylphenol: 49% Bis(2-Chloroethoxy)methane: 5%/8% 4-Chloroaniline: 30%/35% 2-Nitroaniline: 4%/46% Acenaphthylene: 0% 3-Nitroaniline: 0%/0%	J	Qualify positive and non-detect results as estimated (J).	All samples. J added.

SDG K1452 – SVOC QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1452	**W&C Project No.:**222007
Medium: Surface Water		**Analytes:** SVOCs
Samples: J17RH8, J17RH9, & J17RJ0		

Laboratory: Lionville	**Date Data Assessment Completed:** 3/1/10 **Complete By**: SRK	**Sample Collection Date:** 11/10/09	**Sample Analysis Date:** Extracted - 11/17/08; Analyzed – 12/6/08

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
		4-Nitroaniline: 0%/0% Carbazole: 0% 3,3'-Dichlorobenzidine: 0%/0% N-Nitrosodiphenylamine: 1%/20%			
		2,4,5-Trichlorophenol: 151% Dimethylphthalate: 154% 2,4-Dinitrophenol: 209%/241% 2,4-Dinitrotoluene: 160% Diethylphthalate: 165% 4,6-Dinitro-2-methylphenol: 180% Pentachlorophenol: 176% Di-n-butylphthalate: 152% Fluoranthene: 154% Butylbenzylphthalate: 161% Bis(2-Ethylhexyl)phthalate: 153% Di-n-octyl phthalate: 191% Benzo(b)fluoranthene: 174% Benzo(k)fluoranthene: 159% Indeno(1,2,3-cd)pyrene: 165% Dibenz(a,h)anthracene: 175% Benzo(g,h,i)perylene: 162%	-	Qualify positive results as J.	All samples. No impacts because all ND.
Lab Duplicates Sample ID:	Not analyzed				
Field Duplicates Sample ID:	Not collected.				
Summary					
Validity of Data	Some results qualified, none rejected.				
Additional Notes:					

SDG K1452 – PCB QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1452	**W&C Project No.:**222007	
Medium: Surface Water		**Analytes:** PCBs	
Samples: J17RH8, J17RH9, & J17RJ0			
Laboratory: Lionville	**Date Data Assessment Completed:** 3/2/10 **Complete By**: SRK	**Sample Collection Date:** 11/10/09	**Sample Analysis Date:** 11/17/08 extr 11/24/08 anal

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No action	
Detection Limits	Yes	None	-	No action	
Blanks					
Method Blank	Yes	None	-	No action	
Equipment Blank Sample ID:	Not collected				
Other QC Results					
Surrogate Recoveries	Yes	None	-	No action	
LCS Results	Yes	None	-	No action	
Matrix Spikes Sample ID: J17RH9	No (MS only)	Aroclor-1016: 49%	J	Qualify positive and non-detect results < 5x detection limit as estimated (J)	All samples.
Lab Duplicates Sample ID:	Not analyzed				
Field Duplicates Sample ID:	Not collected				
Summary					
Validity of Data	Some results qualified, none rejected.				
Additional Notes:					

SDG K1452 – Pesticides QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1452	**W&C Project No.:**222007	
Medium: Surface Water		**Analytes:** Pesticides	
Samples: J17RH8, J17RH9, & J17RJ0			
Laboratory: Lionville	**Date Data Assessment Completed:** 3/2/10 **Complete By**: SRK	**Sample Collection Date:** 11/10/09	**Sample Analysis Date:** 11/17/08 extr 11/22/08 anal

QC Parameter	**All in Spec.?**	**Non-Compliant Results**	**Flag**	**Action/ Notes**	**Associated Samples**
Holding Times	Yes	None	-	No action	
Detection Limits	Yes	None	-	No action	
Blanks					
Method Blank	Yes	None	-	No action	
Equipment Blank Sample ID:	Not collected				
Other QC Results					
Surrogate Recoveries	Yes	None	-	No action	
LCS Results	No	No LCS results for toxaphene	J	Qualify all associated results as estimated (J)	Impacts to all samples above.
Matrix Spikes Sample ID: J17RH9	No (MS only)	Delta-BHC: 47%	J	Qualify non-detect and positive results < 5x detection limit as estimated (J)	All samples
Lab Duplicates Sample ID:	Not analyzed				
Field Duplicate Sample ID:	Not collected				
QC Summary					
Validity of Data	Some results qualified, none rejected.				
Additional Notes:					

SDG K1452 – Pesticides QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1452	**W&C Project No.:**222007	
Medium: Surface Water		**Analytes:** Pesticides	
Samples: J17RH8, J17RH9, & J17RJ0			
Laboratory: Lionville	**Date Data Assessment Completed:** 3/2/10 **Complete By**: SRK	**Sample Collection Date:** 11/10/09	**Sample Analysis Date:** 11/17/08 extr 11/22/08 anal

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples

SDG K1452 – Metals QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1452	**W&C Project No.:**222007	
Medium: Surface Water		**Analytes:** Metals	
Samples: J17RH8, J17RJ5, J17RH9, J17RJ0, J17RJ6, & J17RJ7			
Laboratory: Lionville	**Date Data Assessment Completed:** 3/2/10 **Complete By**: SRK	**Sample Collection Date:** 11/10/08	**Sample Analysis Date:** 2/10/09 Hg: 12/4/08

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No action	
Detection Limits	Yes	None	-	No action	
Blanks					
Preparation Blank	No	Ba: 0.3 ug/L Cr: 0.6 ug/L Ni: 2.1 ug/L Zn: 2.1 ug/L Mo: 0.4 ug/L P: 4.0 ug/L	UJ	Qualify all sample results < 5x blank concentration as non-detect (UJ)	All samples – Cr, Mo, Ni, P, & Zn
Equipment Blank Sample ID:	Not collected				
Other QC Results					
LCS Results	Yes	None	-	No action	
Matrix Spikes Sample ID: J17RJ5	Yes	None	-	No action	
Lab Duplicates Sample ID:J17RJ5	No	Hg: 45% RPD P: 32% RPD	-	No qualification since the difference between results is less than 1x the RDL	

SDG K1452 – Pesticides QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1452	**W&C Project No.:**222007
Medium: Surface Water		**Analytes:** Pesticides
Samples: J17RH8, J17RH9, & J17RJ0		

Laboratory: Lionville	**Date Data Assessment Completed:** 3/2/10 **Complete By**: SRK	**Sample Collection Date:** 11/10/09	**Sample Analysis Date:** 11/17/08 extr 11/22/08 anal

QC Parameter	**All in Spec.?**	**Non-Compliant Results**	**Flag**	**Action/ Notes**	**Associated Samples**
Field Duplicate Sample ID:	Not collected				
QC Summary					
Validity of Data	Some samples qualified, none rejected.				
Additional Notes:					

SDG K1452 – Radionuclides QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1452	**W&C Project No.:**222007	
Medium: Surface Water		**Analytes:** Radionuclides (GEA, Tritium, C-14, Isotopic Pu, Sr-90, Tc-99, Isotopic Th, H-3, & Isotopic U)	
Samples: J17RH8, J17RH9, & J17RJ0			
Laboratory: Eberline	**Date Data Assessment Completed:** 3/2/10 **Complete By**: SRK	**Sample Collection Date:** 11/10/08	**Sample Analysis Date:** 12/17/08 – 1/5/09

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No action	
Detection Limits	No	RDL and/or MDA above criteria for Tritium, C14, Ra226, Ra228, Th232, U235, U238, Be7, and Ru106	-	No action	
Blanks					
Method Blanks	No	Th230: 0.270 pCi/L	-	Qualify results <5x blank concentration as estimated (J) and below MDA as UJ.	All Samples. J17RH8 (J) J17RJ0 (J) No impact on J17RH9 b/c ND
Other QC Results					
LCS Results	Yes	None	-	No action	
Tracer Results	Yes	None	-	No action	
Matrix Spike Sample ID: J17RH8	Yes	None	-	No action	
Lab Duplicates Sample ID: J17RH8	No	Th230: 71% RPD U233/234: 53% RPD U238: 96% RPD	-	No Action – the difference between both results is less than 1x the RDL	
Field Duplicate Sample ID:	Not collected				
QC Summary					
Validity of Data	Some results qualified, none rejected.				
Additional Notes:					

SDG K1452 – DRO QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1452	**W&C Project No.:**222007	
Medium: Surface Water		**Analytes:** DRO/Motor Oil	
Samples: J17RH8, J17RH9, & J17RJ0			
Laboratory: Lionville	**Date Assessment Completed:** 3/2/10 **Complete By**: SRK	**Sample collection:** 11/10/08	**Sample Analysis Date:** Extracted – 11/17/08; Analyzed – 12/5/08

QC Parameter	**All in Spec.?**	**Non-Compliant Results**	**Flag**	**Action/ Notes**	**Associated Samples**
Holding Times	Yes	None	-	No action	
Surrogates	Yes	None	-	No action	
Blanks					
Method Blank	No	DRO: 36 ug/L	UJ	Qualify all sample results < 5x highest blank concentration as non-detect (UJ)	All samples.
Equipment Blank Sample ID:	Not collected				
Other QC					
LCS Results	Yes	None	-	No action	
Matrix Spikes Sample ID: J17RJ0	Yes	None	-	No action	
Lab Duplicates Sample ID:	Not analyzed				
Field Duplicate Sample ID:	Not collected				
QC Summary					
Validity of Data	Some results qualified, none rejected.				
Additional Notes:					

SDG K1452 – DOC QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1452	**W&C Project No.:**222007	
Medium: Surface Water		**Analytes:** DOC	
Samples: J17RH8, J17RH9, & J17RJ0			
Laboratory: Lionville	**Date Data Assessment Completed:** 3/2/10 **Complete By**: SRK	**Sample Collection Date:** 11/10/08	**Sample Analysis Date:** 11/17/08

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No action	
Detection Limit	Yes	None	-	No action	
Blanks					
Method Blank	Yes	None	-	No action	
Other QC					
LCS Results	Yes	None	-	No action	
Matrix Spikes Sample ID: J17RH8	Yes	None	-	No action	
Lab Duplicate Sample ID: J17RH8	Yes	None	-	No action	
Field Duplicate Sample ID:	Not collected				
QC Summary					
Validity of Data	No results qualified or rejected.				
Additional Notes:					

A.41 SDG K1453

SDG K1453 – VOC QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1453	**W&C Project No.:**222007	
Medium: Surface Water		**Analytes:** VOA	
Samples: J17TW1, J17RK8, & J17TK9			
Laboratory: Lionville	**Date Data Assessment Completed:** 2/21/10 **Complete By:** SRK	**Sample Collection Date:** 11/11/08	**Sample Analysis Date:** 11/20/08

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No action	
Detection Limits	Yes	None	-	No action	
Blanks					
Blanks - Method	Yes	None	-	No action	
Equipment Blank Sample ID:	Not collected				
Trip Blank Sample ID: J17TW1	No	Toluene = 1 ug/L	-	No action based on guidance	
Other QC Results					
Surrogate Recoveries	Yes	None	-	No action	
LCS Results	Yes	None	-	No action	
Matrix Spikes Sample ID: J17TW1 MS and MSD	Yes	None	-	No action	
Lab Duplicates	Not analyzed				
Field Duplicates Sample ID:	Not collected				
Summary					
Validity of Data	No results qualified or rejected				
Additional Notes:					

SDG K1453 – SVOC QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1453	**W&C Project No.:**222007	
Medium: Surface Water		**Analytes:** SVOCs	
Samples: J17TK8 & J17TK9			
Laboratory: Lionville	**Date Data Assessment Completed:** 3/2/10 **Complete By:** SRK	**Sample Collection Date:** 11/11/08	**Sample Analysis Date:** Extracted - 11/18/08; Analyzed – 12/17/08

QC Parameter	**All in Spec.?**	**Non-Compliant Results**	**Flag**	**Action/ Notes**	**Associated Samples**
Holding Times	Yes	None	-	No action	
Detection Limits	No	2,4,5-Trichlorophenol, 2-Nitroaniline, 3-Nitroaniline, 4-Nitrophenol, 4-Nitroaniline, 4,6-Dinitro-2-methylphenol, and Pentachlorophenol	-	No action	
Blanks					
Method Blanks	Yes	None	-	No action	
Equipment Blank Sample ID:	Not collected.				
Other QC					
Surrogate Recoveries	No	2-Fluorophenol: 20% for J17TK9	-	No action because only one surrogate out of range.	
LCS Results	No	Bis(2-Chloroethyl)ether: 45% 1,3-Dichlorobenzene: 3% 1,4-Dichlorobenzene: 13% 1,2-Dichlorobenzene: 5% Hexachloroethane: 0% Isophorone: 0% 2-Nitrophenol: 8% 2,4-Dimethylphenol: 11% Bis(2-Chloroethoxy)methane: 0% 2,4-Dichlorophenol: 11% 1,2,4-Trichlorobenzene: 31% Naphthalene: 10% 4-Chloroaniline: 1% Hexachlorobutadiene: 27% 4-Chloro-3-methylphenol: 16% 2-Methylnaphthalene: 10% 2,4,6-Trichlorophenol: 36% 2,4,5-Trichlorophenol: 41% 2-CHloronaphthalene: 27% 2-Nitroaniline: 46% Dimethylphthalate: 45%	J	Qualify positive and non-detect results as estimated (J)	All samples. J added.

SDG K1453 – SVOC QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1453	**W&C Project No.:**222007	
Medium: Surface Water		**Analytes:** SVOCs	
Samples: J17TK8 & J17TK9			
Laboratory: Lionville	**Date Data Assessment Completed:** 3/2/10 **Complete By:** SRK	**Sample Collection Date:** 11/11/08	**Sample Analysis Date:** Extracted - 11/18/08; Analyzed – 12/17/08

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
		Acenaphthylene: 29% 2,6-Dinitrotoluene: 48% 3-Nitroaniline: 0% Acenaphthene: 30% Dibenzofuran: 35% 4-Chlorophenyl-phenylether: 36% Fluorene: 34% 4-Nitroaniline: 12% N-Nitrosodiphenylamine: 14% 4-Bromophenyl-phenylether: 37% Hexachlorobenzene: 35% Phenanthrene: 46% Anthracene: 45% Carbazole: 43% Pyrene: 34% 3,3'-Dichlorobenzidine: 0% Benzo(a)anthracene: 44% Di-n-octyl phthalate: 47% Benzo(b)fluoranthene: 47% Benzo(k)fluoranthene: 47% Benzo(a)pyrene: 46% Indeno(1,2,3-cd)pyrene: 48% Dibenz(a,h)anthracene: 49% Benzo(g,h,i)perylene: 47%			
Matrix Spikes Sample ID: J17TK8	No	Phenol: 17%/9% 2-Chlorophenol: /36% 1,2-Dichlorobenzene: /48% 2-Methylphenol: 49%/26% 3/4 Methylphenol: /22% Hexachloroethane: /48% 2-Nitrophenol: /49% 2,4-Dimethylphenol: /42% 2,4-Dichlorophenol: /42% 1,2,4-Trichlorobenzene: /48% 4-Chloro-3-methylphenol: /41% 2,4,5-Trichlorophenol: /49% 4-Nitrophenol: 26%/11% N-Nitrosodiphenylamine: /46%	J	Qualify positive and non-detect results as estimated (J)	All samples. J added.

SDG K1453 – SVOC QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1453	**W&C Project No.:**222007	
Medium: Surface Water		**Analytes:** SVOCs	
Samples: J17TK8 & J17TK9			
Laboratory: Lionville	**Date Data Assessment Completed:** 3/2/10 **Complete By:** SRK	**Sample Collection Date:** 11/11/08	**Sample Analysis Date:** Extracted - 11/18/08; Analyzed – 12/17/08

QC Parameter	**All in Spec.?**	**Non-Compliant Results**	**Flag**	**Action/ Notes**	**Associated Samples**
		Carbazole: 48%			
Lab Duplicates Sample ID:	Not analyzed				
Field Duplicates Sample ID:	Not collected.				
Summary					
Validity of Data	Some results qualified, none rejected.				
Additional Notes:					

SDG K1453 – PCB QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1453	**W&C Project No.:**222007	
Medium: Surface Water		**Analytes:** PCBs	
Samples: J17TK8 & J17TK9			
Laboratory: Lionville	**Date Data Assessment Completed:** 3/2/10 **Complete By:** SRK	**Sample Collection Date:** 11/11/09	**Sample Analysis Date:** 3/12/09 extr 3/26/09 anal

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	No	Extracted 122 days after collection	J/R	Qualify positive results as estimated (J) and ND results as rejected (R)	All samples. All ND so all rejected (R)
Detection Limits	Yes	None	-	No action	
Blanks					
Method Blank	Yes	None	-	No action	
Equipment Blank Sample ID:	Not collected				
Other QC Results					
Surrogate Recoveries	Yes	None	-	No action	
LCS Results	Yes	None	-	No action	
Matrix Spikes Sample ID: J17TK8	Yes	None	-	No action	
Lab Duplicates Sample ID:	Not analyzed				
Field Duplicates Sample ID:	Not collected				
Summary					
Validity of Data	All results rejected.				
Additional Notes:					

SDG K1453 – Pesticides QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1453	**W&C Project No.:**222007	
Medium: Surface Water		**Analytes:** Pesticides	
Samples: J17TK8 & J17TK9			
Laboratory: Lionville	**Date Data Assessment Completed:** 3/2/10 **Complete By:** SRK	**Sample Collection Date:** 11/11/08	**Sample Analysis Date:** Extraction – 3/16/09; Analysis – 3/26/09 and 3/27/09

QC Parameter	**All in Spec.?**	**Non-Compliant Results**	**Flag**	**Action/ Notes**	**Associated Samples**
Holding Times	No	Extracted 126 days after collection	J/R	Qualify positive results estimated (J) and reject ND (R)	All samples. All ND so all rejected (R)
Detection Limits	Yes	None	-	No action	
Blanks					
Method Blank	Yes	None	-	No action	
Equipment Blank Sample ID:	Not collected				
Other QC Results					
Surrogate Recoveries	Yes	None	-	No action	
LCS Results	No	No LCS results for toxaphene	J	Qualify all associated results as estimated (J)	Impacts to all samples above.
Matrix Spikes/Matrix Spike Duplicates Sample ID: J17TK9	No	**Non-compliant Recoveries** alpha-BHC = 0%/0%	J	Qualify positive and non-detect results as estimated (J)	All samples
Lab Duplicates Sample ID:	Not analyzed				
Field Duplicate Sample ID:	Not collected				
QC Summary					
Validity of Data	All results rejected.				

Additional Notes:

SDG K1453 – Metals QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1453	**W&C Project No.:**222007	
Medium: Surface Water		**Analytes:** Metals	
Samples: J17V41, J17V44, J17TK8, J17TM5, J17TK9, & J17TM6			
Laboratory: Lionville	**Date Data Assessment Completed:** 3/2/10 **Complete By:** SRK	**Sample Collection Date:** 11/11/08	**Sample Analysis Date:** 2/16/09 Hg: 12/4/08

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No action	
Detection Limits	Yes	None	-	No action	
Blanks					
Preparation Blank	No	Cr: 0.5 ug/L Ni: 3.0 ug/L Zn: 1.8 ug/L Mo: 0.4 ug/L P: 4.2 ug/L Si: 6.9 ug/L Sn: 0.6 ug/L	UJ	Qualify all sample results < 5x blank concentration as non-detect (UJ)	All samples – J17V41 – Cr, Ni, Zn, Mo, & Sn J17V44 – Cr, Ni, P, Mo, & Sn J17TK8 – Cr, Ni, Zn, Mo, & Sn J17TM5 – Cr, Ni, Zn, Mo & Sn J17TK9 – Cr, Ni, Zn, Mo & Sn J17TM6 – Cr, Ni, Zn, Mo, P & Sn
Equipment Blank Sample ID:	Not collected				
Other QC Results					
LCS Results	Yes	None	-	No action	
Matrix Spikes Sample ID: J17V41	Yes	None	-	No action	
Lab Duplicates Sample ID:J17V41	No	Cr: 40% RPD Ni: 38% RPD Zn: 21% RPD Li: 27% RPD	-	No qualification since the difference between results is less than 1x the RDL	
Field Duplicate Sample ID:	Not collected				
QC Summary					
Validity of Data	Some samples qualified, none rejected.				
Additional Notes:					

SDG K1453 – Radionuclides QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1453	**W&C Project No.:**222007	
Medium: Surface Water		**Analytes:** Radionuclides (GEA, Tritium, C-14, Isotopic Pu, Sr-90, Tc-99, Isotopic Th, H-3, & Isotopic U)	
Samples: J17TK8, J17TK9, & J17V41			
Laboratory: Eberline	**Date Data Assessment Completed:** 3/2/10 **Complete By:** SRK	**Sample Collection Date:** 11/11/08	**Sample Analysis Date:** 12/16/08 – 1/2/09

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No action	
Detection Limits	No	RDL and/or MDA above criteria for Tritium, C14, K40, Cs137, Ra226, Ra228, Eu154, Th232, U235, U238, Am241, Be7, Ru106, and Cs134	-	No action	
Blanks					
Method Blanks	Yes	None	-	No action	
Other QC Results					
LCS Results	Yes	None	-	No action	
Tracer Results	Yes	None	-	No action	
Matrix Spike Sample ID: J17TK8	Yes	None	-	No action	
Lab Duplicates Sample ID: J17TK8	No	U238: 26% RPD	-	No Action – the difference between both results is less than 1x the RDL	
Field Duplicate Sample ID:	Not collected				
QC Summary					
Validity of Data	No results qualified or rejected.				
Additional Notes:					

SDG K1453 – DRO QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1453	**W&C Project No.:**222007
Medium: Surface Water		**Analytes:** DRO/Motor Oil
Samples: J17TK8 & J17TK9		

Laboratory: Lionville	**Date Assessment Completed:** 3/2/10 **Complete By:** SRK	**Sample collection:** 11/11/08	**Sample Analysis Date:** Extracted – 11/17/08; Analyzed – 12/8/08

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No action	
Surrogates	Yes	None	-	No action	
Blanks					
Method Blank	No	DRO: 36 ug/L	UJ	Qualify all sample results < 5x highest blank concentration as non-detect (UJ)	All samples.
Equipment Blank Sample ID:	Not collected				
Other QC					
LCS Results	Yes	None	-	No action	
Matrix Spikes Sample ID: J17TK9	Yes	None	-	No action	
Lab Duplicates Sample ID:	Not analyzed				
Field Duplicate Sample ID:	Not collected				
QC Summary					
Validity of Data	Some results qualified, none rejected.				
Additional Notes:					

SDG K1453 – DOC QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1453	**W&C Project No.:**222007	
Medium: Surface Water		**Analytes:** DOC	
Samples: J17V41, J17TK8, & J17TK9			
Laboratory: Lionville	**Date Data Assessment Completed:** 3/2/10 **Complete By:** SRK	**Sample Collection Date:** 11/11/08	**Sample Analysis Date:** 11/17/08

QC Parameter	**All in Spec.?**	**Non-Compliant Results**	**Flag**	**Action/ Notes**	**Associated Samples**
Holding Times	Yes	None	-	No action	
Detection Limit	Yes	None	-	No action	
Blanks					
Method Blank	Yes	None	-	No action	
Other QC					
LCS Results	Yes	None	-	No action	
Matrix Spikes Sample ID: J17V41	Yes	None	-	No action	
Lab Duplicate Sample ID: J17V41	Yes	None	-	No action	
Field Duplicate Sample ID:	Not collected				
QC Summary					
Validity of Data	No results qualified or rejected.				
Additional Notes:					

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SDG K1455 – VOC QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1455	**W&C Project No.:**222007	
Medium: Surface Water		**Analytes:** VOA	
Samples: J17K81, J17RR6, J17TW0			
Laboratory: Lionville	**Date Data Assessment Completed:** 2/21/10 **Complete By**: SRK	**Sample Collection Date:** 11/12/08 and 11/13/08	**Sample Analysis Date:** 11/20/08

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No action	
Detection Limits	Yes	None	-	No action	
Blanks					
Blanks - Method	Yes	None	-	No action	
Equipment Blank Sample ID:	Not collected				
Trip Blank Sample ID: J17K81 J17TW0	No	Methylene Chloride (J17K81) = 3 ug/L	-	No action based on guidance	
Other QC Results					
Surrogate Recoveries	Yes	None	-	No action	
LCS Results	Yes	None	-	No action	
Matrix Spikes Sample ID: J17RR6 MS and MSD	Yes	None	-	No action	
Lab Duplicates	Not analyzed				
Field Duplicates Sample ID:	Not collected				
Summary					
Validity of Data	No results qualified or rejected				
Additional Notes:					

SDG K1455 – SVOC QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1455	**W&C Project No.:**222007	
Medium: Surface Water		**Analytes:** SVOCs	
Samples: J17RR6 & J17RV2			
Laboratory: Lionville	**Date Data Assessment Completed:** 3/2/10 **Completed By:** SRK	**Sample Collection Date:** 11/12/09 & 11/13/09	**Sample Analysis Date:** Extracted - 11/19/08; Analyzed – 12/7/08 and 12/16/08

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No action	
Detection Limits	No	2,4,5-Trichlorophenol, 2-Nitroaniline, 3-Nitroaniline, 4-Nitrophenol, 4-Nitroaniline, 4,6-Dinitro-2-methylphenol, and Pentachlorophenol	-	No action	
Blanks					
Method Blanks	No	Bis(2-Ethylhexyl)phthalate: 1 ug/L	UJ	Qualify results below action levels as non-detect (UJ) and raise value to RDL	All samples – UJ
Equipment Blank Sample ID:	Not collected.				
Other QC					
Surrogate Recoveries	Yes	None	-	No action	
LCS Results	No	4-Chloroaniline: 31% 3,3' –Dichlorobenzidine: 38%	J	Qualify positive and non-detect results as estimated (J)	All samples. J added.
Matrix Spikes Sample ID: J17RR6	No	Phenol: 26% 2-Chlorophenol: 23% 3/4 Methylphenol: 41% 2-Nitrophenol: 21% 2,4-Dichlorophenol: 21% 4-Chloroaniline: 22% 4-Chloro-3-methylphenol: 38% 2,4,6-Trichlorophenol: 25%	J	Qualify positive and non-detect results as estimated (J)	All samples. J added.

SDG K1455 – SVOC QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1455	**W&C Project No.:**222007
Medium: Surface Water	**Analytes:** SVOCs	
Samples: J17RR6 & J17RV2		

Laboratory: Lionville	**Date Data Assessment Completed:** 3/2/10 **Completed By:** SRK	**Sample Collection Date:** 11/12/09 & 11/13/09	**Sample Analysis Date:** Extracted - 11/19/08; Analyzed – 12/7/08 and 12/16/08

QC Parameter	**All in Spec.?**	**Non-Compliant Results**	**Flag**	**Action/ Notes**	**Associated Samples**
		2,4,5-Trichlorophenol: 25% 2,4-Dinitrophenol: 10% 4-Nitrophenol: 17% 4,6-Dinitro-2-methylphenol: 24%			
Lab Duplicates Sample ID:	Not analyzed				
Field Duplicates Sample ID:	Not collected.				
Summary					
Validity of Data	Some results qualified, none rejected.				
Additional Notes:					

SDG K1455 – PCB QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1455	**W&C Project No.:**222007	
Medium: Surface Water		**Analytes:** PCBs	
Samples: J17RR6 & J17RV2			
Laboratory: Lionville	**Date Data Assessment Completed:** 3/2/10 **Completed By:** SRK	**Sample Collection Date:** 11/12/09 & 11/13/09	**Sample Analysis Date:** 3/12/09 extr 3/26/09 anal

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	No	Extracted 121 days after collection	J/R	Qualify positive results as estimated (J) and ND results as rejected (R)	All samples. All ND so all rejected (R)
Detection Limits	Yes	None	-	No action	
Blanks					
Method Blank	Yes	None	-	No action	
Equipment Blank Sample ID:	Not collected				
Other QC Results					
Surrogate Recoveries	Yes	None	-	No action	
LCS Results	Yes	None	-	No action	
Matrix Spikes Sample ID: J17RR6	Yes	None	-	No action	
Lab Duplicates Sample ID:	Not analyzed				
Field Duplicates Sample ID:	Not collected				
Summary					
Validity of Data	All results rejected.				
Additional Notes:					

SDG K1455 – Pesticides QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1455	**W&C Project No.:**222007
Medium: Surface Water	**Analytes:** Pesticides	
Samples: J17RR6 & J17RV2		

Laboratory: Lionville	**Date Data Assessment Completed:** 3/2/10 **Completed By:** SRK	**Sample Collection Date:** 11/12/09 & 11/13/09	**Sample Analysis Date:** Extraction – 3/16/09; Analysis – 3/26/09 and 3/27/09

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	No	Extracted 125 days after collection	J/R	Qualify positive results estimated (J) and reject ND (R)	All samples. All ND so all rejected (R)
Detection Limits	Yes	None	-	No action	
Blanks					
Method Blank	Yes	None	-	No action	
Equipment Blank Sample ID:	Not collected				
Other QC Results					
Surrogate Recoveries	Yes	None	-	No action	
LCS Results	No	No LCS results for toxaphene	J	Qualify all associated results as estimated (J)	Impacts to all samples above.
Matrix Spikes Sample ID: J17RR6	Yes	None	-	No action	
Lab Duplicates Sample ID:	Not analyzed				
Field Duplicate Sample ID:	Not collected				
QC Summary					
Validity of Data	All results rejected.				
Additional Notes:					

SDG K1455 – Metals QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1455	**W&C Project No.:**222007	
Medium: Surface Water		**Analytes:** Metals	
Samples: J17RR2, J17RR8, J17RR3, J17RR9, J17RR4, J17RT0, J17RR5, J17RT1, J17RR6, J17RT2, J17RV2, & J17RV6			
Laboratory: Lionville	**Date Data Assessment Completed:** 3/2/10 **Completed By:** SRK	**Sample Collection Date:** 11/12/08 and 11/13/08	**Sample Analysis Date:** 2/16-17/09 Hg: 12/4/08

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No action	
Detection Limits	Yes	None	-	No action	
Blanks					
Preparation Blank	No	Cr: 0.5 ug/L Ni: 3.0 ug/L Zn: 1.8 ug/L Mo: 0.4 ug/L P: 4.2 ug/L Si: 6.9 ug/L Sn: 0.6 ug/L	UJ	Qualify all sample results < 5x blank concentration as non-detect (UJ)	All samples. J17RR2 – Cr, Ni, Zn, Mo & P J17RR8 – Cr, Ni, Zn, Sn, Mo & P J17RR3 – Cr, Ni, Zn, Mo & P J17RR9 – Cr, Ni, Zn, Mo & P J17RR4 – Cr, Ni, Zn, Mo & P J17RT0 – Cr, Ni, Zn, Sn, Mo & P J17RR5 – Cr, Ni, Zn, Sn, Mo & P J17RT1 – Cr, Ni, Zn, Sn, Mo & P J17RR6 – Cr, Ni, Zn, Mo & P J17RT2 – Cr, Ni, Zn, Mo & P J17RV2 – Cr, Ni, Zn, Mo & P (UJ) J17RV6 – Cr, Ni, Zn, Sn, Mo & P (UJ)
Equipment Blank Sample ID:	Not collected				
Other QC Results					
LCS Results	Yes	None	-	No action	
Matrix Spikes Sample ID: J17	Yes	None	-	No action	
Lab Duplicates Sample ID:J17	No	Cr: 32% RPD Sn: 67% RPD Ti: 46%	-	No qualification since the difference between results is less than 1x the RDL	

SDG K1455 – Metals QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1455	**W&C Project No.:**222007	
Medium: Surface Water		**Analytes:** Metals	
Samples: J17RR2, J17RR8, J17RR3, J17RR9, J17RR4, J17RT0, J17RR5, J17RT1, J17RR6, J17RT2, J17RV2, & J17RV6			
Laboratory: Lionville	**Date Data Assessment Completed:** 3/2/10 **Completed By:** SRK	**Sample Collection Date:** 11/12/08 and 11/13/08	**Sample Analysis Date:** 2/16-17/09 Hg: 12/4/08

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Field Duplicate Sample ID:	Not collected				
QC Summary					
Validity of Data	Some samples qualified, none rejected.				
Additional Notes:					

SDG K1455 – Radionuclides QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1455	**W&C Project No.:**222007	
Medium: Surface Water		**Analytes:** Radionuclides (GEA, Tritium, C-14, Isotopic Pu, Sr-90, Tc-99, Isotopic Th, H-3, & Isotopic U)	
Samples: J17RR2, J17RR3, J17RR4, J17RR5, J17RR6, & J17RV2			
Laboratory: Eberline	**Date Data Assessment Completed:** 3/2/10 **Completed By:** SRK	**Sample Collection Date:** 11/12/08	**Sample Analysis Date:** 12/18/08 – 1/2/09

QC Parameter	**All in Spec.?**	**Non-Compliant Results**	**Flag**	**Action/ Notes**	**Associated Samples**
Holding Times	Yes	None	-	No action	
Detection Limits	No	RDL and/or MDA above criteria for Tritium, C14, Cs137, Ra226, Ra228, Eu154, Eu155, Th232, U235, U238, Am241, Be7, Ru106, and Cs134	-	No action	
Blanks					
Method Blanks	Yes	None	-	No action	
Other QC Results					
LCS Results	Yes	None	-	No action	
Tracer Results	Yes	None	-	No action	
Matrix Spike Sample ID: J17RR6	Yes	None	-	No action	
Lab Duplicates Sample ID: J17RR6	No	Th230: 82% RPD U233/234: 39% RPD U238: 39% RPD	-	No Action – the difference between both results is less than 1x the RDL	
Field Duplicate Sample ID:	Not collected				
QC Summary					
Validity of Data	No results qualified or rejected.				
Additional Notes:					

SDG K1455 – DRO QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1455	**W&C Project No.:**222007
Medium: Surface Water		**Analytes:** DRO/Motor Oil
Samples: J17RR6 & J17RV2		

Laboratory: Lionville	**Date Assessment Completed:** 3/2/10 **Completed By:** SRK	**Sample collection:** 11/12/08 and 11/13/08	**Sample Analysis Date:** Extracted – 11/17/08; Analyzed – 12/8/08 and 12/9/08

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No action	
Surrogates	Yes	None	-	No action	
Blanks					
Method Blank	No	DRO: 36 ug/L	UJ	Qualify all sample results < 5x highest blank concentration as non-detect (UJ)	All samples.
Equipment Blank Sample ID:	Not collected				
Other QC					
LCS Results	Yes	None	-	No action	
Matrix Spikes Sample ID: J17RR6	No	DRO: 79%	J	Qualify positive and non-detect results as estimated (J)	All samples.
Lab Duplicates Sample ID:	Not analyzed				
Field Duplicate Sample ID:	Not collected				
QC Summary					
Validity of Data	No results rejected.				
Additional Notes:					

SDG K1455 – DOC QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1453	**W&C Project No.:**222007	
Medium: Surface Water		**Analytes:** DOC	
Samples: J17RR2, J17RR3, J17RR4, J17RR5, J17RR6, & J17RV2			
Laboratory: Lionville	**Date Data Assessment Completed:** 3/2/10 **Completed By:** SRK	**Sample Collection Date:** 11/12/08	**Sample Analysis Date:** 11/17/08

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No action	
Detection Limit	Yes	None	-	No action	
Blanks					
Method Blank	Yes	None	-	No action	
Other QC					
LCS Results	Yes	None	-	No action	
Matrix Spikes Sample ID: J17RR3	Yes	None	-	No action	
Lab Duplicate Sample ID: J17RR3	Yes	None	-	No action	
Field Duplicate Sample ID:	Not collected				
QC Summary					
Validity of Data	No results qualified or rejected.				
Additional Notes:					

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SDG K1641 – VOC QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1641	**W&C Project No.:**222007	
Medium: Surface Water		**Analytes:** VOA	
Samples: J18NL0, J18NT7, J18NL1, J18NP4			
Laboratory: Lionville	**Date Data Assessment Completed:** 2/19/2010 **Completed By:** KAM	**Sample Collection Date:** 6/1/2009	**Sample Analysis Date:** 6/4/2009

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No Action	
Detection Limits	No	Methylene Chloride	-	No Action	All samples
Blanks					
Blanks - Method	No	Acetone = 3.58J ug/L	-	No Action since acetone results are non-detect	
Equipment Blank Sample ID:	Not collected				
Trip Blank Sample ID: J18NL0, J18NL1	No	Acetone: J18NL0 = 4.07 ug/L J18NL1 = 4.02 ug/L	-	No Action based on guidance	
Other QC Results					
Surrogate Recoveries	Yes	None	-	No Action	
LCS Results	No	2-Butanone = 48%	J	Qualify positive and non-detect results as estimated (J)	All samples
Matrix Spikes Sample ID: J18NT7	Yes	None	-	No Action	
Lab Duplicates	Not analyzed				
Field Duplicates Sample ID:	Not collected				
Summary					
Validity of Data	Yes	No rejected results			
Additional Notes:					

SDG K1641 – SVOC QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1641	**W&C Project No.:**222007	
Medium: Surface Water		**Analytes:** SVOCs	
Samples: J18NP4, J18NT7			
Laboratory: Lionville	**Date Data Assessment Completed:** 2/19/2010 **Completed By:** KAM	**Sample Collection Date:** 6/1/2009	**Sample Analysis Date:** 6/3/2009 extr 6/9-11/2009 anal

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No Action	
Detection Limits	No	2,4-Dinitrophenol 2-Nitroaniline 3,3'-Dichlorobenzidine 3-Nitroaniline 4,6-Dinitro-2-methylphenol 4-Chloroaniline 4-Nitroaniline 4-Nitrophenol Pentachlorophenol	-	No Action	
Blanks					
Method Blanks	Yes	None	-	No Action	
Equipment Blank Sample ID:	Not collected				
Other QC					
Surrogate Recoveries	Yes	None	-	No Action	
LCS Results	No	3-Nitroaniline: 4% 4-Chloroaniline: 9% 4-Nitroaniline: 12% Bis(2-chloroethoxy)methane: 44% N-Nitrosodiphenylamine: 26%	J	Qualify positive and non-detect results as estimated (J)	All samples
		2,4-Dinitrophenol: 162% 4-Nitrophenol: 295% Pentachlorophenol: 159%	-	Qualify positive results as estimated (J)	All samples. No impacts since all results ND.
Matrix Spikes Sample ID: J18NT7	No	2-Nitroaniline: 44% 3-Nitroaniline: 7% 3,3'-dichlorobenzidine: 34% 4-Chloroaniline: 4% 4-Nitroaniline: 9% Acenaphthylene: 34%	J	Qualify positive and non-detect results as estimated (J)	All samples

SDG K1641 – SVOC QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1641	**W&C Project No.:**222007	
Medium: Surface Water		**Analytes:** SVOCs	
Samples: J18NP4, J18NT7			
Laboratory: Lionville	**Date Data Assessment Completed:** 2/19/2010 **Completed By:** KAM	**Sample Collection Date:** 6/1/2009	**Sample Analysis Date:** 6/3/2009 extr 6/9-11/2009 anal

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
		Bis(2-chloroethoxy)methane: 4% Carbazole: 27% Hexachlorocyclopentadiene: 33%/37% N-Nitrosodiphenylamine: 38% Pentachlorophenol: 172%	-	Qualify positive results as estimated (J).	All samples. No impacts since all results ND.
Lab Duplicates Sample ID:	Not analyzed				
Field Duplicates Sample ID:	Not collected				
Summary					
Validity of Data	Yes	No rejected results			
Additional Notes:					

SDG K1641 – PCB QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1641	**W&C Project No.:**222007	
Medium: Surface Water		**Analytes:** PCBs	
Samples: J18NP4, J18NT7			
Laboratory: Lionville	**Date Data Assessment Completed:** 2/19/2010 **Completed By:** KAM	**Sample Collection Date:** 6/1/2009	**Sample Analysis Date:** 6/3/2009 extr 6/5/2009 anal

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No Action	
Detection Limits	Yes	None	-	No Action	
Blanks					
Method Blank	Yes	None	-	No Action	
Equipment Blank Sample ID:	Not collected				
Other QC Results					
Surrogate Recoveries	Yes	None	-	No Action	
LCS Results	Yes	None	-	No Action	
Matrix Spikes Sample ID: J18NT7	Yes	None	-	No Action	
Lab Duplicates Sample ID:	Not analyzed				
Field Duplicates Sample ID:	Not collected				
Summary					
Validity of Data	Yes	No rejected results			
Additional Notes:					

SDG K1641 – Pesticides QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1641	**W&C Project No.:**222007	
Medium: Surface Water		**Analytes:** Pesticides	
Samples: J18NP4, J18NT7			
Laboratory: Lionville	**Date Data Assessment Completed:** 2/19/2010 **Completed By:** KAM	**Sample Collection Date:** 6/1/2009	**Sample Analysis Date:** 6/3/2009 extr 6/5/2009 anal

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No Action	
Detection Limits	Yes	None	-	No Action	
Blanks					
Method Blank	Yes	None	-	No Action	
Equipment Blank Sample ID:	Not collected				
Other QC Results					
Surrogate Recoveries	Yes	None	-	No Action	
LCS Results	No	Beta-BHC = 180% No LCS for toxaphene.	-	Qualify positive results as estimated (J) Toxaphene: Qualify positive and non-detect results as estimated (J	Beta-BHC: All samples. No impacts since results ND. Toxaphene: Impacts to all samples above.
Matrix Spikes Sample ID: J18NT7	Yes	None	-	No Action	
Lab Duplicates Sample ID:	Not analyzed				
Field Duplicate Sample ID:	Not collected				
QC Summary					

SDG K1641 – Pesticides QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1641	**W&C Project No.:**222007	
Medium: Surface Water		**Analytes:** Pesticides	
Samples: J18NP4, J18NT7			
Laboratory: Lionville	**Date Data Assessment Completed:** 2/19/2010 **Completed By:** KAM	**Sample Collection Date:** 6/1/2009	**Sample Analysis Date:** 6/3/2009 extr 6/5/2009 anal

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Validity of Data	Yes	No rejected results			
Additional Notes:					

SDG K1641 – Metals QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1641	**W&C Project No.:**222007
Medium: Surface Water		**Analytes:** Metals
Samples: J18NP4, J18NT8, J18NT7, J18NP5		

Laboratory: Lionville	**Date Data Assessment Completed:** 2/22/2010 **Completed By:** KAM	**Sample Collection Date:** 6/1/2009	**Sample Analysis Date:** 6/10/2009 Hg: 6/10/2009

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No Action	
Detection Limits	No	Silicon	-	No Action	
Blanks					
Preparation Blank	No	Titanium = 1.38 ug/L	UJ	Qualify positive results as estimated non-detect (UJ). No Action for non-detect results.	All samples
Equipment Blank Sample ID:	Not collected				
Other QC Results					
LCS Results	Yes	None	-	No Action	
Matrix Spikes Sample ID: J18NP4	Yes	None	-	No Action	
Lab Duplicates Sample ID: J18NP4	No	Boron = 23%	-	No Action since difference between results is less than 1x RDL	J18NP4
Field Duplicate Sample ID:	Not collected				
QC Summary					
Validity of Data	Yes	No rejected results			
Additional Notes:					

SDG K1641 – Radionuclides QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1641	**W&C Project No.:**222007	
Medium: Surface Water		**Analytes:** Tritium, Carbon-14, Strontium-90, Technetium-99, Isotopic Thorium, Isotopic Uranium, Isotopic Plutonium, Gamma Spectroscopy	
Samples: J18NP4, J18NT7			
Laboratory: Eberline	**Date Data Assessment Completed:** 2/22/2010 **Completed By:** KAM	**Sample Collection Date:** 6/1/2009	**Sample Analysis Date:** 6/7/2009

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No Action	
Detection Limits	No	**RDL** Carbon-14 Strontium **MDA** Radium-226 Radium-228 Beryllium-7 Ruthenium-106	-	No Action	All samples
Blanks					
Method Blanks	Yes	None	-	No Action	
Other QC Results					
LCS Results	Yes	None	-	No Action	
Tracer Results	Yes	None	-	No Action	
Matrix Spike Sample ID: J18NT7	Yes	None	-	No Action	
Lab Duplicates Sample ID: J18NP4	No	Uranium-238 = 34%	-	No Action since the difference between both results is less than 1x the RDL	J18NP4
Field Duplicate Sample ID:	Not collected				
QC Summary					
Validity of Data	Yes	No rejected results			
Additional Notes:					

SDG K1641 – DRO QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1641	**W&C Project No.:**222007	
Medium: Surface Water		**Analytes:** DRO/Motor Oil	
Samples: J18NT7			
Laboratory: Lionville	**Date Assessment Completed:** 2/19/2010 **Completed By:** KAM	**Sample collection:** 6/1/2009	**Sample Analysis Date:** 6/3/2009 extr 6/8/2009 anal

QC Parameter	**All in Spec.?**	**Non-Compliant Results**	**Flag**	**Action/ Notes**	**Associated Samples**
Holding Times	Yes	None	-	No Action	
Surrogates	Yes	None	-	No Action	
Blanks					
Method Blank	Yes	None	-	No Action	
Equipment Blank Sample ID:	Not collected				
Other QC					
LCS Results	Yes	None	-	No Action	
Matrix Spikes Sample ID: J18NT7	Yes	None	-	No Action	
Lab Duplicates Sample ID:	Not analyzed				
Field Duplicate Sample ID:	Not collected				
QC Summary					
Validity of Data	Yes	No rejected results			
Additional Notes:					

SDG K1641 – DOC QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1641	**W&C Project No.:**222007
Medium: Surface Water		**Analytes:** DOC
Samples: J18NP4, J18NT7		

Laboratory: Lionville	**Date Data Assessment Completed:** 2/22/2010 **Completed By:** KAM	**Sample Collection Date:** 6/1/2009	**Sample Analysis Date:** 6/8/2009

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No Action	
Detection Limit	Yes	None	-	No Action	
Blanks					
Method Blank	Yes	None	-	No Action	
Other QC					
LCS Results	Yes	None	-	No Action	
Matrix Spikes Sample ID: J18NT7	Yes	None	-	No Action	
Lab Duplicate Sample ID: J18NT7	Yes	None	-	No Action	
Field Duplicate Sample ID:	Not collected				
QC Summary					
Validity of Data	Yes	No rejected results			
Additional Notes:					

SDG K1641 – Nitrate/Nitrite QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1641	**W&C Project No.:**222007	
Medium: Surface Water		**Analytes:** Nitrate/Nitrite as N	
Samples: J18NP4, J18NT7			
Laboratory: Lionville	**Date Data Assessment Completed:** 5/27/2010 **Complete By:** KAM	**Sample Collection Date:** 6/1/2009	**Sample Analysis Date:** 6/8/2009

QC Parameter	**All in Spec.?**	**Non-Compliant Results**	**Flag**	**Action/ Notes**	**Associated Samples**
Holding Times	Yes	None	-	No Action	
Detection Limit	Laboratory reporting limits not provided in SAP				
Method Blank	Yes	None	-	No Action	
LCS Results	Yes	None	-	No Action	
Matrix Spikes Sample ID: J18NP4	Yes	None	-	No Action	
Lab Duplicate Sample ID: J18NP4	No	RPD = 24%	-	No action because the difference between both results is less than or equal to 1x the RDL	
Field Duplicate Sample ID:	Not collected				
QC Summary					
Validity of Data	Yes; no data were qualified or rejected				
Additional Notes:					

SDG K1641 – Anions QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1641	**W&C Project No.:**222007	
Medium: Surface Water	**Analytes:** Bromide, Chloride, Fluoride, Nitrate, Nitrite, Orthophosphate, Sulfate		
Samples: J18NP4, J18NT7			
Laboratory: Lionville	**Date Data Assessment Completed:** 5/27/2010 **Complete By:** KAM	**Sample Collection Date:** 6/1/2009	**Sample Analysis Date:** 6/4/2009

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	No	Holding Time for nitrate, nitrite, and orthophosphate is 48 hours.	J	For holding times <2x criteria, qualify positive and non-detect results as estimated (J)	All samples for nitrate, nitrite, and orthophosphate qualified as J
Detection Limit	Laboratory reporting limits not provided in SAP				
Method Blank	Yes	None	-	No Action	
LCS Results	Yes	None	-	No Action	
Matrix Spikes Sample ID: J18NP4	Yes	None	-	No Action	
Lab Duplicate Sample ID: J18NP4	Yes	None	-	No Action	
Field Duplicate Sample ID:	Not collected				
QC Summary					
Validity of Data	Not all QC criteria met, however no rejected results				
Additional Notes:					

A.44 SDG K1648

SDG K1648 – VOC QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1648	**W&C Project No.:**222007	
Medium: Surface Water		**Analytes:** VOA	
Samples: J18NM9, J18NL6, J18P20, J18NN2, J18NL2, J18P26, J18NL3, J18P17			
Laboratory: Lionville	**Date Data Assessment Completed:** 2/22/2010 **Completed By:** KAM	**Sample Collection Date:** 6/2/2009	**Sample Analysis Date:** 6/4-5/2009

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No Action	
Detection Limits	No	Methylene Chloride	-	No Action	
Blanks					
Blanks - Method	No	Acetone = 3.58 ug/L	UJ	Qualify positive results below action level as non-detect (UJ) and raise reported value to RDL	All samples. Impacts samples J18NN2 and J18P17.
Equipment Blank Sample ID:	Not collected				
Trip Blank Sample ID: J18NL3, J18NL2	No	Acetone: J18NL3 = 4.70 ug/L J18NL2 = 4.77 ug/L	-	No Action based on guidance	
Other QC Results					
Surrogate Recoveries	Yes	None	-	No Action	
LCS Results	No	2-Butanone = 48%	J	Qualify positive and non-detect results as estimated (J)	All samples
Matrix Spikes Sample ID: J18NL6	Yes	None	-	No Action	
Lab Duplicates	Not analyzed				
Field Duplicates Sample ID: J18NN2	Yes	None	-	No Action	
Summary					
Validity of Data	Yes	No rejected results			
Additional Notes:					

SDG K1648 – SVOC QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1648	**W&C Project No.:**222007
Medium: Surface Water		**Analytes:** SVOCs
Samples: J18NM9, J18P17, J18NN2, J18P20, J18NL6, J18P26		

Laboratory:	**Date Data Assessment Completed:**	**Sample Collection Date:**	**Sample Analysis Date:**
Lionville	2/22/2010 **Completed By:** KAM	6/2/2009	6/9/2009 extr 6/14-16,18/2009 anal

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No Action	
Detection Limits	No	2,4-Dinitrophenol 2-Nitroaniline 3,3'-Dichlorobenzidine 3-Nitroaniline 4,6-Dinitro-2-methylphenol 4-Chloroaniline 4-Nitroaniline 4-Nitrophenol Pentachlorophenol	-	No Action	
Blanks					
Method Blanks	Yes[1]	None	-	No Action	
Equipment Blank Sample ID:	Not collected				
Other QC					
Surrogate Recoveries	Yes	None	-	No Action	
LCS Results	No	3,3'-Dichlorobenzidine: 0% 3-Nitroaniline: 0% 4-Chloroaniline: 3% 4-Nitroaniline: 0% Hexachlorocyclopentadiene: 19% N-Nitrosodiphenylamine: 37% Di-n-octyl Phthalate: 167%	J -	Qualify positive and non-detect results as estimated (J) Qualify positive results as estimated (J).	All samples All samples. No impacts since all ND.
Matrix Spikes Sample ID: J18NL6	No	**REC** 3,3'-dichlorobenzidine: 0%/33% 3-Nitroaniline: 0% 4-Chloroaniline: 0% 4-Nitroaniline: 6% Bis(2-chloroethoxy)methane: 12% N-Nitrosodiphenylamine: 37% Hexachlorocyclopentadiene: 23%/13% Hexachlorobutadiene: 49%	J	Qualify positive and non-detect results as estimated (J) Qualify positive	All samples

SDG K1648 – SVOC QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1648	**W&C Project No.:**222007
Medium: Surface Water		**Analytes:** SVOCs
Samples: J18NM9, J18P17, J18NN2, J18P20, J18NL6, J18P26		

Laboratory: Lionville	**Date Data Assessment Completed:** 2/22/2010 **Completed By:** KAM	**Sample Collection Date:** 6/2/2009	**Sample Analysis Date:** 6/9/2009 extr 6/14-16,18/2009 anal

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
		Benzo[b]fluroanthene: 165% Benzo[g,h,i]perylene: 161% Benzo[k]fluoranthene: 164% Dibenz[a,h]anthracene: 185% Di-n-octyl Phthalate: 188% Indeno[1,2,3-cd]pyrene: 172% Pentachlorophenol: 152%	-	results as estimated (J).	All samples. No impacts since all ND.
		RPD 2,4-Dichlorophenol: 33% 2,4-Dimethylphenol: 47% 2-Nitroaniline: 48% 2-Nitrophenol: 31% 4-Chloro-3-methylphenol: 34% 4-Nitroaniline: 166% Acenaphthylene: 34% Benzo[a]pyrene: 21% Benzo[b[fluroanthene: 29% Benzo[g,h,i]perylene: 29% Benzo[k]fluoranthene: 22% Bis(2-chloroethoxy)methane: 142% Carbazole: 54% Dibenz[a,h]anthracene: 31% Di-n-octyl Phthalate: 25% Hexachlorocyclopentadiene: 54% Indeno[1,2,3-cd]pyrene: 30% Isophorone: 35% Nitrobenzene: 35% N-Nitrosodiphenylamine: 71%	J	Qualify positive and non-detect results as estimated (J)	All samples
Lab Duplicates Sample ID:	Not analyzed				
Field Duplicates Sample ID: J18NN2	Yes	None	-	No Action	
Summary					
Validity of Data	Yes	No rejected results			

Additional Notes:
1 = Second page of Method Blank results is missing (page 18 of SVOC) from SDG, however, based on lab narrative, “the method blank was below the reporting limit for all target compounds”.

SDG K1648 – PCB QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1648	**W&C Project No.:**222007	
Medium: Surface Water		**Analytes:** PCBs	
Samples: J18NM9, J18P17, J18NN2, J18P20, J18NL6, J18P26			
Laboratory: Lionville	**Date Data Assessment Completed:** 2/22/2010 **Completed By:** KAM	**Sample Collection Date:** 6/2/2009	**Sample Analysis Date:** 6/8/2009 extr 6/12/2009 anal

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No Action	
Detection Limits	Yes	None	-	No Action	
Blanks					
Method Blank	Yes	None	-	No Action	
Equipment Blank Sample ID:	Not collected				
Other QC Results					
Surrogate Recoveries	Yes	None	-	No Action	
LCS Results	Yes	None	-	No Action	
Matrix Spikes Sample ID: J18NL6	Yes	None	-	No Action	
Lab Duplicates Sample ID:	Not analyzed				
Field Duplicates Sample ID: J18NN2	Yes	None	-	No Action	
Summary					
Validity of Data	Yes	No rejected results			
Additional Notes:					

SDG K1648 – Pesticides QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1648	**W&C Project No.:**222007	
Medium: Surface Water		**Analytes:** Pesticides	
Samples: J18NM9, J18P17, J18NN2, J18P20, J18NL6, J18P26			
Laboratory: Lionville	**Date Data Assessment Completed:** 2/22/2010 **Completed By:** KAM	**Sample Collection Date:** 6/2/2009	**Sample Analysis Date:** 6/8/2009 extr 6/11/2009 anal

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No Action	
Detection Limits	Yes	None	-	No Action	
Blanks					
Method Blank	Yes	None	-	No Action	
Equipment Blank Sample ID:	Not collected	None	-	No Action	
Other QC Results					
Surrogate Recoveries	Yes	None	-	No Action	
LCS Results	No	No LCS results for toxaphene	J	Qualify all associated results as estimated (J)	Impacts to all samples above.
Matrix Spikes Sample ID:	Yes	None	-	No Action	
Lab Duplicates Sample ID:	Not analyzed				
Field Duplicate Sample ID:	Yes	None	-	No Action	
QC Summary					
Validity of Data	Yes	No rejected results			
Additional Notes:					

SDG K1648 – Metals QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1648	**W&C Project No.:**222007	
Medium: Surface Water		**Analytes:** Metals	
Samples: J18NM9, J18NL6, J18P20, J18NN0, J18NL7, J18P21, J18NN2, J18P17, J18P26, J18NN3, J18P18, J18P27			
Laboratory: Lionville	**Date Data Assessment Completed:** 2/22/2010 **Completed By:** KAM	**Sample Collection Date:** 6/2/2009	**Sample Analysis Date:** 6/11/2009 Hg: 6/10/2009

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No Action	
Detection Limits	No	Silicon	-	No Action	
Blanks					
Preparation Blank	No	Titanium = 1.38 ug/L	UJ	Qualify positive results less than 5x the blank concentration as estimated non-detect (UJ)	J18NM9, J18NN2, J18NL6, J18P18, J18P20, J18P27
Equipment Blank Sample ID:	Not collected				
Other QC Results					
LCS Results	Yes	None	-	No Action	
Matrix Spikes Sample ID: J18NN0	Yes	None	-	No Action	
Lab Duplicates Sample ID: J18NN0	Yes	None	-	No Action	
Field Duplicate Sample ID: J18NN2/J18NL6, J18NN3/J18NL7	No	J18NN2/J18NL6: Aluminum: 200% Molybdenum: 200% Titanium: 56% Vanadium: 31% Phosphorus: 25% J18NN3/J18NL7: Phosphorus: 200%	-	No action based on guidance	
QC Summary					
Validity of Data	Yes	No rejected results			
Additional Notes:					

SDG K1648 – Radionuclides QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1648	**W&C Project No.:**222007	
Medium: Surface Water		**Analytes:** Tritium, Carbon-14, Strontium-90, Technetium-99, Isotopic Thorium, Isotopic Uranium, Isotopic Plutonium, Gamma Spectroscopy	
Samples: J18NL6, J18P17, J18NM9, J18P20, J18NN2, J18P26			
Laboratory: Eberline	**Date Data Assessment Completed:** 2/22/2010 **Completed By:** KAM	**Sample Collection Date:** 6/2/2009	**Sample Analysis Date:** 6-7/2009

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No Action	
Detection Limits	No	**RDL** Carbon-14 Strontium **MDA** Radium-226 Radium-228 Beryllium-7 Ruthenium-106	-	No Action	
Blanks					
Method Blanks	Yes	None	-	No Action	
Other QC Results					
LCS Results	Yes	None	-	No Action	
Tracer Results	Yes	None	-	No Action	
Matrix Spike Sample ID: J18NM9	Yes	None	-	No Action	
Lab Duplicates Sample ID: J18NL6	No	Uranium-238 = 44%	-	No Action since the difference between both results is less than 1x the RDL	J18NL6
Field Duplicate Sample ID: J18NN2/J18NL6	Yes	None	-	No Action	
QC Summary					
Validity of Data	Yes	No rejected results			
Additional Notes:					

SDG K1648 – DRO QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA		**SDG No.:** K1648		**W&C Project No.:**222007	
Medium: Surface Water				**Analytes:** DRO/Motor Oil	
Samples: J18NM9, J18P17, J18NN2, J18P20, J18NL6					
Laboratory: Lionville	**Date Assessment Completed:** 2/22/2010 **Completed By:** KAM			**Sample collection:** 6/2/2009	**Sample Analysis Date:** 6/8/2009 extr 6/15/2009 anal
QC Parameter	**All in Spec.?**	**Non-Compliant Results**	**Flag**	**Action/ Notes**	**Associated Samples**
Holding Times	Yes	None	-	No Action	
Surrogates	Yes	None	-	No Action	
Blanks					
Method Blank	Yes	None	-	No Action	
Equipment Blank Sample ID:	Not Collected				
Other QC					
LCS Results	No	DRO = 69%	J	Qualify positive and non-detect results as estimated (J)	All samples
Matrix Spikes Sample ID: J18NN2	Yes	None	-	No Action	
Lab Duplicates Sample ID:	Not analyzed				
Field Duplicate Sample ID: J18NN2	Yes	None	-	No Action	
QC Summary					
Validity of Data	Yes	No rejected results			
Additional Notes:					

SDG K1648 – DOC QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1648	**W&C Project No.:**222007	
Medium: Surface Water		**Analytes:** DOC	
Samples: J18NM9, J18P17, J18NN2, J18P20, J18NL6, J18P26			
Laboratory: Lionville	**Date Data Assessment Completed:** 2/22/2010 **Completed By:** KAM	**Sample Collection Date:** 6/2/2009	**Sample Analysis Date:** 6/8/2009

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No Action	
Detection Limit	Yes	None	-	No Action	
Blanks					
Method Blank	Yes	None	-	No Action	
Other QC					
LCS Results	Yes	None	-	No Action	
Matrix Spikes Sample ID: J18NN2	Yes	None	-	No Action	
Lab Duplicate Sample ID: J18NM9	Yes	None	-	No Action	
Field Duplicate Sample ID: J18NN2	Yes	None	-	No Action	
QC Summary					
Validity of Data	Yes	No rejected results			
Additional Notes:					

SDG K1648 – Nitrate/Nitrite QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1648	**W&C Project No.:**222007	
Medium: Surface Water		**Analytes:** Nitrate/Nitrite as N	
Samples: J18NM9, J18NN2, J18NL6, J18P17, J18P20, J18P26			
Laboratory: Lionville	**Date Data Assessment Completed:** 5/27/2010 **Complete By:** KAM	**Sample Collection Date:** 6/1/2009	**Sample Analysis Date:** 6/8/2009

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No Action	
Detection Limit	Laboratory reporting limits not provided in SAP				
Method Blank	Yes	None	-	No Action	
LCS Results	Yes	None	-	No Action	
Matrix Spikes Sample ID:	No	No MS analyzed	J	Qualify positive and non-detect results as estimated (J)	All samples
Lab Duplicate Sample ID:	No	No duplicate analyzed	J	Qualify positive and non-detect results as estimated (J)	All samples
Field Duplicate Sample ID: J18NN2/J18NL6	No	Sulfate = 28.4 % Chloride = 152.3%	-	No action based on guidance	
QC Summary					
Validity of Data	Yes; no data were qualified or rejected				
Additional Notes:					

SDG K1648 – Anions QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1648	**W&C Project No.:**222007	
Medium: Surface Water	**Analytes:** Bromide, Chloride, Fluoride, Nitrate, Nitrite, Orthophosphate, Sulfate		
Samples: J18NM9, J18NN2, J18NL6, J18P17, J18P20, J18P26			
Laboratory: Lionville	**Date Data Assessment Completed:** 5/27/2010 **Complete By:** KAM	**Sample Collection Date:** 6/1/2009	**Sample Analysis Date:** 6/5/2009

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	No	Holding Time for nitrate, nitrite, and orthophosphate is 48 hours.	J	For holding times <2x criteria, qualify positive and non-detect results as estimated (J)	All samples for nitrate, nitrite, and orthophosphate qualified as J
Detection Limit	Laboratory reporting limits not provided in SAP				
Method Blank	Yes	None	-	No Action	
LCS Results	Yes	None	-	No Action	
Matrix Spikes Sample ID: J18NM9	Yes	None	-	No Action	
Lab Duplicate Sample ID: J18NM9	Yes	None	-	No Action	
Field Duplicate Sample ID: J18NN2/J18NL6	Yes	None	-	No Action	
QC Summary					
Validity of Data	Not all QC criteria met, however no rejected results				
Additional Notes:					

A.45 SDG K1651

SDG 1651 – VOC QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1651	**W&C Project No.:**222007	
Medium: Surface Water		**Analytes:** VOA	
Samples: J18YB3, J18YB4, J18NN5, J18NN8, J18NP1, J18P23, J18N26			
Laboratory: Lionville	**Date Data Assessment Completed:** 2/23/2010 **Completed By:** KAM	**Sample Collection Date:** 6/3/2009	**Sample Analysis Date:** 6/5/2009

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No Action	
Detection Limits	No	Methylene Chloride	-	No Action	
Blanks					
Blanks - Method	Yes	None	-	No Action	
Equipment Blank Sample ID: J18N26	Yes	None	-	No Action	
Trip Blank Sample ID: J18YB3, J18YB4	No	Acetone: J18YB3 = 5.07J ug/L J18YB4 = 5.20J ug/L	-	No Action based on guidance	
Other QC Results					
Surrogate Recoveries	Yes	None	-	No Action	
LCS Results	Yes	None	-	No Action	
Matrix Spikes Sample ID: J18N26	Yes	None	-	No Action	
Lab Duplicates	Not analyzed				
Field Duplicates Sample ID:	Not collected				
Summary					
Validity of Data	Yes	No rejected results			
Additional Notes:					

SDG K1651 – SVOC QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1651	**W&C Project No.:**222007	
Medium: Surface Water		**Analytes:** SVOCs	
Samples: J18NN5, J18NN8, J18NP1, J18P23, J18N26			
Laboratory: Lionville	**Date Data Assessment Completed:** 2/23/2010 **Completed By:** KAM	**Sample Collection Date:** 6/3/2009	**Sample Analysis Date:** 6/9/2009 extr 6/14,16,18/2009 anal

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No Action	
Detection Limits	No	2,4-Dinitrophenol 2-Nitroaniline 3,3’-Dichlorobenzidine 3-Nitroaniline 4,6-Dinitro-2-methylphenol 4-Chloroaniline 4-Nitroaniline 4-Nitrophenol Pentachlorophenol	-	No Action	
Blanks					
Method Blanks	Yes	None	-	No Action	
Equipment Blank Sample ID: J18N26	No	Diethyl Phthalate = 2.61J ug/L	-	No Action based on guidance	
Other QC					
Surrogate Recoveries	No	2-Fluorobiphenyl = 38%	-	No Action since only 1 surrogate is outside range	
LCS Results	No	3,3’-Dichlorobenzidine: 0% 3-Nitroaniline: 0% 4-Chloroaniline: 3% 4-Nitroaniline: 0% Hexachlorocyclopentadiene: 19% N-Nitrosodiphenylamine: 37%	J	Qualify positive and non-detect results as estimated (J)	All samples
		Di-n-octyl Phthalate: 167%	-	Qualify positive results as estimated (J)	All samples. No impacts since all ND.
Matrix Spikes Sample ID: J18P23	No	**REC** 1,2,4-Trichlorobenzene: 47% 1,2-Dichlorobenzene: 47%/49% 1,3-Dichlorobenzene: 41%/44% 1,4-Dichlorobenzene:	J	Qualify positive and non-detect results as estimated (J)	All samples

SDG K1651 – SVOC QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1651	**W&C Project No.:**222007	
Medium: Surface Water		**Analytes:** SVOCs	
Samples: J18NN5, J18NN8, J18NP1, J18P23, J18N26			
Laboratory: Lionville	**Date Data Assessment Completed:** 2/23/2010 **Completed By:** KAM	**Sample Collection Date:** 6/3/2009	**Sample Analysis Date:** 6/9/2009 extr 6/14,16,18/2009 anal

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
		42%/44% 3,3’-dichlorobenzidine: 8%/48% 3-Nitroaniline: 32% 4-Chloroaniline: 15% Hexachlorocyclopentadiene: 26%/28% Hexachlorobutadiene: 49% Hexachloroethane: 42%/41% N-Nitrosodiphenylamine: 40% **RPD** 2,4-Dinitrophenol: 25% 3,3’-Dichlorobenzidine: 146% 3-Nitroaniline: 85% 4-Chloroaniline: 127% N-Nitrosodiphenylamine: 40%	J	Qualify positive and non-detect results as estimated (J)	All samples
Lab Duplicates Sample ID:	Not analyzed				
Field Duplicates Sample ID:	Not collected				
Summary					
Validity of Data	Yes	No rejected results			
Additional Notes:					

SDG K1651 – PCB QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1651	**W&C Project No.:**222007	
Medium: Surface Water		**Analytes:** PCBs	
Samples: J18NN5, J18NN8, J18NP1, J18P23, J18N26			
Laboratory: Lionville	**Date Data Assessment Completed:** 2/22/2010 **Completed By:** KAM	**Sample Collection Date:** 6/3/2009	**Sample Analysis Date:** 6/8/2009 extr 6/12,16,17/2009 anal

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No Action	
Detection Limits	Yes	None	-	No Action	
Blanks					
Method Blank	Yes	None	-	No Action	
Equipment Blank Sample ID: J18N26	Yes	None	-	No Action	
Other QC Results					
Surrogate Recoveries	Yes	None	-	No Action	
LCS Results	Yes	None	-	No Action	
Matrix Spikes Sample ID: J18N26	Yes	None	-	No Action	
Lab Duplicates Sample ID:	Not analyzed				
Field Duplicates Sample ID:	Not collected				
Summary					
Validity of Data	Yes	No rejected results			
Additional Notes:					

SDG K1651 – Pesticides QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1651	**W&C Project No.:**222007	
Medium: Surface Water		**Analytes:** Pesticides	
Samples: J18NN5, J18NN8, J18NP1, J18P23, J18N26			
Laboratory: Lionville	**Date Data Assessment Completed:** 2/22/2010 **Completed By:** KAM	**Sample Collection Date:** 6/3/2009	**Sample Analysis Date:** 6/8/2009 extr 6/11/2009 anal

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No Action	
Detection Limits	Yes	None	-	No Action	
Blanks					
Method Blank	Yes	None	-	No Action	
Equipment Blank Sample ID: J18N26	Yes	None	-	No Action	
Other QC Results					
Surrogate Recoveries	Yes	None	-	No Action	
LCS Results	No	No LCS results for toxaphene	J	Qualify all associated results as estimated (J)	Impacts to all samples above.
Matrix Spikes Sample ID: J18N26	Yes	None	-	No Action	
Lab Duplicates Sample ID:	Not analyzed				
Field Duplicate Sample ID:	Not collected				
QC Summary					
Validity of Data	Yes	No rejected results			
Additional Notes:					

SDG K1651 – Metals QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA		**SDG No.:** K1651		**W&C Project No.:**222007	
Medium: Surface Water				**Analytes:** Metals	
Samples: J18NN5, J18NN6, J18NN8, J18NN9, J18NP1, J18NP2, J18P23, J18P24, J18P26					
Laboratory: Lionville	**Date Data Assessment Completed:** 2/23/2010 **Completed By:** KAM			**Sample Collection Date:** 6/3/2009	**Sample Analysis Date:** 6/11/2009 Hg: 6/10/2009
QC Parameter	**All in Spec.?**	**Non-Compliant Results**	**Flag**	**Action/ Notes**	**Associated Samples**
Holding Times	Yes	None	-	No Action	
Detection Limits	No	Silicon	-	No Action	
Blanks					
Preparation Blank	No	Copper = 7.46 ug/L	-	No Action since all copper results are non-detect	All samples
Equipment Blank Sample ID:	Not collected				
Other QC Results					
LCS Results	Yes	None	-	No Action	
Matrix Spikes Sample ID: J18NN5	Yes	None	-	No Action	
Lab Duplicates Sample ID: J18NN5	No	Barium = 25% Boron = 23% Manganese = 26% Phosphorus = 101% Titanium = 69% Vanadium = 87%	J	Only qualify barium results as estimated (J) since both concentrations are >5x the RDL. No action on other metals since the difference between the two concentrations is <1x the RDL	J18NN5
Field Duplicate Sample ID:	Not collected				
QC Summary					
Validity of Data	Yes	No rejected results			
Additional Notes:					

SDG K1651 – Radionuclides QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1651	**W&C Project No.:**222007	
Medium: Surface Water		**Analytes:** Tritium, Carbon-14, Strontium-90, Technetium-99, Isotopic Thorium, Isotopic Uranium, Isotopic Plutonium, Gamma Spectroscopy	
Samples: J18NN5, J18NN8, J18NP1, J18P23			
Laboratory: Eberline	**Date Data Assessment Completed:** 2/23/2010 **Completed By:** KAM	**Sample Collection Date:** 6/3/2009	**Sample Analysis Date:** 6-8/2009

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No Action	
Detection Limits	No	**RDL** Carbon-14 Strontium **MDA** Radium-226 Radium-228 Beryllium-7 Ruthenium-106	-	No Action	
Blanks					
Method Blanks	Yes	None	-	No Action	
Other QC Results					
LCS Results	Yes	None	-	No Action	
Tracer Results	Yes	None	-	No Action	
Matrix Spike Sample ID: J18P23, J18NN8	Yes	None	-	No Action	
Lab Duplicates Sample ID: J18NN5	No	Uranium-233/234 = 72% Uranium-238 = 84%	-	No Action since the difference between both results is less than 1x the RDL	J18NN5
Field Duplicate Sample ID:	Not collected				
QC Summary					
Validity of Data	Yes	No rejected results			
Additional Notes:					

SDG K1651 – DRO QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1651	**W&C Project No.:**222007	
Medium: Surface Water		**Analytes:** DRO/Motor Oil	
Samples: P18P23, P18N26			
Laboratory: Lionville	**Date Assessment Completed:** 2/22/2010 **Completed By:** KAM	**Sample collection:** 6/3/2009	**Sample Analysis Date:** 6/8/2009 extr 6/15/2009 anal

QC Parameter	**All in Spec.?**	**Non-Compliant Results**	**Flag**	**Action/ Notes**	**Associated Samples**
Holding Times	Yes	None	-	No Action	
Surrogates	Yes	None	-	No Action	
Blanks					
Method Blank	Yes	None	-	No Action	
Equipment Blank Sample ID: P18N26	Yes	None	-	No Action	
Other QC					
LCS Results	No	DRO = 69%	J	Qualify positive and non-detect results as estimated (J)	All samples
Matrix Spikes Sample ID: J18N26	No	DRO = 78%	J	Qualify positive and non-detect results as estimated (J)	All samples
Lab Duplicates Sample ID:	Not analyzed				
Field Duplicate Sample ID:	Not collected				
QC Summary					
Validity of Data	Yes	No rejected results			
Additional Notes:					

SDG K1651 – DOC QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1651	**W&C Project No.:**222007	
Medium: Surface Water		**Analytes:** DOC	
Samples: J18NN5, J18NN8, J18NP1, J18P23, J18N26			
Laboratory: Lionville	**Date Data Assessment Completed:** 2/22/2010 **Completed By:** KAM	**Sample Collection Date:** 6/3/2009	**Sample Analysis Date:** 6/8/2009

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No Action	
Detection Limit	Yes	None	-	No Action	
Blanks					
Method Blank	Yes	None	-	No Action	
Equipment Blank Sample ID: J18N26	No	DOC = 0.92 mg/L	-	No Action based on guidance	
Other QC					
LCS Results	Yes	None	-	No Action	
Matrix Spikes Sample ID: J18NN5	Yes	None	-	No Action	
Lab Duplicate Sample ID: J18NN5	Yes	None	-	No Action	
Field Duplicate Sample ID:	Not collected				
QC Summary					
Validity of Data	Yes	No rejected results			
Additional Notes:					

SDG K1651 – Nitrate/Nitrite QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1651	**W&C Project No.:**222007	
Medium: Surface Water		**Analytes:** Nitrate/Nitrite as N	
Samples: J18NN5, J18NN8, J18NP1, J18P23, J18N26			
Laboratory: Lionville	**Date Data Assessment Completed:** 5/27/2010 **Complete By:** KAM	**Sample Collection Date:** 6/3/2009	**Sample Analysis Date:** 6/8/2009

QC Parameter	**All in Spec.?**	**Non-Compliant Results**	**Flag**	**Action/ Notes**	**Associated Samples**
Holding Times	Yes	None	-	No Action	
Detection Limit	Laboratory reporting limits not provided in SAP				
Method Blank	Yes	None	-	No Action	
Equipment Blank Sample ID: J18N26	Yes	None	-	No Action	
LCS Results	Yes	None	-	No Action	
Matrix Spikes Sample ID:	No	No MS analyzed	J	Qualify positive and non-detect results as estimated (J)	All samples
Lab Duplicate Sample ID:	No	No duplicate analyzed	J	Qualify positive and non-detect results as estimated (J)	All samples
Field Duplicate Sample ID:	Not collected				
QC Summary					
Validity of Data	Yes; no data were qualified or rejected				
Additional Notes:					

SDG K1651 – Anions QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1651	**W&C Project No.:**222007	
Medium: Surface Water	**Analytes:** Bromide, Chloride, Fluoride, Nitrate, Nitrite, Orthophosphate, Sulfate		
Samples: J18NN5, J18NN8, J18NP1, J18P23, J18N26			
Laboratory: Lionville	**Date Data Assessment Completed:** 5/27/2010 **Complete By:** KAM	**Sample Collection Date:** 6/3/2009	**Sample Analysis Date:** 6/5/2009

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No Action	
Detection Limit	Laboratory reporting limits not provided in SAP				
Method Blank	Yes	None	-	No Action	
Equipment Blank Sample ID: J18N26	No	Sulfate = 0.16J mg/L	-	No action based on guidance	
LCS Results	Yes	None	-	No Action	
Matrix Spikes Sample ID: J18NN5	Yes	None	-	No Action	
Lab Duplicate Sample ID: J18NN5	Yes	None	-	No Action	
Field Duplicate Sample ID:	Not collected				
QC Summary					
Validity of Data	Not all QC criteria met, however no rejected results				
Additional Notes:					

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SDG K1652 – VOC QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1652	**W&C Project No.:**222007	
Medium: Surface Water		**Analytes:** VOA	
Samples: J18NF3, J18P32, J18YB2, & J18P29			
Laboratory: Lionville	**Date Data Assessment Completed:** 2/26/10 **Complete By:** SRK	**Sample Collection Date:** 6/4/09	**Sample Analysis Date:** 6/9/09

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No action	
Detection Limits	No	Methylene Chloride	-	No action	
Blanks					
Blanks - Method	Yes	None	-	No action	
Equipment Blank Sample ID:	Not collected				
Trip Blank Sample ID: J18YB2	No	Acetone: 3.68 ug/L	-	No action based on guidance	
Other QC Results					
Surrogate Recoveries	Yes	None	-	No action	
LCS Results	Yes	None	-	No action	
Matrix Spikes Sample ID: J18YB2	Yes	None	-	No action	
Lab Duplicates	Not analyzed				
Field Duplicates Sample ID: J18NF3/J18P32	No	Acetone: 200%	-	No action based on guidance	
Summary					
Validity of Data	No results qualified or rejected.				
Additional Notes:					

SDG K1652 – SVOC QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1652	**W&C Project No.:**222007
Medium: Surface Water		**Analytes:** SVOCs
Samples: J18NF3, J18P32, & J18P29		

Laboratory: Lionville	**Date Data Assessment Completed:** 2/26/10 **Complete By:** SRK	**Sample Collection Date:** 6/4/09	**Sample Analysis Date:** Extracted – 6/9/09; Analyzed – 6/22/09

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No action	
Detection Limits	No	2,4-Dinitrophenol2-Nitroaniline 3,3'-Dichlorobenzidine3-Nitroaniline 4,6-Dinitro-2-methylphenol 4-Chloroaniline4-Nitroaniline 4-Nitrophenol Pentachlorophenol	-	No action	
Blanks					
Method Blanks	Yes	None	-	No action	
Equipment Blank Sample ID:	Not collected				
Other QC					
Surrogate Recoveries	Yes	None	-	No action	
LCS Results	No	3,3'-Dichlorobenzidine: 0% 3-Nitroaniline: 0% 4-Chloroaniline: 3% 4-Nitroaniline: 0% Hexachlorocyclopentadiene: 19% N-Nitrodiphenylamine: 37%	J	Qualify positive and non-detect results as estimated (J)	All samples.
		Di-n-octyl Phthalate: 167%	-	Qualify positive results as estimated (J)	All samples. No impacts since all results ND.
Matrix Spikes Sample ID: J18NF3	No	3,3'-Dichlorobenzidine: 0%/0% 3-Nitroaniline: 41%/3% 4-Chloroaniline: 26%/0% 4-Nitroaniline: 41%/7% Acenaphthene: 40% Bis(2-chloroethoxy) methane: 17% Carbazole: 31% Hexachlorocyclopentadiene: 23%/48%	J	Qualify positive and non-detect results as estimated (J)	All samples.

SDG K1652 – SVOC QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1652	**W&C Project No.:**222007
Medium: Surface Water		**Analytes:** SVOCs
Samples: J18NF3, J18P32, & J18P29		

Laboratory: Lionville	**Date Data Assessment Completed:** 2/26/10 **Complete By:** SRK	**Sample Collection Date:** 6/4/09	**Sample Analysis Date:** Extracted – 6/9/09; Analyzed – 6/22/09

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
		N-Nitrodiphenylamine: 7%/0%			
Lab Duplicates Sample ID:	Not analyzed				
Field Duplicates Sample ID: J18NF3/J18P32	Yes	None	-	No action	
Summary					
Validity of Data	Some results qualified, none rejected.				
Additional Notes:					

SDG K1652 – PCB QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1652	**W&C Project No.:**222007	
Medium: Surface Water		**Analytes:** PCBs	
Samples: J18NF3, J18P32, & J18P29			
Laboratory: Lionville	**Date Data Assessment Completed:** 2/26/10 **Complete By:** SRK	**Sample Collection Date:** 6/4/09	**Sample Analysis Date:** 6/8/09 extr 6/17/09 anal

QC Parameter	**All in Spec.?**	**Non-Compliant Results**	**Flag**	**Action/ Notes**	**Associated Samples**
Holding Times	Yes	None	-	No action	
Detection Limits	Yes	None	-	No action	
Blanks					
Method Blank	Yes	None	-	No action	
Equipment Blank Sample ID:	Not collected				
Other QC Results					
Surrogate Recoveries	Yes	None	-	No action	
LCS Results	Yes	None	-	No action	
Matrix Spikes Sample ID: J18NF3	Yes	None	-	No action	
Lab Duplicates Sample ID:	Not analyzed				
Field Duplicates Sample ID: J18NF3/J18P32	Yes	None	-	No action	
Summary					
Validity of Data	No results qualified or rejected.				
Additional Notes:					

SDG K1652 – Pesticides QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1652	**W&C Project No.:**222007	
Medium: Surface Water		**Analytes:** Pesticides	
Samples: J18NF3, J18P32, J18P13, J18P14, & J18P29			
Laboratory: Lionville	**Date Data Assessment Completed:** 2/26/10 **Complete By:** SRK	**Sample Collection Date:** 6/4/09	**Sample Analysis Date:** 6/8/09 extr 6/11/09 anal

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No action	
Detection Limits	Yes	None	-	No action	
Blanks					
Method Blank	Yes	None	-	No action	
Equipment Blank Sample ID:	Not collected				
Other QC Results					
Surrogate Recoveries	Yes	None	-	No action	
LCS Results	No	No LCS results for toxaphene	J	Qualify all associated results as estimated (J)	Impacts to all samples above.
Matrix Spikes Sample ID: J18NF3	Yes	None	-	No action	
Lab Duplicates Sample ID:	Not analyzed				
Field Duplicate Sample ID: J18NF3/J18P32	Yes	None	-	No action	
QC Summary					
Validity of Data	No results qualified or rejected.				
Additional Notes:					

SDG K1652 – Metals QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1652	**W&C Project No.:**222007	
Medium: Surface Water		**Analytes:** Metals	
Samples: J18NF3, J18P32, J18NF4, J18P33, J18P29 & J18P30			
Laboratory: Lionville	**Date Data Assessment Completed:** 2/26/10 **Complete By:** SRK	**Sample Collection Date:** 6/4/09	**Sample Analysis Date:** 6/24/09, Hg on 6/19/09

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No action	
Detection Limits	No	Silicon	-	No action	
Blanks					
Preparation Blank	No	Be: 0.408 ug/L Mg: 35.2 ug/L Mn: 2.13 ug/L Ti: 1.26 ug/L	UJ	Qualify all sample results < 5x blank concentration as non-detect (UJ)	All samples. Impacts the following: J18P33 – Mn and Ti J18P30 – Mn J18P29 – Mn J18NF4 – Mn and Ti
Equipment Blank Sample ID:	Not collected				
Other QC Results					
LCS Results	Yes	None	-	No action	
Matrix Spikes Sample ID: J18NF3	No	Al: 130% Si: -18%	J	For compounds where 4x spike level exceeds initial result, flag positive results >IDL as estimated (J)	All samples. Impacts the following: Al for samples J18NF3, J18P32, J18P33, & J18P29
Lab Duplicates Sample ID: J18NF3	No	Chromium: 22%	-	No qualification since the difference between results is less than 1x the RDL	
Field Duplicate Sample ID: J18NF3/J18P32 J18NF4/J18P33	No	J18NF3/J18P32: Cu: 200% Pb: 200% Zn: 26% J18NF4/J18P33:	-	No action based on guidance	

SDG K1652 – Metals QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1652	**W&C Project No.:**222007
Medium: Surface Water		**Analytes:** Metals
Samples: J18NF3, J18P32, J18NF4, J18P33, J18P29 & J18P30		

Laboratory: Lionville	**Date Data Assessment Completed:** 2/26/10 **Complete By:** SRK	**Sample Collection Date:** 6/4/09	**Sample Analysis Date:** 6/24/09, Hg on 6/19/09

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
		Al: 200% Fe: 36% Ti: 21% V: 25%			
QC Summary					
Validity of Data	Some results qualified, none rejected.				
Additional Notes:					

SDG K1652 – Radionuclides QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1652	**W&C Project No.:**222007	
Medium: Surface Water		**Analytes:** Radionuclides (GEA, C-14, Isotopic Pu, Sr-90, Tc-99, Isotopic Th, H-3, & Isotopic U)	
Samples: J18NF3, J18P32, & J18P29			
Laboratory: Eberline	**Date Data Assessment Completed:** 2/26/10 **Complete By:** SRK	**Sample Collection Date:** 6/4/09	**Sample Analysis Date:** 6/19/09 – 7/17/09

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No action	
Detection Limits	No	RDL and/or MDA above criteria for Tritium, K40, Ra226, Ra228, Th232, U235, U238, Am241, Be7, and Ru106	-	No action	
Blanks					
Method Blanks	Yes	None	-	No action	
Other QC Results					
LCS Results	Yes	None	-	No action	
Tracer Results	Yes	None	-	No action	
Matrix Spikes Sample ID: J18P29	Yes	None	-	No action	
Lab Duplicates Sample ID: J18NF3	Yes	None	-	No action	
Field Duplicate Sample ID: J18NF3/J18P32	Yes	None	-	No action	
QC Summary					
Validity of Data	No results qualified or rejected.				
Additional Notes:					

SDG K1652 – DRO QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1652	**W&C Project No.:**222007	
Medium: Surface Water		**Analytes:** DRO/Motor Oil	
Samples: J18NF3 & J18P32			
Laboratory: Lionville	**Date Assessment Completed:** 2/26/10 **Complete By:** SRK	**Sample collection:** 6/4/09	**Sample Analysis Date:** Prepared – 6/8/09, Analyzed – 6/16/09

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No action	
Surrogates	Yes	None	-	No action	
Blanks					
Method Blank	Yes	None	-	No action	
Equipment Blank Sample ID:	Not collected				
Other QC					
LCS Results	Yes	None	-	No action	
Matrix Spikes Sample ID: J18P32	No	DRO: 37%	J	Qualify positive and non-detect results as estimated (J)	All samples.
Lab Duplicates Sample ID:	Not analyzed				
Field Duplicate Sample ID: J18NF3/J18P32	Yes	None	-	No action	
QC Summary					
Validity of Data	Some results qualified, none rejected.				
Additional Notes:					

SDG K1652 – DOC QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1652	**W&C Project No.:**222007	
Medium: Surface Water		**Analytes:** DOC	
Samples: J18NF3, J18P32, & J18P29			
Laboratory: Lionville	**Date Data Assessment Completed:** 2/26/10 **Complete By:** SRK	**Sample Collection Date:** 6/4/09	**Sample Analysis Date:** 6/10/09

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No action	
Detection Limit	Yes	None	-	No action	
Blanks					
Method Blank	Yes	None	-	No action	
Other QC					
LCS Results	Yes	None	-	No action	
Matrix Spikes Sample ID: J18P29	Yes	None	-	No action	
Lab Duplicate Sample ID: J18P29	Yes	None	-	No action	
Field Duplicate Sample ID: J18NF3/J18P32	Yes	None	-	No action	
QC Summary					
Validity of Data	No results qualified or rejected.				
Additional Notes:					

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SDG K1654 – VOC QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1654	**W&C Project No.:**222007
Medium: Surface Water		**Analytes:** VOA
Samples: J18YB1, J18Y96, J18P44		

Laboratory: Lionville	**Date Data Assessment Completed:** 2/23/2010 **Completed By:** KAM	**Sample Collection Date:** 6/5/2009	**Sample Analysis Date:** 6/9/2009

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No Action	
Detection Limits	No	Methylene Chloride	-	No Action	
Blanks					
Blanks - Method	Yes	None	-	No Action	
Equipment Blank Sample ID: J18Y96	No	Toluene = 2.25J ug/L	-	No Action based on guidance	
Trip Blank Sample ID: J18YB1	No	Acetone = 4.54J ug/L	-	No Action based on guidance	
Other QC Results					
Surrogate Recoveries	Yes	None	-	No Action	
LCS Results	Yes	None	-	No Action	
Matrix Spikes Sample ID: J18Y96	Yes	None	-	No Action	
Lab Duplicates	Not analyzed				
Field Duplicates Sample ID:	Not collected				
Summary					
Validity of Data	Yes	No rejected results			
Additional Notes:					

SDG K1654 – SVOC QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1654	**W&C Project No.:**222007	
Medium: Surface Water		**Analytes:** SVOCs	
Samples: J18Y96, J18P44			
Laboratory: Lionville	**Date Data Assessment Completed:** 2/23/2010 **Completed By:** KAM	**Sample Collection Date:** 6/5/2009	**Sample Analysis Date:** 6/9/2009 extr 6/14,16,18,22/2009 anal

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No Action	
Detection Limits	No	2,4-Dinitrophenol 2-Nitroaniline 3,3'-Dichlorobenzidine 3-Nitroaniline 4,6-Dinitro-2-methylphenol 4-Chloroaniline 4-Nitroaniline 4-Nitrophenol Pentachlorophenol	-	No Action	
Blanks					
Method Blanks	Yes	None	-	No Action	
Equipment Blank Sample ID: J18Y96	Yes	None	-	No Action	
Other QC					
Surrogate Recoveries	Yes	None	-	No Action	
LCS Results	No	3,3'-Dichlorobenzidine: 0% 3-Nitroaniline: 0% 4-Chloroaniline: 3% 4-Nitroaniline: 0% Hexachlorocyclopentadiene: 19% N-Nitrosodiphenylamine: 37% Di-n-octyl Phthalate: 167%	J -	Qualify positive and non-detect results as estimated (J) Qualify positive results as estimated (J).	All samples. All Samples. No impacts since all ND.
Matrix Spikes Sample ID: J18Y96	No	**REC** 2,4-Dimethylphenol: 49% 3,3'-dichlorobenzidine: 0%/11% 3-Nitroaniline: 3% 4-Chloroaniline: 24% 4-Nitroaniline: 7% Bis(2-chloroethoxy)methane:	J	Qualify positive and non-detect results as estimated (J)	All samples

SDG K1654 – SVOC QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1654	**W&C Project No.:**222007	
Medium: Surface Water		**Analytes:** SVOCs	
Samples: J18Y96, J18P44			
Laboratory: Lionville	**Date Data Assessment Completed:** 2/23/2010 **Completed By:** KAM	**Sample Collection Date:** 6/5/2009	**Sample Analysis Date:** 6/9/2009 extr 6/14,16,18,22/2009 anal

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
		20% Carbazole: 27% Hexachlorocyclopentadiene: 40%/35% N-Nitrosodiphenylamine: 18% **RPD** 2,4-Dichlorophenol: 21% 2,4-Dimethylphenol: 43% 2,4-Dinitrophenol: 32% 2-Nitroaniline: 29% 3-Nitroaniline: 186% 4-Chloro-3-methylphenol: 23% 4-Chloroaniline: 73% 4-Nitrophenol: 164% Acenaphthylene: 43% Benzo[g,h,i]perylene: 24% Bis(2-chloroethoxy) methane: 102% Carbazole: 78% Dibenz[a,h]anthracene: 22% Indeno[1,2,3-cd]pyrene: 24% Isophorone: 25% Nitrobenzene: 24% N-Nitrosodiphenylamine: 99%	J	Qualify positive and non-detect results as estimated (J)	All samples
Lab Duplicates Sample ID:	Not analyzed				
Field Duplicates Sample ID:	Not collected				
Summary					
Validity of Data	Yes	No rejected results			
Additional Notes:					

SDG K1654 – PCB QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1654	**W&C Project No.:**222007	
Medium: Surface Water		**Analytes:** PCBs	
Samples: J18Y96, J18P44			
Laboratory: Lionville	**Date Data Assessment Completed:** 2/23/2010 **Completed By:** KAM	**Sample Collection Date:** 6/5/2009	**Sample Analysis Date:** 6/11/2009 extr 6/16/2009 anal

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No Action	
Detection Limits	Yes	None	-	No Action	
Blanks					
Method Blank	Yes	None	-	No Action	
Equipment Blank Sample ID: J18Y96	Yes	None	-	No Action	
Other QC Results					
Surrogate Recoveries	Yes	None	-	No Action	
LCS Results	Yes	None	-	No Action	
Matrix Spikes Sample ID: J18P44	Yes	None	-	No Action	
Lab Duplicates Sample ID:	Not analyzed				
Field Duplicates Sample ID:	Not collected				
Summary					
Validity of Data	Yes	No rejected results			
Additional Notes:					

SDG K1654 – Pesticides QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1654	**W&C Project No.:**222007	
Medium: Surface Water		**Analytes:** Pesticides	
Samples: J18Y96, J18P44			
Laboratory: Lionville	**Date Data Assessment Completed:** 2/23/2010 **Completed By:** KAM	**Sample Collection Date:** 6/5/2009	**Sample Analysis Date:** 6/11/2009 extr 6/16/2009 anal

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No Action	
Detection Limits	Yes	None	-	No Action	
Blanks					
Method Blank	Yes	None	-	No Action	
Equipment Blank Sample ID: J18Y96	Yes	None	-	No Action	
Other QC Results					
Surrogate Recoveries	Yes	None	-	No Action	
LCS Results	No	No LCS results for toxaphene	J	Qualify all associated results as estimated (J)	Impacts to all samples above.
Matrix Spikes Sample ID: J18P44	Yes	None	-	No Action	
Lab Duplicates Sample ID:	Not analyzed				
Field Duplicate Sample ID:	Not collected				
QC Summary					
Validity of Data	Yes	No rejected results			
Additional Notes:					

SDG K1654 – Metals QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1654	**W&C Project No.:**222007	
Medium: Surface Water		**Analytes:** Metals	
Samples: J18Y96, J18P44, J18P45			
Laboratory: Lionville	**Date Data Assessment Completed:** 2/23/2010 **Completed By:** KAM	**Sample Collection Date:** 6/5/2009	**Sample Analysis Date:** 6/24/2009 Hg: 6/19/2009

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No Action	
Detection Limits	No	Silicon	-	No Action	
Blanks					
Preparation Blank	No	Beryllium = 0.408 ug/L Magnesium = 35.2 ug/L Manganese = 2.13 ug/L Titanium = 1.26 ug/L	UJ	Qualify positive results less than 5x the blank concentration as UJ	All samples, but only impacts J18P45 (Manganese and Titanium)
Equipment Blank Sample ID: J18Y96	No	Barium = 14.6 ug/L Boron = 8.12 ug/L Calcium = 79.3 ug/L Magnesium = 8.78 ug/L Silicon = 27.4 ug/L Sodium = 58.8 ug/L Zinc = 7.01 ug/L	-	No Action based on guidance	
Other QC Results					
LCS Results	Yes	None	-	No Action	
Matrix Spikes Sample ID: J18P45	Yes	None	-	No Action	
Lab Duplicates Sample ID: J18P45	No	Titanium = 23%	-	No Action since the difference between both concentrations is <1x the RDL	J18P45
Field Duplicate Sample ID:	Not analyzed				
QC Summary					
Validity of Data	Yes	No rejected results			
Additional Notes:					

SDG K1654 – Radionuclides QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1654	**W&C Project No.:**222007	
Medium: Surface Water		**Analytes:** Tritium, Carbon-14, Strontium-90, Technetium-99, Isotopic Thorium, Isotopic Uranium, Isotopic Plutonium, Gamma Spectroscopy	
Samples: J18P44, J18P47-A, J18P93-A			
Laboratory: Eberline	**Date Data Assessment Completed:** 2/23/2010 **Completed By:** KAM	**Sample Collection Date:** 6/5/2009	**Sample Analysis Date:** 6-7/2009

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No Action	
Detection Limits	No	**RDL** Carbon-14 Strontium **MDA** Radium-226 Radium-228 Beryllium-7 Ruthenium-106	-	No Action	
Blanks					
Method Blanks	Yes	None	-	No Action	
Other QC Results					
LCS Results	Yes	None	-	No Action	
Tracer Results	Yes	None	-	No Action	
Matrix Spike Sample ID: J18P47-A	No	Carbon-14 = 76%	J	Qualify positive and non-detect results as estimated (J).	All samples
Lab Duplicates Sample ID: J18P44	No	Uranium-233/234 = 64% Uranium-238 = 70%	-	No Action since the difference between both results is less than 1x the RDL	J18P44
Field Duplicate Sample ID:	Not collected				
QC Summary					
Validity of Data	Yes	No rejected results			
Additional Notes:					

SDG K1654 – DRO QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1654	**W&C Project No.:**222007	
Medium: Surface Water		**Analytes:** DRO/Motor Oil	
Samples: J18Y96, J18P44			
Laboratory: Lionville	**Date Assessment Completed:** 2/23/2010 **Completed By:** KAM	**Sample collection:** 6/5/2009	**Sample Analysis Date:** 6/12/2009 extr 6/24-25/2009 anal

QC Parameter	**All in Spec.?**	**Non-Compliant Results**	**Flag**	**Action/ Notes**	**Associated Samples**
Holding Times	Yes	None	-	No Action	
Surrogates	Yes	None	-	No Action	
Blanks					
Method Blank	Yes	None	-	No Action	
Equipment Blank Sample ID: J18Y96	Yes	None	-	No Action	
Other QC					
LCS Results	Yes	None	-	No Action	
Matrix Spikes Sample ID: J18P44	No	DRO = 68%	J	Qualify positive and non-detect results as estimated (J)	All samples
Lab Duplicates Sample ID:	Not analyzed				
Field Duplicate Sample ID:	Not collected				
QC Summary					
Validity of Data	Yes	No rejected results			
Additional Notes:					

SDG K1654 – DOC QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1654	**W&C Project No.:**222007	
Medium: Surface Water		**Analytes:** DOC	
Samples: J18Y96, J18P44			
Laboratory: Lionville	**Date Data Assessment Completed:** 2/23/2010 **Completed By:** KAM	**Sample Collection Date:** 6/5/2009	**Sample Analysis Date:** 6/10/2009

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No Action	
Detection Limit	Yes	None	-	No Action	
Blanks					
Method Blank	Yes	None	-	No Action	
Equipment Blank Sample ID: J18Y96	No	DOC = 1.86 mg/L	-	No Action based on guidance	
Other QC					
LCS Results	Yes	None	-	No Action	
Matrix Spikes Sample ID: J18P44	Yes	None	-	No Action	
Lab Duplicate Sample ID: J18P44	Yes	None	-	No Action	
Field Duplicate Sample ID:	Not collected				
QC Summary					
Validity of Data	Yes	No rejected results			
Additional Notes:					

SDG K1654 – Nitrate/Nitrite QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1654	**W&C Project No.:**222007	
Medium: Surface Water		**Analytes:** Nitrate/Nitrite as N	
Samples: J18Y96, J18P44			
Laboratory: Lionville	**Date Data Assessment Completed:** 5/27/2010 **Complete By:** KAM	**Sample Collection Date:** 6/5/2009	**Sample Analysis Date:** 6/12/2009

QC Parameter	**All in Spec.?**	**Non-Compliant Results**	**Flag**	**Action/ Notes**	**Associated Samples**
Holding Times	Yes	None	-	No Action	
Detection Limit	Laboratory reporting limits not provided in SAP				
Method Blank	Yes	None	-	No Action	
Equipment Blank Sample ID: J18Y96	No	Nitrate/Nitrite as N = 0.08 mg/L	-	No action based on guidance	
LCS Results	Yes	None	-	No Action	
Matrix Spikes Sample ID: J18Y96	Yes	None	-	No Action	
Lab Duplicate Sample ID: J18Y96	Yes	None	-	No Action	
Field Duplicate Sample ID:	Not collected				
QC Summary					
Validity of Data	Yes; no data were qualified or rejected				
Additional Notes:					

SDG K1654 – Anions QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1654	**W&C Project No.:**222007	
Medium: Surface Water	**Analytes:** Bromide, Chloride, Fluoride, Nitrate, Nitrite, Orthophosphate, Sulfate		
Samples: J18Y96, J18P44			
Laboratory: Lionville	**Date Data Assessment Completed:** 5/27/2010 **Complete By:** KAM	**Sample Collection Date:** 6/5/2009	**Sample Analysis Date:** 6/8/2009

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	No	Holding Time for nitrate, nitrite, and orthophosphate is 48 hours.	J	For holding times <2x criteria, qualify positive and non-detect results as estimated (J)	All samples for nitrate, nitrite, and orthophosphate qualified as J
Detection Limit	Laboratory reporting limits not provided in SAP				
Method Blank	Yes	None	-	No Action	
Equipment Blank Sample ID: J18Y96	No	Chloride = 0.54 mg/L	-	No action based on guidance	
LCS Results	Yes	None	-	No Action	
Matrix Spikes Sample ID: J18NM9	Yes	None	-	No Action	
Lab Duplicate Sample ID: J18NM9	Yes	None	-	No Action	
Field Duplicate Sample ID:	Not collected				
QC Summary					
Validity of Data	Not all QC criteria met, however no rejected results				

SDG K1654 – Anions QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1654	**W&C Project No.:**222007

Medium: Surface Water	**Analytes:** Bromide, Chloride, Fluoride, Nitrate, Nitrite, Orthophosphate, Sulfate
Samples: J18Y96, J18P44	

Laboratory: Lionville	**Date Data Assessment Completed:** 5/27/2010 **Complete By:** KAM	**Sample Collection Date:** 6/5/2009	**Sample Analysis Date:** 6/8/2009

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples

Additional Notes:

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SDG K1656 – VOC QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1656	**W&C Project No.:**222007	
Medium: Surface Water		**Analytes:** VOA	
Samples: J18NL4, J18P47, J18P93			
Laboratory: Lionville	**Date Data Assessment Completed:** 2/23/2010 **Completed By:** KAM	**Sample Collection Date:** 6/8/2009	**Sample Analysis Date:** 6/11/2009

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No Action	
Detection Limits	No	Methylene Chloride	-	No Action	
Blanks					
Blanks - Method	Yes	None	-	No Action	
Equipment Blank Sample ID:	Not collected				
Trip Blank Sample ID: J18NL4	No	Acetone = 5.40J ug/L	-	No Action based on guidance	
Other QC Results					
Surrogate Recoveries	Yes	None	-	No Action	
LCS Results	Yes	None	-	No Action	
Matrix Spikes Sample ID: J18P93	Yes	None	-	No Action	
Lab Duplicates	Not analyzed				
Field Duplicates Sample ID:	Not collected				
Summary					
Validity of Data	Yes	No rejected results			
Additional Notes:					

SDG K1656 – SVOC QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1656	**W&C Project No.:**222007	
Medium: Surface Water		**Analytes:** SVOCs	
Samples: J18P47, J18P93			
Laboratory: Lionville	**Date Data Assessment Completed:** 2/23/2010 **Completed By:** KAM	**Sample Collection Date:** 6/8/2009	**Sample Analysis Date:** 6/9/2009 extr 6/14-16/2009 anal

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No Action	
Detection Limits	No	2,4-Dinitrophenol 2-Nitroaniline 3,3'-Dichlorobenzidine 3-Nitroaniline 4,6-Dinitro-2-methylphenol 4-Chloroaniline 4-Nitroaniline 4-Nitrophenol Pentachlorophenol	-	No Action	
Blanks					
Method Blanks	Yes	None	-	No Action	
Equipment Blank Sample ID:	Not collected				
Other QC					
Surrogate Recoveries	Yes	None	-	No Action	
LCS Results	No	3,3'-Dichlorobenzidine: 0% 3-Nitroaniline: 11% 4-Chloroaniline: 16% 4-Nitroaniline: 26% 4-Nitrophenol: 44% Carbazole: 44% Hexachlorocyclopentadiene: 19% N-Nitrosodiphenylamine: 38%	J	Qualify positive and non-detect results as estimated (J)	All samples
Matrix Spikes Sample ID: J18P93	No	**REC** 1,3-Dichlorobenzene: 48% 1,4-Dichlorobenzene: 49% 2-Nitroaniline: 49% 3,3'-dichlorobenzidine: 0%/0% 3-Nitroaniline: 10%/4% 4-Chloroaniline: 4%/2%	J	Qualify positive and non-detect results as estimated (J)	All samples

SDG K1656 – SVOC QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1656	**W&C Project No.:**222007
Medium: Surface Water		**Analytes:** SVOCs
Samples: J18P47, J18P93		

Laboratory: Lionville	**Date Data Assessment Completed:** 2/23/2010 **Completed By:** KAM	**Sample Collection Date:** 6/8/2009	**Sample Analysis Date:** 6/9/2009 extr 6/14-16/2009 anal

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
		4-Nitroaniline: 10%/6% Acenaphthylene: 43% Bis(2-chloroethoxy)methane: 21% Carbazole: 46%/35% Hexachlorocyclopentadiene: 6%/12% Hexachloroethane: 48% N-Nitrosodiphenylamine: 28%/27% **RPD** 2-Nitroaniline: 24% 3-Nitroaniline: 80% 4-Chloroaniline: 68% 4-Nitroaniline: 100% Acenaphthylene: 34% Bis(2-chloroethoxy) methane: 87% Carbazole: 28% Hexachlorocyclopentadiene: 73% Pyrene: 26%	J	Qualify positive and non-detect results as estimated (J)	All samples
Lab Duplicates Sample ID:	Not analyzed				
Field Duplicates Sample ID:	Not collected				
Summary					
Validity of Data	Yes	No rejected results			
Additional Notes:					

SDG K1656 – PCB QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1656	**W&C Project No.:**222007	
Medium: Surface Water		**Analytes:** PCBs	
Samples: J18P47, J18P93			
Laboratory: Lionville	**Date Data Assessment Completed:** 2/23/2010 **Completed By:** KAM	**Sample Collection Date:** 6/8/2009	**Sample Analysis Date:** 6/11/2009 extr 6/16/2009 anal

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No Action	
Detection Limits	Yes	None	-	No Action	
Blanks					
Method Blank	Yes	None	-	No Action	
Equipment Blank Sample ID:	Not collected				
Other QC Results					
Surrogate Recoveries	Yes	None	-	No Action	
LCS Results	Yes	None	-	No Action	
Matrix Spikes Sample ID: J18P93	Yes	None	-	No Action	
Lab Duplicates Sample ID:	Not analyzed				
Field Duplicates Sample ID:	Not collected				
Summary					
Validity of Data	Yes	No rejected results			
Additional Notes:					

SDG K1656 – Pesticides QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1656	**W&C Project No.:**222007	
Medium: Surface Water		**Analytes:** Pesticides	
Samples: J18P11, J18P12, J18P47, J18P93			
Laboratory: Lionville	**Date Data Assessment Completed:** 2/23/2010 **Completed By:** KAM	**Sample Collection Date:** 6/8/2009	**Sample Analysis Date:** 6/11/2009 extr 6/17/2009 anal

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No Action	
Detection Limits	Yes	None	-	No Action	
Blanks					
Method Blank	Yes	None	-	No Action	
Equipment Blank Sample ID:	Not collected				
Other QC Results					
Surrogate Recoveries	Yes	None	-	No Action	
LCS Results	No	No LCS results for toxaphene	J	Qualify all associated results as estimated (J)	Impacts to all samples above.
Matrix Spikes Sample ID: J18P93	No	RPD: Aldrin = 20.1%	J	Qualify positive and non-detect results as estimated (J)	All samples
Lab Duplicates Sample ID:	Not analyzed				
Field Duplicate Sample ID:	Not collected				
QC Summary					
Validity of Data	Yes	No rejected results			
Additional Notes:					

SDG K1656 – Metals QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1656	**W&C Project No.:**222007
Medium: Surface Water		**Analytes:** Metals
Samples: J18P47, J18P48, J18P93, J18P94		

Laboratory: Lionville	**Date Data Assessment Completed:** 2/23/2010 **Completed By:** KAM	**Sample Collection Date:** 6/8/2009	**Sample Analysis Date:** 6/24/2009 Hg: 6/19/2009

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No Action	
Detection Limits	No	Silicon	-	No Action	
Blanks					
Preparation Blank	No	Beryllium = 0.408 ug/L Magnesium = 35.2 ug/L Manganese = 2.13 ug/L Titanium = 1.26 ug/L	UJ	Qualify positive results less than 5x the blank concentration as UJ	All samples. Impacts the following: Beryllium: J18P47, J18P48, J18P93, J18P94 Manganese: J18P48 Titanium: J18P48, J18P94
Equipment Blank Sample ID:	Not collected				
Other QC Results					
LCS Results	Yes	None	-	No Action	
Matrix Spikes Sample ID: J18P47	No	Silicon = 125%	-	No Action since the initial result is greater than 4x the spiked amount	All samples
Lab Duplicates Sample ID: J18P47	No	Molybdenum = 47%	-	No Action since the difference between both concentrations is <1x the RDL	J18P47
Field Duplicate Sample ID:	Not collected				
QC Summary					
Validity of Data	Yes	No rejected results			
Additional Notes:					

SDG K1656 – DRO QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1656	**W&C Project No.:**222007	
Medium: Surface Water		**Analytes:** DRO/Motor Oil	
Samples: J18P47, J18P93			
Laboratory: Lionville	**Date Assessment Completed:** 2/23/2010 **Completed By:** KAM	**Sample collection:** 6/8/2009	**Sample Analysis Date:** 6/12/2009 extr 6/24/2009 anal

QC Parameter	**All in Spec.?**	**Non-Compliant Results**	**Flag**	**Action/ Notes**	**Associated Samples**
Holding Times	Yes	None	-	No Action	
Surrogates	Yes	None	-	No Action	
Blanks					
Method Blank	Yes	None	-	No Action	
Equipment Blank Sample ID:	Not collected				
Other QC					
LCS Results	Yes	None	-	No Action	
Matrix Spikes Sample ID: J18P93	No	DRO = 67%	J	Qualify positive and non-detect results as estimated (J)	All samples
Lab Duplicates Sample ID:	Not analyzed				
Field Duplicate Sample ID:	Not collected				
QC Summary					
Validity of Data	Yes	No rejected results			
Additional Notes:					

SDG K1656 – DOC QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1656	**W&C Project No.:**222007	
Medium: Surface Water		**Analytes:** DOC	
Samples: J18P47, J18P93			
Laboratory: Lionville	**Date Data Assessment Completed:** 2/23/2010 **Completed By:** KAM	**Sample Collection Date:** 6/8/2009	**Sample Analysis Date:** 6/12/2009

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No Action	
Detection Limit	Yes	None	-	No Action	
Blanks					
Method Blank	Yes	None	-	No Action	
Other QC					
LCS Results	Yes	None	-	No Action	
Matrix Spikes Sample ID: J18P47	Yes	None	-	No Action	
Lab Duplicate Sample ID: J18P47	Yes	None	-	No Action	
Field Duplicate Sample ID:	Not collected				
QC Summary					
Validity of Data	Yes	No rejected results			
Additional Notes:					

SDG K1656 – Nitrate/Nitrite QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1656	**W&C Project No.:**222007	
Medium: Surface Water		**Analytes:** Nitrate/Nitrite as N	
Samples: J18P47, J18P93			
Laboratory: Lionville	**Date Data Assessment Completed:** 5/27/2010 **Complete By:** KAM	**Sample Collection Date:** 6/8/2009	**Sample Analysis Date:** 6/12/2009

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No Action	
Detection Limit	Laboratory reporting limits not provided in SAP				
Method Blank	Yes	None	-	No Action	
LCS Results	Yes	None	-	No Action	
Matrix Spikes Sample ID: J18P93	Yes	None	-	No Action	
Lab Duplicate Sample ID: J18P93	Yes	None	-	No Action	
Field Duplicate Sample ID:	Not collected				
QC Summary					
Validity of Data	Yes; no data were qualified or rejected				
Additional Notes:					

SDG K1656 – Anions QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1656	**W&C Project No.:**222007

Medium: Surface Water	**Analytes:** Bromide, Chloride, Fluoride, Nitrate, Nitrite, Orthophosphate, Sulfate
Samples: J18P47, J18P93	

Laboratory: Lionville	**Date Data Assessment Completed:** 5/27/2010 **Complete By:** KAM	**Sample Collection Date:** 6/8/2009	**Sample Analysis Date:** 6/10/2009

QC Parameter	**All in Spec.?**	**Non-Compliant Results**	**Flag**	**Action/ Notes**	**Associated Samples**
Holding Times	Yes	None	-	No Action	
Detection Limit	Laboratory reporting limits not provided in SAP				
Method Blank	No	Chloride = 0.11J mg/L	-	No action since results are greater than 5x the blank concentration	
LCS Results	Yes	None	-	No Action	
Matrix Spikes Sample ID: J18P47	Yes	None	-	No Action	
Lab Duplicate Sample ID: J18P47	Yes	None	-	No Action	
Field Duplicate Sample ID:	Not collected				
QC Summary					
Validity of Data	Not all QC criteria met, however no rejected results				
Additional Notes:					

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SDG K1660 – VOC QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1660	**W&C Project No.:**222007	
Medium: Surface Water		**Analytes:** VOA	
Samples: J18P35, J18P41, J18NL5			
Laboratory: Lionville	**Date Data Assessment Completed:** 2/24/2010 **Completed By:** KAM	**Sample Collection Date:** 6/9/2009	**Sample Analysis Date:** 6/11-12/2009

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No Action	
Detection Limits	No	Methylene Chloride	-	No Action	
Blanks					
Blanks - Method	Yes	None	-	No Action	
Equipment Blank Sample ID:	Not collected				
Trip Blank Sample ID:	Not collected				
Other QC Results					
Surrogate Recoveries	Yes	None	-	No Action	
LCS Results	Yes	None	-	No Action	
Matrix Spikes Sample ID: J18P35	Yes	None	-	No Action	
Lab Duplicates	Not analyzed				
Field Duplicates Sample ID:	Not collected				
Summary					
Validity of Data	Yes	No rejected results			
Additional Notes:					

SDG K1660 – SVOC QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1660	**W&C Project No.:**222007	
Medium: Surface Water		**Analytes:** SVOCs	
Samples: J18P35, J18P41			
Laboratory: Lionville	**Date Data Assessment Completed:** 2/24/2010 **Completed By:** KAM	**Sample Collection Date:** 6/9/2009	**Sample Analysis Date:** 6/13/2009 extr 6/23/2009 anal

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No Action	
Detection Limits	No	2,4-Dinitrophenol 2-Nitroaniline 3,3’-Dichlorobenzidine 3-Nitroaniline 4,6-Dinitro-2-methylphenol 4-Chloroaniline 4-Nitroaniline 4-Nitrophenol Pentachlorophenol	-	No Action	
Blanks					
Method Blanks	Yes	None	-	No Action	
Equipment Blank Sample ID:	Not collected				
Other QC					
Surrogate Recoveries	Yes	None	-	No Action	
LCS Results	No	2-Nitroaniline: 44% 3,3’-Dichlorobenzidine: 0% 3-Nitroaniline: 1% 4-Chloroaniline: 0% 4-Nitroaniline: 6% Acenaphthylene: 49% Bis(2-chloroethoxy) methane: 19% Carbazole: 31% Hexachlorocyclopentadiene: 22% Hexachloroethane: 48% N-Nitrosodiphenylamine: 19%	J	Qualify positive and non-detect results as estimated (J)	All samples

SDG K1660 – SVOC QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1660	**W&C Project No.:**222007	
Medium: Surface Water		**Analytes:** SVOCs	
Samples: J18P35, J18P41			
Laboratory: Lionville	**Date Data Assessment Completed:** 2/24/2010 **Completed By:** KAM	**Sample Collection Date:** 6/9/2009	**Sample Analysis Date:** 6/13/2009 extr 6/23/2009 anal

QC Parameter	**All in Spec.?**	**Non-Compliant Results**	**Flag**	**Action/ Notes**	**Associated Samples**
Matrix Spikes Sample ID: J18P35	No	**REC** 3,3’-dichlorobenzidine: 0%/0% 3-Nitroaniline: 2%/3% 4-Chloroaniline: 0%/1% 4-Nitroaniline: 3%/4% Bis(2-chloroethoxy)methane: 6%/31% Carbazole: 39% N-Nitrosodiphenylamine: 8%/13%	J	Qualify positive and non-detect results as estimated (J)	All samples
		RPD Benzo[g,h,i]perylene: 21% Bis(2-chloroethoxy) methane: 135% Carbazole: 27% Indeno(1,2,3-cd)pyrene: 21% N-Nitrosodiphenylamine: 52%	-	Qualify positive and non-detect results as estimated (J)	All samples
Lab Duplicates Sample ID:	Not analyzed				
Field Duplicates Sample ID:	Not collected				
Summary					
Validity of Data	Yes	No rejected results			
Additional Notes:					

SDG K1660 – PCB QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1660	**W&C Project No.:**222007	
Medium: Surface Water		**Analytes:** PCBs	
Samples: J18P35, J18P41			
Laboratory: Lionville	**Date Data Assessment Completed:** 2/24/2010 **Completed By:** KAM	**Sample Collection Date:** 6/9/2009	**Sample Analysis Date:** 6/11/2009 extr 6/16/2009 anal

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No Action	
Detection Limits	Yes	None	-	No Action	
Blanks					
Method Blank	Yes	None	-	No Action	
Equipment Blank Sample ID:	Not collected				
Other QC Results					
Surrogate Recoveries	Yes	None	-	No Action	
LCS Results	Yes	None	-	No Action	
Matrix Spikes Sample ID: J18P35	Yes	None	-	No Action	
Lab Duplicates Sample ID:	Not analyzed				
Field Duplicates Sample ID:	Not collected				
Summary					
Validity of Data	Yes	No rejected results			
Additional Notes:					

SDG K1660 – Pesticides QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1660	**W&C Project No.:**222007	
Medium: Surface Water		**Analytes:** Pesticides	
Samples: J18P35, J18P41			
Laboratory: Lionville	**Date Data Assessment Completed:** 2/24/2010 **Completed By:** KAM	**Sample Collection Date:** 6/9/2009	**Sample Analysis Date:** 6/11/2009 extr 6/17/2009 anal

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No Action	
Detection Limits	Yes	None	-	No Action	
Blanks					
Method Blank	Yes	None	-	No Action	
Equipment Blank Sample ID:	Not collected				
Other QC Results					
Surrogate Recoveries	Yes	None	-	No Action	
LCS Results	No	No LCS results for toxaphene	J	Qualify all associated results as estimated (J)	Impacts to all samples above.
Matrix Spikes Sample ID: J18P35	Yes	None	-	No Action	
Lab Duplicates Sample ID:	Not analyzed				
Field Duplicate Sample ID:	Not collected				
QC Summary					
Validity of Data	Yes	No rejected results			
Additional Notes:					

SDG K1660 – Metals QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1660	**W&C Project No.:**222007
Medium: Surface Water		**Analytes:** Metals
Samples: J18P35, J18P36, J18P41, J18P42		

Laboratory: Lionville	**Date Data Assessment Completed:** 2/24/2010 **Completed By:** KAM	**Sample Collection Date:** 6/9/2009	**Sample Analysis Date:** 6/24/2009

QC Parameter	**All in Spec.?**	**Non-Compliant Results**	**Flag**	**Action/ Notes**	**Associated Samples**
Holding Times	Yes	None	-	No Action	
Detection Limits	No	Silicon	-	No Action	
Blanks					
Preparation Blank	No	Beryllium = 0.408B ug/L Magnesium = 35.2B ug/L Manganese = 2.13B ug/L Titanium = 1.26B ug/L	UJ	Qualify positive results less than 5x the blank concentration as UJ	All samples. Impacts the following: Beryllium: All samples Manganese: J18P36 Titanium: J18P36, J18P42
Equipment Blank Sample ID:	Not collected				
Other QC Results					
LCS Results	Yes	None	-	No Action	
Matrix Spikes Sample ID: J18P36	Yes	None	-	No Action	
Lab Duplicates Sample ID: J18P36	Yes	None	-	No Action	
Field Duplicate Sample ID:	Not collected				
QC Summary					
Validity of Data	Yes	No rejected results			
Additional Notes:					

SDG K1660 – Radionuclides QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1660	**W&C Project No.:**222007
Medium: Surface Water	**Analytes:** Tritium, Carbon-14, Strontium-90, Technetium-99, Isotopic Thorium, Isotopic Uranium, Isotopic Plutonium, Gamma Spectroscopy	
Samples: J18P35, J18P41		

Laboratory: Lionville	**Date Data Assessment Completed:** 2/24/2010 **Completed By:** KAM	**Sample Collection Date:** 6/9/2009	**Sample Analysis Date:** 6-7/2009

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No Action	
Detection Limits	No	**RDL** Carbon-14 Strontium **MDA** Radium-226 Radium-228 Americium-241 Beryllium-7 Ruthenium-106	-	No Action	
Blanks					
Method Blanks	Yes	None	-	No Action	
Other QC Results					
LCS Results	Yes	None	-	No Action	
Tracer Results	Yes	None	-	No Action	
Matrix Spike Sample ID: J18P41	Yes	None	-	No Action	
Lab Duplicates Sample ID: J18P35	Yes	None	-	No Action	
Field Duplicate Sample ID:	Not collected				
QC Summary					
Validity of Data	Yes	No rejected results			
Additional Notes:					

SDG K1660 – DRO QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1660	**W&C Project No.:**222007	
Medium: Surface Water		**Analytes:** DRO/Motor Oil	
Samples: J18P35, J18P41			
Laboratory: Lionville	**Date Assessment Completed:** 2/24/2010 **Completed By:** KAM	**Sample collection:** 6/9/2009	**Sample Analysis Date:** 6/12/2009 extr 6/24-25/2009 anal

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No Action	
Surrogates	Yes	None	-	No Action	
Blanks					
Method Blank	Yes	None	-	No Action	
Equipment Blank Sample ID:	Not collected				
Other QC					
LCS Results	Yes	None	-	No Action	
Matrix Spikes Sample ID: J18P41	No	DRO = 71%	J	Qualify positive and non-detect results as estimated (J)	All samples
Lab Duplicates Sample ID:	Not analyzed				
Field Duplicate Sample ID:	Not collected				
QC Summary					
Validity of Data	Yes	No rejected results			
Additional Notes:					

SDG K1660 – DOC QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1660	**W&C Project No.:**222007	
Medium: Surface Water		**Analytes:** DOC	
Samples: J18P35, J18P41			
Laboratory: Lionville	**Date Data Assessment Completed:** 2/24/2010 **Completed By:** KAM	**Sample Collection Date:** 6/9/2009	**Sample Analysis Date:** 6/12/2009

QC Parameter	**All in Spec.?**	**Non-Compliant Results**	**Flag**	**Action/ Notes**	**Associated Samples**
Holding Times	Yes	None	-	No Action	
Detection Limit	Yes	None	-	No Action	
Blanks					
Method Blank	Yes	None	-	No Action	
Other QC					
LCS Results	Yes	None	-	No Action	
Matrix Spikes Sample ID: J18P35	Yes	None	-	No Action	
Lab Duplicate Sample ID: J18P35	Yes	None	-	No Action	
Field Duplicate Sample ID:	Not collected				
QC Summary					
Validity of Data	Yes	No rejected results			
Additional Notes:					

SDG K1660 – Nitrate/Nitrite QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1660	**W&C Project No.:**222007	
Medium: Surface Water		**Analytes:** Nitrate/Nitrite as N	
Samples: J18P35, J18P41			
Laboratory: Lionville	**Date Data Assessment Completed:** 5/27/2010 **Complete By:** KAM	**Sample Collection Date:** 6/9/2009	**Sample Analysis Date:** 6/12/2009

QC Parameter	**All in Spec.?**	**Non-Compliant Results**	**Flag**	**Action/ Notes**	**Associated Samples**
Holding Times	Yes	None	-	No Action	
Detection Limit	Laboratory reporting limits not provided in SAP				
Method Blank	Yes	None	-	No Action	
LCS Results	Yes	None	-	No Action	
Matrix Spikes Sample ID: J18P35	Yes	None	-	No Action	
Lab Duplicate Sample ID: J18P35	Yes	None	-	No Action	
Field Duplicate Sample ID:	Not collected				
QC Summary					
Validity of Data	Yes; no data were qualified or rejected				
Additional Notes:					

SDG K1660 – Anions QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1660	**W&C Project No.:**222007

Medium: Surface Water	**Analytes:** Bromide, Chloride, Fluoride, Nitrate, Nitrite, Orthophosphate, Sulfate
Samples: J18P35, J18P41	

Laboratory: Lionville	**Date Data Assessment Completed:** 5/27/2010 **Complete By:** KAM	**Sample Collection Date:** 6/9/2009	**Sample Analysis Date:** 6/11/2009

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No Action	
Detection Limit	Laboratory reporting limits not provided in SAP				
Method Blank	No	Chloride = 0.11J mg/L	-	No action since results are greater than 5x the blank concentration	
LCS Results	Yes	None	-	No Action	
Matrix Spikes Sample ID: J18P35	Yes	None	-	No Action	
Lab Duplicate Sample ID: J18P35	Yes	None	-	No Action	
Field Duplicate Sample ID:	Not collected				
QC Summary					
Validity of Data	Not all QC criteria met, however no rejected results				
Additional Notes:					

APPENDIX B

SEDIMENT DATA QUALITY ASSESSMENT WORKSHEETS

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APPENDIX B
SEDIMENT DATA QUALITY ASSESSMENT WORKSHEETS

B.1 SDG J00242

SDG J00242 - Hexavalent Chromium QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** J00242	**W&C Project No.:**222007

Medium: Sediment	**Analytes:** Hexavalent Chromium
Samples: J17VB3, J17VB4, J17VB5, J17VB6, J17VB8, J17VD2, J17VD3, J17VD4, J17VD5, J17VD6, J17VD7	

Laboratory: Test America, Richland, WA	**Date Data Assessment Completed:** 2/2/2010 **Complete By:** KAM	**Sample Collection Date:** 12/1/2008	**Sample Analysis Date:** 12/2/2008

QC Parameter	**All in Spec.?**	**Non-Compliant Results**	**Flag**	**Action/ Notes**	**Associated Samples**
Holding Times	Yes	None	-	No Action	
Detection Limits	Yes	None	-	No Action	
Blanks					
Preparation Blank	Yes	None	-	No Action	
Equipment Blank Sample ID:	Not collected				
Other QC Results					
LCS Results	Yes	None	-	No Action	
Matrix Spikes Sample ID: J17VB3	No	Cr+6 = 22.74%	J/R	Qualify positive results as estimated (J) and non-detect results as rejected (R).	Impacts to all samples. Sample J17VB5 qualified as estimated (J), and remaining samples rejected (R).
Lab Duplicates Sample ID: J17VB3	Yes	None, both non-detect	-	No Action	
Field Duplicate Sample ID:	Not collected				
QC Summary					
Validity of Data	No	Matrix Spike	-	Some samples were rejected due to low matrix spike recoveries.	Impacts to all samples.
Additional Notes:					

B.2 SDG J00244

SDG J00244 - Hexavalent Chromium QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** J00244	**W&C Project No.:**222007	
Medium: Sediment		**Analytes:** Hexavalent Chromium	
Samples: J17VD8, J17VD9, J17VF0, J17VF1, J17VF2, J17VF3, J17VF4, J17VR0, J17W49, J17WB9, J17WC1, J17WF3, J17WF4, J17WH0			
Laboratory: Test America, Richland, WA	**Date Data Assessment Completed:** 2/2/2010 **Complete By:** KAM	**Sample Collection Date:** 12/2/2008	**Sample Analysis Date:** 12/3/2008

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No Action	
Detection Limits	Yes	None	-	No Action	
Blanks					
Preparation Blank	Yes	None	-	No Action	
Equipment Blank Sample ID: J17W49	Yes	None	-	No Action based on guidance	
Other QC Results					
LCS Results	Yes	None	-	No Action	
Matrix Spikes Sample ID: J17WF3	Yes	None	-	No Action	
Lab Duplicates Sample ID: J17WF3	Yes	None	-	No Action	
Field Duplicate Sample ID: J17VF3/ J17VR0	Yes	None	-	No Action	
QC Summary					
Validity of Data	Yes	None	-	No Action	No rejected data
Additional Notes:					

B.3 SDG J00246

SDG J00246 - Hexavalent Chromium QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** J00246	**W&C Project No.:**222007	
Medium: Sediment		**Analytes:** Hexavalent Chromium	
Samples: J17WB8, J17WC0, J17WC5, J17WC6, J17WC7, J17WJ6, J17WJ9, J17WK3			
Laboratory: Test America, Richland, WA	**Date Data Assessment Completed:** 2/2/2010 **Complete By:** KAM	**Sample Collection Date:** 12/3/2008	**Sample Analysis Date:** 12/4/2008

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No Action	
Detection Limits	Yes	None	-	No Action	
Blanks					
Preparation Blank	Yes	None	-	No Action	
Equipment Blank Sample ID:	Not collected				
Other QC Results					
LCS Results	Yes	None	-	No Action	
Matrix Spikes Sample ID: J17WC6	No	Cr+6 = 9.34%	J/R	Qualify positive results as estimated (J) and non-detect results as rejected (R).	Impacts to all samples. Sample J17WC6 rejected (R), and remaining samples qualified as estimated (J).
Lab Duplicates Sample ID: J17WC6	Yes	None	-	No Action	
Field Duplicate Sample ID:	Not collected				
QC Summary					
Validity of Data	No	Matrix Spike	R	Sample rejected due to low matrix spike recoveries.	Impacts to all samples.
Additional Notes:					

B.4 SDG J00248

SDG J00248 - Hexavalent Chromium QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** J00248	**W&C Project No.:**222007	
Medium: Sediment		**Analytes:** Hexavalent Chromium	
Samples: J17WC2, J17WC4, J17WH1, J17WJ7, J17WJ8, J17WK0, J17WK2, J17WK5			
Laboratory: Test America, Richland, WA	**Date Data Assessment Completed:** 2/2/2010 **Complete By:** KAM	**Sample Collection Date:** 12/3/2008	**Sample Analysis Date:** 12/4/2008

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No Action	
Detection Limits	Yes	None	-	No Action	
Blanks					
Preparation Blank	Yes	None	-	No Action	
Equipment Blank Sample ID:	Not collected				
Other QC Results					
LCS Results	Yes	None	-	No Action	
Matrix Spikes Sample ID: J17WJ7	Yes	None	-	No Action	
Lab Duplicates Sample ID: J17WJ7	Yes	None	-	No Action	
Field Duplicate Sample ID:	Not collected				
QC Summary					
Validity of Data	Yes	None	-	No Action	No rejected data
Additional Notes:					

B.5 SDG J00249

SDG J00249 - Hexavalent Chromium QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** J00249	**W&C Project No.:**222007	
Medium: Sediment		**Analytes:** Hexavalent Chromium	
Samples: J17WK1, J17WK4, J17X04, J17X05, J17YC6, J17YC7, J17YD4			
Laboratory: Test America, Richland, WA	**Date Data Assessment Completed:** 2/2/2010 **Complete By:** KAM	**Sample Collection Date:** 12/4/2008	**Sample Analysis Date:** 12/5/2008

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No Action	
Detection Limits	Yes	None	-	No Action	
Blanks					
Preparation Blank	Yes	None	-	No Action	
Equipment Blank Sample ID:	Not collected				
Other QC Results					
LCS Results	Yes	None	-	No Action	
Matrix Spikes Sample ID: J17WK4	Yes	None	-	No Action	
Lab Duplicates Sample ID: J17WK4	No	RPD = 80.9%	J	Qualify positive results as estimated (J).	J17WK1, all others ND.
Field Duplicate Sample ID:	Not collected				
QC Summary					
Validity of Data	Yes	None	-	No Action	No rejected data
Additional Notes:					

B.6 SDG J00250

SDG J00250 - Hexavalent Chromium QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** J00250	**W&C Project No.:**222007	
Medium: Sediment		**Analytes:** Hexavalent Chromium	
Samples: J17VP9, J17X17, J17X18, J17X19, J17X20, J17X21, J17YC8, J17YC9, J17YD5			
Laboratory: Test America, Richland, WA	**Date Data Assessment Completed:** 2/2/2010 **Complete By:** KAM	**Sample Collection Date:** 12/4/2008	**Sample Analysis Date:** 12/5/2008

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No Action	
Detection Limits	Yes	None	-	No Action	
Blanks					
Preparation Blank	Yes	None	-	No Action	
Equipment Blank Sample ID:	Not collected				
Other QC Results					
LCS Results	Yes	None	-	No Action	
Matrix Spikes Sample ID: J17X17	No	Cr+6 = 34.03%	J	Qualify positive and non-detect results as estimated (J).	Impacts to all samples.
Lab Duplicates Sample ID: J17X17	No	RPD = 99.1%	J	Qualify positive result as estimated (J).	Impacts to J17X17, J17X19, J17X21, J17YC8
Field Duplicate Sample ID: J17X18/ J17VP9	Yes	None, both non-detect	-	No Action	
QC Summary					
Validity of Data	Yes	None	-	No Action	No data rejected
Additional Notes:					

B.7 SDG J00251

SDG J00251 - Hexavalent Chromium QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** J00251	**W&C Project No.:**222007	
Medium: Sediment		**Analytes:** Hexavalent Chromium	
Samples: J17XJ5, J17XJ6, J17XJ7, J17XJ8, J17XL2, J17XL6, J17YF5, J17YF7			
Laboratory: Test America, Richland, WA	**Date Data Assessment Completed:** 2/3/2010 **Complete By:** KAM	**Sample Collection Date:** 12/5/2008	**Sample Analysis Date:** 12/6/2008

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No Action	
Detection Limits	Yes	None	-	No Action	
Blanks					
Preparation Blank	Yes	None	-	No Action	
Equipment Blank Sample ID:	Not collected				
Other QC Results					
LCS Results	Yes	None	-	No Action	
Matrix Spikes Sample ID: J17YF7	Yes	None	-	No Action	
Lab Duplicates Sample ID: J17YF7	Yes	None	-	No Action	
Field Duplicate Sample ID:	Not collected				
QC Summary					
Validity of Data	Yes	None	-	No Action	No rejected data
Additional Notes:					

B.8 SDG J00252

SDG J00252 - Hexavalent Chromium QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** J00252	**W&C Project No.:**222007	
Medium: Sediment		**Analytes:** Hexavalent Chromium	
Samples: J17XL3, J17XL4, J17XL5, J17YV0, J17YW3, J17YW4, J17YW5, J17YW7			
Laboratory: Test America, Richland, WA	**Date Data Assessment Completed:** 2/3/2010 **Complete By:** KAM	**Sample Collection Date:** 12/8/2008	**Sample Analysis Date:** 12/8/2008

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No Action	
Detection Limits	Yes	None	-	No Action	
Blanks					
Preparation Blank	Yes	None	-	No Action	
Equipment Blank Sample ID:	Not collected				
Other QC Results					
LCS Results	Yes	None	-	No Action	
Matrix Spikes Sample ID: J17YW3	No	Cr+6 = 36.95%	J	Qualify positive and non-detect results as estimated (J)	Impacts to all samples.
Lab Duplicates Sample ID: J17YW3	Yes	None	-	No Action	
Field Duplicate Sample ID:	Not collected				
QC Summary					
Validity of Data	Yes	None	-	No Action	No rejected data
Additional Notes:					

B.9 SDG J00253

Validated by ELR - Included in Appendix F

B.10 SDG J00254

SDG J00254 - Hexavalent Chromium QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** J00254	**W&C Project No.:**222007	
Medium: Sediment		**Analytes:** Hexavalent Chromium	
Samples: J18039, J18040, J18041, J180B4, J180C0			
Laboratory: Test America, Richland, WA	**Date Data Assessment Completed:** 2/3/2010 **Complete By:** KAM	**Sample Collection Date:** 12/9/2008	**Sample Analysis Date:** 12/9/2008

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No Action	
Detection Limits	Yes	None	-	No Action	
Blanks					
Preparation Blank	Yes	None	-	No Action	
Equipment Blank Sample ID:	Not collected				
Other QC Results					
LCS Results	Yes	None	-	No Action	
Matrix Spikes Sample ID: J18041	Yes	None	-	No Action	
Lab Duplicates Sample ID: J18041	No	RPD = 123.3%	J	Qualify positive results as estimated (J)	Impacts to J18040, J180B4.
Field Duplicate Sample ID:	Not collected				
QC Summary					
Validity of Data	Yes	None	-	No Action	No rejected data
Additional Notes:					

B.11 SDG J00256

SDG J00256 - Hexavalent Chromium QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** J00256	**W&C Project No.:**222007	
Medium: Sediment		**Analytes:** Hexavalent Chromium	
Samples: J17VR4, J180B2, J180B3, J180B5, J180B6, J180B7, J180B8, J180C1			
Laboratory: Test America, Richland, WA	**Date Data Assessment Completed:** 2/3/2010 **Complete By:** KAM	**Sample Collection Date:** 12/9/2008	**Sample Analysis Date:** 12/11/2008

QC Parameter	**All in Spec.?**	**Non-Compliant Results**	**Flag**	**Action/ Notes**	**Associated Samples**
Holding Times	No	Samples exceeded holding time (2x).	J	Qualify results as estimated (J).	Impacts to all samples
Detection Limits	Yes	None	-	No Action	
Blanks					
Preparation Blank	Yes	None	-	No Action	
Equipment Blank Sample ID:	Not collected				
Other QC Results					
LCS Results	Yes	None	-	No Action	
Matrix Spikes Sample ID: J180B3	No	Cr+6 = 34.32%	J	Qualify positive and non-detect results as estimated (J)	Impacts to all samples
Lab Duplicates Sample ID: J180B3	Yes	None	-	No Action	
Field Duplicate Sample ID: J180B7/ J17VR4	Yes	None, both non-detect	-	No Action	
QC Summary					
Validity of Data	Yes	None	-	No Action	No rejected data
Additional Notes:					

B.12 SDG J00257

SDG J00257 - Hexavalent Chromium QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** J00257	**W&C Project No.:**222007	
Medium: Sediment		**Analytes:** Hexavalent Chromium	
Samples: J17XP9, J18048, J18049, J18050, J180J0, J180J1, J180J2, J180N5, J180N6, J180N7			
Laboratory: Test America, Richland, WA	**Date Data Assessment Completed:** 2/3/2010 **Complete By:** KAM	**Sample Collection Date:** 12/10/2008	**Sample Analysis Date:** 12/12/2008

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	No	Samples exceeded holding time (2x).	J	Qualify results as estimated (J).	Impacts to all samples
Detection Limits	Yes	None	-	No Action	
Blanks					
Preparation Blank	Yes	None	-	No Action	
Equipment Blank Sample ID:	Not collected				
Other QC Results					
LCS Results	Yes	None	-	No Action	Yes
Matrix Spikes Sample ID: J180N6	Yes	None	-	No Action	Yes
Lab Duplicates Sample ID: J180N6	Yes	None	-	No Action	Yes
Field Duplicate Sample ID:	Not collected				
QC Summary					
Validity of Data	Yes	None	-	No Action	No rejected data
Additional Notes:					

B.13 SDG J00258

SDG J00258 - Hexavalent Chromium QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** J00258	**W&C Project No.:**222007
Medium: Sediment		**Analytes:** Hexavalent Chromium
Samples: J180P5, J180P6, J180P8, J180P9, J180R5, J180R8, J180R9		

Laboratory: Test America, Richland, WA	**Date Data Assessment Completed:** 2/3/2010 **Complete By:** KAM	**Sample Collection Date:** 12/10/2008	**Sample Analysis Date:** 12/12/2008

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	No	Samples exceeded holding time (2x).	J	Qualify results as estimated (J).	Impacts to all samples
Detection Limits	Yes	None	-	No Action	
Blanks					
Preparation Blank	Yes	None	-	No Action	
Equipment Blank Sample ID:	Not collected				
Other QC Results					
LCS Results	Yes	None	-	No Action	
Matrix Spikes Sample ID: J180P6	No	Cr+6 = 33.68%	J	Qualify all positive and non-detect results as estimated (J)	Impacts to all samples
Lab Duplicates Sample ID: J180P6	Yes	None	-	No Action	
Field Duplicate Sample ID:	Not collected				
QC Summary					
Validity of Data	Yes	None	-	No Action	No rejected data
Additional Notes:					

B.14 SDG J00259

SDG J00259 - Hexavalent Chromium QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** J00259	**W&C Project No.:**222007	
Medium: Sediment		**Analytes:** Hexavalent Chromium	
Samples: J17VR3, J180L0, J180L1, J180L2, J180L3, J180L4, J180L5, J180L6, J180L7, J180L8, J180L9			
Laboratory: Test America, Richland, WA	**Date Data Assessment Completed:** 2/3/2010 **Complete By:** KAM	**Sample Collection Date:** 12/11/2008	**Sample Analysis Date:** 12/15/2008

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	No	Samples exceeded holding time (>2x).	R	Qualify non-detect results as rejected (R).	Impacts to all samples
Detection Limits	Yes	None	-	No Action	
Blanks					
Preparation Blank	Yes	None	-	No Action	
Equipment Blank Sample ID:	Not collected				
Other QC Results					
LCS Results	Yes	None	-	No Action	
Matrix Spikes Sample ID: J180L1	No	Cr+6 = 10.57%	R	Qualify non-detect results as rejected (R).	Impacts to all samples
Lab Duplicates Sample ID: J180L1	Yes	None	-	No Action	
Field Duplicate Sample ID: J180L6/ J17VR3	Yes	None, both non-detect	-	No Action	
QC Summary					
Validity of Data	No	Holding Time and Matrix Spike	R	Samples rejected based on matrix spike results and holding time was greater than 2x the requirement.	Impacts to all samples
Additional Notes:					

B.15 SDG J00262

SDG J00262 - Hexavalent Chromium QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** J00262	**W&C Project No.:**222007	
Medium: Sediment		**Analytes:** Hexavalent Chromium	
Samples: J17VR5, J180V0, J180V1, J180V2, J180V3, J180V4			
Laboratory: Test America, Richland, WA	**Date Data Assessment Completed:** 2/3/2010 **Complete By:** KAM	**Sample Collection Date:** 12/11/2008	**Sample Analysis Date:** 12/15/2008

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	No	Samples exceeded holding time (>2x).	R	Qualify non-detect results as rejected (R).	Impacts to all samples
Detection Limits	Yes	None	-	No Action	
Blanks					
Preparation Blank	Yes	None	-	No Action	
Equipment Blank Sample ID:	Not collected				
Other QC Results					
LCS Results	Yes	None	-	No Action	
Matrix Spikes Sample ID: J180V3	No	Cr+6 = 58.86%	J	Qualify positive and non-detect results as estimated (J).	Impacts to all samples
Lab Duplicates Sample ID: J180V3	Yes	None	-	No Action	
Field Duplicate Sample ID: J180V1/ J17VR5	Yes	None, both non-detect	-	No Action	
QC Summary					
Validity of Data	No	Holding Time	R	Samples rejected because holding time was greater than 2x the requirement.	Impacts to all samples
Additional Notes:					

B.16 SDG J00263

SDG J00263 - Hexavalent Chromium QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** J00263	**W&C Project No.:**222007	
Medium: Sediment		**Analytes:** Hexavalent Chromium	
Samples: J180X6, J180X7, J18169, J18170, J18171			
Laboratory: Test America, Richland, WA	**Date Data Assessment Completed:** 2/3/2010 **Complete By:** KAM	**Sample Collection Date:** 12/12/2008	**Sample Analysis Date:** 12/17/2008

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	No	Samples exceeded holding time (>2x).	J/R	Qualify positive results as estimated (J) and non-detect results as rejected (R).	Impacts to all samples. Samples J180X6, J18169, J18171 qualified as estimated J, and samples J180X7, J18170 rejected (R).
Detection Limits	Yes	None	-	No Action	
Blanks					
Preparation Blank	Yes	None	-	No Action	
Equipment Blank Sample ID:	Not collected				
Other QC Results					
LCS Results	Yes	None	-	No Action	
Matrix Spikes Sample ID: J18169	Yes	None	-	No Action	Impacts to all samples
Lab Duplicates Sample ID: J18169	Yes	None	-	No Action	
Field Duplicate Sample ID:	Not collected				
QC Summary					
Validity of Data	No	Holding Time	R	Samples rejected because holding time was greater than 2x the requirement.	Impacts to all samples
Additional Notes:					

B.17 SDG J00319

SDG J00319 - Hexavalent Chromium QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** J00319	**W&C Project No.:**222007	
Medium: Sediment		**Analytes:** Hexavalent Chromium	
Samples: J17XT5, J17XT8, J17XT9, J180X0, J180X1, J18178, J18179, J18180			
Laboratory: Test America, Richland, WA	**Date Data Assessment Completed:** 2/3/2010 **Complete By:** KAM	**Sample Collection Date:** 2/2/2009	**Sample Analysis Date:** 2/3/2009

QC Parameter	**All in Spec.?**	**Non-Compliant Results**	**Flag**	**Action/ Notes**	**Associated Samples**
Holding Times	Yes	None	-	No Action	
Detection Limits	Yes	None	-	No Action	
Blanks					
Preparation Blank	Yes	None	-	No Action	
Equipment Blank Sample ID:	Not collected				
Other QC Results					
LCS Results	Yes	None	-	No Action	
Matrix Spikes Sample ID: J18180	No	Cr+ = 55.96%	J	Qualify positive and non-detect results as estimated (J)	Impacts to all samples
Laboratory Duplicates Sample ID: J18180	Yes	None	-	No Action	
Field Duplicate Sample ID:	Not collected				
QC Summary					
Validity of Data	Yes	None	-	No Action	No rejected data
Additional Notes:					

B.18 SDG J00322

Validated by ELR - Included in Appendix F

B.19 SDG J00325

SDG J00325 - Hexavalent Chromium QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** J00325	**W&C Project No.:**222007	
Medium: Sediment		**Analytes:** Hexavalent Chromium	
Samples: J18938, J18939, J18940, J18941, J18942, J18943, J18944, J18945, J18946, J18947			
Laboratory: Test America, Richland, WA	**Date Data Assessment Completed:** 2/3/2010 **Complete By:** KAM	**Sample Collection Date:** 2/6/2009	**Sample Analysis Date:** 2/6/2009

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No Action	
Detection Limits	Yes	None	-	No Action	
Blanks					
Preparation Blank	Yes	None	-	No Action	
Equipment Blank Sample ID:	Not collected				
Other QC Results					
LCS Results	Yes	None	-	No Action	
Matrix Spikes Sample ID: J18946	Yes	None	-	No Action	
Laboratory Duplicates Sample ID: J18946	Yes	None	-	No Action	
Field Duplicates	Not Collected				
QC Summary					
Validity of Data	Yes	None	-	No Action	No rejected data
Additional Notes:					

B.20 SDG J00327

SDG J00327 - Hexavalent Chromium QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** J00327	**W&C Project No.:**222007	
Medium: Sediment		**Analytes:** Hexavalent Chromium	
Samples: J188H6, J188H7, J188H8, J188H9, J188J0, J188J1, J188J2, J188K8			
Laboratory: Test America, Richland, WA	**Date Data Assessment Completed:** 2/3/2010 **Complete By:** KAM	**Sample Collection Date:** 2/9/2009	**Sample Analysis Date:** 2/9/2009

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No Action	
Detection Limits	Yes	None	-	No Action	
Blanks					
Preparation Blank	Yes	None	-	No Action	
Equipment Blank Sample ID:	Not collected				
Other QC Results					
LCS Results	Yes	None	-	No Action	
Matrix Spikes Sample ID: J188H6	Yes	None	-	No Action	
Laboratory Duplicates Sample ID: J188H6	Yes	None	-	No Action	
Field Duplicates	Not collected				
QC Summary					
Validity of Data	Yes	None	-	No Action	No rejected data
Additional Notes:					

B.21 SDG J00330

SDG J00330 - Hexavalent Chromium QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** J00330	**W&C Project No.:**222007	
Medium: Sediment		**Analytes:** Hexavalent Chromium	
Samples: J17VT0, J188K5, J188K6, J188K7, J188L1, J188L2, J188L4			
Laboratory: Test America, Richland, WA	**Date Data Assessment Completed:** 2/3/2010 **Complete By:** KAM	**Sample Collection Date:** 2/9/2009	**Sample Analysis Date:** 2/10/2009

QC Parameter	**All in Spec.?**	**Non-Compliant Results**	**Flag**	**Action/ Notes**	**Associated Samples**
Holding Times	Yes	None	-	No Action	
Detection Limits	Yes	None	-	No Action	
Blanks					
Preparation Blank	Yes	None	-	No Action	
Equipment Blank Sample ID:	Not collected				
Other QC Results					
LCS Results	Yes	None	-	No Action	
Matrix Spikes Sample ID: J188K5	No	Cr+ = 54.49%	J	Qualify positive and non-detect results as estimated (J)	Impacts to all samples
Laboratory Duplicates Sample ID: J188K5	Yes	None	-	No Action	
Field Duplicates Sample IDs: J188K5/ J17VT0	Yes	None, both non-detect	-	No Action	
QC Summary					
Validity of Data	Yes	None	-	No Action	No rejected data
Additional Notes:					

B.22 SDG J00333

SDG J00333 - Hexavalent Chromium QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** J00333	**W&C Project No.:**222007	
Medium: Sediment		**Analytes:** Hexavalent Chromium	
Samples: J186F3, J186F4, J186F5, J186F6, J186H2			
Laboratory: Test America, Richland, WA	**Date Data Assessment Completed:** 2/3/2010 **Complete By:** LEM	**Sample Collection Date:** 2/10/2009	**Sample Analysis Date:** 2/10/2009

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No Action	
Detection Limits	Yes	None	-	No Action	
Blanks					
Preparation Blank	Yes	None	-	No Action	
Equipment Blank Sample ID:	Not collected				
Other QC Results					
LCS Results	Yes	None	-	No Action	
Matrix Spikes Sample ID: J186F3	Yes	None	-	No Action	
Laboratory Duplicates Sample ID: J186F3	Yes	None, both non-detect	-	No Action	
Field Duplicates Sample ID: J18628	Yes	None	-	No Action	
QC Summary					
Validity of Data	Yes	None	-	No Action	No rejected data
Additional Notes: Sample J18628 is a duplicate that was collected for sample J186F4. Sample J18628 was analyzed with SDG J00334.					

B.23 SDG J00334

SDG J00334 - Hexavalent Chromium QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** J00334	**W&C Project No.:**222007	
Medium: Sediment		**Analytes:** Hexavalent Chromium	
Samples: J18615, J18628, J186Y2, J186Y3, J186Y6, J18712			
Laboratory: Test America, Richland, WA	**Date Data Assessment Completed:** 2/3/2010 **Complete By:** LEM	**Sample Collection Date:** 2/10/2009	**Sample Analysis Date:** 2/11/2009

QC Parameter	**All in Spec.?**	**Non-Compliant Results**	**Flag**	**Action/ Notes**	**Associated Samples**
Holding Times	Yes	None	-	No Action	
Detection Limits	Yes	None	-	No Action	
Blanks					
Preparation Blank	Yes	None	-	No Action	
Equipment Blank Sample ID:	Not collected				
Other QC Results					
LCS Results	Yes	None	-	No Action	
Matrix Spikes Sample ID: J186Y2	No	Cr+6 = 4.8%	J/R	Qualify positive results as estimated (J) and ND result as rejected (R).	All samples. All samples are ND for hex chromium so all are rejected.
Laboratory Duplicates Sample ID: J186Y2	Yes	None, both non-detect	-	No Action	
Field Duplicates Sample IDs: J186Y2/ J18615 J18628	Yes	None, both non-detect	-	No Action	
QC Summary					
Validity of Data	No	Matrix Spike	R	Samples were rejected based on matrix spike results.	Impacts to all samples
Additional Notes:					

B.24 SDG J00335

SDG J00335 - Hexavalent Chromium QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** J00335	**W&C Project No.:**222007	
Medium: Sediment		**Analytes:** Hexavalent Chromium	
Samples: J18616, J18773, J18774, J18776, J187F3			
Laboratory: Test America, Richland, WA	**Date Data Assessment Completed:** 2/3/2010 **Complete By:** LEM	**Sample Collection Date:** 2/11/2009	**Sample Analysis Date:** 2/12/2009

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No Action	
Detection Limits	Yes	None	-	No Action	
Blanks					
Preparation Blank	Yes	None	-	No Action	
Equipment Blank Sample ID:	Not collected				
Other QC Results					
LCS Results	Yes	None	-	No Action	
Matrix Spikes Sample ID: J187F3	No	Cr+6 = 63.54%	J	Qualify non-detect results as estimated (J).	Impacts to all samples
Laboratory Duplicates Sample ID: J187F3	Yes	None, both non-detect	-	No Action	
Field Duplicates Sample IDs: J187F3/J18616	Yes	None	-	No Action	
QC Summary					
Validity of Data	Yes	None	-	No Action	No rejected data
Additional Notes:					

B.25 SDG J00337

Validated by ELR - Included in Appendix F

B.26 SDG J00338

SDG J00338 - Hexavalent Chromium QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** J00338	**W&C Project No.:**222007	
Medium: Sediment		**Analytes:** Hexavalent Chromium	
Samples: J18781, J187F6, J187F7, J187F9, J187L1, J187L2, J187L3, J187L4, J187L5, J18800, J18803			
Laboratory: Test America, Richland, WA	**Date Data Assessment Completed:** 2/3/2010 **Complete By:** LEM	**Sample Collection Date:** 2/12/2009	**Sample Analysis Date:** 2/13/2009

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No Action	
Detection Limits	Yes	None	-	No Action	
Blanks					
Preparation Blank	Yes	None	-	No Action	
Equipment Blank Sample ID:	Not collected				
Other QC Results					
LCS Results	Yes	None	-	No Action	
Matrix Spikes Sample ID: J18800	No	Cr+6 = 54%	J	Qualify positive and non-detect results as estimated (J).	Impacts to all samples
Laboratory Duplicates Sample ID: J18800	Yes	None, both non-detect	-	No Action	
Field Duplicates	Not collected				
QC Summary					
Validity of Data	Yes	None	-	No Action	No rejected data
Additional Notes:					

B.27 SDG J00339

SDG J00339 - Hexavalent Chromium QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** J00339	**W&C Project No.:**222007	
Medium: Sediment		**Analytes:** Hexavalent Chromium	
Samples: J18624, J188D4, J18914, J18915, J18916, J18917, J18918, J18919, J18920, J18921, J18922, J18923, J18924, J18925			
Laboratory: Test America, Richland, WA	**Date Data Assessment Completed:** 2/3/2010 **Complete By:** LEM	**Sample Collection Date:** 2/13/2009	**Sample Analysis Date:** 2/13/2009

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No Action	
Detection Limits	Yes	None	-	No Action	
Blanks					
Preparation Blank	Yes	None	-	No Action	
Equipment Blank Sample ID:	Not collected				
Other QC Results					
LCS Results	Yes	None	-	No Action	
Matrix Spikes Sample ID: J18914	Yes	None	-	No Action	
Laboratory Duplicates Sample ID: J18914	Yes	None, both non-detect	-	No Action	
Field Duplicates Sample IDs: J18916/ J18624 J18923/ J18924	Yes	None	-	No Action	
QC Summary					
Validity of Data	Yes	None	-	No Action	No rejected data
Additional Notes:					

B.28 SDG J00340

SDG J00340 - Hexavalent Chromium QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** J00340	**W&C Project No.:**222007
Medium: Sediment		**Analytes:** Hexavalent Chromium
Samples: J18630, J187Y9, J187P3, J187P4, J187X2, J187T3, J187T1, J187T2, J187T0, J18801, J18802, J18804, J18805, J18806, J187R5, J187R6, J187R7, J187R8, J187R9		

Laboratory: Test America, Richland, WA	**Date Data Assessment Completed:** 2/3/2010 **Complete By:** LEM	**Sample Collection Date:** 2/16/2009	**Sample Analysis Date:** 2/17/2009

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No Action	
Detection Limits	Yes	None	-	No Action	
Blanks					
Preparation Blank	Yes	None	-	No Action	
Equipment Blank Sample ID:	Not collected				
Other QC Results					
LCS Results	Yes	None	-	No Action	
Matrix Spikes Sample ID: J187R7	No	Cr+6 = 40%	J	Qualify non-detect results as estimated (J).	Impacts to all samples
Laboratory Duplicates Sample ID: J187R7	Yes	None, both non-detect	-	No Action	
Field Duplicates Sample IDs: J187Y9/ J18630	Yes	None	-	No Action	
QC Summary					
Validity of Data	Yes	None	-	No Action	No rejected data
Additional Notes:					

B.29 SDG J00342

SDG J00342 - Hexavalent Chromium QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** J00342	**W&C Project No.:**222007	
Medium: Sediment		**Analytes:** Hexavalent Chromium	
Samples: J18858, J18XP4, J18XP5, J18XP6, J18854, J18855, J18856, J18857, J18859, J18860, J188F3, J188F4, J18861, J18862, J18623, J18874, J18875, J18817, J18818, J18819			
Laboratory: Test America, Richland, WA	**Date Data Assessment Completed:** 2/3/2010 **Complete By:** LEM	**Sample Collection Date:** 2/17/2009	**Sample Analysis Date:** 2/18/2009

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No Action	
Detection Limits	Yes	None	-	No Action	
Blanks					
Preparation Blank	Yes	None	-	No Action	
Equipment Blank Sample ID:	Not collected				
Other QC Results					
LCS Results	Yes	None	-	No Action	
Matrix Spikes Sample ID: J18858	No	Cr+6 = 25.31%	J/R	Qualify positive results as estimated (J) and non-detect results as rejected (R).	Impacts to all samples. Samples J18862 & J18874 qualified as estimated (J), and remaining samples rejected (R).
Laboratory Duplicates Sample ID: J18858	Yes	None, both non-detect	-	No Action	
Field Duplicates Sample IDs: J18874/J18623	No	Sample result is greater than 2x the RDL.	-	No Action based on guidance	
QC Summary					
Validity of Data	No	Matrix Spike	R	Some samples were rejected based on matrix spike results.	Impacts to all samples
Additional Notes:					

B.30 SDG J00343

SDG J00343 - Hexavalent Chromium QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** J00343	**W&C Project No.:**222007	
Medium: Sediment		**Analytes:** Hexavalent Chromium	
Samples: J18820, J18830, J18831, J18832, J18877			
Laboratory: Test America, Richland, WA	**Date Data Assessment Completed:** 2/3/2010 **Complete By:** LEM	**Sample Collection Date:** 2/17/2009	**Sample Analysis Date:** 2/18/2009

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No Action	
Detection Limits	Yes	None	-	No Action	
Blanks					
Preparation Blank	Yes	None	-	No Action	
Equipment Blank Sample ID:	Not collected				
Other QC Results					
LCS Results	Yes	None	-	No Action	
Matrix Spikes Sample ID: J18830	Yes	None	-	No Action	
Laboratory Duplicates Sample ID: J18830	No	RPD = 67.5%	J	Qualify positive results as estimated (J).	Impacts to all samples above.
Field Duplicates	Not collected				
QC Summary					
Validity of Data	Yes	None	-	No Action	No rejected data
Additional Notes:					

B.31 SDG J00348

SDG J00348 - Hexavalent Chromium QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** J00348	**W&C Project No.:**222007
Medium: Sediment		**Analytes:** Hexavalent Chromium
Samples: J18896, J188B5, J18970, J18972, J18969, J18980, J18981, J18982, J18892, J18893, J18895, J18899, J17YV3		

Laboratory: Test America, Richland, WA	**Date Data Assessment Completed:** 2/4/2010 **Complete By:** LEM	**Sample Collection Date:** 2/18/2009	**Sample Analysis Date:** 2/19/2009

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No Action	
Detection Limits	Yes	None	-	No Action	
Blanks					
Preparation Blank	Yes	None	-	No Action	
Equipment Blank Sample ID:	Not collected				
Other QC Results					
LCS Results	Yes	None	-	No Action	
Matrix Spikes Sample ID: J18896	No	Cr+6 = 61%	J	Qualify positive and non-detect results as estimated (J).	Impacts to all samples
Laboratory Duplicates Sample ID: J18896	Yes	None	-	No Action	
Field Duplicates	Not collected				
QC Summary					
Validity of Data	Yes	None	-	No Action	No rejected data
Additional Notes:					

B.32 SDG J00349

SDG J00349 - Hexavalent Chromium QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** J00349	**W&C Project No.:**222007	
Medium: Sediment		**Analytes:** Hexavalent Chromium	
Samples: J18897, J17YV1, J17YV2, J188D0, J188B4, J188D1, J18894, J188C8, J189F2, J18898, J188C9, J189F1			
Laboratory: Test America, Richland, WA	**Date Data Assessment Completed:** 2/4/2010 **Complete By:** LEM	**Sample Collection Date:** 2/18/2009	**Sample Analysis Date:** 2/19/2009

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No Action	
Detection Limits	Yes	None	-	No Action	
Blanks					
Preparation Blank	Yes	None	-	No Action	
Equipment Blank Sample ID:	Not collected				
Other QC Results					
LCS Results	Yes	None	-	No Action	
Matrix Spikes Sample ID: J18897	No	Cr+6 = 60.77%	J	Qualify positive and non-detect results as estimated (J).	Impacts to all samples
Laboratory Duplicates Sample ID: J18897	Yes	None	-	No Action	
Field Duplicates	Not collected				
QC Summary					
Validity of Data	Yes	None	-	No Action	No rejected data
Additional Notes:					

B.33 SDG J00350

Validated by ELR - Included in Appendix F

B.34 SDG J00351

SDG J00351 - Hexavalent Chromium QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** J00351	**W&C Project No.:**222007	
Medium: Sediment		**Analytes:** Hexavalent Chromium	
Samples: J189C7, J189C8, J189C9, J189K9, J189L2, J189L4, J189L5			
Laboratory: Test America, Richland, WA	**Date Data Assessment Completed:** 2/4/2010 **Complete By:** LEM	**Sample Collection Date:** 2/19/2009	**Sample Analysis Date:** 2/20/2009

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No Action	
Detection Limits	Yes	None	-	No Action	
Blanks					
Preparation Blank	Yes	None	-	No Action	
Equipment Blank Sample ID:	Not collected				
Other QC Results					
LCS Results	Yes	None	-	No Action	
Matrix Spikes Sample ID: J189C7	Yes	None	-	No Action	
Laboratory Duplicates Sample ID: J189C7	No	RPD = 165%	J	Qualify positive results as estimated (J).	Impacts to all samples above.
Field Duplicates	Not collected				
QC Summary					
Validity of Data	Yes	None	-	No Action	No rejected data
Additional Notes:					

B.35 SDG J00352

SDG J00352 - Hexavalent Chromium QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** J00352	**W&C Project No.:**222007	
Medium: Sediment		**Analytes:** Hexavalent Chromium	
Samples: J189T1, J189V3, J189V1, J189R6, J189T9, J189R5, J189T0, J189V2, J189V0, J18625			
Laboratory: Test America, Richland, WA	**Date Data Assessment Completed:** 2/4/2010 **Complete By:** LEM	**Sample Collection Date:** 2/20/2009	**Sample Analysis Date:** 2/20/2009

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No Action	
Detection Limits	Yes	None	-	No Action	
Blanks					
Preparation Blank	Yes	None	-	No Action	
Equipment Blank Sample ID:	Not collected				
Other QC Results					
LCS Results	Yes	None	-	No Action	
Matrix Spikes Sample ID: J189T1	Yes	None	-	No Action	
Laboratory Duplicates Sample ID: J189T1	No	RPD = 84.7%	J	Qualify positive results as estimated (J).	Impacts to all samples above.
Field Duplicates Sample IDs: J189T9/J18625	Yes	None, both non-detect	-	No Action	
QC Summary					
Validity of Data	Yes	None	-	No Action	No rejected data
Additional Notes:					

B.36 SDG J00355

SDG J00355 - Hexavalent Chromium QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** J00355	**W&C Project No.:**222007
Medium: Sediment		**Analytes:** Hexavalent Chromium
Samples: J180M5, J180M6, J180M7, J180M8, J180M9		

Laboratory: Test America, Richland, WA	**Date Data Assessment Completed:** 2/4/2010 **Complete By:** LEM	**Sample Collection Date:** 2/23/2009	**Sample Analysis Date:** 2/24/2009

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No Action	
Detection Limits	Yes	None	-	No Action	
Blanks					
Preparation Blank	Yes	None	-	No Action	
Equipment Blank Sample ID:	Not collected				
Other QC Results					
LCS Results	Yes	None	-	No Action	
Matrix Spikes Sample ID: J180M5	No	Cr+6 = 1%	J/R	Qualify positive results as estimated (J) and non-detect results as rejected (R).	Impacts to all samples. Sample J180M6 qualified as estimated (J), and remaining samples rejected (R).
Laboratory Duplicates Sample ID: J180M5	Yes	None, both non-detect	-	No Action	
Field Duplicates	Not collected				
QC Summary					
Validity of Data	No	Matrix Spike	R	Some samples were rejected based on matrix spike results.	Impacts to all samples
Additional Notes:					

B.37 SDG J00360

SDG J00360 - Hexavalent Chromium QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** J00360	**W&C Project No.:**222007	
Medium: Sediment		**Analytes:** Hexavalent Chromium	
Samples: J17YY9, J18000, J18001			
Laboratory: Test America, Richland, WA	**Date Data Assessment Completed:** 2/5/2010 **Complete By:** LEM	**Sample Collection Date:** 2/26/2009	**Sample Analysis Date:** 2/27/2009

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No Action	
Detection Limits	Yes	None	-	No Action	
Blanks					
Preparation Blank	Yes	None	-	No Action	
Equipment Blank Sample ID:	Not collected				
Other QC Results					
LCS Results	Yes	None	-	No Action	
Matrix Spikes Sample ID: J17YY9	No	Cr+6 = 69%	J	Qualify positive and non-detect results as estimated (J).	Impacts to all samples
Laboratory Duplicates Sample ID: J17YY9	Yes	None, both non-detect	-	No Action	
Field Duplicates	Not collected				
QC Summary					
Validity of Data	Yes	None	-	No Action	No rejected data
Additional Notes:					

B.38 SDG J00361

SDG J00361 - Hexavalent Chromium QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** J00361	**W&C Project No.:**222007	
Medium: Sediment		**Analytes:** Hexavalent Chromium	
Samples: J18J52			
Laboratory: Test America, Richland, WA	**Date Data Assessment Completed:** 2/5/2010 **Complete By:** LEM	**Sample Collection Date:** 2/27/2009	**Sample Analysis Date:** 2/27/2009

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No Action	
Detection Limits	Yes	None	-	No Action	
Blanks					
Preparation Blank	Yes	None	-	No Action	
Equipment Blank Sample ID:	Not collected				
Other QC Results					
LCS Results	Yes	None	-	No Action	
Matrix Spikes Sample ID: J18J52	No	Cr+6 = 59%	J	Qualify positive and non-detect results as estimated (J).	Impacts to sample J18J52
Laboratory Duplicates Sample ID: J18J52	Yes	None, both non-detect	-	No Action	
Field Duplicates	Not collected				
QC Summary					
Validity of Data	Yes	None	-	No Action	No rejected data
Additional Notes:					

B.39 SDG J00368

SDG J00368 - Hexavalent Chromium QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** J00368	**W&C Project No.:**222007	
Medium: Sediment		**Analytes:** Hexavalent Chromium	
Samples: J186B8, J189N8, J18KJ6, J18KJ7, J18KJ8, J18KJ2, J18KJ1			
Laboratory: Test America, Richland, WA	**Date Data Assessment Completed:** 2/5/2010 **Complete By:** LEM	**Sample Collection Date:** 3/4/2009	**Sample Analysis Date:** 3/5/2009

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No Action	
Detection Limits	Yes	None	-	No Action	
Blanks					
Preparation Blank	Yes	None	-	No Action	
Equipment Blank Sample ID: J186B8	Yes	None	-	No Action based on guidance	
Other QC Results					
LCS Results	Yes	None	-	No Action	
Matrix Spikes Sample ID: J186B8	Yes	None	-	No Action	
Laboratory Duplicates Sample ID: J186B8	Yes	None, both non-detect	-	No Action	
Field Duplicates	Not collected				
QC Summary					
Validity of Data	Yes	None	-	No Action	No rejected data
Additional Notes:					

B.40 SDG J00371

SDG J00371 - Hexavalent Chromium QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** J00371	**W&C Project No.:**222007
Medium: Sediment		**Analytes:** Hexavalent Chromium
Samples: J17XN0, J17XM9, J17XM7, J17XM6, J17XM8		

Laboratory: Test America, Richland, WA	**Date Data Assessment Completed:** 2/5/2010 **Complete By:** LEM	**Sample Collection Date:** 3/5/2009	**Sample Analysis Date:** 3/5/2009

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No Action	
Detection Limits	Yes	None	-	No Action	
Blanks					
Preparation Blank	Yes	None	-	No Action	
Equipment Blank Sample ID:	Not collected				
Other QC Results					
LCS Results	Yes	None	-	No Action	
Matrix Spikes Sample ID: J17XN0	No	Cr+6 = 30%	J	Qualify positive and non-detect results as estimated (J).	Impacts to all samples
Laboratory Duplicates Sample ID: J17XN0	Yes	None, both non-detect	-	No Action	
Field Duplicates	Not collected				
QC Summary					
Validity of Data	Yes	None	-	No Action	No rejected data
Additional Notes:					

B.41 SDG J00421

SDG J00421 - Hexavalent Chromium QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** J00421	**W&C Project No.:**222007	
Medium: Sediment		**Analytes:** Hexavalent Chromium	
Samples: J18KN3, J18KN4, J18KN5, J18KN6, J18L01, J18KY4			
Laboratory: Test America, Richland, WA	**Date Data Assessment Completed:** 2/5/2010 **Complete By:** LEM	**Sample Collection Date:** 3/25/2009	**Sample Analysis Date:** 3/25/2009

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No Action	
Detection Limits	Yes	None	-	No Action	
Blanks					
Preparation Blank	Yes	None	-	No Action	
Equipment Blank Sample ID:	Not collected				
Other QC Results					
LCS Results	Yes	None	-	No Action	
Matrix Spikes Sample ID: J18KN5	Yes	None	-	No Action	
Laboratory Duplicates Sample ID: J18KN5	Yes	None, both non-detect	-	No Action	
Field Duplicates	Not collected				
QC Summary					
Validity of Data	Yes	None	-	No Action	No rejected data
Additional Notes:					

B.42 SDG J00422

SDG J00422 - Hexavalent Chromium QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** J00422	**W&C Project No.:**222007
Medium: Sediment		**Analytes:** Hexavalent Chromium
Samples: J18KP7, J18KP5, J18KY1, J18KY0, J18LD8, J18LD4, J18LD9, J18KX8, J18KX7, J18KX0, J18LF0, J18LD6, J18KX9, J18LD7, J18LD5		

Laboratory: Test America, Richland, WA	**Date Data Assessment Completed:** 2/5/2010 **Complete By:** LEM	**Sample Collection Date:** 3/25/2009	**Sample Analysis Date:** 3/26/2009

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No Action	
Detection Limits	Yes	None	-	No Action	
Blanks					
Preparation Blank	Yes	None	-	No Action	
Equipment Blank Sample ID:	Not collected				
Other QC Results					
LCS Results	Yes	None	-	No Action	
Matrix Spikes Sample ID: J18KP7	Yes	None	-	No Action	
Laboratory Duplicates Sample ID: J18KP7	Yes	None	-	No Action	
Field Duplicates	Not collected				
QC Summary					
Validity of Data	Yes	None	-	No Action	No rejected data
Additional Notes:					

B.43 SDG J00423

SDG J00423 - Hexavalent Chromium QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** J00423	**W&C Project No.:**222007
Medium: Sediment		**Analytes:** Hexavalent Chromium
Samples: J18KR8, J18KT5, J18KT6, J18KT7, J18KT8, J18KT9, J18L04, J18LD0, J18M07, J18M14, J18M15, J18M16, J18M18		

Laboratory: Test America, Richland, WA	**Date Data Assessment Completed:** 2/5/2010 **Complete By:** LEM	**Sample Collection Date:** 3/26/2009	**Sample Analysis Date:** 3/26/2009

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No Action	
Detection Limits	Yes	None	-	No Action	
Blanks					
Preparation Blank	Yes	None	-	No Action	
Equipment Blank Sample ID:	Not collected				
Other QC Results					
LCS Results	Yes	None	-	No Action	
Matrix Spikes Sample ID: J18KR8	No	Cr+6 = 30%	J	Qualify positive and non-detect results as estimated (J).	Impacts to all samples
Laboratory Duplicates Sample ID: J18KR8	Yes	None, both non-detect	-	No Action	
Field Duplicates	Not collected				
QC Summary					
Validity of Data	Yes	None	-	No Action	No rejected data
Additional Notes:					

B.44 SDG J00424

SDG J00424 - Hexavalent Chromium QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** J00424	**W&C Project No.:**222007	
Medium: Sediment		**Analytes:** Hexavalent Chromium	
Samples: J18MJ0, J18MJ1, J18MH3, J18L03, J18M17, J18LD1, J18M26, J18M27, J18M30			
Laboratory: Test America, Richland, WA	**Date Data Assessment Completed:** 2/5/2010 **Complete By:** LEM	**Sample Collection Date:** 3/26-3/27/2009	**Sample Analysis Date:** 3/27/2009

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No Action	
Detection Limits	Yes	None	-	No Action	
Blanks					
Preparation Blank	Yes	None	-	No Action	
Equipment Blank Sample ID:	Not collected				
Other QC Results					
LCS Results	Yes	None	-	No Action	
Matrix Spikes Sample ID: J18M27	No	Cr+6 = 42%	J	Qualify positive and non-detect results as estimated (J).	Impacts to all samples
Laboratory Duplicates Sample ID: J18M27	Yes	None, both non-detect	-	No Action	
Field Duplicates	Not collected				
QC Summary					
Validity of Data	Yes	None	-	No Action	No rejected data
Additional Notes:					

B.45 SDG J00425

SDG J00425 - Hexavalent Chromium QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** J00425	**W&C Project No.:**222007	
Medium: Sediment		**Analytes:** Hexavalent Chromium	
Samples: J18MK6, J18MK4, J18MK5, J18MK3, J18MJ6			
Laboratory: Test America, Richland, WA	**Date Data Assessment Completed:** 2/5/2010 **Complete By:** LEM	**Sample Collection Date:** 3/27/2009	**Sample Analysis Date:** 3/27/2009

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No Action	
Detection Limits	Yes	None	-	No Action	
Blanks					
Preparation Blank	Yes	None	-	No Action	
Equipment Blank Sample ID:	Not collected				
Other QC Results					
LCS Results	Yes	None	-	No Action	
Matrix Spikes Sample ID: J18MK6	No	Cr+6 = 8%	J/R	Qualify positive results as estimated (J) and non-detect results as rejected (R).	Impacts to all samples. Sample J18MK6 rejected (R), and remaining samples qualified as estimated (J).
Laboratory Duplicates Sample ID: J18MK6	Yes	None, both non-detect	-	No Action	
Field Duplicates	Not collected				
QC Summary					
Validity of Data	No	Matrix Spike	R	One sample was rejected based on matrix spike results.	J18MK6
Additional Notes:					

B.46 SDG J00426

SDG J00426 - Hexavalent Chromium QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** J00426	**W&C Project No.:**222007	
Medium: Sediment		**Analytes:** Hexavalent Chromium	
Samples: J18MN7, J18MN0, J18ML7			
Laboratory: Test America, Richland, WA	**Date Data Assessment Completed:** 2/5/2010 **Complete By:** LEM	**Sample Collection Date:** 3/30/2009	**Sample Analysis Date:** 3/31/2009

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No Action	
Detection Limits	Yes	None	-	No Action	
Blanks					
Preparation Blank	Yes	None	-	No Action	
Equipment Blank Sample ID:	Not collected				
Other QC Results					
LCS Results	Yes	None	-	No Action	
Matrix Spikes Sample ID: J18MN7	Yes	None	-	No Action	
Laboratory Duplicates Sample ID: J18MN7	Yes	None	-	No Action	
Field Duplicates	Not collected				
QC Summary					
Validity of Data	Yes	None	-	No Action	No rejected data
Additional Notes:					

B.47 SDG J00431

SDG J00431 - Hexavalent Chromium QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** J00431	**W&C Project No.:**222007	
Medium: Sediment		**Analytes:** Hexavalent Chromium	
Samples: J18MR7, J18MT4, J18MT5, J18MV0			
Laboratory: Test America, Richland, WA	**Date Data Assessment Completed:** 2/5/2010 **Complete By:** LEM	**Sample Collection Date:** 4/2/2009	**Sample Analysis Date:** 4/3/2009

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No Action	
Detection Limits	Yes	None	-	No Action	
Blanks					
Preparation Blank	Yes	None	-	No Action	
Equipment Blank Sample ID:	Not collected				
Other QC Results					
LCS Results	Yes	None	-	No Action	
Matrix Spikes Sample ID: J18MR7	No	Cr+6 = 43%	J	Qualify positive and non-detect results as estimated (J).	Impacts to all samples
Laboratory Duplicates Sample ID: J18MR7	Yes	None, both non-detect	-	No Action	
Field Duplicates	Not collected				
QC Summary					
Validity of Data	Yes	None	-	No Action	No rejected data
Additional Notes:					

B.48 SDG J00435

SDG J00435 - Hexavalent Chromium QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** J00435	**W&C Project No.:**222007
Medium: Sediment		**Analytes:** Hexavalent Chromium
Samples: J18L30, J18L18, J18L14, J18L27, J18L28, J18L29, J18MP3, J18L26, J18MB3, J18MB4, J18MB1, J18L25, J18MB8		

Laboratory: Test America, Richland, WA	**Date Data Assessment Completed:** 2/5/2010 **Complete By:** LEM	**Sample Collection Date:** 4/6-4/7/2009	**Sample Analysis Date:** 4/8/2009

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	No	Several samples exceeded holding times (2x).	J	Qualify results as estimated (J).	J18L18, J18L14 J18L25, J18MB3 J18MB4, J18MB1 J18MB8
Detection Limits	Yes	None	-	No Action	
Blanks					
Preparation Blank	Yes	None	-	No Action	
Equipment Blank Sample ID:	Not collected				
Other QC Results					
LCS Results	Yes	None	-	No Action	
Matrix Spikes Sample ID: J18L30	Yes	None	-	No Action	
Laboratory Duplicates Sample ID: J18L30	Yes	None, both non detect	-	No Action	
Field Duplicates	Not collected				
QC Summary					
Validity of Data	Yes	None	-	No Action	No rejected data
Additional Notes:					

B.49 SDG J00436

SDG J00436 - Hexavalent Chromium QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** J00436	**W&C Project No.:**222007
Medium: Sediment		**Analytes:** Hexavalent Chromium
Samples: J18M99, J18L17, J18MB0, J18L15, J18L16, J18MC0, J18MC1, J18MB7, J18MB6, J18MB5, J18MB9, J18MB2, J18MC1-A		

Laboratory: Test America, Richland, WA	**Date Data Assessment Completed:** 2/8/2010 **Complete By:** LEM	**Sample Collection Date:** 4/6-4/7/2009	**Sample Analysis Date:** 4/7/2009

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No Action	
Detection Limits	Yes	None	-	No Action	
Blanks					
Preparation Blank	Yes	None	-	No Action	
Equipment Blank Sample ID:	Not collected				
Other QC Results					
LCS Results	Yes	None	-	No Action	
Matrix Spikes Sample ID: J18M99	Yes	None	-	No Action	
Laboratory Duplicates Sample ID: J18M99	Yes	None, both non detect	-	No Action	
Field Duplicates	Not collected				
QC Summary					
Validity of Data	Yes	None	-	No Action	No rejected data
Additional Notes:					

B.50 SDG J00438

SDG J00438 - Hexavalent Chromium QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** J00438	**W&C Project No.:**222007
Medium: Sediment		**Analytes:** Hexavalent Chromium
Samples: J18L71, J18L38, J18L72, J18L73, J18L37, J18MB6-A, J18MB8-A, J18MB7-A, J18MB9-A, J18MC0-A, J18M98, J18L41, J18L42, J18L40, J18L39		

Laboratory: Test America, Richland, WA	**Date Data Assessment Completed:** 2/8/2010 **Complete By:** LEM	**Sample Collection Date:** 4/7-4/8/2009	**Sample Analysis Date:** 4/8/2009

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No Action	
Detection Limits	Yes	None	-	No Action	
Blanks					
Preparation Blank	Yes	None	-	No Action	
Equipment Blank Sample ID:	Not collected				
Other QC Results					
LCS Results	Yes	None	-	No Action	
Matrix Spikes Sample ID: J18L71	No	Cr+6 = 46%	J	Qualify positive and non-detect results as estimated (J).	Impacts to all samples
Laboratory Duplicates Sample ID: J18L71	Yes	None, both non-detect	-	No Action	
Field Duplicates	Not collected				
QC Summary					
Validity of Data	Yes	None	-	No Action	No rejected data
Additional Notes:					

B.51 SDG J00544

SDG J00544 - Hexavalent Chromium QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** J00544	**W&C Project No.:**222007	
Medium: Sediment		**Analytes:** Hexavalent Chromium	
Samples: J18X38, J18X39, J18X40, J18X41, J18X42, J18X22, J18X21, J18X59, J18X53, J18X52, J18X51, J18X18, J18X19, J18X20, J18X54, J18X55			
Laboratory: Test America, Richland, WA	**Date Data Assessment Completed:** 2/8/2010 **Complete By:** LEM	**Sample Collection Date:** 6/9/2009	**Sample Analysis Date:** 6/10/2009

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	No	Several samples exceeded holding time (< 2x).	J	Qualify results as estimated (J).	J18X59, J18X51, J18X53, J18X18, J18X52, J18X19, J18X54, J18X55
Detection Limits	Yes	None	-	No Action	
Blanks					
Preparation Blank	Yes	None	-	No Action	
Equipment Blank Sample ID:	Not collected				
Other QC Results					
LCS Results	Yes	None	-	No Action	
Matrix Spikes Sample ID: J18X38	No	Cr+6 = 1%	J/R	Qualify positive results as estimated (J) and non-detect results as rejected (R).	Impacts to all samples. All samples rejected (R).
Laboratory Duplicates Sample ID: J18X38	Yes	None, both non-detect	-	No Action	
Field Duplicates Sample IDs: J18X52/ J18X59	Yes	None, both non-detect	-	No Action	
QC Summary					
Validity of Data	No	Matrix Spike	R	Samples were rejected based on matrix spike results.	Impacts to all samples
Additional Notes:					

B.52 SDG J00546

SDG J00546 - Hexavalent Chromium QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** J00546	**W&C Project No.:**222007	
Medium: Sediment		**Analytes:** Hexavalent Chromium	
Samples: J18X34, J18X35, J18X36, J18X37, J18X33, J18X58			
Laboratory: Test America, Richland, WA	**Date Data Assessment Completed:** 2/8/2010 **Complete By:** LEM	**Sample Collection Date:** 6/10/2009	**Sample Analysis Date:** 6/11/2009

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	No	Several samples exceeded holding times.	J	Qualify results as estimated (J).	J18X35, J18X36 and J18X37
Detection Limits	Yes	None	-	No Action	
Blanks					
Preparation Blank	Yes	None	-	No Action	
Equipment Blank Sample ID:	Not collected				
Other QC Results					
LCS Results	Yes	None	-	No Action	
Matrix Spikes Sample ID: J18X34	No	Cr+6 = 16%	J/R	Qualify positive results as estimated (J) and non-detect results as rejected (R).	Impacts to all samples. All samples rejected (R).
Laboratory Duplicates Sample ID: J18X34	Yes	None, both non-detect	-	No Action	
Field Duplicates Sample IDs: J18X33/ J18X58	Yes	None, both non-detect	-	No Action	
QC Summary					
Validity of Data	No	Matrix Spike	R	Samples were rejected based on matrix spike results.	Impacts to all samples
Additional Notes:					

B.53 SDG K1479

SDG K1479 - VOC QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1479	**W&C Project No.:**222007	
Medium: Sediment		**Analytes:** VOA	
Samples: J17VY1, J17VY3, J17V93, J17V94, J17V95, J17V96			
Laboratory: Lionville	**Date Data Assessment Completed:** 2/05/2010 **Complete By:** RDD	**Sample Collection Date:** 12/01/2008	**Sample Analysis Date:** 12/5-6/2008

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No action	
Detection Limits	No	The detection limits for 1,1,1-trichloroethane and methylene chloride exceed the specifications in the work plan.	-	No action	
Blanks					
Blanks - Method	No	MeCl$_2$ = 7 ug/kg	UJ	Qualify positive sample results < 10x blank concentration as non-detect (UJ) and raise limit to RDL.	Impacts to all samples.
Equipment Blank Sample ID:	Not collected				
Trip Blank Sample ID: J17VY1 J17VY3	No	MeCl$_2$ = 6 ug/kg MeCl$_2$ = 6 ug/kg		No Action based on guidance	
Other QC Results					
Surrogate Recoveries	No	BFB = 130%	-	Qualify positive results as estimated (J).	J17V93 No impacts since all compounds are ND.
LCS Results	Yes	None	-	No action	
Matrix Spikes Sample ID: J17V96	Yes	None	-	No action	
Lab Duplicates Sample ID:	Not analyzed				
Field Duplicate Sample ID:	Not collected				

SDG K1479 - VOC QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA		**SDG No.:** K1479	**W&C Project No.:**222007
Medium: Sediment			**Analytes:** VOA
Samples: J17VY1, J17VY3, J17V93, J17V94, J17V95, J17V96			
Laboratory: Lionville	**Date Data Assessment Completed:** 2/05/2010 **Complete By:** RDD	**Sample Collection Date:** 12/01/2008	**Sample Analysis Date:** 12/5-6/2008

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Summary					
Validity of Data	No but none of the data were rejected.				
Additional Notes:					

SDG K1479 - SVOC QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1479	**W&C Project No.:**222007	
Medium: Sediment		**Analytes:** SVOCs	
Samples: J17V93, J17V94, J17V95, J17V96, J17VB7, J17VB9, J17VC0, J17VC1, J17VC2, J17VC3, J17VC4			
Laboratory: Lionville	**Date Data Assessment Completed:** 02/05/2010 **Complete By:** RDD	**Sample Collection Date:** 12/01/2008	**Sample Analysis Date:** 12/24/2008

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No action	
Detection Limits	No	2,4-dinitrophenol, 2-nitroaniline, 3-nitroaniline, 4-nitroaniline, 4-nitrophenol, and pentachlorophenol all had reporting limits above those specified in the work plan	-	No action	
Blanks					
Method Blank	No	Diethyl phthalate = 167 ug/kg	-	Qualify positive sample results < 5x the blank concentration as ND.	All samples. No impacts since all samples ND.
Equipment Blank Sample ID:	Not analyzed				
Other QC					
Surrogate Recoveries	No	Recoveries of all surrogates at 10% or less.	R	Qualify ND sample results rejected (R) and positive results as estimated (J).	J17VC3
LCS Results	No	2,4-Dimethylphenol = 49% 4-Chloroaniline =48%	J	Qualify positive and ND results as estimated (J).	All samples
Matrix Spikes Sample ID: J17V93	No	**Non compliant recoveries** 1,3-dichlorobenzene = 47%/47% 1,4-dichlorobenzene = 48%/47% 1,2-dichlorobenzene = 50%/47% Hexachloroethane =	J	Qualify positive and ND results as estimated (J).	All samples

SDG K1479 - SVOC QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1479	**W&C Project No.:**222007	
Medium: Sediment		**Analytes:** SVOCs	
Samples: J17V93, J17V94, J17V95, J17V96, J17VB7, J17VB9, J17VC0, J17VC1, J17VC2, J17VC3, J17VC4			
Laboratory: Lionville	**Date Data Assessment Completed:** 02/05/2010 **Complete By:** RDD	**Sample Collection Date:** 12/01/2008	**Sample Analysis Date:** 12/24/2008

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
		45%/44% 4-chloraniline = 40%/40% Hexachlorocyclopentadiene = 5%/13% 2,4,6-trichlorophenol = 65%/44% 4-Nitrophenol = 54%/39% 3,3'-dichlorobenzidine = 8%/20% **Non-compliant RPDs** Hexachlorocyclopentadiene = 94% 2,4,6-trichlorophenol = 39% 4-Nitrophenol = 33% Pentachlorophenol = 32% 3,3'-dichlorobenzidine =84%			
Lab Duplicates Sample ID:	Not analyzed				
Field Duplicates Sample ID:	Not collected				
Summary					
Validity of Data	No	Recoveries of all surrogates were 10% or less		Results were rejected due to low surrogate recoveries.	J17VC3
Additional Notes:					

SDG K1479 - PCB QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1479	**W&C Project No.:**222007	
Medium: Sediment		**Analytes:** PCBs	
Samples: J17V93, J17V94, J17V95, J17V96, J17VB7, J17VB9, J17VC0, J17VC1, J17VC2, J17VC3, J17VC4			
Laboratory: Lionville	**Date Data Assessment Completed:** 02/05/2010 **Complete By:** RDD	**Sample Collection Date:** 12/01/2008	**Sample Analysis Date:** 1/18-29/2009

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No action	
Detection Limits	Yes	None	-	No action	
Blanks					
Method Blank	Yes	None	-	No action	
Equipment Blank Sample ID:	Not collected				
Other QC Results					
Surrogate Recoveries	No	DCB recovery = 148% (J17VB7) 176% (J17VC3) 160% (J17VC0) 154% (J17VC1)	J	Qualify positive sample results as estimated.	J17VB7, J17VC3, J17VC0, J17VC1 No impact to J17VB3, J17VC0, or J17VC1 since all ND. No impact to J17VC3 since both positive results are already qualified by lab as estimated (J).
LCS Results	Yes	None	-	No action	
Matrix Spikes Sample ID: J17V94	Yes	None	-	No action	
Lab Duplicates Sample ID:	Not analyzed				
Field Duplicates Sample ID:	Not collected				
Summary					
Validity of Data	No, but none of the data were rejected (R).				
Additional Notes:					

SDG K1479 - Pesticides QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1479	**W&C Project No.:**222007	
Medium: Sediment		**Analytes:** Pesticides	
Samples: J17V93, J17V94, J17V95, J17V96, J17VB7, J17VB9, J17VC0, J17VC1, J17VC2, J17VC3, J17VC4			
Laboratory: Lionville	**Date Data Assessment Completed:** 02/05/2010 **Complete By:** RDD	**Sample Collection Date:** 12/01/2008	**Sample Analysis Date:** 01/20/2009

QC Parameter	**All in Spec.?**	**Non-Compliant Results**	**Flag**	**Action/ Notes**	**Associated Samples**
Holding Times	Yes	None	-	No action	
Detection Limits	Yes	None	-	No action	
Blanks					
Method Blank	Yes	None	-	No action	
Equipment Blank Sample ID:	Not collected				
Other QC Results					
Surrogate Recoveries	Yes	None	-	No action	
LCS Results	No	Delta BHC = 38% No LCS results for toxaphene.	J J	Qualify positive and ND sample results as estimated (J).	Delta BHC: All samples Toxaphene: All samples.
Matrix Spikes Sample ID: J17V94	No No MSD sample spiked/analyzed	Delta BHC = 49% Beta BHC = 138%	J	Qualify positive and ND results as estimated (J) for delta BHC and qualify positive sample concentrations of Beta-BHC as estimated (J).	All samples. J17VC0 and J17VC3 both have positive results of beta-BHC that are already qualified as estimated (J) by lab.
Lab Duplicates Sample ID:	Not analyzed				
Field Duplicate Sample ID:	Not collected				
QC Summary					
Validity of Data	No, but none of the data were rejected.				
Additional Notes:					

SDG K1479 - Metals QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1479	**W&C Project No.:**222007
Medium: Sediment		**Analytes:** Metals
Samples: J17V93, J17V94, J17V95, J17V96, J17VB7, J17VB9, J17VC0, J17VC1, J17VC2, J17VC3, J17VC4		

Laboratory: Lionville	**Date Data Assessment Completed:** 02/06/2010 **Complete By:** RDD	**Sample Collection Date:** 12/01/2008	**Sample Analysis Date:** 02/09/2009

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No action	
Detection Limits	No	Detection limits of Ca, Fe, P and Zn above limits specified in work plan			
Blanks					
Preparation Blank	No	Cr = 0.2 mg/kg Mg = 2.8 mg/kg Mo = 0.2 mg/kg Ni = 0.7 mg/kg Sn = 1.2 mg/kg	UJ	Qualify sample concentrations < 5x blank concentration as ND (UJ).	All samples. Impacts to the following results: Mo – all samples
Equipment Blank Sample ID:	Not collected				
Other QC Results					
LCS Results	No	As = 185% Sb = 188% Fe = 156% V = 189%	J	Qualify positive sample concentrations as estimated (J).	All samples. Impacts to the following: As – all samples Sb – all samples Fe – all samples V – all samples
Matrix Spikes Sample ID: J17V93	No	Sb = 35%	J	Qualify positive and ND results as estimated (J).	All samples. Impacts to the following: Sb – all samples
Lab Duplicates Sample ID: J17V93	Yes	None	-	No action	
Field Duplicate Sample ID: J17V93	Yes	None	-	No action	
QC Summary					
Validity of Data	No, but none of the data rejected.				
Additional Notes:					

SDG K1479 - Radionuclides QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1479	**W&C Project No.:**222007	
Medium: Sediment		**Analytes:** Carbon-14, Strontium-90, Technetium-99, Isotopic Thorium, Isotopic Uranium, Isotopic Plutonium, Gamma Spectroscopy	
Samples: J17V93, J17V94, J17V95, J17V96, J17VB7, J17VB9, J17VC0, J17VC1, J17VC2, J17VC3, J17VC4			
Laboratory: Eberline	**Date Data Assessment Completed:** 2/05/2010 **Complete By:** RDD	**Sample Collection Date:** 12/01/2008	**Sample Analysis Date:** 12/2008 – 1/2009

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No action	
Detection Limits	Yes	None	-	No action	
Blanks					
Method Blanks	Yes	None	-	No action	
Equipment Blank Sample ID:	Not collected				
Other QC Results					
LCS Results	Yes	None	-	No action	
Matrix Spikes – C_{14}	No	No MS sample was analyzed	J	Qualify positive and non-detect results as estimated (J).	All samples
Tracer Results	No	Thorium 230 tracer = 110%	J	Qualify positive results as estimated (J) for Thorium 230.	J17VB7 Impact to this sample since there is a positive result.
Lab Duplicates Sample ID: J17V94	No	Thorium-228 = 54% Uranium-233/234 = 57% Uranium-238 = 58%	-	No action since the difference between results is less than 1x the RDL	
Field Duplicate Sample ID:	Not collected				
QC Summary					
Validity of Data	Yes			None of the data were rejected.	
Additional Notes:					

SDG K1479 - DRO QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA		**SDG No.:** K1479		**W&C Project No.:**222007	
Medium: Sediment				**Analytes:** DRO/Motor Oil	
Samples: J17V93, J17V94, J17V95, J17V96					
Laboratory: Lionville	**Date Validation Completed:** 02/06/2010 **Complete By:** RDD			**Sample collection:** 12/01/2008	**Sample Analysis Date:** 12/18-19/2008
QC Parameter	**All in Spec.?**	**Non-Compliant Results**	**Flag**	**Action/ Notes**	**Associated Samples**
Holding Times	Yes	None	-	No action	
Surrogates	Yes	None	-	No action	
Blanks					
Method Blank	No	Motor oil range =3600 ug/kg	UJ	Qualify positive sample results < 5x the blank concentration as estimated non-detect (UJ)	Impacts to J17V93, J17V94, J17V95.
Equipment Blank Sample ID:	Not collected				
Other QC					
LCS Results	No	DRO Recovery = 68%	J	Qualify positive and ND results as estimated (J).	All samples
Matrix Spikes Sample ID: J17V94	Yes	None	-	No action	
Lab Duplicates Sample ID:	Not analyzed				
Field Duplicate Sample ID:	Not collected				
QC Summary					
Validity of Data	No but none of the data rejected.				
Additional Notes:					

SDG K1479 - TOC QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1479	**W&C Project No.:**222007	
Medium: Sediment		**Analytes:** TOC	
Samples: J17V93, J17V94, J17V95, J17V96, J17VB7, J17VB9, J17VC0, J17VC1, J17VC2, J17VC3, J17VC4			
Laboratory: Lionville	**Date Data Assessment Completed:** 02/06/2010 **Complete By:** RDD	**Sample Collection Date:** 12/01/2008	**Sample Analysis Date:** 12/06/2008

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No action	
Detection Limit	Yes	None.	-	No action	
Blanks					
Method Blank	Yes	None	-	No action	
Other QC					
LCS Results	Yes	None	-	No action	
Matrix Spikes Sample ID: J17V93	Yes	None	-	No action	
Lab Duplicate Sample ID: J17V93	Yes	None	-	No action	
Field Duplicate Sample ID:	Not collected				
QC Summary					
Validity of Data	Yes, no data were rejected.				
Additional Notes:					

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SDG K1480 - VOC QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1480	**W&C Project No.:**222007	
Medium: Sediment		**Analytes:** VOA	
Samples: J17W04, J17W07, J17W48, J17WD3, J17WD4, J17W99, J17WB1			
Laboratory: Lionville	**Date Data Assessment Completed:** 01/31/10 **Complete By:** RDD	**Sample Collection Date:** 12/02/08	**Sample Analysis Date:** 12/06/08

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	None	No action	
Detection Limits	Yes	None	None	No action	
Blanks					
Blanks - Method	No	$MeCl_2$ = 3 ug/kg	UJ	Qualify sample results < 10x blank concentration as UJ and raise reported value below RDL to RDL.	All samples had methylene chloride detections qualified as non-detect at RDL.
Equipment Blank Sample ID: J17W48	No	$MeCl_2$ = 4 ug/kg	-	No action based on guidance.	
Trip Blank Sample ID: J17W04 J17W07	No	$MeCl_2$ = 4 ug/kg $MeCl_2$ = 5 ug/kg	-	No action based on guidance.	
Other QC Results					
Surrogate Recoveries	Yes	None	-	No action	
LCS Results	No	Acetone = 169%	-	Qualify positive sample concentrations of acetone as estimated (J).	All samples. No impact to any sample results.
Matrix Spikes Sample ID: J17WB1	No	Acetone = 150%	-	Qualify positive results as estimated (J) for associated samples	All samples. No impact since acetone not detected.
Lab Duplicates Sample ID:	Not analyzed				

SDG K1480 - VOC QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1480	**W&C Project No.:**222007	
Medium: Sediment		**Analytes:** VOA	
Samples: J17W04, J17W07, J17W48, J17WD3, J17WD4, J17W99, J17WB1			
Laboratory: Lionville	**Date Data Assessment Completed:** 01/31/10 **Complete By:** RDD	**Sample Collection Date:** 12/02/08	**Sample Analysis Date:** 12/06/08

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Field Duplicate Sample ID:	Not collected				
Summary					
Validity of Data	Not all QC criteria were met, but no data were rejected.				
Additional Notes:					

SDG K1480 - SVOC QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1480	**W&C Project No.:**222007	
Medium: Sediment		**Analytes:** SVOCs	
Samples: J17W48, J17WD3, J17WD4, J17W99, J17WB1, J17VC5, J17VC8, J17VD1, J17VC6, J17VC7, J17VC9, J17VD0, J17VN8			
Laboratory: Lionville	**Date Data Assessment Completed:** 01/31/10 **Complete By:** RDD	**Sample Collection Date:** 12/02/08	**Sample Analysis Date:** 12/23,27/08 and 01/14/09

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No action	
Detection Limits	No	2-chloroaniline, 2-nitroaniline, 2,4-dinitrophenol, 4-nitrophenol, 4-nitroaniline, pentachlorophenol, 3,3'-dichlorobenzidine have RDLs that exceed those specified in work plan.	-	No action	
Blanks					
Method Blanks	No	Di-n-butylphthalate = 54.4 ug/kg	UJ	Qualify positive results < 10x blank level as ND (UJ).	All samples. Impacts only J17VD1.
Equipment Blank Sample ID: J17W48	Yes	None	-	No action	
Other QC					
Surrogate Recoveries	Yes	None	-	No action	
LCS Results	No	3,3'-dichlorobenzidine = 34%	J	Qualify positive and ND sample results as estimated (J).	All samples
Matrix Spikes Sample ID: J17WD3	No	All target compounds have recoveries < 50% for the MS. Some compliant recoveries for the MSD but RPD values exceeded for all SVOAs.	J	Qualify positive and ND results as estimated (J).	All samples
Lab Duplicates Sample ID:	Not analyzed				
Field Duplicates Sample ID: J17VN8/J17VD0	Yes	None	-	No action	

SDG K1480 - SVOC QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1480	**W&C Project No.:**222007	
Medium: Sediment		**Analytes:** SVOCs	
Samples: J17W48, J17WD3, J17WD4, J17W99, J17WB1, J17VC5, J17VC8, J17VD1, J17VC6, J17VC7, J17VC9, J17VD0, J17VN8			
Laboratory: Lionville	**Date Data Assessment Completed:** 01/31/10 **Complete By:** RDD	**Sample Collection Date:** 12/02/08	**Sample Analysis Date:** 12/23,27/08 and 01/14/09

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Summary					
Validity of Data	Not all QC criteria were met, but no data were rejected.				
Additional Notes:					

SDG K1480 - PCB QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1480	**W&C Project No.:**222007
Medium: Sediment		**Analytes:** PCBs
Samples: J17W48, J17WD3, J17WD4, J17W99, J17WB1, J17VC5, J17VC8, J17VD1, J17VC6, J17VC7, J17VC9, J17VD0, J17VN8		

Laboratory: Lionville	**Date Data Assessment Completed:** 02/01/10 **Complete By:** RDD	**Sample Collection Date:** 12/02/08	**Sample Analysis Date:** 2/9-10/09

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	No	All samples	J	Qualify all ND and positive sample results as estimated (J).	All samples.
Detection Limits	Yes	None	-		
Blanks					
Method Blank	Yes	None	-	No action	
Equipment Blank Sample ID: J17W48	Yes	None	-	No action	
Other QC Results					
Surrogate Recoveries	No	J17VC5	-	Qualify positive sample results as estimated.	J17VC5. No impact since the sample has ND results.
LCS Results	Yes	None	-	No action	
Matrix Spikes Sample ID: J17WD3	No	Aroclor 1260 = 207%	-	Qualify positive results as estimated (J)	No impact since all sample results are ND for Aroclor 1260.
Lab Duplicates Sample ID:	Not analyzed				
Field Duplicates Sample ID: J17VN8/J17VD0	Yes	None	-	No action	
Summary					
Validity of Data	Not all QC criteria were met, but no data were rejected.				
Additional Notes:					

SDG K1480 - Pesticides QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1480	**W&C Project No.:**222007	
Medium: Sediment		**Analytes:** Pesticides	
Samples: J17W48, J17WD3, J17WD4, J17W99, J17WB1, J17VC5, J17VC8, J17VD1, J17VC6, J17VC7, J17VC9, J17VD0, J17VN8			
Laboratory: Lionville	**Date Data Assessment Completed:** 02/01/10 **Complete By:** RDD	**Sample Collection Date:** 12/02/08	**Sample Analysis Date:** 02/10-11/09

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	No	All samples analyzed > holding time after extraction.	J	Qualify all positive and ND sample results as estimated (J).	All samples.
Detection Limits	No	Alpha-BHC, Gamma-BHC, Delta-BHC, Heptachlor, Heptachlor epoxide, Gamma-chlordane, Alpha-chlordane, Endosulfan I, Toxaphene limits exceed those in work plan	-	No action	
Blanks					
Method Blank	No	Aldrin = 0.333 mg/kg	-	Qualify positive sample results < 5x RDL as non-detect.	All samples, however no impacts.
Equipment Blank Sample ID: J17W48	Yes	None	-	No action	
Other QC Results					
Surrogate Recoveries	No	Surrogate exceeds upper control limit.	J	Qualify positive sample results as estimated.	Samples J17W48, J17WD4, J17WB1, J17VC5 No impacts since the samples have ND results.
LCS Results	No	Recovery exceeds upper control limit for 4,4'-DDE, Endrin, 4,4'-DDD, 4,4'-DDT No LCS results for toxaphene.	J J	Qualify positive results as estimated (J) Toxaphene: Qualify positive and non-detect results as estimated (J)	All samples. Impacts include: 4,4'-DDE - J17VC6, J17VC7 4,4'-DDD – J17VC6 4,4'-DDT – J17VC6 Toxaphene: Impacts to all samples.

SDG K1480 - Pesticides QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1480	**W&C Project No.:**222007	
Medium: Sediment		**Analytes:** Pesticides	
Samples: J17W48, J17WD3, J17WD4, J17W99, J17WB1, J17VC5, J17VC8, J17VD1, J17VC6, J17VC7, J17VC9, J17VD0, J17VN8			
Laboratory: Lionville	**Date Data Assessment Completed:** 02/01/10 **Complete By:** RDD	**Sample Collection Date:** 12/02/08	**Sample Analysis Date:** 02/10-11/09

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Matrix Spikes Sample ID: J17WD3	No	All MS and several MSD recoveries exceed upper control limit	J	Qualify positive results as estimated (J)	All samples. Impacts include: Alpha-BHC – J17VC7 Aldrin – J17VC6, J17VC7, J17VC9 4,4-DDE- J17VC6, J17VC7 4,4’-DDD – J17VC6 4,4’-DDT – J17VC6 Gamma Chlordane – J17VC7
Lab Duplicates Sample ID:	Not analyzed				
Field Duplicate Sample ID:	Not collected				
QC Summary					
Validity of Data	Not all QC criteria were met, but no data were rejected.				
Additional Notes:					

SDG K1480 - Metals QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1480	**W&C Project No.:**222007
Medium: Sediment		**Analytes:** Metals
Samples: J17W48, J17WD3, J17WD4, J17W99, J17WB1, J17WF0, J17VC5, J17VC8, J17VD1, J17VC6, J17VC7, J17VC9, J17VD0, J17VN8		

Laboratory: Lionville	**Date Data Assessment Completed:** 01/31/10 **Complete By:** RDD	**Sample Collection Date:** 12/02/2008	**Sample Analysis Date:** 1/13/09 Hg 2/19/09 others

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	No	Hg	J	Qualify all Hg results as estimated (J) for associated samples	All samples.
Detection Limits	No	Al, B, Ca, Co, Cu, Fe, Li, Mg, Mo, Mn, Ni, P, K, Na, Sr, Sn, U, V and Zn	-	No action	
Blanks					
Preparation Blank	No	Be = 0.02 mg/kg Pb = 1.4 mg/kg Sn = 1.1 mg/kg	UJ	Qualify results > IDL but < 5x blank result as ND (UJ).	Impacts to the following samples: Be – J17W48, J17WD3 Pb – J17W48, J17WB1 Sn – All samples
Equipment Blank Sample ID: J17W48	No	Al = 214 mg/kg Ba = 2.0 mg/kg Ca = 41.5 mg/kg Fe = 235 mg/kg Lead = 0.8 mg/kg Mg = 32.4 mg/kg Mn = 3.2 mg/kg K = 43.6 mg/kg Si = 211 mg/kg Sr = 0.5 mg/kg Sn = 0.8 mg/kg V = 0.5 mg/kg	-	No action based on guidance.	
Other QC Results					
LCS Results	No	As = 245% Fe = 143% Pb = 57% V = 182%	J	Qualify As, Fe, V results as estimated for sample values > IDL and no action for ND results. For Pb	Impacts the following: As, Fe, Pb, V – all samples

SDG K1480 - Metals QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1480	**W&C Project No.:**222007
Medium: Sediment		**Analytes:** Metals
Samples: J17W48, J17WD3, J17WD4, J17W99, J17WB1, J17WF0, J17VC5, J17VC8, J17VD1, J17VC6, J17VC7, J17VC9, J17VD0, J17VN8		

Laboratory: Lionville	**Date Data Assessment Completed:** 01/31/10 **Complete By:** RDD	**Sample Collection Date:** 12/02/2008	**Sample Analysis Date:** 1/13/09 Hg 2/19/09 others

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
				qualify results > IDL and ND as estimated (J). Tl spike level is below RDL.	
Matrix Spikes Sample ID: J17WD3	No	Sb = 57% recovery	J	Qualify positive, ND results of Sb, as estimated (J).	Impacts to Sb– all samples
Lab Duplicates Sample ID: J17WD3	Yes	None	-	No action	
Field Duplicate Sample ID: J17VN8/J17VD0	Yes	None	-	No action	
QC Summary					
Validity of Data	Not all QC criteria were met, but no data were rejected.				
Additional Notes: Equipment blank results indicate potential carry-over of several metals into samples from decontamination procedures.					

SDG K1480 - Radionuclides QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1480	**W&C Project No.:**222007	
Medium: Sediment		**Analytes:** Gamma scan, C_{14}, Sr_{90}, Tc_{99}, and Isotopic Th, U, Pu	
Samples: J17VC5, J17VC6, J17VC7, J17VC8, J17VC9, J17VD0, J17VD1, J17VN8, J17W99, J17WB1, J17WD3, J17WD4, J17WF0			
Laboratory: Eberline	**Date Data Assessment Completed:** 01/31/10 **Complete By:** RDD	**Sample Collection Date:** 12/02/08	**Sample Analysis Date:** 12/08 – 1/09

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No action	
Detection Limits	Yes	None	-	No action	
Blanks					
Method Blanks	Yes	None	-	No action	
Equipment Blank Sample ID: J17W48	Yes	None	-	No action based on guidance.	
Other QC Results					
LCS Results	Yes	None	-	None	
Matrix Spikes - C_{14}	No	No MS sample analysis was performed.	J	Qualify positive and ND sample results as estimated (J).	All samples.
Tracer Results	Yes	None	-	No action	
Lab Duplicates Sample ID: J17VD0	Yes	None	-	No action	
Field Duplicate Sample ID: J17VN8/J17VD0	Yes	None	-	No action	
QC Summary					
Validity of Data	Not all QC criteria met, but no data were rejected.				
Additional Notes:					

SDG K1480 - DRO QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1480			**W&C Project No.:**222007	
Medium: Sediment				**Analytes:** DRO	
Samples: J17W48, J17WD3, J17WD4					
Laboratory: Lionville	**Date Validation Completed:** 01/31/10 **Complete By:** RDD			**Sample collection:** 12/02/2008	**Sample Analysis Date:** 12/18-19/08
QC Parameter	**All in Spec.?**	**Non-Compliant Results**	**Flag**	**Action/ Notes**	**Associated Samples**
Holding Times	Yes	None.	-	No action.	
Surrogates	Yes	None.	-	No action	
Blanks					
Method Blank	Yes for DRO No for motor oil	Motor oil = 3600 mg/kg	UJ	Qualify all motor results < 5x blank concentration as non-detect (UJ).	Impacts all samples
Equipment Blank Sample ID: J17W48	No	Motor Oil =12,000 mg/kg	-	No action based on guidance.	
Other QC					
LCS Results	Yes	None	-	No action	
Matrix Spikes Sample ID:	Yes	None	-	No action	
Lab Duplicates Sample ID: J17WD3	Not analyzed				
Field Duplicate Sample ID:	Not collected				
QC Summary					
Validity of Data	Not all QC criteria met, but no data were rejected.				
Additional Notes:					

SDG K1480 - TOC QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1480	**W&C Project No.:**222007
Medium: Sediment		**Analytes:** TOC
Samples: J17W48, J17WD3, J17WD4, J17W99, J17WB1, J17WF0, J17VC5, J17VC8, J17VD1, J17VC6, J17VC7, J17VC9, J17VD0, J17VN8		

Laboratory: Lionville	**Date Data Assessment Completed:** 01/31/10 **Complete By:** RDD	**Sample Collection Date:** 12/02/2008	**Sample Analysis Date:** 12/07/2008

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No action	
Detection Limit	Yes	None	-	No action	
Blanks					
Method Blank	Yes	None	-	No action	
Other QC					
LCS Results	Yes	None	-	No action	
Matrix Spikes Sample ID: J17VC9	Yes	None	-	No action	
Lab Duplicate Sample ID: J17VC9	Yes	None	-	No action	
Field Duplicate Sample ID: J17VN8/J17VD0	Yes	None	-	No action	
QC Summary					
Validity of Data	All QC parameters within criteria and none of the data were rejected.				
Additional Notes:					

B.55 SDG K1482

SDG K1482 - VOC QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1482	**W&C Project No.:**222007	
Medium: Sediment		**Analytes:** VOA	
Samples: J17W03, J17W06, J17WH6, J17WH7, J17WH8, J17WH9, J17W98, J17WB0			
Laboratory: Lionville	**Date Data Assessment Completed:** 02/08/2010 **Complete By:** RDD	**Sample Collection Date:** 12/03/2008	**Sample Analysis Date:** 12/19/2008

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	No	Samples were analyzed < 2x holding time limit.	J	Qualify positive and ND sample results as estimated (J).	All samples
Detection Limits	No	The detection limit for 1,1,1-trihchloroethane exceeds the specification in the work plan	-	No action.	
Blanks					
Blanks - Method	No	$MeCl_2$ = 2 ug/kg	UJ	Qualify positive sample results < 10x the blank concentration as ND (UJ) and raise positive reported values below RDL to the RDL.	All samples. Impacts all since $MeCl_2$ detected in all samples.
Equipment Blank Sample ID:	Not collected				
Trip Blank Sample ID: J17W06 J17W03	 No No	 $MeCl_2$ = 3 ug/kg $MeCl_2$ = 2 ug/kg	-	No action based on criteria in guidance.	
Other QC Results					
Surrogate Recoveries	Yes	None	-	No action	
LCS Results	No	Acetone = 172%	-	Qualify positive sample results as estimated (J).	All samples. No impact since acetone ND in all samples.
Matrix Spikes Sample ID: J17WH6	No	Acetone = 236% 2-Butanone =236% 2-Hexanone = 173%	-	Qualify positive sample results as estimated (J).	All samples. No impact since all three compounds ND in all samples.

SDG K1482 - VOC QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1482	**W&C Project No.:**222007	
Medium: Sediment		**Analytes:** VOA	
Samples: J17W03, J17W06, J17WH6, J17WH7, J17WH8, J17WH9, J17W98, J17WB0			
Laboratory: Lionville	**Date Data Assessment Completed:** 02/08/2010 **Complete By:** RDD	**Sample Collection Date:** 12/03/2008	**Sample Analysis Date:** 12/19/2008

QC Parameter	**All in Spec.?**	**Non-Compliant Results**	**Flag**	**Action/ Notes**	**Associated Samples**
Lab Duplicates Sample ID:	Not analyzed				
Field Duplicate Sample ID:	Not collected				
Summary					
Validity of Data	No, but none of the data were rejected.				
Additional Notes:					

SDG K1482 - SVOC QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1482	**W&C Project No.:**222007	
Medium: Sediment		**Analytes:** SVOCs	
Samples: J17WH6, J17WH7, J17WH8, J17WH9, J17W98, J17WB0			
Laboratory: Lionville	**Date Data Assessment Completed:** 02/08/2010 **Complete By:** RDD	**Sample Collection Date:** 12/03/2008	**Sample Analysis Date:** 01/14/2009

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No action	
Detection Limits	No	2,4-dinitrophenol, hexachlorobenzene, 3,3'-Dichlorobenzidine, 2-nitroaniline, 3-nitroaniline, 4-nitroaniline, 4-nitrophenol, pentachlorophenol all had reporting limits above those specified in the work plan	-	No action	
Blanks					
Method Blanks	No	Di-n-butylphthalate = 54.4 ug/kg	UJ	Qualify positive sample results < 10x blank concentration as ND (UJ) and raise positive reported values below RDL to the RDL.	All samples. No impact since all samples ND for this compound.
Equipment Blank Sample ID:	Not collected				
Other QC					
Surrogate Recoveries	Yes	None	-	No action	
LCS Results	No	4-Chloroaniline = 37% 2,4,5-Trichlorophenol = 44% 2,4,6-Trichlorophenol = 24% 3,3'-Dichlorobenzidine =34%	J	Qualify positive and ND sample results as estimated (J).	All samples

SDG K1482 - SVOC QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1482	**W&C Project No.:**222007	
Medium: Sediment		**Analytes:** SVOCs	
Samples: J17WH6, J17WH7, J17WH8, J17WH9, J17W98, J17WB0			
Laboratory: Lionville	**Date Data Assessment Completed:** 02/08/2010 **Complete By:** RDD	**Sample Collection Date:** 12/03/2008	**Sample Analysis Date:** 01/14/2009

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Matrix Spikes Sample ID: J17WD3	No	Hexachlorocyclopentadiene = 42% 2,4,6-Trichlorophenol =13% Pentachlorophenol = 20%	J	Qualify positive and ND sample results as estimated (J).	All samples
Lab Duplicates Sample ID:	Not analyzed				
Field Duplicates Sample ID:	Not collected				
Summary					
Validity of Data	No, but none of the data are rejected.				
Additional Notes:					

SDG K1482 - PCB QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1482	**W&C Project No.:**222007	
Medium: Sediment		**Analytes:** PCBs	
Samples: J17WH6, J17WH7, J17WH8, J17WH9, J17W98, J17WB0			
Laboratory: Lionville	**Date Data Assessment Completed:** 2/08/2010 **Complete By:** RDD	**Sample Collection Date:** 12/03/2008	**Sample Analysis Date:** 12/16/2008 extr 02/10/2009 anal

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	No	Holding time exceeded < 2x limit.	J	Qualify positive and ND results as estimated (J).	All samples.
Detection Limits	Yes	None	-	No action	
Blanks					
Method Blank	Yes	None	-	No action	
Equipment Blank Sample ID:	Not collected				
Other QC Results					
Surrogate Recoveries	Yes	None	-	No action	
LCS Results	Yes	None	-	No action	
Matrix Spikes Sample ID: J17WH9	Yes	None	-	No action	
Lab Duplicates Sample ID:	Not analyzed	None	-	No action	
Field Duplicates Sample ID:	Not collected	None	-	No action	
Summary					
Validity of Data	No, but none of the data were rejected.				
Additional Notes:					

SDG K1482 - Pesticides QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1482	**W&C Project No.:**222007	
Medium: Sediment		**Analytes:** Pesticides	
Samples: J17WH6, J17WH7, J17WH8, J17WH9, J17W98, J17WB0			
Laboratory: Lionville	**Date Data Assessment Completed:** 02/08/2010 **Complete By:** RDD	**Sample Collection Date:** 12/03/2008	**Sample Analysis Date:** 12/16/2008 extr 02/10/2009 anal

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	No	Sample analysis < 2x holding time limit	J	Qualify positive and ND sample results as estimated (J).	All samples.
Detection Limits	Yes	None	-	No action	
Blanks					
Method Blank	Yes	None	-	No action	
Equipment Blank Sample ID:	Not collected				
Other QC Results					
Surrogate Recoveries	Yes	None	-	No action	
LCS Results	No	4,4'-DDE = 151% Endrin = 155% 4,4'-DDD = 154% 4,4'-DDT = 157% No LCS results for toxaphene.	J	Qualify positive results as estimated (J). Toxaphene: Qualify positive and non-detect results as estimated (J).	All samples
Matrix Spikes Sample ID: J19WH9	No	Heptachlor epoxide = 207% Beta-BHC = 157%	J	Qualify positive results as estimated (J).	All samples.
Lab Duplicates Sample ID:	Not analyzed				
Field Duplicate Sample ID:	Not collected				
QC Summary					

SDG K1482 - Pesticides QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1482	**W&C Project No.:**222007	
Medium: Sediment		**Analytes:** Pesticides	
Samples: J17WH6, J17WH7, J17WH8, J17WH9, J17W98, J17WB0			
Laboratory: Lionville	**Date Data Assessment Completed:** 02/08/2010 **Complete By:** RDD	**Sample Collection Date:** 12/03/2008	**Sample Analysis Date:** 12/16/2008 extr 02/10/2009 anal

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Validity of Data	Not all QC criteria met, but none of the data were rejected.				
Additional Notes:					

SDG K1482 - Metals QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1482	**W&C Project No.:**222007
Medium: Sediment		**Analytes:** Metals
Samples: J17WH6, J17WH7, J17WH8, J17WH9, J17W98**,** J17WB0, J17WJ0, J17WJ2, J17WJ3, J17WJ5, J17WB2, J17WB4, J17WB5, J17WB6, J17WB7, J17WF1		

Laboratory: Lionville	**Date Data Assessment Completed:** 02/08/2010 **Complete By:** RDD	**Sample Collection Date:** 12/03/2008	**Sample Analysis Date:** 1/14/2009 Hg 2/6/2009

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	No	Hg analyses were performed < 2x holding time limit.	J	Qualify positive and ND sample concentrations of mercury as estimated (J).	All samples
Detection Limits	No	Detection limits of Ca, Fe, P and Zn above limits specified in work plan	-	No action	
Blanks					
Preparation Blank	No	Pb = 0.6 mg/kg Mg = 2.0 mg/kg Mo = 0.2 mg/kg Sn = 1.2 mg/kg	UJ	Qualify positive sample results < 5x blank concentration as non-detect (UJ).	All samples. Impacts include the following: Mo – All samples except J17WJ0 Sn – J17WB7
Equipment Blank Sample ID:	Not collected				
Other QC Results					
LCS Results	No	Sb = 198% As = 202% Cr = 147% Fe = 141% Sn = 132% V = 195%	J	Qualify positive sample results as estimated (J).	All samples. Impacts include the following: Sb –J17WJ0 As – All samples Cr –All samples Fe – All samples Sn –J17WB7 V – All samples
Matrix Spikes Sample ID: J17WH6	No	Sb = 49%	J	Qualify positive and ND sample results as estimated (J).	All samples
Lab Duplicates Sample ID: J17WH6	Yes	None	-		

SDG K1482 - Metals QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1482	**W&C Project No.:**222007
Medium: Sediment		**Analytes:** Metals
Samples: J17WH6, J17WH7, J17WH8, J17WH9, J17W98**,** J17WB0, J17WJ0, J17WJ2, J17WJ3, J17WJ5, J17WB2, J17WB4, J17WB5, J17WB6, J17WB7, J17WF1		

Laboratory: Lionville	**Date Data Assessment Completed:** 02/08/2010 **Complete By:** RDD	**Sample Collection Date:** 12/03/2008	**Sample Analysis Date:** 1/14/2009 Hg 2/6/2009

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Field Duplicate Sample ID: J17WH6	Yes	None	-		
QC Summary					
Validity of Data	No, but none of the data were rejected.				
Additional Notes:					

SDG K1482 - Radionuclides QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1482	**W&C Project No.:**222007	
Medium: Sediment		**Analytes:** Gamma scan, C_{14}, Sr_{90}, Tc_{99}, and Isotopic Th, U, Pu	
Samples: J17W98, J17WB0, J17WB2, J17WB4, J17WB5, J17WB6, J17WB7, J17WF1, J17WH6, J17WH7, J17WH8 J17WH9, J17WJ0, J17WJ2, J17WJ3, J17WJ5			
Laboratory: Eberline	**Date Data Assessment Completed:** 02/08/2010 **Complete By:** RDD	**Sample Collection Date:** 12/03/2008	**Sample Analysis Date:** several

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No action	
Detection Limits	Yes	None	-	No action	
Blanks					
Method Blanks	Yes	None	-	No action	
Equipment Blank Sample ID:	Not collected				
Other QC Results					
LCS Results	Yes	None	-	No action	
Matrix Spikes - C_{14}	No	No MS sample was analyzed	J	Qualify all positive and ND sample results as estimated (J).	
Tracer Results	No	Technetium 99 = 106% for J17WB4	-	Qualify positive technetium result for J17WB4 as estimated (J).	J17WB4 No impact since ND in sample.
Lab Duplicates Sample ID: J17WB6	Yes	None	-	No action	
Field Duplicate Sample ID:	Not collected				
QC Summary					
Validity of Data	No, but none of the data are rejected.				
Additional Notes:					

SDG K1482 - DRO QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1482	**W&C Project No.:**222007	
Medium: Sediment		**Analytes:** DRO	
Samples: J17WH6, J17WH7, J17WH8, J17WH9			
Laboratory: Lionville	**Date Validation Completed:** 02/08/2010 **Complete By:** RDD	**Sample collection:** 12/03/2008	**Sample Analysis Date:** 12/10/2008 extr. 12/19/2008 anal

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No action	
Surrogates	Yes	None	-	No action	
Blanks					
Method Blank	No	Motor Oil = 3600 ug/kg	UJ	Qualify positive sample results < 5x the blank concentration as non-detect (UJ).	All samples. All samples are impacted and qualified as ND (UJ) for motor oil.
Equipment Blank Sample ID:	Not collected				
Other QC					
LCS Results	No	DRO = 68%	J	Qualify positive and ND sample results as estimated (J).	All samples
Matrix Spikes Sample ID: J17WH8	Yes	None	-	No action	
Lab Duplicates Sample ID:	Not analyzed				
Field Duplicate Sample ID:	Not collected				
QC Summary					
Validity of Data	No, but none of the data were rejected.				
Additional Notes:					

SDG K1482 - TOC QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1482	**W&C Project No.:**222007	
Medium: Sediment		**Analytes:** TOC	
Samples: J17WH6, J17WH7, J17WH8, J17WH9, J17W98, J17WB0, J17WJ0, J17WJ2, J17WJ3, J17WJ5, J17WB2, J17WB4, J17WB5, J17WB6, J17WB7, J17WF1			
Laboratory: Lionville	**Date Data Assessment Completed:** 02/08/2010 **Complete By:** RDD	**Sample Collection Date:** 12/03/2008	**Sample Analysis Date:** 01/05/2009

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	No	Samples were analyzed < 2x holding time limit.	J	Qualify positive and ND sample results as estimated (J).	All samples.
Detection Limit	Yes	None	-	No action	
Blanks					
Method Blank	Yes	None	-	No action	
Other QC					
LCS Results	Yes	None	-	No action	
Matrix Spikes Sample ID: J17WB2	Yes	None	-	No action	
Lab Duplicate Sample ID: J17WB2	Yes	None	-	No action	
Field Duplicate Sample ID:	Not collected				
QC Summary					
Validity of Data	Not all QC criteria were met, but none of the data have been rejected.				
Additional Notes:					

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SDG K1484 - VOC QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1484	**W&C Project No.:**222007	
Medium: Sediment		**Analytes:** VOA	
Samples: J17YV9, J17W00, J17X13, J17Y96, J17Y97, J17Y98, J17Y99, J17VN7, J17X01, J17X02, J17X12			
Laboratory: Lionville	**Date Data Assessment Completed:** 02/01/10 **Complete By:** RDD	**Sample Collection Date:** 12/04/08	**Sample Analysis Date:** 12/18-19/08

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	None	No action	
Detection Limits	No	Detection limit for 1,1,1-trichloroethane exceeds limit in work plan.	None	No action	Detection limit exceeds limit in work plan
Blanks					
Blanks - Method	No	MeCl$_2$ = 4 ug/kg Acetone = 3 ug/kg 1,2-DCA = 1 ug/kg 4-methyl-2-pentanone = 3 ug/kg 2-hexanone = 4 ug/kg Styrene = 1 ug/kg	UJ	Qualify positive sample results of acetone and MeCl$_2$ < 10x (5x for all other compounds) blank concentration as UJ and riase reported value to RDL.	All samples had methylene chloride detections qualified as non-detect at the RDL. No impact from blank detections of other VOAs.
Equipment Blank Sample ID:	Not collected				
Trip Blank Sample ID: J17W00 J17VY9	 No No	 MeCl$_2$ = 1 ug/kg MeCl$_2$ = 2 ug/kg	-	No action taken based on criteria in guidance	
Other QC Results					
Surrogate Recoveries	Yes	None	-	No action	
LCS Results	No	Acetone = 272% 2-butanone = 256% 2-hexanone =195%	-	Qualify positive sample concentrations of acetone, 2-butanone and 2-hexanone as estimated (J).	All samples. No impact to any sample results.

SDG K1484 - VOC QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1484	**W&C Project No.:**222007	
Medium: Sediment		**Analytes:** VOA	
Samples: J17YV9, J17W00, J17X13, J17Y96, J17Y97, J17Y98, J17Y99, J17VN7, J17X01, J17X02, J17X12			
Laboratory: Lionville	**Date Data Assessment Completed:** 02/01/10 **Complete By:** RDD	**Sample Collection Date:** 12/04/08	**Sample Analysis Date:** 12/18-19/08

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Matrix Spikes Sample ID: J17X12	No	Acetone = 313% 2-butanone = 279% 4-methyl-2-pentanone = 151% 2-hexanone = 208% 1,1,2,2-tetrachloroethane = 149%	-	Qualify positive results as estimated (J) for associated samples	All samples. No impact since all compounds ND in all associated samples.
Lab Duplicates Sample ID:	Not analyzed				
Field Duplicate Sample ID: J17VN7/J17X13	Yes	None	-	No action	
Summary					
Validity of Data	Not all QC criteria were met, but no data were rejected.				
Additional Notes:					

SDG K1484 - SVOC QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1484	**W&C Project No.:**222007	
Medium: Sediment		**Analytes:** SVOCs	
Samples: J17X13, J17Y96, J17Y97, J17Y98, J17Y99, J17VN7, J17X01, J17X02, J17X12			
Laboratory: Lionville	**Date Data Assessment Completed:** 02/01/10 **Complete By:** RDD	**Sample Collection Date:** 12/04/10	**Sample Analysis Date:** 1/18,20/09

QC Parameter	**All in Spec.?**	**Non-Compliant Results**	**Flag**	**Action/ Notes**	**Associated Samples**
Holding Times	Yes	None	-	No action	
Detection Limits	No	2-chloroaniline, 2-nitroaniline, 2,4-dinitrophenol, 4-nitrophenol, 4-nitroaniline, pentachlorophenol, hexachlorobenzene, 3,3'-dichlorobenzidine have RDLs that exceed those specified in work plan.	-	No action	
Blanks					
Method Blanks	Yes	None	-	No action	
Laboratory Blank	Yes	None	-	No action	
Other QC					
Surrogate Recoveries	Yes	None	-	No action	
LCS Results	No	2-methylphenol = 46% 2,4-dichlorophenol = 48% Naphthalene = 37% 4-chloro-3-methylphenol = 49% 2,4,6-trichlorophenol = 48% 2-nitroaniline = 47% 2,6-dinitrotoluene = 48% 3-nitroaniline = 46% Acenaphthene = 49% 2,4-dinitrophenol= 48% Dibenzofuran = 49% 2,4-Dinitrotoluene = 48% Fluorene = 48% 4-chloroaniline =38% N-nitrosodiphenylamine = 43% 4-Bromophenyl Phenyl ether = 47%	J	Qualify positive and ND sample results as estimated (J).	All samples

SDG K1484 - SVOC QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1484	**W&C Project No.:**222007	
Medium: Sediment		**Analytes:** SVOCs	
Samples: J17X13, J17Y96, J17Y97, J17Y98, J17Y99, J17VN7, J17X01, J17X02, J17X12			
Laboratory: Lionville	**Date Data Assessment Completed:** 02/01/10 **Complete By:** RDD	**Sample Collection Date:** 12/04/10	**Sample Analysis Date:** 1/18,20/09

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
		Pentachlorophenol = 45% Carbazole = 39% 3,3'-dichlorobenzidine = 32% Benzo[b]fluoranthene = 47% Benzo[k]fluroanthene = 48% Benzo[a]pyrene = 45% Indeno[1,2,3-cd]pyrene = 46% Benzo[g,h,i]perylene = 48%			
Matrix Spikes Sample ID: J17Y99	No	Hexachloroethane = 43% 4-chloroaniline = 19% Hexachlorocyclopentadiene = 19% 2,4-Dinitrophenol = 40% 4,6-Dinitro-2-methylphenol = 44% Pentachlorophenol = 29% Di-n-octyl phthalate = 214%	J	Qualify positive and ND results of all except di-n-octyl phthalate as estimated (J). Qualify positive sample results as estimated (J) for di-n-octyl phthalate.	All samples
Lab Duplicates Sample ID:	Not analyzed				
Field Duplicates Sample ID: J17VN7/J17X13	Yes	None	-	No action	
Summary					
Validity of Data	Not all QC criteria compliant but no data rejected.				
Additional Notes:					

SDG K1484 - PCB QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1484	**W&C Project No.:**222007
Medium: Sediment		**Analytes:** PCBs
Samples: J17X13, J17Y96, J17Y97, J17Y98, J17Y99, J17VN7, J17X01, J17X02, J17X12		

Laboratory: Lionville	**Date Data Assessment Completed:** 02/01/10 **Complete By:** RDD	**Sample Collection Date:** 12/04/08	**Sample Analysis Date:** 1/17,18/09

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No action	
Detection Limits	Yes	None	-	No action	
Blanks					
Method Blank	Yes	No detections	-	No action	
Equipment Blank Sample ID:	Not collected				
Other QC Results					
Surrogate Recoveries	No	J17VN7, J17X02 have DCB recoveries > upper control limit.	-	Qualify positive sample results as estimated.	No impact since the samples have ND results for all PCBs.
LCS Results	Yes	None	-	No action	
Matrix Spikes Sample ID: J17Y99	Yes	None	-	No action	
Lab Duplicates Sample ID:	Not analyzed				
Field Duplicates Sample ID: J17VN7/J17X13	Yes	None	-	No action	
Summary					
Validity of Data	Not all of the QC criteria were met, but no data were rejected.				
Additional Notes:					

SDG K1484 - Pesticides QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1484	**W&C Project No.:**222007	
Medium: Sediment		**Analytes:** Pesticides	
Samples: J17X13, J17Y96, J17Y97, J17Y98, J17Y99, J17VN7, J17X01, J17X02, J17X12			
Laboratory: Lionville	**Date Data Assessment Completed:** 02/01/10 **Complete By:** RDD	**Sample Collection Date:** 12/04/08	**Sample Analysis Date:** 1/15,16/09

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No action	
Detection Limits	Yes	None	-	No action	
Blanks					
Method Blank	Yes	None	-	No action	
Equipment Blank Sample ID:	Not collected				
Other QC Results					
Surrogate Recoveries	No	Surrogate exceeds upper control limit.	J	Qualify positive sample results as estimated.	J17Y98, J17X01, J17X02, No impacts for most compounds since all ND results and all except for results < RDL that are already qualified as estimated. Qualify the concentration of aldrin for J17X01 as estimated (J) since there is no estimated qualifier already applied.
LCS Results	No	No LCS results for toxaphene	J	Qualify all associated results as estimated (J)	Impacts to all samples above.
Matrix Spikes Sample ID: J17Y99	No	All MS recoveries except delta-BHC exceed upper control limit	J	Qualify positive results as estimated (J)	All samples. Impacts only alpha-BHC.
Lab Duplicates Sample ID:	Not analyzed			No action	
Field Duplicate Sample ID: J17VN7/J17X13	Yes	None	-	No action	

SDG K1484 - Pesticides QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA		**SDG No.:** K1484	**W&C Project No.:**222007
Medium: Sediment			**Analytes:** Pesticides
Samples: J17X13, J17Y96, J17Y97, J17Y98, J17Y99, J17VN7, J17X01, J17X02, J17X12			
Laboratory: Lionville	**Date Data Assessment Completed:** 02/01/10 **Complete By:** RDD	**Sample Collection Date:** 12/04/08	**Sample Analysis Date:** 1/15,16/09

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
QC Summary					
Validity of Data	Not all of the QC criteria were met, but no data were rejected.				
Additional Notes:					

SDG K1484 - Metals QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1484	**W&C Project No.:**222007	
Medium: Sediment		**Analytes:** Metals	
Samples: J17X13, J17Y96, J17Y97, J17Y98, J17Y99, J17VN7, J17X01, J17X02, J17X12, J17WJ1, J17WJ4, J17YB4, J17YB5, J17X14, J17X15, J17X16			
Laboratory: Lionville	**Date Data Assessment Completed:** 02/01/10 **Complete By:** RDD	**Sample Collection Date:** 12/05/08	**Sample Analysis Date:** 1/14/09 Hg 2/7/09 others

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	No	Hg	J	Qualify all Hg results as estimated (J) for associated samples	All samples.
Detection Limits	No	Ca, Fe, P, Zn detections limits exceed specifications in work plan.	-	No action	
Blanks					
Preparation Blank	No	Mo = 0. 2 mg/kg Ni = 0.7 mg/kg Sn = 1.6 mg/kg	UJ	Qualify results > IDL but < 5x blank result as ND (UJ).	Impacts to the following samples: Mo – All samples Sn – J17WJ1
Equipment Blank Sample ID:	Not collected				
Other QC Results					
LCS Results	No	As = 180% Sb = 203% Fe = 134% V = 196%	J	Qualify As, Sb, Fe, and V results as estimated for sample values > IDL and no action for ND results. Tl was spiked at a level just above the RDL.	Impacts the following: As, Sb, Fe, Tl, V – all samples
Matrix Spikes Sample ID: J17X13	Yes	None	-	No action	
Lab Duplicates Sample ID: J17X13	Yes	None	-	No action	

SDG K1484 - Metals QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1484	**W&C Project No.:**222007	
Medium: Sediment		**Analytes:** Metals	
Samples: J17X13, J17Y96, J17Y97, J17Y98, J17Y99, J17VN7, J17X01, J17X02, J17X12, J17WJ1, J17WJ4, J17YB4, J17YB5, J17X14, J17X15, J17X16			
Laboratory: Lionville	**Date Data Assessment Completed:** 02/01/10 **Complete By:** RDD	**Sample Collection Date:** 12/05/08	**Sample Analysis Date:** 1/14/09 Hg 2/7/09 others

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Field Duplicate Sample ID: J17VN7/J17X13	Yes	None	-	No action	
QC Summary					
Validity of Data	Not all QC criteria were met but no data were rejected.				
Additional Notes:					

SDG K1484 - Radionuclides QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1484	**W&C Project No.:**222007	
Medium: Sediment		**Analytes:** Gamma scan, C_{14}, Sr_{90}, Tc_{99}, and Isotopic Th, U, Pu	
Samples: J17VN7, J17WJ1, J17WJ4, J17X12, , J17X13 , J17X14, J17X15, J17X16, J17Y96, J17Y97, J17Y98, J17Y99, J17YB4, J17YB5			
Laboratory: Eberline	**Date Data Assessment Completed:** 02/01/10 **Complete By:** RDD	**Sample Collection Date:** 12/04/08	**Sample Analysis Date:** 01/09

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No action	
Detection Limits	Yes	None	-	No action	
Blanks					
Method Blanks	Yes	None	-	No action	
Equipment Blank Sample ID:	Not collected				
Other QC Results					
LCS Results	Yes	None	-	No action	
Matrix Spikes - C_{14}	No	No MS sample was analyzed.	J	Qualify positive and ND sample results as estimated (J).	All samples
Tracer Results	No	Tracer recovery of Thorium 230 exceeds upper control limit.	-	Qualify positive results of Thorium 230 as estimated (J).	J17Y96 No impact since thorium 230 not detected in J17Y96.
Lab Duplicates Sample ID: J17WJ4	Yes	None	-	No action	
Field Duplicate Sample ID: J17VN7/J17X13	Yes	None	-	No action	
QC Summary					
Validity of Data	Not all QC criteria were met but no data were rejected.				
Additional Notes:					

SDG K1484 - DRO QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1484	**W&C Project No.:**222007
Medium: Sediment		**Analytes:** DRO
Samples: J17X13, J17Y96, J17Y97, J17Y98, J17Y99, J17VN7, J17X12		

Laboratory: Lionville	**Date Validation Completed:** 02/01/10 **Complete By:** RDD	**Sample collection:** 12/04/10	**Sample Analysis Date:** 1/9,14,15/09

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None.	-	No action.	
Surrogates	Yes	None.	-	No action	
Blanks					
Method Blank	No	DRO = 1100 mg/kg	UJ	Qualify as ND (UJ) all DRO sample results < 5x blank concentration	All samples. Impacts the following: J17X13, J17VN7
Equipment Blank Sample ID:	Not collected				
Other QC					
LCS Results	No	DRO = 35%	J	Qualify positive and ND results as estimated (J).	All samples
Matrix Spikes Sample ID: J17Y96	Yes	None	-	No action	
Lab Duplicates Sample ID:	Not analyzed				
Field Duplicate Sample ID: J17VN7/J17X13	Yes	None	-	No action	
QC Summary					
Validity of Data	Not all QC criteria were met, but no data were rejected.				
Additional Notes:					

SDG K1484 - TOC QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1484	**W&C Project No.:**222007	
Medium: Sediment		**Analytes:** TOC	
Samples: J17X13, J17Y96, J17Y97, J17Y98, J17Y99, J17VN7, J17X01, J17X02, J17X12, J17WJ1, J17WJ4, J17YB4, J17YB5, J17X14, J17X15, J17X16			
Laboratory: Lionville	**Date Data Assessment Completed:** 02/01/10 **Complete By:** RDD	**Sample Collection Date:** 12/04/2008	**Sample Analysis Date:** 12/07/2008

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No action	
Detection Limit	Yes	None	-	No action	
Blanks					
Method Blank	Yes	None	-	No action	
Other QC					
LCS Results	Yes	None	-	No Action	
Matrix Spikes Sample ID: J17X13	Yes	None	-	No Action	
Lab Duplicate Sample ID: J17X13	Yes	None	-	No action	
Field Duplicate Sample ID: J17VN7/J17X13	No	RPD = 36%	-	No action based on criteria in guidance.	
QC Summary					
Validity of Data	Not all QC criteria compliant but no data rejected.				
Additional Notes:					

B.57 SDG K1486

SDG K1486 - VOC QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1486	**W&C Project No.:**222007	
Medium: Sediment		**Analytes:** VOA	
Samples: J17YF2, J17XJ1, J17XK5, J17VY7, J17VY8			
Laboratory: Lionville	**Date Data Assessment Completed:** 02/01/10 **Complete By:** RDD	**Sample Collection Date:** 12/05/08	**Sample Analysis Date:** 12/18-19/08

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No action	
Detection Limits	No	1,1,1-trichloroethane.	-	No action	
Blanks					
Blanks - Method	No	$MeCl_2$ = 3 ug/kg	UJ	Qualify positive sample results < 10x the blank concentration as ND (UJ) and raise reported value to RDL.	All samples had methylene chloride detections qualified as non-detect at RDL.
Equipment Blank Sample ID:	Not collected				
Trip Blank Sample ID: J17VY8 J17VY7	No No	$MeCl_2$ = 2 ug/kg $MeCl_2$ = 2 ug/kg	-	No action based on guidance.	
Other QC Results					
Surrogate Recoveries	Yes	None	-	No action	
LCS Results	Yes	None	-	No action	
Matrix Spikes Sample ID: J17XK5	Yes	None	-	No action	
Lab Duplicates Sample ID:	Not analyzed				
Field Duplicate Sample ID:	Not collected				
Summary					
Validity of Data	Not all QC criteria were met, but no data were rejected.				
Additional Notes:					

SDG K1486 - SVOC QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1486	**W&C Project No.:**222007	
Medium: Sediment		**Analytes:** SVOCs	
Samples: J17YF2, J17XJ1, J17XK5			
Laboratory: Lionville	**Date Data Assessment Completed:** 02/01/10 **Complete By:** RDD	**Sample Collection Date:** 12/05/08	**Sample Analysis Date:** 1/18/09

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No action	
Detection Limits	No	2-chloroaniline, 2-nitroaniline, 2,4-dinitrophenol, 4-nitrophenol, 4-nitroaniline, pentachlorophenol, hexachlorobenzene, 3,3'-dichlorobenzidine have RDLs that exceed those specified in work plan.	-	No action	
Blanks					
Method Blanks	Yes	None	-	No action	
Laboratory Blank	Yes	None	-	No action	
Other QC					
Surrogate Recoveries	Yes	None	-	No action	
LCS Results	No	2-methylphenol = 46% 2,4-dichlorophenol = 48% Naphthalene = 37% 4-chloro-3-methylphenol = 49% 2,4,6-trichlorophenol = 48% 2-nitroaniline = 47% 2,6-dinitrotoluene = 48% 3-nitroaniline = 46% Acenaphthene = 49% 2,4-dinitrophenol= 48% Dibenzofuran = 49% 2,4-Dinitrotoluene = 48% Fluorene = 48% 4-chloroaniline =38% N-nitrosodiphenylamine = 43% 4-Bromophenyl Phenyl ether = 47% Pentachlorophenol = 45% Carbazole = 39% 3,3'-dichlorobenzidine = 32%	J	Qualify positive and ND sample results as estimated (J).	All samples

SDG K1486 - SVOC QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1486	**W&C Project No.:**222007
Medium: Sediment		**Analytes:** SVOCs
Samples: J17YF2, J17XJ1, J17XK5		

Laboratory: Lionville	**Date Data Assessment Completed:** 02/01/10 **Complete By:** RDD	**Sample Collection Date:** 12/05/08	**Sample Analysis Date:** 1/18/09

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
		Benzo[b]fluoranthene = 47% Benzo[k]fluroanthene = 48% Benzo[a]pyrene = 45% Indeno[1,2,3-cd]pyrene = 46% Benzo[g,h,i]perylene = 48%			
Matrix Spikes Sample ID: J17XK5	No	Hexachloroethane = 35%/9% 1,2-dichlorobenzene = 24% 1,3-dichlorobenzene = 14% 1,4-dichlorobenzene = 16% 3,3'-Dichlorobenzidine = 0% Hexachlorocyclopentadiene = 0%	J	Qualify positive and ND results of all.	All samples
Lab Duplicates Sample ID:	Not analyzed				
Field Duplicates Sample ID:	Not collected				
Summary					
Validity of Data	Not all QC criteria were met, but no data were rejected.				
Additional Notes:					

SDG K1486 - PCB QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1486	**W&C Project No.:**222007
Medium: Sediment		**Analytes:** PCBs
Samples: J17YF2, J17XJ1, J7XK5		

Laboratory: Lionville	**Date Data Assessment Completed:** 02/01/10 **Complete By:** RDD	**Sample Collection Date:** 12/05/08	**Sample Analysis Date:** 1/17-18/09

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No action	
Detection Limits	Yes	None	-	No action	
Blanks					
Method Blank	Yes	None	-	No action	
Equipment Blank Sample ID:	Not collected				
Other QC Results					
Surrogate Recoveries	Yes	None	-	No action	
LCS Results	Yes	None	-	No action	
Matrix Spikes Sample ID: J17YF2	Yes	None	-	No action	
Lab Duplicates Sample ID:	Not analyzed				
Field Duplicates Sample ID:	Not collected				
Summary					
Validity of Data	All QC parameters were compliant.				
Additional Notes:					

SDG K1486 - Pesticides QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1486	**W&C Project No.:**222007
Medium: Sediment		**Analytes:** Pesticides
Samples: J17YF2, J17XJ1, J7XK5		

Laboratory: Lionville	**Date Data Assessment Completed:** 02/01/10 **Complete By:** RDD	**Sample Collection Date:** 12/05/08	**Sample Analysis Date:** 1/15,16,17/09

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No action	
Detection Limits	Yes	None	-	No action	
Blanks					
Method Blank	Yes	None	-	No action	
Equipment Blank Sample ID:	Not collected				
Other QC Results					
Surrogate Recoveries	Yes	None	-	No action	
LCS Results	No	No LCS results for toxaphene	J	Qualify all associated results as estimated (J)	Impacts to all samples above.
Matrix Spikes Sample ID: J17YF2	No	MSD recovery of 4,4'-DDT and methoxychlor below the lower control limit.	J	Qualify positive and ND results as estimated (J)	All samples
Lab Duplicates Sample ID:	Not analyzed				
Field Duplicate Sample ID:	Not collected				
QC Summary					
Validity of Data	Not all QC criteria were met, but no data were rejected.				
Additional Notes:					

SDG K1486 - Metals QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1486	**W&C Project No.:**222007	
Medium: Sediment		**Analytes:** Metals	
Samples: J17XJ1, J17XJ2, J17XJ3, J17XJ4, , J17XK5, J17XK9, J17YF2, J17YF3			
Laboratory: Lionville	**Date Data Assessment Completed:** 02/01/10 **Complete By:** RDD	**Sample Collection Date:** 12/05/08	**Sample Analysis Date:** 1/13/09 Hg 2/9/09 others

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	No	Hg	J	Qualify all Hg results as estimated (J) for associated samples	All samples.
Detection Limits	No	RDLs for Ca, Fe, P, Zn exceed those specified in the work plan.	-	No action	
Blanks					
Preparation Blank	No	Cr = 0. 207 mg/kg Mg = 2.85 mg/kg Mo = 0.81 mg/kg Ni = 0.71 mg/kg Sn = 1.22 mg/kg	UJ	Qualify results > IDL but < 5x blank result as ND (UJ).	Impacts to the following samples: Mo – All samples
Equipment Blank Sample ID:	Not collected				
Other QC Results					
LCS Results	No	As = 185% Sb = 188% Fe = 156% Tl = 0% V = 189%	J	Qualify As, Fe, V results as estimated for sample values > IDL and no action for ND results. For Tl spike concentration just above IDL so no action taken.	Impacts the following: As, Sb, Fe, V – all samples
Matrix Spikes Sample ID: J17YF2	No	Antimony = 54%	J	Qualify positive and ND sample results as estimated (J).	All samples
Lab Duplicates Sample ID: J17YF2	Yes	None	-	No action	
Field Duplicate Sample ID:	Not collected	Not collected			
QC Summary					
Validity of Data	Not all QC criteria met, but no data were rejected.				
Additional Notes:					

SDG K1486 - Radionuclides QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1486	**W&C Project No.:**222007	
Medium: Sediment		**Analytes:** Gamma scan, C_{14}, Sr_{90}, Tc_{99}, and Isotopic Th, U, Pu	
Samples: J17XJ1, J17XJ2, J17XJ3, J17XJ4, J17XK5, J17XK9, J17YF2, J17YF3			
Laboratory: Eberline	**Date Data Assessment Completed:** 02/01/10 **Complete By:** RDD	**Sample Collection Date:** 12/05/08	**Sample Analysis Date:** 01/09

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No action	
Detection Limits	Yes	None	-	No action	
Blanks					
Method Blanks	Yes	None	-	No action	
Equipment Blank Sample ID:	Not collected				
Other QC Results					
LCS Results	Yes	None	-	No action	
Matrix Spikes - C_{14}	No	No MS was analyzed	J	Qualify positive and ND samples results as estimated (J).	All samples
Tracer Results	Yes	None	-	No action	
Lab Duplicates Sample ID: J17XJ4	Yes	None	-	No action	
Field Duplicate Sample ID:	Not collected				
QC Summary					
Validity of Data	Not all QC criteria met, but no data were rejected.				
Additional Notes:					

SDG K1486 - DRO QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1486	**W&C Project No.:**222007	
Medium: Sediment		**Analytes:** DRO	
Samples: J17YF2, J17XJ1, J7XK5			
Laboratory: Lionville	**Date Validation Completed:** 02/01/10 **Complete By:** RDD	**Sample collection:** 12/05/08	**Sample Analysis Date:** 1/9,15/09

QC Parameter	**All in Spec.?**	**Non-Compliant Results**	**Flag**	**Action/ Notes**	**Associated Samples**
Holding Times	Yes	None	-	No action	
Surrogates	Yes	None	-	No action	
Blanks					
Method Blank	Yes	None	-	No action	
Equipment Blank Sample ID:	Not collected				
Other QC					
LCS Results	No	DRO = 37%	J	Qualify positive and ND results as estimated (J).	All samples
Matrix Spikes Sample ID: J17XK5	No	DRO MS and MSD recovery below the lower control limit.	J	Qualify positive and ND results as estimated (J).	All samples
Lab Duplicates Sample ID:	Not analyzed				
Field Duplicate Sample ID:	Not collected				
QC Summary					
Validity of Data	Not all QC criteria were met, but no data were rejected.				
Additional Notes:					

SDG K1486 - TOC QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1486	**W&C Project No.:**222007	
Medium: Sediment		**Analytes:** TOC	
Samples: J17XJ1, J17XJ2, J17XJ3, J17XJ4, J17XK5, J17XK9, J17YF2, J17YF3			
Laboratory: Lionville	**Date Data Assessment Completed:** 02/01/10 **Complete By:** RDD	**Sample Collection Date:** 12/05/2008	**Sample Analysis Date:** 12/08/2008

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No action	
Detection Limit	Yes	None	-	No action	
Blanks					
Method Blank	Yes	None	-	No action	
Other QC					
LCS Results	Yes	None	-	No Action	
Matrix Spikes Sample ID: J17YF2	Yes	None	-	No Action	
Lab Duplicate Sample ID: J17YF2	Yes	None	-	No action	
Field Duplicate Sample ID:	Not collected				
QC Summary					
Validity of Data	All QC parameters were compliant.				
Additional Notes:					

B.58 SDG K1489

Validated by ELR - Included in Appendix F

B.59 SDG K1491

SDG K1491 - VOC QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1491	**W&C Project No.:**222007	
Medium: Sediment		**Analytes:** VOA	
Samples: J17W01, J17W05, J180B1, J180B0**,** J18030, J18031, J18092, J18096, J18098, J18093, J18094, J18095, J17VP2, J18097			
Laboratory: Lionville	**Date Data Assessment Completed:** 02/09/2010 **Complete By:** RDD	**Sample Collection Date:** 12/09/2008	**Sample Analysis Date:** 12/19-20/2008

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No action	
Detection Limits	No	The detection limit for 1,1,1-trihchloroethane exceeds the specification in the work plan.	-	No action	
Blanks					
Blanks - Method	No	$MeCl_2$ = 2 ug/kg	UJ	Qualify positive sample results < 10x the blank concentration as estimated non-detect (UJ) and raise positive results below the RDL to the RDL.	All samples. Impacts all samples except J18093.
Equipment Blank Sample ID:	Not collected				
Trip Blank Sample ID: J17W01 J17W05	 No No	 $MeCl_2$ = 3 ug/kg $MeCl_2$ = 2 ug/kg	-	No action based on guidance	
Other QC Results					
Surrogate Recoveries	Yes	None	-	No action	
LCS Results	No	Acetone = 172.55%	J	Qualify positive and non-detect results as estimated (J)	All samples

SDG K1491 - VOC QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1491	**W&C Project No.:**222007	
Medium: Sediment		**Analytes:** VOA	
Samples: J17W01, J17W05, J180B1, J180B0**,** J18030, J18031, J18092, J18096, J18098, J18093, J18094, J18095, J17VP2, J18097			
Laboratory: Lionville	**Date Data Assessment Completed:** 02/09/2010 **Complete By:** RDD	**Sample Collection Date:** 12/09/2008	**Sample Analysis Date:** 12/19-20/2008

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Matrix Spikes Sample ID: J18096	No	Acetone = 294%/274% 2-Butanone = 274%/250% 4-Methyl-2-pentanone = 156% 2-Hexanone = 211%/198%	-	Qualify positive sample results as estimated (J).	All samples. No impact since all are ND for these compounds.
Lab Duplicates Sample ID:	Not analyzed				
Field Duplicate Sample ID: J17VP2/J18097	Yes	None	-	No action	
Summary					
Validity of Data	Not all QC criteria met, but no data rejected.				
Additional Notes:					

SDG K1491 - SVOC QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1491	**W&C Project No.:**222007
Medium: Sediment		**Analytes:** SVOCs
Samples: J180B1, J180B0**,** J18030, J18031, J18092, J18096, J18098, J18093, J18094, J18095, J17VP2, J18097		

Laboratory: Lionville	**Date Data Assessment Completed:** 2/09/2010 **Complete By:** RDD	**Sample Collection Date:** 12/09/2008	**Sample Analysis Date:** 01/04/2009 extr 01/23-25/2009 anal

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	No	Holding time to extraction exceeded by < 2x limit.	J	Qualify positive and ND sample results as estimated (J).	All samples.
Detection Limits	No	2,4-dinitrophenol, 2-nitroaniline, 3-nitroaniline, 4-nitroaniline, 4-nitrophenol, and pentachlorophenol all had reporting limits above those specified in the work plan	-	No action	
Blanks					
Method Blanks	Yes	None	-	No Action	
Laboratory Blank	Not collected				
Other QC					
Surrogate Recoveries	No	2,4,6-tribromophenol = 5% for J18030	R	Qualify non-detect results as rejected (R) and positive results as estimated (J) for associated acid fraction compounds	J18030 Applies to 2,4-Dichlorophenol, 2,4,6-Trichlorophenol, 2,4,5-Trichlorophenol, Pentachlorophenol, bis(2-Chloroethyl)ether, bis(2-chloroisopropyl) ether Bis(2-chloroethoxy)methane 4-Chlorophenl phenyl ether 4-bromophenyl phenyl ether
LCS Results	No	4-Chloroaniline =38% 3,3'Dichlorobenzidine = 41%	J	Qualify positive and ND sample results as estimated (J).	All samples

SDG K1491 - SVOC QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1491	**W&C Project No.:**222007	
Medium: Sediment		**Analytes:** SVOCs	
Samples: J180B1, J180B0, J18030, J18031, J18092, J18096, J18098, J18093, J18094, J18095, J17VP2, J18097			
Laboratory: Lionville	**Date Data Assessment Completed:** 2/09/2010 **Complete By:** RDD	**Sample Collection Date:** 12/09/2008	**Sample Analysis Date:** 01/04/2009 extr 01/23-25/2009 anal

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Matrix Spikes Sample ID: J180B1	No	4-Nitrophenol = 0%/11% 4-nitroaniline = 47%/31% 4-Chloroaniline = 7% /0% Pentachlorophenol = 0%/31% 3-Nitroaniline = 29%/24% 3,3'-Dichlorobenzidine = 0%/0% Hexachlorocyclopentadiene = 0%/0% 2,4,6-Trichlorophenol = 23%/32% Hexachloroethane = 49%/35%	J	Qualify positive and ND sample results as estimated (J).	All samples
Lab Duplicates Sample ID:	Not analyzed				
Field Duplicates Sample ID: J17VP2/J18097	Yes	None	-	No action	
Summary					
Validity of Data	Not all of QC criteria met, but no data were rejected.				
Additional Notes:					

SDG K1491 - PCB QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1491	**W&C Project No.:**222007	
Medium: Sediment		**Analytes:** PCBs	
Samples: J180B1, J180B0, J18030, J18031, J18092, J18096, J18098, J18093, J18094, J18095, J17VP2, J18097			
Laboratory: Lionville	**Date Data Assessment Completed:** 2/09/2010 **Complete By:** RDD	**Sample Collection Date:** 12/09/2008	**Sample Analysis Date:** 01/05/2009 extr 01/22-23/2009 anal

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	No	All samples extracted < 2x holding time limit.	J	Qualify all samples as estimated (J).	All samples
Detection Limits	No	All samples diluted by 10x due to matrix interferences.	-	No action	
Blanks					
Method Blank	Yes	All ND but DCB surrogate < LCL	-	No action	
Equipment Blank Sample ID:	Not collected				
Other QC Results					
Surrogate Recoveries	No	DCB exceeds UCL for J18031	-	No action	J18031 No impact since ND for all.
LCS Results	Yes	None	-	No action	
Matrix Spikes Sample ID: J17VP2	Yes	None	-	No action	
Lab Duplicates Sample ID:	Not analyzed				
Field Duplicates Sample ID: J17VP2/J18097	Yes	None	-	No action	
Summary					
Validity of Data	Not all QC criteria were met but none of the data were rejected.				
Additional Notes:					

SDG K1491 - Pesticides QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1491	**W&C Project No.:**222007	
Medium: Sediment		**Analytes:** Pesticides	
Samples: J180B1, J180B0, J18030, J18031, J18092, J18096, J18098, J18093, J18094, J18095, J17VP2, J18097			
Laboratory: Lionville	**Date Data Assessment Completed:** 2/09/2010 **Complete By:** RDD	**Sample Collection Date:** 12/09/2008	**Sample Analysis Date:** 01/05/2009 extr 01/22,27-28/2009 anal

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	No	Holding times for sample extraction exceeded by < 2x limit.	J	Qualify positive and ND samples results as estimated (J).	All samples
Detection Limits	Yes	None	-	No action	
Blanks					
Method Blank	Yes	None	-	No action	
Equipment Blank Sample ID:	Not collected				
Other QC Results					
Surrogate Recoveries	Yes	None	-	No action	
LCS Results	No	4,4'-DDT = 152%	-	Qualify positive sample results as estimated (J).	All samples. No impact since all samples ND for this compound.
		No LCS results for toxaphene.	J	Toxaphene: Qualify positive and non-detect sample results as estimated (J).	Toxaphene: Impacts to all samples above.
Matrix Spikes Sample ID: J17VP2	No	Beta-BHC = 181%/154%	-	Qualify positive sample results as estimated (J).	All samples. No impact since all samples ND for this compound.
Lab Duplicates Sample ID:	Not analyzed				
Field Duplicate Sample ID: J17VP2/ J18097	Yes	None	-	No action	

SDG K1491 - Pesticides QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1491	**W&C Project No.:**222007	
Medium: Sediment		**Analytes:** Pesticides	
Samples: J180B1, J180B0, J18030, J18031, J18092, J18096, J18098, J18093, J18094, J18095, J17VP2, J18097			
Laboratory: Lionville	**Date Data Assessment Completed:** 2/09/2010 **Complete By:** RDD	**Sample Collection Date:** 12/09/2008	**Sample Analysis Date:** 01/05/2009 extr 01/22,27-28/2009 anal

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
QC Summary					
Validity of Data	Not all QC criteria were met, but no data rejected.				
Additional Notes:					

SDG K1491 - Metals QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1491	**W&C Project No.:**222007	
Medium: Sediment	**Analytes:** Metals		
Samples: J180B1, J180B0, J18030, J18031, J18092, J18096, J18098, J18093, J18094, J18095, J17VP2, J18097, J18032, J17YW0-A			
Laboratory: Lionville	**Date Data Assessment Completed:** 02/09/2010 **Complete By:** RDD	**Sample Collection Date:** 12/09/2008	**Sample Analysis Date:** 02/23/2009 01/14/2009 Hg

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	No	Hg analysis performed < 2x holding time.	J	Qualify positive and ND Hg results as estimated (J).	All samples
Detection Limits	No	Detection limits of Ca, Fe, P and Zn above limits specified in work plan	-	No action.	
Blanks					
Preparation Blank	No	Be = 0.02 mg/kg Cr = 0.2 mg/kg Pb = 0.3 mg/kg Mo = 0.1 mg/kg Ni = 0.7 mg/kg Sn = 1.1 mg/kg	UJ	Qualify positive sample results < 5x blank concentration as ND (UJ).	All samples. Impacts to the following: Mo –all except J18030, J18031, J18032. Sn – J180B0, J18095
Equipment Blank Sample ID:	Not collected				
Other QC Results					
LCS Results	No	Sb = 196% As = 190% Fe = 141% Pb = 52% V = 197%	J	Qualify positive sample results of Sb, As, Fe, and V and positive and ND sample results of Pb as estimated (J).	All samples. Impacts include: As – All samples Fe – All samples Pb – All samples V – All samples
Matrix Spikes Sample ID: J180B1	No	Sb = 43% Cd = 58% Ca = 19%	J/R	Qualify positive and ND sample results of Sb and Cd as estimated (J). Qualify positive and ND Ca results as rejected (R).	All samples.
Lab Duplicates Sample ID: J180B1	Yes	None	-	No action	
Field Duplicate Sample ID: J17VP2/J18097	Yes	None	-	No action based on guidance	
QC Summary					

SDG K1491 - Metals QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1491	**W&C Project No.:**222007
Medium: Sediment	**Analytes:** Metals	
Samples: J180B1, J180B0, J18030, J18031, J18092, J18096, J18098, J18093, J18094, J18095, J17VP2, J18097, J18032, J17YW0-A		

Laboratory: Lionville	**Date Data Assessment Completed:** 02/09/2010 **Complete By:** RDD	**Sample Collection Date:** 12/09/2008	**Sample Analysis Date:** 02/23/2009 01/14/2009 Hg

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Validity of Data	No, but none of the data were rejected.				
Additional Notes:					

SDG K1491 - Radionuclides QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1491	**W&C Project No.:**222007	
Medium: Sediment		**Analytes:** Radionuclides	
Samples: J17VP2, J18030, J18031, J18032, J18092, J18093, J18094, J18095, J18096, J18097, J18098, J180B0, J180B1			
Laboratory: Eberline	**Date Data Assessment Completed:** 02/08/2010 **Complete By:** RDD	**Sample Collection Date:** 12/09/2008	**Sample Analysis Date:** 1-2/2009

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No action	
Detection Limits	Yes	None	-	No action	
Blanks					
Method Blanks	Yes	None	-	No action	
Equipment Blank Sample ID:	Not collected				
Other QC Results					
LCS Results	Yes	None	-	No action	
Matrix Spikes – C_{14}	No	No MS sample was analyzed	J	Qualify positive and non-detect results as estimated (J).	All samples
Tracer Results	Yes	None	-	No action	
Lab Duplicates Sample ID: J18093	No	Thorium-228 = 55%	-	No action since difference between results is less than 2x RDL	
Field Duplicate Sample ID: J17VP2/J18097	Yes	None	-	No action	
QC Summary					
Validity of Data	Yes, all QC met and no data rejected.				

SDG K1491 - Radionuclides QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1491	**W&C Project No.:**222007	
Medium: Sediment		**Analytes:** Radionuclides	
Samples: J17VP2, J18030, J18031, J18032, J18092, J18093, J18094, J18095, J18096, J18097, J18098, J180B0, J180B1			
Laboratory: Eberline	**Date Data Assessment Completed:** 02/08/2010 **Complete By:** RDD	**Sample Collection Date:** 12/09/2008	**Sample Analysis Date:** 1-2/2009

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Additional Notes:					

SDG K1491 - DRO QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1491	**W&C Project No.:**222007

Medium: Sediment	**Analytes:** DRO

Samples: J180B1, J180B0, J18030, J18031, J18092, J18096, J18098, J18093, J18094, J18095, J17VP2, J18097

Laboratory: Lionville	**Date Validation Completed:** 02/09/2010 **Complete By:** RDD	**Sample collection:** 12/09/2008	**Sample Analysis Date:** 01/04/2009 extr 01/20/2009 anal

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	No	Holding times exceeded by < 2x limit for DRO and Motor Oil.	J	Qualify as estimated (J)	All samples.
Surrogates	No	p-terphenyl recoveries exceed criteria for the following: J18030 J18093	J	Qualify positive DRO results for associated samples as estimated (J).	J18030 J18093
Blanks					
Method Blank	No	DRO = 1050 mg/kg	UJ	Qualify positive sample results < 5x the blank contamination as ND (UJ).	All samples. Impacts to the following: J180B0 J18096 J17VP2 J18097
Equipment Blank Sample ID:	Not collected				
Other QC					
LCS Results	No	DRO = 60%	J	Qualify positive and ND sample results as estimated (J).	All samples.
Matrix Spikes Sample ID: J180B1	No	DRO = 82%/67%	J	Qualify positive and ND sample results as estimated (J).	All samples
Lab Duplicates Sample ID:	Not analyzed				
Field Duplicate Sample ID: J17VP2/J18097	No	Motor Oil = 47%	-	No action based on guidance	
QC Summary					
Validity of Data	Not all QC met criteria but no data rejected.				

Additional Notes: Duplicate RPD indicates variability in motor oil results due to heterogeneity of sediment sample

SDG K1491 - TOC QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1491	**W&C Project No.:**222007	
Medium: Sediment		**Analytes:** TOC	
Samples: J180B1, J180B0, J18030, J18031, J18092, J18096, J18098, J18093, J18094, J18095, J17VP2, J18097, J18032, J17YW0-A			
Laboratory: Lionville	**Date Data Assessment Completed:** 02/09/2009 **Complete By:** RDD	**Sample Collection Date:** 12/09/2008	**Sample Analysis Date:** 01/13/2009

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	No	Samples were analyzed < 2x holding time limit.	J	Qualify all samples as estimated (J).	All samples.
Detection Limit	Yes	None	-	No action.	
Blanks					
Method Blank	Yes	None	-	No action	
Other QC					
LCS Results	Yes	None	-	No action	
Matrix Spikes Sample ID: J18093	Yes	None	-	No action	
Lab Duplicate Sample ID: J18093	Yes	None	-	No action	
Field Duplicate Sample ID: J17VP2/J18097	No	RPD =59%	-	No action based on guidance.	
QC Summary					
Validity of Data	Not all QC met criteria but no data rejected.				
Additional Notes:					

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SDG K1495 - VOC QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1495	**W&C Project No.:**222007
Medium: Sediments		**Analytes:** VOA
Samples: J17VP1, J17VP3, J18OK0, J18OK1, J18OK2, J18OK3, J18OK4, J18OK5, J18OK6, J18OK7, J18OK8, J18OK9, J18OT5, J18OT6, J18OT7, J18OT8, J18OT9, J17W15		

Laboratory: Lionville	**Date Data Assessment Completed:** 02/17/2010 **Complete By:** RDD	**Sample Collection Date:** 12/11/2009	**Sample Analysis Date:** 12/21/2008 12/23/2009

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No action	
Detection Limits	No	Detection limit 1,1,1-trichloroethane exceeds limit in work plan.	-	No action	
Blanks					
Blanks - Method 12/21/2008 12/22/2008	Yes Yes	None None	- -	No action No action	
Equipment Blank Sample ID:	Not collected				
Trip Blank Sample ID: J17W15	Yes	None	-	No action	
Other QC Results					
Surrogate Recoveries	No	J17VP1 - one surr exceeds UCL.	-	Qualify positive results as estimated (J).	J17VP1. No impact since all ND.
LCS Results	No	Acetone = 151%	J	Qualify positive results as estimated (J).	J18OK0, J18OK1
	No	2-Butanone =177% Acetone =197%	-	Qualify positive results as estimated (J).	J18OK2, J18OK3, J18OK4, J18OK5, J18OK6, J18OK7, J18OK8, J18OK9, J18OT5, J18OT6, J18OT7, J18OT8, J18OT9, J17VP1, J17VP3 No impact since all compounds ND in all samples above.

SDG K1495 - VOC QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1495	**W&C Project No.:**222007	
Medium: Sediments		**Analytes:** VOA	
Samples: J17VP1, J17VP3, J18OK0, J18OK1, J18OK2, J18OK3, J18OK4, J18OK5, J18OK6, J18OK7, J18OK8, J18OK9, J18OT5, J18OT6, J18OT7, J18OT8, J18OT9, J17W15			
Laboratory: Lionville	**Date Data Assessment Completed:** 02/17/2010 **Complete By:** RDD	**Sample Collection Date:** 12/11/2009	**Sample Analysis Date:** 12/21/2008 12/23/2009

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Matrix Spikes Sample ID:J17VP1	No	All MS/MSD recoveries compliant. **Non-compliant RPDs** 2-butanone = 32% 2-hexanone = 37% 4-methyl-2-pentanone = 32% Chloromethane = 38% Ethylbenzene = 31%	J	Qualify positive and ND sample concentrations as estimated (J).	All samples.
Lab Duplicates	Not analyzed				
Field Duplicates Sample ID:J17VP1/J18OK6 Sample ID:J17VP3/J18OT6	 Yes Yes	 None None	 - -	 No action No action	
Summary					
Validity of Data	Not all QC criteria were met, but none of the data were rejected				
Additional Notes:					

SDG K1495 - VOC QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1495	**W&C Project No.:**222007
Medium: Sediments		**Analytes:** VOA
Samples: J18045, J18046, J18047, J18OH5, J18OH6, J18OH7, J18ON0, J18OP0, J18OP1, J18OP3, J18OP4, J18OR0, J18OR4, J18OR3, J18XP7, J17WO2, J17VY2		

Laboratory: Lionville	**Date Data Assessment Completed:** 12/18/2010 **Complete By:** RDD	**Sample Collection Date:** 12/10/2008	**Sample Analysis Date:** 12/20/2008 12/21/2008

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No action	
Detection Limits	No	Samples diluted due to matrix effects which elevated detection limits on some samples. Without dilution, 1,1,1-trichloroethane exceeded limit specified in work plan.	-	No action	
Blanks					
Blanks - Method	No	$MeCl_2$ = 2 ug/kg	UJ	Qualify sample results < 10x blank concentration as ND (UJ) and raise value to RL.	All samples. Impacts to: J18046, J18047, J18OH7, J18ON0, J18OP0, J18OR0, J18OR4, J18WO2
Equipment Blank Sample ID:	Not collected				
Trip Blank					
Sample ID:J17VY2	Yes	None	-	No action	
Sample ID:J17WO2	Yes	None	-	No action	
Other QC Results					
Surrogate Recoveries	Yes	None	-	No action	
LCS Results	No	Acetone =184% 2-Butanone =175%	-	Qualify positive sample results as estimated (J).	All samples. No impact since all samples ND for acetone and 2-Butanone.

SDG K1495 - VOC QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA		**SDG No.:** K1495	**W&C Project No.:**222007		
Medium: Sediments			**Analytes:** VOA		
Samples: J18045, J18046, J18047, J18OH5, J18OH6, J18OH7, J18ON0, J18OP0, J18OP1, J18OP3, J18OP4, J18OR0, J18OR4, J18OR3, J18XP7, J17WO2, J17VY2					
Laboratory: Lionville	**Date Data Assessment Completed:** 12/18/2010 **Complete By:** RDD		**Sample Collection Date:** 12/10/2008	**Sample Analysis Date:** 12/20/2008 12/21/2008	
QC Parameter	**All in Spec.?**	**Non-Compliant Results**	**Flag**	**Action/ Notes**	**Associated Samples**
Matrix Spikes Sample ID:J18OH5	No	**Non compliant recoveries** Acetone = 171%/128% 2-Butanone = 151%/132%	-	Qualify positive sample results as estimated (J).	All samples. No impact since all samples ND for acetone and 2-Butanone.
Lab Duplicates	Not analyzed				
Field Duplicates Sample ID:	Not collected				
Summary					
Validity of Data	Not all QC criteria met, but none of the data were rejected.				
Additional Notes:					

SDG K1495 - SVOC QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1495	**W&C Project No.:**222007	
Medium: Sediments		**Analytes:** SVOCs	
Samples: J17VP1, J17VP3, J18OK0, J18OK1, J18OK2, J18OK3, J18OK4, J18OK5, J18OK6, J18OK7, J18OK8, J18OK9, J18OT5, J18OT6, J18OT7, J18OT8, J18OT9			
Laboratory: Lionville	**Date Data Assessment Completed:** 02/17/2010 **Complete By:** RDD	**Sample Collection Date:** 12/11/2008	**Sample Analysis Date:** 01/08/2009 extr 01/30-31/2009 anal 02/06/2009 anal 02/07/2009 anal

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	No	Sample extraction at < 2x holding time.	J	Qualify positive and ND sample results as estimated (J).	All samples.
Detection Limits	No	Samples diluted due to matrix effects which elevated detection limits on some samples. Without dilution, hexachlorobenzene, 2-chloroaniline, 2-nitroaniline, 2,4-dinitrophenol, 4-nitrophenol, 4-nitroaniline, pentachlorophenol, 3,3'-dichlorobenzidine have RDLs that exceed those specified in work plan.	-	No action	
Blanks					
Method Blanks	No	Di-n-butyl phthalate = 80.9 ug/kg	UJ	Qualify positive sample results < 5x the blank concentration as ND (UJ)	All samples. No impact since all ND for this compound.
Equipment Blank	Not collected				
Other QC					
Surrogate Recoveries	Yes	None	-	No action	
LCS Results	No	4-Chloroaniline = 40%	J	Qualify positive and ND sample results as estimated (J).	All samples
Matrix Spikes Sample ID:J18OT8	No	**Non-compliant recoveries** Hexachloroethane = 38%/31% 4-Chloroaniline = 14%/19% 3-Nitroaniline =49% 3,3'-Dichlorobenzidine = 32%/34% 1,3-Dichlorobenzene =60% /46% 1,4-Dichlorobenzene = 60%/47% 1,2-dichlorobenzene = 64%/48% Nitrobenzene = 60%/47% Isophorone =60%/47% 1,2,4-Trichlorobenzene =60%/46% Hexachlorobutadiene =62%/49%	J	Qualify positive and ND sample results as estimated (J).	All samples

SDG K1495 - SVOC QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1495	**W&C Project No.:**222007

Medium: Sediments	**Analytes:** SVOCs

Samples: J17VP1, J17VP3, J18OK0, J18OK1, J18OK2, J18OK3, J18OK4, J18OK5, J18OK6, J18OK7, J18OK8, J18OK9, J18OT5, J18OT6, J18OT7, J18OT8, J18OT9

Laboratory: Lionville	**Date Data Assessment Completed:** 02/17/2010 **Complete By:** RDD	**Sample Collection Date:** 12/11/2008	**Sample Analysis Date:** 01/08/2009 extr 01/30-31/2009 anal 02/06/2009 anal 02/07/2009 anal

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
		4-Nitroaniline =49%/45% Benzo[g,h,i]perylene=66%/48% **Non-Compliant RPDs** Phenol = 34% Bis(2-chloroethyl) ether = 33% 2-Chlorophenol = 32% 2-Methylphenol = 33% Bis(2-chloroisopropyl) ether = 34% 4-Methylphenol = 30% N-nitrosophenylamine = 34%			
Lab Duplicates Sample ID:	Not analyzed				
Field Duplicates					
Sample ID:J17VP3/J18OT6	Yes	None	-	No action	
Sample ID:J17VP1/J18OK6	Yes	None	-	No action	
Summary					
Validity of Data	Not all QC in criteria but no data were rejected.				
Additional Notes:					

SDG K1495 - SVOC QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1495	**W&C Project No.:**222007

Medium: Sediments	**Analytes:** SVOCs

Samples: J18045, J18046, J18047, J18OH5, J18OH6, J18ON0, J18ON1, J18ON2, J18OP0, J18OP1, J18OP3, J18OP4, J18OR0, J18OR4, J18OR3, J17XP7

Laboratory: Lionville	**Date Data Assessment Completed:** 02/18/2010 **Complete By:** RDD	**Sample Collection Date:** 12/10/2008	**Sample Analysis Date:** 01/06/2009 extr; 01/25/2009 anal; 01/28/2009 anal; 02/07/2009 anal

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	No	Samples extracted < 2x holding time limit.	J	Qualify positive and ND sample results as estimated (J).	
Detection Limits	No	Samples diluted due to matrix effects which elevated detection limits on some samples. Without dilution, hexachlorobenzene, 2-chloroaniline, 2-nitroaniline, 2,4-dinitrophenol, 4-nitrophenol, 4-nitroaniline, pentachlorophenol, 3,3'-dichlorobenzidine have RDLs that exceed those specified in work plan.			
Blanks					
Method Blanks	Yes	None	-	No action	
Equipment Blank Sample ID:	Not analyzed				
Other QC					
Surrogate Recoveries	No	J18ON0 all high J18ON2 all high J18OP1 one high J18OP3, J18OP4 two BN surr high J18OR4 one high	J	Qualify positive sample results as estimated (J).	No action for J18OP1 and J18OR4 since only one surrogate out of criteria. For J18ON0, J18ON2, J18OP3 no impact since all samples ND for all SVOAs.
LCS Results	No	Bis(2-chloroethyl) ether =39% 2-Chlorophenol = 46% 1,3-Dichlorobenzene=17% 1,4-Dichlorobenzene = 18% 1,2-Dichlorobenzene = 25% 2-Methylphenol = 45%	J	Qualify positive and ND sample results as estimated (J).	All samples.

SDG K1495 - SVOC QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1495		**W&C Project No.:**222007
Medium: Sediments		**Analytes:** SVOCs	
Samples: J18045, J18046, J18047, J18OH5, J18OH6, J18ON0, J18ON1, J18ON2, J18OP0, J18OP1, J18OP3, J18OP4, J18OR0, J18OR4, J18OR3, J17XP7			
Laboratory: Lionville	**Date Data Assessment Completed:** 02/18/2010 **Complete By:** RDD	**Sample Collection Date:** 12/10/2008	**Sample Analysis Date:** 01/06/2009 extr; 01/25/2009 anal; 01/28/2009 anal; 02/07/2009 anal

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
		Bis(2-chloroisopropyl)ether = 47%/108% 4-Methylphenol = 49% Hexachloroethane = 20% Nitrobenzene = 47% 2,4-Dimethylphenol =16% 1,2,4-trimethybenzene =44% 4-Chloroaniline =49% Hexachlorbutadiene =44% Hexachlorocyclopentadiene = 25% 4-Nitroaniline =42% Carbazole = 45% 3,3'Dichlorobenzidine = 47%			
Matrix Spikes Sample ID:J18046	No	Hexachlorocyclopentadiene = 22%/19% All phthalates exceed UCL	J	Qualify positive and ND sample results of hexachlorocyclopentadiene and positive phthalate results as estimated (J).	All samples. No impact from phthalate non compliance since all samples ND for all. Hexachlorocyclopentadiene qualified as estimated for all samples above.
Lab Duplicates Sample ID:	Not analyzed				
Field Duplicates Sample ID:	Not collected				
Summary					
Validity of Data	Not all QC criteria were met, but one of the data were rejected.				

SDG K1495 - PCB QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1495	**W&C Project No.:**222007	
Medium: Sediments		**Analytes:** PCBs	
Samples: J17VP1, J17VP3, J18OK0, J18OK1, J18OK2, J18OK3, J18OK4, J18OK5, J18OK6, J18OK7, J18OK8, J18OK9, J18OT5, J18OT6, J18OT7, J18OT8, J18OT9			
Laboratory: Lionville	**Date Data Assessment Completed:** 02/17/2010 **Complete By:** RDD	**Sample Collection Date:** 12/11/ 2008	**Sample Analysis Date:** 01/08/2009 extr 01/29/2009 anal 01/30/2009 anal

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	No	Samples were extracted ≤ 2x holding time limit.	J	Qualify positive and ND sample results as estimated (J).	All samples.
Detection Limits	Yes	None	-	No action	
Blanks					
Method Blank	Yes	None	-	No action	
Equipment Blank Sample ID:	Not collected				
Other QC Results					
Surrogate Recoveries	No	J18OT6 both recoveries < LCL J18OT8 one surr. recovery < LCL J18OK7 one surr > UCL.	J	Qualify positive and ND sample concentrations for J18OT6 and J18OT8 and positive concentrations for J18OK7 as estimated (J)	J18OT6 J18OT8 No impact to J18OK7 since all ND.
LCS Results	Yes	None	-	No action	
Matrix Spikes Sample ID:J18OT5	No	Arochlor 1016 = 62%	J	Qualify positive and ND sample Arochlor 1016 results as estimated (J).	All samples.
Lab Duplicates	Not analyzed				
Field Duplicates Sample ID:	Not collected				
Summary					
Validity of Data	Not all QC met, but no data were rejected.				

SDG K1495 - PCB QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1495	**W&C Project No.:**222007	
Medium: Sediments		**Analytes:** PCBs	
Samples: J18045, J18046, J18047, J18OH5, J18OH6, J18ON0, J18ON1, J18ON2, J18OP0, J18OP1, J18OP3, J18OP4, J18OR0, J18OR4, J18OR3, J17XP7			
Laboratory: Lionville	**Date Data Assessment Completed:** 02/18/2010 **Complete By:** RDD	**Sample Collection Date:** 12/10/2008	**Sample Analysis Date:** 01/06/2009 extr 01/23/2009 anal 01/27/2009 anal

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	No	Samples were extracted < 2x holding time limit.	J	Qualify all positive and ND sample results as estimated (J).	All samples
Detection Limits	Yes	None	-	No action	
Blanks					
Method Blank	Yes	None	-	No action	
Equipment Blank Sample ID:	Not collected				
Other QC Results					
Surrogate Recoveries	No	J18OP4 both surr. high J18OR4 one surr. high	-	Qualify positive sample results as estimated (J).	J18OP4, J18OR4 No impact since both samples ND for all PCBs.
LCS Results	Yes	None	-	No action	
Matrix Spikes Sample ID:J18045	Yes	None	-	No action	
Lab Duplicates Sample ID:	Not analyzed				
Field Duplicates Sample ID:	Not collected				
Summary					
Validity of Data	Not all QC criteria were met but no data were rejected				
Additional Notes:					

SDG K1495 - Pesticides QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1495	**W&C Project No.:**222007	
Medium: Sediments		**Analytes:** Pesticides	
Samples: J17VP1, J17VP3, J18OK0, J18OK1, J18OK2, J18OK3, J18OK4, J18OK5, J18OK6, J18OK7, J18OK8, J18OK9, J18OT5, J18OT6, J18OT7, J18OT8, J18OT9			
Laboratory: Lionville	**Date Data Assessment Completed:** 02/17/2010 **Complete By:** RDD	**Sample Collection Date:** 12/11/2009	**Sample Analysis Date:** 01/08/2009 extr 01/28/2009 anal

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	No	Samples were analyzed ≤ 2x holding time.	J	Qualify positive and ND sample results as estimated (J).	All samples
Detection Limits	No	RDLs for Endosulfan I, gamma BHC, heptachlor, and heptachlor epoxide exceed specified levels in work plan.	-	No action	
Blanks					
Method Blank	Yes	None	-	No action	
Equipment Blank Sample ID:	Not collected				
Other QC Results					
Surrogate Recoveries	No	J18OT6 one surr < LCL	J	Qualify positive and ND results as estimated (J).	J18OT6
LCS Results	No	No LCS results for toxaphene	J	Qualify all associated results as estimated (J)	Impacts to all samples above.
Matrix Spikes Sample ID:J18OT5	No	Beta-BHC = 155%/164%	-	Qualify positive results as estimated (J).	All samples. No impacts since all samples are ND for beta-BHC.
Lab Duplicates Sample ID:	Not analyzed				
Field Duplicate Sample ID:	Not collected				
QC Summary					
Validity of Data	Not all QC criteria were met, but no data were rejected.				

SDG K1495 - Pesticides QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1495	**W&C Project No.:**222007
Medium: Sediments		**Analytes:** Pesticides
Samples: J17VP1, J17VP3, J18OK0, J18OK1, J18OK2, J18OK3, J18OK4, J18OK5, J18OK6, J18OK7, J18OK8, J18OK9, J18OT5, J18OT6, J18OT7, J18OT8, J18OT9		

Laboratory: Lionville	**Date Data Assessment Completed:** 02/17/2010 **Complete By:** RDD	**Sample Collection Date:** 12/11/2009	**Sample Analysis Date:** 01/08/2009 extr 01/28/2009 anal

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Additional Notes:					

SDG K1495 - Pesticides QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1495	**W&C Project No.:**222007
Medium: Sediments	**Analytes:** Pesticides	
Samples: J18045, J18046, J18047, J18OH5, J18OH6, J18ON0, J18ON1, J18ON2, J18OP0, J18OP1, J18OP3, J18OP4, J18OR0, J18OR4, J18OR3, J17XP7		

Laboratory: Lionville	**Date Data Assessment Completed:** 2/18/2009 **Complete By:** RDD	**Sample Collection Date:** 12/10/2008	**Sample Analysis Date:** 01/06/2009 extr; 01/23/2009 anal; 01/24/2009 anal

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	No	Samples were extracted < 2x holding time limit.	J	Qualify positive and ND sample results as estimated (J).	All samples.
Detection Limits	No	RDLs for Endosulfan I, gamma BHC, heptachlor, and heptachlor epoxide exceed specified levels in work plan	-	No action	
Blanks					
Method Blank	No	Aldrin = 0.333 mg/kg	-	Qualify positive sample results < 5x the blank concentration as ND (UJ).	All samples. No impact to any samples.
Equipment Blank Sample ID:	Not collected				
Other QC Results					
Surrogate Recoveries	Yes	None	-	No action	
LCS Results	No	No LCS results for toxaphene	J	Qualify all associated results as estimated (J)	Impacts to all samples above.
Matrix Spikes Sample ID:J17XP7	No	4,4'-DDD =164%/166% Endosulfan II= 143%/144% 4,4'-DDT = 39%/41%	J	Qualify positive and ND sample results of 4,4'-DDT and positive sample results of 4,4'-DDD and Endosulfan II as estimated (J).	All samples. Impacts include: 4,4'-DDT – All samples 4,4'-DDD – J18ON2
Lab Duplicates Sample ID:	Not analyzed				
Field Duplicate Sample ID:	Not collected				
QC Summary					
Validity of Data	Not all QC criteria were met, but no data were rejected.				
Additional Notes:					

SDG K1495 - Metals QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1495	**W&C Project No.:**222007	
Medium: Sediments		**Analytes:** Metals	
Samples: J17VP1, J17VP3, J18OK0, J18OK1, J18OK2, J18OK3, J18OK4, J18OK5, J18OK6, J18OK7, J18OK8, J18OK9, J18OT5, J18OT6, J18OT7, J18OT8, J18OT9			
Laboratory: Lionville	**Date Data Assessment Completed:** 02/17/2010 **Complete By:** RDD	**Sample Collection Date:** 12/11/2008	**Sample Analysis Date:** 01/13/2009 Hg 02/19/2009 others

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	No	Samples analyzed < 2x holding time for Hg	J	Qualify as estimated (J) all positive and ND sample results.	All samples.
Detection Limits	No	Ca, Fe, P, Zn detections limits exceed specifications in work plan.	-	No action	
Blanks					
Preparation Blank	No	Cr = 0.3 mg/kg Pb = 0.5 mg/kg Mo = 0.2 mg/kg Ni = 0.7 mg/kg Sn = 1.1 mg/kg	UJ	Qualify positive sample results < 5x the blank concentration as ND.	All samples. Impacts the following: Mo –All samples Sn –J18OK1, J18OK4, J18OK5, J18OK7, J18OK9, J17VP1, J18OT6, J18OT7, J18OT9
Equipment Blank Sample ID:	Not collected				
Other QC Results					
LCS Results	No	Sb = 210% As = 176% V = 189%	J	Qualify positive sample results as estimated (J).	All samples. Impacts are as follows: As – All samples V – All samples
Matrix Spikes Sample ID:J18OK0	No	Sb = 41%	J	Qualify positive and ND results as estimated (J).	All samples.
Lab Duplicates Sample ID:J18OK0	Yes	None	-	No action	
Field Duplicate Sample ID:J17VP1/J18OK6 Sample ID:J17VP3/J18OT6	No	RPDs > 30% for the following: Al, As, Ba, Ca, Cr, Fe, Mg, Mn, Sr, V, Zn Al, As, Ba, Ca, Fe, Mg, Mn, P, Na, V, Zn	-	No action based on guidance.	
QC Summary					

SDG K1495 - Metals QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1495	**W&C Project No.:**222007	
Medium: Sediments		**Analytes:** Metals	
Samples: J17VP1, J17VP3, J18OK0, J18OK1, J18OK2, J18OK3, J18OK4, J18OK5, J18OK6, J18OK7, J18OK8, J18OK9, J18OT5, J18OT6, J18OT7, J18OT8, J18OT9			
Laboratory: Lionville	**Date Data Assessment Completed:** 02/17/2010 **Complete By:** RDD	**Sample Collection Date:** 12/11/2008	**Sample Analysis Date:** 01/13/2009 Hg 02/19/2009 others

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Validity of Data	Not all QC criteria were met, but no data were rejected.				
Additional Notes: Both field duplicate sample results indicate a high degree of variability which may be due to sample heterogeneity.					

SDG K1495 - Metals QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1495	**W&C Project No.:**222007	
Medium: Sediments		**Analytes:** Metals	
Samples: J18045, J18046, J18047, J18OH5, J18OH6, J18OH7, J18ON0, J18ON1, J18ON2, J18OP0, J18OP1, J18OP3, J18OP4, J18OR0, J18OR4, J18OR3, J17XP7			
Laboratory: Lionville	**Date Data Assessment Completed:** 12/18/2008 **Complete By:** RDD	**Sample Collection Date:** 12/10/2008	**Sample Analysis Date:** 01/12/2009 Hg 03/12/2009 Others

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	No	Samples analyzed for Hg < 2x holding time.	J	Qualify positive and ND sample concentrations of Hg as estimated (J).	All samples.
Detection Limits	No	Ca, Fe, P, Zn detection limits exceed specifications in work plan	-	No action.	
Blanks					
Preparation Blank	No	Ba = 0.1 mg/kg Cr = 0.2 mg/kg Mo = 0.1 mg/kg Ni = 0.7 mg/kg Sn = 1.2 mg/kg	UJ	Qualify positive sample results < 5x the blank concentration as ND (UJ).	All samples with the following impacts Mo – All samples Sn - J18OH5, J18OH6, J18OH7, J18OP0, J18OP1, J18OP3, J18OP4, J18OR3
Equipment Blank Sample ID:	Not collected				
Other QC Results					
LCS Results	No	Sb = 187% As = 185% Fe = 139% V = 200%	J	Qualify positive sample results as estimated (J).	All samples. Impacts as follows: Sb- J18047, J18OH5, J18OH7, J18OP3, J18OP4, J18OR4, J18OR3, J17XP7 As- All samples Fe – All samples V – All samples
Matrix Spikes Sample ID:J18045	No	Sb = 48%	J	Qualify positive and ND sample results as estimated (J).	All samples.

SDG K1495 - Metals QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1495	**W&C Project No.:**222007	
Medium: Sediments		**Analytes:** Metals	
Samples: J18045, J18046, J18047, J18OH5, J18OH6, J18OH7, J18ON0, J18ON1, J18ON2, J18OP0, J18OP1, J18OP3, J18OP4, J18OR0, J18OR4, J18OR3, J17XP7			
Laboratory: Lionville	**Date Data Assessment Completed:** 12/18/2008 **Complete By:** RDD	**Sample Collection Date:** 12/10/2008	**Sample Analysis Date:** 01/12/2009 Hg 03/12/2009 Others

QC Parameter	**All in Spec.?**	**Non-Compliant Results**	**Flag**	**Action/ Notes**	**Associated Samples**
Lab Duplicates Sample ID:J18045	Yes	None	-	No action	
Field Duplicate Sample ID:	Not collected				
QC Summary					
Validity of Data	Not all QC criteria were met but none of the data were rejected.				
Additional Notes: Tl LCS recovery was 0% but no action taken due to the low concentration of the spike level. Matrix spike recovery was acceptable.					

SDG K1495 - Radionuclides QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1495	**W&C Project No.:**222007	
Medium: Sediments		**Analytes:** Gamma scan, C_{14}, Sr_{90}, Tc_{99}, and Isotopic Th, U, Pu	
Samples: J17XP7, J18OH5, J18OH6, J18OH7, J18ON0, J18ON1, J18ON2, J18OP0, J18OP1, J18OP3, J18OP4, J18OR0, J18OR3, J18OR4			
Laboratory: Eberline	**Date Data Assessment Completed:** 02/16/09 **Complete By:** RDD	**Sample Collection Date:** 12/10/2008	**Sample Analysis Date:** 1/2009

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No action	
Detection Limits	Yes	None	-	No action	
Blanks					
Method Blanks	Yes	None	-	No action	
Other QC Results					
LCS Results	Yes	None	-	No action	
Matrix Spikes - C_{14}	No	MS not analyzed	J	Qualify positive and ND results as estimated (J).	All samples.
Tracer Results	No	Thorium tracer yields > 105% for: J17XP7 = 107% J18OH5 = 109% J18OH6 = 116% J18OH7 = 109% J18ON0 = 112% J18ON1 = 111% J18ON2 = 107% J18OP0 = 111% J18OP1 = 115% J18OP3 = 113% J18OP4 = 109% J18OR3 = 107%	J	Qualify positive sample results of thorium 230 as estimated (J).	As indicated. Impacts to J17XP7, J18OH5, J18OH6, J18ON0, J18ON1, J18ON2, J18OP0, J18OP3,J18OP4, J18OR3
Lab Duplicates Sample ID: J18ON1	Yes	None	-	No action	
Field Duplicate Sample ID:	Not collected				
QC Summary					
Validity of Data	Not all QC parameters were met but no data were rejected				
Additional Notes:					

SDG K1495 - Radionuclides QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1495	**W&C Project No.:**222007	
Medium: Sediments		**Analytes:** Gamma scan, C_{14}, Sr_{90}, Tc_{99}, and Isotopic Th, U, Pu	
Samples: J17VP1, J17VP3, J18OK0, J18OK1, J18OK2, J18OK3, J18OK4, J18OK5, J18OK6, J18OK7, J18OK8, J18OK9, J18OT5, J18OT6, J18OT7, J18OT8, J18OT9			
Laboratory: Eberline	**Date Data Assessment Completed:** 02/16/09 **Complete By:** RDD	**Sample Collection Date:** 12/11/2008	**Sample Analysis Date:** 1-2/2009

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No action	
Detection Limits	Yes	None	-	No action	
Blanks					
Method Blanks	Yes	None	-	No action	
Other QC Results					
LCS Results	Yes	None	-	No action	
Matrix Spike - C_{14} only	No	MS not analyzed	J	Qualify positive and ND results as estimated (J).	All samples
Tracer Results	Yes	None	-	No action	
Lab Duplicates Sample ID:J18OK5	Yes	None	-	No action	
Field Duplicate Sample ID:J17VP1/J18OK6	Yes	None – all detections < RDL	-	No action	
Sample ID:J17VP3/J18OT6	No	K_{40} RPD = 71% Radium 226 diff > 2x RDL.	-	No action based on guidance.	
QC Summary					
Validity of Data	Not all QC criteria were met, but none of the data were rejected.				
Additional Notes:					

SDG K1495 - DRO QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1495	**W&C Project No.:**222007	
Medium: Sediments		**Analytes:** DRO	
Samples: J17VP1, J17VP3, J18OK0, J18OK1, J18OK2, J18OK3, J18OK4, J18OK5, J18OK6, J18OK7, J18OK8, J18OK9, J18OT5, J18OT6, J18OT7, J18OT8, J18OT9			
Laboratory: Lionville	**Date Validation Completed:** 02/18/2010 **Complete By:** RDD	**Sample collection:** 12/11/2008	**Sample Analysis Date:** 01/08/2009 extr ;01/21/2009; anal; 01/22/2009 anal

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	No	Sample extraction < 2x holding time.	J	Qualify positive and ND sample results as estimated (J).	All samples.
Surrogates	No	J18OK2 = 175% J18OK4 = 131% J18OK5 = 247% J18OK6 = 164% J18OK8 = 178% J18OK9 = 173% J17VP3 = 160% J18OT5 = 173% J18OT6 = 151%	J	Qualify positive sample results as estimated (J).	J18OK2, J18OK4, J18OK5,J18OK6, J18OK8, J18OK9, J17VP3, J18OT5, J18OT6
Blanks					
Method Blank	No	DRO = 2960 mg/kg Motor Oil = 4560 mg/kg	UJ	Qualify positive sample results < 5x blank concentration as ND (UJ).	All samples. Impacts to: DRO –J18OK1, J18OK3, J18OK7, J18OK8, J17VP1, J18OT7, J18OT8, J18OT9 Motor Oil – J18OK1
Equipment Blank Sample ID:	Not collected				
Other QC					
LCS Results	No	DRO = 68%	J	Qualify positive and ND sample results as estimated (J).	All samples.
Matrix Spikes Sample ID:J18OK0	Yes	None.	-	No action	
Lab Duplicates Sample ID:	Not analyzed				

SDG K1495 - DRO QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1495	**W&C Project No.:**222007
Medium: Sediments		**Analytes:** DRO
Samples: J17VP1, J17VP3, J18OK0, J18OK1, J18OK2, J18OK3, J18OK4, J18OK5, J18OK6, J18OK7, J18OK8, J18OK9, J18OT5, J18OT6, J18OT7, J18OT8, J18OT9		

Laboratory: Lionville	**Date Validation Completed:** 02/18/2010 **Complete By:** RDD	**Sample collection:** 12/11/2008	**Sample Analysis Date:** 01/08/2009 extr ;01/21/2009; anal; 01/22/2009 anal

QC Parameter	**All in Spec.?**	**Non-Compliant Results**	**Flag**	**Action/ Notes**	**Associated Samples**
Field Duplicate Sample ID:	Not collected				
QC Summary					
Validity of Data	Not all criteria were met, but none of the data were rejected.				
Additional Notes:					

SDG K1495 - DRO QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA		**SDG No.:** K1495		**W&C Project No.:**222007	
Medium: Sediments				**Analytes:** DRO	
Samples: J18OH5, J18OH6, J18ON0, J18OP0, J18OP1, J18OP3, J18OP4, J18OR0, J18OR4, J18OR3, J17XP7					
Laboratory: Lionville	**Date Validation Completed:** 02/18/2010 **Complete By:** RDD		**Sample collection:** 12/10/2008		**Sample Analysis Date:** 01/07/2009 extr 01/19/2009 anal
QC Parameter	**All in Spec.?**	**Non-Compliant Results**	**Flag**	**Action/ Notes**	**Associated Samples**
Holding Times	No	Sample extraction < 2x holding time.	J	Qualify positive and ND sample results as estimated (J)	All samples.
Surrogates	No	Surrogates not added.	J	Qualify positive and ND sample results as estimated (J)	All samples
Blanks					
Method Blank	No	DRO = 4220 mg/kg Motor Oil = 5970 mg/kg	UJ	Qualify positive sample results < 5x the blank concentration as ND (UJ).	All samples. Impacts include: DRO – J18OR3, J17XP7
Equipment Blank Sample ID:	Not collected				
Other QC					
LCS Results	Yes	None	-	No action.	
Matrix Spikes Sample ID:J17XP7	Yes	None	-	No action	
Lab Duplicates Sample ID:	Not analyzed				
Field Duplicate Sample ID:	Not collected				
QC Summary					
Validity of Data	Not all QC criteria were met but no data were rejected.				
Additional Notes:					

SDG K1495 - TOC QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1495	**W&C Project No.:**222007	
Medium: Sediments		**Analytes:** TOC	
Samples: J17VP1, J17VP3, J18OK0, J18OK1, J18OK2, J18OK3, J18OK4, J18OK5, J18OK6, J18OK7, J18OK8, J18OK9, J18OT5, J18OT6, J18OT7, J18OT8, J18OT9			
Laboratory: Lionville	**Date Data Assessment Completed:** 2/17/2010 **Complete By:** RDD	**Sample Collection Date:** 12/11/2008	**Sample Analysis Date:** 01/14/2009 extr 01/14,17/2009 anal

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	No	Samples analyzed < 2x holding time limit	J	Qualify as estimated (J) all positive and ND sample results.	All samples.
Detection Limit	Yes	All samples were diluted 10x.	-	No action	
Blanks					
Method Blank	Yes	None	-	No action	
Other QC					
LCS Results	Yes	None	-	No action	
Matrix Spikes Sample ID:J180K5	Yes	None	-	No action	
Lab Duplicate Sample ID: J180K5	Yes	None	-	No action	
Field Duplicate Sample ID:J17VP1/J18OK6	Yes	None	-	No action	
Sample ID: J17VP3/J18OT6	No	RPD = 113%	-	No action based on guidance.	
QC Summary					
Validity of Data	Not all QC criteria were met but no data were rejected.				
Additional Notes:					

SDG K1495 - TOC QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1495	**W&C Project No.:**222007	
Medium: Sediments		**Analytes:** TOC	
Samples: J18045, J18046, J18047, J18OH5, J18OH6, J18OH7, J18ON0, J18ON1, J18ON2, J18OP0, J18OP1, J18OP3, J18OP4, J18OR0, J18OR4, J18OR3, J17XP7			
Laboratory: Lionville	**Date Data Assessment Completed:** 02/18/2010 **Complete By:** RDD	**Sample Collection Date:** 12/10/2008	**Sample Analysis Date:** 01/19/2009

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	No	Samples were analyzed < 2x holding time.	J	Qualify all sample results as estimated (J).	All samples.
Detection Limit	Yes	None	-	No action	
Blanks					
Method Blank	Yes	None	-	No action	
Other QC					
LCS Results	Yes	None	-	No action	
Matrix Spikes Sample ID:J18046	Yes	None	-	No action	
Lab Duplicate Sample ID:J18046	Yes	None	-	No action	
Field Duplicate Sample ID:	Not collected				
QC Summary					
Validity of Data	Not all QC criteria were met but none of the data were rejected.				
Additional Notes:					

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SDG K1497 - VOC QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1497	**W&C Project No.:**222007

Medium: Sediment	**Analytes:** VOA
Samples: J17W08, J18164	

Laboratory: Lionville	**Date Data Assessment Completed:** 02/08/2010 **Complete By:** RDD	**Sample Collection Date:** 12/12/2008	**Sample Analysis Date:** 12/23/2008

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No action	
Detection Limits	No	The detection limit for 1,1,1-trihchloroethane exceeds the specification in the work plan.	-	No action	
Blanks					
Blanks – Method	Yes	None	-	No action	
Equipment Blank Sample ID:	Not collected				
Trip Blank Sample ID: J17W08	Yes	None	-	No action	
Other QC Results					
Surrogate Recoveries	Yes	None	-	No action	
LCS Results	No	Acetone = 212% 2-butanone = 198%	-	Qualify positive sample results as estimated (J).	All samples. No impact since acetone, and 2-butanone were not detected in any samples.
Matrix Spikes Sample ID: J18164	No	Acetone = 235%/276% 2-butanone = 219%/252% 2-hexanone = 170%/189%	-	Qualify positive sample results as estimated (J).	All samples. No impact since acetone , 2-butanone, and 2-hexanone not detected in any samples.
Lab Duplicates Sample ID:	Not analyzed				
Field Duplicate Sample ID:	Not collected				
Summary					
Validity of Data	Not all QC criteria were met, but				

SDG K1497 - VOC QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1497	**W&C Project No.:**222007
Medium: Sediment	**Analytes:** VOA	
Samples: J17W08, J18164		

Laboratory: Lionville	**Date Data Assessment Completed:** 02/08/2010 **Complete By:** RDD	**Sample Collection Date:** 12/12/2008	**Sample Analysis Date:** 12/23/2008

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
	none of the data were rejected.				
Additional Notes:					

SDG K1497 - SVOC QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1497	**W&C Project No.:**222007
Medium: Sediment		**Analytes:** SVOCs
Samples: J18164, J18165, J18166, J18167, J18168		

Laboratory: Lionville	**Date Data Assessment Completed:** 02/08/2010 **Complete By:** RDD	**Sample Collection Date:** 12/12/2008	**Sample Analysis Date:** 01/15/2009 extracted 02/6,7,11/2009 analyzed

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	No	Holding time (collection to extraction) exceeded >2x limit	R	Qualify non-detect sample results as rejected (R) and positive results as estimated (J).	All samples.
Detection Limits	No	2,4-dinitrophenol, 2-nitroaniline, 3-nitroaniline, 4-nitroaniline, 4-nitrophenol, and pentachlorophenol all had reporting limits above those specified in the work plan	-	No action	
Blanks					
Method Blanks	Yes	None	-	No action	
Laboratory Blank	Not collected				
Other QC					
Surrogate Recoveries	No	2,4,6-tribromophenol = 3% 2-Fluorophenol = 21% Phenol-d% = 21% Nitrobenzene-d5 = 21% 2-Fluorobiphenyl = 23% p-Terphenyl-d14 – 24%	R/J	Qualify associated ND acid fraction results as rejected (R) and qualify all positive and ND base fraction results as estimated (J).	J18164 Rejected acid fraction analytes 2,4-dichlorophenol, 2,4,6-trichlorophenol, 2,4,5-trichlorophenol, pentachlorophenol, bis(2-chloroethyl)ether, bis(2-chloroisopropyl)ether, bis(2-chloroethoxy)methane, 4-chlorophenyl phenyl ether, 4-bromophenyl phenyl ether

SDG K1497 - SVOC QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1497	**W&C Project No.:**222007
Medium: Sediment		**Analytes:** SVOCs
Samples: J18164, J18165, J18166, J18167, J18168		

Laboratory: Lionville	**Date Data Assessment Completed:** 02/08/2010 **Complete By:** RDD	**Sample Collection Date:** 12/12/2008	**Sample Analysis Date:** 01/15/2009 extracted 02/6,7,11/2009 analyzed

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
LCS Results	No	2,4-Dinitrophenol = 37% 4,6-Dinitro-2-Methylphenol = 49% Pentachlorophenol = 39%	J	Qualify positive and ND sample results as estimated (J).	All samples
Matrix Spikes Sample ID: J18164	No	4-chloroaniline =25%/22% Hexachlorocyclopentadiene = 32%/37% Pentachlorophenol = 9%/12% 3-Nitroaniline = 44%	J	Qualify positive and ND sample results as estimated (J)	All samples.
Lab Duplicates Sample ID:	Not analyzed				
Field Duplicates Sample ID:	Not collected				
Summary					
Validity of Data	No, all samples rejected due to holding time exceedance > 2x limit.				
Additional Notes:					

SDG K1497 - PCB QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1497	**W&C Project No.:**222007
Medium: Sediment		**Analytes:** PCBs
Samples: J18164, J18165, J18166, J18167, J18168		

Laboratory: Lionville	**Date Data Assessment Completed:** 02/06/2010 **Complete By:** RDD	**Sample Collection Date:** 12/12/2008	**Sample Analysis Date:** 01/21/2009 extraction 02/16/2009

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	No	Samples were extracted beyond (> 2x) holding time.	R	Qualify ND results as rejected (R) and positive results as estimated (J).	All samples
Detection Limits	Yes	None	-	No action	
Blanks					
Method Blank	Yes	None	-	No action	
Equipment Blank Sample ID:	Not collected				
Other QC Results					
Surrogate Recoveries	Yes	None	-	No action	
LCS Results	Yes	None	-	No action	
Matrix Spikes Sample ID: J18164	Yes	None	-	No action	
Lab Duplicates Sample ID:	Not analyzed				
Field Duplicates Sample ID:	Not collected				
Summary					
Validity of Data	No, samples extracted > 2x holding time so all results were rejected.				
Additional Notes:					

SDG K1497 - Pesticides QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1497	**W&C Project No.:**222007	
Medium: Sediment		**Analytes:** Pesticides	
Samples: J18164, J18165, J18166, J18167, J18168			
Laboratory: Lionville	**Date Data Assessment Completed:** 02/06/2010 **Complete By:** RDD	**Sample Collection Date:** 12/12/2008	**Sample Analysis Date:** 02/16/2009

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	No	Samples extracted > 2x holding time limit.	R	Qualify non-detect results as rejected (R)	All samples. All results rejected since all ND.
Detection Limits	Yes	None	-	No action	
Blanks					
Method Blank	Yes	None	-	No action	
Equipment Blank Sample ID:	Not collected				
Other QC Results					
Surrogate Recoveries	Yes	None	-	No action	
LCS Results	No	No LCS results for toxaphene	J	Qualify all associated results as estimated (J)	Impacts to all samples above.
Matrix Spikes Sample ID: J18164	Yes	None	-	No action	
Lab Duplicates Sample ID:	Not analyzed	None	-	No action	
Field Duplicate Sample ID:	Not collected				
QC Summary					
Validity of Data	No. Sample data rejected due to holding time exceedances > 2x limit.				
Additional Notes:					

SDG K1497 - Metals QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1497	**W&C Project No.:**222007
Medium: Sediment		**Analytes:** Metals
Samples: J18164, J18165, J18166, J18167, J18168		

Laboratory: Lionville	**Date Data Assessment Completed:** 02/06/2010 **Complete By:** RDD	**Sample Collection Date:** 12/12/2008	**Sample Analysis Date:** 02/18/2009 01/16/2009 Hg

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	No	Samples analyzed for Hg < 2x the holding time limit.	J	Qualify all results as estimated (J)	All samples
Detection Limits	No	Detection limits of Ca, Fe, P and Zn above limits specified in work plan	-	No action.	
Blanks					
Preparation Blank	No	Pb = 0.32 mg/kg Mn = 1.46 mg/kg Mo = 0.17 mg/kg Ni = 0.73 mg/kg Sn = 1.26 mg/kg	UJ	Qualify positive sample results < 5x the blank concentration as non-detect (UJ).	All samples. Impacts include the following: Mo – All samples
Equipment Blank Sample ID:	Not collected				
Other QC Results					
LCS Results	No	Sb = 186% As = 185% Fe = 138% Pb = 45% V = 197%	J	Qualify positive concentrations of Sb, As, Fe and V and positive and ND concentrations of Pb as estimated (J)	All samples. Impacts to the following samples: As – All samples Fe- All samples Pb – All samples V – All samples
Matrix Spikes Sample ID: J18164	No	Sb = 56% Ca = 186% Mg = 68% P = 277% V = 167%	J	Qualify positive and ND concentrations of Sb and Mg and positive concentrations of Ca, V and P as estimated (J).	All samples. Impacts to the following samples: Sb – All samples Ca – All samples Mg - All samples P - All samples V – All samples
Lab Duplicates Sample ID: J18164	Yes	None	-	No action	

SDG K1497 - Metals QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1497	**W&C Project No.:**222007	
Medium: Sediment		**Analytes:** Metals	
Samples: J18164, J18165, J18166, J18167, J18168			
Laboratory: Lionville	**Date Data Assessment Completed:** 02/06/2010 **Complete By:** RDD	**Sample Collection Date:** 12/12/2008	**Sample Analysis Date:** 02/18/2009 01/16/2009 Hg

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Field Duplicate Sample ID:	Not collected				
QC Summary					
Validity of Data	Not all QC criteria were met, but none of the data were rejected.				
Additional Notes:					

SDG K1497 - Radionuclides QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1497	**W&C Project No.:**222007	
Medium: Sediment	**Analytes:** Carbon-14, Strontium-90, Technetium-99, Isotopic Thorium, Isotopic Uranium, Isotopic Plutonium, Gamma Spectroscopy		
Samples: J18164, J18165, J18166, J18167, J18168			
Laboratory: Eberline	**Date Data Assessment Completed:** 2/06/2010 **Complete By:** RDD	**Sample Collection Date:** 12/12/2008	**Sample Analysis Date:** several

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No action	
Detection Limits	Yes	None	-	No action	
Blanks					
Method Blanks	Yes	None	-	No action	
Equipment Blank Sample ID:	Not collected				
Other QC Results					
LCS Results	Yes	None	-	No action	
Matrix Spikes – C_{14}	No	An MS sample was not analyzed.	J	Qualify positive and ND sample results as estimated (J).	All samples.
Tracer Results	Yes	None	-	No action	
Lab Duplicates Sample ID: J18168	No	Thorium-230 = 74% Uranium-235 = 51%	-	No action since difference between results is less than 2x the RDL	
Field Duplicate Sample ID:	Not collected				
QC Summary					
Validity of Data	Not all QC criteria were met, but no data were rejected.				
Additional Notes:					

SDG K1497 - TOC QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1497	**W&C Project No.:**222007	
Medium: Sediment		**Analytes:** TOC	
Samples: J18164, J18165, J18166, J18167, J18168			
Laboratory: Lionville	**Date Data Assessment Completed:** 02/06/2010 **Complete By:** RDD	**Sample Collection Date:** 12/12/2008	**Sample Analysis Date:** 01/19/2009

QC Parameter	**All in Spec.?**	**Non-Compliant Results**	**Flag**	**Action/ Notes**	**Associated Samples**
Holding Times	No	Exceeded holding time by < 2x limit.	J	Qualify all samples as estimated (J).	All samples.
Detection Limit	Yes	None	-	No action	
Blanks					
Method Blank	Yes	None	-	No action	
Other QC					
LCS Results	Yes	None	-	No action	
Matrix Spikes Sample ID: J18164	Yes	None	-	No action	
Lab Duplicate Sample ID: J18164	Yes	None	-	No action	
Field Duplicate Sample ID:	Not collected				
QC Summary					
Validity of Data	Not all QC were met, but no data were rejected.				
Additional Notes:					

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SDG K1524 - VOC QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1524	**W&C Project No.:**222007	
Medium: Sediment		**Analytes:** VOA	
Samples: J17W13, J18172, J18173, J18176			
Laboratory: Lionville	**Date Data Assessment Completed:** 02/11/2010 **Complete By:** RDD	**Sample Collection Date:** 02/02/2009	**Sample Analysis Date:** 02/10/2009

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No action	
Detection Limits	No	Detection limit 1,1,1-trichloroethane exceeds limit in work plan. Limits of other VOCs slightly exceed limit due to dilution factor resulting from weight of sample used for analysis.	-	No action.	
Blanks					
Blanks - Method	No	$MeCl_2$ = 2.14 mg/kg	-	Qualify positive sample results < 5x blank concentration as non-detect (UJ).	All samples. No impact to above samples since all ND for $MeCl_2$.
Equipment Blank Sample ID:	Not collected				
Trip Blank Sample ID: J17W13	No	Acetone = 4.27 mg/kg	-	No action based on guidance	
Other QC Results					
Surrogate Recoveries	Yes	None	-	No action	
LCS Results	No	2-butanone =181% Acetone = 185%	-	Qualify positive sample concentrations as estimated (J).	All samples. No impact since all ND in all samples.
Matrix Spikes Sample ID:	No	2-Butanone = 191%/203% 2-Hexanone = 159%/168% Acetone = 191%/206%	-	Qualify positive sample concentrations as estimated (J).	All samples. No impact since all ND in all samples

SDG K1524 - VOC QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA		**SDG No.:** K1524	**W&C Project No.:**222007
Medium: Sediment		**Analytes:** VOA	
Samples: J17W13, J18172, J18173, J18176			
Laboratory: Lionville	**Date Data Assessment Completed:** 02/11/2010 **Complete By:** RDD	**Sample Collection Date:** 02/02/2009	**Sample Analysis Date:** 02/10/2009

QC Parameter	**All in Spec.?**	**Non-Compliant Results**	**Flag**	**Action/ Notes**	**Associated Samples**
Lab Duplicates Sample ID:	Not analyzed				
Field Duplicate Sample ID:	Not collected				
Summary					
Validity of Data	Not all QC criteria met but no data rejected.				
Additional Notes:					

SDG K1524 - SVOC QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1524	**W&C Project No.:**222007
Medium: Sediment		**Analytes:** SVOCs
Samples: J18172, J18173, J18176		

Laboratory: Lionville	**Date Data Assessment Completed:** 2/12/2010 **Complete By:** RDD	**Sample Collection Date:** 02/02/2009	**Sample Analysis Date:** 2/11/2009 extr 2/16/2009 anal

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No action	
Detection Limits	No	2-chloroaniline, 2-nitroaniline, 2,4-dinitrophenol, 4-nitrophenol, 4-nitroaniline, pentachlorophenol, 3,3'-dichlorobenzidine have RDLs that exceed those specified in work plan	-	No action	
Blanks					
Method Blanks	Yes	None	-	No action	
Laboratory Blank	Not collected				
Other QC					
Surrogate Recoveries	Yes	None	-	No action	
LCS Results	Yes	None	-	No action	
Matrix Spikes Sample ID: J18172	No	**Non-Compliant Recoveries:** 3,3'-dichlorobenzidiene =0%/0% 4-Nitrophenol = 0%/0% Pentachlorophenol =41%/16% Hexachlorocyclopentadiene =0%/0% 4-Chloroaniline =34% /27% **Non-Compliant RPDs:** Pentachlorophenol = 85%	J	Qualify positive and ND results as estimated (J).	All samples.
Lab Duplicates	Not analyzed				

SDG K1524 - SVOC QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1524	**W&C Project No.:**222007
Medium: Sediment		**Analytes:** SVOCs
Samples: J18172, J18173, J18176		

Laboratory: Lionville	**Date Data Assessment Completed:** 2/12/2010 **Complete By:** RDD	**Sample Collection Date:** 02/02/2009	**Sample Analysis Date:** 2/11/2009 extr 2/16/2009 anal

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Sample ID:					
Field Duplicates Sample ID:	Not collected				
Summary					
Validity of Data	Not all criteria met but no data were rejected.				
Additional Notes:					

SDG K1524 - PCB QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1524	**W&C Project No.:**222007	
Medium: Sediment		**Analytes:** PCBs	
Samples: J18172, J18173, J18176			
Laboratory: Lionville	**Date Data Assessment Completed:** 2/11/2010 **Complete By:** RDD	**Sample Collection Date:** 2/02/2009	**Sample Analysis Date:** 02/12/2009 extr 2/24-25/2009 anal

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No action	
Detection Limits	Yes	None	-	No action	
Blanks					
Method Blank	Yes	None	-	No action	
Equipment Blank Sample ID:	Not collected				
Other QC Results					
Surrogate Recoveries	Yes	None	-	No action	
LCS Results	Yes	None	-	No action	
Matrix Spikes Sample ID: J18172	Yes	None	-	No action	
Lab Duplicates Sample ID:	Not analyzed				
Field Duplicates Sample ID:	Not collected				
Summary					
Validity of Data	All QC criteria met, no data were rejected.				
Additional Notes:					

SDG K1524 - Pesticides QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1524	**W&C Project No.:**222007	
Medium: Sediment		**Analytes:** Pesticides	
Samples: J18172, J18173, J18176			
Laboratory: Lionville	**Date Data Assessment Completed:** 02/12/2010 **Complete By:** RDD	**Sample Collection Date:** 2/02/2009	**Sample Analysis Date:** 2/12/2009 extr 3/6-7/2009anal

QC Parameter	**All in Spec.?**	**Non-Compliant Results**	**Flag**	**Action/ Notes**	**Associated Samples**
Holding Times	Yes	None	-	No action	
Detection Limits	Yes				
Blanks					
Method Blank	Yes	None	-	No action	
Equipment Blank Sample ID:	Not collected				
Other QC Results					
Surrogate Recoveries	Yes	None	-	No action	
LCS Results	No	No LCS results for toxaphene	J	Qualify all associated results as estimated (J)	Impacts to all samples above.
Matrix Spikes Sample ID: J18172	No	All recoveries compliant. **Non-compliant RPDs** 4,4'-DDD = 45% Endosulfan II = 34%	-	No action since all results ND	
Lab Duplicates Sample ID:	Not analyzed				
Field Duplicate Sample ID:	Not collected				
QC Summary					
Validity of Data	Not all criteria met, but none of the data were rejected.				
Additional Notes:					

SDG K1524 - Metals QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1524	**W&C Project No.:**222007
Medium: Sediment		**Analytes:** Metals
Samples: J18172, J18173, J18176, J17XR5, J17XR8, J17XR9		

Laboratory: Lionville	**Date Data Assessment Completed:** 02/12/2010 **Complete By:** RDD	**Sample Collection Date:** 02/02/2009	**Sample Analysis Date:** 03/24/2009 Hg 02/16/2009

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No action	
Detection Limits	No	Ca, Fe, P, Zn detections limits exceed specifications in work plan.			
Blanks					
Preparation Blank	No	Be = 0.00503 mg/kg Mo = 0.102 mg/kg Ni = 0.549 mg/kg Sn = 1.02 mg/kg	UJ	Qualify positive sample results < 5x the blank concentration as ND (UJ).	All samples. Impacts to the following: Mo – All samples
Equipment Blank Sample ID:	Not collected				
Other QC Results					
LCS Results	No	Sb = 191% As = 189% Tl = 0% V = 165%	J	Tl spiked at concentration just above IDL. Qualify positive sample results of As and V as estimated (J).	All samples. Impacts include: As – All samples V – All samples
Matrix Spikes Sample ID:	No	Sb =28%	R	Qualify positive Sb results < IDL and ND sample results as rejected (R)	All samples. Impacts to all samples.
Lab Duplicates Sample ID: J17XR9	Yes	None	-	No action	
Field Duplicate Sample ID:	Not collected				
QC Summary					
Validity of Data	Not all criteria met, rejected results for Sb.				
Additional Notes:					

SDG K1524 - Radionuclides QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1524	**W&C Project No.:**222007

Medium: Sediment	**Analytes:** Carbon-14, Strontium-90, Technetium-99, Isotopic Thorium, Isotopic Uranium, Isotopic Plutonium, Gamma Spectroscopy

Samples: J17XR5, J17XR8, J17XR9, J180W8, J180W9, J18157, J18158, J18159, J18160, J18172, J1873, J18176

Laboratory: Eberline	**Date Data Assessment Completed:** 02/11/2010 **Complete By:** RDD	**Sample Collection Date:** 02/02/2009	**Sample Analysis Date:** 2/2009

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No action	
Detection Limits	Yes	None	-	No action	
Blanks					
Method Blanks	Yes	None	-	No action	
Equipment Blank Sample ID:	Not collected				
Other QC Results					
LCS Results	Yes	None	-	No action	
Matrix Spikes – C_{14}	No	No MS sample was analyzed	J	Qualify positive and non-detect results as estimated (J).	All samples
Tracer Results	Yes	None	-	No action	
Lab Duplicates Sample ID: J17XR8	No	Thorium-230 = 49%	-	No action since difference between results is less than 2x the RDL	
Field Duplicate Sample ID:	Not collected				
QC Summary					
Validity of Data	All criteria in compliance, no data rejected.				
Additional Notes:					

SDG K1524 - DRO QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1524	**W&C Project No.:**222007
Medium: Sediment		**Analytes:** DRO/Motor Oil
Samples: J18172, J18173, J18176		

Laboratory: Lionville	**Date Validation Completed:** 02/11/2010 **Complete By:** RDD	**Sample collection:** 2/2/2009	**Sample Analysis Date:** 2/15/2009 extr 2/20/2009 anal

QC Parameter	**All in Spec.?**	**Non-Compliant Results**	**Flag**	**Action/ Notes**	**Associated Samples**
Holding Times	Yes	None	-	No action	
Surrogates	Yes	None	-	No action	
Blanks					
Method Blank	No	DRO = 4490 ug/kg Motor Oil = 7840 ug/kg	UJ	Qualify positive sample results < 5x the blank concentration as non-detect (UJ).	All samples. Impacts to the following: Motor Oil – All samples qualified as UJ
Equipment Blank Sample ID:	Not collected				
Other QC					
LCS Results	Yes	None	-	No action	
Matrix Spikes Sample ID: J17V94	Yes	None	-	No action	
Lab Duplicates Sample ID:	Not analyzed				
Field Duplicate Sample ID:	Not collected				
QC Summary					
Validity of Data	Not all QC criteria met but no data rejected.				
Additional Notes:					

SDG K1524 - TOC QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1524	**W&C Project No.:**222007	
Medium: Sediment		**Analytes:** TOC	
Samples: J18172, J18173, J18176, J17XR5, J17XR8, J17XR9			
Laboratory: Lionville	**Date Data Assessment Completed:** 02/12/2010 **Complete By:** RDD	**Sample Collection Date:** 02/02/2009	**Sample Analysis Date:** 02/06/2009

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No action	
Detection Limit	Yes	None.	-	No action	
Blanks					
Method Blank	Yes	None	-	No action	
Other QC					
LCS Results	Yes	None	-	No action	
Matrix Spikes Sample ID: J17V93	Yes	None	-	No action	
Lab Duplicate Sample ID: J17V93	Yes	None	-	No action	
Field Duplicate Sample ID:	Not collected				
QC Summary					
Validity of Data	All QC criteria met, no rejected data.				
Additional Notes:					

B.63 SDG K1525

Validated by ELR - Included in Appendix F

B.64 SDG K1526

SDG K1526 - VOC QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1526	**W&C Project No.:**222007	
Medium: Sediment		**Analytes:** VOA	
Samples: J186C0, J186C1, J186C2, J186C3, J186C5, J186C6, J186C7, J186C8			
Laboratory: Lionville	**Date Data Assessment Completed:** 02/12/2010 **Complete By:** RDD	**Sample Collection Date:** 02/04/2009	**Sample Analysis Date:** 02/10,12/2009

QC Parameter	**All in Spec.?**	**Non-Compliant Results**	**Flag**	**Action/ Notes**	**Associated Samples**
Holding Times	Yes	None	-	No action	
Detection Limits	No	Detection limit 1,1,1-trichloroethane exceeds limit in work plan. Limits of other VOCs slightly exceed limit due to dilution factor resulting from weight of sample used for analysis.	-	No action	
Blanks					
Blanks - Method					
02/12/2009	Yes	None	-	No action	-
02/10/2009	No	$MeCl_2$ = 2.14 ug/kg	-	Qualify positive sample results < 10x the blank concentration as ND (UJ).	Associated samples J186C0. J186C1, J186C7, J186C8. No impact to results for these samples since $MeCl_2$ ND for all.
Equipment Blank Sample ID:	Not collected				
Trip Blank Sample ID:					
J17W09	No	Acetone = 4.95 ug/kg	-	No action based on guidance.	
J17W11	No	Acetone = 6.31 ug/kg $MeCl_2$ = 1.99 ug/kg	-	No action based on guidance.	

SDG K1526 - VOC QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1526	**W&C Project No.:**222007	
Medium: Sediment		**Analytes:** VOA	
Samples: J186C0, J186C1, J186C2, J186C3, J186C5, J186C6, J186C7, J186C8			
Laboratory: Lionville	**Date Data Assessment Completed:** 02/12/2010 **Complete By:** RDD	**Sample Collection Date:** 02/04/2009	**Sample Analysis Date:** 02/10,12/2009

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Other QC Results					
Surrogate Recoveries	Yes	None	-	No action	
LCS Results	Yes	None	-	No action	
Matrix Spikes Sample ID: J186C6	No	2-Butanone = 260%/201% 2-Hexanone = 210%/171% Acetone = 268%/206%	-	Qualify positive sample results as estimated (J).	All samples. No impact since all samples ND for each.
Lab Duplicates Sample ID:	Not analyzed				
Field Duplicate Sample ID:	Not collected				
Summary					
Validity of Data	Not all criteria met, but no data were rejected.				
Additional Notes: Trip blank data indicate potential false positive acetone and methylene chloride sample results.					

SDG K1526 - SVOC QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1526	**W&C Project No.:**222007
Medium: Sediment		**Analytes:** SVOCs
Samples: J186C0, J186C1, J186C2, J186C3, J186C5, J186C6, J186C7, J186C8		

Laboratory: Lionville	**Date Data Assessment Completed:** 2/12/2010 **Complete By:** RDD	**Sample Collection Date:** 02/04/2009	**Sample Analysis Date:** 02/17/2009 extr 02/22-25/2009 anal

QC Parameter	**All in Spec.?**	**Non-Compliant Results**	**Flag**	**Action/ Notes**	**Associated Samples**
Holding Times	Yes	None	-	No action	
Detection Limits	No	2-chloroaniline, 2-nitroaniline, 2,4-dinitrophenol, 4-nitrophenol, 4-nitroaniline, pentachlorophenol, 3,3'-dichlorobenzidine have RDLs that exceed those specified in work plan	-	No action	
Blanks					
Method Blanks	Yes	None	-	No action	
Equipment Blank	Not collected				
Other QC					
Surrogate Recoveries	Yes	None	-	No action	
LCS Results	No	4-Chloroaniline = 48%	J	Qualify positive and ND sample results as estimated (J).	All samples.
Matrix Spikes Sample ID: J186C0	No	**Non-compliant recoveries** 2-methylphenol = 47% 2,4-dichlorophenol = 47% 1,2,4-Trichlorobenzene = 44% 2-Chloroaniline = 30% Naphthalene = 45% 1,3-Dichlorobenzene = 49% 1,4-Dichlorobenzene =47% 1,2-Dichlorobenzene = 48% 3,3'-Dichlorobenzidine = 41%	J	Qualify positive and ND sample results as estimated (J) for all SVOCs based on the large number of non-compliant RPDs.	All samples.

SDG K1526 - SVOC QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1526	**W&C Project No.:**222007	
Medium: Sediment		**Analytes:** SVOCs	
Samples: J186C0, J186C1, J186C2, J186C3, J186C5, J186C6, J186C7, J186C8			
Laboratory: Lionville	**Date Data Assessment Completed:** 2/12/2010 **Complete By:** RDD	**Sample Collection Date:** 02/04/2009	**Sample Analysis Date:** 02/17/2009 extr 02/22-25/2009 anal

QC Parameter	**All in Spec.?**	**Non-Compliant Results**	**Flag**	**Action/ Notes**	**Associated Samples**
		Hexachloroethane = 45% Nitrobenzene = 42% Isophorone = 40% 2-Nitrophenol =43% 2,4-Dimethylphenol = 43% Hexachlorobutadiene =48% 2-Chloro-3-methylphenol = 48% 2-Methylnaphthalene= 47% 4-Chloroaniline = 30%/45% 2,4-Dinitrophenol = 49% Pyrene = 43% N-Nitrosodiphenylamine = 49% **Non-compliant RPDs** Almost of the results non-compliant.			
Lab Duplicates Sample ID:	Not analyzed				
Field Duplicates Sample ID:	Not collected				
Summary					
Validity of Data	Not all criteria were met but none of the data were rejected.				
Additional Notes:					

SDG K1526 - PCB QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1526	**W&C Project No.:**222007	
Medium: Sediment		**Analytes:** PCBs	
Samples: J186C0, J186C1, J186C2, J186C3, J186C5, J186C6, J186C7, J186C8			
Laboratory: Lionville	**Date Data Assessment Completed:** 02/12/2010 **Complete By:** RDD	**Sample Collection Date:** 02/04/2009	**Sample Analysis Date:** 02/18/2009 extr 02/24-25/2009 anal

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No action	
Detection Limits	Yes	None	-	No action	
Blanks					
Method Blank	Yes	None	-	No action	
Equipment Blank Sample ID:	Not collected				
Other QC Results					
Surrogate Recoveries	Yes	None	-	No action	
LCS Results	Yes	None	-	No action	
Matrix Spikes Sample ID: J186C1	Yes	None	-	No action	
Lab Duplicates Sample ID:	Not analyzed				
Field Duplicates Sample ID:	Not collected				
Summary					
Validity of Data	All criteria in spec and no data were rejected.				
Additional Notes:					

SDG K1526 - Pesticides QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1526	**W&C Project No.:**222007
Medium: Sediment		**Analytes:** Pesticides
Samples: J186C0, J186C1, J186C2, J186C3, J186C5, J186C6, J186C7, J186C8		

Laboratory:	**Date Data Assessment Completed:**	**Sample Collection Date:**	**Sample Analysis Date:**
Lionville	02/12/2010 **Complete By:** RDD	02/04/2009	02/18/2009, 03/14/2009 extr 02/27/2009 anal 03/12,13,18,19/2009 anal

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	Original extractions were before holding time elapsed. Samples were reextracted beyond holding time.	-	No action	
Detection Limits	Yes	None	-	No action	
Blanks					
Method Blank	Yes	None	-	No action	
Equipment Blank Sample ID:	Not collected				
Other QC Results					
Surrogate Recoveries	No	DCB = 158% for J186C1	J	Qualify positive sample results as estimated (J).	J186C1 No impacts since all results are ND.
LCS Results	No	No LCS results for toxaphene	J	Qualify all associated results as estimated (J)	Impacts to all samples above.
Matrix Spikes Sample ID: J186C0	Yes	None	-	No action	
Lab Duplicates Sample ID:	Not analyzed				
Field Duplicate Sample ID:	Not collected				
QC Summary					
Validity of Data	Not all QC criteria were met but no data were rejected.				
Additional Notes:					

SDG K1526 - Metals QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1526	**W&C Project No.:**222007
Medium: Sediment		**Analytes:** Metals
Samples: J186C0, J186C1, J186C2, J186C3, J186C5, J186C6, J186C7, J186C8		

Laboratory: Lionville	**Date Data Assessment Completed:** 02/12/2010 **Complete By:** RDD	**Sample Collection Date:** 02/04/2009	**Sample Analysis Date:** 02/26/2009 Hg 03/25/2009 others

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No action	
Detection Limits	No	Ca, Fe, P, Zn detections limits exceed specifications in work plan.	-	No action	
Blanks					
Preparation Blank	No	Sn = 0.99 mg/kg	-	Qualify positive sample results < 5x the blank concentration as ND (UJ).	All samples. No impacts to any samples since Sn results are ND for all.
Equipment Blank Sample ID:	Not collected				
Other QC Results					
LCS Results	No	Sb = 176% Fe = 144% As =215% V = 170%	J	Tl spiked at just above RDL. Qualify positive sample concentrations as estimated (J)	All samples. Impacts include: Sb- None since qualified for MS results. Fe – All samples. As – All samples V – All samples
Matrix Spikes Sample ID: J186C8	No	Sb = 52%	J	Qualify positive and ND samples results as estimated (J).	All samples.
Lab Duplicates Sample ID: J186C8	Yes	None	-	No action	
Field Duplicate Sample ID:	Not collected				
QC Summary					
Validity of Data	Not all QC criteria were met but none of the data were rejected.				
Additional Notes:					

SDG K1526 - Radionuclides QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1526	**W&C Project No.:**222007	
Medium: Sediment	**Analytes:** Carbon-14, Strontium-90, Technetium-99, Isotopic Thorium, Isotopic Uranium, Isotopic Plutonium, Gamma Spectroscopy		
Samples: J186C0, J186C1, J186C2, J186C3, J186C5, J186C6, J186C7, J186C8			
Laboratory: Eberline	**Date Data Assessment Completed:** 02/12/2010 **Complete By:** RDD	**Sample Collection Date:** 02/04/2009	**Sample Analysis Date:** 2-3/2009

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No action	
Detection Limits	Yes	None	-	No action	
Blanks					
Method Blanks	Yes	None	-	No action	
Equipment Blank Sample ID:	Not collected				
Other QC Results					
LCS Results	Yes	None	-	No action	
Matrix Spikes – C_{14}	No	No MS sample was analyzed.	J	Qualify positive and ND sample results as estimated (J).	All samples.
Tracer Results	Yes	None	-	No action	
Lab Duplicates Sample ID: J186C0	No	Thorium-232 = 36% Uranium-238 = 31%	-	No action since the difference between results is less than 2x the RDL	
Field Duplicate Sample ID:	Not collected				
QC Summary					
Validity of Data	Not all QC criteria were met but no data were rejected.				
Additional Notes:					

SDG K1526 - TOC QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1526	**W&C Project No.:**222007	
Medium: Sediment		**Analytes:** TOC	
Samples: J186C0, J186C1, J186C2, J186C3, J186C5, J186C6, J186C7, J186C8			
Laboratory: Lionville	**Date Data Assessment Completed:** 02/12/2010 **Complete By:** RDD	**Sample Collection Date:** 02/04/2009	**Sample Analysis Date:** 02/10/2009

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No action	
Detection Limit	Yes	None.	-	No action	
Blanks					
Method Blank	No	TOC = 6.50 mg/kg	-	Qualify positive results < 5x the blank concentration as ND (UJ).	All samples. No impact to any samples.
Other QC					
LCS Results	Yes	None	-	No action	
Matrix Spikes Sample ID: J17V93	Yes	None	-	No action	
Lab Duplicate Sample ID: J17V93	Yes	None	-	No action	
Field Duplicate Sample ID:	Not collected				
QC Summary					
Validity of Data	Not all QC are in criteria but no data were rejected.				
Additional Notes:					

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SDG K1527 - VOC QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1527	**W&C Project No.:**222007	
Medium: Sediment		**Analytes:** VOA	
Samples: J18613, J186D2, J18928, J18929, J18930, J18931, J18932, J18678, J18688			
Laboratory: Lionville	**Date Data Assessment Completed:** 2/15/2010 **Complete By:** RDD	**Sample Collection Date:** 02/05/2009, 02/06/2009	**Sample Analysis Date:** 02/12/2009, 02/13/2009

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No action	
Detection Limits	No	Detection limit 1,1,1-trichloroethane exceeds limit in work plan.	-	No action	
Blanks					
Blanks - Method 02/12/2009	Yes	None	-	No action	
02/13/2009	No	$MeCl_2$ = 2.16 mg/kg	UJ	Qualify positive results < 10x blank concentration as ND (UJ) and raise reported value to RDL.	Impacts to J18931, J18932
Equipment Blank Sample ID:	Not collected.				
Trip Blank Sample ID: J18678	No	Acetone = 6.33 mg/kg	-	No impact based on guidance.	
J18688	No	Acetone = 6.35 mg/kg	-		
Other QC Results					
Surrogate Recoveries	Yes	None	-	No action	
LCS Results 2/12/2009 2/13/2009	Yes Yes	None None	- -	No action No action	
Matrix Spikes Sample ID: J18932	No	**Non-Compliant Recoveries** 2-Butanone = 260%/214% 2-Hexanone = 213%/178% 4-Methyl-2-pentanone = 158%/131%	-	Qualify positive sample results as estimated (J).	No impact since all compounds ND for all samples.

SDG K1527 - VOC QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1527	**W&C Project No.:**222007
Medium: Sediment		**Analytes:** VOA
Samples: J18613, J186D2, J18928, J18929, J18930, J18931, J18932, J18678, J18688		

Laboratory: Lionville	**Date Data Assessment Completed:** 2/15/2010 **Complete By:** RDD	**Sample Collection Date:** 02/05/2009, 02/06/2009	**Sample Analysis Date:** 02/12/2009, 02/13/2009

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
		Acetone = 273%/228% **Non-Compliant RPDs** 2-Butanone =41% 2-Hexanone =40% 4-Methyl-2-pentanone = 40% Acetone = 40% Bromoform = 34% Dibromochloromethane = 34%			
Lab Duplicates Sample ID:	Not analyzed				
Field Duplicate Sample ID: J18613/J186D2	Yes	None	-	No action	
Summary					
Validity of Data	Not all QC criteria were compliant, but no data were rejected.				
Additional Notes:					

SDG K1527 - SVOC QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1527	**W&C Project No.:**222007
Medium: Sediment		**Analytes:** SVOCs
Samples: J18613, J186D2, J18928, J18929, J18930, J18931, J18932		

Laboratory: Lionville	**Date Data Assessment Completed:** 02/15/2010 **Complete By:** RDD	**Sample Collection Date:** 02/05/2009, 02/06/2009	**Sample Analysis Date:** 02/17/2009 extr 02/25/2009 anal

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No action	
Detection Limits	Yes	Samples diluted due to matrix effects which elevated detection limits. Without dilution, hexachlorobenzene, 2-chloroaniline, 2-nitroaniline, 2,4-dinitrophenol, 4-nitrophenol, 4-nitroaniline, pentachlorophenol, 3,3'-dichlorobenzidine have RDLs that exceed those specified in work plan	-	No action	
Blanks					
Method Blanks	Yes	None	-	No action	
Laboratory Blank	Not collected				
Other QC					
Surrogate Recoveries	Yes	None	-	No action	
LCS Results	No	4-Chloroaniline = 48%	J	Qualify positive and ND results as estimated (J).	All samples.
Matrix Spikes Sample ID:	No	Hexachloroethane = 43%/43% 4-chloroaniline = 39%/43% Hexachlorocyclopentadiene = 19%/20% 3,3'-Dichlorobenzidine = 45%/42%	J	Qualify positive and ND results as estimated (J).	All samples.
Lab Duplicates Sample ID:	Not analyzed				
Field Duplicates Sample ID: J18613/J186D2	Yes	None	-	No action	

SDG K1527 - SVOC QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1527	**W&C Project No.:**222007	
Medium: Sediment		**Analytes:** SVOCs	
Samples: J18613, J186D2, J18928, J18929, J18930, J18931, J18932			
Laboratory: Lionville	**Date Data Assessment Completed:** 02/15/2010 **Complete By:** RDD	**Sample Collection Date:** 02/05/2009, 02/06/2009	**Sample Analysis Date:** 02/17/2009 extr 02/25/2009 anal

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Summary					
Validity of Data	Not all QC criteria were met but no data were rejected.				
Additional Notes:					

SDG K1527 - PCB QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1527	**W&C Project No.:**222007
Medium: Sediment		**Analytes:** PCBs
Samples: J18613, J186D2, J18928, J18929, J18930, J18931, J18932		

Laboratory: Lionville	**Date Data Assessment Completed:** 02/15/2010 **Complete By:** RDD	**Sample Collection Date:** 02/05/2009, 2/06/2009	**Sample Analysis Date:** 02/18/2009 extr 02/25/2009 anal

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No action	
Detection Limits	Yes	None	-	No action	
Blanks					
Method Blank	Yes	None	-	No action	
Equipment Blank Sample ID:	Not collected				
Other QC Results					
Surrogate Recoveries	Yes	None	-	No action	
LCS Results	Yes	None	-	No action	
Matrix Spikes Sample ID: J18932	Yes	None	-	No action	
Lab Duplicates Sample ID:	Not analyzed				
Field Duplicates Sample ID: J18613/J186D2	Yes	None	-	No action	
Summary					
Validity of Data	All QC parameters had compliant results and no data were rejected.				
Additional Notes:					

SDG K1527 - Pesticides QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1527	**W&C Project No.:**222007	
Medium: Sediment		**Analytes:** Pesticides	
Samples: J18613, J186D2, J18928, J18929, J18930, J18931, J18932			
Laboratory: Lionville	**Date Data Assessment Completed:** 02/15/2010 **Complete By:** RDD	**Sample Collection Date:** 02/05/2009, 02/06/2009	**Sample Analysis Date:** 02/18/2009extr; 03/12/2009, 03/13/2009 anal

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No action	
Detection Limits	No	RDLs for Endosulfan I, gamma BHC, heptachlor, and heptachlor epoxide exceed specified levels in work plan.	-	No action	
Blanks					
Method Blank	Yes	None	-	No action	
Equipment Blank Sample ID:	Not collected				
Other QC Results					
Surrogate Recoveries	Yes	None	-	No action	
LCS Results	No	No LCS results for toxaphene Original LCS was not spiked on 2/18/2009. Another LCS was reextracted on 03/14/2009 and reanalyzed on 03/19/2009. No action was taken for this error	J	Qualify all associated results as estimated (J)	Impacts to all samples above.
Matrix Spikes Sample ID: J18613	Yes	None	-	Original MS/MSD was not spiked on 2/18/2009. Sample was reextracted on 03/14/2009 and reanalyzed on 03/19/2009. No action was taken for this error.	
Lab Duplicates Sample ID:	Not analyzed				
Field Duplicate Sample ID:	Yes	None	-	No action	

SDG K1527 - Pesticides QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1527	**W&C Project No.:**222007
Medium: Sediment		**Analytes:** Pesticides
Samples: J18613, J186D2, J18928, J18929, J18930, J18931, J18932		

Laboratory: Lionville	**Date Data Assessment Completed:** 02/15/2010 **Complete By:** RDD	**Sample Collection Date:** 02/05/2009, 02/06/2009	**Sample Analysis Date:** 02/18/2009extr; 03/12/2009, 03/13/2009 anal

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
J18613/J186D2					
QC Summary					
Validity of Data	None of the data were qualified or rejected.				
Additional Notes:					

SDG K1527 - Metals QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA		**SDG No.:** K1527		**W&C Project No.:**222007	
Medium: Sediment				**Analytes:** Metals	
Samples: J18613, J186D2, J18928, J18929, J18930, J18931, J18932, J18933, J18934, J18935, J18936, J18937					
Laboratory: Lionville	**Date Data Assessment Completed:** 02/15/2010 **Complete By:** RDD			**Sample Collection Date:** 02/05/2009, 02/06/2009	**Sample Analysis Date:** 03/05/2009 Hg 04/02/2009

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No action	
Detection Limits	No	Ca, Fe, P, Zn detections limits exceed specifications in work plan.	-	No action	
Blanks					
Preparation Blank	No	Be = 0.008 mg/kg Si = 2.18 mg/kg	-	Qualify positive sample results < 5x the blank concentration as ND (UJ).	All samples, however no impacts.
Equipment Blank Sample ID:	Not collected				
Other QC Results					
LCS Results	No	Sb = 207% As = 192% Fe = 189% V = 177%	J	Qualify positive results as estimated (J).	All samples. Impacts include: Sb – J18936, J18934, J18932 and J18931. As – All samples Fe – All samples V – All samples
Matrix Spikes Sample ID: J186D2	No	Sb = 58% P = 62%	J	Qualify positive and ND results as estimated (J).	All samples.
Lab Duplicates Sample ID: J186D2	No	Cr = 41%	J	Qualify positive results as estimated (J).	All samples.
Field Duplicate Sample ID: J18613/J186D2	No	Ba = 32% Si = 34%	-	No action based on guidance.	
QC Summary					

SDG K1527 - Metals QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1527	**W&C Project No.:**222007	
Medium: Sediment		**Analytes:** Metals	
Samples: J18613, J186D2, J18928, J18929, J18930, J18931, J18932, J18933, J18934, J18935, J18936, J18937			
Laboratory: Lionville	**Date Data Assessment Completed:** 02/15/2010 **Complete By:** RDD	**Sample Collection Date:** 02/05/2009, 02/06/2009	**Sample Analysis Date:** 03/05/2009 Hg 04/02/2009

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Validity of Data	Not all QC criteria were met but no data were rejected.				
Additional Notes:					

SDG K1527 - Radionuclides QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1527	**W&C Project No.:**222007	
Medium: Sediment		**Analytes:** Gamma scan, C_{14}, Sr_{90}, Tc_{99}, and Isotopic Th, U, Pu	
Samples: J18613, J186D2, J18928, J18929, J18930, J18931, J18932, J18933, J18934, J18935, J18936, J18937			
Laboratory: Eberline	**Date Data Assessment Completed:** 02/15/2010 **Complete By:** RDD	**Sample Collection Date:** 02/06/2009	**Sample Analysis Date:** several

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No action	
Detection Limits	Yes	None	-	No action	
Blanks					
Method Blanks	Yes	None	-	No action	
Equipment Blank Sample ID:	Not collected				
Other QC Results					
LCS Results	Yes	None	-	No action	
Matrix Spikes - C_{14}	No	No MS analyzed	J	Qualify positive and ND sample results as estimated (J).	All samples.
Tracer Results	No	Technetium 99 recoveries > 105% for: J186D2 = 108% J18934 = 106% J18936 = 108% J18937 = 108%	-	Qualify positive sample results as estimated (J).	No impacts to associated samples J186D2, J18934, J18936, J18937 since all results ND for this isotope.
Lab Duplicates Sample ID: J18613	Yes	None	-	No action	
Field Duplicate Sample ID: J18613/J186D2	Yes	None	-	No action	
QC Summary					
Validity of Data	Not all QC criteria were met, but none of the data were rejected.				
Additional Notes:					

SDG K1527 - DRO QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1527	**W&C Project No.:**222007
Medium: Sediment		**Analytes:** DRO/Motor Oil
Samples: J18613, J18928, J18929, J18930, J18931, J18932		

Laboratory: Lionville	**Date Validation Completed:** 02/15/2010 **Complete By:** RDD	**Sample collection:** 02/05/2009, 2/06/2009	**Sample Analysis Date:** 02/18/2009 extr 02/27/2009 anal

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No action	
Surrogates	No	J18931	J	Qualify positive sample results as estimated (J).	J18931 No impacts since DRO was ND for this sample.
Blanks					
Method Blank	No	DRO = 8650 mg/kg Motor Oil = 16900 mg/kg	UJ	Qualify all positive sample results < 5x blank concentration as ND (UJ).	All samples. Impact to the following: Motor Oil – All samples
Equipment Blank Sample ID:	Not collected				
Other QC					
LCS Results	Yes	None	-	No action	
Matrix Spikes Sample ID: J18613	Yes	None	-	No action	
Lab Duplicates Sample ID:	Not analyzed				
Field Duplicate Sample ID:	Not collected				
QC Summary					
Validity of Data	Not all QC within criteria but no data were rejected.				
Additional Notes:					

SDG K1527 - TOC QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1527	**W&C Project No.:**222007	
Medium: Sediment		**Analytes:** TOC	
Samples: J18613, J186D2, J18928, J18929, J18930, J18931, J18932, J18933, J18934, J18935, J18936, J18937			
Laboratory: Lionville	**Date Data Assessment Completed:** 02/15/2010 **Complete By:** RDD	**Sample Collection Date:** 02/05/2009, 2/06/2009	**Sample Analysis Date:** 02/19/2009

QC Parameter	**All in Spec.?**	**Non-Compliant Results**	**Flag**	**Action/ Notes**	**Associated Samples**
Holding Times	Yes	None	-	No action	
Detection Limit	Yes	None.	-	No action	
Blanks					
Method Blank	Yes	None	-	No action	
Other QC					
LCS Results	Yes	None	-	No action	
Matrix Spikes Sample ID: J18930	Yes	None	-	No action	
Lab Duplicate Sample ID:	Yes	None	-	No action	
Field Duplicate Sample ID: J18613/J186D2	Yes	None	-	No action	
QC Summary					
Validity of Data	All QC parameters compliant and no data rejected				
Additional Notes:					

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SDG K1536 - VOC QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1536	**W&C Project No.:**222007	
Medium: Sediments		**Analytes:** VOA	
Samples: J188F7, J188F8, J188F9, J188H0, J188J5, J188J6, J188J7, J188J8, J17VP8, J18686			
Laboratory: Lionville	**Date Data Assessment Completed:** 02/22/2010 **Complete By:** RDD	**Sample Collection Date:** 02/09/2009	**Sample Analysis Date:**02/13/2009 02/15/2009

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No action	
Detection Limits	No	Detection limit for 1,1,1-trichloroethane exceeds limit in work plan	-	No action	
Blanks					
Blanks – Method 02/13/2009	No	$MeCl_2$ = 2.17 ug/kg	UJ	Qualify sample results < 5x the blank concentration as ND (UJ) and raise RDL.	All samples. Impacted samples include: J188F8, J188F9.
02/15/2009	Yes	None	-	No action	
Equipment Blank Sample ID:	Not collected				
Trip Blank Sample ID:J18686	No	Acetone = 7.09 ug/kg	-	No action based on guidance	
Other QC Results					
Surrogate Recoveries	Yes	None	-	No action	
LCS Results 02/13/2009 02/15/2009	 Yes Yes	 None None	 - -	 No action No action	
Matrix Spikes Sample ID:J188F9	No	2-Butanone = 246%/215% 2-Hexanone = 213%/195% Acetone = 254%/221%	J	Qualify positive sample results as estimated (J).	All samples. Impacts to: Acetone- J188F8, J188F9
Lab Duplicates	Not analyzed				
Field Duplicates	Yes	None			

SDG K1536 - VOC QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1536	**W&C Project No.:**222007	
Medium: Sediments		**Analytes:** VOA	
Samples: J188F7, J188F8, J188F9, J188H0, J188J5, J188J6, J188J7, J188J8, J17VP8, J18686			
Laboratory: Lionville	**Date Data Assessment Completed:** 02/22/2010 **Complete By:** RDD	**Sample Collection Date:** 02/09/2009	**Sample Analysis Date:**02/13/2009 02/15/2009

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Sample ID: J17VP8/J188J5					
Summary					
Validity of Data	Not all QC met, but no data were rejected.				
Additional Notes:					

SDG K1536 - SVOC QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1536	**W&C Project No.:**222007
Medium: Sediments		**Analytes:** SVOCs
Samples: J188F7, J188F8, J188F9, J188H0, J188J5, J188J6, J188J7, J188J8, J17VP8		

Laboratory: Lionville	**Date Data Assessment Completed:** 02/22/2010 **Complete By:** RDD	**Sample Collection Date:** 02/09/2009	**Sample Analysis Date:** 02/23/2009 extr ; 03/06/2009 anal; 03/12/2009 anal

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No action	
Detection Limits	No	Hexachlorobenzene, 2-chloroaniline, 2-nitroaniline, 2,4-dinitrophenol, 4-nitrophenol, 4-nitroaniline, pentachlorophenol, 3,3'-dichlorobenzidine have RDLs that exceed those specified in work plan.	-	No action	
Blanks					
Method Blanks	Yes	None	-	No action	
Equipment Blank Sample ID:	Not collected				
Other QC					
Surrogate Recoveries	No	J188F8 – 1 acid fraction surrogate < LCL.	-	No action since only 1 surr out of compliance	
LCS Results	No	4-Chloroaniline = 41% Hexachlorocyclopentadiene = 43%	J	Qualify positive and ND sample results as estimated (J).	All samples.
Matrix Spikes Sample ID:J188F7	No	**Non-Compliant Recoveries** Bis(2-chloroethyl)ether = 53%/45% 2-Chlorophenol =61%/49% 1,3-Dichlorobenzene = 49%/45% 1,4-Dichlorbenzene = 50%/47% 1,2-Dichlorbenzene=53%/49% 2-Methylphenol = 53%/49% Bis(2-chloroisopropyl) ether =55% /46% N-nitroso-di-n-propylamine = 55%/43%	J	Qualify positive and ND sample results as estimated (J)	All samples.

SDG K1536 - SVOC QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1536	**W&C Project No.:**222007
Medium: Sediments		**Analytes:** SVOCs

Samples: J188F7, J188F8, J188F9, J188H0, J188J5, J188J6, J188J7, J188J8, J17VP8

Laboratory: Lionville	**Date Data Assessment Completed:** 02/22/2010 **Complete By:** RDD	**Sample Collection Date:** 02/09/2009	**Sample Analysis Date:** 02/23/2009 extr ; 03/06/2009 anal; 03/12/2009 anal

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
		Hexachloroethane = 43%/33% Isophorone = 48%/42% 2-Nitrophenol = 56%/47% 1,2,4-Trichlorobenzene = 52%/45% Naphthalene = 55%/31% 4-Chloroaniline = 29%/28% Hexachlorobutadiene = 53%/46% Hexachlorocyclopentadiene = 18%/9% 3-NItroaniline = 52%/42% 4-Nitroaniline = 48%/41% Carbazole =56%/48% Pentachlorophenol = 31%/25% 3,3’-Dichlorbenzidine = 27%/22% Indeno[1,2,3-cd]pyrene =53%/46% Dibenz[a,h]anthracene =54%/48% Benzo[g,h,i]perylene =54%/45% **Non-Compliant RPDs** Naphthalene = 56% 4-Nitrophenol = 37%			
Lab Duplicates Sample ID:	Not analyzed				
Field Duplicates Sample ID: J17VP8/J188J5	Yes	None	-	No action	
Summary					
Validity of Data	Not all QC met, but no data were rejected.				
Additional Notes:					

SDG K1536 - PCB QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1536	**W&C Project No.:**222007
Medium: Sediments		**Analytes:** PCBs
Samples: J188F7, J188F8, J188F9, J188H0, J188J5, J188J6, J188J7, J188J8, J17VP8		

Laboratory: Lionville	**Date Data Assessment Completed:** 02/22/2010 **Complete By:** RDD	**Sample Collection Date:** 02/09/2009	**Sample Analysis Date:** 02/20/2009 extr 02/26/2009 anal

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No action	
Detection Limits	Yes	None	-	No action	
Blanks					
Method Blank	Yes	None	-	No action	
Equipment Blank Sample ID:	Not collected				
Other QC Results					
Surrogate Recoveries	Yes	None	-	No action	
LCS Results	Yes	None	-	No action	
Matrix Spikes Sample ID:J188F7	Yes	None	-	No action	
Lab Duplicates Sample ID:	Not analyzed				
Field Duplicates Sample ID: J17VP8/J188J5	Yes	None	-	No action	
Summary					
Validity of Data	All QC parameters were met.				
Additional Notes:					

SDG K1536 - Pesticides QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1536	**W&C Project No.:**222007
Medium: Sediments	**Analytes:** Pesticides	
Samples: J188F7, J188F8, J188F9, J188H0, J188J5, J188J6, J188J7, J188J8, J17VP8		

Laboratory:	**Date Data Assessment Completed:**	**Sample Collection Date:**	**Sample Analysis Date:**
Lionville	02/20/2009 **Complete By:** RDD	02/09/2009	02/20/2009 extr 03/13/2009 anal

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No action	
Detection Limits	No	RDLs for Endosulfan I, gamma BHC, heptachlor, and heptachlor epoxide exceed specified levels in work plan.	-	No action	
Blanks					
Method Blank	Yes	None	-	No action	
Equipment Blank	Not collected				
Other QC Results					
Surrogate Recoveries	No	J188F8 DCB surr recovery < LCL	J	Qualify positive and ND sample results as estimated (J).	J188F8
LCS Results	No	No LCS results for toxaphene	J	Qualify all associated results as estimated (J)	Impacts to all samples.
Matrix Spikes Sample ID:J188F7	No	Methoxychlor = 177%/184%	-	Qualify positive sample results as estimated (J).	All samples. No impacts to any samples since all results ND.
Lab Duplicates Sample ID:	Not analyzed				
Field Duplicate Sample ID: J17VP8/J188J5	Yes	None	-	No action	
QC Summary					

SDG K1536 - Pesticides QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1536	**W&C Project No.:**222007

Medium: Sediments	**Analytes:** Pesticides

Samples: J188F7, J188F8, J188F9, J188H0, J188J5, J188J6, J188J7, J188J8, J17VP8

Laboratory: Lionville	**Date Data Assessment Completed:** 02/20/2009 **Complete By:** RDD	**Sample Collection Date:** 02/09/2009	**Sample Analysis Date:** 02/20/2009 extr 03/13/2009 anal

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Validity of Data	Not all QC parameters were met, but no data were rejected.				
Additional Notes:					

SDG K1536 - Metals QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1536	**W&C Project No.:**222007	
Medium: Sediments		**Analytes:** Metals	
Samples: J17VP8, J188F7, J188F8, J188F9, J188H0, J188H1, J188H2, J188H3, J188J5, J188J6, J188J7, J188J8, J188K1, J188K2, J188K4			
Laboratory: Lionville	**Date Data Assessment Completed:** 02/22/2010 **Complete By:** RDD	**Sample Collection Date:** 02/09/2009	**Sample Analysis Date:** 03/10/2009 Hg 04/03/2009 others

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No action	
Detection Limits	No	Ca, Fe, P, Zn detection limits exceed specifications in work plan	-	No action	
Blanks					
Preparation Blank	No	Mg = 2.80 mg/kg Sn = 1.21 mg/kg	UJ	Qualify positive sample results < 5x the blank concentration as ND (UJ).	All samples. Impacts to the following samples: Sn –All samples
Equipment Blank Sample ID:	Not collected				
Other QC Results					
LCS Results	No	Sb = 193% As = 188% Cu = 133% V = 191%	J	Qualify positive sample results as estimated (J).	All samples with the following impacts: Sb –J188F7, J188F8, J188H2, J188H3, J188J5, J188J6, J188J8, J188K2, J17VP8. As – All samples Cu – All samples V – All samples
Matrix Spikes Sample ID: J188F7	No	Sb = 50%	J	Qualify positive and ND Sb sample results as estimated (J).	All samples with the following impacts: Sb – All samples
Lab Duplicates Sample ID:J188F7	Yes	None	-	No action.	
Field Duplicate Sample ID: J17VP8/J188J5	Yes	None	-		
QC Summary					

SDG K1536 - Metals QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1536	**W&C Project No.:**222007	
Medium: Sediments		**Analytes:** Metals	
Samples: J17VP8, J188F7, J188F8, J188F9, J188H0, J188H1, J188H2, J188H3, J188J5, J188J6, J188J7, J188J8, J188K1, J188K2, J188K4			
Laboratory: Lionville	**Date Data Assessment Completed:** 02/22/2010 **Complete By:** RDD	**Sample Collection Date:** 02/09/2009	**Sample Analysis Date:** 03/10/2009 Hg 04/03/2009 others

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Validity of Data	Not all QC met but none of the data were rejected.				
Additional Notes: No action taken with respect to Tl LCS result of 0% recovery, since spike level is just above the IDL.					

SDG K1536 - Radionuclides QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1536	**W&C Project No.:**222007	
Medium: Sediments		**Analytes:** Gamma scan, C_{14}, Sr_{90}, Tc_{99}, and Isotopic Th, U, Pu,	
Samples: J17VP8, J188F7, J188F8, J188F9, J188H0, J188H1, J188H2, J188H3, J188J5, J188J6, J188J7, J188J8, J188K1, J188K2, J188K4			
Laboratory: Eberline	**Date Data Assessment Completed:** 02/22/2010 **Complete By:** RDD	**Sample Collection Date:** 02/09/2009	**Sample Analysis Date:** several

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No action	
Detection Limits	Yes	None	-	No action	
Blanks					
Method Blanks	Yes	None	-	No action	
Other QC Results					
LCS Results	Yes	None	-	No action	
Matrix Spike – C_{14}	No	No MS was analyzed	J	Qualify positive and ND sample results as estimated (J).	All samples.
Tracer Results	No	Tc_{99} tracer recovery > UCL	-	Qualify positive sample results as estimated (J).	No impact since this isotope not detected above the RDL in the sample.
Lab Duplicates Sample ID:J17VP8	No	Th-228 = 49% U-238 = 42% Cs-137 = 35%	-	No action since difference between results is less than 2x the RDL	All samples.
Field Duplicate Sample ID:J17VP8/J188J5	Yes	None			
QC Summary					
Validity of Data	Not all QC parameters were met, but no data were rejected.				
Additional Notes:					

SDG K1536 - DRO QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1536	**W&C Project No.:**222007
Medium: Sediments		**Analytes:** DRO
Samples: J188F7, J188F8, J188F9, J188H0, J188J5, J188J6, J188J7, J188J8, J17VP8		

Laboratory: Lionville	**Date Validation Completed:** 02/20/2010 **Complete By:** RDD	**Sample collection:** 02/09/2009	**Sample Analysis Date:** 02/18/2009 extr 02/27/2009 anal

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No action	
Surrogates	No	J17VP8 surr. recovery > UCL	-	Qualify positive sample result as estimated (J).	J17VP8. No impact to sample result since ND for DRO.
Blanks					
Method Blank	No	DRO = 8650 mg/kg Motor oil = 16900 mg/kg	UJ	Qualify positive sample results < 5x the blank concentration as ND (UJ).	All samples. Impacts include: Motor Oil – All samples
Equipment Blank Sample ID:	Not collected				
Other QC					
LCS Results	No	DRO = 60%	J	Qualify positive and ND sample results as estimated (J).	All samples.
Matrix Spikes Sample ID: J188F7	Yes	None	-	No action	
Lab Duplicates Sample ID:	Not analyzed				
Field Duplicate Sample ID: J17VP8/J188J5	No	Motor Oil = 61%	-	No action based on criteria specified in guidance.	
QC Summary					
Validity of Data	Not all QC criteria were met but no data were rejected.				
Additional Notes: Blank results indicate potential false positive motor oil results.					

SDG K1536 - TOC QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1536	**W&C Project No.:**222007
Medium: Sediments		**Analytes:** TOC
Samples: J188F7, J188F8, J188F9, J188H0, J188H1, J188H2, J188H3, J188J5, J188J6, J188J7, J188J8, J188K1, J188K2, J188K4, J17VP8		

Laboratory: Lionville	**Date Data Assessment Completed:** 02/22/2010 **Complete By:** RDD	**Sample Collection Date:** 02/09/2009	**Sample Analysis Date:**02/23/2009

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No action.	
Detection Limit	Yes	None	-	No action	
Blanks					
Method Blank	Yes	None	-	No action	
Other QC					
LCS Results	Yes	None	-	No action	
Matrix Spikes Sample ID: J188F3	Yes	None	-	No action	
Lab Duplicate Sample ID: J188F3	Yes	None	-	No action	
Field Duplicate Sample ID: J17VP8/J188J5	No	RPD = 51%	-	No action taken based on criteria in guidance.	
QC Summary					
Validity of Data	Not all QC met but no data were rejected.				
Additional Notes: Field duplicate results indicate potential heterogeneous concentrations of TOC in the sediment matrix.					

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SDG K1537 - VOC QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1537	**W&C Project No.:**222007	
Medium: Sediments		**Analytes:** VOA	
Samples: J18685, J18675, J185Y9, J186D3, J186D4, J186D5, J186D6, J186X2, J186X3, J18702			
Laboratory: Lionville	**Date Data Assessment Completed:** 02/22/2010 **Complete By:** RDD	**Sample Collection Date:** 02/10/2009	**Sample Analysis Date:**02/15/2009 02/16/2009

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No action	
Detection Limits	No	Detection limit for 1,1,1-trichloroethane exceeds limit in work plan	-	No action	
Blanks					
Blanks – Method 02/15/2009	Yes	None	-	No action	
02/16/2009	Yes	None	-	No action	
Equipment Blank Sample ID:	Not collected				
Trip Blank Sample ID:J18685	No	Acetone = 6.32 ug/kg	-	No action based on guidance.	
Sample ID:J18675	Yes	None	-	No action	
Other QC Results					
Surrogate Recoveries	Yes	None	-	No action	
LCS Results 02/15/2009	Yes	None	-	No action	
02/16/2009	Yes	None	-	No action	
Matrix Spikes Sample ID:J186X3	No	2-Butanone = 226%/251% 2-Hexanone = 190%/211% Acetone = 225%/248%	-	Qualify positive sample results as estimated (J).	All samples. No impact to any samples since all results ND for these compounds.
Lab Duplicates	Not analyzed				
Field Duplicates Sample ID: J185Y9/J186X2	Yes	None	-	No action	
Summary					

SDG K1537 - VOC QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1537	**W&C Project No.:**222007	
Medium: Sediments		**Analytes:** VOA	
Samples: J18685, J18675, J185Y9, J186D3, J186D4, J186D5, J186D6, J186X2, J186X3, J18702			
Laboratory: Lionville	**Date Data Assessment Completed:** 02/22/2010 **Complete By:** RDD	**Sample Collection Date:** 02/10/2009	**Sample Analysis Date:**02/15/2009 02/16/2009

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Validity of Data	Not all QC met, but no data were rejected.				
Additional Notes:					

SDG K1537 - SVOC QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1537	**W&C Project No.:**222007	
Medium: Sediments		**Analytes:** SVOCs	
Samples: J185Y9, J186D3, J186D4, J186D5, J186D6, J186X2, J186X3, J18702			
Laboratory: Lionville	**Date Data Assessment Completed:** 02/22/2010 **Complete By:** RDD	**Sample Collection Date:** 02/10/2009	**Sample Analysis Date:** 02/23/2009 extr; 3/07/2009 anal; 03/12/2009 anal

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No action	
Detection Limits	No	Hexachlorobenzene, 2-chloroaniline, 2-nitroaniline, 2,4-dinitrophenol, 4-nitrophenol, 4-nitroaniline, pentachlorophenol, 3,3'-dichlorobenzidine have RDLs that exceed those specified in work plan.	-	No action	
Blanks					
Method Blanks	Yes	None	-	No action	
Equipment Blank Sample ID:	Not collected				
Other QC					
Surrogate Recoveries	Yes	None	-	No action	
LCS Results	No	4-Chloroaniline = 41% Hexachlorocyclopentadiene = 43%	J	Qualify positive and ND sample results as estimated (J).	All samples.
Matrix Spikes Sample ID:J186X3	No	**Non-Compliant Recoveries** Bis(2-chloroethyl)ether = 53%/46% 2-Chlorophenol =61%/49% 1,3-Dichlorobenzene = 40%/37% 1,4-Dichlorobenzene = 42%/37% 1,2-Dichlorobenzene=48%/42% Bis(2-chloroisopropyl) ether =57% /49% Hexachloroethane = 26%/23% 4-Chloroaniline = 45%/38% Hexachlorobutadiene = 60%/49% Hexachlorocyclopentadiene	J	Qualify positive and ND sample results as estimated (J)	All samples.

SDG K1537 - SVOC QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1537	**W&C Project No.:**222007	
Medium: Sediments		**Analytes:** SVOCs	
Samples: J185Y9, J186D3, J186D4, J186D5, J186D6, J186X2, J186X3, J18702			
Laboratory: Lionville	**Date Data Assessment Completed:** 02/22/2010 **Complete By:** RDD	**Sample Collection Date:** 02/10/2009	**Sample Analysis Date:** 02/23/2009 extr; 3/07/2009 anal; 03/12/2009 anal

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
		= 0%/0% 2,4-Dinitrophenol = 73%/47% Pentachlorophenol = 42%/32% 3,3'-Dichlorbenzidine = 43%/26% **Non-Compliant RPDs** 2,4-Dinitrophenol = 44% 3,3'-Dichlorbenzidine = 50%			
Lab Duplicates Sample ID:	Not analyzed				
Field Duplicates Sample ID: J185Y9/J186X2	Yes	None	-	No action	
Summary					
Validity of Data	Not all QC met, but no data were rejected.				
Additional Notes:					

SDG K1537 - PCB QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1537	**W&C Project No.:**222007
Medium: Sediments		**Analytes:** PCBs
Samples: J185Y9, J186D3, J186D4, J186D5, J186D6, J186X2, J186X3, J18612, J18702		

Laboratory: Lionville	**Date Data Assessment Completed:** 02/22/2010 **Complete By:** RDD	**Sample Collection Date:** 02/10/2009	**Sample Analysis Date:** 02/20/2009 extr 03/26/2009 anal

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No action	
Detection Limits	Yes	None	-	No action	
Blanks					
Method Blank	Yes	None	-	No action	
Equipment Blank Sample ID:	Not collected				
Other QC Results					
Surrogate Recoveries	Yes	None	-	No action	
LCS Results	Yes	None	-	No action	
Matrix Spikes Sample ID:J186X3	Yes	None	-	No action	
Lab Duplicates Sample ID:	Not analyzed				
Field Duplicates Sample ID: J185Y9/J186X2	Yes	None	-	No action	
Summary					
Validity of Data	All QC parameters were met.				
Additional Notes:					

SDG K1537 - Pesticides QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1537	**W&C Project No.:**222007
Medium: Sediments	**Analytes:** Pesticides	
Samples: J185Y9, J186D3, J186D4, J186D5, J186D6, J186X2, J186X3, J18612, J18702		

Laboratory: Lionville	**Date Data Assessment Completed:** 02/22/2010 **Complete By:** RDD	**Sample Collection Date:** 02/10/2009	**Sample Analysis Date:** 02/20/2009 extr; 03/13/2009 anal; 03/14/2009 anal; 03/25/2009 anal

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No action	
Detection Limits	No	RDLs for Endosulfan I, gamma BHC, heptachlor, and heptachlor epoxide exceed specified levels in work plan.	-	No action	
Blanks					
Method Blank	Yes	None	-	No action	
Equipment Blank	Not collected				
Other QC Results					
Surrogate Recoveries	No	J186X2 DCB surr recovery < LCL	J	Qualify positive and ND sample results as estimated (J).	J186X2
LCS Results	No	No LCS results for toxaphene	J	Qualify all associated results as estimated (J)	Impacts to all samples above.
Matrix Spikes Sample ID:J186X3	No	Methoxychlor = 182%/167%	-	Qualify positive sample results as estimated (J).	All samples. No impacts to any samples since all results ND.
Lab Duplicates	Not analyzed				
Field Duplicate Sample ID: J185Y9/J186X2	Yes	None	-	No action	
QC Summary					
Validity of Data	No all QC parameters were met, but no data were rejected.				

SDG K1537 - Pesticides QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1537	**W&C Project No.:**222007

Medium: Sediments	**Analytes:** Pesticides

Samples: J185Y9, J186D3, J186D4, J186D5, J186D6, J186X2, J186X3, J18612, J18702

Laboratory: Lionville	**Date Data Assessment Completed:** 02/22/2010 **Complete By:** RDD	**Sample Collection Date:** 02/10/2009	**Sample Analysis Date:** 02/20/2009 extr; 03/13/2009 anal; 03/14/2009 anal; 03/25/2009 anal

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples

Additional Notes:

SDG K1537 - Metals QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1537	**W&C Project No.:**222007	
Medium: Sediments		**Analytes:** Metals	
Samples: J185Y9, J186D3, J186D4, J186D5, J186D6, J186F2, J186X2, J186X3, J186X6, J18612, J18702			
Laboratory: Lionville	**Date Data Assessment Completed:** 02/22/2010 **Complete By:** RDD	**Sample Collection Date:** 02/10/2009	**Sample Analysis Date:** 03/10/2009 Hg 04/06/2009 others

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No action	
Detection Limits	No	Ca, Fe, P, Zn detection limits exceed specifications in work plan	-	No action	
Blanks					
Preparation Blank	No	Ca = 71.4 mg/kg Mg = 3.00 mg/kg Pb = 0.941 mg/kg Sn = 1.12 mg/kg	UJ	Qualify positive sample results < 5x the blank concentration as ND (UJ).	All samples. Impacts to the following samples: Sn –All samples
Equipment Blank Sample ID:	Not collected				
Other QC Results					
LCS Results	No	Sb = 212% As = 191% Fe = 138% V = 191%	J	Qualify positive sample results as estimated (J).	All samples with the following impacts: Sb –J18702, J186X6 As – All samples Fe – All samples V – All samples
Matrix Spikes Sample ID: J18612	Yes	None	-	No action.	
Lab Duplicates Sample ID:J18612	No	Si = 40%	J	Qualify positive sample results as estimated (J).	All samples.
Field Duplicate Sample ID: J185Y9/J186X2	Yes	None	-		
QC Summary					
Validity of Data	Not all QC met but none of the data were rejected.				

Additional Notes: No action taken with respect to Tl LCS result of 0% recovery, since spike level is just above the IDL.

SDG K1537 - Radionuclides QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1537	**W&C Project No.:**222007	
Medium: Sediments		**Analytes:** Gamma scan, C_{14}, Sr_{90}, Tc_{99}, and Isotopic Th, U, Pu,	
Samples: J185Y9, J186D3, J186D4, J186D5, J186D6, J186F2, J186X2, J186X3, J186X6, J18612, J18702			
Laboratory: Eberline	**Date Data Assessment Completed:** 02/22/2010 **Complete By:** RDD	**Sample Collection Date:** 02/10/2009	**Sample Analysis Date:** several

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No action	
Detection Limits	Yes	None	-	No action	
Blanks					
Method Blanks	Yes	None	-	No action	
Other QC Results					
LCS Results	Yes	None	-	No action	
Matrix Spike – C_{14}	No	No MS was analyzed	J	Qualify positive and ND sample results as estimated (J).	All samples.
Tracer Results	Yes	None	-	No action	
Lab Duplicates Sample ID:J185Y9	Yes	None	-	No action.	
Field Duplicate Sample ID:J185Y9/J186X2	Yes	None	-	No action	
QC Summary					
Validity of Data	Not all QC parameters were met, but no data were rejected.				
Additional Notes:					

SDG K1537 - DRO QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1537	**W&C Project No.:**222007	
Medium: Sediments		**Analytes:** DRO	
Samples: J18612			
Laboratory: Lionville	**Date Validation Completed:** 02/20/2010 **Complete By:** RDD	**Sample collection:** 02/10/2009	**Sample Analysis Date:** 02/18/2009 extr 02/27/2009 anal

QC Parameter	**All in Spec.?**	**Non-Compliant Results**	**Flag**	**Action/ Notes**	**Associated Samples**
Holding Times	Yes	None	-	No action	
Surrogates	Yes	None	-	No action.	
Blanks					
Method Blank	No	DRO = 8650 mg/kg Motor oil = 16900 mg/kg	UJ	Qualify positive sample results < 5x the blank concentration as ND (UJ).	All samples. Impacts include: Motor Oil – All samples
Equipment Blank Sample ID:	Not collected				
Other QC					
LCS Results	No	DRO = 60%	J	Qualify positive and ND sample results as estimated (J).	All samples.
Matrix Spikes Sample ID: J18612	Yes	None	-	No action	
Lab Duplicates Sample ID:	Not analyzed				
Field Duplicate Sample ID:	Not collected				
QC Summary					
Validity of Data	Not all QC criteria were met but no data were rejected.				
Additional Notes: Blank results indicate potential false positive motor oil results.					

SDG K1537 - TOC QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1537	**W&C Project No.:**222007	
Medium: Sediments		**Analytes:** TOC	
Samples: J185Y9, J186D3, J186D4, J186D5, J186D6, J186F2, J186X2, J186X3, J186X6, J18612, J18702			
Laboratory: Lionville	**Date Data Assessment Completed:** 02/22/2010 **Complete By:** RDD	**Sample Collection Date:** 02/10/2009	**Sample Analysis Date:**02/23/2009

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No action.	
Detection Limit	Yes	None	-	No action	
Blanks					
Method Blank	Yes	None	-	No action	
Other QC					
LCS Results	Yes	None	-	No action	
Matrix Spikes Sample ID: J188F3	Yes	None	-	No action	
Lab Duplicate Sample ID: J186D3	Yes	None	-	No action	
Field Duplicate Sample ID: J185Y9/J186X2	No	RPD = 41%	-	No action taken based on criteria in guidance.	
QC Summary					
Validity of Data	Not all QC met but no data were rejected.				
Additional Notes: Field duplicate results indicate potential heterogeneous concentrations of TOC in the sediment matrix.					

B.68 SDG K1539

SDG K1539 - VOC QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1539	**W&C Project No.:**222007	
Medium: Sediments		**Analytes:** VOA	
Samples: J18600, J18671, J187D3			
Laboratory: Lionville	**Date Data Assessment Completed:** 02/19/2010 **Complete By:** RDD	**Sample Collection Date:**	**Sample Analysis Date:** 02/15/2009

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No action	
Detection Limits	No	Detection limit for 1,1,1-trichloroethane exceeds limit in work plan	-	No action	
Blanks					
Blanks - Method	Yes	None	-	No action	
Equipment Blank Sample ID:	Not collected				
Trip Blank Sample ID:J18671	Yes	None	-	No action	
Other QC Results					
Surrogate Recoveries	Yes	None	-	No action	
LCS Results	Yes	None	-	No action	
Matrix Spikes Sample ID:J187D3	No	2-Butanone =230%/202% Acetone = 230%/213%	-	Qualify positive sample concentrations as estimated (J).	All samples. No impacts since all samples are ND for these compounds.
Lab Duplicates	Not analyzed				
Field Duplicates Sample ID:J18600/ J187D3	Yes	None	-	No action	
Summary					
Validity of Data	Not all QC criteria were met but none of the data were rejected.				
Additional Notes:					

SDG K1539 - SVOC QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA		**SDG No.:** K1539	**W&C Project No.:**222007
Medium: Sediments			**Analytes:** SVOCs
Samples: J18600, J187D3			
Laboratory: Lionville	**Date Data Assessment Completed:** 02/19/2010 **Complete By:** RDD	**Sample Collection Date:** 02/11/2009	**Sample Analysis Date:** 02/24/2009 extr 03/01/2009 anal

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No action	
Detection Limits	No	Hexachlorobenzene, 2-chloroaniline, 2-nitroaniline, 2,4-dinitrophenol, 4-nitrophenol, 4-nitroaniline, pentachlorophenol, 3,3'-dichlorobenzidine have RDLs that exceed those specified in work plan.	-	No action	
Blanks					
Method Blanks	Yes	None	-	No action	
Equipment Blank Sample ID:	Not collected				
Other QC					
Surrogate Recoveries	Yes	None	-	No action	
LCS Results	No	Nitrobenzene = 46% Isophorone =45% 2-Nitrophenol =47% 2,4-Dimethylphenol =42% 1,2,4-Trichlorobenzene =48% 4-Chloroaniline =49% Hexachlorocyclopentadiene = 26% 2,4-Dinitrophenol = 32% Pyrene =44%	J	Qualify positive and ND sample results as estimated (J).	All samples.
Matrix Spikes Sample ID:J18600	No	**Non-compliant Recoveries** 1,3-Dichlorobenzene =48%/71% 1,4-Dichlorobenzene =48%/71% Hexachloroethane = 44%/67%	J	Qualify positive and ND sample results of all SVOA compounds as	All samples.

SDG K1539 - SVOC QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1539	**W&C Project No.:**222007	
Medium: Sediments		**Analytes:** SVOCs	
Samples: J18600, J187D3			
Laboratory: Lionville	**Date Data Assessment Completed:** 02/19/2010 **Complete By:** RDD	**Sample Collection Date:** 02/11/2009	**Sample Analysis Date:** 02/24/2009 extr 03/01/2009 anal

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
		4-Chloroaniline = 39%/48% Hexachlorocyclopentadiene = 23%/41% Pyrene = 48%/69% 3,3'-Dichlorobenzidine = 46%/66% **Non-Compliant RPDs** Just about all compounds (60/64 or 94%)have RPDs that exceed criteria.		estimated (J) based on non-compliant MS/MSD RPDs.	
Lab Duplicates Sample ID:	Not analyzed				
Field Duplicates Sample ID:J18600/J187D3	Yes	None	-		
Summary					
Validity of Data	Not all QC criteria met, but no data were rejected.				
Additional Notes:					

SDG K1539 - PCB QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1539	**W&C Project No.:**222007	
Medium: Sediments		**Analytes:** PCBs	
Samples: J18600, J187D3			
Laboratory: Lionville	**Date Data Assessment Completed:** 02/19/2010 **Complete By:** RDD	**Sample Collection Date:** 02/11/2009	**Sample Analysis Date:** 02/24/2009 extr 03/11/2009 anal

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No action	
Detection Limits	Yes	None	-	No action	
Blanks					
Method Blank	Yes	None	-	No action	
Equipment Blank Sample ID:	Not collected				
Other QC Results					
Surrogate Recoveries	Yes	None	-	No action	
LCS Results	Yes	None	-	No action	
Matrix Spikes Sample ID:J187D3	Yes	None	-	No action	
Lab Duplicates Sample ID:	Not analyzed				
Field Duplicates Sample ID:J18600/J187D3	Yes	None	-	No action	
Summary					
Validity of Data	All QC criteria were met.				
Additional Notes:					

SDG K1539 - Pesticides QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1539	**W&C Project No.:**222007	
Medium: Sediments		**Analytes:** Pesticides	
Samples: J18600, J187D3			
Laboratory: Lionville	**Date Data Assessment Completed:** 02/20/2010 **Complete By:** RDD	**Sample Collection Date:** 02/11/2009	**Sample Analysis Date:** 02/24/2009 extr 03/16/2009 anal

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No action	
Detection Limits	Yes	None	-	No action	
Blanks					
Method Blank	No	Aldrin = 0.833 mg/kg	-	Qualify positive sample results < 5x the blank concentration as ND (UJ).	All samples. No impact since both samples ND for this compound.
Equipment Blank Sample ID:	Not collected				
Other QC Results					
Surrogate Recoveries	Yes	None	-	No action	
LCS Results	No	No LCS results for toxaphene	J	Qualify all associated results as estimated (J)	Impacts to all samples above.
Matrix Spikes Sample ID:J187D3	No	4,4’-DDT=161% Methoxychlor =183%	-	Qualify positive sample results as estimated (J).	All samples. No impact since both samples ND for both compounds.
Lab Duplicates Sample ID:	Not analyzed				
Field Duplicate Sample ID:J18600/J187D3	Yes	None	-	No action	
QC Summary					
Validity of Data	Not all QC criteria were met but none of the data were rejected.				
Additional Notes:					

SDG K1539 - Metals QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1539	**W&C Project No.:**222007	
Medium:		**Analytes:** Metals	
Samples: J18600, J187D3, J18763, J18766			
Laboratory: Lionville	**Date Data Assessment Completed:** 02/19/2010 **Complete By:** RDD	**Sample Collection Date:** 02/11/2009	**Sample Analysis Date:** 02/25/2009 Hg 04/06/2009 others

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No action	
Detection Limits	No	Ca, Fe, P, Zn detection limits exceed specifications in work plan	-		
Blanks					
Preparation Blank	No	Ca = 71.7 mg/kg Pb = 0.941 mg/kg Mg = 3.0 mg/kg Sn = 1.12 mg/kg	UJ	Qualify positive sample results < 5x blank concentration as ND (UJ).	All samples. Impacts to the following: Sn – All samples
Equipment Blank Sample ID:	Not collected				
Other QC Results					
LCS Results	No	Sb = 212% As = 191% Fe = 138% V = 191%	J	Qualify positive sample results as estimated (J).	All samples. Impacts to the following samples: As- All samples Fe –All samples V –All samples
Matrix Spikes Sample ID:J18600	Yes	None	-	No action	
Lab Duplicates Sample ID:J18600	Yes	None	-	No action	
Field Duplicate Sample ID:J18600/J187D3	Yes	None	-	No action	
QC Summary					
Validity of Data	Not all QC criteria were met but none of the data were rejected.				
Additional Notes:					

SDG K1539 - Radionuclides QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1539	**W&C Project No.:**222007	
Medium: Sediments		**Analytes:** Gamma scan, C_{14}, Sr_{90}, Tc_{99}, and Isotopic Th, U, Pu, Cs, Co	
Samples: J18600, J18763, J18764, J18766, J187D3			
Laboratory: Eberline	**Date Data Assessment Completed:** 02/19/2010 **Complete By:** RDD	**Sample Collection Date:** 02/11/2009	**Sample Analysis Date:** 02-03/2009

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No action	
Detection Limits	Yes	None	-	No action	
Blanks					
Method Blanks	Yes	None	-	No action	
Other QC Results					
LCS Results	Yes	None	-	No action	
Matrix Spike – C_{14}	No	MS not analyzed	J	Qualify sample results as estimated (J).	All samples.
Tracer Results	No	Tc recoveries > 105% for: J18766 = 106%	-	Qualify positive sample results as estimated (J).	J18766 No impact since sample is ND for this analyte.
Lab Duplicates Sample ID:J18600	Yes	None	-	No action	
Field Duplicate Sample ID:J18600/J187D3	Yes	None	-	No action	
QC Summary					
Validity of Data	Not all QC criteria were met but no data were rejected.				
Additional Notes:					

SDG K1539 - DRO QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1539	**W&C Project No.:**222007	
Medium: Sediments		**Analytes:** DRO	
Samples: J18600, J187D3			
Laboratory: Lionville	**Date Validation Completed:** 02/19/2010 **Complete By:** RDD	**Sample collection:** 02/11/2009	**Sample Analysis Date:** 02/27/2009 extr; 03/09/2009 extr; 03/05/2009 anal; 03/20/2009 anal

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	No	Samples extracted < 2x holding time.	J	Qualify sample results as estimated (J).	All samples.
Surrogates	Yes	None	-	No action	
Blanks					
Method Blank 03/05/2009 03/20/2009	 No No	 Motor Oil – 40400 mg/kg Motor Oil -5020 mg/kg	 UJ	Qualify positive sample results < 5x the blank concentration as ND.	All samples. Impacts the following samples: Motor Oil – J187D3 Motor Oil – J18600
Equipment Blank	Not collected				
Other QC					
LCS Results 03/05/2009 03/20/2009	 Yes No	 None DRO = 64%/66%	 - J	 No action Qualify positive and ND sample results as estimated	 J18600
Matrix Spikes Sample ID:J18600	Yes	None	-	No action	
Lab Duplicates Sample ID:	Not analyzed				
Field Duplicate Sample ID:J18600/J187D3	No	Motor Oil RPD =110%	-	No action based on guidance.	
QC Summary					
Validity of Data	Not all QC criteria were met but no data were rejected.				
Additional Notes:					

SDG K1539 - TOC QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1539	**W&C Project No.:**222007
Medium: Sediments		**Analytes:** TOC
Samples: J18600, J187D3, J18763, J18766		

Laboratory: Lionville	**Date Data Assessment Completed:** 02/19/2010 **Complete By:** RDD	**Sample Collection Date:** 02/11/2009	**Sample Analysis Date:** 02/26/2009

QC Parameter	**All in Spec.?**	**Non-Compliant Results**	**Flag**	**Action/ Notes**	**Associated Samples**
Holding Times	Yes	None	-	No action	
Detection Limit	Yes	None	-	No action	
Blanks					
Method Blank	No	TOC = 7.2 mg/kg	-	Qualify positive sample concentrations < 5x the blank concentration as ND (UJ).	All samples. No impact since all sample > 5x blank concentration.
Other QC					
LCS Results	Yes	None	-	No action	
Matrix Spikes Sample ID:J18600	Yes	None	-	No action	
Lab Duplicate Sample ID:J18600	Yes	None	-	No action	
Field Duplicate Sample ID:J18600/J187D3	No	RPD = 41%	-	No action based on guidance criteria.	
QC Summary					
Validity of Data	Not all QC criteria were met but no data were rejected.				
Additional Notes:Field Duplicate results indicate a high degree of variability for TOC sediment concentrations.					

B.69 SDG K1540

Validated by ELR - Included in Appendix F

B.70 SDG K1542

SDG K1542 - VOC QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1542	**W&C Project No.:**222007
Medium: Sediment	**Analytes:** VOA (1 of 2)	
Samples: J18807, J18808, J18809, J18810, J18827, J18844, J18845, J18846, J18864, J18865, J17XP1, J17XP2, J17XP3, J18607, J188F0, J188F1, J18681-A, J18687		

Laboratory:	**Date Data Assessment Completed:**	**Sample Collection Date:**	**Sample Analysis Date:**
Lionville	02/25/2010 **Complete By:** JR	02/17/2009	02/21/2009 – 02/24/2009

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No action	
Detection Limits	No	1,1,1-Trichloroethane had reporting limit above that referenced in the work plan	-	No action based on guidance	
Blanks					
Blanks - Method	Yes	None	-	No action	
Equipment Blank Sample ID:	Not collected				
Trip Blank Sample ID:					
J18687	No	Acetone = 6.30 ug/kg	-	No action based on guidance	
J18681-A	No	Acetone = 6.09 ug/kg	-	No action based on guidance	
Other QC Results					
Surrogate Recoveries	Yes	None	-	No action	
LCS Results	No	Batch L903086: Acetone = 178% 2-Butanone = 178% 2-Hexanone = 163%	-	Qualify positive results as estimated (J)	All samples. No impacts since associated results non-detect

SDG K1542 - VOC QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1542	**W&C Project No.:**222007
Medium: Sediment	**Analytes:** VOA (1 of 2)	
Samples: J18807, J18808, J18809, J18810, J18827, J18844, J18845, J18846, J18864, J18865, J17XP1, J17XP2, J17XP3, J18607, J188F0, J188F1, J18681-A, J18687		

Laboratory: Lionville	**Date Data Assessment Completed:** 02/25/2010 **Complete By:** JR	**Sample Collection Date:** 02/17/2009	**Sample Analysis Date:** 02/21/2009 – 02/24/2009

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Matrix Spikes Sample ID: J188F0	No	Acetone = 194%/205% 2-Butanone = 197%/204% 2-Hexanone = 169%/182%	-	Qualify positive results as estimated (J)	All samples. No impacts since associated results non-detect
Lab Duplicates	Not analyzed				
Field Duplicates Sample ID: J18607/J18864	Yes	None	-	No action	
Summary					
Validity of Data	No, but no data were rejected				

Additional Notes:
NOTE: All sample results were reported on a wet weight basis.
As noted in the narrative, internal standard areas were outside control limits for sample J18827; data were reported unqualified.

SDG K1542 - VOC QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1542	**W&C Project No.:**222007	
Medium: Sediment		**Analytes:** VOA (2 of 2)	
Samples: J18902, J18903, J18904, J18905, J18906, J18608, J18614, J18676, J18669, J18670, J187Y1, J187P1, J187P5, J187P6, J187P7, J187P8, J187Y3, J18674			
Laboratory: Lionville	**Date Data Assessment Completed:** 02/25/2010 **Complete By:** JR	**Sample Collection Date:** 02/13/2009 – 02/16/2009	**Sample Analysis Date:** 02/20/2009 – 02/21/2009

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No action	
Detection Limits	No	1,1,1-Trichloroethane had reporting limit above that referenced in the work plan	-	No action based on guidance	
Blanks					
Blanks - Method	No	Batch L902168: Methylene chloride = 7.37 ug/kg	UJ	Qualify positive results less than 10X blank concentration as non-detected estimated (UJ)	Impacts the following samples: J18902, J18903, J18904, J18905, J18906, J18608, J18614, J18676, J18669, J187P7, J187Y3, J18674
	Yes	Batch L902169: None	-	No action	
Equipment Blank Sample ID:	Not collected				
Trip Blank Sample ID:					
J18669	No	Acetone = 10.2 ug/kg Methylene chloride = 5.59 ug/kg	-	No action based on guidance	
J18670	No	Acetone = 6.05 ug/kg Methylene chloride = 5.19 ug/kg	-	No action based on guidance	
J18674	No	Acetone = 5.21 ug/kg Methylene chloride = 4.70 ug/kg	-	No action based on guidance	
J18676	No	Acetone = 6.76 ug/kg	-	No action based on guidance	

SDG K1542 - VOC QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1542	**W&C Project No.:**222007	
Medium: Sediment		**Analytes:** VOA (2 of 2)	
Samples: J18902, J18903, J18904, J18905, J18906, J18608, J18614, J18676, J18669, J18670, J187Y1, J187P1, J187P5, J187P6, J187P7, J187P8, J187Y3, J18674			
Laboratory: Lionville	**Date Data Assessment Completed:** 02/25/2010 **Complete By:** JR	**Sample Collection Date:** 02/13/2009 – 02/16/2009	**Sample Analysis Date:** 02/20/2009 – 02/21/2009

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
		Methylene chloride = 3.26 ug/kg			
Other QC Results					
Surrogate Recoveries	Yes	None	-	No action	
LCS Results	Yes Yes	Batch L902168: None Batch L902169: None	-	No action No action	
Matrix Spikes Sample ID: J18YP6	No	Acetone = 230%/211% 2-Butanone = 232%/219% 2-Hexanone = 181%/161%	J	Qualify positive results as estimated (J)	All samples. No impacts since associated results non-detect or already qualified J since between MDL and RL
Lab Duplicates	Not analyzed				
Field Duplicates Sample ID: J18614/J187Y1 J18608/J18904	Yes Yes	None None	- -	No action No action	
Summary					
Validity of Data	No, but no data were rejected				

Additional Notes:
NOTE: All sample results were reported on a wet weight basis.
As noted in the narrative, internal standard areas were outside control limits for samples J187P1 and J187P6; data were reported unqualified.

SDG K1542 - SVOC QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1542	**W&C Project No.:**222007	
Medium: Sediments		**Analytes:** SVOCs (1 of 2)	
Samples: J18807, J18808, J18809, J18810, J18827, J18844, J18845, J18846, J18864, J18865, J17XP1, J17XP2, J17XP3, J18607, J188F0, J188F1			
Laboratory: Lionville	**Date Data Assessment Completed:** 02/25/2010 **Complete By:** JR	**Sample Collection Date:** 02/17/2009	**Sample Extraction Date:** 02/26/2009

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No action	
Detection Limits	No	2,4-Dintrophenol; 2-Nitroaniline; 3-Nitroaniline; 4-Nitroaniline; 4-Nitrophenol; Pentachlorophenol; Hexachlorobenzene; and 3,3'-Dichlorobenzidine all had reporting limits above those specified in the work plan; see also NOTE (1) below	-	No action based on guidance	
Blanks					
Method Blanks	Yes	None	-	No action	
Equipment Blank Sample ID:	Not collected				
Other QC					
Surrogate Recoveries	No	Phenol-d5 = 122% Terphenyl-d14 = 147%	J	No action since only one surrogate per fraction (acid, B/N) outside criteria	J18846
	No	2,4,6-Tribromophenol = 9%	J/R	Qualify positive results associated with 2,4,6-TBP as estimated (J); qualify non-detected	J18807
	No	2,4,6-Tribromophenol = 5%	J/R		J18808 Affected compounds for both samples: 2,4-dichlorophenol, 2,4,6-trichlorophenol, 2,4,5-trichlorophenol,

SDG K1542 - SVOC QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1542	**W&C Project No.:**222007	
Medium: Sediments		**Analytes:** SVOCs (1 of 2)	
Samples: J18807, J18808, J18809, J18810, J18827, J18844, J18845, J18846, J18864, J18865, J17XP1, J17XP2, J17XP3, J18607, J188F0, J188F1			
Laboratory: Lionville	**Date Data Assessment Completed:** 02/25/2010 **Complete By:** JR	**Sample Collection Date:** 02/17/2009	**Sample Extraction Date:** 02/26/2009

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
				results as rejected (R)	pentachlorophenol, bis(2-chloroethyl)ether, bis(2-chloroisopropyl)ether, bis(2-chloroethoxy)methane, 4-chlorophenyl phenyl ether, 4-bromophenyl phenyl ether
LCS Results	No	**Non-compliant recoveries:** 4-Chloroaniline = 45% Hexachlorocyclopentadiene = 32%	J	Qualify positive and non-detected results as estimated (J)	All samples
Matrix Spikes Sample ID: J18807	No	**Non-compliant recoveries:** 1,3-Dichlorobenzene = 41% 1,4-Dichlorobenzene = 42% 1,2-Dichlorobenzene = 47% Hexachloroethane = 38% 4-Chloroaniline = 32%/25% Hexachlorocyclopentadiene = 12%/10% Pentachlorophenol = 0%/0% 3,3'-Dichlorobenzidine = 21%/0% 3-Nitroanaline = 45% 2,4-Dinitrophenol = 36% 4-Nitroaniline = 45% **Non-compliant RPDs:** 1,3-Dichlorobenzene = 47 1,4-Dichlorobenzene = 42 1,2-Dichlorobenzene = 38 Hexachloroethane = 37 2,4-Dinitrophenol = 44	J	Qualify positive and non-detected results for as estimated (J)	All samples

SDG K1542 - SVOC QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1542	**W&C Project No.:**222007	
Medium: Sediments		**Analytes:** SVOCs (1 of 2)	
Samples: J18807, J18808, J18809, J18810, J18827, J18844, J18845, J18846, J18864, J18865, J17XP1, J17XP2, J17XP3, J18607, J188F0, J188F1			
Laboratory: Lionville	**Date Data Assessment Completed:** 02/25/2010 **Complete By:** JR	**Sample Collection Date:** 02/17/2009	**Sample Extraction Date:** 02/26/2009

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Lab Duplicates Sample ID:	Not analyzed				
Field Duplicates Sample ID: J18607/J18864	Yes	None	-	No action	
Summary					
Validity of Data	No	Data were rejected for the following analytes in two samples: pentachlorophenol; 2,4-dichlorophenol; 2,4,5-trichlorophenol; 2,4,6-trichlorophenol; bis(2-chloroethyl)ether; bis(2-chloroisopropyl)ether; bis(2-chloroethoxymethane; 4-chlorophenyl phenyl ether; 4-bromophenyl phenyl ether			

Additional Notes:
(1) NOTE: Sample results were reported on a wet weight basis. Samples J18807 and J18808 were analyzed at two-fold dilutions due to matrix interference. The remaining samples were analyzed at three-fold dilutions due to matrix interference. Reporting limits are elevated by a factor of two or three as applicable.

SDG K1542 - SVOC QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1542	**W&C Project No.:**222007	
Medium: Sediments		**Analytes:** SVOCs (2 of 2)	
Samples: J18902, J18903, J18904, J18905, J18906, J18608, J18614, J187Y1, J187P1, J187P5, J187P6, J187P7, J187P8, J187Y3			
Laboratory: Lionville	**Date Data Assessment Completed:** 02/25/2010 **Complete By:** JR	**Sample Collection Date:** 02/13/2009 – 02/16/2009	**Sample Extraction Date:** 02/25/2009

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No action	
Detection Limits	No	2,4-Dintrophenol; 2-Nitroaniline; 3-Nitroaniline; 4-Nitroaniline; 4-Nitrophenol; Pentachlorophenol; Hexachlorobenzene; and 3,3'-Dichlorobenzidine all had reporting limits above those specified in the work plan; see also NOTE (1) below	-	No action based on guidance	
Blanks					
Method Blanks	Yes	None	-	No action	
Equipment Blank Sample ID:	Not collected				
Other QC					
Surrogate Recoveries	No	2,4,6-Tribromophenol = 18%	J	No action since only one surrogate per fraction (acid) outside criteria	J187P6
LCS Results	No	**Non-compliant recoveries:** Hexachlorocyclopentadiene = 42%	J	Qualify positive and non-detected results as estimated (J)	All samples

SDG K1542 - SVOC QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1542	**W&C Project No.:**222007
Medium: Sediments		**Analytes:** SVOCs (2 of 2)
Samples: J18902, J18903, J18904, J18905, J18906, J18608, J18614, J187Y1, J187P1, J187P5, J187P6, J187P7, J187P8, J187Y3		

Laboratory: Lionville	**Date Data Assessment Completed:** 02/25/2010 **Complete By:** JR	**Sample Collection Date:** 02/13/2009 – 02/16/2009	**Sample Extraction Date:** 02/25/2009

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Matrix Spikes Sample ID: J18902	No	**Non-compliant recoveries:** 1,3-Dichlorobenzene = 48% 1,4-Dichlorobenzene = 48% Hexachloroethane = 43% 4-Chloroaniline = 34%/38% Hexachlorocyclopentadiene = 0%/0% Pentachlorophenol = 47%/34% 3,3’-Dichlorobenzidine = 0%/0% **Non-compliant RPDs:** Hexachloroethane = 40 Pentachlorophenol = 33	J	Qualify positive and non-detected results for as estimated (J) .	All samples
Lab Duplicates Sample ID:	Not analyzed				
Field Duplicates Sample ID:					
J18614/J187Y1	Yes	None	-	No action	
J18608/J18904	Yes	None	-	No action	
Summary					
Validity of Data	Not all QC criteria were met, but no data were rejected.				

Additional Notes:
(1) NOTE: Sample results were reported on a wet weight basis. Samples J18902, J18903, J18614, J187Y1, J187P5, J187P6, and P187P7were analyzed at two-fold dilutions due to matrix interference. Samples J187P1 and J187P8 were analyzed at three-fold dilutions due to matrix interference. Reporting limits are elevated by a factor of two or three as applicable.

SDG K1542 - PCB QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1542	**W&C Project No.:**222007	
Medium: Sediments		**Analytes:** PCBs (1 of 2)	
Samples: J18807, J18808, J18809, J18810, J18827, J18844, J18845, J18846, J18864, J18865, J17XP1, J17XP2, J17XP3, J18607, J188F0, J188F1			
Laboratory: Lionville	**Date Data Assessment Completed:** 02/25/2010 **Complete By:** JR	**Sample Collection Date:** 02/17/2009	**Sample Extraction Date:** 02/26/2009

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No action	
Detection Limits	Yes	None	-	No action	
Blanks					
Method Blank	Yes	None	-	No action	
Equipment Blank Sample ID:	Not collected				
Other QC Results					
Surrogate Recoveries	Yes	None	-	No action	
LCS Results	Yes	None	-	No action	
Matrix Spikes Sample ID: J18807	Yes	None	-	No action	
Lab Duplicates Sample ID:	Not analyzed				
Field Duplicates Sample ID: J18607/J18864	Yes	None	-	No action	
Summary					
Validity of Data	Yes, no data were rejected				
Additional Notes: NOTE: All sample results were reported on a wet weight basis.					

SDG K1542 - PCB QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1542	**W&C Project No.:**222007	
Medium: Sediments		**Analytes:** PCBs (2 of 2)	
Samples: J18902, J18903, J18904, J18905, J18906, J18608, J18614, J187Y1, J187P1, J187P5, J187P6, J187P7, J187P8, J187Y3			
Laboratory: Lionville	**Date Data Assessment Completed:** 02/26/2010 **Complete By:** JR	**Sample Collection Date:** 02/13/2009 – 02/16/2009	**Sample Extraction Date:** 02/25/2009

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No action	
Detection Limits	Yes	None	-	No action	
Blanks					
Method Blank	Yes	None	-	No action	
Equipment Blank Sample ID:	Not collected				
Other QC Results					
Surrogate Recoveries	Yes	None	-	No action	
LCS Results	Yes	None	-	No action	
Matrix Spikes Sample ID: J18902	Yes	None	-	No action	
Lab Duplicates Sample ID:	Not analyzed				
Field Duplicates Sample ID: J18614/J187Y1 J18608/J18904	Yes Yes	None None	- -	No action No action	
Summary					
Validity of Data	Yes, no data were rejected				
Additional Notes: NOTE: All sample results were reported on a wet weight basis.					

SDG K1542 - Pesticides QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1542	**W&C Project No.:**222007
Medium: Sediment		**Analytes:** Pesticides (1 of 2)
Samples: J18807, J18808, J18809, J18810, J18827, J18844, J18845, J18846, J18864, J18865, J17XP1, J17XP2, J17XP3, J18607, J188F0, J188F1		

Laboratory: Lionville	**Date Data Assessment Completed:** 02/25/2010 **Complete By:** JR	**Sample Collection Date:** 02/17/2009	**Sample Extraction Date:** 02/26/2009

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No action	
Detection Limits	Yes; see also NOTE (1) below	None	-	No action	
Blanks					
Method Blank	Yes	None	-	No action	
Equipment Blank Sample ID:	Not collected				
Other QC Results					
Surrogate Recoveries	Yes	None	-	No action	
LCS Results	No	No LCS results for toxaphene	J	Qualify all associated results as estimated (J)	Impacts to all samples above.
Matrix Spikes Sample ID: J18807	No	Delta-BHC = 49% Methoxychlor = 171%/175%	J	Qualify positive and non-detected results for delta-BHC as estimated (J); qualify positive results for methoxychlor as estimated (J)	All samples. Impacts the following: Delta-BHC – All samples
Lab Duplicates Sample ID:	Not analyzed				
Field Duplicate Sample ID: J18607/J18864	Yes	None	-	No action	
QC Summary					
Validity of Data	No, but no data were rejected				

SDG K1542 - Pesticides QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1542	**W&C Project No.:**222007
Medium: Sediment		**Analytes:** Pesticides (1 of 2)
Samples: J18807, J18808, J18809, J18810, J18827, J18844, J18845, J18846, J18864, J18865, J17XP1, J17XP2, J17XP3, J18607, J188F0, J188F1		

Laboratory: Lionville	**Date Data Assessment Completed:** 02/25/2010 **Complete By:** JR	**Sample Collection Date:** 02/17/2009	**Sample Extraction Date:** 02/26/2009

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples

Additional Notes:
Sample results were reported on a wet weight basis. Samples J18XP3, J18607, and J188F1were analyzed at four-fold dilutions due to matrix interference, and the remaining samples were analyzed at ten-fold dilutions due to matrix interference; reporting limits are elevated (4X or 10X) as applicable.

SDG K1542 - Pesticides QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1542	**W&C Project No.:**222007	
Medium: Sediment		**Analytes:** Pesticides (2 of 2)	
Samples: J18902, J18903, J18904, J18905, J18906, J18608, J18614, J187Y1, J187P1, J187P5, J187P6, J187P7, J187P8, J187Y3			
Laboratory: Lionville	**Date Data Assessment Completed:** 02/25/2010 **Complete By:** JR	**Sample Collection Date:** 02/13/2009 – 02/16/2009	**Sample Extraction Date:** 02/25/2009

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No action	
Detection Limits	Yes; see also NOTE (1) below	None	-	No action	
Blanks					
Method Blank	Yes	None	-	No action	
Equipment Blank Sample ID:	Not collected				
Other QC Results					
Surrogate Recoveries	Yes	None	-	No action	
LCS Results	No	No LCS results for toxaphene	J	Qualify all associated results as estimated (J)	Impacts to all samples.
Matrix Spikes Sample ID: J18902	No	Delta-BHC = 49% 4,4’-DDD = 151%	J	Qualify positive and non-detected results for delta-BHC as estimated (J); qualify positive results for 4,4’-DDD as estimated (J)	All samples. Impacts the following: Delta-BHC – All samples
Lab Duplicates Sample ID:	Not analyzed				
Field Duplicate Sample ID:					

SDG K1542 - Pesticides QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1542	**W&C Project No.:**222007	
Medium: Sediment		**Analytes:** Pesticides (2 of 2)	
Samples: J18902, J18903, J18904, J18905, J18906, J18608, J18614, J187Y1, J187P1, J187P5, J187P6, J187P7, J187P8, J187Y3			
Laboratory: Lionville	**Date Data Assessment Completed:** 02/25/2010 **Complete By:** JR	**Sample Collection Date:** 02/13/2009 – 02/16/2009	**Sample Extraction Date:** 02/25/2009

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
J18614/J187Y1	Yes	None	-	No action	
J18608/J18904	Yes	None	-	No action	
QC Summary					
Validity of Data	No, but no data were rejected				

Additional Notes:
Sample results were reported on a wet weight basis. Samples J18904, J18905, J18906, and J18608 were analyzed at four-fold dilutions due to matrix interference, and the remaining samples were analyzed at ten-fold dilutions due to matrix interference; reporting limits are elevated (4X or 10X) as applicable.

SDG K1542 - Metals QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1542	**W&C Project No.:**222007
Medium: Sediment		**Analytes:** Metals (1 of 2)
Samples: J18807, J18808, J18809, J18810, J18827, J18828, J18829, J18844, J18845, J18846, J18847, J18848, J18849, J18850, J18851, J18852, J18864, J18865, J18867, J17XP1, J17XP2, J17XP3, J18607, J188F0, J188F1		

Laboratory: Lionville	**Date Data Assessment Completed:** 02/25/2010 **Complete By:** JR	**Sample Collection Date:** 2/17/2009	**Sample Analysis Date:** ICP – 05/07/2009; Hg – 04/17/2009 – 04/22/2009

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No action	
Detection Limits	Yes	None	-	No action	
Blanks					
Preparation Blank	No	Batch L904053: Pb = 3.19 mg/kg Sn = 1.54 mg/kg	UJ	Qualify positive results less than 5X blank concentration as non-detected estimated (UJ)	Impacts the following results: Pb – J18807, J18808, J18809, J18810, J18827, J18828, J18829
	No	Batch L904054: Pb = 0.535 mg/kg Mg = 2.27 mg/kg Sn = 1.32 mg/kg	UJ	Qualify positive results less than 5X blank concentration as non-detected estimated (UJ)	Impacts the following results: Pb – J188F0, J188F1
Equipment Blank Sample ID:	Not collected				
Other QC Results					
LCS Results	No	Batch L904053: Sb = 178% As = 167% Tl = 0% V = 147%	J	Qualify positive results for Sb, As, and V in associated batch as estimated (J)	Impacts the following results: As, V - J18807, J18808, J18809, J18810, J18827, J18828, J18829
	No	Batch L904054: Sb = 189% As = 241% Tl = 0% V = 168%	J	Qualify positive results for Sb, As, and V in associated batch as estimated (J) For both QC	Impacts the following results: As, V – J18844, J18845, J18846, J18847, J18848, J18849, J18850, J18851, J18852, J18864, J18865, J18867, J17XP1, J17XP2, J17XP3, J188F0, J188F1

SDG K1542 - Metals QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1542	**W&C Project No.:**222007
Medium: Sediment		**Analytes:** Metals (1 of 2)
Samples: J18807, J18808, J18809, J18810, J18827, J18828, J18829, J18844, J18845, J18846, J18847, J18848, J18849, J18850, J18851, J18852, J18864, J18865, J18867, J17XP1, J17XP2, J17XP3, J18607, J188F0, J188F1		

Laboratory: Lionville	**Date Data Assessment Completed:** 02/25/2010 **Complete By:** JR	**Sample Collection Date:** 2/17/2009	**Sample Analysis Date:** ICP – 05/07/2009; Hg – 04/17/2009 – 04/22/2009

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
				batches: no qualifiers applied to Tl results since LCS spike concentration is near the RL (less than 2XRL)	
Matrix Spikes Sample ID:					
Hg - J18807	Yes	None	-	No action	
Hg – J17XP2	Yes	None	-	No action	
ICP – J18844	No	Sb = 59%	J	Qualify positive and non-detected results for Sb in associated batch as estimated (J)	Impacts the following results: Sb – J18844, J18845, J18846, J18847, J18848, J18849, J18850, J18851, J18852, J18864, J18865, J18867, J17XP1, J17XP2, J17XP3, J18607, J188F0, J188F1
Lab Duplicates Sample ID:					
Hg – J18807	Yes	None	-	No action	
Hg – J17XP2	Yes	None	-	No action	
ICP – J18844	No	Non-compliant RPDs or absolute differences: Si = 35	J	Qualify results for affected analytes as estimated (J)	Si – All samples above.
Field Duplicate Sample ID: J18607/J18864	No	Non-compliant RPDs: Si = 66	J	Qualify results for Si as estimated (J)	Impacts the following results: Si – J18607, J18864
QC Summary					

SDG K1542 - Metals QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1542	**W&C Project No.:**222007
Medium: Sediment		**Analytes:** Metals (1 of 2)
Samples: J18807, J18808, J18809, J18810, J18827, J18828, J18829, J18844, J18845, J18846, J18847, J18848, J18849, J18850, J18851, J18852, J18864, J18865, J18867, J17XP1, J17XP2, J17XP3, J18607, J188F0, J188F1		

Laboratory: Lionville	**Date Data Assessment Completed:** 02/25/2010 **Complete By:** JR	**Sample Collection Date:** 2/17/2009	**Sample Analysis Date:** ICP – 05/07/2009; Hg – 04/17/2009 – 04/22/2009

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Validity of Data	No, but no data were rejected				
Additional Notes: Sample results were reported on a wet weight basis.					

SDG K1542 - Metals QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1542	**W&C Project No.:**222007	
Medium: Sediment		**Analytes:** Metals (2 of 2)	
Samples: J18902, J18903, J18904, J18905, J18906, J18907, J18908, J18909, J18910, J18911, J18912, J18913, J18608, J18614, J187R2, J187W8, J187Y1, J187P1, J187P2, J187P5, J187P6, J187P7, J187P8, J187P9, J187R0, J187R1, J187R3, J187Y3, J187Y4, J187Y6, J187Y7, J187Y8, J188C4			
Laboratory: Lionville	**Date Data Assessment Completed:** 02/26/2010 **Complete By:** JR	**Sample Collection Date:** 2/13/2009 – 02/16/2009	**Sample Analysis Date:** ICP – 04/11/2009 – 04/13/2009; Hg – 03/11/2009 – 03/16/2009

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No action	
Detection Limits	Yes	None	-	No action	
Blanks					
Preparation Blank	No	Batch L904052: Pb = 2.40 mg/kg Mg = 2.14 mg/kg Si = 3.45 mg/kg Sn = 1.23 mg/kg	UJ	Qualify positive results less than 5X blank concentration as non-detected estimated (UJ)	Impacts the following results: Sn – J187P5 Pb – J18905, J18909, J18910, J18911, J18912, J187R2
	No	Batch L904053: Pb = 3.19 mg/kg Sn = 1.54 mg/kg	UJ	Qualify positive results less than 5X blank concentration as non-detected estimated (UJ)	Impacts the following results: Sn – J187P7, J187P9 Pb – J187P6, J187R1, J187Y3, J187Y6, J187Y7, J187Y8, J188C4
Equipment Blank Sample ID:	Not collected				
Other QC Results					
LCS Results	No	Batch L904052: Sb = 206% As = 164% Ca = 135% Tl = 0% V = 171%	J	Qualify positive results for Sb, As, Ca, and V in associated batch as estimated (J)	Impacts the following results: Sb – J18904, J18906, J18907, J18908, J18913, J18608, J18614, J187W8, J187P2, J187P5 As, Ca, V – J18902, J18903, J18904, J18905, J18906, J18907, J18908, J18909, J18910, J18911, J18912, J18913, J18608, J18614, J187R2, J187W8, J187Y1, J187P1, J187P2, J187P5

SDG K1542 - Metals QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1542	**W&C Project No.:**222007	
Medium: Sediment		**Analytes:** Metals (2 of 2)	
Samples: J18902, J18903, J18904, J18905, J18906, J18907, J18908, J18909, J18910, J18911, J18912, J18913, J18608, J18614, J187R2, J187W8, J187Y1, J187P1, J187P2, J187P5, J187P6, J187P7, J187P8, J187P9, J187R0, J187R1, J187R3, J187Y3, J187Y4, J187Y6, J187Y7, J187Y8, J188C4			
Laboratory: Lionville	**Date Data Assessment Completed:** 02/26/2010 **Complete By:** JR	**Sample Collection Date:** 2/13/2009 – 02/16/2009	**Sample Analysis Date:** ICP – 04/11/2009 – 04/13/2009; Hg – 03/11/2009 – 03/16/2009

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
	No	Batch L904053: Sb = 178% As = 167% Tl = 0% V = 147%	J	Qualify positive results for Sb, As, and V in associated batch as estimated (J) For both QC batches: no qualifiers applied to Tl results since LCS spike concentration is near the RL (less than 2XRL)	Impacts the following results: As, V – J187P6, J187P7, J187P8, J187P9, J187R0, J187R1, J187R3, J187Y3, J187Y4, J187Y6, J187Y7, J187Y8, J188C4
Matrix Spikes Sample ID:					
Hg - J18902	Yes	None	-	No action	
Hg – J187R2	Yes	None	-	No action	
ICP – J18902	No	Sb = 58%	J	Qualify positive and non-detected results for Sb in associated batch as estimated (J)	Impacts the following results: Sb – J18902, J18903, J18904, J18905, J18906, J18907, J18908, J18909, J18910, J18911, J18912, J18913, J18608, J18614, J187R2, J187W8, J187Y1, J187P1, J187P2, J187P5
ICP – J187P6	No	Sb = 32%	J	Qualify positive and non-detected results for Sb in associated batch as estimated (J)	Sb – J187P6, J187P7, J187P8, J187P9, J187R0, J187R1, J187R3, J187Y3, J187Y4, J187Y6, J187Y7, J187Y8, J188C4

SDG K1542 - Metals QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1542	**W&C Project No.:**222007	
Medium: Sediment		**Analytes:** Metals (2 of 2)	
Samples: J18902, J18903, J18904, J18905, J18906, J18907, J18908, J18909, J18910, J18911, J18912, J18913, J18608, J18614, J187R2, J187W8, J187Y1, J187P1, J187P2, J187P5, J187P6, J187P7, J187P8, J187P9, J187R0, J187R1, J187R3, J187Y3, J187Y4, J187Y6, J187Y7, J187Y8, J188C4			
Laboratory: Lionville	**Date Data Assessment Completed:** 02/26/2010 **Complete By:** JR	**Sample Collection Date:** 2/13/2009 – 02/16/2009	**Sample Analysis Date:** ICP – 04/11/2009 – 04/13/2009; Hg – 03/11/2009 – 03/16/2009

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Lab Duplicates Sample ID:					
Hg – J18902	Yes	None	-	No action	
Hg – J187R2	Yes	None	-	No action	
ICP – J18902	No	Non-compliant RPDs or absolute differences were reported for the vast majority of analytes	J	Qualify positive detections for all analytes as estimated (J) based on professional judgment	Impacts the following results: All positive detections - J18902
ICP – J187P6	Yes	None	-	No action	
Field Duplicate Sample ID:		Non-compliant RPDs or absolute differences for:		Qualify results for affected analytes as estimated (J)	Impacts the following sample results:
J18614/J187Y1	No	Hg: Difference >2RL, RPD = 136	J		Hg – J18614, J187Y1
J18608/J18904	No	V: RPD = 45	J		V – J18608/J18904
J18911/J18912	No	Al : RPD = 39 Ca: RPD = 32 Cr: RPD = 34 Cu: RPD = 46 Fe: RPD = 32 Mg: RPD = 41	J J J J J J		Al, Ca, Cr, Cu, Fe, Mg – J18911/J18912
QC Summary					
Validity of Data	No, but no data were rejected				
Additional Notes: Sample results were reported on a wet weight basis.					

SDG K1542 - Radionuclides QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1542	**W&C Project No.:**222007
Medium: Sediment Data set 1 of 2		**Analytes:** C-14, Gamma Spec, Isotopic Plutonium, Isotopic Thorium, Isotopic Uranium, Sr-90, Tc-99

Samples: J18852, J18864, J18865, J18867, J188C4, J188F0, J188F1, J18902, J18903, J18904, J18905, J18906, J18907, J18908, J18909, J18910, J18911, J18912, J18913; J187Y6, J187Y7, J187Y8, J18807, J18808, J18809, J18810, J18827, J18828, J18829, J18844, J18845, J18846, J18847, J18848, J18849, J18850, J18851

Laboratory: Eberline	**Date Data Assessment Completed:** 03/22/2010 **Complete By:** JR	**Sample Collection Date:** 02/13/2009 - 02/17/2009	**Sample Analysis Date:** 03/12/2009 – 03/25/2009

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No action	
Detection Limits	Yes	None	-	No action	
Blanks					
Method Blanks	Yes	None	-	No action	
Other QC Results					
LCS Results	Yes	None	-	No action	
Matrix Spikes – C14	No	No MS sample was analyzed.	J	Qualify positive and ND sample results as estimated (J).	All samples
Tracer Results	No	Technetium-99 = 107% to 112% for a subset of samples	-	Qualify positive results for technetium-99 as estimated (J)	No impacts since results are non-detect in affected samples
Lab Duplicates					
Sample ID: J18852	Yes	None	-	No action	
J187Y6	Yes	None	-	No action	
Field Duplicate					
Sample ID: J18607/J18864	Yes	None	-	No action	
J18608/J18904	No	Non-compliant RPDs for:		No action based on guidance	
		Ra-228 = 34	-		
		Th-232 = 34	-		

SDG K1542 - Radionuclides QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1542	**W&C Project No.:**222007
Medium: Sediment Data set 1 of 2		**Analytes:** C-14, Gamma Spec, Isotopic Plutonium, Isotopic Thorium, Isotopic Uranium, Sr-90, Tc-99

Samples: J18852, J18864, J18865, J18867, J188C4, J188F0, J188F1, J18902, J18903, J18904, J18905, J18906, J18907, J18908, J18909, J18910, J18911, J18912, J18913; J187Y6, J187Y7, J187Y8, J18807, J18808, J18809, J18810, J18827, J18828, J18829, J18844, J18845, J18846, J18847, J18848, J18849, J18850, J18851

Laboratory: Eberline	**Date Data Assessment Completed:** 03/22/2010 **Complete By:** JR	**Sample Collection Date:** 02/13/2009 - 02/17/2009	**Sample Analysis Date:** 03/12/2009 – 03/25/2009

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
J18911/J18912	Yes	None	-	No action	
QC Summary					
Validity of Data	No, but no data were rejected				

NOTE: The data package was originally missing radionuclide results and associated quality control data for the following samples: J187Y6, J187Y7, J187Y8, J18807, J18808, J18809, J18810, J18827, J18828, J18829, J18844, J18845, J18846, J18847, J18848, J18849, J18850, and J18851. These results were not validated until a revised data package was received 03/18/2010; validation of these sample results was completed on 03/22/2010.

SDG K1542 - Radionuclides QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1542	**W&C Project No.:**222007	
Medium: Sediment Data set 2 of 2		**Analytes:** C-14, Gamma Spec, Isotopic Plutonium, Isotopic Thorium, Isotopic Uranium, Sr-90, Tc-99	
Samples: J18607, J18608, J18614, J187P1, J187P2, J187P5, J187P6, J187P7, J187P8, J187P9, J187R0, J187R1, J187R2, J187R3, J187W8, J187Y1, J187Y3, J187Y4			
Laboratory: Eberline	**Date Data Assessment Completed:** 02/25/2010 **Complete By:** JR	**Sample Collection Date:** 02/13/2009 - 02/17/2009	**Sample Analysis Date:** 03/11/2009 – 03/23/2009

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No action	
Detection Limits	Yes	None	-	No action	
Blanks					
Method Blanks	Yes	None	-	No action	
Other QC Results					
LCS Results	Yes	None	-	No action	
Matrix Spike – C_{14}	No	No MS sample was analyzed	J	Qualify positive and ND sample results as estimated (J).	
Tracer Results	No	Technetium-99 = 106% 106% 109%	-	Qualify positive results for technetium-99 as estimated (J)	No impacts since sample results non-detect
Lab Duplicates Sample ID: J18607	Yes	None	-	No action	
Field Duplicate Sample ID: J18614/J187Y1	Yes	None	-	No action	
QC Summary					
Validity of Data	No, but no data were rejected				
Additional Notes:					

SDG K1542 - DRO QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1542	**W&C Project No.:**222007	
Medium: Sediments		**Analytes:** DRO (1 of 2)	
Samples: J18807, J18808, J18809, J18810, J18827, J18864, J18865, J18607			
Laboratory: Lionville	**Date Validation Completed:** 02/25/2010 **Complete By:** JR	**Sample collection:** 02/17/2009	**Sample Extraction Date:** 02/27/2009

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No action	
Surrogates	Yes	None	-	No action	
Blanks					
Method Blank	No	Motor Oil = 13600 ug/kg	-	Qualify positive results less than 5X blank concentration as non-detected estimated (UJ)	No impacts since all results are greater than 5X blank concentration
Equipment Blank Sample ID:	Not collected				
Other QC					
LCS Results	Yes	None	-	No action	
Matrix Spikes Sample ID: J18807	No	DRO = 134%/56%; RPD = 81	J	Qualify positive and non-detected results as estimated (J)	Impacts the following samples: DRO – All samples
Lab Duplicates Sample ID:	Not analyzed				
Field Duplicate Sample ID: J18607/J18864	Yes	None	-	No action	
QC Summary					
Validity of Data	Yes, no data were rejected				
Additional Notes: NOTE: All sample results were reported on a wet weight basis.					

SDG K1542 - DRO QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1542	**W&C Project No.:**222007	
Medium: Sediments		**Analytes:** DRO (2 of 2)	
Samples: J18902, J18903, J18904, J18905, J18906, J18608, J18614, J187Y1, J187P1, J187P5, J187P6, J187P7, J187P8, J187Y3			
Laboratory: Lionville	**Date Validation Completed:** 02/26/2010 **Complete By:** JR	**Sample collection:** 02/13/2009 – 02/16/2009	**Sample Extraction Date:** 02/25/2009

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No action	
Surrogates	No	p-Terphenyl = 131%	J	Qualify positive detections in associated sample as estimated (J)	Impacts the following results: Motor Oil – J187Y3
Blanks					
Method Blank	Yes	None	-	No action	
Equipment Blank Sample ID:	Not collected				
Other QC					
LCS Results	Yes	None	-	No action	
Matrix Spikes Sample ID: J18902	No	DRO RPD = 44	J	Qualify positive and non-detected results as estimated (J)	Impacts the following samples: DRO – All samples
Lab Duplicates Sample ID:	Not analyzed				
Field Duplicate Sample ID: J18614/J187Y1 J18608/J18904	 Yes Yes	 None None	 - -	 No action No action	
QC Summary					
Validity of Data	Yes, no data were rejected				
Additional Notes: NOTE: All sample results were reported on a wet weight basis.					

SDG K1542 - TOC QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1542	**W&C Project No.:**222007
Medium: Sediment		**Analytes:** TOC (1 of 2)
Samples: J18807, J18808, J18809, J18810, J18827, J18828, J18829, J18844, J18845, J18846, J18847, J18848, J18849, J18850, J18851, J18852, J18864, J18865, J18867, J17XP1, J17XP2, J17XP3, J18607, J188F0, J188F1		

Laboratory: Lionville	**Date Data Assessment Completed:** 02/25/2010 **Complete By:** JR	**Sample Collection Date:** 02/17/2009	**Sample Analysis Date:** 03/13/2009

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No action	
Detection Limit	Yes	None	-	No action	
Blanks					
Method Blank	Yes	None	-	No action	
Other QC					
LCS Results	Yes	None	-	No action	
Matrix Spikes Sample ID: J18827	Yes	None	-	No action	
Lab Duplicate Sample ID: J18827	Yes	None	-	No action	
Field Duplicate Sample ID: J18607/J18864	No	Non-compliant RPDs: TOC = 53	J	Qualify results for TOC as estimated (J)	Impacts the following sample results: TOC – J18607, J18864
QC Summary					
Validity of Data	Yes; no data were rejected				
Additional Notes:					

SDG K1542 - TOC QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1542	**W&C Project No.:**222007
Medium: Sediment		**Analytes:** TOC (2 of 2)

Samples: J18902, J18903, J18904, J18905, J18906, J18907, J18908, J18909, J18910, J18911, J18912, J18913, J18608, J18614, J187R2, J187W8, J187Y1, J187P1, J187P2, J187P5, J187P6, J187P7, J187P8, J187P9, J187R0, J187R1, J187R3, J187Y3, J187Y4, J187Y6, J187Y7, J187Y8, J188C4

Laboratory: Lionville	**Date Data Assessment Completed:** 02/26/2010 **Complete By:** JR	**Sample Collection Date:** 02/13/2009 – 02/16/2009	**Sample Analysis Date:** 03/05/2009 – 03/06/2009

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No action	
Detection Limit	Yes	None	-	No action	
Blanks					
Method Blank	Batch L903192: Yes	None	-	No action	
	Batch L903194: No	TOC = 5.32 mg/kg	-	Qualify positive results less than 5X blank concentration as non-detected estimated (UJ)	No impacts since all TOC results are greater than 5X blank concentration
Other QC					
LCS Results	Yes	None	-	No action	
Matrix Spikes					
Sample ID: J18903	Yes	None	-	No action	
Sample ID: J18910	Yes	None	-	No action	
Lab Duplicate					
Sample ID: J18903	Yes	None	-	No action	
Sample ID: J18910	Yes	None	-	No action	
Field Duplicate					
Sample ID: J18614/J187Y1	Yes	None Non-compliant RPDs or absolute	-	No action	

SDG K1542 - TOC QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1542	**W&C Project No.:**222007
Medium: Sediment		**Analytes:** TOC (2 of 2)
Samples: J18902, J18903, J18904, J18905, J18906, J18907, J18908, J18909, J18910, J18911, J18912, J18913, J18608, J18614, J187R2, J187W8, J187Y1, J187P1, J187P2, J187P5, J187P6, J187P7, J187P8, J187P9, J187R0, J187R1, J187R3, J187Y3, J187Y4, J187Y6, J187Y7, J187Y8, J188C4		

Laboratory: Lionville	**Date Data Assessment Completed:** 02/26/2010 **Complete By:** JR	**Sample Collection Date:** 02/13/2009 – 02/16/2009	**Sample Analysis Date:** 03/05/2009 – 03/06/2009

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
		differences:			
J18608/J18904	No	TOC RPD = 134	-	No action based on guidance	
J18911/J18912	No	TOC Difference >2RL; TOC reported at 746440 ug/kg in J18911, but reported non-detected (RL = 20000 ug/kg) in J18912	-	No action based on guidance	
QC Summary					
Validity of Data	Yes; no data were rejected				
Additional Notes:					

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SDG K1543 - VOC QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1543	**W&C Project No.:**222007	
Medium: Sediment		**Analytes:** VOA	
Samples: J18677, J18684, J18884, J18885, J18886, J18887, J18965, J18966, J18977, J188B2, J188B8, J188B9, J188C0, J188C1, J189D6, J189D7			
Laboratory: Lionville	**Date Data Assessment Completed:** 02/19/2010 **Complete By:** JR	**Sample Collection Date:** 02/18/2009	**Sample Analysis Date:** 02/24/2009

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No action	
Detection Limits	No	1,1,1-Trichloroethane had reporting limit above that referenced in the work plan	-	No action based on criteria in references	
Blanks					
Blanks - Method	Yes	None	-	No action	
Equipment Blank Sample ID:	Not collected				
Trip Blank Sample ID: J18684	No	Acetone = 5.35 ug/kg; Methylene Chloride = 4.46 ug/kg		No action based on guidance	
J18677	No	Acetone = 6.21 ug/kg; Methylene Chloride = 4.92 ug/kg		No action based on guidance	
Other QC Results					
Surrogate Recoveries	Yes	None	-	No action	
LCS Results	No	Acetone = 178%/170% 2-Butanone = 178%/173% 2-Hexanone = 163%/151%	-	Qualify positive results as estimated (J)	All samples; no qualifiers needed since all results for acetone, 2-butanone, and 2-hexanone are non-detected in all samples

SDG K1543 - VOC QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1543	**W&C Project No.:**222007
Medium: Sediment		**Analytes:** VOA
Samples: J18677, J18684, J18884, J18885, J18886, J18887, J18965, J18966, J18977, J188B2, J188B8, J188B9, J188C0, J188C1, J189D6, J189D7		

Laboratory: Lionville	**Date Data Assessment Completed:** 02/19/2010 **Complete By:** JR	**Sample Collection Date:** 02/18/2009	**Sample Analysis Date:** 02/24/2009

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Matrix Spikes Sample ID: J189D7	Yes	None	-	No action	
Lab Duplicates	Not analyzed				
Field Duplicates Sample ID:	Not collected				
Summary					
Validity of Data	No, but no data were rejected				

Additional Notes:
NOTE: All sample results were reported on a wet weight basis. Note also VOC results were not found in the electronic data file; re-issued data file received 03/02/2010.

SDG K1543 - SVOC QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1543	**W&C Project No.:**222007
Medium: Sediment		**Analytes:** SVOCs
Samples: J18884, J18885, J18886, J18887, J18965, J18966, J18977, J188B2, J188B8, J188B9, J188C0, J188C1, J189D6, J189D7		

Laboratory: Lionville	**Date Data Assessment Completed:** 02/19/2010 **Complete By:** JR	**Sample Collection Date:** 02/18/2009	**Sample Extraction Date:** 03/01/2009

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No action	
Detection Limits	No	2,4-Dintrophenol; 2-Nitroaniline; 3-Nitroaniline; 4-Nitroaniline; 4-Nitrophenol; Pentachlorophenol; Hexachlorobenzene; and 3,3'-Dichlorobenzidine all had reporting limits above those specified in the work plan; see also NOTE (1) below	-	No action based on guidance	
Blanks					
Method Blanks	Yes	None	-	No action	
Equipment Blank Sample ID:	Not collected				
Other QC					
Surrogate Recoveries	Yes	None	-	No action	
LCS Results	No	2,4-Dimethylphenol = 49% 4-Chloroaniline = 35% Hexachlorocyclopentadiene = 14% 2,4,6-Trichlorophenol = 33% 2,4-Dinitrophenol = 43% Pentachlorophenol = 35%	J	Qualify positive and non-detected results as estimated (J)	All samples
Matrix Spikes Sample ID: J18884	No	4-Chloroaniline = 26%/34% Hexachlorocyclopentadiene = 31%/20% Pentachlorophenol = 0%/0% 3,3'-Dichlorobenzidine =	J	Qualify positive and non-detected results as estimated	All samples

SDG K1543 - SVOC QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1543	**W&C Project No.:**222007
Medium: Sediment		**Analytes:** SVOCs
Samples: J18884, J18885, J18886, J18887, J18965, J18966, J18977, J188B2, J188B8, J188B9, J188C0, J188C1, J189D6, J189D7		

Laboratory: Lionville	**Date Data Assessment Completed:** 02/19/2010 **Complete By:** JR	**Sample Collection Date:** 02/18/2009	**Sample Extraction Date:** 03/01/2009

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
		37%/39%		(J)	
Lab Duplicates Sample ID:	Not analyzed				
Field Duplicates Sample ID:	Not collected				
Summary					
Validity of Data	No, but no data were rejected				

Additional Notes:
(1) NOTE: All sample results were reported on a wet weight basis. Samples J18965, J18966, and J188B9 were analyzed at two-fold dilutions due to matrix interference; samples J18884, J18885, J18977, J188B8, J188C0, J188C1, and J189D7 were analyzed at three-fold dilutions due to matrix interference. Reporting limits are elevated by a factor of two or three as applicable.

SDG K1543 - PCB QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1543	**W&C Project No.:**222007	
Medium: Sediment		**Analytes:** PCBs	
Samples: J18884, J18885, J18886, J18887, J18965, J18966, J18977, J188B2, J188B8, J188B9, J188C0, J188C1, J189D6, J189D7			
Laboratory: Lionville	**Date Data Assessment Completed:** 02/19/2010 **Complete By:** JR	**Sample Collection Date:** 02/18/2009	**Sample Extraction Date:** 02/28/2009

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No action	
Detection Limits	Yes	None	-	No action	
Blanks					
Method Blank	Yes	None	-	No action	
Equipment Blank Sample ID:	Not collected				
Other QC Results					
Surrogate Recoveries	Yes	None	-	No action	
LCS Results	Yes	None	-	No action	
Matrix Spikes Sample ID: J18884	Yes	None	-	No action	
Lab Duplicates Sample ID:	Not analyzed				
Field Duplicates Sample ID:	Not collected				
Summary					
Validity of Data	Yes			No data were rejected	
Additional Notes: (1) NOTE: All sample results were reported on a wet weight basis.					

SDG K1543 - Pesticides QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1543	**W&C Project No.:**222007
Medium: Sediments	**Analytes:** Pesticides	
Samples: J18884, J18885, J18886, J18887, J18965, J18966, J18977, J188B2, J188B8, J188B9, J188C0, J188C1, J189D6, J189D7		

Laboratory: Lionville	**Date Data Assessment Completed:** **Complete By:** JR	**Sample Collection Date:** 2/18/2009	**Sample Analysis Date:** 3/20-21/2009

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No action	
Detection Limits	Yes	None; see also NOTE (1) below	-	No action	
Blanks					
Method Blank	Yes	None	-	No action	
Equipment Blank Sample ID:	Not collected				
Other QC Results					
Surrogate Recoveries	Yes	None	-	No action	
LCS Results	No	No LCS results for toxaphene	J	Qualify all associated results as estimated (J)	Impacts to all samples above.
Matrix Spikes Sample ID: J18884	Yes	None	-	No action	
Lab Duplicates Sample ID:	Not analyzed				
Field Duplicate Sample ID:	Not collected				
QC Summary					
Validity of Data	No, but no data were rejected				

Additional Notes:
(1) NOTE: All sample results were reported on a wet weight basis. All samples except J189D7 were analyzed at four-fold dilutions due to matrix interference; sample J189D7 was analyzed at a ten-fold dilution due to matrix interference. Reporting limits are elevated by a factor of four or ten as applicable.

SDG K1543 - Metals QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1543	**W&C Project No.:**222007
Medium: Sediments		**Analytes:** Metals
Samples: J17YT6, J17YT7, J17YT8, J18884, J18885, J18886, J18887, J18888, J18889, J18890, J18891, J18965, J18966, J1968, J18977, J18978, J18979, J188B2, J188B3, J188B8, J188B9, J188C0, J188C1, J189D6, J189D7		

Laboratory: Lionville	**Date Data Assessment Completed:** 02/19/2010 **Complete By:** JR	**Sample Collection Date:** 02/18/2009	**Sample Analysis Date:** ICP 04/21/2009; Hg 03/17/2009

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No action	
Detection Limits	Yes	None	-	No action	
Blanks					
Preparation Blank	No	Batch L904076: Mg = 1.22 mg/kg Sn = 1.02 mg/kg Batch L904077: Mg = 2.0 mg/kg Sn = 0.987 mg/kg Pb = 0.751 mg/kg	UJ UJ	Qualify positive results less than 5X blank concentrations as non-detected estimated (UJ)	All samples. Impacts the following: Sn – All samples
Equipment Blank Sample ID:	Not collected				
Other QC Results					
LCS Results	No	Batch L904076: Sb = 199% As = 185% Sn = 131% V = 172% Batch L904077: Sb = 189% As = 204% Cu = 710% Ni = 142% Sn = 138% V = 162% Zn = 683%	J+ J+	Qualify positive results as estimated (J)	All samples. Impacts the following: Sb – J18886 As, V – All samples Cu, Ni, Zn – J188B9, J188C0, J188C1, J189D6, J189D7
Matrix Spikes Sample ID: J17YT6	No	Sb = 49%	J	Qualify positive and non-detected results as estimated (J)	All samples

SDG K1543 - Metals QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1543	**W&C Project No.:**222007
Medium: Sediments		**Analytes:** Metals
Samples: J17YT6, J17YT7, J17YT8, J18884, J18885, J18886, J18887, J18888, J18889, J18890, J18891, J18965, J18966, J1968, J18977, J18978, J18979, J188B2, J188B3, J188B8, J188B9, J188C0, J188C1, J189D6, J189D7		

Laboratory: Lionville	**Date Data Assessment Completed:** 02/19/2010 **Complete By:** JR	**Sample Collection Date:** 02/18/2009	**Sample Analysis Date:** ICP 04/21/2009; Hg 03/17/2009

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Lab Duplicates Sample ID: J17YT6	Yes	None	-	No action	
Field Duplicate Sample ID:	Not collected				
QC Summary					
Validity of Data	No, but no data were rejected				

Additional Notes:
(1) NOTE: All sample results were reported on a wet weight basis.

SDG K1543 - Radionuclides QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1543	**W&C Project No.:**222007
Medium: Sediments		**Analytes:** C-14, Gamma Spec, Isotopic Plutonium, Isotopic Thorium, Isotopic Uranium, Sr-90, Tc-99
Samples: J188B3, J188B8, J188B9, J188C0, J188C1, J18965, J18966, J18968, J18977, J18978, J18979, J189D6, J189D7,J18884, J18885, J18886, J18887, J18888, J18889, J18890, J18891, J188B2, J17YT6, J17YT7, J17YT8		

Laboratory: Eberline	**Date Data Assessment Completed:** 02/19/2010 **Complete By:** JR	**Sample Collection Date:** 02/18/2009	**Sample Analysis Date:** 03/10/2009 – 03/23/2009

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No action	
Detection Limits	Yes	None	-	No action	
Blanks					
Method Blanks	Yes	None	-	No action	
Other QC Results					
LCS Results	Yes	None	-	No action	
Tracer Results	No	Isotopic Thorium = 106%	J+	Qualify positive results for isotopic thorium as estimated (J)	Impacts the following sample: J18884
Matrix Spike – Carbon 14 Sample ID:	No	No MS analyzed for C-14	J	Qualify positive and non-detect results for C-14 as estimated (J).	All samples
Lab Duplicates Sample ID: J188B3 and J17YT6	Yes	None	-	No action	
Field Duplicate Sample ID:	Not collected				
QC Summary					
Validity of Data	No, but no data were rejected				
Additional Notes:					

SDG K1543 - DRO QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1543	**W&C Project No.:**222007	
Medium: Sediment		**Analytes:** DRO	
Samples: J18884, J18885, J18886, J18887, J18965, J18966, J18977, J188B2, J188B8, J188B9, J188C0, J188C1, J189D6, J189D7			
Laboratory: Lionville	**Date Validation Completed:** 02/19/2010 **Complete By:** JR	**Sample collection:** 02/18/2009	**Sample Extraction Date:** 03/03/2009

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No action	
Surrogates	Yes	None	-	No action	
Blanks					
Method Blank	No	Motor Oil = 17400 ug/kg	UJ	Qualify positive detections of motor oil less than 5X blank concentration as non-detected estimated (UJ)	All samples had positive motor oil detections that were less than 5X the blank concentration and were qualified UJ
Equipment Blank Sample ID:	Not collected				
Other QC					
LCS Results	Yes	None	-	No action	
Matrix Spikes Sample ID: J18884	Yes	None	-	No action	
Lab Duplicates Sample ID:	Not analyzed				
Field Duplicate Sample ID:	Not collected				
QC Summary					
Validity of Data	No, but no data were rejected				
Additional Notes: (1) NOTE: All sample results were reported on a wet weight basis.					

SDG K1543 - TOC QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1543	**W&C Project No.:**222007	
Medium: Sediment		**Analytes:** TOC	
Samples: J17YT6, J17YT7, J17YT8, J18884, J18885, J18886, J18887, J18888, J18889, J18890, J18891, J18965, J18966, J18968, J18977, J18978, J18979, J188B2, J188B3, J188B8, J188B9, J188C0, J188C1, J189D6, J189D7			
Laboratory: Lionville	**Date Data Assessment Completed:** 02/19/2010 **Complete By:** JR	**Sample Collection Date:** 02/18/2009	**Sample Analysis Date:** 03/16/2009

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No action	
Detection Limit	Yes	None	-	No action	
Blanks					
Method Blank	No	TOC = 7.76 mg/kg	-	Qualify positive results less than 5X blank concentration as non-detected estimated (UJ)	All samples. No impacts since all TOC results are greater than 5X the blank concentration or are non-detected
Other QC					
LCS Results	Yes	None	-	No action	
Matrix Spikes Sample ID: J17YT7	Yes	None	-	No action	
Lab Duplicate Sample ID: J17YT7	Yes	None	-	No action	
Field Duplicate Sample ID:	Not collected				
QC Summary					
Validity of Data	No, but no data were rejected				
Additional Notes:					

B.72 SDG K1544

Validated by ELR - Included in Appendix F

B.73 SDG K1547

SDG K1547 - VOC QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1547	**W&C Project No.:**222007	
Medium: Sediments		**Analytes:** VOA	
Samples: J180M0, J189J1, J18609, J18673, J189P5, J189P6, J189R0, J189R1, J189T4, J189T5, J189T6, J189T7, J189T8, J18664, J18665, J18682-A			
Laboratory: Lionville	**Date Data Assessment Completed:** 02/22/2010 **Complete By:** RDD	**Sample Collection Date:** 02/20/2009 and 2/23/2009	**Sample Analysis Date:**03/05/2009, 03/04/2009

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No action	
Detection Limits	No	Detection limit for 1,1,1-trichloroethane exceeds limit in work plan	-	No action	
Blanks					
Blanks – Method 03/04/2009	Yes	None	-	No action	
03/05/2009	Yes	None	-	No action	
Equipment Blank Sample ID:	Not collected				
Trip Blank					
Sample ID:J18664	Yes	None	-	No action.	
Sample ID:J18682-A	No	Acetone = 4.30 ug/kg	-	No action based on guidance.	
Sample ID: J18673	No	Acetone = 4.18 ug/kg	-	No action based on guidance.	
Sample ID: J18665	Yes	None	-	No action	
Other QC Results					
Surrogate Recoveries	Yes	None	-	No action	
LCS Results 03/04/2009	Yes	None	-	No action	
03/05/2009	No	2-Butanone =160% Acetone = 183%	-	Qualify associated positive sample results as	J189J1, J180M0. No impact since both samples ND for both

SDG K1547 - VOC QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1547	**W&C Project No.:**222007
Medium: Sediments		**Analytes:** VOA

Samples: J180M0, J189J1, J18609, J18673, J189P5, J189P6, J189R0, J189R1, J189T4, J189T5, J189T6, J189T7, J189T8, J18664, J18665, J18682-A

Laboratory: Lionville	**Date Data Assessment Completed:** 02/22/2010 **Complete By:** RDD	**Sample Collection Date:** 02/20/2009 and 2/23/2009	**Sample Analysis Date:**03/05/2009, 03/04/2009

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
				estimated (J).	compounds.
Matrix Spikes Sample ID:J189J1	No	Acetone = 140%/152%	J	Qualify positive sample results as estimated (J).	All samples. Impacts the following samples: J189P5.
Lab Duplicates	Not analyzed				
Field Duplicates Sample ID: J18609/J189T4	Yes	None	-	No action	
Summary					
Validity of Data	Not all QC met, but no data were rejected.				

Additional Notes: Trip blank results indicate potential false positive concentrations of acetone in associated samples.

SDG K1547 - SVOC QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1547	**W&C Project No.:**222007
Medium: Sediments		**Analytes:** SVOCs
Samples: J189J1, J180M0, J180M1, J180M2, J180M3, J180M4, J18609, J189P5, J189P6, J189R0, J189R1, J189T4, J189T5, J189T6, J189T7, J189T8		

Laboratory: Lionville	**Date Data Assessment Completed:** 02/22/2010 **Complete By:** RDD	**Sample Collection Date:** 2/20/2009 and 02/23/2009	**Sample Analysis Date:** 3/09/2009 extr; 3/28/2009 anal; 3/27/2009 anal; 3/30/2009 anal; 3/29/2009 anal

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	No	Some of the samples were extracted at < 2x the holding time limit.	J	Qualify positive and ND results as estimated for associated samples.	J18609, J189P5, J189P6, J189R0, J189R1, J189T4, J189T5, J189T6, J189T7, J189T8,
Detection Limits	No	Hexachlorobenzene, 2-chloroaniline, 2-nitroaniline, 2,4-dinitrophenol, 4-nitrophenol, 4-nitroaniline, pentachlorophenol, 3,3'-dichlorobenzidine have RDLs that exceed those specified in work plan.	-	No action	
Blanks					
Method Blanks	Yes	None	-	No action	
Equipment Blank Sample ID:	Not collected				
Other QC					
Surrogate Recoveries	Yes	None	-	No action	
LCS Results	No	Bis(2-chloroethyl) ether = 33% 1,3-Dichlorobenzene = 5% 1,4- Dichlorobenzene = 4% 1,2- Dichlorobenzene = 10% Bis(2-chloroisopropyl)ether =40% Hexachloroethane = 8% Nitrobenzene = 46% 2-Nitrophenol = 48% 1,2,4-Trichlorobenzene = 26% Naphthalene =36% 4-Chloroaniline = 46% Hexachlorobutadiene = 28% 2-Methylnaphthalene = 49% Hexachlorocyclopentadiene = 0% 2,4-Dinitrophenol = 45%	J	Qualify positive and ND sample results as estimated (J).	All samples.

SDG K1547 - SVOC QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1547	**W&C Project No.:**222007	
Medium: Sediments		**Analytes:** SVOCs	
Samples: J189J1, J180M0, J180M1, J180M2, J180M3, J180M4, J18609, J189P5, J189P6, J189R0, J189R1, J189T4, J189T5, J189T6, J189T7, J189T8			
Laboratory: Lionville	**Date Data Assessment Completed:** 02/22/2010 **Complete By:** RDD	**Sample Collection Date:** 2/20/2009 and 02/23/2009	**Sample Analysis Date:** 3/09/2009 extr; 3/28/2009 anal; 3/27/2009 anal; 3/30/2009 anal; 3/29/2009 anal

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Matrix Spikes Sample ID:J180M0	No	**Non-Compliant Recoveries** Phenol =49%/45% 2-Chlorophenol =48%/55% 1,3-Dichlorobenzene = 39%/40% 1,4-Dichlorobenzene = 39%/42% 1,2-Dichlorobenzene=43%/47% 4-Methylphenol = 39%/43% Hexachloroethane = 21%/24% Nitrobenzene = 49%/57% Isophorone = 39%/58% 2-Nitrophenol = 39%/53% 2,4-Dimethylphenol = 20%/32% 1,2,4-Trichlorobenzene = 45%/52% 4-Chloroaniline = 12%/20% Hexachlorobutadiene = 48%/54% Hexachlorocyclopentadiene = 0%/0% 2,4,6-Trichlorophenol = 38%/42% 3-Nitroaniline = 26%/39% 2,4-Dinitrophenol = 19%/28% 4-Nitrophenol = 0%/0% 2,4-Dinitrotoluene = 49%/ 61% 4-Nitroaniline =35%/42% 4,6-Dinitro-2-methylphenol = 31%/42% Pentachlorophenol = 0%/0 Carbazole = 48%/58% 3,3'-Dichlorbenzidine = 0%/0% **Non-Compliant RPDs** 2,4-Dimethylphenol = 49% 4-Chloroaniline = 52% 3-NItroaniline = 40% 2,4-Dinitrophenol = 41%	J	Qualify positive and ND sample results as estimated (J)	All samples.
Lab Duplicates	Not analyzed				

SDG K1547 - SVOC QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1547	**W&C Project No.:**222007	
Medium: Sediments		**Analytes:** SVOCs	
Samples: J189J1, J180M0, J180M1, J180M2, J180M3, J180M4, J18609, J189P5, J189P6, J189R0, J189R1, J189T4, J189T5, J189T6, J189T7, J189T8			
Laboratory: Lionville	**Date Data Assessment Completed:** 02/22/2010 **Complete By:** RDD	**Sample Collection Date:** 2/20/2009 and 02/23/2009	**Sample Analysis Date:** 3/09/2009 extr; 3/28/2009 anal; 3/27/2009 anal; 3/30/2009 anal; 3/29/2009 anal

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Sample ID:					
Field Duplicates Sample ID: J18609/J189T4	Yes	None	-	No action	
Summary					
Validity of Data	Not all QC met, but no data were rejected.				
Additional Notes:					

SDG K1547 - PCB QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1547	**W&C Project No.:**222007
Medium: Sediments		**Analytes:** PCBs
Samples: J180M0, J180M1, J180M2, J180M3, J180M4, J18609, J189P5, J189P6, J189R0, J189R1, J189T4, J189T5, J189T6, J189T7, J189T8		

Laboratory: Lionville	**Date Data Assessment Completed:** 02/22/2010 **Complete By:** RDD	**Sample Collection Date:** 02/20/2009 and 02/23/2009	**Sample Analysis Date:** 03/06/2009 extr; 03/19/2009 anal

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No action	
Detection Limits	Yes	None	-	No action	
Blanks					
Method Blank	Yes	None	-	No action	
Equipment Blank Sample ID:	Not collected				
Other QC Results					
Surrogate Recoveries	Yes	None	-	No action	
LCS Results	Yes	None	-	No action	
Matrix Spikes Sample ID:J180M0	Yes	None	-	No action	
Lab Duplicates Sample ID:	Not analyzed				
Field Duplicates Sample ID: J18609/J189T4	Yes	None	-	No action	
Summary					
Validity of Data	All QC parameters were met.				
Additional Notes:					

SDG K1547 - Pesticides QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1547	**W&C Project No.:**222007	
Medium: Sediments		**Analytes:** Pesticides	
Samples: J180M0, J180M1, J180M2, J180M3, J180M4, J18609, J189P5, J189P6, J189R0, J189R1, J189T4, J189T5, J189T6, J189T7, J189T8			
Laboratory: Lionville	**Date Data Assessment Completed:** 02/22/2009 **Complete By:** RDD	**Sample Collection Date:** 02/20/2009 and 02/23/2009	**Sample Analysis Date:** 03/06/2009 extr 03/21/2009 anal 03/25/2009 anal

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No action	
Detection Limits	No	RDLs for Endosulfan I, gamma BHC, heptachlor, and heptachlor epoxide exceed specified levels in work plan.	-	No action	
Blanks					
Method Blank	Yes	None	-	No action	
Equipment Blank	Not collected				
Other QC Results					
Surrogate Recoveries	Yes	None	-	No action	
LCS Results	No	No LCS results for toxaphene	J	Qualify all associated results as estimated (J)	Impacts to all samples above.
Matrix Spikes Sample ID:J180M0	No	4,4'-DDD = 155%/133%	J	Qualify positive sample results as estimated (J).	All samples. Impacts J180M4.
Lab Duplicates	Not analyzed				
Field Duplicate Sample ID: J18609/J189T4	Yes	None	-	No action	
QC Summary					
Validity of Data	No all QC parameters were met, but no data were rejected.				
Additional Notes:					

SDG K1547 - Metals QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1547	**W&C Project No.:**222007	
Medium: Sediments		**Analytes:** Metals	
Samples: J180M0, J180M1, J180M2,J180M3, J180M4, J18609, J189J1, J189J2, J189J3, J189J4, J189J5, J189J6, J189J7, J189P5, J189P6, J189R0, J189R1, J189T5, J189T6, J189T7, J189T8, J189T4			
Laboratory: Lionville	**Date Data Assessment Completed:** 02/22/2010 **Complete By:** RDD	**Sample Collection Date:** 02/20/2009 and 02/23/2009	**Sample Analysis Date:** 03/19/2009 Hg 04/23/2009 others 04/25/2009 others

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No action	
Detection Limits	No	Ca, Fe, P, Zn detection limits exceed specifications in work plan	-	No action	
Blanks					
Preparation Blank					
04/25/2009	No	Pb = 0.639 mg/kg Sn = 0.796 mg/kg	UJ	Qualify positive sample results < 5x the blank concentration as ND (UJ).	J189T8. Impacts to the following samples: Pb – J189T8
04/23/2009	No	Be = 0.00861 mg/kg Pb = 0.662 mg/kg Sn = 0.863 mg/kg	UJ		All samples except J189T8. Impacts the following samples: Pb – J189J2, J189J3, J189J7, J18609, J189P6, J189R0, J189R1, J189T4, J189T5, J189T6, J189T7, J189T8 Sn – J189J2
Equipment Blank Sample ID:	Not collected				
Other QC Results					
LCS Results					
4/25/2009	No	Sb = 192% As = 192% Cu =648% Ni = 186% V = 164%	J	Qualify associated positive sample results as estimated (J).	Associated sample J189T8: As – yes Fe – yes Ni - yes V – yes

SDG K1547 - Metals QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1547	**W&C Project No.:**222007	
Medium: Sediments		**Analytes:** Metals	
Samples: J180M0, J180M1, J180M2,J180M3, J180M4, J18609, J189J1, J189J2, J189J3, J189J4, J189J5, J189J6, J189J7, J189P5, J189P6, J189R0, J189R1, J189T5, J189T6, J189T7, J189T8, J189T4			
Laboratory: Lionville	**Date Data Assessment Completed:** 02/22/2010 **Complete By:** RDD	**Sample Collection Date:** 02/20/2009 and 02/23/2009	**Sample Analysis Date:** 03/19/2009 Hg 04/23/2009 others 04/25/2009 others

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
4/23/2009	No	Zn = 605% Sb = 198% As = 198% Pb = 65% Sn = 132% V = 191%	J	Qualify associated positive sample results as estimated (J).	Zn – yes Associated Samples – all but J189T8. Impacts to: Sb – J189J7 As – all assoc. samples Pb - all assoc. samples V - all assoc. samples
Matrix Spikes Sample ID: J18612	No	Sb = 53% P = 20%	J	Qualify positive and ND sample results as estimated (J).	All samples.
Lab Duplicates Sample ID:J189J1	No	P = 40% Na = 35%	J	Qualify positive sample results as estimated (J).	All samples.
Field Duplicate Sample ID: J18609/J189T4	Yes	None	-	No action	
QC Summary					
Validity of Data	Not all QC met but none of the data were rejected.				
Additional Notes: No action taken with respect to Tl LCS result of 0% recovery, since spike level is just above the IDL.					

SDG K1547 - Radionuclides QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1547	**W&C Project No.:**222007	
Medium: Sediments		**Analytes:** Gamma scan, C_{14}, Sr_{90}, Tc_{99}, and Isotopic Th, U, Pu,	
Samples: J18609, J189P5, J189P6, J189R0, J189R1, J189T4, J189T5, J189T6, J189T7, J189T8			
Laboratory: Eberline	**Date Data Assessment Completed:** 02/22/2010 **Complete By:** RDD	**Sample Collection Date:** 02/20/2009	**Sample Analysis Date:** 03-04/2009

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No action	
Detection Limits	Yes	None	-	No action	
Blanks					
Method Blanks	Yes	None	-	No action	
Other QC Results					
LCS Results	Yes	None	-	No action	
Matrix Spike – C_{14}	No	No MS was analyzed	J	Qualify positive and ND sample results as estimated (J).	All samples.
Tracer Results	No	Tracer recovery = 107% for Tc_{99} J186T6	-	Qualify positive sample results as estimated (J).	J189T6 No impact since the sample is ND for this isotope.
Lab Duplicates Sample ID:J18609	Yes	None	-	No action.	
Field Duplicate Sample ID:J18609/J189T4	Yes	None	-	No action	
QC Summary					
Validity of Data	Not all QC parameters were met, but no data were rejected.				
Additional Notes:					

SDG K1547 - Radionuclides QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1547	**W&C Project No.:**222007
Medium: Sediments	**Analytes:** Gamma scan, C_{14}, Sr_{90}, Tc_{99}, and Isotopic Th, U, Pu,	
Samples: J180M0, J180M1, J180M2, J180M3, J180M4, J189J1, J189J2, J189J3, J189J4, J189J5, J189J6, J189J7		

Laboratory: Eberline	**Date Data Assessment Completed:** 02/22/2010 **Complete By:** RDD	**Sample Collection Date:** 02/23/2009	**Sample Analysis Date:** 03-04/2009

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No action	
Detection Limits	Yes	None	-	No action	
Blanks					
Method Blanks	No	Thorium 230 = 0.308 pCi/g	J	Qualify positive sample results < 5x the blank concentration as estimated (J).	All samples. Impacts all samples as all had positive concentrations for this isotope.
Other QC Results					
LCS Results	Yes	None	-	No action	
Matrix Spike – C_{14}	No	No MS was analyzed	J	Qualify positive and ND sample results as estimated (J).	All samples.
Tracer Results	Yes	None	-	No action	
Lab Duplicates Sample ID:J180M0	Yes	None	-	No action	
Field Duplicate Sample ID:	Not collected				
QC Summary					
Validity of Data	Not all QC parameters were met, but no data were rejected.				
Additional Notes:					

SDG K1547 - DRO QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA		**SDG No.:** K1547		**W&C Project No.:**222007	
Medium: Sediments				**Analytes:** DRO	
Samples: J180M0, J180M1, J180M2, J180M3, J180M4, J18609, J189P5, J189P6, J189R0, J189R1, J189T4, J189T5, J189T6, J189T7, J189T8					
Laboratory: Lionville	**Date Validation Completed:** 02/22/2010 **Complete By:** RDD			**Sample collection:** 02/20/2009, 02/23/2009	**Sample Analysis Date:** 03/06/2009 extr 03/20/2009 anal
QC Parameter	**All in Spec.?**	**Non-Compliant Results**	**Flag**	**Action/ Notes**	**Associated Samples**
Holding Times	Yes	None	-	No action	
Surrogates	No	J189R1 surr recovery > UCL	-	Qualify positive sample results as estimated (J).	J189R1 No impact since sample was ND for DRO.
Blanks					
Method Blank	No	Motor oil = 17900 mg/kg	UJ	Qualify positive sample results < 5x the blank concentration as ND (UJ).	All samples. Impacts include: Motor Oil – All samples
Equipment Blank Sample ID:	Not collected				
Other QC					
LCS Results	No	DRO = 64%	J	Qualify positive and ND sample results as estimated (J).	All samples.
Matrix Spikes Sample ID: J180M0	No	DRO = 81%/64%	J	Qualify positive and ND sample results as estimated (J).	All samples.
Lab Duplicates Sample ID:	Not analyzed				
Field Duplicate Sample ID: J18609/J189T4	Yes	None	-	No action	
QC Summary					
Validity of Data	Not all QC criteria were met but no data were rejected.				
Additional Notes: Blank results indicate potential false positive motor oil results.					

SDG K1547 - TOC QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1547	**W&C Project No.:**222007	
Medium: Sediments		**Analytes:** TOC	
Samples: J189J1, J189J2, J189J3, J189J4, J189J5, J189J6, J189J7, J180M0, J189M1, J189M2, J189M3, J189M4, J18609, J189P5, J189P6, J189R0, J189R1, J189T4, J189T5, J189T6, J189T7, J189T8			
Laboratory: Lionville	**Date Data Assessment Completed:** 02/22/2010 **Complete By:** RDD	**Sample Collection Date:** 02/20/2009 and 2/23/2009	**Sample Analysis Date:**03/18/2009

QC Parameter	**All in Spec.?**	**Non-Compliant Results**	**Flag**	**Action/ Notes**	**Associated Samples**
Holding Times	Yes	None	-	No action	
Detection Limit	Yes	None	-	No action	
Blanks					
Method Blank	Yes	None	-	No action	
Other QC					
LCS Results	Yes	None	-	No action	
Matrix Spikes Sample ID: J189J4	Yes	None	-	No action	
Lab Duplicate Sample ID: J189J4	Yes	None	-	No action	
Field Duplicate Sample ID: J18609/J189T4	No	RPD = 31%	-	No action based on criteria in guidance.	
QC Summary					
Validity of Data	Not all QC met but no data were rejected.				
Additional Notes: Field duplicate results indicate potential heterogeneous concentrations of TOC in the sediment matrix.					

B.74 SDG K1555

SDG K1555 - Metals QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1555	**W&C Project No.:**222007
Medium: Sediments		**Analytes:** Metals
Samples: J189D9		

Laboratory: Lionville	**Date Data Assessment Completed:** 02/19/2010 **Complete By:** JR	**Sample Collection Date:** 02/27/2009	**Sample Analysis Date:** ICP – 05/05/2009; Hg – 03/24/2009

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No action	
Detection Limits	Yes	None	-	No action	
Blanks					
Preparation Blank	No	Ca = 6.26 mg/kg Sn = 1.17 mg/kg	UJ	Qualify positive results less than 5X the blank concentration as non-detected estimated (UJ)	All samples. Impacts the following results: Sn – J189D9
Equipment Blank Sample ID:	Not collected				
Other QC Results					
LCS Results	No	Sb = 184% As = 201% Cr = 138% Co = 147% Cu = 145% Fe = 431% Pb = 68% Mn = 147% V = 163% Zn = 134%	J	Pb: Qualify positive and non-detected results as estimated (J); for all others qualify positive results as estimated (J)	All samples. Impacts the following results: As, Cr, Co, Cu, Fe, Pb, Mn, V, Zn – J189D9
Matrix Spikes Sample ID: J189D9	No	Sb = 42% Zn = 66%	J	Qualify positive and non-detected results as estimated (J)	All samples. Impacts the following results: Sb, Zn – J189D9
Lab Duplicates Sample ID: J189D9	No	Si = 35%	J	Qualify positive results for Si as estimated (J)	Impacts all samples above.
Field Duplicate Sample ID:	Not collected				
QC Summary					
Validity of Data	No, but no data were rejected				

Additional Notes:
(1) NOTE: All sample results were reported on a wet weight basis.

SDG K1555 - Radionuclides QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1555	**W&C Project No.:**222007	
Medium: Sediments		**Analytes:** C-14, Gamma Spec, Isotopic Plutonium, Isotopic Thorium, Isotopic Uranium, Sr-90, Tc-99	
Samples: J189D9			
Laboratory: Eberline	**Date Data Assessment Completed:** 02/19/2010 **Complete By:** JR	**Sample Collection Date:** 02/27/2009	**Sample Analysis Date:** 03/27/2009 – 04/10/2009

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No action	
Detection Limits	Yes	None	-	No action	
Blanks					
Method Blanks	Yes	None	-	No action	
Other QC Results					
LCS Results	Yes	None	-	No action	
Tracer Results	Yes	None	-	No action	
Matrix Spike – Carbon 14 Sample ID:	No	No MS for C14 was analyzed	J	Qualify positive and non-detect results for C-14 as estimated (J).	All samples
Lab Duplicates Sample ID: J189D9	Yes	None	-	No action	
Field Duplicate Sample ID:	Not collected				
QC Summary					
Validity of Data	No, but no data were rejected				
Additional Notes:					

SDG K1555 - TOC QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1555	**W&C Project No.:**222007
Medium: Sediment		**Analytes:** TOC
Samples: J189D9		

Laboratory: Lionville	**Date Data Assessment Completed:** 02/19/2010 **Complete By:** JR	**Sample Collection Date:** 02/27/2009	**Sample Analysis Date:** 03/27/2009

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No action	
Detection Limit	Yes	None	-	No action	
Blanks					
Method Blank	No	TOC = 8.13 mg/kg	-	Qualify positive results less than 5X blank concentration as non-detected estimated (UJ)	All samples, however no impacts.
Other QC					
LCS Results	Yes	None	-	No action	
Matrix Spikes Sample ID: J189D9	Yes	None	-	No action	
Lab Duplicate Sample ID: J189D9	Yes	None	-	No action	
Field Duplicate Sample ID:	Not collected				
QC Summary					
Validity of Data	No, but no data were rejected				
Additional Notes:					

B.75 SDG K1557

SDG K1557 - VOC QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1557	**W&C Project No.:**222007	
Medium: Sediments		**Analytes:** VOA	
Samples: J18666, J18668, J186B7, J189M8, J18KH5, J18KH7, J18KH8			
Laboratory: Lionville	**Date Data Assessment Completed:** 02/18/2010 **Complete By:** RDD	**Sample Collection Date:** 03/04/2009	**Sample Analysis Date**: 03/06/2009

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No action	
Detection Limits	No	Detection limit for 1,1,1-trichloroethane exceeds limit in work plan	-	No action	
Blanks					
Blanks - Method	Yes	None	-	No action	
Equipment Blank Sample ID:J186B7	No	2-Butanone = 19 ug/kg $MeCl_2$ = 2.17 ug/kg	-	No action based on guidance.	
Trip Blank Sample ID:J18666 Sample ID:J18668	No No	$MeCl_2$=2.25ug/kg $MeCl_2$=2.56ug/kg	-	No action based on guidance.	
Other QC Results					
Surrogate Recoveries	Yes	None	-	No action	
LCS Results	No	2-butanone = 152% Acetone = 167%	J	Qualify positive sample results as estimated (J).	All samples. Impacts the following samples: 2-Butanone –J186B7
Matrix Spikes Sample ID:J189M8	No	2-butanone = 155%/177% Acetone = 181%/158% All RPD are compliant.	J	Qualify positive sample results as estimated (J).	All samples. Impacts the following samples: 2-Butanone –J186B7
Lab Duplicates	Not analyzed				

SDG K1557 - VOC QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1557	**W&C Project No.:**222007	
Medium: Sediments		**Analytes:** VOA	
Samples: J18666, J18668, J186B7, J189M8, J18KH5, J18KH7, J18KH8			
Laboratory: Lionville	**Date Data Assessment Completed:** 02/18/2010 **Complete By:** RDD	**Sample Collection Date:** 03/04/2009	**Sample Analysis Date**: 03/06/2009

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Field Duplicates Sample ID:	Not collected				
Summary					
Validity of Data	Not all QC criteria were met but no data were rejected.				
Additional Notes: Trip blank results indicate potential $MeCl_2$ contamination in samples. Equipment blank results indicate potential false positive concentrations in samples.					

SDG K1557 - SVOC QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1557	**W&C Project No.:**222007
Medium: Sediments	**Analytes:** SVOCs	
Samples: J186B7, J189M8, J18KH5, J18KH7, J18KH8		

Laboratory: Lionville	**Date Data Assessment Completed:** 02/18/2010 **Complete By:** RDD	**Sample Collection Date:** 03/04/2009	**Sample Analysis Date:** 03/14/2009 extr 03/31/2009 anal

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No action	
Detection Limits	No	Samples diluted due to matrix effects which elevated detection limits on some samples. Without dilution, hexachlorobenzene, 2-chloroaniline, 2-nitroaniline, 2,4-dinitrophenol, 4-nitrophenol, 4-nitroaniline, pentachlorophenol, 3,3'-dichlorobenzidine have RDLs that exceed those specified in work plan.	-	No action	
Blanks					
Method Blanks	Yes	None	-	No action	
Equipment Blank Sample ID:J186B7	Yes	None	-	No action based on guidance.	
Other QC					
Surrogate Recoveries	No	J18KH8 had 1 surr < LCL but > 10%	-	No action since only 1 surr. Out of criteria.	
LCS Results	No	4-Chloroaniline = 42% Pentachlorophenol = 45%	J	Qualify positive and ND sample results as estimated (J).	All samples.
Matrix Spikes Sample ID:J18KH5	No	2,4-Dimethylphenol = 42%/51% 2,4-Dinitrophenol = 37%/42% 2-Methylphenol =48%/52% 2-Nitroaniline = 43%/56% 2-Nitrophenol = 48%/53% 3,3'-Dichlorobenzidine = 38%/49% 3-Nitroaniline = 52%/33% 4-Chloroaniline =26%/26%	J	Qualify positive and ND sample results as estimated (J).	All samples.

SDG K1557 - SVOC QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1557	**W&C Project No.:**222007	
Medium: Sediments		**Analytes:** SVOCs	
Samples: J186B7, J189M8, J18KH5, J18KH7, J18KH8			
Laboratory: Lionville	**Date Data Assessment Completed:** 02/18/2010 **Complete By:** RDD	**Sample Collection Date:** 03/04/2009	**Sample Analysis Date:** 03/14/2009 extr 03/31/2009 anal

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
		4-Nitroaniline = 47%/40% Bis(2-chloroethyl)ether =48%/50% Bis(2-chloroisopropyl)ether = 47%/49% Hexachloroethane =48%/50% Isophorone =41%/43% Naphthalene = 48%/54% Nitrobenzene = 44%/45% Pentachlorophenol = 18%/18% Phenol =49%/51% All RPDs compliant.			
Lab Duplicates Sample ID:	Not analyzed				
Field Duplicates Sample ID:	Not collected				
Summary					
Validity of Data	Not all QC criteria were met but none of the data were rejected.				
Additional Notes:					

SDG K1557 - PCB QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1557	**W&C Project No.:**222007
Medium: Sediments		**Analytes:** PCBs
Samples: J186B7, J189M8, J18KH5, J18KH7, J18KH8		

Laboratory: Lionville	**Date Data Assessment Completed:** 02/18/2010 **Complete By:** RDD	**Sample Collection Date:** 03/04/2009	**Sample Analysis Date:** 03/16/2009 extr 04/01/2009 anal

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No action	
Detection Limits	Yes	None	-	No action	
Blanks					
Method Blank	Yes	None	-	No action	
Equipment Blank Sample ID:J186B7	No	Arochlor 1016 = 4.03 ug/kg	-	No action was taken based on specifications in the guidance.	
Other QC Results					
Surrogate Recoveries	Yes	None	-	No action	
LCS Results	Yes	None	-	No action	
Matrix Spikes Sample ID:J186B7	Yes	None	-	No action	
Lab Duplicates Sample ID:	Not analyzed				
Field Duplicates Sample ID:	Not collected				
Summary					
Validity of Data	Not all QC met but no data were rejected.				
Additional Notes: The Arochlor 1016 result for J18KH7 would have been impacted if the equipment blank detection had been used.					

SDG K1557 - Pesticides QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1557	**W&C Project No.:**222007	
Medium: Sediments		**Analytes:** Pesticides	
Samples: J186B7, J189M8, J18KH5, J18KH7, J18KH8			
Laboratory: Lionville	**Date Data Assessment Completed:** 02/18/2010 **Complete By:** RDD	**Sample Collection Date:** 03/04/2009	**Sample Analysis Date:** 03/16/2009 extr 03/28/2009 anal

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No action	
Detection Limits	No	RDLs for Endosulfan I, gamma BHC, heptachlor, and heptachlor epoxide exceed specified levels in work plan.	-	No action	
Blanks					
Method Blank	Yes	None	-	No action	
Equipment Blank Sample ID:J186B7	Yes	None	-	No action	
Other QC Results					
Surrogate Recoveries	Yes	None	-	No action	
LCS Results	No	No LCS results for toxaphene	J	Qualify all associated results as estimated (J)	Impacts to all samples above.
Matrix Spikes Sample ID:J186B7	No	Delta-BHC = 49.7%/53.1%	J	Qualify positive and ND sample results as estimated (J).	All samples.
Lab Duplicates Sample ID:	Not analyzed				
Field Duplicate Sample ID:	Not collected				
QC Summary					
Validity of Data	Not all QC criteria were met but no data were rejected.				
Additional Notes:					

SDG K1557 - Metals QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1557	**W&C Project No.:**222007	
Medium: Sediments		**Analytes:** Metals	
Samples: J186B7, J189M8, J18KH5, J18KH7, J18KH8, J18KJ3, J18KJ4, J18KJ5			
Laboratory: Lionville	**Date Data Assessment Completed:** 02/18/2010 **Complete By:** RDD	**Sample Collection Date:** 03/04/2009	**Sample Analysis Date:**03/30/2009 Hg 05/14/2009 others

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No action	
Detection Limits	No	Ca, Fe, P, Zn detection limits exceed specifications in work plan	-	No action	
Blanks					
Preparation Blank	No	Be = 0.0931 mg/kg Mg = 3.61 mg/kg Si = 2.17 mg/kg Sn = 0.95 mg/kg	UJ	Qualify positive sample concentrations < 5x the blank concentration as ND (UJ).	All samples. Impacts to the following: Be – All samples Sn – All samples
Equipment Blank Sample ID:J186B7	No	Al = 151 mg/kg Ba= 1.80 mg/kg Ca = 42.7 mg/kg Cr = 0.194 mg/kg Fe = 195 mg/kg Pb = 0.573 mg/kg Mg = 26 mg/kg Mn = 4.0 mg/kg P = 6.53 mg/kg Se = 0.226 mg/kg Si = 115 mg/kg Na = 12.1 mg/kg Sr = 0.502 mg/kg Sn = 0.746 V = 0.278 mg/kg Zn = 0.834 mg/kg	-	No action based on criteria in guidance.	
Other QC Results					
LCS Results	No	Sb =197% As = 193% Fe = 135% Pb = 46% V =149%	J	Qualify positive sample results of Sb, As, Fe, and V and positive and ND sample results of Pb as estimated (J).	All samples. Impacts include: Sb – J18KH7, J18KH5 As – All samples Fe – All samples Pb – All samples V – All samples

SDG K1557 - Metals QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1557	**W&C Project No.:**222007
Medium: Sediments		**Analytes:** Metals
Samples: J186B7, J189M8, J18KH5, J18KH7, J18KH8, J18KJ3, J18KJ4, J18KJ5		

Laboratory: Lionville	**Date Data Assessment Completed:** 02/18/2010 **Complete By:** RDD	**Sample Collection Date:** 03/04/2009	**Sample Analysis Date:**03/30/2009 Hg 05/14/2009 others

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Matrix Spikes Sample ID:J18KJ5	No	Sb = 54% Mn = 474% Si = 167% V = 65%	J	Qualify positive and ND sample results of Sb and V and positive results of Mn and Si as estimated (J) .	All samples. Impacts include: Sb – All samples Mn – All samples Si – All samples V – All samples
Lab Duplicates Sample ID: J18KJ5	No	**Non compliant RPDs** Ca = 118% Cu = 33% Mn = 45% P = 36% Na = 63%	J	Qualify positive results as estimated (J).	All samples.
Field Duplicate Sample ID:	Not collected				
QC Summary					
Validity of Data	Not all QC parameters were met but no data were rejected.				

Additional Notes: Samples were redigested because matrix spike was not added to sample. Tl LCS recovery was 0% but no action taken due to the low concentration of the spike. Matrix spike recovery was acceptable. Equipment blank results indicate potential carry over from decontamination procedures.

SDG K1557 - Radionuclides QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1557	**W&C Project No.:**222007	
Medium: Sediments		**Analytes:** Gamma scan, C_{14}, Sr_{90}, Tc_{99}, and Isotopic Th, U, Pu	
Samples: J189M8, J18KH5, J18KH7, J18KH8, J18KJ3, J18KJ4, J18KJ5			
Laboratory: Eberline	**Date Data Assessment Completed:** 02/18/2010 **Complete By:** RDD	**Sample Collection Date:** 03/04/2009	**Sample Analysis Date:** 04/2009

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No action	
Detection Limits	Yes	None	-	No action	
Blanks					
Method Blanks	Yes	None	-	No action	
Other QC Results					
LCS Results	Yes	None	-	No action	
Matrix Spike - C_{14}	No	No MS sample was analyzed.	J	Qualify positive and ND sample results as estimated (J).	All samples
Tracer Results	Yes	None	-	No action	
Lab Duplicates Sample ID:J189M8	Yes	None	-	No action	
Field Duplicate Sample ID:	Not collected				
QC Summary					
Validity of Data	Not all QC criteria met but no data were rejected.				
Additional Notes:					

SDG K1557 - DRO QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1557	**W&C Project No.:**222007
Medium: Sediments		**Analytes:** DRO
Samples: J189B7, J189M8		

Laboratory: Lionville	**Date Validation Completed:** 02/18/2009 **Complete By:** RDD	**Sample collection:** 03/04/2009	**Sample Analysis Date:** 03/16/2009 extr 04/10/2009 anal

QC Parameter	**All in Spec.?**	**Non-Compliant Results**	**Flag**	**Action/ Notes**	**Associated Samples**
Holding Times	Yes	None	-	No action	
Surrogates	Yes	None	-	No action	
Blanks					
Method Blank	Yes	None	-	No action	
Equipment Blank Sample ID:J186B7	No	Motor Oil =8380 mg/kg	-	No action taken based on criteria in guidance	
Other QC					
LCS Results	Yes	None	-	No action	
Matrix Spikes Sample ID:J189M8	Yes	None	-	No action	
Lab Duplicates Sample ID:	Not analyzed				
Field Duplicate Sample ID:	Not collected				
QC Summary					
Validity of Data	All QC met.				
Additional Notes:					

SDG K1557 - TOC QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1557	**W&C Project No.:**222007	
Medium: Sediments		**Analytes:** TOC	
Samples: J186B7, J189M8, J18KH5, J18KH7, J18KH8, J18KJ3, J18KJ4, J18KJ5			
Laboratory: Lionville	**Date Data Assessment Completed:** 02/18/2010 **Complete By:** RDD	**Sample Collection Date:**03/04/2009	**Sample Analysis Date:** 04/08/2009

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	No	Samples were analyzed < 2x holding time limit.	J	Qualify positive and ND sample results as estimated (J).	All samples.
Detection Limits	Yes	None	-	No action	
Blanks					
Method Blank	No	TOC = 12.39 mg/kg	-	Qualify positive sample results < 5x the blank concentration as ND (UJ).	All samples. No impact since all sample concentrations > 5x blank concentration.
Equipment Blank Sample ID: J186B7	No	TOC = 101.25 mg/kg	-	No action as specified in the work plan.	
Other QC					
LCS Results	Yes	None	-	No action	
Matrix Spikes Sample ID:J189M8	Yes	None	-	No action	
Lab Duplicate Sample ID:J189M8	Yes	None	-	No action	
Field Duplicate Sample ID:	Not collected				
QC Summary					
Validity of Data	Not all QC criteria were met but no data were rejected.				
Additional Notes:					

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SDG K1558 - VOC QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1558	**W&C Project No.:**222007	
Medium: Sediments		**Analytes:** VOA	
Samples: J17XM1, J17W17			
Laboratory: Lionville	**Date Data Assessment Completed:** 02/20/2010 **Complete By:** RDD	**Sample Collection Date:** 03/05/2009	**Sample Analysis Date:**03/09/2009

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No action	
Detection Limits	No	Detection limit for 1,1,1-trichloroethane exceeds limit in work plan	-	No action	
Blanks					
Blanks - Method	Yes	None	-	No action	
Equipment Blank Sample ID:	Not collected				
Trip Blank Sample ID:J17W17	No	2-Butanone = 41.7 ug/kg	-	No action based on guidance	
Other QC Results					
Surrogate Recoveries	Yes	None	-	No action	
LCS Results	Yes	None	-	No action	
Matrix Spikes Sample ID:J17MX1	No	2-Butanone = 177%/139% Acetone = 195%/156%	J	Qualify positive sample results as estimated (J).	All samples. Impacts to J17MX1.
Lab Duplicates	Not analyzed				
Field Duplicates Sample ID:	Not collected				
Summary					
Validity of Data	Not all QC met, but no data were rejected.				
Additional Notes:					

SDG K1558 - SVOC QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1558	**W&C Project No.:**222007	
Medium: Sediments		**Analytes:** SVOCs	
Samples: J17XM1			
Laboratory: Lionville	**Date Data Assessment Completed:** 02/20/2010 **Complete By:** RDD	**Sample Collection Date:** 03/05/2009	**Sample Analysis Date:** 03/17/2009 extr 03/27/2009 anal

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No action	
Detection Limits	No	Hexachlorobenzene, 2-chloroaniline, 2-nitroaniline, 2,4-dinitrophenol, 4-nitrophenol, 4-nitroaniline, pentachlorophenol, 3,3’-dichlorobenzidine have RDLs that exceed those specified in work plan.	-	No action	
Blanks					
Method Blanks	Yes	None	-	No action	
Equipment Blank Sample ID:	Not collected				
Other QC					
Surrogate Recoveries	Yes	None	-	No action	
LCS Results	No	4-Chloroaniline = 32% Hexachlorocyclopentadiene = 20%	J	Qualify positive and ND sample results as estimated (J).	All samples.
Matrix Spikes Sample ID:J17MX1	No	1,3-Dichlorobenzene = 49%/45% 1,4-Dichlorbenzene = 50%/47% 1,2-Dichlorbenzene=54%/49% Hexachloroethane = 42%/36% 1,2,4-Trichlorobenzene = 49% 4-Chloroaniline = 11% Hexachlorocyclopentadiene = 0%/0% 4-Nitroaniline = 36%/77% 3,3’-Dichlorbenzidine = 0%/0%		Qualify positive and ND sample results as estimated (J)	

SDG K1558 - SVOC QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA		**SDG No.:** K1558	**W&C Project No.:**222007
Medium: Sediments			**Analytes:** SVOCs
Samples: J17XM1			
Laboratory: Lionville	**Date Data Assessment Completed:** 02/20/2010 **Complete By:** RDD	**Sample Collection Date:** 03/05/2009	**Sample Analysis Date:** 03/17/2009 extr 03/27/2009 anal

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Lab Duplicates Sample ID:	Not analyzed				
Field Duplicates Sample ID:	Not collected				
Summary					
Validity of Data	Not all QC met, but no data were rejected.				
Additional Notes:					

SDG K1558 - PCB QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1558	**W&C Project No.:**222007
Medium: Sediments		**Analytes:** PCBs
Samples: J17XM1		

Laboratory: Lionville	**Date Data Assessment Completed:** 02/20/2010 **Complete By:** RDD	**Sample Collection Date:** 03/05/2009	**Sample Analysis Date:** 03/16/2009 extr 04/01/2009 anal

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No action	
Detection Limits	Yes	None	-	No action	
Blanks					
Method Blank	Yes	None	-	No action	
Equipment Blank Sample ID:	Not collected				
Other QC Results					
Surrogate Recoveries	Yes	None	-	No action	
LCS Results	Yes	None	-	No action	
Matrix Spikes Sample ID:J17MX1	Yes	None	-	No action	
Lab Duplicates Sample ID:	Not analyzed				
Field Duplicates Sample ID:	Not collected				
Summary					
Validity of Data	All QC parameters were met.				
Additional Notes:					

SDG K1558 - Pesticides QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1558	**W&C Project No.:**222007
Medium: Sediments		**Analytes:** Pesticides
Samples: J17XM1		

Laboratory: Lionville	**Date Data Assessment Completed:** 02/20/2009 **Complete By:** RDD	**Sample Collection Date:** 03/05/2009	**Sample Analysis Date:** 03/16/2009 extr 03/28/2009 anal

QC Parameter	**All in Spec.?**	**Non-Compliant Results**	**Flag**	**Action/ Notes**	**Associated Samples**
Holding Times	Yes	None	-	No action	
Detection Limits	No	RDLs for Endosulfan I, gamma BHC, heptachlor, and heptachlor epoxide exceed specified levels in work plan.	-	No action	
Blanks					
Method Blank	Yes	None	-	No action	
Equipment Blank Sample ID:	Not collected				
Other QC Results					
Surrogate Recoveries	Yes	None	-	No action	
LCS Results	No	No LCS results for toxaphene	J	Qualify all associated results as estimated (J)	Impacts to all samples above.
Matrix Spikes Sample ID:J17MX1	Yes	None	-	No action	
Lab Duplicates Sample ID:	Not analyzed				
Field Duplicate Sample ID:	Not collected				
QC Summary					
Validity of Data	All QC parameters were met.				
Additional Notes:					

SDG K1558 - Metals QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1558	**W&C Project No.:**222007
Medium: Sediments		**Analytes:** Metals
Samples: J17XM1, J17XM2, J17XM3, J17XM4, J17XM5		

Laboratory: Lionville	**Date Data Assessment Completed:** 02/20/2010 **Complete By:** RDD	**Sample Collection Date:** 03/05/2009	**Sample Analysis Date:** 03/30/2009 Hg 05/14/2009 others

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No action	
Detection Limits	No	Ca, Fe, P, Zn detection limits exceed specifications in work plan	-	No action	
Blanks					
Preparation Blank	No	Be = 0.0931 mg/kg Mg = 3.61 mg/kg Si = 2.17 mg/kg Sn = 0.950 mg/kg	UJ	Qualify positive sample results < 5x the blank concentration as ND (UJ).	All samples. Impacts to the following samples: Be – All samples Sn –All samples
Equipment Blank Sample ID:	Not collected				
Other QC Results					
LCS Results	No	Sb = 55%	J	Qualify positive and ND sample results as estimated (J).	All samples
Matrix Spikes Sample ID:J17MX5	No	Sb = 197% As = 193% Pb = 46% V = 149%	J	Qualify positive Sb, As, and V and positive and ND Pb sample results as estimated (J).	All samples with the following impacts: As –All samples Pb – All samples V –All samples
Lab Duplicates Sample ID:J17MX5	No	Cd = 36%	J	Qualify positive sample results as estimated (J).	All samples
Field Duplicate Sample ID:	Not collected				
QC Summary					
Validity of Data	Not all QC met but none of the data were rejected.				
Additional Notes:					

SDG K1558 - Radionuclides QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1558	**W&C Project No.:**222007	
Medium: Sediments		**Analytes:** Gamma scan, C_{14}, Sr_{90}, Tc_{99}, and Isotopic Th, U, Pu,	
Samples: J17XM1, J17XM2, J17XM3, J17XM4, J17XM5			
Laboratory: Eberline	**Date Data Assessment Completed:** 02/20/2010 **Complete By:** RDD	**Sample Collection Date:** 03/05/2009	**Sample Analysis Date:** 04/2009

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No action	
Detection Limits	Yes	None	-	No action	
Blanks					
Method Blanks	Yes	None	-	No action	
Other QC Results					
LCS Results	Yes	None	-	No action	
Matrix Spike – C_{14}	No	No MS was analyzed	J	Qualify positive and ND sample results as estimated (J).	All samples.
Tracer Results	Yes	None	-	No action	
Lab Duplicates Sample ID:	No	Thorium 232 RPD = 81%	J	Qualify positive sample results as estimated.	All samples.
Field Duplicate Sample ID:	Not collected				
QC Summary					
Validity of Data	Not all QC parameters were met, but no data were rejected.				
Additional Notes:					

SDG K1558 - DRO QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1558		**W&C Project No.:**222007
Medium: Sediments			**Analytes:** DRO
Samples: J17XM1			
Laboratory: Lionville	**Date Validation Completed:** 02/20/2010 **Complete By:** RDD	**Sample collection Date:** 03/05/2009	**Sample Analysis Date:** 03/16/2009 extr 03/31/2009 anal

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No action	
Surrogates	Yes	None	-	No action	
Blanks					
Method Blank	Yes	None	-	No action	
Equipment Blank Sample ID:	Not collected				
Other QC					
LCS Results	Yes	None	-	No action	
Matrix Spikes Sample ID:J17MX1	Yes	None	-	No action	
Lab Duplicates Sample ID:	Not analyzed				
Field Duplicate Sample ID:	Not collected				
QC Summary					
Validity of Data	Not all QC criteria were met but no data were rejected.				
Additional Notes:					

SDG K1558 - TOC QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1558	**W&C Project No.:**222007	
Medium: Sediments		**Analytes:** TOC	
Samples: J17XM1, J17XM2, J17XM3, J17XM4, J17XM5			
Laboratory: Lionville	**Date Data Assessment Completed:** 02/20/2010 **Complete By:** RDD	**Sample Collection Date:** 03/05/2009	**Sample Analysis Date:**04/09/2009

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	No	Samples analyzed < 2x holding time limit.	J	Qualify positive and ND sample results as estimated (J).	All samples.
Detection Limit	Yes	None	-	No action	
Blanks					
Method Blank	Yes	None	-	No action	
Other QC					
LCS Results	Yes	None	-	No action	
Matrix Spikes Sample ID:J17MX3	Yes	None	-	No action	
Lab Duplicate Sample ID: J17MX3	Yes	None	-	No action	
Field Duplicate Sample ID:	Not collected				
QC Summary					
Validity of Data	Not all QC met but no data were rejected.				
Additional Notes:					

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SDG K1565 - VOC QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1565	**W&C Project No.:**222007	
Medium: Sediments		**Analytes:** VOA	
Samples: J17YY6, J17YY7, J17YY8, J18667			
Laboratory: Lionville	**Date Data Assessment Completed:** 02/18/2010 **Complete By:** RDD	**Sample Collection Date:** 02/26/2009	**Sample Analysis Date:** 03/05/2009

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No action	
Detection Limits	No	RDL for 1,1,1-trichloroethane exceed limit specified in work plan.	-	No action	
Blanks					
Blanks - Method	Yes	None	-	No action	
Equipment Blank Sample ID:	Not collected				
Trip Blank Sample ID:J18667	No	$MeCl_2$ = 2.89 ug/kg	-	No action is taken based on specifications in the guidance.	
Other QC Results					
Surrogate Recoveries	Yes	None	-	No action	
LCS Results	No	2-Butanone =160% Acetone = 183%	-	Qualify positive sample concentrations as estimated (J).	All samples. No impacts since all samples ND for both compounds.
Matrix Spikes Sample ID:J17YY8	No	2-Butanone =166%/174% Acetone = 183%/198%	-	Qualify positive sample concentrations as estimated (J).	All samples. No impacts since all samples ND for both compounds.
Lab Duplicates	Not analyzed				
Field Duplicates Sample ID:	Not collected				
Summary					
Validity of Data					
Additional Notes:					

SDG K1565 - SVOC QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1565	**W&C Project No.:**222007	
Medium: Sediments		**Analytes:** SVOCs	
Samples: J17YY6, J17YY7, J17YY8			
Laboratory: Lionville	**Date Data Assessment Completed:** 02/18/2010 **Complete By:** RDD	**Sample Collection Date:** 02/26/2009	**Sample Analysis Date:** 03/08/2009 extr 03/29/2009 anal

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No action	
Detection Limits	No	Elevated RDLs due to dilutions performed for matrix interferences.	-	No action	
Blanks					
Method Blanks	No	Bis(2-ethylhexyl)phthalate = 106 mg/kg	-	Qualify positive sample concentrations < 10x the blank concentration as ND (UJ).	All samples. No impact since this compound ND in all samples.
Equipment Blank Sample ID:	Not collected				
Other QC					
Surrogate Recoveries	No	J17YY7, J17YY8 – one surr < LCL	-	No action since only 1 surrogate out of spec.	
LCS Results	No	Hexachlorobenzene =198% Dibenz[a,h,i]anthracene = 151% Pentachlorophenol = 47%	J	Qualify positive hexachlorobenzene and Dibenz[a,h,i]anthracene sample results and positive and ND pentachlorophenol results as estimated.	All samples. Impacts include: Pentachlorophenol – All samples
Matrix Spikes Sample ID:J17YY6	No	**Non-Compliant Recoveries** 1,2,4-Trichlorobenzene = 34%/58%* 1,2-Dichlorobenzene =12%/54%* 1,3-Dichlorobenzene = 6%/155%* 1,4-Dichlorobenzene =7%/150%* 2,4-Dinitrophenol = 44%/66% 2-Chlorophenol = 48%/58% 2-Methylnaphthalene = 49%/59% 2-Nitrophenol = 38%/54%* 3,3'-Dichlorobenzidine =	J	Qualify positive and ND sample results as estimated (J).	

SDG K1565 - SVOC QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1565	**W&C Project No.:**222007
Medium: Sediments		**Analytes:** SVOCs
Samples: J17YY6, J17YY7, J17YY8		

Laboratory: Lionville	**Date Data Assessment Completed:** 02/18/2010 **Complete By:** RDD	**Sample Collection Date:** 02/26/2009	**Sample Analysis Date:** 03/08/2009 extr 03/29/2009 anal

QC Parameter	**All in Spec.?**	**Non-Compliant Results**	**Flag**	**Action/ Notes**	**Associated Samples**
		26%/34% 3-Nitroaniline = 30%/56%* 4-Chloroaniline =13%/37%* Bis(2-chloroethyl)ether = 18%/54%* Bis(2-chloroisopropyl)ether = 23%/55%* Hexachlorobutatdiene = 32%/62%* Hexachlorocyclopentadiene = 0%/0% Hexachloroethane = 5%/34%* Isophorone = 39%/51% Nitrobenzene = 32%/52%* N-Nitroso-di-n-propylamine = 41%/59%* Pentachlorophenol = 0%/24% *** =Non-compliant RPDs** Naphthalene= 42%			
Lab Duplicates Sample ID:	Not analyzed				
Field Duplicates Sample ID:	Not collected				
Summary					
Validity of Data	Not all QC criteria were met, but none of the data were rejected.				
Additional Notes:					

SDG K1565 - PCB QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA		**SDG No.:** K1565	**W&C Project No.:**222007
Medium: Sediments			**Analytes:** PCBs
Samples: J17YY6, J17YY7, J17YY8			
Laboratory: Lionville	**Date Data Assessment Completed:** 02/18/2010 **Complete By:** RDD	**Sample Collection Date:** 02/26/2009	**Sample Analysis Date:** 03/08/2009 extr 03/17/2009 anal

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No action	
Detection Limits	Yes	None	-	No action	
Blanks					
Method Blank	Yes	None	-	No action	
Equipment Blank Sample ID:	Not collected				
Other QC Results					
Surrogate Recoveries	Yes	None	-	No action	
LCS Results	Yes	None	-	No action	
Matrix Spikes Sample ID:J17YY6	Yes	None	-	No action	
Lab Duplicates Sample ID:	Not analyzed				
Field Duplicates Sample ID:	Not collected				
Summary					
Validity of Data	All QC in compliance.				
Additional Notes:					

SDG K1565 - Pesticides QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1565	**W&C Project No.:**222007	
Medium: Sediments		**Analytes:** Pesticides	
Samples: J17YY6, J17YY7, J17YY8			
Laboratory: Lionville	**Date Data Assessment Completed:** 02/18/2010 **Complete By:** RDD	**Sample Collection Date:** 02/26/2009	**Sample Analysis Date:**

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No action	
Detection Limits	Yes	RDLs elevated due to dilution for matrix effects.	-	No action	
Blanks					
Method Blank	No	Aldrin = 0.37 mg/kg	-	Qualify positive sample results < 5x the blank concentration as ND (UJ).	All samples. No impacts to any samples since all ND.
Equipment Blank Sample ID:	Not collected				
Other QC Results					
Surrogate Recoveries	Yes	None	-	No action	
LCS Results	No	No LCS results for toxaphene	J	Qualify all associated results as estimated (J)	Impacts to all samples above.
Matrix Spikes Sample ID:J17YY6	No	Delta BHC = 44%/48%	J	Qualify positive and ND sample concentrations as estimated (J).	All samples
Lab Duplicates Sample ID:	Not analyzed				
Field Duplicate Sample ID:	Not collected				
QC Summary					
Validity of Data	Not all QC criteria met, but no data were rejected.				
Additional Notes:					

SDG K1565 - Metals QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1565	**W&C Project No.:**222007	
Medium: Sediments		**Analytes:** Metals	
Samples: J17YY6, J17YY7, J17YY8			
Laboratory: Lionville	**Date Data Assessment Completed:** 02/18/2010 **Complete By:** RDD	**Sample Collection Date:** 02/26/2009	**Sample Analysis Date:** 03/24/2009 Hg 04/23/2009 others

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No action	
Detection Limits	No	Ca, Fe, P, Zn detections limits exceed specifications in work plan.	-	No action	
Blanks					
Preparation Blank	No	Be = 0.008 mg/kg Pb = 0.662 mg/kg Sn = 0.863 mg/kg	UJ	Qualify positive sample results < 5x the blank concentration as ND (UJ).	All samples however no impacts.
Equipment Blank Sample ID:	Not collected				
Other QC Results					
LCS Results	No	Sb = 198% As = 198% Pb = 65% V = 173%	J	Qualify positive sample results of Sb, As, and V and positive and ND results of Pb as estimated (J).	All samples. Impacts to: As – All samples Pb – All samples V – All samples
Matrix Spikes Sample ID: J17YY6	No	Sb = 52%	J	Qualify positive and ND sample results as estimated (J).	All samples
Lab Duplicates Sample ID:J17YY6	Yes	None	-	No action	
Field Duplicate Sample ID:	Not collected				
QC Summary					
Validity of Data	Not all QC criteria were met but none of the data were rejected.				
Additional Notes:					

SDG K1565 - TOC QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1565	**W&C Project No.:**222007	
Medium: Sediments		**Analytes:** TOC	
Samples: J17YY6, J17YY7, J17YY8			
Laboratory: Lionville	**Date Data Assessment Completed:** 02/18/2010 **Complete By:** RDD	**Sample Collection Date:** 02/26/2009	**Sample Analysis Date:** 03/19/2009

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No action	
Detection Limit	Yes	None	-	No action	
Blanks					
Method Blank	No	TOC = 6.93 mg/kg	-	Qualify positive results < 5x the blank concentration as ND (UJ).	All samples. No impact since all samples have concentrations > 5x blank concentration.
Other QC					
LCS Results	Yes	None	-	No action	
Matrix Spikes Sample ID:J17YY6	Yes	None	-	No action	
Lab Duplicate Sample ID:	Not analyzed				
Field Duplicate Sample ID:	Not collected				
QC Summary					
Validity of Data	Not all QC criteria met but none of the data were rejected.				
Additional Notes:					

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SDG K1573 - VOC QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1573	**W&C Project No.:**222007	
Medium: Sediments		**Analytes:** VOA	
Samples: J18KM9, J18KP4, J18KW9, J18KY3, J18LF8			
Laboratory: Lionville	**Date Data Assessment Completed:** 02/20/2010 **Complete By:** RDD	**Sample Collection Date:** 03/25/2009	**Sample Analysis Date:**04/03/2009

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No action	
Detection Limits	No	Detection limit for 1,1,1-trichloroethane exceeds limit in work plan	-	No action	
Blanks					
Blanks - Method	Yes	None	-	No action	
Equipment Blank Sample ID:	Not collected				
Trip Blank Sample ID:J18LF8	No	2-Butanone = 36.2 ug/kg	-	No action based on guidance	
Other QC Results					
Surrogate Recoveries	Yes	None	-	No action	
LCS Results	Yes	Acetone = 205%	-	Qualify positive sample results as estimated (J).	All samples. No impact since all ND.
Matrix Spikes Sample ID:J18KM9	No	**Non-Compliant Recoveries** 2-Butanone = 218%/153% Acetone = 345%/208% **Non-Compliant RPDs** 2-Butanone = 33% Benzene =48%	-	Qualify positive sample results as estimated (J).	All samples. No impacts since all ND.
Lab Duplicates	Not analyzed				

SDG K1573 - VOC QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1573	**W&C Project No.:**222007
Medium: Sediments		**Analytes:** VOA
Samples: J18KM9, J18KP4, J18KW9, J18KY3, J18LF8		

Laboratory: Lionville	**Date Data Assessment Completed:** 02/20/2010 **Complete By:** RDD	**Sample Collection Date:** 03/25/2009	**Sample Analysis Date:**04/03/2009

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Field Duplicates Sample ID:	Not collected				
Summary					
Validity of Data	Not all QC met, but no data were rejected.				
Additional Notes:					

SDG K1573 - SVOC QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1573	**W&C Project No.:**222007	
Medium: Sediments		**Analytes:** SVOCs	
Samples: J18KM9, J18KP4, J18KW9, J18KY3			
Laboratory: Lionville	**Date Data Assessment Completed:** 02/20/2010 **Complete By:** RDD	**Sample Collection Date:** 03/25/2009	**Sample Analysis Date:** 03/31/2009 extr 04/15/2009 anal 4/23/2009 anal

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No action	
Detection Limits	No	Hexachlorobenzene, 2-chloroaniline, 2-nitroaniline, 2,4-dinitrophenol, 4-nitrophenol, 4-nitroaniline, pentachlorophenol, 3,3'-dichlorobenzidine have RDLs that exceed those specified in work plan.	-	No action	
Blanks					
Method Blanks	Yes	None	-	No action	
Equipment Blank Sample ID:	Not collected				
Other QC					
Surrogate Recoveries	Yes	None	-	No action	
LCS Results	No	2,4-Dimethylphenol =46% 4-Chloroaniline = 27% Hexachlorocyclopentadiene = 35%	J	Qualify positive and ND sample results as estimated (J).	All samples.
Matrix Spikes Sample ID:J18KP4	No	**Non-Compliant Recoveries** 1,3-Dichlorobenzene = 57%/42% 1,4-Dichlorbenzene = 58%/42% Hexachloroethane = 41%/33% 4-Chloroaniline = 11%/17% Hexachlorocyclopentadiene = 0%/0% 4-Nitroaniline = 36%/77% 3,3'-Dichlorbenzidine = 0%/0% 3-Nitroaniline = 29%/41%	J	Qualify positive and ND sample results as estimated (J)	

SDG K1573 - SVOC QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1573	**W&C Project No.:**222007	
Medium: Sediments		**Analytes:** SVOCs	
Samples: J18KM9, J18KP4, J18KW9, J18KY3			
Laboratory: Lionville	**Date Data Assessment Completed:** 02/20/2010 **Complete By:** RDD	**Sample Collection Date:** 03/25/2009	**Sample Analysis Date:** 03/31/2009 extr 04/15/2009 anal 4/23/2009 anal

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
		2,4,5-Trichlorophenol = 77%/42% **Non-Compliant RPDs** 1,4-Dichlorbenzene = 31% 3-Nitroaniline = 35% 2,4,5-Trichlorophenol = 31% 4,6-Dinitro-2-Mmethylphenol =32% 4-Chloroaniline = 44% 4-Nitroaniline = 40% Pentachlorphenol =40%			
Lab Duplicates Sample ID:	Not analyzed				
Field Duplicates Sample ID:	Not collected				
Summary					
Validity of Data	Not all QC met, but no data were rejected.				
Additional Notes:					

SDG K1573 - PCB QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1573	**W&C Project No.:**222007
Medium: Sediments		**Analytes:** PCBs
Samples: J18KM9, J18KP4, J18KY3		

Laboratory:	**Date Data Assessment Completed:**	**Sample Collection Date:**	**Sample Analysis Date:**
Lionville	02/20/2010 **Complete By:** RDD	03/25/2009	03/30/2009 extr 04/02/2009 anal

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No action	
Detection Limits	Yes	None	-	No action	
Blanks					
Method Blank	Yes	None	-	No action	
Equipment Blank Sample ID:	Not collected				
Other QC Results					
Surrogate Recoveries	Yes	None	-	No action	
LCS Results	Yes	None	-	No action	
Matrix Spikes Sample ID:J18KY3	Yes	None	-	No action	
Lab Duplicates Sample ID:	Not analyzed				
Field Duplicates Sample ID:	Not collected				
Summary					
Validity of Data	All QC parameters were met.				
Additional Notes:					

SDG K1573 - Pesticides QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1573	**W&C Project No.:**222007
Medium: Sediments		**Analytes:** Pesticides
Samples: J18KM9, J18KP4, J18KY3		

Laboratory: Lionville	**Date Data Assessment Completed:** 02/20/2009 **Complete By:** RDD	**Sample Collection Date:** 03/25/2009	**Sample Analysis Date:** 03/30/2009 extr 04/02/2009 anal

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No action	
Detection Limits	No	RDLs for Endosulfan I, gamma BHC, heptachlor, and heptachlor epoxide exceed specified levels in work plan.	-	No action	
Blanks					
Method Blank	No	Endrin Aldehyde = 0.4 ug/kg Beta-BHC = 0.667 ug/kg Gamma BHC = 1.0 ug/kg	-	Qualify positive sample results < 5x the blank concentration as ND (UJ).	All samples. No impact since all compounds are ND in all samples.
Equipment Blank Sample ID:	Not collected				
Other QC Results					
Surrogate Recoveries	Yes	None	-	No action	
LCS Results	No	No LCS results for toxaphene	J	Qualify all associated results as estimated (J)	Impacts to all samples above.
Matrix Spikes Sample ID:J18KY3	Yes	None	-	No action	
Lab Duplicates Sample ID:	Not analyzed				
Field Duplicate Sample ID:	Not collected				
QC Summary					
Validity of Data	Not all QC parameters were met, but no data were rejected.				

SDG K1573 - Pesticides QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1573	**W&C Project No.:**222007
Medium: Sediments		**Analytes:** Pesticides
Samples: J18KM9, J18KP4, J18KY3		

Laboratory: Lionville	**Date Data Assessment Completed:** 02/20/2009 **Complete By:** RDD	**Sample Collection Date:** 03/25/2009	**Sample Analysis Date:** 03/30/2009 extr 04/02/2009 anal

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Additional Notes:					

SDG K1573 - Metals QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1573	**W&C Project No.:**222007
Medium: Sediments		**Analytes:** Metals
Samples: J18KM9, J18KN9, J18KP0, J18KP1, J18KP4, J18KR2, J18KW9, J18KX2, J18KX3, J18KX4, J18KX5, J18KX6, J18KY3, J18KY6, J18LB4, J18LB5, J18LB6, J18LB7, J18LB8, J18LB9, J18LC0		

Laboratory: Lionville	**Date Data Assessment Completed:** 02/20/2010 **Complete By:** RDD	**Sample Collection Date:** 03/25/2009	**Sample Analysis Date:** 04/08/2009 Hg; 05/07/2009 others; 05/14/2009 others; 05/13/2009 others

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No action	
Detection Limits	No	Ca, Fe, P, Zn detection limits exceed specifications in work plan	-	No action	
Blanks					
Preparation Blank 05/07/2009	No	Al = 12.8 mg/kg Ba = 0.103 mg/kg Ca = 13.7 mg/kg Fe = 55.1 mg/kg Pb = 0.844 mg/kg Mg = 3.7 mg/kg Mn = 0.671 mg/kg Si = 10.1 mg/kg V = 0.175 mg/kg	UJ	Qualify positive sample results < 5x the blank concentration as ND (UJ).	J18KY6 - No impacts
05/13/2009	No	Ca = 8.86 mg/kg Pb = 0.254 mg/kg Sn = 0.733 mg/kg			Sn –All samples except J18LC0 and J18KY6.

SDG K1573 - Metals QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1573	**W&C Project No.:**222007
Medium: Sediments		**Analytes:** Metals
Samples: J18KM9, J18KN9, J18KP0, J18KP1, J18KP4, J18KR2, J18KW9, J18KX2, J18KX3, J18KX4, J18KX5, J18KX6, J18KY3, J18KY6, J18LB4, J18LB5, J18LB6, J18LB7, J18LB8, J18LB9, J18LC0		

Laboratory: Lionville	**Date Data Assessment Completed:** 02/20/2010 **Complete By:** RDD	**Sample Collection Date:** 03/25/2009	**Sample Analysis Date:** 04/08/2009 Hg; 05/07/2009 others; 05/14/2009 others; 05/13/2009 others

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Equipment Blank Sample ID:	Not collected				
Other QC Results					
LCS Results	No	Sb = 52% Si = 311% Zn = 143%	J	Qualify positive and ND Sb and positive Si and Zn sample results as estimated (J).	All samples. Impacts include: Sb – All samples Si –All samples Zn – All samples
Matrix Spikes Sample ID: J18KY3	No	Sb = 196% As = 186% Pb = 46% V = 149%	J	Qualify positive Sb, As, and V and positive and ND Pb sample results as estimated (J).	All samples with the following impacts: As –All samples Pb – All samples V –All samples
Lab Duplicates Sample ID:J18KY3	Yes	None	-	No action	
Field Duplicate Sample ID:	Not collected				
QC Summary					
Validity of Data	Not all QC met but none of the data were rejected.				
Additional Notes: One page containing the method blank results was missing from the data package.					

SDG K1573 - Radionuclides QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1573	**W&C Project No.:**222007	
Medium: Sediments		**Analytes:** Gamma scan, C_{14}, Sr_{90}, Tc_{99}, and Isotopic Th, U, Pu,	
Samples: J18KM9, J18KN9, J18KP0, J18KP1, J18KP4, J18KR2, J18KW9, J18KX2, J18KX3, J18KX4, J18KX5			
Laboratory: Eberline	**Date Data Assessment Completed:** 02/20/2010 **Complete By:** RDD	**Sample Collection Date:** 03/25/2009	**Sample Analysis Date:** several

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No action	
Detection Limits	Yes	None	-	No action	
Blanks					
Method Blanks	Yes	None	-	No action	
Other QC Results					
LCS Results	Yes	None	-	No action	
Matrix Spike – C_{14}	No	No MS was analyzed	J	Qualify positive and ND sample results as estimated (J).	All samples.
Tracer Results	Yes	None	-	No action	
Lab Duplicates Sample ID:	Yes	None	-	No action	
Field Duplicate Sample ID:	Not collected				
QC Summary					
Validity of Data	Not all QC parameters were met, but no data were rejected.				
Additional Notes:					

SDG K1573 - Radionuclides QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1573	**W&C Project No.:**222007	
Medium: Sediments		**Analytes:** Gamma scan, C_{14}, Sr_{90}, Tc_{99}, and Isotopic Th, U, Pu,	
Samples: J18KX6, J18KY3, J18KY6, J18LB4, J18LB5, J18LB6, J18LB7, J18LB8, J18LB9, J18LC0			
Laboratory: Eberline	**Date Data Assessment Completed:** 02/20/2010 **Complete By:** RDD	**Sample Collection Date:** 03/27/2009	**Sample Analysis Date:** several

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No action	
Detection Limits	Yes	None	-	No action	
Blanks					
Method Blanks	Yes	None	-	No action	
Other QC Results					
LCS Results	Yes	None	-	No action	
Matrix Spike – C_{14}	No	No MS was analyzed	J	Qualify positive and ND sample results as estimated (J).	All samples.
Tracer Results	No	Thorium 230 tracer > UCL for: J18LB4 J18LB6 Uranium tracer > UCL for: J18KY3 J18LB4	J	Qualify positive sample results as estimated (J).	J18LB4 J18LB6 Impacts to both samples J18KY3, J18LB4 No impacts since ND for both samples.
Lab Duplicates Sample ID: J18KX6	Yes	None	-	No action	
Field Duplicate Sample ID:	Not collected				
QC Summary					
Validity of Data	Not all QC parameters were met, but no data were rejected.				
Additional Notes:					

SDG K1573 - TOC QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1573	**W&C Project No.:**222007	
Medium: Sediments		**Analytes:** TOC	
Samples: J18KM9, J18KN9, J18KP0, J18KP1, J18KP4, J18KR2, J18KW9, J18KX2, J18KX3, J18KX4, J18KX5, J18KX6, J18KY3, J18KY6, J18LB4, J18LB5, J18LB6, J18LB7, J18LB8, J18LB9, J18LC0			
Laboratory: Lionville	**Date Data Assessment Completed:** 02/20/2010 **Complete By:** RDD	**Sample Collection Date:** 03/24/2009 03/25/2009	**Sample Analysis Date:**04/16/2009

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None.	-	No action	
Detection Limit	Yes	None	-	No action	
Blanks					
Method Blank	Yes	None	-	No action	
Other QC					
LCS Results	Yes	None	-	No action	
Matrix Spikes Sample ID: J18LB4	Yes	None	-	No action	
Lab Duplicate Sample ID: J18LB4	Yes	None	-	No action	
Field Duplicate Sample ID:	Not collected				
QC Summary					
Validity of Data	All QC were met.				
Additional Notes:					

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SDG K1574 - VOC QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1574	**W&C Project No.:**222007	
Medium: Sediment		**Analytes:** VOA	
Samples: J18MH2, J18MJ5, J18M06, J18M19, J18KR7			
Laboratory: Lionville	**Date Data Assessment Completed:** 02/20/2010 **Complete By:** JR	**Sample Collection Date:** 03/26/2009 – 03/27/2009	**Sample Analysis Date:** 04/03/2009

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No action	
Detection Limits	No	1,1,1-Trichloroethane had reporting limit above that referenced in the work plan	-	No action based on guidance	
Blanks					
Blanks - Method	Yes	None	-	No action	
Equipment Blank Sample ID:	Not collected				
Trip Blank Sample ID:	Not collected				
Other QC Results					
Surrogate Recoveries	Yes	None	-	No action	
LCS Results	No	Acetone = 205%	J	Qualify positive results as estimated (J)	All samples. Impacts the following: Acetone – J18MJ5, J18M19, J18KR7
Matrix Spikes Sample ID: J18KR7	No	Acetone = 231%/177% 2-Butanone = 166%; RPD = 35	J	Qualify positive and non-detected results as estimated (J)	All samples. Impacts the following: Acetone – J18MJ5, J18M19, J18KR7 2-Butanone – All samples
Lab Duplicates	Not analyzed				
Field Duplicates Sample ID:	Not collected				
Summary					

SDG K1574 - VOC QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1574	**W&C Project No.:**222007	
Medium: Sediment		**Analytes:** VOA	
Samples: J18MH2, J18MJ5, J18M06, J18M19, J18KR7			
Laboratory: Lionville	**Date Data Assessment Completed:** 02/20/2010 **Complete By:** JR	**Sample Collection Date:** 03/26/2009 – 03/27/2009	**Sample Analysis Date:** 04/03/2009

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Validity of Data	No, but no data were rejected				

Additional Notes:
NOTE: All sample results were reported on a wet weight basis.

SDG K1574 - SVOC QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1574	**W&C Project No.:**222007	
Medium: Sediments		**Analytes:** SVOCs	
Samples: J18MH2, J18MJ5, J18M06, J18M19, J18KR7			
Laboratory: Lionville	**Date Data Assessment Completed:** 02/20/2010 **Complete By:** JR	**Sample Collection Date:** 03/26/2009 – 03/27/2009	**Sample Extraction Date:** 03/31/2009

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No action	
Detection Limits	No	2,4-Dintrophenol; 2-Nitroaniline; 3-Nitroaniline; 4-Nitroaniline; 4-Nitrophenol; Pentachlorophenol; Hexachlorobenzene; and 3,3’-Dichlorobenzidine all had reporting limits above those specified in the work plan; see also NOTE (1) below	-	No action based on criteria in references	
Blanks					
Method Blanks	Yes	None	-	No action	
Equipment Blank Sample ID:	Not collected				
Other QC					
Surrogate Recoveries	No	Phenol-d5 = 119% Terphenyl-d14 = 164%	J	No action since only one surrogate per fraction (acid, B/N) outside criteria	J18KR7
LCS Results	No	**Non-compliant recoveries:** 2,4-Dimethylphenol = 46% 4-Chloroaniline = 27% Hexachlorocyclopentadiene = 35% 3,3’-Dichlorobenzidine = 46%	J	Qualify positive and non-detected results as estimated (J)	All samples. Impacts to all samples.
Matrix Spikes Sample ID: J18MH2	No	**Non-compliant recoveries:** 1,3-Dichlorobenzene = 48% 2,4,5-Trichlorophenol = 154% 3,3’-Dichlorobenzidine = 21%/0%	J	Qualify positive and non-detected results for **all target**	All samples. Impacts to all samples.

SDG K1574 - SVOC QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1574	**W&C Project No.:**222007	
Medium: Sediments		**Analytes:** SVOCs	
Samples: J18MH2, J18MJ5, J18M06, J18M19, J18KR7			
Laboratory: Lionville	**Date Data Assessment Completed:** 02/20/2010 **Complete By:** JR	**Sample Collection Date:** 03/26/2009 – 03/27/2009	**Sample Extraction Date:** 03/31/2009

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
		4,6-Dintro-2-methyl-phenol = 157% 4-Chloroaniline = 30%/12% Bis(2-Ethylhexyl)phthalate = 175% Butylbenzyl phthalate = 174% Di-n-butyl phthalate = 151% Di-n-octyl phthalate = 167% Hexachlorocyclopentadiene = 0%/25% Pyrene = 152% 2,4,6-Trichlorophenol = 47% 4-Nitrophenol = 0% Pentachlorophenol = 48% 3-Nitroanaline = 28% **Non-compliant RPDs:** For the majority of target analytes RPDs are above 30		**analytes** as estimated (J) based on professional judgment since the vast majority of compounds have non-compliant RPDs	
Lab Duplicates Sample ID:	Not analyzed				
Field Duplicates Sample ID:	Not collected				
Summary					
Validity of Data	No, but no data were rejected				
Additional Notes: (1) NOTE: Sample results for J18M06, J18M19, and J18KR7 were reported on a wet weight basis; sample results for J18MH2 and J18MJ5 were reported on a dry weight basis. Samples J18MH2, J18MJ5, J18M06, and J18M19 were analyzed at two-fold dilutions due to matrix interference; sample J18KR7 was analyzed at a three-fold dilution due to matrix interference. Reporting limits are elevated by a factor of two or three as applicable.					

SDG K1574 - PCB QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1574	**W&C Project No.:**222007	
Medium: Sediments		**Analytes:** PCBs	
Samples: J18MH2, J18MJ5, J18M19			
Laboratory: Lionville	**Date Data Assessment Completed:** 02/20/2010 **Complete By:** JR	**Sample Collection Date:** 03/26/2009 – 03/27/2009	**Sample Extraction Date:** 03/30/2009

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No action	
Detection Limits	Yes	None	-	No action	
Blanks					
Method Blank	Yes	None	-	No action	
Equipment Blank Sample ID:	Not collected				
Other QC Results					
Surrogate Recoveries	Yes	None	-	No action	
LCS Results	Yes	None	-	No action	
Matrix Spikes Sample ID: J18MH2	Yes	None	-	No action	
Lab Duplicates Sample ID:	Not analyzed				
Field Duplicates Sample ID:	Not collected				
Summary					
Validity of Data	Yes, no data were rejected				
Additional Notes: NOTE: All sample results were reported on a wet weight basis.					

SDG K1574 - Pesticides QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1574	**W&C Project No.:**222007	
Medium: Sediment		**Analytes:** Pesticides	
Samples: J18MH2, J18MJ5			
Laboratory: Lionville	**Date Data Assessment Completed:** 02/20/2010 **Complete By:** JR	**Sample Collection Date:** 03/27/2009	**Sample Extraction Date:** 03/30/2009

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No action	
Detection Limits	Yes; see also NOTE (1) below	None	-	No action	
Blanks					
Method Blank	No	Gamma-BHC = 1 ug/kg Beta-BHC = 0.667 ug/kg Endrin aldehyde = 0.40 ug/kg	-	Qualify positive sample concentrations < 5x the blank concentration as ND.	All samples. No impact since both samples ND.
Equipment Blank Sample ID:	Not collected				
Other QC Results					
Surrogate Recoveries	Yes	None	-	No action	
LCS Results	No	No LCS results for toxaphene	J	Qualify all associated results as estimated (J)	Impacts to all samples above.
Matrix Spikes Sample ID: J18MH2	Yes	None	-	No action	
Lab Duplicates Sample ID:	Not analyzed				
Field Duplicate Sample ID:	Not collected				
QC Summary					
Validity of Data	No, but no data were rejected				

Additional Notes:
Sample results for J18MH2 and J18MJ5 were reported on a dry weight basis.

SDG K1574 - Metals QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1574	**W&C Project No.:**222007
Medium: Sediment		**Analytes:** Metals
Samples: J18LB0, J18LB1, J18MH2, J18MH5, J18MH6, J18MJ5, J18MJ8, J18MJ9, J18MK0, J18MK1, J18KY8, J18KY9, J18M06, J18M09, J18M10, J18M11, J18M12, J18M13, J18M19, J18M20, J18M21, J18KT0, J18KT1, J18KT2, J18KT3, J18KT4, J18KR7		

Laboratory: Lionville	**Date Data Assessment Completed:** 02/23/2010 **Complete By:** JR	**Sample Collection Date:** 03/26/2009 – 03/27/2009	**Sample Analysis Date:** ICP – 05/07/2009; Hg – 04/17/2009 – 04/22/2009

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No action	
Detection Limits	Yes	None	-	No action	
Blanks					
Preparation Blank	No	Batch L904178: Al = 12.8 mg/kg Ba = 0.103 mg/kg Ca = 13.7 mg/kg Fe = 55.1 mg/kg Pb = 0.844 mg/kg Mg = 3.70 mg/kg Mn = 0.671 mg/kg Si = 10.1 mg/kg V = 0.175 mg/kg	UJ	Qualify positive results less than 5X blank concentration as non-detected estimated (UJ)	Impacts the following results: Pb – J18KY8, J18KY9, J18LB0, J18LB1, J18M11, J18M12, J18M13
	No	Batch L904191: Ca = 7.38 mg/kg Pb = 0.455 mg/kg Li = 0.441 mg/kg Mg = 2.13 mg/kg Sn = 4.84 mg/kg	UJ	Qualify positive results less than 5X blank concentration as non-detected estimated (UJ)	Impacts the following results: Sn – J18KT4, J18M21
Equipment Blank Sample ID:	Not collected				
Other QC Results					
LCS Results	No	Batch L904178: Sb = 196% As = 186% Fe = 134% Pb = 55% Tl = 0% V = 164%	J	Qualify positive results for Sb, As, Fe, and V in associated batch as estimated (J); qualify positive and non-detected results for Pb in associated batch as estimated (J)	Impacts the following results: Sb – J18M06, J18M09, J18M19, J18MH2, J18MJ9, J18MK0 As, Fe, Pb, V - J18LB0, J18LB1, J18MH2, J18MH5, J18MH6, J18MJ5, J18MJ8, J18MJ9, J18MK0, J18MK1, J18KY8, J18KY9,

SDG K1574 - Metals QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1574	**W&C Project No.:**222007	
Medium: Sediment		**Analytes:** Metals	
Samples: J18LB0, J18LB1, J18MH2, J18MH5, J18MH6, J18MJ5, J18MJ8, J18MJ9, J18MK0, J18MK1, J18KY8, J18KY9, J18M06, J18M09, J18M10, J18M11, J18M12, J18M13, J18M19, J18M20, J18M21, J18KT0, J18KT1, J18KT2, J18KT3, J18KT4, J18KR7			
Laboratory: Lionville	**Date Data Assessment Completed:** 02/23/2010 **Complete By:** JR	**Sample Collection Date:** 03/26/2009 – 03/27/2009	**Sample Analysis Date:** ICP – 05/07/2009; Hg – 04/17/2009 – 04/22/2009

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
					J18M06, J18M09, J18M10, J18M11, J18M12, J18M13, J18M19
	No	Batch L904191: Sb = 197% As = 188% Cu = 159% Pb = 55% Tl = 0% V = 159% Zn = 151%	J	Qualify positive results for Sb, As, Cu, V, and Zn in associated batch as estimated (J); qualify positive and non-detected results for Pb in associated batch as estimated (J) For both QC batches: no qualifiers applied to Tl results since LCS spike concentration is near the RL (less than 2XRL)	Impacts the following results: As, Cu, Pb, V, Zn – J18M20, J18M21, J18KT0, J18KT1, J18KT2, J18KT3, J18KT4, J18KR7
Matrix Spikes Sample ID: Hg - J18M21 ICP - J18M19	No No	Hg = 194% Sb = 55% Ca = 48% Cr = 140% Mg = 50% Mn = 35% K = 65% Si = 209% Zn = 172%	J	Qualify positive results for Hg, Cr, Si, and Zn in associated batch as estimated (J); qualify positive and non-detected results for Sb, Ca, Mg, Mn, and K in associated batch as estimated (J)	All samples. Impacts the following results: Hg – J18KT0, J18KT1, J18KT2, J18KT3, J18KT4, J18KR7 Sb, Ca, Cr, Mg, Mn, K, Si, Zn – J18LB0, J18LB1, J18MH2, J18MH5, J18MH6, J18MJ5, J18MJ8, J18MJ9, J18MK0, J18MK1, J18KY8, J18KY9, J18M06, J18M09, J18M10, J18M11, J18M12, J18M13, J18M19

SDG K1574 - Metals QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1574	**W&C Project No.:**222007	
Medium: Sediment		**Analytes:** Metals	
Samples: J18LB0, J18LB1, J18MH2, J18MH5, J18MH6, J18MJ5, J18MJ8, J18MJ9, J18MK0, J18MK1, J18KY8, J18KY9, J18M06, J18M09, J18M10, J18M11, J18M12, J18M13, J18M19, J18M20, J18M21, J18KT0, J18KT1, J18KT2, J18KT3, J18KT4, J18KR7			
Laboratory: Lionville	**Date Data Assessment Completed:** 02/23/2010 **Complete By:** JR	**Sample Collection Date:** 03/26/2009 – 03/27/2009	**Sample Analysis Date:** ICP – 05/07/2009; Hg – 04/17/2009 – 04/22/2009

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Lab Duplicates Sample ID:					
Hg – J18M21	Yes	None	-	No action	
ICP – J18M19	No	Non-compliant RPDs or absolute differences: As = Diff >2RL Cr = 56 Si = 37	J	Qualify positive results for affected analytes as estimated (J).	All samples above.
Field Duplicate Sample ID:	Not collected				
QC Summary					
Validity of Data	No, but no data were rejected				
Additional Notes: Sample results were reported on a wet weight basis.					

SDG K1574 - Radionuclides QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1574	**W&C Project No.:**222007	
Medium: Sediment		**Analytes:** C-14, Gamma Spec, Isotopic Plutonium, Isotopic Thorium, Isotopic Uranium, Sr-90, Tc-99	
Samples: J18M12, J18M13, J18M19, J18M20, J18M21, J18MH2, J18MH5, J18MH6, J18MJ5, J18MJ8, J18MJ9, J18MK0, J18MK1, J18KR7, J18KT0, J18KT1, J18KT2, J18KT3, J18KT4, J18KY8, J18KY9, J18KB0, J18KB1, J18M06, J18M09, J18M10, J18M11			
Laboratory: Eberline	**Date Data Assessment Completed:** 02/20/2010 **Complete By:** JR	**Sample Collection Date:** 03/26/2009 - 03/27/2009	**Sample Analysis Date:** 04/24/2009 – 05/12/2009

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No action	
Detection Limits	Yes	None	-	No action	
Blanks					
Method Blanks	Yes	None	-	No action	
Other QC Results					
LCS Results	Yes	None	-	No action	
Tracer Results	No	Isotopic Thorium = 110%	J	Qualify positive results for isotopic thorium as estimated (J)	Impacts the following sample: J18MK1
Matrix Spike – Carbon 14	No	No MS analyzed	J	Qualify positive and non-detect results for C-14 as estimated (J).	All samples
Lab Duplicates Sample ID: J18M12 and J18KR7	Yes	None	-	No action	
Field Duplicate Sample ID:	Not collected				
QC Summary					
Validity of Data	No, but no data were rejected				
Additional Notes:					

SDG K1574 - DRO QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1574	**W&C Project No.:**222007	
Medium: Sediments		**Analytes:** DRO	
Samples: J18M19			
Laboratory: Lionville	**Date Validation Completed:** 02/20/2010 **Complete By:** JR	**Sample collection:** 03/26/2009	**Sample Extraction Date:** 03/31/2009

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No action	
Surrogates	Yes	None	-	No action	
Blanks					
Method Blank	Yes	None	-	No action	
Equipment Blank Sample ID:	Not collected				
Other QC					
LCS Results	Yes	None	-	No action	
Matrix Spikes Sample ID: J18M19	Yes	None	-	No action	
Lab Duplicates Sample ID:	Not analyzed				
Field Duplicate Sample ID:	Not collected				
QC Summary					
Validity of Data	Yes, no data were rejected				

Additional Notes:
NOTE: All sample results were reported on a wet weight basis.

SDG K1574 - TOC QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1574	**W&C Project No.:**222007
Medium: Sediment		**Analytes:** TOC
Samples: J18LB0, J18LB1, J18MH2, J18MH5, J18MH6, J18MJ5, J18MJ8, J18MJ9, J18MK0, J18MK1, J18KY8, J18KY9, J18M06, J18M09, J18M10, J18M11, J18M12, J18M13, J18M19, J18M20, J18M21, J18KT0, J18KT1, J18KT2, J18KT3, J18KT4, J18KR7		

Laboratory: Lionville	**Date Data Assessment Completed:** 02/23/2010 **Complete By:** JR	**Sample Collection Date:** 03/26/2009 – 03/27/2009	**Sample Analysis Date:** 04/17/2009 – 04/27/2009

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	No	Subset of samples analyzed 4 days past HT	J	Qualify positive and non-detected results as estimated (J)	Impacts the following TOC results: J18M21, J18KT0, J18KT1, J18KT2, J18KT3, J18KT4, J18KR7
Detection Limit	Yes	None	-	No action	
Blanks					
Method Blank	No	TOC = 20.0 mg/kg TOC = 13.3 mg/kg	-	Qualify positive results less than 5X blank concentration as non-detected estimated (UJ)	All samples, however no impacts since all sample results are greater than 5X blank concentration
Other QC					
LCS Results	Yes	None	-	No action	
Matrix Spikes Sample ID: J18MH2	Yes	None	-	No action	
Lab Duplicate Sample ID: J18MH2	Yes	None	-	No action	
Field Duplicate Sample ID:	Not collected				
QC Summary					
Validity of Data	No, but no data were rejected				
Additional Notes:					

B.80 SDG K1580

SDG K1580 - VOC QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1580	**W&C Project No.:**222007	
Medium: Sediments		**Analytes:** VOA	
Samples: J18ML6, J18MM9, J18MR6, J18MT9, J18LF4			
Laboratory: Lionville	**Date Data Assessment Completed:** 02/24/2010 **Complete By:** RDD	**Sample Collection Date:** 03/30/2009 and 04/02/2009	**Sample Analysis Date:** 04/07/2009

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No action	
Detection Limits	No	Detection limit 1,1,1-trichloroethane exceeds limit in work plan. Limits of other VOCs slightly exceed limit due to dilution factor resulting from weight of sample used for analysis.	-	No action	
Blanks					
Blanks – Method	Yes	None	-	No action	
Equipment Blank Sample ID: J18LF4	No	$MeCl_2$ = 4.61 ug/kg	-	No action based on guidance	
Trip Blank Sample ID:	Not collected				
Other QC Results					
Surrogate Recoveries	Yes	None	-	No action	
LCS Results	No	2-Butanone = 159% Acetone = 226%	J	Qualify positive sample results as estimated (J).	All samples. Impacts to the following samples: Acetone – J18MR6
Matrix Spikes Sample ID:J18MT9	No	2-Butanone = 207%/187% Acetone = 310%/270%	J	Qualify positive sample results as estimated (J).	All samples. Impacts to the following samples: Acetone – J18MR6
Lab Duplicates	Not analyzed				

SDG K1580 - VOC QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA		**SDG No.:** K1580	**W&C Project No.:**222007		
Medium: Sediments			**Analytes:** VOA		
Samples: J18ML6, J18MM9, J18MR6, J18MT9, J18LF4					
Laboratory: Lionville	**Date Data Assessment Completed:** 02/24/2010 **Complete By:** RDD		**Sample Collection Date:** 03/30/2009 and 04/02/2009	**Sample Analysis Date:** 04/07/2009	
QC Parameter	**All in Spec.?**	**Non-Compliant Results**	**Flag**	**Action/ Notes**	**Associated Samples**
Field Duplicates Sample ID:	Not collected				
Summary					
Validity of Data	Not all QC met, but no data were rejected.				
Additional Notes:					

SDG K1580 - SVOC QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1580	**W&C Project No.:**222007
Medium: Sediments		**Analytes:** SVOCs
Samples: J18ML6, J18MM9, J18MR6, J18MT9, J18LF4		

Laboratory: Lionville	**Date Data Assessment Completed:** 02/24/2010 **Complete By:** RDD	**Sample Collection Date:** 03/30/2009 and 04/02/2009	**Sample Analysis Date:** 04/06/2009 extr; 04/23/2009 anal; 05/1,4-5/2009 anal

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No action	
Detection Limits	No	Hexachlorobenzene, 2-chloroaniline, 2-nitroaniline, 2,4-dinitrophenol, 4-nitrophenol, 4-nitroaniline, pentachlorophenol, and 3,3'-dichlorobenzidine have RDLs that exceed those specified in work plan.	-	No action	
Blanks					
Method Blanks	Yes	None	-	No action	
Equipment Blank Sample ID:J18LF4	Yes	None	-		
Other QC					
Surrogate Recoveries	No	2-Fluorophenol: 0.1% Phenol-d5: 18% Nitrobenzene-d5: 0.4% 2-Fluorobyphenyl: 2% 1 acid fraction and 1 BN fraction have surrogate recoveries < 10%. See "notes" below for additional information.	R	Qualify all results for J18MR6 as rejected (R).	J18MR6
LCS Results	No	2,4-Dimethylphenol = 38% 2,4-Dinitrophenol = 33% 3,3'-Dichlorobenzidine = 41% 4,6-Dinitro-2-methylphenol = 45% 4-Chloroaniline = 20% Hexachlorocyclopentadiene = 25%	J	Qualify positive and non-detected results as estimated (J)	All samples
Matrix Spikes/Matrix Spike Duplicates Sample ID: J18ML6	No	**Non-compliant Recoveries** 3,3'-Dichlorobenzidine = 0%/0% 3-Nitroaniline = 32%/34% 4-Chloroaniline = 9%/7% 4-Nitroaniline = 44%/45% Hexachlorocyclopentadiene = 0%/0% Hexachloroethane = 49%/49% Pentachlorophenol = 36%/35%	J	Qualify positive and non-detected results as estimated (J)	All samples
Lab Duplicates	Not analyzed				

SDG K1580 - SVOC QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1580	**W&C Project No.:**222007	
Medium: Sediments		**Analytes:** SVOCs	
Samples: J18ML6, J18MM9, J18MR6, J18MT9, J18LF4			
Laboratory: Lionville	**Date Data Assessment Completed:** 02/24/2010 **Complete By:** RDD	**Sample Collection Date:** 03/30/2009 and 04/02/2009	**Sample Analysis Date:** 04/06/2009 extr; 04/23/2009 anal; 05/1,4-5/2009 anal

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Sample ID :					
Field Duplicates Sample ID:	Not collected				
Summary					
Validity of Data	Some data were rejected due to surrogate recoveries	1 acid fraction and 1 BN fraction have surrogate recoveries < 10%	R	Results for sample J18MR6 rejected	J18MR6

Additional Notes: 1. Recovery of 2,4,6-tribromophenol surrogate was < 10% for the equipment blank, J18LF4. 2. Surrogates used for SVOA analysis did not match those contained in guidance, therefore the association of compounds to each surrogate could not be made. Professional judgment was used in decision to reject data for this sample.

SDG K1580 - PCB QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1580	**W&C Project No.:**222007
Medium: Sediments		**Analytes:** PCBs
Samples: J18ML6, J18MM9, J18MR6, J18MT9, J18LF4		

Laboratory: Lionville	**Date Data Assessment Completed:** 02/24/2010 **Complete By:** RDD	**Sample Collection Date:** 03/30/2009 and 04/02/2009	**Sample Analysis Date:** 04/06/2009 extr 04/09/2009 anal

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No action	
Detection Limits	Yes	None	-	No action	
Blanks					
Method Blank	Yes	None	-	No action	
Equipment Blank Sample ID: J18LF4	Yes	None	-	No action	
Other QC Results					
Surrogate Recoveries	Yes	None	-	No action	
LCS Results	Yes	None	-	No action	
Matrix Spikes Sample ID:J18ML6	Yes	None	-	No action	
Lab Duplicates Sample ID:	Not analyzed				
Field Duplicates Sample ID:	Not collected	None			
Summary					
Validity of Data	All QC parameters were met.				
Additional Notes:					

SDG K1580 - Pesticides QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA
SDG No.: K1580
W&C Project No.:222007
Medium: Sediments
Analytes: Pesticides
Samples: J18ML6, J18MM9, J18MR6, J18MT9, J18LF4
Laboratory: Lionville
Date Data Assessment Completed: 02/24/2010
Complete By: RDD
Sample Collection Date: 03/30/2009 and 04/02/2009
Sample Analysis Date: 04/06/2009 extr
04/22/2009 anal

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No action	
Detection Limits	No	RDLs for Endosulfan I, gamma BHC, heptachlor, and heptachlor epoxide exceed specified levels in work plan.	-	No action	
Blanks					
Method Blank	Yes	None	-	No action	
Equipment Blank Sample ID: J18LF4	No	Aldrin = 2.07 mg/kg	-	No action based on criteria in guidance.	
Other QC Results					
Surrogate Recoveries	Yes	None	-	No action	
LCS Results	No	No LCS results for toxaphene	J	Qualify all associated results as estimated (J)	Impacts to all samples above.
Matrix Spikes Sample ID:J18ML6	Yes	None	-	No action.	
Lab Duplicates	Not analyzed				
Field Duplicate Sample ID:	Not collected				
QC Summary					
Validity of Data	No all QC parameters were met, but no data were rejected.				

Additional Notes:

SDG K1580 - Metals QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1580	**W&C Project No.:**222007
Medium: Sediments		**Analytes:** Metals
Samples: J18ML6, J18MM9, J18MN2, J18MR6, J18MR9, J18MT0, J18MT9, J18MW2, J18MW3, J18MW4, J18MW5, J18MW6, J18MW7, J18MW8, J18MW9, J18LF4		

Laboratory: Lionville	**Date Data Assessment Completed:** 02/22/2010 **Complete By:** RDD	**Sample Collection Date:** 03/30/2009, 04/01/2009 and 04/02/2009	**Sample Analysis Date:** 04/22/2009 Hg 05/07-08/2009 others

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No action	
Detection Limits	No	Ca, Fe, P, Zn detection limits exceed specifications in work plan	-	No action	
Blanks					
Preparation Blank					
04/22/2009 Hg	Yes	None	-	No action	
05/07/2009 other metals	No	Ca = 7.38 mg/kg Pb = 0.455 mg/kg Li = 0.441 mg/kg Mg = 2.13 mg/kg Sn = 4.84 mg/kg	UJ	Qualify positive sample results < 5x the blank concentration as ND (UJ).	Associated Samples: J18ML6, J18MM9, J18MN2, J18MW2, J18MW3, J18MW4, J18MW5, J18MW6, J18MW7, J18MW8, J18MW9. Impacts to the following samples: Sn – J18MW5, J18MW6, J18MW7, J18MW8 and J18MW9
05/08/2009 other metals	No	Ba = 0.0919 mg/kg Ca = 8.71 mg/kg Pb = 0.885 mg/kg Si = 1.98 mg/kg Sn = 1.33 mg/kg	UJ	Qualify positive sample results < 5x the blank concentration as ND (UJ).	Associated samples: J18MT9, J18MT0, J128MR9, J18MR6 Impacts the following samples: Pb –J18MT0
Equipment Blank Sample ID:J18LF4	No	Al = 220 mg/kg Ba = 2.45 mg/kg Ca = 58.8 mg/kg Cr = 0.204 mg/kg Fe = 298 mg/kg Pb = 0.969 mg/kg Li = 0.717 mg/kg Mg = 42.3 mg/kg Mn = 5.84 mg/kg P = 8.24 mg/kg K = 53.2 mg/kg	-	No action based on criteria specified in guidance.	

SDG K1580 - Metals QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1580	**W&C Project No.:**222007
Medium: Sediments		**Analytes:** Metals
Samples: J18ML6, J18MM9, J18MN2, J18MR6, J18MR9, J18MT0, J18MT9, J18MW2, J18MW3, J18MW4, J18MW5, J18MW6, J18MW7, J18MW8, J18MW9, J18LF4		

Laboratory:	**Date Data Assessment Completed:**	**Sample Collection Date:**	**Sample Analysis Date:**
Lionville	02/22/2010 **Complete By:** RDD	03/30/2009, 04/01/2009 and 04/02/2009	04/22/2009 Hg 05/07-08/2009 others

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
		Si = 240 mg/kg Na = 11.9 mg/kg Sr = 0.647 mg/kg Sn = 1,08 mg/kg V = 0.456 mg/kg Zn = 1.25 mg/kg			
Other QC Results					
LCS Results 5/07/2009	No	Sb = 197% As = 188% Fe = 159% Pb = 55% V = 159% Zn =151%	J	Qualify positive sample results for Sb, As, Fe, V, Zn and positive and ND Pb results as estimated (J).	Associated samples J18ML6, J18MM9, J18MN2, J18MW2, J18MW3, J18MW4, J18MW5, J18MW6, J18MW7, J18MW8, J18MW9 with the following impacts: Sb –J18MW5, J18MW6, J18MW7, J18MW8, J18MW9 As – All associated samples above Fe – All associated samples above Pb – All associated samples above V – All associated samples above Zn – All associated samples above
05/08/2009	No	Sb = 192% As = 192% Fe = 135% Pb = 49% V = 163%	J	Qualify positive sample results for Sb, As, Fe, V and positive and ND Pb results as estimated (J).	Associated samples J18MT9, J18MT0, J128MR9, J18MR6 with the following impacts: As – All associated samples above Fe – All associated samples above Pb – All associated samples above V – All associated samples above
Matrix Spikes 05/07/2009 Sample ID: J18MW9	No	Sb = 58%	J	Qualify positive and ND sample results as estimated (J).	Impacts all associated samples: J18ML6, J18MM9, J18MN2, J18MW2, J18MW3, J18MW4, J18MW5, J18MW6, J18MW7, J18MW8, J18MW9

SDG K1580 - Metals QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1580	**W&C Project No.:**222007
Medium: Sediments		**Analytes:** Metals
Samples: J18ML6, J18MM9, J18MN2, J18MR6, J18MR9, J18MT0, J18MT9, J18MW2, J18MW3, J18MW4, J18MW5, J18MW6, J18MW7, J18MW8, J18MW9, J18LF4		

Laboratory: Lionville	**Date Data Assessment Completed:** 02/22/2010 **Complete By:** RDD	**Sample Collection Date:** 03/30/2009, 04/01/2009 and 04/02/2009	**Sample Analysis Date:** 04/22/2009 Hg 05/07-08/2009 others

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Lab Duplicates 05/07/2009 Sample ID:J18MW9	No	As = 34% Si = 34%	J	Qualify positive sample results as estimated (J).	Impacts all associated samples: J18ML6, J18MM9, J18MN2, J18MW2, J18MW3, J18MW4, J18MW5, J18MW6, J18MW7, J18MW8, J18MW9.
Field Duplicate Sample ID:	Not collected				
QC Summary					
Validity of Data	Not all QC met but none of the data were rejected.				

Additional Notes: 1. No action taken with respect to Tl LCS result of 0% recovery, since spike level is just above the IDL.
2. Equipment blank results indicate potential carry-over concentrations of most target metals into samples from the decontamination process.

SDG K1580 - Radionuclides QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1580	**W&C Project No.:**222007
Medium: Sediments		**Analytes:** Gamma scan, C_{14}, Sr_{90}, Tc_{99}, and Isotopic Th, U, Pu
Samples: J18ML6, J18MM9, J18MN2, J18MR6, J18MR9, J18MT0, J18MT9, J18MW2, J18MW3, J18MW4, J18MW5, J18MW6, J18MW7, J18MW8, J18MW9		

Laboratory: Eberline	**Date Data Assessment Completed:** 02/24/2010 **Complete By:** RDD	**Sample Collection Date:** 03/30/2009, 04/01/2009 and 04/20/2009	**Sample Analysis Date:** 04-05/2009

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No action	
Detection Limits	Yes	None	-	No action	
Blanks					
Method Blanks	No	Thorium 230 = 0.385 pCi/g	J	Qualify positive sample results < 5x the blank concentration as estimated (J).	All samples. Impacts all samples.
Other QC Results					
LCS Results	Yes	None	-	No action	
Matrix Spike – C_{14}	No	No MS was analyzed	J	Qualify positive and ND sample results as estimated (J).	All samples.
Tracer Results	Yes	None	-	No action	
Lab Duplicates Sample ID:J18ML6	No	Uranium-233/234: 59% Uranium-238: 34%	-	No action since difference between both results is less than 2x the RDL	
Field Duplicate Sample ID:	Not collected				
QC Summary					
Validity of Data	Not all QC parameters were met, but no data were rejected.				
Additional Notes:					

SDG K1580 - DRO QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1580	**W&C Project No.:**222007
Medium: Sediments		**Analytes:** DRO
Samples: J18MR6		

Laboratory: Lionville	**Date Validation Completed:** 02/24/2010 **Complete By:** RDD	**Sample collection Date:** 04/02/2009	**Sample Analysis Date:** 04/13/2009 extr 04/14-15/2009 anal

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No action	
Surrogates	Yes	None	-	No action.	
Blanks					
Method Blank	Yes	None	-	No action	
Equipment Blank Sample ID:	Not collected				
Other QC					
LCS Results	Yes	None	-	No action	
Matrix Spikes Sample ID: J18MR6	No	DRO = 68%	J	Qualify positive and ND sample results as estimated (J).	All samples.
Lab Duplicates Sample ID:	Not analyzed				
Field Duplicate Sample ID:	Not collected				
QC Summary					
Validity of Data	Not all QC criteria were met but no data were rejected.				
Additional Notes:					

SDG K1580 - TOC QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA		**SDG No.:** K1580		**W&C Project No.:**222007	
Medium: Sediments				**Analytes:** TOC	
J18ML6, J18MM9, J18MN2, J18MR6, J18MR9, J18MT0, J18MT9, J18MW2, J18MW3, J18MW4, J18MW5, J18MW6, J18MW7, J18MW8, J18MW9, J18LF4					
Laboratory: Lionville	**Date Data Assessment Completed:** 02/24/2010 **Complete By:** RDD		**Sample Collection Date:** 03/30/2009, 04/01/2009 and 04/20/2009		**Sample Analysis Date:** 04/27/2009

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No action.	
Detection Limit	Yes	None	-	No action	
Blanks					
Method Blank	No	TOC = 13.29 mg/kg	-	Qualify positive sample results < 5x the blank concentration as ND (UJ).	All samples. No impact since all results are ND.
Equipment Blank Sample ID: J18LF4	No	TOC = 131.52 mg/kg	-	No action based on guidance.	
Other QC					
LCS Results	Yes	None	-	No action	
Matrix Spikes Sample ID: J18MN2	Yes	None	-	No action	
Lab Duplicate Sample ID: J18MN2	Yes	None	-	No action	
Field Duplicate Sample ID:	Not collected				
QC Summary					
Validity of Data	Not all QC met but no data were rejected.				
Additional Notes: Equipment blank results indicate potential trace concentrations of TOC as carry-over into samples.					

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SDG K1583 - VOC QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1583	**W&C Project No.:**222007
Medium: Sediments		**Analytes:** VOA
Samples: J18L19, J18MP2		

Laboratory: Lionville	**Date Data Assessment Completed:** 02/23/2010 **Complete By:** RDD	**Sample Collection Date:** 04/06/2009 and 04/07/2009	**Sample Analysis Date:** 04/09/2009

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No action	
Detection Limits	No	Detection limit for 1,1,1-trichloroethane exceeds limit in work plan	-	No action	
Blanks					
Blanks – Method	Yes	None	-	No action	
Equipment Blank Sample ID:	Not collected				
Trip Blank	Not collected				
Other QC Results					
Surrogate Recoveries	Yes	None	-	No action	
LCS Results	No	Acetone = 188%	-	Qualify associated positive sample results as estimated (J).	All samples. No impact since both samples ND for acetone.
Matrix Spikes Sample ID:J18MP2	No	2-Butanone =176%/152% Acetone = 258%/230%	-	Qualify positive sample results as estimated (J).	All samples. No impacts since both samples ND for both compounds.
Lab Duplicates	Not analyzed				
Field Duplicates Sample ID:	Not collected				
Summary					
Validity of Data	Not all QC met, but no data were rejected.				
Additional Notes:					

SDG K1583 - SVOC QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1583	**W&C Project No.:**222007	
Medium: Sediments		**Analytes:** SVOCs	
Samples: J18L19, J18MP2			
Laboratory: Lionville	**Date Data Assessment Completed:** 02/23/2010 **Complete By:** RDD	**Sample Collection Date:** 04/06/2009 and 04/07/2009	**Sample Analysis Date:** 04/17/2009 extr 05/04/2009 anal

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No action.	
Detection Limits	No	Hexachlorobenzene, 2-chloroaniline, 2-nitroaniline, 2,4-dinitrophenol, 4-nitrophenol, 4-nitroaniline, pentachlorophenol, 3,3'-dichlorobenzidine have RDLs that exceed those specified in work plan.	-	No action	
Blanks					
Method Blanks	Yes	None	-	No action	
Equipment Blank Sample ID:	Not collected				
Other QC					
Surrogate Recoveries	Yes	None	-	No action	
LCS Results	No	4-Chloroaniline = 28%	J	Qualify positive and ND sample results as estimated (J).	All samples.
Matrix Spikes Sample ID:J18L19	No	**Non-Compliant Recoveries** 2-Chlorophenol =45%/66% 1,3-Dichlorobenzene = 0%/45% 1,4-Dichlorobenzene = 0%/46% 1,2-Dichlorobenzene=6%/49% Hexachloroethane = 21%/24% 2-Nitrophenol = 0%/47% 3,3'-Dichlorobenzidine= 0%/0% 1,2,4-Trichlorobenzene = 29%/47% 4-Chloroaniline = 13%/0% Bis(2-chloroethyl) ether= 12%/62% Bis(2-chloroisopropyl)ether=23%/69% Hexachlorobutadiene = 0%/49% Hexachlorocyclopentadiene =	J	Qualify positive and ND sample results as estimated (J)	All samples.

SDG K1583 - SVOC QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1583	**W&C Project No.:**222007	
Medium: Sediments		**Analytes:** SVOCs	
Samples: J18L19, J18MP2			
Laboratory: Lionville	**Date Data Assessment Completed:** 02/23/2010 **Complete By:** RDD	**Sample Collection Date:** 04/06/2009 and 04/07/2009	**Sample Analysis Date:** 04/17/2009 extr 05/04/2009 anal

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
		0%/28% Naphthalene = 35%/54% Nitrobenzene = 31%/51% 3-Nitroaniline = 21%/25% 4-Nitroaniline =33%/39% Pentachlorophenol = 47%/59% **Non-Compliant RPDs** 1,2,4-Trichlorobenzene =48% 1,2-Dichlorobenzene = 157% 2-Chlorophenol = 39% 4-Chloroaniline = 52% Bsi(2-chloroethl)ether=133% Bis(2-chloroisopropyl)ether =99% Hexachlorobutadiene= 53% Naphthalene =42% Nitrobenzene=48%			
Lab Duplicates Sample ID:	Not analyzed				
Field Duplicates Sample ID:	Not collected				
Summary					
Validity of Data	Not all QC met, but no data were rejected.				
Additional Notes:					

SDG K1583 - PCB QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1583	**W&C Project No.:**222007
Medium: Sediments		**Analytes:** PCBs
Samples: J18L19		

Laboratory: Lionville	**Date Data Assessment Completed:** 02/23/2010 **Complete By:** RDD	**Sample Collection Date:** 04/06/2009	**Sample Analysis Date:** 04/17/2009 extr 04/21/2009 anal

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No action	
Detection Limits	Yes	None	-	No action	
Blanks					
Method Blank	Yes	None	-	No action	
Equipment Blank Sample ID:	Not collected				
Other QC Results					
Surrogate Recoveries	Yes	None	-	No action	
LCS Results	Yes	None	-	No action	
Matrix Spikes Sample ID:J18L19	Yes	None	-	No action	
Lab Duplicates Sample ID:	Not analyzed				
Field Duplicates Sample ID:	Not collected				
Summary					
Validity of Data	All QC parameters were met.				
Additional Notes:					

SDG K1583 - Pesticides QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1583	**W&C Project No.:**222007	
Medium: Sediments		**Analytes:** Pesticides	
Samples: J18L19			
Laboratory: Lionville	**Date Data Assessment Completed:** 02/23/2009 **Complete By:** RDD	**Sample Collection Date:** 04/06/2009	**Sample Analysis Date:** 04/17/2009 extr 04/21/2009 anal

QC Parameter	**All in Spec.?**	**Non-Compliant Results**	**Flag**	**Action/ Notes**	**Associated Samples**
Holding Times	Yes	None	-	No action	
Detection Limits	Yes	None	-	No action	
Blanks					
Method Blank	Yes	None	-	No action	
Equipment Blank	Not collected				
Other QC Results					
Surrogate Recoveries	Yes	None	-	No action	
LCS Results	No	No LCS results for toxaphene	J	Qualify all associated results as estimated (J)	Impacts to all samples above.
Matrix Spikes Sample ID:J18L19	Yes	None	-	No action.	
Lab Duplicates	Not analyzed				
Field Duplicate Sample ID:	Not collected				
QC Summary					
Validity of Data	All QC parameters were met.				
Additional Notes:					

SDG K1583 - Metals QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1583	**W&C Project No.:**222007	
Medium: Sediments		**Analytes:** Metals	
Samples: J18L09, J18L10, J18L11, J18L12, J18L13, J18L19, J18L20, J18L21, J18L22, J18L23, J18L24, J18M59, J18M60, J18M61, J18M62, J18M63, J18M64, J18M65, J18M66, J18M67, J18M68, J18M69, J18M70, J18M71, J18M71-A, J18MP2			
Laboratory: Lionville	**Date Data Assessment Completed:** 02/23/2010 **Complete By:** RDD	**Sample Collection Date:** 04/06/2009 and 04/07/2009	**Sample Analysis Date:** 04/29/2009 Hg; 04/22/2009 Hg; 05/082009 others; 05/12/2009 others

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No action	
Detection Limits	No	Ca, Fe, P, Zn detection limits exceed specifications in work plan	-	No action	
Blanks					
Preparation Blank 04/29/2009 Hg	Yes	None	-	No action	
04/22/2009 Hg	Yes	None	-	No action	
05/08/2009	No	Be = 0.0919 mg/kg Ca = 8.71 mg/kg Pb = 0.885 mg/kg Si = 1.98 mg/kg Sn = 1.33 mg/kg	UJ	Qualify positive sample results < 5x the blank concentration as ND (UJ).	Associated samples: J18L09, J18L10, J18L11, J18L12, J18L13, J18L19, J18L20, J18L21, J18L22, J18L23, J18L24, J18M59, J18M60, J18M61, J18M62, J18M63 Impacts include: Be – J18L09, J18L10, J18L11, J18L12, J18L13, J18L19, J18L20, J18L21, J18L22, J18L23, J18L24, J18M61, J18M62, J18M63 Pb – J18L24, J18L23, J18L22, J18L21, J18L20
05/12/2009	No	Sb = 0.354 mg/kg Ca = 7.64 mg/kg Pb = 0.939 mg/kg Mg = 1.85 mg/kg Si = 2.65 mg/kg	UJ	Qualify positive sample results < 5x the blank concentration as ND (UJ).	Associated samples: J18M64, J18M65, J18M66, J18M67, J18M68, J18M69, J18M70, J18M71, J18M71-A, J18MP2. Impacts to the following samples Sb – J18M65, J18M67, J18M68, J18M69, J18M70, J18M71. Pb – J18MP2

SDG K1583 - Metals QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1583	**W&C Project No.:**222007
Medium: Sediments		**Analytes:** Metals

Samples: J18L09, J18L10, J18L11, J18L12, J18L13, J18L19, J18L20, J18L21, J18L22, J18L23, J18L24, J18M59, J18M60, J18M61, J18M62, J18M63, J18M64, J18M65, J18M66, J18M67, J18M68, J18M69, J18M70, J18M71, J18M71-A, J18MP2

Laboratory:	**Date Data Assessment Completed:**	**Sample Collection Date:**	**Sample Analysis Date:**
Lionville	02/23/2010 **Complete By:** RDD	04/06/2009 and 04/07/2009	04/29/2009 Hg; 04/22/2009 Hg; 05/082009 others; 05/12/2009 others

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Equipment Blank Sample ID:	Not collected				
Other QC Results					
LCS Results					
4/29/2009 Hg	Yes	None	-	No action	
4/22/2009 Hg	Yes	None	-	No action	
5/08/2009	No	Sb = 192% As = 192% Fe = 135% Pb = 49% V = 163%	J	Qualify associated positive Sb, As, Fe and V and positive and ND Pb sample results as estimated (J).	Associated samples: J18L09, J18L10, J18L11, J18L12, J18L13, J18L19, J18L20, J18L21, J18L22, J18L23, J18L24, J18M59, J18M60, J18M61, J18M62, J18M63 Impacts to the following samples: Sb – J18L13, J18M61 As – all assoc. samples above Fe – all assoc. samples above Pb – all assoc. samples above V – all assoc. samples above
5/12/2009		Sb = 201% As = 176% Cd= 134% Fe = 135% Pb = 65% V = 185%		Qualify associated positive Sb, As, Fe and V and positive and ND Pb sample results as estimated (J).	Associated Samples – J18M64, J18M65, J18M66, J18M67, J18M68, J18M69, J18M70, J18M71, J18M71-A, J18MP2. Impacted samples include: Sb – J18M65, J18M67, J18M68, J18M69, J18M70, J18M71 As –all assoc. samples Pb - all assoc. samples Fe – all assoc. samples V - all assoc. samples

SDG K1583 - Metals QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1583	**W&C Project No.:**222007
Medium: Sediments		**Analytes:** Metals
Samples: J18L09, J18L10, J18L11, J18L12, J18L13, J18L19, J18L20, J18L21, J18L22, J18L23, J18L24, J18M59, J18M60, J18M61, J18M62, J18M63, J18M64, J18M65, J18M66, J18M67, J18M68, J18M69, J18M70, J18M71, J18M71-A, J18MP2		

Laboratory: Lionville	**Date Data Assessment Completed:** 02/23/2010 **Complete By:** RDD	**Sample Collection Date:** 04/06/2009 and 04/07/2009	**Sample Analysis Date:** 04/29/2009 Hg; 04/22/2009 Hg; 05/082009 others; 05/12/2009 others

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Matrix Spikes					
4/22/2009 Hg Sample ID: J18M68	No	Hg = 45%	J	Qualify positive and ND sample results as estimated (J).	J18M68, J18M69, J18M70, J18M71-A, J18MP2, J18M71
4/29/2009 Hg Sample ID: J18L09	Yes	None	-	No action	
05/08/2009 other metals Sample ID: J18M63	No	Sb = 43%	J	Qualify positive and ND sample results as estimated (J).	Applies to associated samples - J18L09, J18L10, J18L11, J18L12, J18L13, J18L19, J18L20, J18L21, J18L22, J18L23, J18L24, J18M59, J18M60, J18M61, J18M62, J18M63
05/12/2009 other metals Sample ID:J18M71	No	Sb = 39% Mg = 66%	J	Qualify positive and ND sample results as estimated (J).	Applies to associated samples - J18M64, J18M65, J18M66, J18M67, J18M68, J18M69, J18M70, J18M71, J18M71-A, J18MP2
Lab Duplicates					
4/22/2009 Hg Sample ID: J18M68	No	Hg = 40%	J	Qualify positive sample results as estimated (J).	All associated samples – J18M68, J18M69, J18M70, J18M71-A, J18MP2, J18M71
4/29/2009 Hg	Yes	None	-	No action	

SDG K1583 - Metals QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1583	**W&C Project No.:**222007
Medium: Sediments		**Analytes:** Metals

Samples: J18L09, J18L10, J18L11, J18L12, J18L13, J18L19, J18L20, J18L21, J18L22, J18L23, J18L24, J18M59, J18M60, J18M61, J18M62, J18M63, J18M64, J18M65, J18M66, J18M67, J18M68, J18M69, J18M70, J18M71, J18M71-A, J18MP2

Laboratory: Lionville	**Date Data Assessment Completed:** 02/23/2010 **Complete By:** RDD	**Sample Collection Date:** 04/06/2009 and 04/07/2009	**Sample Analysis Date:** 04/29/2009 Hg; 04/22/2009 Hg; 05/082009 others; 05/12/2009 others

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Sample ID: J18L09					
05/08/2009 other metals Sample ID:J18M63	Yes	None	-	No action	
05/12/2009 other metals Sample ID: J18M71	Yes	None	-	No action	
Field Duplicate Sample ID:	Not collected	None	-		
QC Summary					
Validity of Data	Not all QC met but none of the data were rejected.				

Additional Notes: No action taken with respect to Tl LCS result of 0% recovery, since spike level is just above the IDL.

SDG K1583 - Radionuclides QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1583	**W&C Project No.:**222007	
Medium: Sediments		**Analytes:** Gamma scan, C_{14}, Sr_{90}, Tc_{99}, and Isotopic Th, U, Pu	
Samples: J18M61, J18M62, J18M63, J18M64, J18M65, J18M66, J18M67, J18M68, J18M69, J18M70, J18M71, J18M71-A, J18MP2			
Laboratory: Eberline	**Date Data Assessment Completed:** 02/23/2010 **Complete By:** RDD	**Sample Collection Date:** 04/06/2009	**Sample Analysis Date:** several

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No action	
Detection Limits	Yes	None	-	No action	
Blanks					
Method Blanks	Yes	None	-	No action	
Other QC Results					
LCS Results	No	Uranium 235 = 124%	-	Qualify positive sample results as estimated (J).	All samples. No impacts since all ND for this isotope.
Matrix Spike – C_{14}	No	No MS was analyzed	J	Qualify positive and ND sample results as estimated (J).	All samples.
Tracer Results	Yes	None	-	No action.	
Lab Duplicates Sample ID:J18M61	Yes	None	-	No action.	
Field Duplicate Sample ID:	Not collected				
QC Summary					
Validity of Data	Not all QC parameters were met, but no data were rejected.				
Additional Notes:					

SDG K1583 - Radionuclides QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1583	**W&C Project No.:**222007
Medium: Sediments		**Analytes:** Gamma scan, C_{14}, Sr_{90}, Tc_{99}, and Isotopic Th, U, Pu,
Samples: J18L09, J18L10, J18L11, J18L12, J18L13, J18L19, J18L20, J18L21, J18L22, J18L23, J18L24, J18M59, J18M60		

Laboratory: Eberline	**Date Data Assessment Completed:** 02/23/2010 **Complete By:** RDD	**Sample Collection Date:** 04/06/2009 and 04/07/2009	**Sample Analysis Date:** several

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No action	
Detection Limits	Yes	None	-	No action	
Blanks					
Method Blanks	Yes	None	-	No action	
Other QC Results					
LCS Results	Yes	None	-	No action	
Matrix Spike – C_{14}	No	No MS was analyzed	J	Qualify positive and ND sample results as estimated (J).	All samples.
Tracer Results	Yes	None	-	No action	
Lab Duplicates Sample ID:J18L09	Yes	None	-	No action.	
Field Duplicate Sample ID:	Not collected				
QC Summary					
Validity of Data	Not all QC parameters were met, but no data were rejected.				
Additional Notes:					

SDG K1583 - TOC QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1583	**W&C Project No.:**222007	
Medium: Sediments		**Analytes:** TOC	
Samples: J18L09, J18L10, J18L11, J18L12, J18L13, J18L19, J18L20, J18L21, J18L22, J18L23, J18L24, J18M59, J18M60, J18M61, J18M62, J18M63, J18M64, J18M65, J18M66, J18M67, J18M68, J18M69, J18M70, J18M71, J18M71-A, J18MP2			
Laboratory: Lionville	**Date Data Assessment Completed:** 02/23/2010 **Complete By:** RDD	**Sample Collection Date:** 04/06/2009 and 04/07/2009	**Sample Analysis Date:**04/28/2009 04/29/2009

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No action.	
Detection Limit	Yes	None	-	No action	
Blanks					
Method Blank				Qualify positive sample results < 5x blank concentration as ND (UJ).	All samples. No impact for either date since all results > 5x blank concentration.
04/28/2009	No	TOC = 9.08 mg/kg	-		
04/29/2009	No	TOC = 9.72 mg/kg	-		
Other QC					
LCS Results					
04/28/2009	Yes	None	-	No action	
04/29/2009	Yes	None	-	No action	
Matrix Spikes Sample ID: J18L10	Yes	None	-	No action	
Lab Duplicate Sample ID: J18L10	Yes	None	-	No action	
Field Duplicate Sample ID:	Not collected				
QC Summary					
Validity of Data	Not all QC met but no data were rejected.				
Additional Notes:					

B.82 SDG K1584

SDG K1584 - VOC QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1584	**W&C Project No.:**222007	
Medium: Sediments		**Analytes:** VOA	
Samples: J18L31, J18L51, J18LF7			
Laboratory: Lionville	**Date Data Assessment Completed:** 02/24/2010 **Complete By:** RDD	**Sample Collection Date:** 04/07/2009 and 04/08/2009	**Sample Analysis Date:**04/15/2009

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No action	
Detection Limits	No	Detection limit for 1,1,1-trichloroethane exceeds limit in work plan	-	No action	
Blanks					
Blanks – Method	Yes	None	-	No action	
Equipment Blank Sample ID:	Not collected				
Trip Blank Sample ID: J18LF7	No	2-Butanone = 47.3 mg/kg Acetone = 13.3 mg/kg $MeCl_2$ = 3.42 mg/kg	-	No action based on guidance.	
Other QC Results					
Surrogate Recoveries	Yes	None	-	No action	
LCS Results	No	2-Butanone = 157% Acetone = 250%	J	Qualify positive sample results as estimated (J).	All samples. Impacts include the following: Acetone – All samples
Matrix Spikes Sample ID:J18L31	No	2-Butanone =217%/208% Acetone = 243%/249%	J	Qualify positive sample results as estimated (J).	All samples. Impacts include the following: Acetone – All samples
Lab Duplicates	Not analyzed				
Field Duplicates Sample ID:	Not collected				
Summary					
Validity of Data	Not all QC met, but no data were rejected.				
Additional Notes: Trip blank results indicate potential false positive acetone and methylene chloride sample concentrations.					

SDG K1584 - SVOC QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1584	**W&C Project No.:**222007	
Medium: Sediments		**Analytes:** SVOCs	
Samples: J18L31, J18L51			
Laboratory: Lionville	**Date Data Assessment Completed:** 02/24/2010 **Complete By:** RDD	**Sample Collection Date:** 04/06/2009 and 04/07/2009	**Sample Analysis Date:** 04/17/2009 extr 05/05/2009 anal

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No action.	
Detection Limits	No	Hexachlorobenzene, 2-chloroaniline, 2-nitroaniline, 2,4-dinitrophenol, 4-nitrophenol, 4-nitroaniline, pentachlorophenol, 3,3'-dichlorobenzidine have RDLs that exceed those specified in work plan.	-	No action	
Blanks					
Method Blanks	Yes	None	-	No action	
Equipment Blank Sample ID:	Not collected				
Other QC					
Surrogate Recoveries	Yes	None	-	No action	
LCS Results	No	4-Chloroaniline = 28%	J	Qualify positive and ND sample results as estimated (J).	All samples.
Matrix Spikes Sample ID:J18L31	No	**Non-Compliant Recoveries** 2-Chlorophenol =45%/66% 1,3-Dichlorobenzene = 62%/48% 1,4-Dichlorobenzene = 62%/49% 2,4,6-Trichlorophenol =62%/47% 2,4-Dinitrophenol = 49%/47% 2-Nitrophenol = 52%/47% Hexachloroethane = 53%38% 2-Nitrophenol = 0%/47% 3,3'-Dichlorobenzidine= 0%/0% 1,2,4-Trichlorobenzene = 58%/48% 4-Chloroaniline = 14%/8%	J	Qualify positive and ND sample results as estimated (J)	All samples.

SDG K1584 - SVOC QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1584	**W&C Project No.:**222007	
Medium: Sediments		**Analytes:** SVOCs	
Samples: J18L31, J18L51			
Laboratory: Lionville	**Date Data Assessment Completed:** 02/24/2010 **Complete By:** RDD	**Sample Collection Date:** 04/06/2009 and 04/07/2009	**Sample Analysis Date:** 04/17/2009 extr 05/05/2009 anal

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
		Carbazole = 61%/47% Hexachlorocyclopentadiene = 0%/0% 3-Nitroaniline = 31%/32% 4-Nitroaniline =53%/40% 4-NItrophenol = 13%/0% N-nitroso-di-n-propylamine = 93%/0% Pentachlorophenol = 47%/59% **Non-Compliant RPDs** Hexachloroethane= 31% Carbazole =61% 4-Chloroaniline = 59%			
Lab Duplicates Sample ID:	Not analyzed				
Field Duplicates Sample ID:	Not collected				
Summary					
Validity of Data	Not all QC met, but no data were rejected.				
Additional Notes:					

SDG K1584 - PCB QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1584	**W&C Project No.:**222007	
Medium: Sediments		**Analytes:** PCBs	
Samples: J18L31, J18L51			
Laboratory: Lionville	**Date Data Assessment Completed:** 02/24/2010 **Complete By:** RDD	**Sample Collection Date:** 04/07/2009 and 04/08/2009	**Sample Analysis Date:** 04/17/2009 extr 04/22/2009 anal

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No action	
Detection Limits	Yes	None	-	No action	
Blanks					
Method Blank	Yes	None	-	No action	
Equipment Blank Sample ID:	Not collected				
Other QC Results					
Surrogate Recoveries	Yes	None	-	No action	
LCS Results	Yes	None	-	No action	
Matrix Spikes Sample ID:J18L31	Yes	None	-	No action	
Lab Duplicates Sample ID:	Not analyzed				
Field Duplicates Sample ID:	Not collected				
Summary					
Validity of Data	All QC parameters were met.				
Additional Notes:					

SDG K1584 - Pesticides QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1584	**W&C Project No.:**222007
Medium: Sediments		**Analytes:** Pesticides
Samples: J18L31, J18L51		

Laboratory: Lionville	**Date Data Assessment Completed:** 02/24/2009 **Complete By:** RDD	**Sample Collection Date:** 04/07/2009 and 04/08/2009	**Sample Analysis Date:** 04/17/2009 extr 04/21/2009 anal

QC Parameter	**All in Spec.?**	**Non-Compliant Results**	**Flag**	**Action/ Notes**	**Associated Samples**
Holding Times	Yes	None	-	No action	
Detection Limits	Yes	None	-	No action	
Blanks					
Method Blank	Yes	None	-	No action	
Equipment Blank	Not collected				
Other QC Results					
Surrogate Recoveries	Yes	None	-	No action	
LCS Results	No	No LCS results for toxaphene	J	Qualify all associated results as estimated (J)	Impacts to all samples above.
Matrix Spikes Sample ID:J18L31	Yes	None	-	No action	
Lab Duplicates	Not analyzed				
Field Duplicate Sample ID:	Not collected				
QC Summary					
Validity of Data	All QC parameters were met.				
Additional Notes:					

SDG K1584 - Metals QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1584	**W&C Project No.:**222007	
Medium: Sediments		**Analytes:** Metals	
Samples: J18L31, J18L32, J18L33, J18L34, J18L35, J18L36, J18L51, J18L52, J18L53, J18M58, J18M66-A, J18M67-A, J18M68-A, J18M69-A, J18M70-A, J18MY2, J18MY3, J18MY8, J18MY9, J18N00			
Laboratory: Lionville	**Date Data Assessment Completed:** 02/24/2010 **Complete By:** RDD	**Sample Collection Date:** 04/08/2009, 04/09/2009 and 04/07/2009	**Sample Analysis Date:** 05/04/2009 Hg 05/12/2009 others

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No action	
Detection Limits	No	Ca, Fe, P, Zn detection limits exceed specifications in work plan	-	No action	
Blanks					
Preparation Blank 05/04/2009 Hg	Yes	None	-	No action	
05/12/2009	No	Ca = 6.88 mg/kg Pb = 1.08 mg/kg Si = 2.28 mg/kg Sn =0.836 mg/kg	UJ	Qualify positive sample results < 5x the blank concentration as ND (UJ).	All samples. Impacts to the following samples Pb – J18L33, J18MY2 Sn – J18N00, J18M67-A
Equipment Blank Sample ID:	Not collected				
Field Blank[1] Sample ID: J18N25	No	Titanium = 1.25 ug/L B	-	No action based on guidance	
Other QC Results					
LCS Results[2]					
4/29/2009 Hg	Yes	None	-	No action	
5/12/2009		Sb = 186% As = 180% Fe = 199% Pb = 56% V = 186%	J	Qualify associated positive Sb, As, Fe and V and positive and ND Pb sample results as estimated (J).	Impacts to the following samples: As – all assoc. samples above Fe – all assoc. samples above Pb – all assoc. samples above V – all assoc. samples above

SDG K1584 - Metals QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1584	**W&C Project No.:**222007	
Medium: Sediments		**Analytes:** Metals	
Samples: J18L31, J18L32, J18L33, J18L34, J18L35, J18L36, J18L51, J18L52, J18L53, J18M58, J18M66-A, J18M67-A, J18M68-A, J18M69-A, J18M70-A, J18MY2, J18MY3, J18MY8, J18MY9, J18N00			
Laboratory: Lionville	**Date Data Assessment Completed:** 02/24/2010 **Complete By:** RDD	**Sample Collection Date:** 04/08/2009, 04/09/2009 and 04/07/2009	**Sample Analysis Date:** 05/04/2009 Hg 05/12/2009 others

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Matrix Spikes					
4/29/2009 Hg Sample ID: J18L31	Yes	None	-	No action	
05/12/2009 other metals Sample ID:J18L31	No	Sb = 39% Ca = 135%	J	Qualify positive and ND Sb and positive Ca sample results as estimated (J).	All samples: Impacts to the following samples: Sb – All samples Ca – All samples
Lab Duplicates					
4/29/2009 Hg Sample ID: J18L31	Yes	None	-	No action	
05/12/2009 other metals Sample ID: J18N00	Yes	None	-	No action	
Field Duplicate Sample ID:	Not collected				
QC Summary					
Validity of Data	Not all QC met but none of the data were rejected.				

Additional Notes:
1 – Field ambient blank from SDG K1598. Associated samples are “all BDC sediments” per Integral tracking sheet.
2 – No action taken with respect to Tl LCS result of 0% recovery, since spike level is just above the IDL.

SDG K1584 - Radionuclides QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1584	**W&C Project No.:**222007	
Medium: Sediments		**Analytes:** Gamma scan, C_{14}, Sr_{90}, Tc_{99}, and Isotopic Th, U, Pu,	
Samples: J18M66-A, J18M67-A, J18M68-A, J18M69-A, J18M70-A, J18MY2, J18MY3, J18MY8, J18MY9, J18N00			
Laboratory: Eberline	**Date Data Assessment Completed:** 02/24/2010 **Complete By:** RDD	**Sample Collection Date:** 04/08/2009	**Sample Analysis Date:** 05-06/2009

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No action	
Detection Limits	Yes	None	-	No action	
Blanks					
Method Blanks	Yes	None	-	No action	
Other QC Results					
LCS Results	Yes	None	-	No action	
Matrix Spike – C_{14}	No	No MS was analyzed	J	Qualify positive and ND sample results as estimated (J).	All samples
Tracer Results	Yes	None	-	No action	
Lab Duplicates Sample ID:J18M66-A	Yes	None	-	No action	
Field Duplicate Sample ID:	Not collected				
QC Summary					
Validity of Data	Not all QC parameters were met, but no data were rejected.				
Additional Notes:					

SDG K1584 - Radionuclides QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1584	**W&C Project No.:**222007	
Medium: Sediments		**Analytes:** Gamma scan, C_{14}, Sr_{90}, Tc_{99}, and Isotopic Th, U, Pu,	
Samples: J18L31, J18L32, J18L33, J18L34, J18L35, J18L36, J18L51, J18L52, J18L53, J18M58			
Laboratory: Eberline	**Date Data Assessment Completed:** 02/24/2010 **Complete By:** RDD	**Sample Collection Date:** 04/07/2009 and 04/08/2009	**Sample Analysis Date:** 05-06/2009

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No action	
Detection Limits	Yes	None	-	No action	
Blanks					
Method Blanks	Yes	None	-	No action	
Other QC Results					
LCS Results	Yes	None	-	No action	
Matrix Spike – C_{14}	No	No MS was analyzed	J	Qualify positive and ND sample results as estimated (J).	All samples.
Tracer Results	Yes	None	-	No action	
Lab Duplicates Sample ID:J18L31	Yes	None	-	No action	
Field Duplicate Sample ID:	Not collected				
QC Summary					
Validity of Data	Not all QC parameters were met, but no data were rejected.				
Additional Notes:					

SDG K1584 - TOC QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1584	**W&C Project No.:**222007	
Medium: Sediments		**Analytes:** TOC	
Samples: J18L31, J18L32, J18L33, J18L34, J18L35, J18L36, J18L51, J18L52, J18L53, J18M58, J18M66-A, J18M67-A, J18M68-A, J18M69-A, J18M70-A, J18MY2, J18MY3, J18MY8, J18MY9, J18N00			
Laboratory: Lionville	**Date Data Assessment Completed:** 02/24/2010 **Complete By:** RDD	**Sample Collection Date:** 04/08/2009, 04/09/2009 and 04/07/2009	**Sample Analysis Date:** 04/29/2009

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No action.	
Detection Limit	Yes	None	-	No action	
Blanks					
Method Blank 04/29/2009	No	TOC = 9.72 mg/kg	-	Qualify positive sample results < 5x blank concentration as ND (UJ).	All samples. No impact since all results > 5x blank concentration.
Other QC					
LCS Results 04/29/2009	Yes	None	-	No action	
Matrix Spikes Sample ID: J18L36	Yes	None	-	No action	
Lab Duplicate Sample ID: J18L36	Yes	None	-	No action	
Field Duplicate Sample ID:	Not collected				
QC Summary					
Validity of Data	Not all QC met but no data were rejected.				
Additional Notes:					

B.83 SDG K1663

SDG K1663 - Pesticides QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1663	**W&C Project No.:**222007
Medium: Sediment		**Analytes:** Pesticides
Samples: J18X05, J18X06, J18X07, J18X08, J18X09, J18X10, J18X11, J18X12		

Laboratory: Lionville	**Date Data Assessment Completed:** 02/04/2010 **Complete By:** RDD	**Sample Collection Date:** 6/08/2009	**Sample Analysis Date:** 6/18/2009; 6/23/2009

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No action	
Detection Limits	Yes	None	-	No action	
Blanks					
Method Blank	Yes	None	-	No action	
Equipment Blank Sample ID:	Not collected				
Other QC Results					
Surrogate Recoveries	Yes	None	-	No action	
LCS Results	No	No LCS results for toxaphene	J	Qualify all associated results as estimated (J)	Impacts to all samples above.
Matrix Spikes Sample ID:	Yes	None	-	No action	
Lab Duplicates Sample ID:	Not analyzed				
Field Duplicate Sample ID:	Not collected				
QC Summary					
Validity of Data	Yes	None of the data were rejected.			
Additional Notes:					

B.84 SDG K1665

SDG K1665 - SVOC QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1665	**W&C Project No.:**222007
Medium: Sediment		**Analytes:** SVOCs
Samples: J18X13, J18X14, J18X15, J18X16, J18X17		

Laboratory: Lionville	**Date Data Assessment Completed:** 2/4/2009 **Complete By:** RDD	**Sample Collection Date:** 6/09/2009	**Sample Analysis Date:** 6/23/2009; 6/28/2009

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No action	
Detection Limits	No	Samples were diluted for interferences present in the matrix which resulted in elevated detection limits.	-	No action	
Blanks					
Method Blank	Yes	None	-	No action	
Equipment Blank Sample ID:	Not collected				
Other QC Results					
Surrogate Recoveries	Yes	None	-	No action	
LCS Results	No	2,4-Dinitrophenol = 49% 3-Nitroaniline = 42% 4-Chloroaniline = 13% Pentachlorophenol = 48%	J	Qualify positive and ND results as estimated (J) for associated samples above.	All samples
Matrix Spikes Sample ID: J18X13	No	**Non-compliant RPDs:** 1,2,4-trichlorobenzene 1,2-Dichlorobenzene 1,3-Dichlorobenzene 1,4-Dichlorobenzene 2,4,5-Trichlorophenol 2,4,6-Trichlorophenol 2,4-Dimethylphenol 2,4-Dinitrotoluene 2,6-Dinitrotoluene 3-Nitroaniline 4,6-Dinitro-2-Methylphenol 4-Bromophenyl Phenyl Ether 4-Chloro-3-methylphenol 4-Chloroaniline 4-Chlorophenyl Phenyl Ether	J	Qualify positive and non-detect results as estimated (J) for all compounds with non-compliant RPDs and recoveries.	All samples

SDG K1665 - SVOC QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1665	**W&C Project No.:**222007
Medium: Sediment		**Analytes:** SVOCs
Samples: J18X13, J18X14, J18X15, J18X16, J18X17		

Laboratory: Lionville	**Date Data Assessment Completed:** 2/4/2009 **Complete By:** RDD	**Sample Collection Date:** 6/09/2009	**Sample Analysis Date:** 6/23/2009; 6/28/2009

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
		4-Chloroaniline Anthracene Benzo[a]pyrene Benzo[g,h,i]perylene Benzo[k]fluoranthene Bis(2-chloroethyl)ether Bis(2-ethylhexyl)phthalate Butyl Benzyl Phthalate Carbazole Chrysene Dibenz[a,h]antracene Dimethyl phthalate Di-n-butyl phthalate Di-n-octyl phthalate Hexachlorobenzene Hexachlorobutadiene Indeno[1,2,3-cd]pyrene Naphthalene Nitrobenzene N-Nitrosodiphenylamine Phenanthrene Phenol Pyrene **Non-compliant recoveries** 3,3'-dichlorobenzidine =0% 4-chloroaniline =30% Benzo[g,h,i]perylene = 49% Dibenz[a,h]perylene = 47% Hexachlorocyclopentadiene= 14% Indeno[1,2,3-cd]pyrene = 49%			
Lab Duplicates	Not analyzed				
Field Duplicates Sample ID:	Not collected				
Summary					
Validity of Data	Yes	None of the data have been rejected.			
Additional Notes:					

SDG K1665 - Pesticides QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1665	**W&C Project No.:**222007
Medium: Sediment		**Analytes:** Pesticides
Samples: J18X13, J18X14, J18X15, J18X16, J18X17		

Laboratory: Lionville	**Date Data Assessment Completed:** 2/04/2009 **Complete By:** RDD	**Sample Collection Date:** 6/09/2009	**Sample Analysis Date:** 6/23/2009

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No action	
Detection Limits	Yes	None	-	No action	
Blanks					
Method Blank	Yes	None	-	No action	
Equipment Blank Sample ID:	Not collected				
Other QC Results					
Surrogate Recoveries	Yes	None	-	No action	
LCS Results	No	No LCS results for toxaphene	J	Qualify all associated results as estimated (J)	Impacts to all samples above.
Matrix Spikes Sample ID: J18X13	Yes	None	-	No action	
Lab Duplicates Sample ID:	Not analyzed				
Field Duplicate Sample ID:	Not collected				
QC Summary					
Validity of Data	Yes	There were no data rejected.	-	No action	
Additional Notes:					

SDG K1665 - Metals QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1665	**W&C Project No.:**222007
Medium: Sediment		**Analytes:** Metals
Samples: J18X13, J18X14, J18X15, J18X16, J18X17, J18X28, J18X29, J18X30, J18X31, J18X32, J18X46, J18X47, J18X48, J18X49, J18X50, J18X57		

Laboratory: Lionville	**Date Data Assessment Completed:** 2/04/2009 **Complete By:** RDD	**Sample Collection Date:** 6/09/2009	**Sample Analysis Date:** 6/30/2009 6/18/2009 Hg

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No action	
Detection Limits	No	Detection limits for Ca, Fe, and Zn exceeded those specified in the plan.	-	No action	
Blanks					
Preparation Blank	No	Ca = 26.6 mg/kg Mg = 4.09 mg/kg Sn = 1.18 mg/kg U = 3.48 mg/kg	UJ	Qualify positive results < 5x the blank concentration as non-detect (UJ).	All samples. Impacts include the following: Sn – All samples
Equipment Blank Sample ID:	Not collected				
Other QC Results					
LCS Results	No	Si = 237%	J	Qualify positive sample results as estimated (J).	All samples
Matrix Spikes Sample ID: J18X13	No	Sb = 51% Cr = 68% Cu = 68% Mg = 57% V = 56%	J	Qualify positive and ND results as estimated (J).	All samples
Lab Duplicates Sample ID: J18X13	Yes	None	-	No action	
Field Duplicate Sample ID: J18X13	Yes	None	-	No action	
QC Summary					
Validity of Data	Not all QC criteria met, but no data were rejected.				
Additional Notes:					

SDG K1665 - DRO QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA		**SDG No.:** K1665		**W&C Project No.:**222007	
Medium: Sediment				**Analytes:** DRO	
Samples: J18X13					
Laboratory: Lionville	**Date Validation Completed:** 02/04/10 **Complete By:** RDD			**Sample collection:** 6/09/2009	**Sample Analysis Date:** 6/25/2009

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No action	
Surrogates	Yes	None	-	No action	
Blanks					
Method Blank	Yes	None	-	No action	
Equipment Blank Sample ID:	Not collected				
Other QC					
LCS Results	Yes	None	-	No action	
Matrix Spikes Sample ID:	Yes	None	-	No action	
Lab Duplicates Sample ID:	Not analyzed				
Field Duplicate Sample ID:	Not collected				
QC Summary					
Validity of Data	All QC criteria met.				
Additional Notes:					

B.85 SDG K1667

SDG K1667 - SVOC QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1667	**W&C Project No.:**222007	
Medium: Sediment		**Analytes:** SVOCs	
Samples: J18X60			
Laboratory: Lionville	**Date Data Assessment Completed:** 02/05/2010 **Complete By:** RDD	**Sample Collection Date:** 6/11/2009	**Sample Analysis Date:** 7/06/2009

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No action	
Detection Limits	No	2,4-dinitrophenol, 2-nitroaniline, 3-nitroaniline, 4-nitroaniline, 4-nitrophenol, pentachlorophenol all had reporting limits above those specified in the work plan.	-	No action based on criteria in references.	
Blanks					
Method Blanks	Yes	None	-	No action	
Laboratory Blank	Not collected				
Other QC					
Surrogate Recoveries	No	2,4,6-tribromophenol = 17%	-	No action since only one surrogate out of spec.	J18X60
LCS Results	No	Hexachlorocyclopentadiene = 35% 4-Chloroaniline = 39%	J	Qualify positive and ND results as estimated (J).	J18X60
Matrix Spikes Sample ID: J18X60	No	**Non-compliant recoveries** 2,4,6-trichlorophenol = 27%/25% 3,3'-dichlorobenzidine = 43%/23% 4-chloroaniline = 38%/21% Hexachlorocyclopentadiene = 48% 2,4,5-trichlorophenol = 25%/47% 2,4-Dimethylphenol = 48% Hexachlorocyclopentadiene = 36% **Non-compliant RPDs** 2,4-dimethylphenol = 31%	J	Qualify positive and ND results as estimated (J).	J18X60

SDG K1667 - SVOC QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1667	**W&C Project No.:**222007	
Medium: Sediment		**Analytes:** SVOCs	
Samples: J18X60			
Laboratory: Lionville	**Date Data Assessment Completed:** 02/05/2010 **Complete By:** RDD	**Sample Collection Date:** 6/11/2009	**Sample Analysis Date:** 7/06/2009

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
		3,3'-Dichlorobenzidine=62% 3-Nitroaniline = 39% 4-Chloroaniline = 57% Benzo[b]fluoranthene = 32% Benzo[g,h,i]fluoranthene = 37% Dibenz[a,h]anthracene =34% Indeno[1,2,3-cd]pyrene = 33%			
Lab Duplicates Sample ID:	Not analyzed				
Field Duplicates Sample ID:	Not collected				
Summary					
Validity of Data	Not all QC criteria were met, but none of the data was rejected.				
Additional Notes: Sample tracking sheet indicates that the only sample in SDG K1667, J18X60, is an equipment blank					

SDG K1667 - Pesticides QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1667	**W&C Project No.:**222007
Medium: Sediment		**Analytes:** Pesticides
Samples: J18X60		

Laboratory: Lionville	**Date Data Assessment Completed:** 02/05/2010 **Complete By:** RDD	**Sample Collection Date:** 6/11/2009	**Sample Analysis Date:** 6/17/2009

QC Parameter	**All in Spec.?**	**Non-Compliant Results**	**Flag**	**Action/ Notes**	**Associated Samples**
Holding Times	Yes	None	-	No action	
Detection Limits	Yes	None	-	No action	
Blanks					
Method Blank	Yes	None	-	No action	
Equipment Blank Sample ID:	Not collected				
Other QC Results					
Surrogate Recoveries	Yes	None	-	No action	
LCS Results	No	No LCS results for toxaphene	J	Qualify all associated results as estimated (J)	Impacts to all samples above.
Matrix Spikes Sample ID: J17V94	Yes	None	-	No action	
Lab Duplicates Sample ID:	Not analyzed				
Field Duplicate Sample ID:	Not collected				
QC Summary					
Validity of Data	Yes			None of the data were rejected.	
Additional Notes: Sample tracking sheet indicates that the only sample in SDG K1667, J18X60, is an equipment blank.					

SDG K1667 - Metals QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1667	**W&C Project No.:**222007
Medium: Sediment		**Analytes:** Metals
Samples: J18X23, J18X24, J18X25, J18X26, J18X27, J18X56, J18X60		

Laboratory: Lionville	**Date Data Assessment Completed:** 02/05/2010 **Complete By:** RDD	**Sample Collection Date:** 6/10/2009	**Sample Analysis Date:** 6/30/2009

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No action	
Detection Limits	No	Detection limits of Ca, Fe, P and Zn above limits specified in work plan.	-	No action	
Blanks					
Preparation Blank	No	Ca = 5.4 mg/kg Mg = 3.57 mg/kg Si = 1.7 mg/kg Sn = 1.02 mg/kg U = 3.05 mg/kg	UJ	Qualify positive results < 5x the blank concentration as ND (UJ).	All samples. Impacts the following samples: Sn –All samples U – J18X23, J18X56, J18X60
Equipment Blank Sample ID: J18X60	No	Al = 188 mg/kg Ba = 2.08 mg/kg Ca = 48 mg/kg Fe = 219 mg/kg Pb = 0.569 mg/kg Mg = 28.8 mg/kg Mn = 4.7 mg/kg P = 7.51 mg/kg K = 34.2 mg/kg Si = 186 mg/kg Sr = 0.594 mg/kg Sn = 1.28 mg/kg U = 3.67 mg/kg V = 0.245 mg/kg Zn = 0.967 mg/kg	-	No action based on guidance.	
Other QC Results					
LCS Results	No	Si = 56%	J	Qualify positive and ND results as estimated (J).	All samples.
Matrix Spikes Sample ID: J18X23	No	Sb = 49%	J	Qualify positive and ND results as estimated (J).	All samples.
Lab Duplicates Sample ID:	Yes	None	-	No action	

SDG K1667 - Metals QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1667	**W&C Project No.:**222007
Medium: Sediment		**Analytes:** Metals
Samples: J18X23, J18X24, J18X25, J18X26, J18X27, J18X56, J18X60		

Laboratory: Lionville	**Date Data Assessment Completed:** 02/05/2010 **Complete By:** RDD	**Sample Collection Date:** 6/10/2009	**Sample Analysis Date:** 6/30/2009

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Field Duplicate Sample ID: J18X56/J18X23	Yes	None	-	No action	
QC Summary					
Validity of Data	No, but no rejected data.	None of the data were rejected.			
Additional Notes: Equipment blank results indicate potential carry over concentrations of several elements into samples from decontamination procedures.					

SDG K1667 - DRO QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1667		**W&C Project No.:**222007
Medium: Sediment			**Analytes:** DRO/Motor Oil
Samples: J18X60			
Laboratory: Lionville	**Date Assessment Completed:** 02/05/2010 **Complete By:** RDD	**Sample collection Date:** 6/11/2009	**Sample Analysis Date:** 7/01/2009

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No action	
Surrogates	No	p-trephenyl recovery = 38%	J	Qualify positive and ND results as estimated (J).	J18X60
Blanks					
Method Blank	Yes	None	-	No action	
Equipment Blank Sample ID:	Not collected				
Other QC					
LCS Results	No	DRO = 69%	J	Qualify positive and ND results as estimated.	J18X60
Matrix Spikes Sample ID: J17V94	Yes	None	-	No action	
Lab Duplicates Sample ID:	Not analyzed				
Field Duplicate Sample ID:	Not collected				
QC Summary					
Validity of Data	No, but none of the data rejected.			No data were rejected.	
Additional Notes: Sample tracking sheet indicates that the only sample in SDG K1667, J18X60, is an equipment blank.					

APPENDIX C

SOIL DATA QUALITY ASSESSMENT WORKSHEETS

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APPENDIX C
SOIL DATA QUALITY ASSESSMENT WORKSHEETS

C.1 SDG K1551

SDG K1551 – SVOC QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1551	**W&C Project No.:**222007	
Medium: Soil		**Analytes:** SVOCs	
Samples: J189X0**,** J189X1, J189X2, J189X3, J189X4, J189X5, J189X6, J189X7, J189X8, J189X9, J18HY5			
Laboratory: Lionville	**Date Data Assessment Completed:** 03/03/2010 **Complete By:** RDD	**Sample Collection Date:** 02/25/2009 02/26/2009	**Sample Analysis Date:** 03/10/2009 extr; 03/17/2009 anal; 03/19/2009 anal

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No action	
Detection Limits	No	Hexachlorobenzene, 2-chloroaniline, 2-nitroaniline, 2,4-dinitrophenol, 4-nitrophenol, 4-nitroaniline, pentachlorophenol, 3,3’-dichlorobenzidine have RDLs that exceed those specified in work plan.	-	No action	
Blanks					
Method Blanks	Yes	None	-	No action	
Equipment Blank Sample ID:J18HY5	Yes	None			
Other QC					
Surrogate Recoveries	No	J189X4, J189X5 2,4,6-tribromophenol = 0%	R	Qualify ND sample results of associated compounds as rejected.	J189X4, J189X5 Associated compounds: 2,4-dichlorophenol, 2,4,6-trichlorophenol, 2,4,5-trichlorophenol, pentachlorophenol, bis(2-chloroethyl)ether, bis(2-chloroisopropyl)ether, bis(2-chloroeithoxy)methane, 4-chlorophenyl phenyl ether, 4-bromophenyl phenyl ether
LCS Results	Yes	None	-	No action.	

SDG K1551 – SVOC QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1551	**W&C Project No.:**222007	
Medium: Soil		**Analytes:** SVOCs	
Samples: J189X0**,** J189X1, J189X2, J189X3, J189X4, J189X5, J189X6, J189X7, J189X8, J189X9, J18HY5			
Laboratory: Lionville	**Date Data Assessment Completed:** 03/03/2010 **Complete By:** RDD	**Sample Collection Date:** 02/25/2009 02/26/2009	**Sample Analysis Date:** 03/10/2009 extr; 03/17/2009 anal; 03/19/2009 anal

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Matrix Spikes Sample ID:J189X0	No	**Non-Compliant Recoveries** 4-Chloroaniline= 52%/24% 4-Nitrophenol = 0%/0% Pentachlorophenol = 0%/0% 3,3'-Dichlorbenzidine = 0%/0% 2,4,5-Trichlorophenol = 119%/161% **Non-Compliant RPDs** 1,3-Dichlorobenzene = 39% 1,4-Dichlorobenzene = 34% Hexachloroethane = 39% 4-Chloroaniline = 44% Hexachlorocyclopenadiene =31% 2,4-Dinitrophenol = 35% 3,3'-Dichlorbenzidine = 50%	J	Qualify positive and ND sample results as estimated (J)	All samples
Lab Duplicates Sample ID:	None analyzed				
Field Duplicates Sample ID:	Yes	None	-	No action	
Summary					
Validity of Data	Not all QC met, but no data were rejected.				
Additional Notes: Dry weight results.					

SDG K1551 – PCB QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1551	**W&C Project No.:**222007
Medium: Sediments		**Analytes:** PCBs
Samples: J189X0, J189X1, J189X2, J189X3, J189X4, J189X5, J189X6, J189X7, J189X8, J189X9, J18HY5		

Laboratory: Lionville	**Date Data Assessment Completed:** 03/03/2010 **Complete By:** RDD	**Sample Collection Date:** 02/25/2009 02/26/2009	**Sample Analysis Date:** 03/10/2009 extr 03/18/2009 anal

QC Parameter	**All in Spec.?**	**Non-Compliant Results**	**Flag**	**Action/ Notes**	**Associated Samples**
Holding Times	Yes	None	-	No action	
Detection Limits	Yes	None	-	No action	
Blanks					
Method Blank	Yes	None	-	No action	
Equipment Blank Sample ID: J18HY5	Yes	None			
Other QC Results					
Surrogate Recoveries	Yes	None	-	No action	
LCS Results	Yes	None	-	No action	
Matrix Spikes Sample ID:J189X0	Yes	None	-	No action	
Lab Duplicates Sample ID:	None analyzed				
Field Duplicates Sample ID:	None collected				
Summary					
Validity of Data	All QC parameters were met.				
Additional Notes:					

SDG K1551 – Pesticides QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1551	**W&C Project No.:**222007
Medium: Sediments		**Analytes:** Pesticides
Samples: : J189X0, J189X1, J189X2, J189X3, J189X4, J189X5, J189X6, J189X7, J189X8, J189X9, J18HY5		

Laboratory: Lionville	**Date Data Assessment Completed:** 03/03/2010 **Complete By:** RDD	**Sample Collection Date:** 02/25/2009 02/26/2009	**Sample Analysis Date:** 03/10/2009 extr; 03/18/2009 anal; 03/19/2009 anal

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No action	
Detection Limits	No	RDLs for Endosulfan I, gamma BHC, heptachlor, and heptachlor epoxide exceed specified levels in work plan.	-	No action	
Blanks					
Method Blank	No	Beta BHC = 1.23 ug/kg	UJ	Qualify positive sample results < 5x the blank concentration as ND.	All samples. No impacts since all samples ND for this compound.
Equipment Blank Sample ID: J18HY5	Yes	None			
Other QC Results					
Surrogate Recoveries	No	J189X1 DCB surr recovery > UCL	J	Qualify positive sample results as estimated (J).	J189X1 Impacts detection of Endosulfan II
LCS Results	No	No LCS results for toxaphene	J	Qualify all associated results as estimated (J)	Impacts to all samples above.
Matrix Spikes Sample ID:J189X0	No	Methoxychlor = 184%/192% 4,4'-DDD = 144%/157%	J	Qualify positive sample results as estimated (J).	All samples. Methoxychlor – J189X6 4,4'-DDD - None
Lab Duplicates	None analyzed				
Field Duplicate Sample ID:	None collected	None			
QC Summary					
Validity of Data	No all QC parameters were met, but no data were rejected.				
Additional Notes: Dry weight results.					

SDG K1551 – Metals QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1551	**W&C Project No.:**222007	
Medium: Sediments		**Analytes:** Metals	
Samples: J189X0, J189X1, J189X2, J189X3, J189X4, J189X5, J189X6, J189X7, J189X8, J189X9, J18HY5			
Laboratory: Lionville	**Date Data Assessment Completed:** 03/05/2010 **Complete By:** RDD	**Sample Collection Date:** 02/25/2009 02/26/2009	**Sample Analysis Date:** 03/19/2009 Hg; 03/24/2009 others; 03/25/2009 others

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No action	
Detection Limits	No	Ca, Fe, P, Zn detection limits exceed specifications in work plan	-	No action	
Blanks					
Preparation Blank	No	Be = 0.00503 mg/kg Mo = 0.102 mg/kg Ni = 0.549 mg/kg Sn = 1.02 mg/kg	UJ	Qualify positive sample results < 5x the blank concentration as ND (UJ).	All samples. Impacts to the following samples: Be – J18HY5 Mo –J18HY5, J189X1, J189X3, J189X8 Ni –J18HY5 Sn –J18HY5, J189X5
Equipment Blank Sample ID:J18HY5	No	Al = 176 mg/kg Ba = 1.65 mg/kg Be = 0.0232 mg/kg Ca = 34.4 mg/kg Cr = 0.239 mg/kg Co = 0.047 mg/kg Fe = 191 mg/kg Mg = 23.4 mg/kg Mn = 3.19 mg/kg Mo = 0.0959 mg/kg Ni = 0.455 mg/kg K = 37.7 mg/kg Si=121 mg/kg Sr = 0.478 mg/kg Sn = 0.956 mg/kg Ti = 5.28 mg/kg V = 0.316 mg/kg	-	No action based on guidance.	
Other QC Results					
LCS Results	No	Sb = 189% As = 191% V = 165%	J	Qualify positive sample results as estimated (J).	All samples with the following impacts: Sb –J189X9 As – All samples except J18HY5 V – All samples
Matrix Spikes Sample ID: J189X0	Yes	Sb = 32%	J	Qualify positive and ND sample results as	All samples.

SDG K1551 – Metals QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1551	**W&C Project No.:**222007
Medium: Sediments		**Analytes:** Metals
Samples: J189X0, J189X1, J189X2, J189X3, J189X4, J189X5, J189X6, J189X7, J189X8, J189X9, J18HY5		

Laboratory: Lionville	**Date Data Assessment Completed:** 03/05/2010 **Complete By:** RDD	**Sample Collection Date:** 02/25/2009 02/26/2009	**Sample Analysis Date:** 03/19/2009 Hg; 03/24/2009 others; 03/25/2009 others

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
				estimated (J).	
Lab Duplicates Sample ID:J189X0	Yes	None	-	None	.
Field Duplicate Sample ID:	None collected		-		
QC Summary					
Validity of Data	Not all QC met but none of the data were rejected.				
Additional Notes: No action taken with respect to Tl LCS result of 0% recovery, since spike level is just above the IDL.					

SDG K1551 – Radionuclides QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1551	**W&C Project No.:**222007	
Medium: Soil		**Analytes:** Gamma scan, C_{14}, Sr_{90}, Tc_{99}, and Isotopic Th, U, Pu, Tr.	
Samples: J189X1, J189X2, J189X3, J189X4, J189X5, J189X6, J189X7, J189X8, J189X9, J18JC0			
Laboratory: Eberline	**Date Data Assessment Completed:** 03/03/2010 **Complete By:** RDD	**Sample Collection Date:** 02/25/2009 02/26/2009	**Sample Analysis Date:** several

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No action	
Detection Limits	Yes	None	-	No action	
Blanks					
Method Blanks	Yes	None	-	No action	
Other QC Results					
LCS Results	Yes	None	-	No action	
Matrix Spike – C_{14} and tritium	No	No MS was analyzed	J	Qualify positive and ND sample results as estimated (J).	All samples for C_{14} and tritium
Tracer Results	Yes	None	-	No action	
Lab Duplicates Sample ID:J189X0	Yes	None	-	No action.	
Field Duplicate Sample ID:	Yes	None	-	No action	
QC Summary					
Validity of Data	Not all QC parameters were met, but no data were rejected.				
Additional Notes:					

SDG K1551 – DRO QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1551	**W&C Project No.:**222007
Medium: Sediments		**Analytes:** DRO
Samples: J18HY5		

Laboratory: Lionville	**Date Validation Completed:** 03/05/2010 **Complete By:** RDD	**Sample collection:** 02/25/2009	**Sample Analysis Date:** 03/11/2009 extr 03/24/2009 anal

QC Parameter	**All in Spec.?**	**Non-Compliant Results**	**Flag**	**Action/ Notes**	**Associated Samples**
Holding Times	Yes	None	-	No action	
Surrogates	Yes	None	-	No action.	
Blanks					
Method Blank	No	Motor oil = 4710 mg/kg	UJ	Qualify positive sample results < 5x the blank concentration as ND (UJ).	All samples. Impacts include: Motor Oil – All samples
Equipment Blank Sample ID:J18HY5	No				
Other QC					
LCS Results	Yes	None	-		
Matrix Spikes Sample ID: J18612	Yes	None	-	No action	
Lab Duplicates Sample ID:	None analyzed				
Field Duplicate Sample ID:	None collected		-		
QC Summary					
Validity of Data	Not all QC criteria were met but no data were rejected.				
Additional Notes: This is an equipment blank – associated samples not known.					

SDG K1551 – TOC QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1551	**W&C Project No.:**222007
Medium: Soil		**Analytes:** TOC
Samples: J189X0, J189X1, J189X2, J189X3, J189X4, J189X5, J189X6, J189X7, J189X8, J189X9, J18HY5		

Laboratory: Lionville	**Date Data Assessment Completed:** 03/05/2010 **Complete By:** RDD	**Sample Collection Date:** 02/25/2009 2/26/2009	**Sample Analysis Date:** 03/19/2009

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No action.	
Detection Limit	Yes	None	-	No action	
Blanks					
Method Blank	No	TOC = 6.93 mg/kg	-	Qualify positive results < 5x the blank concentration as ND (UJ).	All samples. No impact since all sample concentrations much greater than 5X blank concentration.
Equipment Blank Sample ID: J18HY5	Yes	None	-	No action	
Other QC					
LCS Results	Yes	None	-	No action	
Matrix Spikes Sample ID: J188F3	Yes	None	-	No action	
Lab Duplicate Sample ID: J189X2	Yes	None	-	No action	
Field Duplicate Sample ID:	None collected				
QC Summary					
Validity of Data	Not all QC met but no data were rejected.				
Additional Notes:					

C.2 SDG K1554

SDG K1554 – SVOC QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA		**SDG No.:** K1554	**W&C Project No.:**222007
Medium: Soil			**Analytes:** SVOCs (1 of 3)
Samples: J18B00, J18B01, J18B02, J18B03, J18B47, J18B48, J18B49, J18B50			
Laboratory: Lionville	**Date Data Assessment Completed:** 03/02/2010 **Complete By:** RDD	**Sample Collection Date:** 02/27/2009 – 03/02/2009	**Sample Extraction Date:** 03/08/2009

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No action	
Detection Limits	No	2,4-Dintrophenol; 2-Nitroaniline; 3-Nitroaniline; 4-Nitroaniline; 4-Nitrophenol; Pentachlorophenol; Hexachlorobenzene; and 3,3'-Dichlorobenzidine all had reporting limits above those specified in the work plan; see also NOTE (1) below	-	No action based on criteria in references	
Blanks					
Method Blanks	No	Bis(2-Ethylhexyl)phthalate (BEHP) = 106 ug/kg	UJ	Qualify positive results less than ten times the blank concentration as non-detected estimated (UJ)	Impacts the following samples: BEHP - J18B01, J18B03, J18B47, J18B48
Equipment Blank Sample ID:	None analyzed				
Other QC					
Surrogate Recoveries	No	Terphenyl-d14 = -3%	J/R	Qualify positive results associated with terphenyl-d14 as estimated (J); qualify non-detected results as rejected (R)	Impacts the following sample: J18B48 Affected analytes: naphthalene, acenaphthylene, acenaphthene, fluorene, phenanthrene, anthracene, fluoranthene, pyrene, benzo(a)anthracene, chrysene, benzo(b)fluoranthene,

SDG K1554 – SVOC QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1554	**W&C Project No.:**222007	
Medium: Soil		**Analytes:** SVOCs (1 of 3)	
Samples: J18B00, J18B01, J18B02, J18B03, J18B47, J18B48, J18B49, J18B50			
Laboratory: Lionville	**Date Data Assessment Completed:** 03/02/2010 **Complete By:** RDD	**Sample Collection Date:** 02/27/2009 – 03/02/2009	**Sample Extraction Date:** 03/08/2009

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
					benzo(k)fluoranthene, benzo(a)pyrene, indeno(1,2,3-c,d)pyrene, benzo(g,h,i)perylene
LCS Results	No	**Non-compliant recoveries:** Dibenz(a,h)anthracene = 151% Hexachlorobenzene = 198% Pentachlorophenol = 47%	J	Qualify positive results for dibenz(a,h)-anthracene and hexachlorobenzene as estimated (J); qualify positive and non-detected results for pentachlorophenol as estimated (J)	Impacts the following samples: Dibenz(a,h)anthracene, hexachlorobenzene – None; all sample results non-detected Pentachlorophenol -All samples
Matrix Spikes Sample ID: J18B48	No	**Non-compliant recoveries:** 1,3-Dichlorobenzene = 48% 1,4-Dichlorobenzene = 49% Hexachloroethane = 49%/42% 4-Chloroaniline = 45%/43% Hexachlorocyclopentadiene = 48%/37% Pentachlorophenol = 15%/19% 2-Nitrophenol = 49% Bis(2-chloroethyl)ether = 47% Bis(2-chloroisopropyl)ether = 47% Isophorone = 45% Naphthalene = 49% Nitrobenzene = 45%	J	Qualify positive and non-detected results as estimated (J)	Impacts the following samples: All samples
Lab Duplicates Sample ID:	None analyzed				
Field Duplicates Sample ID:					

SDG K1554 – SVOC QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1554	**W&C Project No.:**222007	
Medium: Soil		**Analytes:** SVOCs (1 of 3)	
Samples: J18B00, J18B01, J18B02, J18B03, J18B47, J18B48, J18B49, J18B50			
Laboratory: Lionville	**Date Data Assessment Completed:** 03/02/2010 **Complete By:** RDD	**Sample Collection Date:** 02/27/2009 – 03/02/2009	**Sample Extraction Date:** 03/08/2009

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
J18B00/J189W1	Yes	None	-	No action	
J18B49/J189W0	Yes	None	-	No action	
Summary					
Validity of Data	No	Data were rejected for the following analytes in sample J18B48: naphthalene, acenaphthylene, acenaphthene, fluorene, phenanthrene, anthracene, fluoranthene, pyrene, benzo(a)anthracene, chrysene, benzo(b)fluoranthene, benzo(k)fluoranthene, benzo(a)pyrene, indeno(1,2,3-c,d)pyrene, benzo(g,h,i)perylene			
Additional Notes: (1) NOTE: Sample results were reported on a dry weight basis. Sample J18B00 was analyzed at a two-fold dilution due to matrix interference; reporting limits are elevated by a factor of two for sample J18B00.					

SDG K1554 – SVOC QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1554	**W&C Project No.:**222007	
Medium: Soil		**Analytes:** SVOCs (2 of 3)	
Samples: J18B57, J18B58, J18B59, J18B60, J18JC0-A, J189W0, J189W1, J189Y0, J189Y1			
Laboratory: Lionville	**Date Data Assessment Completed:** 03/03/2010 **Complete By:** RDD	**Sample Collection Date:** 02/25/2009 – 03/02/2009	**Sample Extraction Date:** 03/11/2009

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No action	
Detection Limits	No	2,4-Dintrophenol; 2-Nitroaniline; 3-Nitroaniline; 4-Nitroaniline; 4-Nitrophenol; Pentachlorophenol; Hexachlorobenzene; and 3,3'-Dichlorobenzidine all had reporting limits above those specified in the work plan; see also NOTE (1) below	-	No action based on criteria in references	
Blanks					
Method Blanks	Yes	None	-	No action	
Equipment Blank Sample ID:	None analyzed				
Other QC					
Surrogate Recoveries	Yes	None	-	No action	
LCS Results	No	**Non-compliant recoveries:** 1,2,4-Trichlorobenzene = 41% 1,3-Dichlorobenzene = 49% 2,4,5-Trichlorophenol = 6% 2,4,6-Trichlorophenol = 5% 2,4-Dichlorophenol = 24% 2,4-Dimethylphenol = 35% 2,4-Dinitrophenol = 41% 2-Methylnaphthalene = 46% 2-Nitrophenol = 33% 3,3'-Dichlorobenzidine = 21% 3-Nitroaniline = 30% 4-Chloro-3-methylphenol = 49%	J	Qualify positive and non-detected results for affected analytes as estimated (J)	Impacts the following samples: All samples

SDG K1554 – SVOC QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1554	**W&C Project No.:**222007
Medium: Soil		**Analytes:** SVOCs (2 of 3)
Samples: J18B57, J18B58, J18B59, J18B60, J18JC0-A, J189W0, J189W1, J189Y0, J189Y1		

Laboratory: Lionville	**Date Data Assessment Completed:** 03/03/2010 **Complete By:** RDD	**Sample Collection Date:** 02/25/2009 – 03/02/2009	**Sample Extraction Date:** 03/11/2009

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
		4-Chloroaniline = 8% 4-Nitroaniline = 42% 4-Nitrophenol = 0% Hexachlorocyclopentadiene = 40% Isophorone = 44% Naphthalene = 46% Pentachlorophenol = 31% Pyrene = 48%			
Matrix Spikes Sample ID: J18B57	No	**Non-compliant recoveries:** 2,4-Dinitrophenol = 47%/49% 3,3'-Dichlorobenzidine = 46%/47% 4-Chloroaniline = 42%/36% Hexachlorocyclopentadiene = 31%/36% Hexachloroethane = 47% Pentachlorophenol = 21%/22%	J	Qualify positive and non-detected results for affected analytes as estimated (J)	Impacts the following samples: All samples
Lab Duplicates Sample ID:	None analyzed				
Field Duplicates Sample ID:					
J18B00/J189W1	Yes	None	-	No action	
J18B49/J189W0	Yes	None	-	No action	
Summary					
Validity of Data	No, but no data were rejected				

Additional Notes:
(1) NOTE: Sample results were reported on a dry weight basis. Sample J18JC0-A had a 2.0 mL final extract volume and was further diluted by a factor of 3X for analysis, resulting in an effective dilution of 6X; reporting limits are elevated by a factor of six for sample J18JC0-A. Samples J189W1 and J189Y0 were analyzed at two-fold dilutions due to matrix interference; reporting limits are elevated by a factor of two for samples J189W1 and J189Y0.

SDG K1554 – SVOC QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1554	**W&C Project No.:**222007	
Medium: Soil		**Analytes:** SVOCs (3 of 3)	
Samples: J189Y3			
Laboratory: Lionville	**Date Data Assessment Completed:** 03/04/2010 **Complete By:** RDD	**Sample Collection Date:** 03/02/2009	**Sample Extraction Date:** 03/11/2009

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No action	
Detection Limits	No	2,4-Dintrophenol; 2-Nitroaniline; 3-Nitroaniline; 4-Nitroaniline; 4-Nitrophenol; Pentachlorophenol; Hexachlorobenzene; and 3,3'-Dichlorobenzidine all had reporting limits above those specified in the work plan; see also NOTE (1) below	-	No action based on criteria in references	
Blanks					
Method Blanks	Yes	None	-	No action	
Equipment Blank Sample ID:	None analyzed				
Other QC					
Surrogate Recoveries	Yes	None	-	No action	
LCS Results	No	**Non-compliant recoveries:** 3-Nitroaniline = 30% 2,4-Dinitrophenol = 41% 4-Nitrophenol = 0% 4-Nitroaniline = 42% Pentachlorophenol = 31% Pyrene = 48% 3,3-Dichlorobenzidine = 21% 1,3-Dichlorobenzene = 49% Isophorone = 44% 2-Nitrophenol = 33% 2,4-Dimethylphenol = 35% 2,4-Dichlorophenol = 24% 1,2,4-Trichlorobenzene = 41% Naphthalene = 46% 4-Chloroaniline = 8% 4-Chloro-3-methylphenol = 49% 2-Methylnaphthalene = 46% Hexachlorocyclopentadiene = 40% 2,4,6-Trichlorophenol = 5% 2,4,5-Trichlorophenol = 6%	J	Qualify positive and non-detected results as estimated (J)	Impacts the following samples: All samples

SDG K1554 – SVOC QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1554	**W&C Project No.:**222007
Medium: Soil		**Analytes:** SVOCs (3 of 3)
Samples: J189Y3		

Laboratory: Lionville	**Date Data Assessment Completed:** 03/04/2010 **Complete By:** RDD	**Sample Collection Date:** 03/02/2009	**Sample Extraction Date:** 03/11/2009

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Matrix Spikes Sample ID: J189Y3	No	**Non-compliant recoveries:** Hexachloroethane = 49%/43% 4-Chloroaniline = 31%/28% Hexachlorocyclopentadiene = 38%/31% 2,4-Dinitrophenol = 45%/36% Pentachlorophenol = 0%/0% 3,3'-Dichlorobenzidine = 38%/34% 1,3-Dichlorobenzene = 47% 1,4-Dichlorobenzene = 47% Isophorone = 48% 2-Nitrophenol = 49% 1,2,4-Trichlorobenzene = 47% 2,4,6-Trichlorophenol = 46% 3-Nitroaniline = 47% 4-Nitroaniline = 48%	J	Qualify positive and non-detected results as estimated (J)	Impacts the following samples: All samples
Lab Duplicates Sample ID:	None analyzed				
Field Duplicates Sample ID:	None analyzed				
Summary					
Validity of Data	No, but no data were rejected				

Additional Notes:
(1) NOTE: Sample results were reported on a dry weight basis. Sample J189Y3 was analyzed at a two-fold dilution due to matrix interference; reporting limits are elevated by a factor of two for sample J189Y3.

SDG K1554 – PCB QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1554	**W&C Project No.:**222007	
Medium: Soil		**Analytes:** PCBs (1 of 3)	
Samples: J18B00, J18B01, J18B02, J18B03, J18B47, J18B48, J18B49, J18B50			
Laboratory: Lionville	**Date Data Assessment Completed:** 03/02/2010 **Complete By:** RDD	**Sample Collection Date:** 02/27/2009 – 03/02/2009	**Sample Extraction Date:** 03/08/2009 – 03/17/2009

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	No	Sample J18B00 extracted 1 day past HT	J	Qualify positive and non-detected results as estimated (J)	Impacts the following samples: J18B00
Detection Limits	Yes	None	-	No action	
Blanks					
Method Blank	Yes	None	-	No action	
Equipment Blank Sample ID:	None analyzed				
Other QC Results					
Surrogate Recoveries	Yes	None	-	No action	
LCS Results	Yes	None	-	No action	
Matrix Spikes Sample ID: J18B48	Yes	None	-	No action	
Lab Duplicates Sample ID:	None analyzed				
Field Duplicates Sample ID: J18B00/J189W1 J18B49/J189W0	Yes Yes	None None	- -	No action No action	
Summary					
Validity of Data	Yes, no data were rejected				
Additional Notes: NOTE: All sample results were reported on a dry weight basis.					

SDG K1554 – PCB QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1554	**W&C Project No.:**222007
Medium: Soil		**Analytes:** PCBs (2 of 3)
Samples: J18B57, J18B58, J18B59, J18B60, J18JC0-A, J189W0, J189W1, J189Y0, J189Y1		

Laboratory: Lionville	**Date Data Assessment Completed:** 03/03/2010 **Complete By:** RDD	**Sample Collection Date:** 02/25/2009 – 03/02/2009	**Sample Extraction Date:** 03/11/2009

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No action	
Detection Limits	Yes	None	-	No action	
Blanks					
Method Blank	Yes	None	-	No action	
Equipment Blank Sample ID:	None analyzed				
Other QC Results					
Surrogate Recoveries	Yes	None	-	No action	
LCS Results	Yes	None	-	No action	
Matrix Spikes Sample ID: J18B57	Yes	None	-	No action	
Lab Duplicates Sample ID:	None analyzed				
Field Duplicates Sample ID: J18B00/J189W1	Yes	None	-	No action	
J18B49/J189W0	Yes	None	-	No action	
Summary					
Validity of Data	Yes, no data were rejected				

Additional Notes:
NOTE: All sample results were reported on a dry weight basis.

SDG K1554 – PCB QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1554	**W&C Project No.:**222007	
Medium: Soil		**Analytes:** PCBs (3 of 3)	
Samples: J189Y3			
Laboratory: Lionville	**Date Data Assessment Completed:** 03/04/2010 **Complete By:** RDD	**Sample Collection Date:** 03/02/2009	**Sample Extraction Date:** 03/11/2009

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No action	
Detection Limits	Yes	None	-	No action	
Blanks					
Method Blank	Yes	None	-	No action	
Equipment Blank Sample ID:	None analyzed				
Other QC Results					
Surrogate Recoveries	Yes	None	-	No action	
LCS Results	Yes	None	-	No action	
Matrix Spikes Sample ID: J189Y3	Yes	None	-	No action	
Lab Duplicates Sample ID:	None analyzed				
Field Duplicates Sample ID:	None analyzed				
Summary					
Validity of Data	Yes, no data were rejected				
Additional Notes: NOTE: All sample results were reported on a dry weight basis.					

SDG K1554 – Pesticides QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1554	**W&C Project No.:**222007
Medium: Soil		**Analytes:** Pesticides (1 of 3)
Samples: J18B00, J18B01, J18B02, J18B03, J18B47, J18B48, J18B49, J18B50		

Laboratory: Lionville	**Date Data Assessment Completed:** 03/02/2010 **Complete By:** RDD	**Sample Collection Date:** 02/27/2009 – 03/02/2009	**Sample Extraction Date:** 03/08/2009 – 03/17/2009

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	No	J18B00 extracted 1 day past HT	J	Qualify positive and non-detected results as estimated (J)	Impacts the following samples: J18B00
Detection Limits	Yes; see also NOTE (1) below	None	-	No action	
Blanks					
Method Blank Batch L903052	No	Aldrin = 0.367 ug/kg	-	Qualify positive results less than 5X blank concentration as non-detected estimated (UJ)	Impacts the following samples: Aldrin – None; sample results are non-detected
Batch L903141	Yes	None	-	No action	
Equipment Blank Sample ID:	None analyzed				
Other QC Results					
Surrogate Recoveries	Yes	None	-	No action	
LCS Results	No	No LCS results for toxaphene	J	Qualify all associated results as estimated (J)	Impacts to all samples above.
Matrix Spikes Sample ID: J18B48	Yes	None	-	No action	
Lab Duplicates Sample ID:	None analyzed				
Field Duplicate Sample ID:	No	Absolute	-	No action	

SDG K1554 – Pesticides QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1554	**W&C Project No.:**222007	
Medium: Soil		**Analytes:** Pesticides (1 of 3)	
Samples: J18B00, J18B01, J18B02, J18B03, J18B47, J18B48, J18B49, J18B50			
Laboratory: Lionville	**Date Data Assessment Completed:** 03/02/2010 **Complete By:** RDD	**Sample Collection Date:** 02/27/2009 – 03/02/2009	**Sample Extraction Date:** 03/08/2009 – 03/17/2009

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
J18B00/J189W1		differences between results are greater than 2X reporting limit for: 4,4'-DDD 4,4'-DDT Methoxychlor		based on guidance	
J18B49/J189W0	No	Absolute differences between results are greater than 2X reporting limit for: 4,4'-DDT Endrin ketone	-	No action based on guidance	
QC Summary					
Validity of Data	No, but no data were rejected				

Additional Notes:
Sample results were reported on a dry weight basis. All samples were analyzed at four-fold dilutions due to matrix interference; reporting limits are elevated (4X) for all samples.

SDG K1554 – Pesticides QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1554	**W&C Project No.:**222007	
Medium: Soil		**Analytes:** Pesticides (2 of 3)	
Samples: J18B57, J18B58, J18B59, J18B60, J18JC0-A, J189W0, J189W1, J189Y0, J189Y1			
Laboratory: Lionville	**Date Data Assessment Completed:** 03/03/2010 **Complete By:** RDD	**Sample Collection Date:** 02/25/2009 – 03/02/2009	**Sample Extraction Date:** 03/11/2009

QC Parameter	**All in Spec.?**	**Non-Compliant Results**	**Flag**	**Action/ Notes**	**Associated Samples**
Holding Times	Yes	None	-	No action	
Detection Limits	Yes; see also NOTE (1) below	None	-	No action	
Blanks					
Method Blank	Yes	None	-	No action	
Equipment Blank Sample ID:	None analyzed				
Other QC Results					
Surrogate Recoveries	Yes	None	-	No action	
LCS Results	No	No LCS results for toxaphene	J	Qualify all associated results as estimated (J)	Impacts to all samples above.
Matrix Spikes Sample ID: J18B57	Yes	None	-	No action	
Lab Duplicates Sample ID:	None analyzed				
Field Duplicate Sample ID: J18B00/J189W1	No	Absolute differences between results are greater than 2X reporting limits for: 4,4'-DDD 4,4'-DDT Methoxychlor	-	No action based on guidance.	
J18B49/J189W0	No	Abolute differences between results are greater than 2X reporting limits for: 4,4'-DDT Endrin ketone	-	No action based on guidance.	
QC Summary					

SDG K1554 – Pesticides QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1554	**W&C Project No.:**222007
Medium: Soil		**Analytes:** Pesticides (2 of 3)
Samples: J18B57, J18B58, J18B59, J18B60, J18JC0-A, J189W0, J189W1, J189Y0, J189Y1		

Laboratory: Lionville	**Date Data Assessment Completed:** 03/03/2010 **Complete By:** RDD	**Sample Collection Date:** 02/25/2009 – 03/02/2009	**Sample Extraction Date:** 03/11/2009

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Validity of Data	Not all QC parameters in criteria, but no data were rejected.				

Additional Notes:
Sample results were reported on a dry weight basis. All samples except J18JC0-A were analyzed at four-fold dilutions due to matrix interference; reporting limits are elevated (4X) as applicable. Sample J18JC0-A was analyzed at a ten-fold dilution due to matrix interference; RLs were elevated by a factor of 10X.

SDG K1554 – Pesticides QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1554	**W&C Project No.:**222007	
Medium: Soil		**Analytes:** Pesticides (3 of 3)	
Samples: J189Y3			
Laboratory: Lionville	**Date Data Assessment Completed:** 03/03/2010 **Complete By:** RDD	**Sample Collection Date:** 03/02/2009	**Sample Extraction Date:** 03/11/2009

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No action	
Detection Limits	Yes; see also NOTE (1) below	None	-	No action	
Blanks					
Method Blank	Yes	None	-	No action	
Equipment Blank Sample ID:	None analyzed				
Other QC Results					
Surrogate Recoveries	Yes	None	-	No action	
LCS Results	No	No LCS results for toxaphene	J	Qualify all associated results as estimated (J)	Impacts to all samples above.
Matrix Spikes Sample ID: J189Y3	Yes	None	-	No action	
Lab Duplicates Sample ID:	None analyzed				
Field Duplicate Sample ID:	None analyzed				
QC Summary					
Validity of Data	Yes				

Additional Notes:
Sample results were reported on a dry weight basis. Sample J189Y3 was analyzed at a four-fold dilution due to matrix interference; reporting limits are elevated (4X).

SDG K1554 – Metals QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1554	**W&C Project No.:**222007	
Medium: Soil		**Analytes:** Metals (1 of 3)	
Samples: J18B00, J18B01, J18B02, J18B03, J18B04, J18B05, J18B06, J18B07, J18B08, J18B09, J18B15, J18B16, J18B17, J18B18, J18B19, J18B47, J18B48, J18B49, J18B50, J18B51			
Laboratory: Lionville	**Date Data Assessment Completed:** 03/02/2010 **Complete By:** RDD	**Sample Collection Date:** 2/27/2009 – 03/02/2009	**Sample Analysis Date:** ICP – 04/20/2009; Hg – 03/26/2009

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No action	
Detection Limits	Yes	None	-	No action	
Blanks					
Preparation Blank	No	Batch L904109: Be = 0.0084 mg/kg Pb = 0.365 mg/kg Si = 1.77 mg/kg Sn = 0.962 mg/kg	UJ	Qualify positive results less than 5X blank concentration as non-detected estimated (UJ)	Impacts the following results: Be, Pb, Si – None; all results >5X blank concentration Sn – J18B08, J18B17, J18B19, J18B49; otherwise results non-detected
Equipment Blank Sample ID:	None analyzed				
Other QC Results					
LCS Results	No	Batch L904109: Sb = 200% As = 181% Pb = 60% Tl = 0% V = 172%	J	Qualify positive results for Sb, As, and V in associated batch as estimated (J); qualify positive and non-detected results for Pb as estimated (J) No qualifiers applied to Tl results since LCS spike concentration is near the RL (less than 2XRL)	Impacts the following results: Sb – J18B06 As, Pb, V – All samples

SDG K1554 – Metals QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1554	**W&C Project No.:**222007
Medium: Soil		**Analytes:** Metals (1 of 3)
Samples: J18B00, J18B01, J18B02, J18B03, J18B04, J18B05, J18B06, J18B07, J18B08, J18B09, J18B15, J18B16, J18B17, J18B18, J18B19, J18B47, J18B48, J18B49, J18B50, J18B51		

Laboratory: Lionville	**Date Data Assessment Completed:** 03/02/2010 **Complete By:** RDD	**Sample Collection Date:** 2/27/2009 – 03/02/2009	**Sample Analysis Date:** ICP – 04/20/2009; Hg – 03/26/2009

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Matrix Spikes Sample ID:					
Hg - J18B00	Yes	None	-	No action	
ICP – J18B51	No	Sb = 53%	J	Qualify positive and non-detected results for Sb in associated batch as estimated (J)	Impacts the following results: Sb – All samples
Lab Duplicates Sample ID:					
Hg – J18B00	Yes	None	-	No action	
ICP – J18B51	Yes	None	-	No action	
Field Duplicate Sample ID:					
J18B00/J189W1	Yes	None	-	No action	
J18B49/J189W0	Yes	None	-	No action	
QC Summary					
Validity of Data	No, but no data were rejected				

Additional Notes: :
Sample results were reported on a dry weight basis.

SDG K1554 – Metals QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1554	**W&C Project No.:**222007
Medium: Soil		**Analytes:** Metals (2 of 3)
Samples: J18B52, J18B53, J18B54, J18B55, J18B56, J18B57, J18B58, J18B59, J18B60, J18B61, J18B62, J18B64, J18B65, J18B63, J18B66, J189W0, J189W1, J189Y0, J189Y1		

Laboratory: Lionville	**Date Data Assessment Completed:** 03/03/2010 **Complete By:** RDD	**Sample Collection Date:** 2/27/2009 – 03/02/2009	**Sample Analysis Date:** ICP – 05/04/2009; Hg – 03/24/2009

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No action	
Detection Limits	Yes	None	-	No action	
Blanks					
Preparation Blank	No	Batch L904110: Be = 0.0181 mg/kg Pb = 0.426 mg/kg Si = 2.25 mg/kg Sn = 1.01 mg/kg	UJ	Qualify positive results less than 5X blank concentration as non-detected estimated (UJ)	Impacts the following results: Sn – J189Y0, J189Y1, J18B52, J18B53, J18B54, J18B55, J18B58, J18B59, J18B56, J18B63, J18B65 Be, Pb, Si - None
Equipment Blank Sample ID:	None analyzed				
Other QC Results					
LCS Results	No	Batch L904110: Sb = 187% As = 201% Co = 168% Fe = 269% Pb = 54% Mn = 139% Tl = 0% V = 183%	J	Qualify positive results for Sb, As, Co, Fe, Mn, and V in associated batch as estimated (J); qualify positive and non-detected results for Pb as estimated (J) No qualifiers applied to Tl results since LCS spike concentration is near the RL (less than 2XRL)	Impacts the following results: Sb – J189W0, J189Y0, J189Y1, J18B53, J18B54, J18B59, J18B61, J18B62, J18B63, J18B65 As, Co, Fe, Pb, Mn, V – All samples

SDG K1554 – Metals QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1554	**W&C Project No.:**222007
Medium: Soil		**Analytes:** Metals (2 of 3)
Samples: J18B52, J18B53, J18B54, J18B55, J18B56, J18B57, J18B58, J18B59, J18B60, J18B61, J18B62, J18B64, J18B65, J18B63, J18B66, J189W0, J189W1, J189Y0, J189Y1		

Laboratory: Lionville	**Date Data Assessment Completed:** 03/03/2010 **Complete By:** RDD	**Sample Collection Date:** 2/27/2009 – 03/02/2009	**Sample Analysis Date:** ICP – 05/04/2009; Hg – 03/24/2009

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Matrix Spikes					
Sample ID:					
Hg - J18B52	Yes	None	-	No action	
ICP – J189Y1	No	Sb = 57% Cu = 43% Pb = 67%	J	Qualify positive and non-detected results for Sb, Cu, and Pb in associated batch as estimated (J)	Impacts the following results: Sb, Cu, Pb – All samples
Lab Duplicates					
Sample ID:					
Hg – J18B52	Yes	None	-	No action	
ICP – J189Y1	Yes	None	-	No action	
Field Duplicate					
Sample ID:					
J18B00/J189W1	Yes	None	-	No action	
J18B49/J189W0	Yes	None	-	No action	
QC Summary					
Validity of Data	No, but no data were rejected				

Additional Notes: :
Sample results were reported on a dry weight basis.

SDG K1554 – Metals QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1554	**W&C Project No.:**222007
Medium: Soil		**Analytes:** Metals (3 of 3)
Samples: J189Y3, J189Y4, J189Y5, J189Y6, J189Y7, J189Y8, J189Y9		

Laboratory: Lionville	**Date Data Assessment Completed:** 03/04/2010 **Complete By:** RDD	**Sample Collection Date:** 03/02/2009	**Sample Analysis Date:** ICP – 05/05/2009; Hg – 03/24/2009

QC Parameter	**All in Spec.?**	**Non-Compliant Results**	**Flag**	**Action/ Notes**	**Associated Samples**
Holding Times	Yes	None	-	No action	
Detection Limits	Yes	None	-	No action	
Blanks					
Preparation Blank	No	Batch L904162: Ca = 6.26 mg/kg Sn = 1.17 mg/kg Ti = 0.133 mg/kg	UJ	Qualify positive results less than 5X blank concentration as non-detected estimated (UJ)	Impacts the following results: Sn – J189Y5; otherwise non-detected Ca, Ti – None; all results greater than 5X blank
Equipment Blank Sample ID:	None analyzed				
Other QC Results					
LCS Results	No	Batch L904162: Sb = 184% As = 201% Cr = 138% Co = 147% Cu = 145% Fe = 431% Pb = 68% Mn = 147% Tl = 0% V = 163% Zn = 134%	J	Qualify positive results for Sb, As, Cr, Co, Cu, Fe, Mn, V, and Zn in associated batch as estimated (J); qualify positive and non-detected results for Pb as estimated (J) No qualifiers applied to Tl results since LCS spike concentration is near the RL (less than 2XRL)	Impacts the following results: Sb – J189Y3 As, Cr, Co, Cu, Fe, Pb, Mn, V, Zn – All samples
Matrix Spikes Sample ID:					

SDG K1554 – Metals QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1554	**W&C Project No.:**222007
Medium: Soil		**Analytes:** Metals (3 of 3)
Samples: J189Y3, J189Y4, J189Y5, J189Y6, J189Y7, J189Y8, J189Y9		

Laboratory: Lionville	**Date Data Assessment Completed:** 03/04/2010 **Complete By:** RDD	**Sample Collection Date:** 03/02/2009	**Sample Analysis Date:** ICP – 05/05/2009; Hg – 03/24/2009

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Hg - J189Y3 ICP – J189Y3	Yes No	None Sb = 49%	- J	No action Qualify positive and non-detected results for Sb in associated batch as estimated (J)	Impacts the following results: Sb – All samples
Lab Duplicates Sample ID: Hg – J189Y3 ICP – J189Y3	Yes Yes	None None	- -	No action No action	
Field Duplicate Sample ID:	None analyzed				
QC Summary					
Validity of Data	No, but no data were rejected				
Additional Notes: : Sample results were reported on a dry weight basis.					

SDG K1554 – Radionuclides QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1554	**W&C Project No.:**222007
Medium: Soil Data set 1 of 4	**Analytes:** C-14, Gamma Spec, Isotopic Plutonium, Isotopic Thorium, Isotopic Uranium, Sr-90, Tc-99, Tritium	
Samples: J189W1, J189Y0, J189Y1, J189Y3, J189Y4, J189Y5, J189Y6, J189Y7, J189Y8, J189Y9, J18B00, J18B01, J18B02		

Laboratory: Eberline	**Date Data Assessment Completed:** 03/01/2010 **Complete By:** RDD	**Sample Collection Date:** 03/02/2009	**Sample Analysis Date:** 03/20/2009 – 04/11/2009

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No action	
Detection Limits	Yes	None	-	No action	
Blanks					
Method Blanks	Yes	None	-	No action	
Other QC Results					
LCS Results	Yes	None	-	No action	
Matrix Spike – C_{14} and tritium	No	No MS analyzed	J	Qualify non-detect and positive results as estimated (J)	All samples for C_{14} and tritium
Tracer Results	No	Iso. Th = 107% Iso. Th = 112% Iso. U = 110% Iso. U = 109%	J	Qualify positive results for Th-228, Th-230, Th-232, U-233/234, U-235, and U-238 as estimated (J)	Impacts the following results: Th-228, Th-230, Th-232 - J189W1, J189Y1 U-233/234, U-238 - J189Y9, J18B02 U-235 - None; results non-detect
Lab Duplicates Sample ID: J189W1	Yes	None	-	No action	
Field Duplicate Sample ID: J189W1/J18B00	Yes	None	-	No action	
QC Summary					
Validity of Data	No, but no data were rejected				
Additional Notes: Matrix spikes required for C-14 and tritium analyses were not performed; positive and non-detected results for C-14 were qualified as estimated (J).					

SDG K1554 – Radionuclides QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1554	**W&C Project No.:**222007

Medium: Soil	Data set 1 of 4	**Analytes:** C-14, Gamma Spec, Isotopic Plutonium, Isotopic Thorium, Isotopic Uranium, Sr-90, Tc-99, Tritium

Samples: J189W1, J189Y0, J189Y1, J189Y3, J189Y4, J189Y5, J189Y6, J189Y7, J189Y8, J189Y9, J18B00, J18B01, J18B02

Laboratory: Eberline	**Date Data Assessment Completed:** 03/01/2010 **Complete By:** RDD	**Sample Collection Date:** 03/02/2009	**Sample Analysis Date:** 03/20/2009 – 04/11/2009

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples

SDG K1554 – Radionuclides QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1554	**W&C Project No.:**222007
Medium: Soil Data set 2 of 4	**Analytes:** C-14, Gamma Spec, Isotopic Plutonium, Isotopic Thorium, Isotopic Uranium, Sr-90, Tc-99, Tritium	
Samples: J18B57, J18B58, J18B59, J18B60, J18B61, J18B62, J18B63, J18B64, J18B65, J18B66		

Laboratory: Eberline	**Date Data Assessment Completed:** 03/01/2010 **Complete By:** RDD	**Sample Collection Date:** 02/27/2009	**Sample Analysis Date:** 04/06/2009 – 04/17/2009

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No action	
Detection Limits	Yes	None	-	No action	
Blanks					
Method Blanks	Yes	None	-	No action	
Other QC Results					
LCS Results	Yes	None	-	No action	
Matrix Spike – C_{14} and tritium	No	No MS analyzed	J	Qualify non-detect and positive results as estimated (J)	All samples for C_{14} and tritium
Tracer Results	Yes	None	-	No action	
Lab Duplicates Sample ID: J18B58	Yes	None	-	No action	
Field Duplicate Sample ID:	None analyzed				
QC Summary					
Validity of Data	No, but no data were rejected				
Additional Notes: Matrix spikes required for C-14 and tritium analyses were not performed; positive and non-detected results for C-14 were qualified as estimated (J).					

SDG K1554 – Radionuclides QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1554	**W&C Project No.:**222007
Medium: Soil Data set 3 of 4	**Analytes:** C-14, Gamma Spec, Isotopic Plutonium, Isotopic Thorium, Isotopic Uranium, Sr-90, Tc-99, Tritium	

Samples: J189W0, J18B47, J18B48, J18B49, J18B50, J18B51, J18B52, J18B53, J18B54, J18B55, J18B56

Laboratory: Eberline	**Date Data Assessment Completed:** 03/01/2010 **Complete By:** RDD	**Sample Collection Date:** 02/27/2009	**Sample Analysis Date:** 04/03/2009 – 04/17/2009

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No action	
Detection Limits	Yes	None	-	No action	
Blanks					
Method Blanks	Yes	None	-	No action	
Other QC Results					
LCS Results	Yes	None	-	No action	
Matrix Spike – C_{14} and tritium	No	No MS analyzed	J	Qualify non-detect and positive results as estimated (J)	All samples for C_{14} and tritium
Tracer Results	No	Tc-99 = 107%	J	Qualify positive results for Tc-99 in J18B56 as estimated (J)	Impacts the following results: Tc-99 - None; results non-detect
Lab Duplicates Sample ID: J18B50	Yes	None	-	No action	
Field Duplicate Sample ID: J189W0/J18B49	Yes	None	-	No action	
QC Summary					
Validity of Data	No, but no data were rejected				

Additional Notes: Matrix spikes required for C-14 and tritium analyses were not performed; positive and non-detected results for C-14 were qualified as estimated (J).

SDG K1554 – Radionuclides QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1554	**W&C Project No.:**222007
Medium: Soil Data set 4 of 4	**Analytes:** C-14, Gamma Spec, Isotopic Plutonium, Isotopic Thorium, Isotopic Uranium, Sr-90, Tc-99, Tritium	

Samples: J18B03, J18B04, J18B05, J18B06, J18B07, J18B08, J18B09, J18B15, J18B16, J18B17, J18B18, J18B19

Laboratory: Eberline	**Date Data Assessment Completed:** 03/02/2010 **Complete By:** RDD	**Sample Collection Date:** 03/02/2009	**Sample Analysis Date:** 03/24/2009 – 04/02/2009

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No action	
Detection Limits	Yes	None	-	No action	
Blanks					
Method Blanks	Yes	None	-	No action	
Other QC Results					
LCS Results	Yes	None	-	No action	
Matrix Spike – C_{14} and tritium	No	No MS analyzed	J	Qualify non-detect and positive results as estimated (J)	All samples for C_{14} and tritium
Tracer Results	No	Iso. Th = 110% Iso. U = 107% Iso. U = 119%	J	Qualify positive results for Th-228, Th-230, Th-232, U-233/234, U-235, and U-238 as estimated (J)	Impacts the following results: Th-228, Th-230, Th-232 - J18B03 U-233/234, U-238 - J18B08, J18B15 U-235 - None; results non-detect
Lab Duplicates Sample ID: J18B03	Yes	None	-	No action	
Field Duplicate Sample ID:	None analyzed				
QC Summary					
Validity of Data	No, but no data were rejected				

SDG K1554 – Radionuclides QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1554	**W&C Project No.:**222007	
Medium: Soil Data set 4 of 4		**Analytes:** C-14, Gamma Spec, Isotopic Plutonium, Isotopic Thorium, Isotopic Uranium, Sr-90, Tc-99, Tritium	
Samples: J18B03, J18B04, J18B05, J18B06, J18B07, J18B08, J18B09, J18B15, J18B16, J18B17, J18B18, J18B19			
Laboratory: Eberline	**Date Data Assessment Completed:** 03/02/2010 **Complete By:** RDD	**Sample Collection Date:** 03/02/2009	**Sample Analysis Date:** 03/24/2009 – 04/02/2009

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Additional Notes: Matrix spikes required for C-14 and tritium analyses were not performed; positive and non-detected results for C-14 were qualified as estimated (J).					

SDG K1554 – DRO QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1554	**W&C Project No.:**222007
Medium: Soil		**Analytes:** DRO (1 of 3)
Samples: J18B00, J18B01, J18B02, J18B03, J18B47, J18B48, J18B49, J18B50		

Laboratory: Lionville	**Date Assessment Completed:** 03/02/2010 **Complete By:** RDD	**Sample collection:** 02/27/2009 – 03/02/2009	**Sample Extraction Date:** 03/11/2009

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No action	
Surrogates	Yes	None	-	No action	
Blanks					
Method Blank	No	Motor Oil = 4710 ug/kg	UJ	Qualify positive results less than 5X blank concentration as non-detected estimated (UJ)	Impacts the following samples: Motor Oil – J18B01, J18B02, J18B03, J18B47, J18B48, J18B49, J18B50
Equipment Blank Sample ID:	None analyzed				
Other QC					
LCS Results	Yes	None	-	No action	
Matrix Spikes Sample ID: J18B00	Yes	None	-	No action	
Lab Duplicates Sample ID:	None analyzed				
Field Duplicate Sample ID: J18B00/J189W1	No	RPDs or absolute differences between results are >2X RL for: Diesel and Motor oil	-	No action based on guidance	
J18B49/J189W0	No	Absolute difference between results is greater than 2X RL for: Motor Oil	-	No action based on guidance	
QC Summary					
Validity of Data	Yes, no data were rejected				
Additional Notes: NOTE: All sample results were reported on a dry weight basis.					

SDG K1554 – DRO QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1554	**W&C Project No.:**222007
Medium: Soil		**Analytes:** DRO (2 of 3)
Samples: J18B57, J18B58, J18B59, J18B60, J18JC0-A, J189W0, J189W1, J189Y0, J189Y1		

Laboratory: Lionville	**Date Assessment Completed:** 03/03/2010 **Complete By:** RDD	**Sample collection:** 02/25/2009 – 03/02/2009	**Sample Extraction Date:** 03/12/2009

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	No	Sample J18JC0-A extracted 1 day past HT	J	Qualify positive and non-detected results as estimated (J)	Impacts the following sample: J18JC0-A
Surrogates	Yes	None	-	No action	
Blanks					
Method Blank	Yes	None	-	No action	
Equipment Blank Sample ID:	None analyzed				
Other QC					
LCS Results	Yes	None	-	No action	
Matrix Spikes Sample ID: J18B57	Yes	None	-	No action	
Lab Duplicates Sample ID:	None analyzed				
Field Duplicate Sample ID: J18B00/J189W1 J18B49/J189W0	No No	Refer to Summary for sample batch 1 of 3 for specifics			
QC Summary					
Validity of Data	No, but no data were rejected				

Additional Notes:
NOTE: All sample results were reported on a dry weight basis. Sample J18JC0-A was analyzed at a five-fold dilution due to matrix interference; the surrogate was reported as diluted out. DRO was reported non-detected in J18JC0-A, and the reporting limit is elevated (5X) as a result of the dilution.

SDG K1554 – DRO QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1554		**W&C Project No.:**222007
Medium: Soil			**Analytes:** DRO (3 of 3)
Samples: J189Y3			
Laboratory: Lionville	**Date Assessment Completed:** 03/04/2010 **Complete By:** RDD	**Sample collection:** 03/02/2009	**Sample Extraction Date:** 03/11/2009

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No action	
Surrogates	Yes	None	-	No action	
Blanks					
Method Blank	Yes	None	-	No action	
Equipment Blank Sample ID:	None analyzed				
Other QC					
LCS Results	Yes	None	-	No action	
Matrix Spikes Sample ID: J189Y3	Yes	None	-	No action	
Lab Duplicates Sample ID:	None analyzed				
Field Duplicate Sample ID:	None analyzed				
QC Summary					
Validity of Data	Yes, no data were rejected				
Additional Notes: NOTE: All sample results were reported on a dry weight basis.					

SDG K1554 – TOC QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1554	**W&C Project No.:**222007	
Medium: Soil		**Analytes:** TOC (1 of 3)	
Samples: J18B00, J18B01, J18B02, J18B03, J18B04, J18B05, J18B06, J18B07, J18B08, J18B09, J18B15, J18B16, J18B17, J18B18, J18B19, J18B47, J18B48, J18B49, J18B50, J18B51			
Laboratory: Lionville	**Date Data Assessment Completed:** 03/02/2010 **Complete By:** RDD	**Sample Collection Date:** 02/27/2009 – 03/02/2009	**Sample Analysis Date:** 03/25/2009

QC Parameter	**All in Spec.?**	**Non-Compliant Results**	**Flag**	**Action/ Notes**	**Associated Samples**
Holding Times	Yes	None	-	No action	
Detection Limit	Yes	None	-	No action	
Blanks					
Method Blank	No	TOC = 5.98 mg/kg	UJ	Qualify positive results less than 5X blank concentration as non-detected estimated (UJ)	Impacts the following sample results: TOC – None; all results are greater than 5X blank concentration or are non-detected
Other QC					
LCS Results	Yes	None	-	No action	
Matrix Spikes Sample ID: J18B00	Yes	None	-	No action	
Lab Duplicate Sample ID: J18B00	Yes	None	-	No action	
Field Duplicate Sample ID: J18B00/J189W1 J18B49/J189W0	No	Non-compliant RPDs: TOC = 88 TOC = 63	- -	No action based on guidance	
QC Summary					
Validity of Data	Yes; no data were rejected				
Additional Notes: All samples were analyzed at ten-fold dilutions; positive detections for TOC were reported in all samples except J18B47, which was reported non-detected at an elevated (10X) reporting limit.					

SDG K1554 – TOC QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1554	**W&C Project No.:**222007	
Medium: Soil		**Analytes:** TOC (2 of 3)	
Samples: J18B52, J18B53, J18B54, J18B55, J18B56, J18B57, J18B58, J18B59, J18B60, J18B61, J18B62, J18B63, J18B64, J18B65, J18B66, J189W0, J189W1, J189Y0, J189Y1, J18JCO-A			
Laboratory: Lionville	**Date Data Assessment Completed:** 03/03/2010 **Complete By:** RDD	**Sample Collection Date:** 02/25/2009 – 03/02/2009	**Sample Analysis Date:** 03/26/2009

QC Parameter	**All in Spec.?**	**Non-Compliant Results**	**Flag**	**Action/ Notes**	**Associated Samples**
Holding Times	Yes	None	-	No action	
Detection Limit	Yes	None	-	No action	
Blanks					
Method Blank	No	TOC = 8.15 mg/kg	UJ	Qualify positive results less than 5X blank concentration as non-detected estimated (UJ)	Impacts the following sample results: TOC – None; all results are greater than 5X blank concentration or are non-detected
Other QC					
LCS Results	Yes	None	-	No action	
Matrix Spikes Sample ID: J18B52	Yes	None	-	No action	
Lab Duplicate Sample ID: J18B52	Yes	None	-	No action	
Field Duplicate Sample ID: J18B00/J189W1 J18B49/J189W0	No No	Non-compliant RPDs: TOC = 88 TOC = 63	- -	No action based on guidance	
QC Summary					
Validity of Data	Yes; no data were rejected				
Additional Notes:					

SDG K1554 – TOC QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1554	**W&C Project No.:**222007	
Medium: Soil		**Analytes:** TOC (3 of 3)	
Samples: J189Y3, J189Y4, J189Y5, J189Y6, J189Y7, J189Y8, J189Y9			
Laboratory: Lionville	**Date Data Assessment Completed:** 03/04/2010 **Complete By:** RDD	**Sample Collection Date:** 03/02/2009	**Sample Analysis Date:** 03/27/2009

QC Parameter	**All in Spec.?**	**Non-Compliant Results**	**Flag**	**Action/ Notes**	**Associated Samples**
Holding Times	Yes	None	-	No action	
Detection Limit	Yes	None	-	No action	
Blanks					
Method Blank	No	TOC = 8.13 mg/kg	UJ	Qualify positive results less than 5X blank concentration as non-detected estimated (UJ)	Impacts the following sample results: TOC – None; all results are greater than 5X blank concentration or are non-detected
Other QC					
LCS Results	Yes	None	-	No action	
Matrix Spikes Sample ID: J189Y7	Yes	None	-	No action	
Lab Duplicate Sample ID: J189Y7	Yes	None	-	No action	
Field Duplicate Sample ID:	None analyzed				
QC Summary					
Validity of Data	Yes; no data were rejected				
Additional Notes:					

SDG K1554 – Hexavalent Chromium QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1554	**W&C Project No.:**222007	
Medium: Soil		**Analytes:** Hexavalent Chromium (1 of 3)	
Samples: J18B00, J18B01, J18B02, J18B03, J18B04, J18B05, J18B06, J18B07, J18B08, J18B09, J18B15, J18B16, J18B17, J18B18, J18B19, J18B47, J18B48, J18B49, J18B50, J18B51			
Laboratory: Lionville	**Date Data Assessment Completed:** 03/02/2010 **Complete By:** RDD	**Sample Collection Date:** 02/27/2009 – 03/02/2009	**Sample Analysis Date:** 03/25/2009

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No action	
Detection Limit	Yes	None	-	No action	
Blanks					
Method Blank	Yes	None	-	No action	
Other QC					
LCS Results	Yes	None	-	No action	
Matrix Spikes Sample ID: J18B00	No	Cr VI = 64%	J	Qualify positive and non-detected results as estimated (J)	Impacts the following samples: All samples
Lab Duplicate Sample ID: J18B00	Yes	None	-	No action	
Field Duplicate Sample ID: J18B00/J189W1 J18B49/J189W0	Yes Yes	None None	- -	No action No action	
QC Summary					
Validity of Data	Not all QC met but no data were rejected.				
Additional Notes: Samples J18B00, J18B04, and J18B07 were analyzed at four-fold dilutions, and samples J18B02, J18B08, and J18B17 were analyzed at two-fold dilutions. Results for hexavalent chromium were non-detected and reporting limits for these samples are elevated by a factor of 4X or 2X as applicable.					

SDG K1554 – Hexavalent Chromium QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1554	**W&C Project No.:**222007	
Medium: Soil		**Analytes:** Hexavalent Chromium (2 of 3)	
Samples: J18B52, J18B53, J18B54, J18B55, J18B56, J18B57, J18B58, J18B59, J18B60, J18B61, J18B62, J18B63, J18B64, J18B65, J18B66, J189W0, J189W1, J189Y0, J189Y1			
Laboratory: Lionville	**Date Data Assessment Completed:** 03/03/2010 **Complete By:** RDD	**Sample Collection Date:** 02/27/2009 – 03/02/2009	**Sample Analysis Date:** 03/26/2009

QC Parameter	**All in Spec.?**	**Non-Compliant Results**	**Flag**	**Action/ Notes**	**Associated Samples**
Holding Times	Yes	None	-	No action	
Detection Limit	Yes	None	-	No action	
Blanks					
Method Blank	Yes	None	-	No action	
Other QC					
LCS Results	Yes	None	-	No action	
Matrix Spikes Sample ID: J18B52	No	Cr VI = 23%	J/R	Qualify positive results as estimated (J) and non-detect results as rejected (R).	Impacts the following samples: All samples
Lab Duplicate Sample ID: J18B52	Yes	None	-	No action	
Field Duplicate Sample ID: J18B00/J189W1 J18B49/J189W0	Yes Yes	None None	- -	No action No action	
QC Summary					
Validity of Data	Several samples in the SDG were rejected due to matrix spike recoveries < 30%.	Matrix spike recoveries	R/J	Rejected results based on poor matrix spike recoveries.	
Additional Notes: Sample results were reported on a dry weight basis.					

SDG K1554 – Hexavalent Chromium QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1554	**W&C Project No.:**222007	
Medium: Soil		**Analytes:** Hexavalent Chromium (3 of 3)	
Samples: J189Y3, J189Y4, J189Y5, J189Y6, J189Y7, J189Y8, J189Y9			
Laboratory: Lionville	**Date Data Assessment Completed:** 03/04/2010 **Complete By:** RDD	**Sample Collection Date:** 03/02/2009	**Sample Analysis Date:** 03/09/2009

QC Parameter	**All in Spec.?**	**Non-Compliant Results**	**Flag**	**Action/ Notes**	**Associated Samples**
Holding Times	Yes	None	-	No action	
Detection Limit	Yes	None	-	No action	
Blanks					
Method Blank	Yes	None	-	No action	
Other QC					
LCS Results	Yes	None	-	No action	
Matrix Spikes Sample ID: J189Y3	Yes	None	-	No action	
Lab Duplicate Sample ID: J189Y3	Yes	None	-	No action	
Field Duplicate Sample ID:	None analyzed				
QC Summary					
Validity of Data	Yes	No rejected results.			
Additional Notes: Sample results were reported on a dry weight basis.					

C.3 SDG K1556

SDG K1556 – SVOC QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1556	**W&C Project No.:**222007
Medium: Soil		**Analytes:** SVOCs (1 of 2)
Samples: J189V8, J189V9, J189W6		

Laboratory: Lionville	**Date Data Assessment Completed:** 03/05/2010 **Complete By:** RDD	**Sample Collection Date:** 03/03/2009	**Sample Extraction Date:** 03/14/2009

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No action	
Detection Limits	No	2,4-Dintrophenol; 2-Nitroaniline; 3-Nitroaniline; 4-Nitroaniline; 4-Nitrophenol; Pentachlorophenol; Hexachlorobenzene; and 3,3'-Dichlorobenzidine all had reporting limits above those specified in the work plan; see also NOTE (1) below	-	No action based on criteria in references	
Blanks					
Method Blanks	Yes	None	-	No action	
Equipment Blank Sample ID: J189W6	Yes	None	-	No action	
Other QC					
Surrogate Recoveries	Yes	None	-	No action	
LCS Results	No	**Non-compliant recoveries:** 4-Chloroaniline = 42% Pentachlorophenol = 45%	J	Qualify positive and non-detected results for 4-chloroaniline and pentachlorophenol as estimated (J)	Impacts the following samples: 4-Chloroaniline and pentachlorophenol - All samples
Matrix Spikes Sample ID: J189V8	No	**Non-compliant recoveries:** 1,2-Dichlorobenzene = 44% 1,3-Dichlorobenzene = 42% 1,4-Dichlorobenzene = 40% 2-Chlorophenol = 48% 2-Nitroaniline = 46%	J	Qualify positive and non-detected results as estimated (J)	Impacts the following samples: All samples

SDG K1556 – SVOC QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1556	**W&C Project No.:**222007
Medium: Soil		**Analytes:** SVOCs (1 of 2)
Samples: J189V8, J189V9, J189W6		

Laboratory: Lionville	**Date Data Assessment Completed:** 03/05/2010 **Complete By:** RDD	**Sample Collection Date:** 03/03/2009	**Sample Extraction Date:** 03/14/2009

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
		2-Nitrophenol = 47% 3,3'-Dichlorobenzidine = 19%/24% 3-Nitroaniline = 40%/47% 4-Chloroaniline = 24%/24% 4-Methylphenol = 48% 4-Nitroaniline = 46% Bis(2-Chloroethyl)ether = 41%/49% Bis(2-Chloroisopropyl)ether = 43% Hexachlorocyclopentadiene = 41%/49% Hexachloroethane = 36%/44% Isophorone = 43%/48% Naphthalene = 48% Nitrobenzene = 41%/47% n-Nitrosodi-n-propylamine = 48% Pentachlorophenol = 0%/0% Phenol = 48%			
Lab Duplicates Sample ID:	None analyzed				
Field Duplicates Sample ID:					
J189V8/J18B11	Yes	None	-	No action	
J189V9/J18B33	Yes	None	-	No action	
Summary					
Validity of Data	Yes, but no data were rejected				

Additional Notes:
(1) NOTE: Sample results were reported on a dry weight basis. Sample J189V8 was analyzed at a two-fold dilution due to matrix interference; reporting limits are elevated by a factor of two for sample J189V8.

SDG K1556 – SVOC QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA		**SDG No.:** K1556	**W&C Project No.:**222007
Medium: Soil			**Analytes:** SVOCs (2 of 2)
Samples: J18B10, J18B11, J18B12, J18B13, J18B20, J18B21, J18B22, J18B23, J18B32, J18B33, J18B34, J18B35			
Laboratory: Lionville	**Date Data Assessment Completed:** 03/06/2010 **Complete By:** RDD	**Sample Collection Date:** 03/03/2009	**Sample Extraction Date:** 03/12/2009

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No action	
Detection Limits	No	2,4-Dintrophenol; 2-Nitroaniline; 3-Nitroaniline; 4-Nitroaniline; 4-Nitrophenol; Pentachlorophenol; Hexachlorobenzene; and 3,3'-Dichlorobenzidine all had reporting limits above those specified in the work plan; see also NOTE (1) below	-	No action based on criteria in references	
Blanks					
Method Blanks	Yes	None	-	No action	
Equipment Blank Sample ID:	None analyzed				
Other QC					
Surrogate Recoveries	Yes	None	-	No action	
LCS Results	No	**Non-compliant recoveries:** 2,4,5-Trichlorophenol = 23% 2,4,6-Trichlorophenol = 14% 3,3'-Dichlorobenzidine = 22% 4-Chloroaniline = 23% Fluoranthene = 0%	J	Qualify positive and non-detected results for affected analytes as estimated (J)	Impacts the following samples: All samples
Matrix Spikes Sample ID: J18B10	No	**Non-compliant recoveries:** 3,3'-Dichlorobenzidine = 39% 4-Chloroaniline = 30%/49% Hexachlorocyclopentadiene = 49% Pentachlorophenol =	J	Qualify positive and non-detected results for affected analytes as estimated	Impacts the following samples: All samples

SDG K1556 – SVOC QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1556	**W&C Project No.:**222007
Medium: Soil		**Analytes:** SVOCs (2 of 2)
Samples: J18B10, J18B11, J18B12, J18B13, J18B20, J18B21, J18B22, J18B23, J18B32, J18B33, J18B34, J18B35		

Laboratory: Lionville	**Date Data Assessment Completed:** 03/06/2010 **Complete By:** RDD	**Sample Collection Date:** 03/03/2009	**Sample Extraction Date:** 03/12/2009

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
		24%/41% **Non-compliant RPDs:** 3,3’-Dichlorobenzidine RPD = 52 4-Chloroaniline RPD = 49 Pentachlorophenol RPD = 53		(J)	
Lab Duplicates Sample ID:	None analyzed				
Field Duplicates Sample ID:					
J189V8/J18B11	Yes	None	-	No action	
J189V9/J18B33	Yes	None	-	No action	
Summary					
Validity of Data	Not all QC criteria were met, but no data were rejected.				
Additional Notes: (1) NOTE: Sample results were reported on a dry weight basis. Sample J18B32 was analyzed at a two-fold dilution due to matrix interference; reporting limits are elevated by a factor of two for sample J18B32.					

SDG K1556 – PCB QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1556	**W&C Project No.:**222007
Medium: Soil	**Analytes:** PCBs (1 of 2)	
Samples: J189V8, J189V9, J189W6		

Laboratory: Lionville	**Date Data Assessment Completed:** 03/06/2010 **Complete By:** RDD	**Sample Collection Date:** 03/03/2009	**Sample Extraction Date:** 03/16/2009

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No action	
Detection Limits	Yes	None	-	No action	
Blanks					
Method Blank	Yes	None	-	No action	
Equipment Blank Sample ID: J189W6	Yes	None	-	No action	
Other QC Results					
Surrogate Recoveries	Yes	None	-	No action	
LCS Results	Yes	None	-	No action	
Matrix Spikes Sample ID: J189V8	Yes	None	-	No action	
Lab Duplicates Sample ID:	None analyzed				
Field Duplicates Sample ID: J189V8/J18B11 J189V9/J18B33	Yes Yes	None None	- -	No action No action	
Summary					
Validity of Data	Yes, no data were rejected				
Additional Notes: NOTE: All sample results were reported on a dry weight basis.					

SDG K1556 – PCB QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1556	**W&C Project No.:**222007
Medium: Soil		**Analytes:** PCBs (2 of 2)
Samples: J18B10, J18B11, J18B12, J18B13, J18B20, J18B21, J18B22, J18B23, J18B32, J18B33, J18B34, J18B35		

Laboratory: Lionville	**Date Data Assessment Completed:** 03/06/2010 **Complete By:** RDD	**Sample Collection Date:** 03/03/2009	**Sample Extraction Date:** 03/12/2009

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No action	
Detection Limits	Yes	None	-	No action	
Blanks					
Method Blank	Yes	None	-	No action	
Equipment Blank Sample ID:	None analyzed				
Other QC Results					
Surrogate Recoveries	Yes	None	-	No action	
LCS Results	Yes	None	-	No action	
Matrix Spikes Sample ID: J18B20	Yes	None	-	No action	
Lab Duplicates Sample ID:	None analyzed				
Field Duplicates Sample ID: J189V8/J18B11 J189V9/J18B33	Yes Yes	None None	- -	No action No action	
Summary					
Validity of Data	Yes, no data were rejected				
Additional Notes: NOTE: All sample results were reported on a dry weight basis.					

SDG K1556 – Pesticides QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1556	**W&C Project No.:**222007
Medium: Soil		**Analytes:** Pesticides (1 of 2)
Samples: J189V8, J189V9, J189W6		

Laboratory: Lionville	**Date Data Assessment Completed:** 03/06/2010 **Complete By:** RDD	**Sample Collection Date:** 03/03/2009	**Sample Extraction Date:** 03/16/2009

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No action	
Detection Limits	Yes; see also NOTE (1) below	None	-	No action	
Blanks					
Method Blank	Yes	None	-	No action	
Equipment Blank Sample ID: J189W6	Yes	None	-	No action	
Other QC Results					
Surrogate Recoveries	Yes	None	-	No action	
LCS Results	No	No LCS results for toxaphene	J	Qualify all associated results as estimated (J)	Impacts to all samples above.
Matrix Spikes Sample ID: J189V8	No	4,4'-DDE = 157%	J	Qualify positive results for 4,4'-DDE as estimated (J)	Impacts the following samples: 4,4'-DDE – None; all results non-detected
Lab Duplicates Sample ID:	None analyzed				
Field Duplicate Sample ID: J189V8/J18B11 J189V9/J18B33	Yes Yes	None None	- -	No action No action	
QC Summary					
Validity of Data	Not all QC criteria were met, but no data were rejected.				

Additional Notes:
Sample results were reported on a dry weight basis. All samples were analyzed at ten-fold dilutions due to matrix interference; reporting limits are elevated (10X) for all samples.

SDG K1556 – Pesticides QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1556	**W&C Project No.:**222007	
Medium: Soil		**Analytes:** Pesticides (2 of 2)	
Samples: J18B10, J18B11, J18B12, J18B13, J18B20, J18B21, J18B22, J18B23, J18B32, J18B33, J18B34, J18B35			
Laboratory: Lionville	**Date Data Assessment Completed:** 03/06/2010 **Complete By:** RDD	**Sample Collection Date:** 03/03/2009	**Sample Extraction Date:** 03/12/2009

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No action	
Detection Limits	Yes; see also NOTE (1) below	None	-	No action	
Blanks					
Method Blank	Yes	None	-	No action	
Equipment Blank Sample ID:	None analyzed				
Other QC Results					
Surrogate Recoveries	Yes	None	-	No action	
LCS Results	No	No LCS results for toxaphene	J	Qualify all associated results as estimated (J)	Impacts to all samples above.
Matrix Spikes Sample ID: J18B20	Yes	None	-	No action	
Lab Duplicates Sample ID:	None analyzed				
Field Duplicate Sample ID: J189V8/J18B11 J189V9/J18B33	Yes Yes	None None	- -	No action No action	
QC Summary					
Validity of Data	Yes				

Additional Notes:
Sample results were reported on a dry weight basis. All samples were analyzed at four-fold dilutions due to matrix interference; reporting limits are elevated (4X) as applicable.

SDG K1556 – Metals QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1556	**W&C Project No.:**222007
Medium: Soil		**Analytes:** Metals (1 of 2)
Samples: J189V8, J189V9, J189W6, J18B37, J18B38, J18B39, J18B40, J18B41		

Laboratory: Lionville	**Date Data Assessment Completed:** 03/05/2010 **Complete By:** RDD	**Sample Collection Date:** 03/03/2009	**Sample Analysis Date:** ICP – 05/05/2009; Hg – 03/30/2009

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No action	
Detection Limits	Yes	None	-	No action	
Blanks					
Preparation Blank	No	Batch L904166: Ca = 6.23 mg/kg Pb = 0.566 mg/kg Sn = 0.988 mg/kg Ti = 0.098 mg/kg	-	Qualify positive results less than 5X blank concentration as non-detected estimated (UJ)	Impacts the following results: Ca, Pb, Sn, Ti – None; all results >5X blank concentration or sample results are non-detected
Equipment Blank Sample ID: J189W6	No	Al = 168 mg/kg As = 0.221 mg/kg Ba = 1.93 mg/kg Ca = 40.7 mg/kg Fe = 205 mg/kg Pb = 0.378 mg/kg Mg = 27.6 mg/kg Mn = 3.58 mg/kg P = 6.32 mg/kg K = 37.5 mg/kg Si = 215 mg/kg Sr = 0.521 mg/kg Sn = 0.819 mg/kg Ti = 5.47 mg/kg V = 0.273 mg/kg Zn = 0.879 mg/kg	-	No action required by validation criteria	
Other QC Results					
LCS Results	No	Batch L904166: Sb = 194% As = 179% Tl = 0% V = 189%	J	Qualify positive results for Sb, As, and V in associated batch as estimated (J) No qualifiers applied to Tl results since LCS spike concentration is near the RL (less than 2XRL)	Impacts the following results: Sb – None As, V – All samples

SDG K1556 – Metals QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1556	**W&C Project No.:**222007
Medium: Soil		**Analytes:** Metals (1 of 2)
Samples: J189V8, J189V9, J189W6, J18B37, J18B38, J18B39, J18B40, J18B41		

Laboratory:	**Date Data Assessment Completed:**	**Sample Collection Date:**	**Sample Analysis Date:**
Lionville	03/05/2010 **Complete By:** RDD	03/03/2009	ICP – 05/05/2009; Hg – 03/30/2009

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Matrix Spikes Sample ID:					
Hg - J18B37	Yes	None	-	No action	
ICP – J18B37	No	Sb = 46%	J	Qualify positive and non-detected results for Sb in associated batch as estimated (J)	Impacts the following results: Sb – All samples
Lab Duplicates Sample ID:					
Hg – J18B37	Yes	None	-	No action	
ICP – J18B37	Yes	None	-	No action	
Field Duplicate Sample ID:					
J189V8/J18B11	No	Si RPD = 64	-	No action based on guidance	
J189V9/J18B33	No	Si RPD = 85	-	No action based on guidance	
QC Summary					
Validity of Data	Not all QC criteria were , but no data were rejected				
Additional Notes: : Sample results were reported on a dry weight basis.					

SDG K1556 – Metals QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1556	**W&C Project No.:**222007
Medium: Soil		**Analytes:** Metals (2 of 2)
Samples: J18B10, J18B11, J18B12, J18B13, J18B14, J18B20, J18B21, J18B22, J18B23, J18B24, J18B25, J18B26, J18B27, J18B28, J18B29, J18B32, J18B33, J18B34, J18B35, J18B36		

Laboratory: Lionville	**Date Data Assessment Completed:** 03/06/2010 **Complete By:** RDD	**Sample Collection Date:** 03/03/2009	**Sample Analysis Date:** ICP – 05/04/2009; Hg – 03/26/2009

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No action	
Detection Limits	Yes	None	-	No action	
Blanks					
Preparation Blank	No	Batch L904165: Be = 0.0102 mg/kg Pb = 0.553 mg/kg Mg = 1.76 mg/kg Na = 10.2 mg/kg Sn = 1.17 mg/kg	UJ	Qualify positive results less than 5X blank concentration as non-detected estimated (UJ)	Impacts the following results: Sn – J18B12, J18B20, J18B23, J18B24, J18B25, J18B26 Be, Pb, Mg, Na - None
Equipment Blank Sample ID:	None analyzed				
Other QC Results					
LCS Results	No	Batch L904165: Sb = 163% As = 152% Na = 67% Tl = 0%	J	Qualify positive results for Sb and As as estimated (J); qualify positive and non-detected results for Na as estimated (J) No qualifiers applied to Tl results since LCS spike concentration is near the RL (less than 2XRL)	Impacts the following results: Sb – J18B14, J18B20, J18B25, J18B26 As, Na – All samples
Matrix Spikes Sample ID: Hg - J18B10 ICP – J18B36	 Yes No	 None Sb = 51%	 - J	No action Qualify positive and non-detected results for Sb in associated batch as	Impacts the following results:

SDG K1556 – Metals QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1556	**W&C Project No.:**222007
Medium: Soil		**Analytes:** Metals (2 of 2)
Samples: J18B10, J18B11, J18B12, J18B13, J18B14, J18B20, J18B21, J18B22, J18B23, J18B24, J18B25, J18B26, J18B27, J18B28, J18B29, J18B32, J18B33, J18B34, J18B35, J18B36		

Laboratory: Lionville	**Date Data Assessment Completed:** 03/06/2010 **Complete By:** RDD	**Sample Collection Date:** 03/03/2009	**Sample Analysis Date:** ICP – 05/04/2009; Hg – 03/26/2009

QC Parameter	**All in Spec.?**	**Non-Compliant Results**	**Flag**	**Action/ Notes**	**Associated Samples**
				estimated (J)	Sb – All samples
Lab Duplicates Sample ID: Hg – J18B10 ICP – J18B36	Yes Yes	None None	- -	No action No action	
Field Duplicate Sample ID: J189V8/J18B11 J189V9/J18B33	No No	Si RPD = 64 Si RPD = 85	- -	No action based on guidance No action based on guidance	
QC Summary					
Validity of Data	No, but no data were rejected				

Additional Notes: :
Sample results were reported on a dry weight basis.

SDG K1556 – Radionuclides QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1556	**W&C Project No.:**222007

Medium: Soil Data set 1 of 2	**Analytes:** C-14, Gamma Spec, Isotopic Plutonium, Isotopic Thorium, Isotopic Uranium, Sr-90, Tc-99, Tritium

Samples: J189V8, J189V9, J18B10, J18B11, J18B12, J18B13, J18B14, J18B20, J18B21, J18B22, J18B23, J18B24, J18B25, J18B26

Laboratory: Eberline	**Date Data Assessment Completed:** 03/05/2010 **Complete By:** RDD	**Sample Collection Date:** 03/03/2009	**Sample Analysis Date:** 03/21/2009 – 04/18/2009

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No action	
Detection Limits	Yes	None	-	No action	
Blanks					
Method Blanks	Yes	None	-	No action	
Other QC Results					
LCS Results	Yes	None	-	No action	
Matrix Spike – C_{14} and tritium	No	No MS analyzed	J	Qualify non-detect and positive results as estimated (J)	All samples for C_{14} and tritium
Tracer Results	Yes	None	-	No action	
Lab Duplicates Sample ID: J189V8	Yes	None	-	No action	
Field Duplicate Sample ID:					
J189V8/J18B11	No	Cs-137 RPD = 85	-	No action based on guidance	
J189V9/J18B33	Yes	None	-	No action	
QC Summary					
Validity of Data	No, but no data were rejected				

Additional Notes: Matrix spikes required for C-14 and tritium analyses were not performed; positive and non-detected results for C-14 were qualified as estimated (J).

SDG K1556 – Radionuclides QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1556	**W&C Project No.:**222007
Medium: Soil Data set 2 of 2	**Analytes:** C-14, Gamma Spec, Isotopic Plutonium, Isotopic Thorium, Isotopic Uranium, Sr-90, Tc-99, Tritium	
Samples: J18B27, J18B28, J18B29, J18B32, J18B33, J18B34, J18B35, J18B36, J18B37, J18B38, J18B39, J18B40, J18B41		

Laboratory: Eberline	**Date Data Assessment Completed:** 03/05/2010 **Complete By:** RDD	**Sample Collection Date:** 03/03/2009	**Sample Analysis Date:** 04/06/2009 – 04/20/2009

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No action	
Detection Limits	Yes	None	-	No action	
Blanks					
Method Blanks	Yes	None	-	No action	
Other QC Results					
LCS Results	Yes	None	-	No action	
Matrix Spike – C_{14} and tritium	No	No MS analyzed	J	Qualify non-detect and positive results as estimated (J)	All samples for C_{14} and tritium
Tracer Results	No	Tracer recoveries for Isotopic Thorium above control limits in following samples: J18B27 = 110% J18B28 = 114% J18B29 = 113% J18B34 = 111% J18B39 = 108% J18B40 = 110% J18B41 = 110%	J	Qualify positive results for Th-228, Th-230, and Th-232 as estimated (J) in affected samples	Impacts the following results: Th-228, Th-232 - All samples Th-230 – J18B28, J18B29, J18B34, J18B39, J18B41
Lab Duplicates Sample ID: J18B27	Yes	None	-	No action	
Field Duplicate Sample ID: J189V9/J18B33	Yes	None	-	No action	
QC Summary					
Validity of Data	No, but no data were rejected				
Additional Notes: Matrix spikes required for C-14 and tritium analyses were not performed; positive and non-detected results for C-14 were qualified as estimated (J).					

SDG K1556 – DRO QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1556	**W&C Project No.:**222007	
Medium: Soil		**Analytes:** DRO (1 of 2)	
Samples: J189V8, J189V9, J189W6			
Laboratory: Lionville	**Date Assessment Completed:** 03/06/2010 **Complete By:** RDD	**Sample collection Date:** 03/03/2009	**Sample Extraction Date:** 03/16/2009

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No action	
Surrogates	Yes	None	-	No action	
Blanks					
Method Blank	Yes	None	-	No action	
Equipment Blank Sample ID: J189W6	No	Motor Oil = 8110 ug/kg	-	No action required by validation criteria	
Other QC					
LCS Results	Yes	None	-	No action	
Matrix Spikes Sample ID: J189V8	No	DRO RPD = 64	J	Qualify positive and non-detected results as estimated (J)	Impacts the following samples: DRO – J189V8, J189V9
Lab Duplicates Sample ID:	None analyzed				
Field Duplicate Sample ID: J189V8/J18B11	No	RPDs or absolute differences between results are >2X RL for: Motor oil	-	No action based on guidance	
J189V9/J18B33	Yes	None	-	No action	
QC Summary					
Validity of Data	Yes, no data were rejected				
Additional Notes: NOTE: All sample results were reported on a dry weight basis.					

SDG K1556 – DRO QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1556	**W&C Project No.:**222007
Medium: Soil		**Analytes:** DRO (2 of 2)

Samples: J18B10, J18B11, J18B12, J18B13, J18B20, J18B21, J18B22, J18B23, J18B32, J18B33, J18B34, J18B35

Laboratory: Lionville	**Date Assessment Completed:** 03/0362010 **Complete By:** RDD	**Sample collection Date:** 03/03/2009	**Sample Extraction Date:** 03/15/2009

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No action	
Surrogates	No	J18B23: p-Terphenyl = 131%	J	Qualify positive results as estimated (J) in sample J18B23	Impacts the following results: Motor oil – J18B23 DRO – None; non-detected in J18B23
Blanks					
Method Blank	Yes	None	-	No action	
Equipment Blank Sample ID:	None analyzed				
Other QC					
LCS Results	Yes	None	-	No action	
Matrix Spikes Sample ID: J18B10	Yes	None	-	No action	
Lab Duplicates Sample ID:	None analyzed				
Field Duplicate Sample ID: J189V8/J18B11	No	RPDs or absolute differences between results are >2X RL for: Motor oil	J	Qualify positive and non-detected results for motor oil as estimated (J)	Impacts the following results: Motor oil – J189V8, J18B11
J189V9/J18B33	Yes	None	-	No action	
QC Summary					
Validity of Data	No, but no data were rejected				

Additional Notes:
NOTE: All sample results were reported on a dry weight basis.

SDG K1556 – TOC QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1556	**W&C Project No.:**222007
Medium: Soil		**Analytes:** TOC (1 of 2)
Samples: J189V8, J189V9, J189W6, J18B37, J18B38, J18B39, J18B40, J18B41		

Laboratory: Lionville	**Date Data Assessment Completed:** 03/05/2010 **Complete By:** RDD	**Sample Collection Date:** 03/03/2009	**Sample Analysis Date:** 04/08/2009

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	No	All samples analyzed 8 days past HT	J	Qualify positive and non-detected results as estimated	Impacts the following results: TOC – All samples
Detection Limit	Yes	None	-	No action	
Blanks					
Method Blank	No	TOC = 12.4 mg/kg	UJ	Qualify positive results less than 5X blank concentration as non-detected estimated (UJ)	Impacts the following sample results: TOC – None; all results are greater than 5X blank concentration or are non-detected
Equipment Blank Sample ID: J189W6	No	TOC = 68.9 mg/kg	-	No qualifiers required by validation criteria	
Other QC					
LCS Results	Yes	None	-	No action	
Matrix Spikes Sample ID: J18B38	Yes	None	-	No action	
Lab Duplicate Sample ID: J18B38	Yes	None	-	No action	
Field Duplicate Sample ID: J189V8/J18B11 J189V9/J18B33	No No	Non-compliant RPDs: TOC = 62 TOC = 88	J J	Qualify results for TOC as estimated (J)	Impacts the following sample results: TOC – J189V8, J18B11 TOC – J189V9, J18B33
QC Summary					
Validity of Data	No, but no data were rejected				
Additional Notes:					

SDG K1556 – TOC QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1556	**W&C Project No.:**222007	
Medium: Soil		**Analytes:** TOC (2 of 2)	
Samples: J18B10, J18B11, J18B12, J18B13, J18B14, J18B20, J18B21, J18B22, J18B23, J18B24, J18B25, J18B26, J18B27, J18B28, J18B29, J18B32, J18B33, J18B34, J18B35, J18B36			
Laboratory: Lionville	**Date Data Assessment Completed:** 03/06/2010 **Complete By:** RDD	**Sample Collection Date:** 03/03/2009	**Sample Analysis Date:** 03/30/2009

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No action	
Detection Limit	Yes	None	-	No action	
Blanks					
Method Blank	No	TOC = 7.78 mg/kg	UJ	Qualify positive results less than 5X blank concentration as non-detected estimated (UJ)	Impacts the following sample results: TOC – None; all results are greater than 5X blank concentration or are non-detected
Other QC					
LCS Results	Yes	None	-	No action	
Matrix Spikes Sample ID: J18B12	Yes	None	-	No action	
Lab Duplicate Sample ID: J18B12	Yes	None	-	No action	
Field Duplicate Sample ID: J189V8/J18B11 J189V9/J18B33	No No	Non-compliant RPDs: TOC = 62 TOC = 88	J J	Qualify results for TOC as estimated (J)	Impacts the following sample results: TOC – J189V8, J18B11 TOC – J189V9, J18B33
QC Summary					
Validity of Data	No, but no data were rejected				
Additional Notes:					

SDG K1556 – Hexavalent Chromium QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1556	**W&C Project No.:**222007	
Medium: Soil		**Analytes:** Hexavalent Chromium (1 of 2)	
Samples: J189V8, J189V9, J189W6, J18B37, J18B38, J18B39, J18B40, J18B41			
Laboratory: Lionville	**Date Data Assessment Completed:** 03/05/2010 **Complete By:** RDD	**Sample Collection Date:** 03/03/2009	**Sample Analysis Date:** 04/15/2009

QC Parameter	**All in Spec.?**	**Non-Compliant Results**	**Flag**	**Action/ Notes**	**Associated Samples**
Holding Times	No	All samples analyzed after HT expiration; collected 03/03/2009, analyzed 04/15/2009	J	Qualify non-detected results and positive results as estimated (J)	Impacts all samples above.
Detection Limit	Yes	None	-	No action	
Blanks					
Method Blank	Yes	None	-	No action	
Equipment Blank Sample ID: J189W6	Yes	None	-	No action	
Other QC					
LCS Results	Yes	None	-	No action	
Matrix Spikes Sample ID: J18B41	Yes	None	-	No action	
Lab Duplicate Sample ID: J18B41	Yes	None	-	No action	
Field Duplicate Sample ID: J189V8/J18B11 J189V9/J18B33	Yes Yes	None None	- -	No action No action	
QC Summary					
Validity of Data	Yes	Not all QC met but no data were rejected.			
Additional Notes:					

SDG K1556 – Hexavalent Chromium QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA

SDG No.: K1556

W&C Project No.:222007

Medium: Soil

Analytes: Hexavalent Chromium (2 of 2)

Samples: J18B10, J18B11, J18B12, J18B13, J18B14, J18B20, J18B21, J18B22, J18B23, J18B24, J18B25, J18B26, J18B27, J18B28, J18B29, J18B32, J18B33, J18B34, J18B35, J18B36

Laboratory: Lionville

Date Data Assessment Completed: 03/06/2010
Complete By: RDD

Sample Collection Date: 03/03/2009

Sample Analysis Date: 04/20/2009

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	No	All samples analyzed after HT expiration; collected on 03/03/2009 and analyzed on 04/20/2009	J	Qualify non-detected results and positive results as estimated (J)	Impacts all samples above.
Detection Limit	Yes	None	-	No action	
Blanks					
Method Blank	Yes	None	-	No action	
Other QC					
LCS Results	Yes	None	-	No action	
Matrix Spikes Sample ID: J18B10	No	Cr VI = 27%	R	Qualify non-detected results as rejected (R) and positive results as estimated (J)	Impacts the following samples: All samples qualified R.
Lab Duplicate Sample ID: J18B10	Yes	None	-	No action	
Field Duplicate Sample ID: J189V8/J18B11 J189V9/J18B33	Yes Yes	None None	- -	No action No action	
QC Summary					
Validity of Data	Some results were rejected.	Low matrix spike recoveries.	R		

Additional Notes: Sample results were reported on a dry weight basis. Sample J18B35 was analyzed at a two-fold dilution due to matrix interference; the reporting limit was elevated (2X).

C.4 SDG K1566

SDG K1566 – SVOC QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1566	**W&C Project No.:**222007	
Medium: Soil		**Analytes:** SVOCs	
Samples: J18J29, J18J30, J18J31, J18J32, J18J33, J18J34, J18J35, J18J36			
Laboratory: Lionville	**Date Data Assessment Completed:** 02/26/2010 **Complete By:** KAM	**Sample Collection Date:** 03/11-13/2009	**Sample Analysis Date:** 03/24/2009 extr; 03/29/2009 anal; 04/11-12/2009 anal

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No action	
Detection Limits	No	Samples diluted due to matrix effects. Hexachlorobenzene, 2-chloroaniline, 2-nitroaniline, 2,4-dinitrophenol, 4-nitrophenol, 4-nitroaniline, pentachlorophenol, 3,3'-dichlorobenzidine have raw, undiluted RDLs that exceed those specified in work plan.	-	No action	
Blanks					
Method Blanks	Yes	None	-	No action	
Equipment Blank Sample ID:	Not collected				
Other QC					
Surrogate Recoveries	No	J18J36 2-fluorobiphenyl surrogate recovery > UCL	-	No action since only 1 surrogate out of criteria.	J18J36
LCS Results	No	2,4-Dinitrophenol = 44% 4-Chloroaniline = 43% Hexachlorocyclopentadiene = 27%	J	Qualify positive and ND sample results as estimated (J).	All samples.
Matrix Spikes Sample ID:J18J36	No	**Non-Compliant Recoveries** 4-Chloroaniline = 42%/34% Hexachlorocyclopentadiene = 11%/6% **Non-Compliant RPDs** Hexachlorocyclopentadiene =61% Pentachlorophenol = 31%	J	Qualify positive and ND sample results as estimated (J).	All samples.
Lab Duplicates Sample ID:	None analyzed				
Field Duplicates Sample ID:	No collected				
Summary					

SDG K1566 – SVOC QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1566	**W&C Project No.:**222007
Medium: Soil		**Analytes:** SVOCs
Samples: J18J29, J18J30, J18J31, J18J32, J18J33, J18J34, J18J35, J18J36		

Laboratory: Lionville	**Date Data Assessment Completed:** 02/26/2010 **Complete By:** KAM	**Sample Collection Date:** 03/11-13/2009	**Sample Analysis Date:** 03/24/2009 extr; 03/29/2009 anal; 04/11-12/2009 anal

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Validity of Data	Not all QC met, but no data were rejected.				
Additional Notes:					

SDG K1566 – PCB QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1566	**W&C Project No.:**222007
Medium: Soil		**Analytes:** PCBs
Samples: J18J29, J18J30, J18J31, J18J32, J18J33, J18J34, J18J35, J18J36		

Laboratory: Lionville	**Date Data Assessment Completed:** 02/26/2010 **Complete By:** KAM	**Sample Collection Date:** 03/11-13/2009	**Sample Analysis Date:** 03/24/2009 extr 04/02/2009 anal

QC Parameter	**All in Spec.?**	**Non-Compliant Results**	**Flag**	**Action/ Notes**	**Associated Samples**
Holding Times	Yes	None	-	No action	
Detection Limits	Yes	None	-	No action	
Blanks					
Method Blank	Yes	None	-	No action	
Equipment Blank Sample ID:	Not collected				
Other QC Results					
Surrogate Recoveries	Yes	None	-	No action	
LCS Results	Yes	None	-	No action	
Matrix Spikes Sample ID:J18J29	Yes	None	-	No action	
Lab Duplicates Sample ID:	Not analyzed				
Field Duplicates Sample ID:	Not collected				
Summary					
Validity of Data	All QC parameters were met.				
Additional Notes:					

SDG K1566 – Pesticides QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1566	**W&C Project No.:**222007	
Medium: Sediments		**Analytes:** Pesticides	
Samples: : J18J29, J18J30, J18J31, J18J32, J18J33, J18J34, J18J35, J18J36			
Laboratory: Lionville	**Date Data Assessment Completed:** 02/26/2010 **Complete By:** KAM	**Sample Collection Date:** 03/11-13/2009	**Sample Analysis Date:** 03/16/2009 extr 04/2,28/2009 anal

QC Parameter	**All in Spec.?**	**Non-Compliant Results**	**Flag**	**Action/ Notes**	**Associated Samples**
Holding Times	Yes	None	-	No action	
Detection Limits	No	RDLs for Endosulfan I, gamma BHC, heptachlor, and heptachlor epoxide exceed specified levels in work plan.	-	No action	
Blanks					
Method Blank	Yes	None	-	No action	
Equipment Blank	Not collected				
Other QC Results					
Surrogate Recoveries	Yes	None	-	No action	
LCS Results	No	No LCS results for toxaphene	J	Qualify all associated results as estimated (J)	Impacts to all samples above.
Matrix Spikes Sample ID:J18J35	No	Delta – BHC = 43%	J	Qualify positive and ND sample results as estimated (J).	All samples.
Lab Duplicates	Not analyzed				
Field Duplicate Sample ID:	Not collected				
QC Summary					
Validity of Data	No all QC parameters were met, but no data were rejected.				
Additional Notes:					

SDG K1566 – Metals QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1566	**W&C Project No.:**222007	
Medium: Soil		**Analytes:** Metals	
Samples: J18J29, J18J30, J18J31, J18J32, J18J33, J18J34, J18J35, J18J36			
Laboratory: Lionville	**Date Data Assessment Completed:** 02/26/2010 **Complete By:** KAM	**Sample Collection Date:** 03/11-13/2009	**Sample Analysis Date:** 04/09/2009

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No action	
Detection Limits	No	Ca, Fe, P, Zn detection limits exceed specifications in work plan	-	No action	
Blanks					
Preparation Blank	No	Be= 0.00345 mg/kg Mg = 1.03 mg/kg Pb = 3.95 mg/kg Sn = 0.582 mg/kg	UJ	Qualify positive sample results < 5x the blank concentration as ND (UJ).	All samples. Impacts to the following samples: Pb –J18J31, J18J34, J18J35, J18J36
Equipment Blank Sample ID:	Not collected				
Other QC Results					
LCS Results	No	Sb = 182% As = 180% Pb = 40% V = 167%	J	Qualify positive sample results as estimated (J).	All samples with the following impacts: Sb – J18J30, J18J31, J18J35, J18J36 As – All samples Pb – All samples V – All samples
Matrix Spikes Sample ID: J18J33	No	Sb = 39% Bi = 66% Cd = 57% P = 59%	J	Qualify positive and ND sample results as estimated (J).	All samples.
Lab Duplicates Sample ID:J18J33	Yes	None	-	No action.	
Field Duplicate Sample ID:	Not collected				
QC Summary					
Validity of Data	Not all QC met but none of the data were rejected.				
Additional Notes: No action taken with respect to Tl LCS result of 0% recovery, since spike level is just above the IDL.					

SDG K1566 – Radionuclides QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1566	**W&C Project No.:**222007	
Medium: Soil	**Analytes:** Gamma scan, C_{14}, Sr_{90}, Tc_{99}, and Isotopic Th, U, Pu		
Samples: J18J29, J18J30, J18J31, J18J32, J18J33, J18J34, J18J35, J18J36			
Laboratory: Eberline	**Date Data Assessment Completed:** 02/26/2010 **Complete By:** KAM	**Sample Collection Date:** 03/11-13/2009	**Sample Analysis Date:** 04/2009

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No action	
Detection Limits	Yes	None	-	No action	
Blanks					
Method Blanks	Yes	None	-	No action	
Other QC Results					
LCS Results	Yes	None	-	No action	
Matrix Spike – C_{14}	No	No MS was analyzed	J	Qualify positive and ND sample results as estimated (J).	All samples for C_{14}
Tracer Results	No	J18J33 recovery > UCL for Thorium 230	J	Qualify positive sample results as estimated (J).	J18J33.
Lab Duplicates Sample ID:J18J29	No	Thorium-232 = 69%	-	No action since the difference between results is less than 2x the RDL	
Field Duplicate Sample ID:	Not collected				
QC Summary					
Validity of Data	Not all QC parameters were met, but no data were rejected.				
Additional Notes:					

SDG K1566 – DRO QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1566	**W&C Project No.:**222007
Medium: Soil		**Analytes:** DRO
Samples: J18J29, J18J30, J18J31, J18J32, J18J33, J18J34, J18J35, J18J36		

Laboratory: Lionville	**Date Validation Completed:** 02/26/2010 **Complete By:** KAM	**Sample collection Date:** 03/11-13/2009	**Sample Analysis Date:** 03/24/2009 extr 04/02-04/2009 anal

QC Parameter	**All in Spec.?**	**Non-Compliant Results**	**Flag**	**Action/ Notes**	**Associated Samples**
Holding Times	Yes	None	-	No action	
Surrogates	Yes	None	-	No action.	
Blanks					
Method Blank	Yes	None	-	No action	
Equipment Blank Sample ID:	Not collected				
Other QC					
LCS Results	Yes	None	-	No action.	
Matrix Spikes Sample ID: J18J35	No	DRO = 69%	J	Qualify positive and ND sample results as estimated (J).	All samples
Lab Duplicates Sample ID:	Not analyzed				
Field Duplicate Sample ID:	Not collected				
QC Summary					
Validity of Data	Not all QC criteria were met but no data were rejected.				
Additional Notes:					

SDG K1566 – TOC QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1566	**W&C Project No.:**222007	
Medium: Soil		**Analytes:** TOC	
Samples: J18J29, J18J30, J18J31, J18J32, J18J33, J18J34, J18J35, J18J36			
Laboratory: Lionville	**Date Data Assessment Completed:** 03/01/2010 **Complete By:** KAM	**Sample Collection Date:** 03/11-13/2009	**Sample Analysis Date:**04/14-15/2009

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	No	Sample analysis < 2x holding time limit	J	Qualify positive and ND sample results as estimated (J).	All samples.
Detection Limit	Yes	None	-	No action	
Blanks					
Method Blank	Yes	None	-	No action	
Other QC					
LCS Results	Yes	None	-	No action	
Matrix Spikes Sample ID:	No	No MS sample was analyzed.	J	Qualify positive and ND sample results as estimated (J).	All samples.
Lab Duplicate Sample ID: J18J30	Yes	None	-	No action	
Field Duplicate Sample ID:	None collected				
QC Summary					
Validity of Data	Not all QC met but no data were rejected.				
Additional Notes:					

SDG K1566 – Hexavalent Chromium QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1566	**W&C Project No.:**222007	
Medium: Soil		**Analytes:** Hexavalent Chromium	
Samples: J18J29, J18J30, J18J31, J18J32, J18J33, J18J34, J18J35, J18J36			
Laboratory: Lionville	**Date Data Assessment Completed:** 02/26/2010 **Complete By:** KAM	**Sample Collection Date:** 03/11/2009 03/12/2009 03/13/2009	**Sample Analysis Date:** 04/15/2009 04/16/2009 04/20/2009

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	No	Samples analyzed beyond holding time limit.	J	Qualify non-detected results and positive results as estimated (J)	Impacts to all samples
Detection Limits	Yes	None	-	No Action	
Blanks					
Blanks – Method					
04/15/2009	Yes	None	-	No Action	
04/16/2009	Yes	None	-	No Action	
04/20/2009	Yes	None	-	No Action	
Equipment Blank Sample ID:	Not collected				
Other QC Results					
LCS Results					
04/15/2009	Yes	None	-	No Action	
04/16/2009	Yes	None	-	No Action	
04/20/2009	Yes	None	-	No Action	
Matrix Spikes Sample ID:	No	No MS sample was analyzed	J	Qualify positive and ND sample results as estimated (J).	All samples.
Laboratory Duplicates Sample ID: J18J32	Yes	None.	-	No Action	
Field Duplicate Sample ID:	Not collected				
QC Summary					
Validity of Data	Not all QC met but no data were rejected.				
Additional Notes:					

C.5 SDG K1668

SDG K1668 – Metals QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1668	**W&C Project No.:**222007
Medium: Soil		**Analytes:** Metals
Samples: J18X63, J18X66, J18X69, J18X72, J18X64, J18X67, J18X70, J18X65, J18X68, J18X71		

Laboratory: Lionville	**Date Data Assessment Completed:** 2/26/2010 **Complete By:** LEM	**Sample Collection Date:** 6/11/2009	**Sample Analysis Date:** Other Metals 6/20/2009 Hg 6/22/2009

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No Action	
Detection Limits	No	Some elements exceed detection limits specified in the SAP (calcium, iron, phosphorus, and zinc)	-	No Action	
Blanks					
Preparation Blank	No	Calcium=7.46 mg/kg Lithium=0.519 mg/kg Tin=1.15 mg/kg	UJ	Qualify positive results as UJ	All samples. Impacts: Tin: all samples except J18X68, J18X70, and J18X71
Equipment Blank Sample ID: J18X72	No	Aluminum=200 mg/kg Arsenic=0.247 mg/kg Barium=2.08 mg/kg Calcium=46.8 mg/kg Chromium=0.2 mg/kg Iron=261 mg/kg Lead=0.378 mg/kg Magnesium=30.9 mg/kg Manganese=4.63 mg/kg Phosphorus=6.55 mg/kg Potassium=53.2 mg/kg Silicon=157 mg/kg Strontium=0.508 mg/kg Tin=0.866 mg/kg Titanium=6.63 mg/kg Vanadium=0.369 mg/kg Zinc=1.01 mg/kg	-	No action based on guidance.	
Other QC Results					

SDG K1668 – Metals QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1668	**W&C Project No.:**222007
Medium: Soil		**Analytes:** Metals
Samples: J18X63, J18X66, J18X69, J18X72, J18X64, J18X67, J18X70, J18X65, J18X68, J18X71		

Laboratory: Lionville	**Date Data Assessment Completed:** 2/26/2010 **Complete By:** LEM	**Sample Collection Date:** 6/11/2009	**Sample Analysis Date:** Other Metals 6/20/2009 Hg 6/22/2009

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
LCS Results	No	Titanium = 136%	J	Qualify positive results as estimated (J).	Titanium: Impacts to all samples
Matrix Spikes Sample ID: J18X63	No	Antimony = 43%	J/UJ	Qualify positive and non-detect results as estimated (J and UJ, respectively).	Antimony: Impacts to all samples
Lab Duplicates Sample ID: J18X63	No	Silicon = 37% Antimony = 63%	J	Qualify positive silicon results as estimated (J). No action because both results are non-detect.	Silicon: Impacts to all samples
Field Duplicate Sample ID: J18X71/J18X68	Yes	None	-	No Action	
QC Summary					
Validity of Data	Yes	No rejected results			

Additional Notes:
Equipment blank results indicate potential carryover contamination of several elements from decontamination procedure.

SDG K1668 – Hexavalent Chromium QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.: K1668**	**W&C Project No.:**222007	
Medium: Soil		**Analytes:** Hexavalent Chromium	
Samples: J18X63, J18X66, J18X69, J18X64, J18X67, J18X70, J18X65, J18X68, J18X71			
Laboratory: Lionville	**Date Data Assessment Completed:** 2/25/2010 **Completed By:** LEM	**Sample Collection Date:** 6/11/2009	**Sample Analysis Date:** 6/17/2009

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No Action	
Detection Limits	Yes	None	-	No Action	
Blanks					
Preparation Blank	Yes	None	-	No Action	
Equipment Blank Sample ID:	None collected				
Other QC Results					
LCS Results	Yes	None	-	No Action	
Matrix Spikes Sample ID: J18X63	Yes	None	-	No Action	
Laboratory Duplicates Sample ID: J18X63	Yes	None, both non-detect	-	No Action	
Field Duplicates Sample ID: J18X71/J18X68	Yes	None, both non-detect	-	No Action	
QC Summary					
Validity of Data	Yes	No rejected results			
Additional Notes:					

APPENDIX D

GROUNDWATER UPWELLING DATA QUALITY ASSESSMENT WORKSHEETS

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APPENDIX D
GROUNDWATER UPWELLING DATA QUALITY ASSESSMENT WORKSHEETS

D.1 POREWATER

D.1.1 SDG J00557

SDG J00557 – Hexavalent Chromium QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** J00557	**W&C Project No.:**222007
Medium: Pore Water		**Analytes:** Hexavalent Chromium
Samples: J192P4		

Laboratory: Test America, Richland, WA	**Date Data Assessment Completed:** 4/7/2010 **Completed By:** LEM	**Sample Collection Date:** 7/30/2009	**Sample Analysis Date:** 7/31/2009

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No Action	
Detection Limits	Yes	None	-	No Action	
Blanks					
Preparation Blank	Yes	None	-	No Action	
Equipment Blank Sample ID:	Not collected				
Other QC Results					
LCS Results	Yes	None	-	No Action	
Matrix Spikes Sample ID: J192P4	No	Cr+6 = 22-25%	R	Qualify non-detect result as rejected (R) because recovery was <30%.	Impacts to sample J192P4
Laboratory Duplicates Sample ID: J192P4	Yes	None	-	No Action	
Field Duplicates	Not collected				
QC Summary					
Validity of Data	No	Matrix Spike	R	Sample rejected based on matrix spike results	J192P4
Additional Notes: Sample was filtered, suspect matrix effects					

D.1.2 SDG J00560

SDG J00560 – Hexavalent Chromium QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** J00560	**W&C Project No.:**222007	
Medium: Pore Water		**Analytes:** Hexavalent Chromium	
Samples: J19510, J19511			
Laboratory: Test America, Richland, WA	**Date Data Assessment Completed:** 2/10/2010 **Completed By:** LEM	**Sample Collection Date:** 8/23/2009	**Sample Analysis Date:** 8/23/2009

QC Parameter	**All in Spec.?**	**Non-Compliant Results**	**Flag**	**Action/ Notes**	**Associated Samples**
Holding Times	Yes	None	-	No Action	
Detection Limits	Yes	None	-	No Action	
Blanks					
Preparation Blank	Yes	None	-	No Action	
Equipment Blank Sample ID:	Not collected				
Other QC Results					
LCS Results	Yes	None	-	No Action	
Matrix Spikes Sample ID: J19510	Yes	None	-	No Action	
Laboratory Duplicates Sample ID: J19510	Yes	None, both non-detect	-	No Action	
Field Duplicates	Not Collected				
QC Summary					
Validity of Data	Yes	None	-	No Action	No rejected data
Additional Notes:					

D.1.3 SDG J00561

SDG J00561 – Hexavalent Chromium QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** J00561	**W&C Project No.:**222007	
Medium: Pore Water		**Analytes:** Hexavalent Chromium	
Samples: J19513			
Laboratory: Test America, Richland, WA	**Date Data Evaluation Completed:** 2/10/2010 **Completed By:** LEM	**Sample Collection Date:** 8/20/2009	**Sample Analysis Date:** 8/21/2009

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No Action	
Detection Limits	Yes	None	-	No Action	
Blanks					
Preparation Blank	Yes	None	-	No Action	
Equipment Blank Sample ID:	Not collected				
Other QC Results					
LCS Results	Yes	None	-	No Action	
Matrix Spikes Sample ID: J19513	Yes	None	-	No Action	
Laboratory Duplicates Sample ID: J19513	Yes	None, both non-detect	-	No Action	
Field Duplicates	Not collected				
QC Summary					
Validity of Data	Yes	None	-	No Action	No rejected data
Additional Notes:					

D.1.4 SDG J00562

SDG J00562 – Hexavalent Chromium QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** J00562	**W&C Project No.:**222007	
Medium: Pore Water		**Analytes:** Hexavalent Chromium	
Samples: J19516			
Laboratory: Test America, Richland, WA	**Date Data Evaluation Completed:** 2/10/2010 **Completed By:** LEM	**Sample Collection Date:** 8/24/2009	**Sample Analysis Date:** 8/24/2009

QC Parameter	**All in Spec.?**	**Non-Compliant Results**	**Flag**	**Action/ Notes**	**Associated Samples**
Holding Times	Yes	None	-	No Action	
Detection Limits	Yes	None	-	No Action	
Blanks					
Preparation Blank	Yes	None	-	No Action	
Equipment Blank Sample ID:	None Collected				
Other QC Results					
LCS Results	Yes	None	-	No Action	
Matrix Spikes Sample ID: J19516	Yes	None	-	No Action	
Laboratory Duplicates Sample ID: J19516	Yes	None	-	No Action	
Field Duplicates	None Collected				
QC Summary					
Validity of Data	Yes	None	-	No Action	No rejected data
Additional Notes:					

D.1.5 SDG J00565

Validated by ELR - Included in Appendix F

D.1.6 SDG J00566

SDG J00566 – Hexavalent Chromium QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** J00566	**W&C Project No.:**222007	
Medium: Pore Water		**Analytes:** Hexavalent Chromium	
Samples: J19519, J19520			
Laboratory: Test America, Richland, WA	**Date Data Evaluation Completed:** 2/10/2010 **Completed By:** LEM	**Sample Collection Date:** 8/31/2009	**Sample Analysis Date:** 9/1/2009

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No Action	
Detection Limits	Yes	None	-	No Action	
Blanks					
Preparation Blank	Yes	None	-	No Action	
Equipment Blank Sample ID:	Not collected				
Other QC Results					
LCS Results	Yes	None	-	No Action	
Matrix Spikes Sample ID: J19519	Yes	None	-	No Action	
Laboratory Duplicates Sample ID: J19519	Yes	None	-	No Action	
Field Duplicates	Not collected				
QC Summary					
Validity of Data	Yes	None	-	No Action	No rejected data
Additional Notes:					

D.1.7 SDG J00567

SDG J00567 – Hexavalent Chromium QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** J00567	**W&C Project No.:**222007	
Medium: Pore Water		**Analytes:** Hexavalent Chromium	
Samples: J19360, J19525, J19523, J19524			
Laboratory: Test America, Richland, WA	**Date Data Evaluation Completed:** 2/10/2010 **Completed By:** LEM	**Sample Collection Date:** 9/3/2009	**Sample Analysis Date:** 9/4/2009

QC Parameter	**All in Spec.?**	**Non-Compliant Results**	**Flag**	**Action/ Notes**	**Associated Samples**
Holding Times	Yes	None	-	No Action	
Detection Limits	Yes	None	-	No Action	
Blanks					
Preparation Blank	Yes	None	-	No Action	
Equipment Blank Sample ID:	Not collected				
Other QC Results					
LCS Results	Yes	None	-	No Action	
Matrix Spikes Sample ID: J19524	Yes	None	-	No Action	
Laboratory Duplicates Sample ID: J19524	Yes	None	-	No Action	
Field Duplicates	Not collected				
QC Summary					
Validity of Data	Yes	None	-	No Action	No rejected data
Additional Notes:					

D.1.8 SDG J00570

SDG J00570 – Radionuclides QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** J00570	**W&C Project No.:**222007
Medium: Pore Water	**Analytes:** Total Uranium	
Samples: J193J0, J193J1, J193J2, J193J3, J193J4, J193P4, J193P5, J193P6, J193P7, J193P8, J193P9, J193R0, J193R2, J193R3, J19423, J19587, J19589		

Laboratory: TestAmerica	**Date Data Assessment Completed:** 2/24/2010 **Completed By:** KAM	**Sample Collection Date:** 8/24,25,27,28/2009, 9/1/2009	**Sample Analysis Date:** 9/21/2009

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No Action	
Detection Limits	[1]				
Blanks					
Method Blanks	Yes	None	-	No Action	
Other QC Results					
LCS Results	Yes	None	-	No Action	
Tracer Results	[2]				
Matrix Spike Sample ID: J193P7	Yes	None	-	No Action	
Lab Duplicates Sample ID: J193P6	Yes	None	-	No Action	
Field Duplicate Sample ID: J19423[3]	Yes	None	-	No Action	J193J1, J193J2
QC Summary					
Validity of Data	Yes	No rejected results			

Additional Notes:
1 = The detection limit for Total Uranium is not identified in Table 3-1 of the SAP
2 = Tracer/Yield results not provided in data package
3 = According to Porewater Sample Tracking spreadsheet, duplicate sample J19423 is associated with two samples (J193J1 and J193J2)

D.1.9 SDG J00571

SDG J00571 – Radionuclides QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** J00571	**W&C Project No.:**222007	
Medium: Pore Water		**Analytes:** Total Uranium	
Samples: J19590, J19591, J19594			
Laboratory: TestAmerica	**Date Data Assessment Completed:** 2/24/2010 **Completed By:** KAM	**Sample Collection Date:** 9/2,8/2009	**Sample Analysis Date:** 9/21/2009

QC Parameter	**All in Spec.?**	**Non-Compliant Results**	**Flag**	**Action/ Notes**	**Associated Samples**
Holding Times	Yes	None	-	No Action	
Detection Limits	[1]				
Blanks					
Method Blanks	Yes	None	-	No Action	
Other QC Results					
LCS Results	Yes	None	-	No Action	
Tracer Results	[2]				
Matrix Spike Sample ID: J19591	Yes	None	-	No Action	
Lab Duplicates Sample ID: J19590	Yes	None	-	No Action	
Field Duplicate Sample ID:	Not collected				
QC Summary					
Validity of Data	Yes	No rejected results			

Additional Notes:
1 = The detection limit for Total Uranium is not identified in Table 3-1 of the SAP
2 = Tracer/Yield results not provided in data package

D.1.10 SDG J00572

SDG J00572 – Hexavalent Chromium QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** J00572	**W&C Project No.:**222007	
Medium: Pore Water		**Analytes:** Hexavalent Chromium	
Samples: J19522, J19361, J19362			
Laboratory: Test America, Richland, WA	**Date Data Evaluation Completed:** 2/10/2010 **Completed By:** LEM	**Sample Collection Date:** 9/10/2009	**Sample Analysis Date:** 9/11/2009

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No Action	
Detection Limits	Yes	None	-	No Action	
Blanks					
Preparation Blank	Yes	None	-	No Action	
Equipment Blank Sample ID:	Not collected				
Other QC Results					
LCS Results	Yes	None	-	No Action	
Matrix Spikes Sample ID: J19522	Yes	None	-	No Action	
Laboratory Duplicates Sample ID: J19522	Yes	None	-	No Action	
Field Duplicates	Not collected				
QC Summary					
Validity of Data	Yes	None	-	No Action	No rejected data
Additional Notes:					

D.1.11 SDG J00573

SDG J00573 – Hexavalent Chromium QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** J00573	**W&C Project No.:**222007	
Medium: Pore Water		**Analytes:** Hexavalent Chromium	
Samples: J19363, J19517			
Laboratory: Test America, Richland, WA	**Date Data Evaluation Completed:** 2/10/2010 **Completed By:** LEM	**Sample Collection Date:** 9/11/2009	**Sample Analysis Date:** 9/11/2009

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No Action	
Detection Limits	Yes	None	-	No Action	
Blanks					
Preparation Blank	Yes	None	-	No Action	
Equipment Blank Sample ID:	Not collected				
Other QC Results					
LCS Results	Yes	None	-	No Action	
Matrix Spikes Sample ID: J19363	Yes	None	-	No Action	
Laboratory Duplicates Sample ID: J19363	Yes	None	-	No Action	
Field Duplicates	Not collected				
QC Summary					
Validity of Data	Yes	None	-	No Action	No rejected data
Additional Notes:					

D.1.12 SDG J00574

SDG J00574 – Hexavalent Chromium QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** J00574	**W&C Project No.:**222007

Medium: Pore Water	**Analytes:** Hexavalent Chromium
Samples: J19515, J19364, J19365, & J19521	

Laboratory: Test America, Richland, WA	**Date Data Evaluation Completed:** 2/10/2010 **Completed By:** LEM	**Sample Collection Date:** 9/13/2009	**Sample Analysis Date:** 9/15/2009

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	No	Samples exceeded holding time (<2x).	J	Qualify results as estimated (J).	Impacts to all samples
Detection Limits	Yes	None	-	No Action	
Blanks					
Blanks - Method	Yes	None	-	No Action	
Equipment Blank	None Collected				
Other QC Results					
LCS Results	Yes	None	-	No Action	
Matrix Spikes Sample ID: J19364	Yes	None	-	No Action	
Laboratory Duplicates Sample ID: J19364	Yes	None	-	No Action	
Field Duplicates	None Collected				
Summary					
Validity of Data	Yes	None	-	No Action	No rejected data

D.1.13 SDG J00575

SDG J00575 – Hexavalent Chromium QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** J00575	**W&C Project No.:**222007	
Medium: Pore Water		**Analytes:** Hexavalent Chromium	
Samples: J19353, J19354			
Laboratory: Test America, Richland, WA	**Date Data Evaluation Completed:** 2/10/2010 **Completed By:** LEM	**Sample Collection Date:** 9/14/2009	**Sample Analysis Date:** 9/15/2009

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No Action	
Detection Limits	Yes	None	-	No Action	
Blanks					
Blanks - Method	Yes	None	-	No Action	
Equipment Blank	None Collected				
Other QC Results					
LCS Results	Yes	None	-	No Action	
Matrix Spikes Sample ID: J19363	Yes	None	-	No Action	
Laboratory Duplicates Sample ID: J19363	Yes	None	-	No Action	
Field Duplicates	None Collected				
Summary					
Validity of Data	Yes	None	-	No Action	No rejected data

D.1.14 SDG J00576

SDG J00576 – Hexavalent Chromium QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** J00576	**W&C Project No.:**222007
Medium: Pore Water		**Analytes:** Hexavalent Chromium
Samples: J19355, J19425, J19356, J19358		

Laboratory: Test America, Richland, WA	**Date Data Evaluation Completed:** 2/10/2010 **Completed By:** LEM	**Sample Collection Date:** 9/15/2009	**Sample Analysis Date:** 9/16/2009

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No Action	
Detection Limits	Yes	None	-	No Action	
Blanks					
Blanks - Method	Yes	None	-	No Action	
Equipment Blank	None Collected				
Other QC Results					
LCS Results	Yes	None	-	No Action	
Matrix Spikes Sample ID: J19358	Yes	None	-	No Action	
Laboratory Duplicates Sample ID: J19358	Yes	None	-	No Action	
Field Duplicates Sample IDs: J19355/ J19425	No	RPD = 200%	-	No action based on guidance.	
Summary					
Validity of Data	Yes	None	-	No Action	No rejected data
Additional Notes: Variability in concentrations indicated by Field Duplicate results.					

D.1.15 SDG J00578

SDG J00578 – Hexavalent Chromium QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** J00578	**W&C Project No.:**222007
Medium: Pore Water		**Analytes:** Hexavalent Chromium
Samples: J19366, J19359		

Laboratory: Test America, Richland, WA	**Date Data Evaluation Completed:** 2/10/2010 **Completed By:** LEM	**Sample Collection Date:** 9/16/2009	**Sample Analysis Date:** 9/17/2009

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No Action	
Detection Limits	Yes	None	-	No Action	
Blanks					
Blanks - Method	Yes	None	-	No Action	
Equipment Blank	None Collected				
Other QC Results					
LCS Results	Yes	None	-	No Action	
Matrix Spikes Sample ID: J19366	Yes	None	-	No Action	
Laboratory Duplicates Sample ID: J19366	Yes	None	-	No Action	
Field Duplicates	None Collected				
Summary					
Validity of Data	Yes	None	-	No Action	No rejected data

D.1.16 SDG J00580

SDG J00580 – Hexavalent Chromium QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** J00580	**W&C Project No.:**222007	
Medium: Pore Water		**Analytes:** Hexavalent Chromium	
Samples: J19548, J19547, J19549			
Laboratory: Test America, Richland, WA	**Date Data Evaluation Completed:** 2/10/2010 **Completed By:** LEM	**Sample Collection Date:** 9/21/2009	**Sample Analysis Date:** 9/22/2009

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No Action	
Detection Limits	Yes	None	-	No Action	
Blanks					
Blanks - Method	Yes	None	-	No Action	
Equipment Blank	None Collected				
Other QC Results					
LCS Results	Yes	None	-	No Action	
Matrix Spikes Sample ID: J19548	No	Cr+6 = 1%	J	Qualify positive results as estimated (J) and non-detect results as rejected (R).	Impacts to all samples – J all samples
Laboratory Duplicates Sample ID: J19548	No	RPD = 66.7%	J	Qualify positive results as estimated because difference between sample results is greater than 1x RDL.	Impacts to all samples
Field Duplicates	None Collected				
Summary					
Validity of Data	Yes	None	-	No Action	No rejected data

D.1.17 SDG J00582

SDG J00582 – Hexavalent Chromium QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** J00582	**W&C Project No.:**222007

Medium: Pore Water	**Analytes:** Hexavalent Chromium
Samples: J19546, J19552, J19550, J19551	

Laboratory: Test America, Richland, WA	**Date Data Evaluation Completed:** 2/10/2010 **Completed By:** LEM	**Sample Collection Date:** 9/22/2009	**Sample Analysis Date:** 9/23/2009

QC Parameter	**All in Spec.?**	**Non-Compliant Results**	**Flag**	**Action/ Notes**	**Associated Samples**
Holding Times	Yes	None	-	No Action	
Detection Limits	Yes	None	-	No Action	
Blanks					
Blanks - Method	Yes	None	-	No Action	
Equipment Blank	None Collected				
Other QC Results					
LCS Results	Yes	None	-	No Action	
Matrix Spikes Sample ID: J19546	Yes	None	-	No Action	
Laboratory Duplicates Sample ID: J19546	Yes	None, both non-detect	-	No Action	
Field Duplicates	None Collected				
Summary					
Validity of Data	Yes	None	-	No Action	No rejected data

D.1.18 SDG J00583

SDG J00583 – Hexavalent Chromium QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** J00583	**W&C Project No.:**222007
Medium: Pore Water	**Analytes:** Hexavalent Chromium	
Samples: J193B5, J19555		

Laboratory: Test America, Richland, WA	**Date Data Evaluation Completed:** 2/11/2010 **Completed By:** LEM	**Sample Collection Date:** 9/23/2009	**Sample Analysis Date:** 9/24/2009

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No Action	
Detection Limits	Yes	None	-	No Action	
Blanks					
Blanks - Method	Yes	None	-	No Action	
Equipment Blank	None Collected				
Other QC Results					
LCS Results	Yes	None	-	No Action	
Matrix Spikes Sample ID: J193B5	Yes	None	-	No Action	
Laboratory Duplicates Sample ID: J193B5	No	RPD = 90%	J	Qualify positive result as estimated (J), because difference between sample results is greater than 1x RDL.	Impacts to all samples
Field Duplicates	None Collected				
Summary					
Validity of Data	Yes	None	-	No Action	No rejected data

D.1.19 SDG J00584

SDG J00584 – Hexavalent Chromium QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** J00584	**W&C Project No.:**222007	
Medium: Pore Water		**Analytes:** Hexavalent Chromium	
Samples: J193B3			
Laboratory: Test America, Richland, WA	**Date Data Evaluation Completed:** 2/11/2010 **Completed By:** LEM	**Sample Collection Date:** 9/24/2009	**Sample Analysis Date:** 9/24/2009

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No Action	
Detection Limits	Yes	None	-	No Action	
Blanks					
Blanks - Method	Yes	None	-	No Action	
Equipment Blank	None Collected				
Other QC Results					
LCS Results	Yes	None	-	No Action	
Matrix Spikes Sample ID: J193B3	Yes	None	-	No Action	
Laboratory Duplicates Sample ID: J193B3	Yes	None	-	No Action	
Field Duplicates	None Collected				
Summary					
Validity of Data	Yes	None	-	No Action	No rejected data

D.1.20 SDG J00585

Validated by ELR - Included in Appendix F

D.1.21 SDG J00586

SDG J00586 – Hexavalent Chromium QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** J00586	**W&C Project No.:**222007	
Medium: Pore Water		**Analytes:** Hexavalent Chromium	
Samples: J193B4, J193B2			
Laboratory: Test America, Richland, WA	**Date Data Evaluation Completed:** 2/11/2010 **Completed By:** LEM	**Sample Collection Date:** 9/24/2009	**Sample Analysis Date:** 9/25/2009

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No Action	
Detection Limits	Yes	None	-	No Action	
Blanks					
Blanks - Method	Yes	None	-	No Action	
Equipment Blank	None Collected				
Other QC Results					
LCS Results	Yes	None	-	No Action	
Matrix Spikes Sample ID: J193B2	Yes	None	-	No Action	
Laboratory Duplicates Sample ID: J193B2	Yes	None, both non-detect	-	No Action	
Field Duplicates	None Collected				
Summary					
Validity of Data	Yes	None	-	No Action	No rejected data

D.1.22 SDG J00589

SDG J00589 – Hexavalent Chromium QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** J00589	**W&C Project No.:**222007	
Medium: Pore Water		**Analytes:** Hexavalent Chromium	
Samples: J19399, J19553			
Laboratory: Test America, Richland, WA	**Date Data Assessment Completed:** 3/2/2010 **Completed By:** LEM	**Sample Collection Date:** 9/29/2009	**Sample Analysis Date:** 9/29/2009

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No Action	
Detection Limits	Yes	None	-	No Action	
Blanks					
Preparation Blank	Yes	None	-	No Action	
Equipment Blank Sample ID:	Not collected				
Other QC Results					
LCS Results	Yes	None	-	No Action	
Matrix Spikes Sample ID: J19399	Yes	None	-	No Action	
Laboratory Duplicates Sample ID: J19399	Yes	None	-	No Action	
Field Duplicates	Not collected				
QC Summary					
Validity of Data	Yes	None	-	No Action	No rejected data
Additional Notes:					

D.1.23 SDG J00590

SDG J00590 – Radionuclides QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA		**SDG No.:** J00590		**W&C Project No.:**222007	
Medium: Pore Water				**Analytes:** Total Uranium	
Samples: J193H6, J193H7, J195M8, J195M9, J19782, J19783					
Laboratory: Test America, Richland, WA	**Date Data Assessment Completed:** 3/24/2010 **Complete By:** LEM		**Sample Collection Date:** 9/27-9/28/2009		**Sample Analysis Date:** 10/5/2009
QC Parameter	**All in Spec.?**	**Non-Compliant Results**	**Flag**	**Action/ Notes**	**Associated Samples**
Holding Times	Yes	None	-	No Action	
Detection Limits	Yes	MDAs are less than the reporting limit in the Work Plan.	-	No Action	
Blanks					
Method Blanks	Yes	None	-	No Action	
Other QC Results					
LCS Results	Yes	None	-	No Action	
Tracer Results	Not Reported				
Matrix Spikes Sample ID: J195M9	Yes	None	-	No Action	
Lab Duplicates Sample ID: J193H6	Yes	None	-	No Action	
Field Duplicate Sample ID:	Not collected				
QC Summary					
Validity of Data	Yes	None	-	No Action	No rejected data
Additional Notes:					

D.1.24 SDG J00591

SDG J00591 – Hexavalent Chromium QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** J00591	**W&C Project No.:**222007	
Medium: Pore Water		**Analytes:** Hexavalent Chromium	
Samples: J19554, J193B0			
Laboratory: Test America, Richland, WA	**Date Data Assessment Completed:** 3/9/2010 **Completed By:** LEM	**Sample Collection Date:** 9/30/2009	**Sample Analysis Date:** 9/30/2009

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No Action	
Detection Limits	Yes	None	-	No Action	
Blanks					
Preparation Blank	Yes	None	-	No Action	
Equipment Blank Sample ID:	Not collected				
Other QC Results					
LCS Results	Yes	None	-	No Action	
Matrix Spikes Sample ID: J19554	Yes	None	-	No Action	
Laboratory Duplicates Sample ID: J19554	Yes	None	-	No Action	
Field Duplicates	Not collected				
QC Summary					
Validity of Data	Yes	None	-	No Action	No rejected data
Additional Notes:					

D.1.25 SDG J00592

SDG J00592 – Hexavalent Chromium QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** J00592	**W&C Project No.:**222007	
Medium: Pore Water		**Analytes:** Hexavalent Chromium	
Samples: J193C7, J19556			
Laboratory: Test America, Richland, WA	**Date Data Assessment Completed:** 3/9/2010 **Completed By:** LEM	**Sample Collection Date:** 9/30/2009	**Sample Analysis Date:** 10/1/2009

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No Action	
Detection Limits	Yes	None	-	No Action	
Blanks					
Preparation Blank	Yes	None	-	No Action	
Equipment Blank Sample ID:	Not collected				
Other QC Results					
LCS Results	Yes	None	-	No Action	
Matrix Spikes Sample ID: J19556	Yes	None	-	No Action	
Laboratory Duplicates Sample ID: J19556	Yes	None	-	No Action	
Field Duplicates	Not collected				
QC Summary					
Validity of Data	Yes	None	-	No Action	No rejected data
Additional Notes:					

D.1.26 SDG J00593

SDG J00592 – Hexavalent Chromium QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** J00592	**W&C Project No.:**222007	
Medium: Pore Water		**Analytes:** Hexavalent Chromium	
Samples: J193C7, J19556			
Laboratory: Test America, Richland, WA	**Date Data Assessment Completed:** 3/9/2010 **Completed By:** LEM	**Sample Collection Date:** 9/30/2009	**Sample Analysis Date:** 10/1/2009

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No Action	
Detection Limits	Yes	None	-	No Action	
Blanks					
Preparation Blank	Yes	None	-	No Action	
Equipment Blank Sample ID:	Not collected				
Other QC Results					
LCS Results	Yes	None	-	No Action	
Matrix Spikes Sample ID: J19556	Yes	None	-	No Action	
Laboratory Duplicates Sample ID: J19556	Yes	None	-	No Action	
Field Duplicates	Not collected				
QC Summary					
Validity of Data	Yes	None	-	No Action	No rejected data
Additional Notes:					

D.1.27 SDG J00594

SDG J00594 – Hexavalent Chromium QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** J00594	**W&C Project No.:**222007	
Medium: Pore Water		**Analytes:** Hexavalent Chromium	
Samples: J19558			
Laboratory: Test America, Richland, WA	**Date Data Assessment Completed:** 3/9/2010 **Completed By:** LEM	**Sample Collection Date:** 10/1/2009	**Sample Analysis Date:** 10/2/2009

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No Action	
Detection Limits	Yes	None	-	No Action	
Blanks					
Preparation Blank	Yes	None	-	No Action	
Equipment Blank Sample ID:	Not collected				
Other QC Results					
LCS Results	Yes	None	-	No Action	
Matrix Spikes Sample ID: J19558	Yes	None	-	No Action	
Laboratory Duplicates Sample ID: J19558	Yes	None	-	No Action	
Field Duplicates	Not collected				
QC Summary					
Validity of Data	Yes	None	-	No Action	No rejected data
Additional Notes:					

D.1.28 SDG J00595

SDG J00595 – Hexavalent Chromium QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** J00595	**W&C Project No.:**222007	
Medium: Pore Water		**Analytes:** Hexavalent Chromium	
Samples: J195F6			
Laboratory: Test America, Richland, WA	**Date Data Assessment Completed:** 3/9/2010 **Completed By:** LEM	**Sample Collection Date:** 10/5/2009	**Sample Analysis Date:** 10/5/2009

QC Parameter	**All in Spec.?**	**Non-Compliant Results**	**Flag**	**Action/ Notes**	**Associated Samples**
Holding Times	Yes	None	-	No Action	
Detection Limits	Yes	None	-	No Action	
Blanks					
Preparation Blank	Yes	None	-	No Action	
Equipment Blank Sample ID:	Not collected				
Other QC Results					
LCS Results	Yes	None	-	No Action	
Matrix Spikes Sample ID: J195F6	Yes	None	-	No Action	
Laboratory Duplicates Sample ID: J195F6	Yes	None	-	No Action	
Field Duplicates	Not collected				
QC Summary					
Validity of Data	Yes	None	-	No Action	No rejected data
Additional Notes:					

D.1.29 SDG J00596

SDG J00596– Hexavalent Chromium QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** J00596	**W&C Project No.:**222007

Medium: Pore Water	**Analytes:** Hexavalent Chromium
Samples: J195F2, J195F7, J195F8	

Laboratory: Test America, Richland, WA	**Date Data Assessment Completed:** 3/9/2010 **Completed By:** LEM	**Sample Collection Date:** 10/5/2009	**Sample Analysis Date:** 10/6/2009

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No Action	
Detection Limits	Yes	None	-	No Action	
Blanks					
Preparation Blank	Yes	None	-	No Action	
Equipment Blank Sample ID:	Not collected				
Other QC Results					
LCS Results	Yes	None	-	No Action	
Matrix Spikes Sample ID:	No	MS/MSD not analyzed	J	Qualify positive and non-detect results as estimated (J), due to no MS/MSD being analyzed. See notes below.	Impacts to all samples
Laboratory Duplicates Sample ID:	No	Laboratory duplicate not analyzed	J	Qualify positive and non-detect results as estimated (J).	Impacts to all samples
Field Duplicates	Not collected				
QC Summary					
Validity of Data	Yes	None	-	No Action	No rejected data
Additional Notes: Insufficient sample volume to perform MS/MSD and duplicate analyses.					

D.1.30 SDG J00597

SDG J00597– Hexavalent Chromium QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA		**SDG No.:** J00597		**W&C Project No.:**222007	
Medium: Pore Water				**Analytes:** Hexavalent Chromium	
Samples: J19560, J19561					
Laboratory: Test America, Richland, WA	**Date Data Assessment Completed:** 3/9/2010 **Completed By:** LEM			**Sample Collection Date:** 10/6/2009	**Sample Analysis Date:** 10/7/2009

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No Action	
Detection Limits	Yes	None	-	No Action	
Blanks					
Preparation Blank	Yes	None	-	No Action	
Equipment Blank Sample ID:	Not collected				
Other QC Results					
LCS Results	Yes	None	-	No Action	
Matrix Spikes Sample ID: J19561	Yes	None	-	No Action	
Laboratory Duplicates Sample ID: J19561	No	RPD = 43.1%	J	Qualify positive and non-detect results as estimated (J).	Impacts to all samples
Field Duplicates	Not collected				
QC Summary					
Validity of Data	Yes	None	-	No Action	No rejected data
Additional Notes:					

D.1.31 SDG J00599

SDG J00599– Hexavalent Chromium QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** J00599	**W&C Project No.:**222007	
Medium: Pore Water		**Analytes:** Hexavalent Chromium	
Samples: J19398, J195D2, J195D4, J195F5			
Laboratory: Test America, Richland, WA	**Date Data Assessment Completed:** 3/9/2010 **Completed By:** LEM	**Sample Collection Date:** 10/7/2009	**Sample Analysis Date:** 10/8/2009

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No Action	
Detection Limits	Yes	None	-	No Action	
Blanks					
Preparation Blank	Yes	None	-	No Action	
Equipment Blank Sample ID:	Not collected				
Other QC Results					
LCS Results	Yes	None	-	No Action	
Matrix Spikes Sample ID: J195F5	Yes	None	-	No Action	
Laboratory Duplicates Sample ID: J195F5	Yes	None	-	No Action	
Field Duplicates	Not collected				
QC Summary					
Validity of Data	Yes	None	-	No Action	No rejected data
Additional Notes:					

D.1.32 SDG J00600

SDG J00600 – Hexavalent Chromium QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** J00600	**W&C Project No.:**222007	
Medium: Pore Water		**Analytes:** Hexavalent Chromium	
Samples: J195F3			
Laboratory: Test America, Richland, WA	**Date Data Assessment Completed:** 3/9/2010 **Completed By:** LEM	**Sample Collection Date:** 10/8/2009	**Sample Analysis Date:** 10/8/2009

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No Action	
Detection Limits	Yes	None	-	No Action	
Blanks					
Preparation Blank	Yes	None	-	No Action	
Equipment Blank Sample ID:	Not collected				
Other QC Results					
LCS Results	Yes	None	-	No Action	
Matrix Spikes Sample ID:	No	MS/MSD not analyzed	J	Qualify positive and non-detect results as estimated (J), due to no MS/MSD being analyzed. See notes below.	Impacts to all samples
Laboratory Duplicates Sample ID:	No	Laboratory duplicate not analyzed	J	Qualify positive and non-detect results as estimated (J).	Impacts to all samples
Field Duplicates	Not collected				
QC Summary					
Validity of Data	Yes	None	-	No Action	No rejected data
Additional Notes: Insufficient sample volume to perform MS/MSD and duplicate analyses.					

D.1.33 SDG J00601

Validated by ELR - Included in Appendix F

D.1.34 SDG J00602

SDG J00602 – Hexavalent Chromium QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** J00602	**W&C Project No.:**222007	
Medium: Pore Water		**Analytes:** Hexavalent Chromium	
Samples: J19394, J19396			
Laboratory: Test America, Richland, WA	**Date Data Assessment Completed:** 3/9/2010 **Completed By:** LEM	**Sample Collection Date:** 10/11/2009	**Sample Analysis Date:** 10/12/2009

QC Parameter	**All in Spec.?**	**Non-Compliant Results**	**Flag**	**Action/ Notes**	**Associated Samples**
Holding Times	Yes	None	-	No Action	
Detection Limits	Yes	None	-	No Action	
Blanks					
Preparation Blank	Yes	None	-	No Action	
Equipment Blank Sample ID:	Not collected				
Other QC Results					
LCS Results	Yes	None	-	No Action	
Matrix Spikes Sample ID: J19396	Yes	None	-	No Action	
Laboratory Duplicates Sample ID: J19396	No	RPD = 50.7%	J	Qualify positive and non-detect results as estimated (J).	Impacts to all samples
Field Duplicates	Not collected				
QC Summary					
Validity of Data	Yes	None	-	No Action	No rejected data
Additional Notes:					

D.1.35 SDG J00603

Validated by ELR - Included in Appendix F

D.1.36 SDG J00605

SDG J00605 – Hexavalent Chromium QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** J00605	**W&C Project No.:**222007	
Medium: Pore Water		**Analytes:** Hexavalent Chromium	
Samples: J19529, J19530			
Laboratory: Test America, Richland, WA	**Date Data Assessment Completed:** 3/9/2010 **Completed By:** LEM	**Sample Collection Date:** 10/13/2009	**Sample Analysis Date:** 10/13/2009

QC Parameter	**All in Spec.?**	**Non-Compliant Results**	**Flag**	**Action/ Notes**	**Associated Samples**
Holding Times	Yes	None	-	No Action	
Detection Limits	Yes	None	-	No Action	
Blanks					
Preparation Blank	Yes	None	-	No Action	
Equipment Blank Sample ID:	Not collected				
Other QC Results					
LCS Results	Yes	None	-	No Action	
Matrix Spikes Sample ID: J19530	Yes	None	-	No Action	
Laboratory Duplicates Sample ID: J19530	Yes	None	-	No Action	
Field Duplicates	Not collected				
QC Summary					
Validity of Data	Yes	None	-	No Action	No rejected data
Additional Notes:					

D.1.37 SDG J00606

SDG J00606 – Hexavalent Chromium QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** J00606	**W&C Project No.:**222007	
Medium: Pore Water		**Analytes:** Hexavalent Chromium	
Samples: J19528, J19527, J19531			
Laboratory: Test America, Richland, WA	**Date Data Assessment Completed:** 3/9/2010 **Completed By:** LEM	**Sample Collection Date:** 10/13/2009	**Sample Analysis Date:** 10/14/2009

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No Action	
Detection Limits	Yes	None	-	No Action	
Blanks					
Preparation Blank	Yes	None	-	No Action	
Equipment Blank Sample ID:	Not collected				
Other QC Results					
LCS Results	Yes	None	-	No Action	
Matrix Spikes Sample ID:	No	MS/MSD not analyzed	J	Qualify positive and non-detect results as estimated (J), due to no MS/MSD being analyzed. See notes below.	Impacts to all samples
Laboratory Duplicates Sample ID:	No	Laboratory duplicate not analyzed	J	Qualify positive and non-detect results as estimated (J).	Impacts to all samples
Field Duplicates	Not collected				
QC Summary					
Validity of Data	Yes	None	-	No Action	No rejected data

Additional Notes:
Analytical results for MS/MSD and duplicate analyses not provided.

D.1.38 SDG J00607

Validated by ELR - Included in Appendix F

D.1.39 SDG J00608

SDG J00608 – Hexavalent Chromium QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** J00608	**W&C Project No.:**222007	
Medium: Pore Water		**Analytes:** Hexavalent Chromium	
Samples: J19367, J19368, J19532, J195D3			
Laboratory: Test America, Richland, WA	**Date Data Assessment Completed:** 3/9/2010 **Completed By:** LEM	**Sample Collection Date:** 10/14/2009	**Sample Analysis Date:** 10/14- 10/15/2009

QC Parameter	**All in Spec.?**	**Non-Compliant Results**	**Flag**	**Action/ Notes**	**Associated Samples**
Holding Times	Yes	None	-	No Action	
Detection Limits	Yes	None	-	No Action	
Blanks					
Preparation Blank	Yes	None	-	No Action	
Equipment Blank Sample ID:	Not collected				
Other QC Results					
LCS Results	Yes	None	-	No Action	
Matrix Spikes Sample ID: J195D3	Yes	None	-	No Action	
Laboratory Duplicates Sample ID: J195D3	Yes	None	-	No Action	
Field Duplicates	Not collected				
QC Summary					
Validity of Data	Yes	None	-	No Action	No rejected data
Additional Notes:					

D.1.40 SDG J00609

SDG J00609 – Hexavalent Chromium QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** J00609	**W&C Project No.:**222007

Medium: Pore Water	**Analytes:** Hexavalent Chromium
Samples: J19533, J19534	

Laboratory: Test America, Richland, WA	**Date Data Assessment Completed:** 3/9/2010 **Completed By:** LEM	**Sample Collection Date:** 10/17/2009	**Sample Analysis Date:** 10/17/2009

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No Action	
Detection Limits	Yes	None	-	No Action	
Blanks					
Preparation Blank	Yes	None	-	No Action	
Equipment Blank Sample ID:	Not collected				
Other QC Results					
LCS Results	Yes	None	-	No Action	
Matrix Spikes Sample ID:	No	MS/MSD not analyzed	J	Qualify positive and non-detect results as estimated (J), due to no MS/MSD being analyzed. See notes below.	Impacts to all samples
Laboratory Duplicates Sample ID:	No	Laboratory duplicate not analyzed	J	Qualify positive and non-detect results as estimated (J).	Impacts to all samples
Field Duplicates	Not collected				
QC Summary					
Validity of Data	Yes	None	-	No Action	No rejected data

Additional Notes:
Analytical results for MS/MSD and duplicate analyses were not provided.

D.1.41 SDG J00610

SDG J00610 – Hexavalent Chromium QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** J00610	**W&C Project No.:**222007	
Medium: Pore Water		**Analytes:** Hexavalent Chromium	
Samples: J19375, J19376, J19377, J19535			
Laboratory: Test America, Richland, WA	**Date Data Assessment Completed:** 3/9/2010 **Completed By:** LEM	**Sample Collection Date:** 10/18/2009	**Sample Analysis Date:** 10/19/2009

QC Parameter	**All in Spec.?**	**Non-Compliant Results**	**Flag**	**Action/ Notes**	**Associated Samples**
Holding Times	Yes	None	-	No Action	
Detection Limits	Yes	None	-	No Action	
Blanks					
Preparation Blank	Yes	None	-	No Action	
Equipment Blank Sample ID:	Not collected				
Other QC Results					
LCS Results	Yes	None	-	No Action	
Matrix Spikes Sample ID: J19535	Yes	None	-	No Action	
Laboratory Duplicates Sample ID: J19535	Yes	None	-	No Action	
Field Duplicates	Not collected				
QC Summary					
Validity of Data	Yes	None	-	No Action	No rejected data
Additional Notes:					

D.1.42 SDG J00611

SDG J00611 – Hexavalent Chromium QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** J00611	**W&C Project No.:**222007	
Medium: Pore Water		**Analytes:** Hexavalent Chromium	
Samples: J19379, J19380			
Laboratory: Test America, Richland, WA	**Date Data Assessment Completed:** 3/9/2010 **Completed By:** LEM	**Sample Collection Date:** 10/17/2009	**Sample Analysis Date:** 10/17/2009

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No Action	
Detection Limits	Yes	None	-	No Action	
Blanks					
Preparation Blank	Yes	None	-	No Action	
Equipment Blank Sample ID:	Not collected				
Other QC Results					
LCS Results	Yes	None	-	No Action	
Matrix Spikes Sample ID: J19380	Yes	None	-	No Action	
Laboratory Duplicates Sample ID: J19380	Yes	None	-	No Action	
Field Duplicates	Not collected				
QC Summary					
Validity of Data	Yes	None	-	No Action	No rejected data
Additional Notes:					

D.1.43 SDG J00612

SDG J00612 – Hexavalent Chromium QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** J00612	**W&C Project No.:**222007	
Medium: Pore Water		**Analytes:** Hexavalent Chromium	
Samples: J19378, J19562, J19563, J19564			
Laboratory: Test America, Richland, WA	**Date Data Assessment Completed:** 3/9/2010 **Completed By:** LEM	**Sample Collection Date:** 10/19/2009	**Sample Analysis Date:** 10/19/2009

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No Action	
Detection Limits	Yes	None	-	No Action	
Blanks					
Preparation Blank	Yes	None	-	No Action	
Equipment Blank Sample ID:	Not collected				
Other QC Results					
LCS Results	Yes	None	-	No Action	
Matrix Spikes Sample ID: J19562	Yes	None	-	No Action	
Laboratory Duplicates Sample ID: J19562	Yes	None	-	No Action	
Field Duplicates	Not collected				
QC Summary					
Validity of Data	Yes	None	-	No Action	No rejected data
Additional Notes:					

D.1.44 SDG J00613

SDG J00613 – Hexavalent Chromium QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** J00613	**W&C Project No.:**222007	
Medium: Pore Water		**Analytes:** Hexavalent Chromium	
Samples: J19557, J19559			
Laboratory: Test America, Richland, WA	**Date Data Assessment Completed:** 3/9/2010 **Completed By:** LEM	**Sample Collection Date:** 10/19/2009	**Sample Analysis Date:** 10/20/2009

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No Action	
Detection Limits	Yes	None	-	No Action	
Blanks					
Preparation Blank	Yes	None	-	No Action	
Equipment Blank Sample ID:	Not collected				
Other QC Results					
LCS Results	Yes	None	-	No Action	
Matrix Spikes Sample ID:	No	MS/MSD not analyzed	J	Qualify positive and non-detect results as estimated (J), due to no MS/MSD being analyzed. See notes below.	Impacts to all samples
Laboratory Duplicates Sample ID:	No	Laboratory duplicate not analyzed	J	Qualify positive and non-detect results as estimated (J).	Impacts to all samples
Field Duplicates	Not collected				
QC Summary					
Validity of Data	Yes	None	-	No Action	No rejected data
Additional Notes: Insufficient sample volume to perform MS/MSD and duplicate analyses.					

D.1.45 SDG J00615

SDG J00615 – Hexavalent Chromium QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** J00615	**W&C Project No.:**222007	
Medium: Pore Water		**Analytes:** Hexavalent Chromium	
Samples: J19565, J19568			
Laboratory: Test America, Richland, WA	**Date Data Assessment Completed:** 3/9/2010 **Completed By:** LEM	**Sample Collection Date:** 10/20/2009	**Sample Analysis Date:** 10/20/2009

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No Action	
Detection Limits	Yes	None	-	No Action	
Blanks					
Preparation Blank	Yes	None	-	No Action	
Equipment Blank Sample ID:	Not collected				
Other QC Results					
LCS Results	Yes	None	-	No Action	
Matrix Spikes Sample ID: J19565	Yes	None	-	No Action	
Laboratory Duplicates Sample ID: J19565	Yes	None	-	No Action	
Field Duplicates	Not collected				
QC Summary					
Validity of Data	Yes	None	-	No Action	No rejected data
Additional Notes:					

D.1.46 SDG J00616

SDG J00616 – Hexavalent Chromium QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** J00616	**W&C Project No.:**222007	
Medium: Pore Water		**Analytes:** Hexavalent Chromium	
Samples: J19566, J19567, J19569, J19570			
Laboratory: Test America, Richland, WA	**Date Data Assessment Completed:** 3/9/2010 **Completed By:** LEM	**Sample Collection Date:** 10/20/2009	**Sample Analysis Date:** 10/21/2009

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No Action	
Detection Limits	Yes	None	-	No Action	
Blanks					
Preparation Blank	Yes	None	-	No Action	
Equipment Blank Sample ID:	Not collected				
Other QC Results					
LCS Results	Yes	None	-	No Action	
Matrix Spikes Sample ID: J19566	Yes	None	-	No Action	
Laboratory Duplicates Sample ID: J19566	Yes	None	-	No Action	
Field Duplicates	Not collected				
QC Summary					
Validity of Data	Yes	None	-	No Action	No rejected data
Additional Notes:					

D.1.47 SDG J00618

SDG J00618 – Hexavalent Chromium QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** J00618	**W&C Project No.:**222007	
Medium: Pore Water		**Analytes:** Hexavalent Chromium	
Samples: J19571, J19572			
Laboratory: Test America, Richland, WA	**Date Data Assessment Completed:** 3/9/2010 **Completed By:** LEM	**Sample Collection Date:** 10/21/2009	**Sample Analysis Date:** 10/21/2009

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No Action	
Detection Limits	Yes	None	-	No Action	
Blanks					
Preparation Blank	Yes	None	-	No Action	
Equipment Blank Sample ID:	Not collected				
Other QC Results					
LCS Results	Yes	None	-	No Action	
Matrix Spikes Sample ID: J19571	Yes	None	-	No Action	
Laboratory Duplicates Sample ID: J19571	Yes	None	-	No Action	
Field Duplicates	Not collected				
QC Summary					
Validity of Data	Yes	None	-	No Action	No rejected data
Additional Notes:					

D.1.48 SDG J00619

SDG J00619 – Hexavalent Chromium QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** J00619	**W&C Project No.:**222007
Medium: Pore Water		**Analytes:** Hexavalent Chromium
Samples: J19573, J19574		

Laboratory: Test America, Richland, WA	**Date Data Assessment Completed:** 3/11/2010 **Completed By:** LEM	**Sample Collection Date:** 10/21/2009	**Sample Analysis Date:** 10/21/2009

QC Parameter	**All in Spec.?**	**Non-Compliant Results**	**Flag**	**Action/ Notes**	**Associated Samples**
Holding Times	Yes	None	-	No Action	
Detection Limits	Yes	None	-	No Action	
Blanks					
Preparation Blank	Yes	None	-	No Action	
Equipment Blank Sample ID:	Not collected				
Other QC Results					
LCS Results	Yes	None	-	No Action	
Matrix Spikes Sample ID:	No	MS/MSD not analyzed	J	Qualify positive and non-detect results as estimated (J), due to no MS/MSD being analyzed. See notes below.	Impacts to all samples
Laboratory Duplicates Sample ID:	No	Laboratory duplicate not analyzed	J	Qualify positive and non-detect results as estimated (J).	Impacts to all samples
Field Duplicates	Not collected				
QC Summary					
Validity of Data	Yes	None	-	No Action	No rejected data

Additional Notes: Insufficient sample volume to perform MS/MSD and laboratory duplicate analyses.

D.1.49 SDG J00620

SDG J00620 – Hexavalent Chromium QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** J00620	**W&C Project No.:**222007	
Medium: Pore Water		**Analytes:** Hexavalent Chromium	
Samples: J19575, J195D5, J195F0, J195D9			
Laboratory: Test America, Richland, WA	**Date Data Assessment Completed:** 3/11/2010 **Completed By:** LEM	**Sample Collection Date:** 10/24/2009	**Sample Analysis Date:** 10/24/2009

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No Action	
Detection Limits	Yes	None	-	No Action	
Blanks					
Preparation Blank	Yes	None	-	No Action	
Equipment Blank Sample ID:	Not collected				
Other QC Results					
LCS Results	Yes	None	-	No Action	
Matrix Spikes Sample ID: J195D5	Yes	None	-	No Action	
Laboratory Duplicates Sample ID: J195D5	Yes	None	-	No Action	
Field Duplicates	Not collected				
QC Summary					
Validity of Data	Yes	None	-	No Action	No rejected data
Additional Notes:					

D.1.50 SDG J00621

SDG J00621 – Hexavalent Chromium QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** J00621	**W&C Project No.:**222007			
Medium: Pore Water			**Analytes:** Hexavalent Chromium		
Samples: J19CB0, J193C5, J193C6, J19373					
Laboratory: Test America, Richland, WA	**Date Data Assessment Completed:** 3/11/2010 **Completed By:** LEM		**Sample Collection Date:** 10/25/2009	**Sample Analysis Date:** 10/26/2009	
QC Parameter	**All in Spec.?**	**Non-Compliant Results**	**Flag**	**Action/ Notes**	**Associated Samples**
Holding Times	Yes	None	-	No Action	
Detection Limits	Yes	None	-	No Action	
Blanks					
Preparation Blank	Yes	None	-	No Action	
Equipment Blank Sample ID:	Not collected				
Other QC Results					
LCS Results	Yes	None	-	No Action	
Matrix Spikes Sample ID: J193C6	Yes	None	-	No Action	
Laboratory Duplicates Sample ID: J193C6	Yes	None	-	No Action	
Field Duplicates	Not collected				
QC Summary					
Validity of Data	Yes	None	-	No Action	No rejected data
Additional Notes:					

D.1.51 SDG J00622

SDG J00622 – Hexavalent Chromium QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** J00622	**W&C Project No.:**222007	
Medium: Pore Water		**Analytes:** Hexavalent Chromium	
Samples: J193C4			
Laboratory: Test America, Richland, WA	**Date Data Assessment Completed:** 3/11/2010 **Completed By:** LEM	**Sample Collection Date:** 10/26/2009	**Sample Analysis Date:** 10/26/2009

QC Parameter	**All in Spec.?**	**Non-Compliant Results**	**Flag**	**Action/ Notes**	**Associated Samples**
Holding Times	Yes	None	-	No Action	
Detection Limits	Yes	None	-	No Action	
Blanks					
Preparation Blank	Yes	None	-	No Action	
Equipment Blank Sample ID:	Not collected				
Other QC Results					
LCS Results	Yes	None	-	No Action	
Matrix Spikes Sample ID:	No	MS/MSD not analyzed	J	Qualify positive and non-detect results as estimated (J), due to no MS/MSD being analyzed. See notes below.	Impacts to all samples
Laboratory Duplicates Sample ID:	No	Laboratory duplicate not analyzed	J	Qualify positive and non-detect results as estimated (J).	Impacts to all samples
Field Duplicates	Not collected				
QC Summary					
Validity of Data	Yes	None	-	No Action	No rejected data

Additional Notes: Insufficient sample volume to perform MS/MSD and laboratory duplicate analyses.

D.1.52 SDG J00624

SDG J00624 – Hexavalent Chromium QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** J00624	**W&C Project No.:**222007	
Medium: Pore Water		**Analytes:** Hexavalent Chromium	
Samples: J193B6, J193B7, J193C3			
Laboratory: Test America, Richland, WA	**Date Data Assessment Completed:** 3/11/2010 **Completed By:** LEM	**Sample Collection Date:** 10/27/2009	**Sample Analysis Date:** 10/27/2009

QC Parameter	**All in Spec.?**	**Non-Compliant Results**	**Flag**	**Action/ Notes**	**Associated Samples**
Holding Times	Yes	None	-	No Action	
Detection Limits	Yes	None	-	No Action	
Blanks					
Preparation Blank	Yes	None	-	No Action	
Equipment Blank Sample ID:	Not collected				
Other QC Results					
LCS Results	Yes	None	-	No Action	
Matrix Spikes Sample ID: J193B6	Yes	None	-	No Action	
Laboratory Duplicates Sample ID: J193B6	Yes	None	-	No Action	
Field Duplicates	Not collected				
QC Summary					
Validity of Data	Yes	None	-	No Action	No rejected data
Additional Notes:					

D.1.53 SDG J00625

Validated by ELR - Included in Appendix F

D.1.54 SDG J00627

SDG J00627 – Hexavalent Chromium QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** J00627	**W&C Project No.:**222007	
Medium: Pore Water		**Analytes:** Hexavalent Chromium	
Samples: J195F9			
Laboratory: Test America, Richland, WA	**Date Data Assessment Completed:** 3/11/2010 **Completed By:** LEM	**Sample Collection Date:** 11/1/2009	**Sample Analysis Date:** 11/2/2009

QC Parameter	**All in Spec.?**	**Non-Compliant Results**	**Flag**	**Action/ Notes**	**Associated Samples**
Holding Times	Yes	None	-	No Action	
Detection Limits	Yes	None	-	No Action	
Blanks					
Preparation Blank	Yes	None	-	No Action	
Equipment Blank Sample ID:	Not collected				
Other QC Results					
LCS Results	Yes	None	-	No Action	
Matrix Spikes Sample ID: J195F9	Yes	None	-	No Action	
Laboratory Duplicates Sample ID: J195F9	Yes	None	-	No Action	
Field Duplicates	Not collected				
QC Summary					
Validity of Data	Yes	None	-	No Action	No rejected data
Additional Notes:					

D.1.55 SDG J00628

SDG J00628 – Hexavalent Chromium QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** J00628	**W&C Project No.:**222007

Medium: Pore Water	**Analytes:** Hexavalent Chromium

Samples: J195H0

Laboratory: Test America, Richland, WA	**Date Data Assessment Completed:** 3/11/2010 **Completed By:** LEM	**Sample Collection Date:** 11/2/2009	**Sample Analysis Date:** 11/3/2009

QC Parameter	**All in Spec.?**	**Non-Compliant Results**	**Flag**	**Action/ Notes**	**Associated Samples**
Holding Times	Yes	None	-	No Action	
Detection Limits	Yes	None	-	No Action	
Blanks					
Preparation Blank	Yes	None	-	No Action	
Equipment Blank Sample ID:	Not collected				
Other QC Results					
LCS Results	Yes	None	-	No Action	
Matrix Spikes Sample ID: J195H0	Yes	None	-	No Action	
Laboratory Duplicates Sample ID: J195H0	Yes	None	-	No Action	
Field Duplicates	Not collected				
QC Summary					
Validity of Data	Yes	None	-	No Action	No rejected data
Additional Notes:					

D.1.56 SDG J00629

SDG J00629 – Hexavalent Chromium QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** J00629	**W&C Project No.:**222007

Medium: Pore Water	**Analytes:** Hexavalent Chromium
Samples: J193C0	

Laboratory: Test America, Richland, WA	**Date Data Assessment Completed:** 3/11/2010 **Completed By:** LEM	**Sample Collection Date:** 11/3/2009	**Sample Analysis Date:** 11/3/2009

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No Action	
Detection Limits	Yes	None	-	No Action	
Blanks					
Preparation Blank	Yes	None	-	No Action	
Equipment Blank Sample ID:	Not collected				
Other QC Results					
LCS Results	Yes	None	-	No Action	
Matrix Spikes Sample ID: J193C0	Yes	None	-	No Action	
Laboratory Duplicates Sample ID: J193C0	Yes	None	-	No Action	
Field Duplicates	Not collected				
QC Summary					
Validity of Data	Yes	None	-	No Action	No rejected data
Additional Notes:					

D.1.57 SDG J00630

SDG J00630 – Hexavalent Chromium QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** J00630	**W&C Project No.:**222007
Medium: Pore Water		**Analytes:** Hexavalent Chromium
Samples: J193B8, J193B9, J19427, J19428		

Laboratory: Test America, Richland, WA	**Date Data Assessment Completed:** 3/11/2010 **Completed By:** LEM	**Sample Collection Date:** 11/3/2009	**Sample Analysis Date:** 11/4/2009

QC Parameter	**All in Spec.?**	**Non-Compliant Results**	**Flag**	**Action/ Notes**	**Associated Samples**
Holding Times	Yes	None	-	No Action	
Detection Limits	Yes	None	-	No Action	
Blanks					
Preparation Blank	Yes	None	-	No Action	
Equipment Blank Sample ID:	Not collected				
Other QC Results					
LCS Results	Yes	None	-	No Action	
Matrix Spikes Sample ID:	No	MS/MSD not analyzed	J	Qualify positive and non-detect results as estimated (J), due to no MS/MSD being analyzed. See notes below.	Impacts to all samples
Laboratory Duplicates Sample ID:	No	Laboratory duplicate not analyzed	J	Qualify positive and non-detect results as estimated (J).	Impacts to all samples
Field Duplicates Sample ID: J193B9/ J19427 J193B8/ J19428	Yes	None	-	No Action	
QC Summary					
Validity of Data	Yes	None	-	No Action	No rejected data

Additional Notes: Insufficient sample volume to perform MS/MSD and laboratory duplicate analyses.

D.1.58 SDG J00632

SDG J00632 – Radionuclides QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** J00632	**W&C Project No.:**222007
Medium: Pore Water		**Analytes:** Total Strontium
Samples: J193D7, J193D8, J193D9, J193F8, J193H0, J193H1, J193H2, J193H3, J193H4, J193H5, J19576, J19577, J19578, J19579, J19580, J19581, J19582, J19583, J19584, J19585		

Laboratory: Test America, Richland, WA	**Date Data Assessment Completed:** 3/25/2010 **Complete By:** LEM	**Sample Collection Date:** 10/28-11/4/2009	**Sample Analysis Date:** 11/10-11/11/2009

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No Action	
Detection Limits	No	MDAs for 18 samples exceed the reporting limit in the Work Plan.	-	No Action	
Blanks					
Method Blanks	Yes	None	-	No Action	
Other QC Results					
LCS Results	Yes	None	-	No Action	
Tracer Results	Yes	None	-	No Action	
Matrix Spikes Sample ID:	Not Analyzed				
Lab Duplicates Sample ID: J193F8	Yes	None	-	No Action	
Field Duplicate Sample ID:	Not collected				
QC Summary					
Validity of Data	Yes	None	-	No Action	No rejected data
Additional Notes: Samples J193F8, J193F8 DUP, the blank and LCS met the CRDL. The remaining samples did not meet the CRDL due to insufficient sample volumes.					

D.1.59 SDG J00634

SDG J00634 – Hexavalent Chromium QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA		**SDG No.:** J00634		**W&C Project No.:**222007	
Medium: Pore Water				**Analytes:** Hexavalent Chromium	
Samples: J19392, J19393, J19437, J19536, J19537					
Laboratory: Test America, Richland, WA	**Date Data Assessment Completed:** 3/11/2010 **Completed By:** LEM		**Sample Collection Date:** 11/10/2009	**Sample Analysis Date:** 11/11/2009	
QC Parameter	**All in Spec.?**	**Non-Compliant Results**	**Flag**	**Action/ Notes**	**Associated Samples**
Holding Times	Yes	None	-	No Action	
Detection Limits	Yes	None	-	No Action	
Blanks					
Preparation Blank	Yes	None	-	No Action	
Equipment Blank Sample ID:	Not collected				
Other QC Results					
LCS Results	Yes	None	-	No Action	
Matrix Spikes Sample ID: J19536	Yes	None	-	No Action	
Laboratory Duplicates Sample ID: J19536	Yes	None	-	No Action	
Field Duplicates Sample ID: J19536/ J19437	No	RPD = 200%	-	No action based on guidance	
QC Summary					
Validity of Data	Yes	None	-	No Action	No rejected data
Additional Notes:					

D.1.60 SDG J00635

SDG J00635 – Radionuclides QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA		**SDG No.:** J00635		**W&C Project No.:**222007	
Medium: Pore Water				**Analytes:** Total Strontium	
Samples: J193F2					
Laboratory: Test America, Richland, WA	**Date Data Assessment Completed:** 3/25/2010 **Complete By:** LEM		**Sample Collection Date:** 11/7/2009		**Sample Analysis Date:** 11/18/2009

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No Action	
Detection Limits	No	MDAs exceed the reporting limit in the Work Plan.	-	No Action	
Blanks					
Method Blanks	Yes	None	-	No Action	
Other QC Results					
LCS Results	Yes	None	-	No Action	
Tracer Results	Yes	None	-	No Action	
Matrix Spikes Sample ID:	Not Analyzed				
Lab Duplicates Sample ID:	No	Laboratory duplicate not analyzed	J	Qualify positive and non-detect results as estimated (J), because laboratory duplicate was not analyzed. See notes below.	Impacts to all samples
Field Duplicate Sample ID:	Not collected				
QC Summary					
Validity of Data	Yes	None	-	No Action	No rejected data
Additional Notes: Insufficient sample volume to perform laboratory duplicate analysis.					

D.1.61 SDG J00636

SDG J00636 – Hexavalent Chromium QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA		**SDG No.:** J00636		**W&C Project No.:**222007	
Medium: Pore Water				**Analytes:** Hexavalent Chromium	
Samples: J19389, J19390, J19391, J19538					
Laboratory: Test America, Richland, WA	**Date Data Assessment Completed:** 3/11/2010 **Completed By:** LEM		**Sample Collection Date:** 11/11/2009	**Sample Analysis Date:** 11/12/2009	

QC Parameter	**All in Spec.?**	**Non-Compliant Results**	**Flag**	**Action/ Notes**	**Associated Samples**
Holding Times	Yes	None	-	No Action	
Detection Limits	Yes	None	-	No Action	
Blanks					
Preparation Blank	Yes	None	-	No Action	
Equipment Blank Sample ID:	Not collected				
Other QC Results					
LCS Results	Yes	None	-	No Action	
Matrix Spikes Sample ID: J19391	Yes	None	-	No Action	
Laboratory Duplicates Sample ID: J19391	Yes	None	-	No Action	
Field Duplicates	Not collected				
QC Summary					
Validity of Data	Yes	None	-	No Action	No rejected data
Additional Notes:					

D.1.62 SDG J00637

Validated by ELR - Included in Appendix F

D.1.63 SDG J00638

SDG J00638 – Hexavalent Chromium QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA		**SDG No.:** J00638		**W&C Project No.:**222007	
Medium: Pore Water				**Analytes:** Hexavalent Chromium	
Samples: J19384, J19385, J19386, J19387, J19388					
Laboratory: Test America, Richland, WA	**Date Data Assessment Completed:** 3/11/2010 **Completed By:** LEM		**Sample Collection Date:** 11/14/2009		**Sample Analysis Date:** 11/14/2009
QC Parameter	**All in Spec.?**	**Non-Compliant Results**	**Flag**	**Action/ Notes**	**Associated Samples**
Holding Times	Yes	None	-	No Action	
Detection Limits	Yes	None	-	No Action	
Blanks					
Preparation Blank	Yes	None	-	No Action	
Equipment Blank Sample ID:	Not collected				
Other QC Results					
LCS Results	Yes	None	-	No Action	
Matrix Spikes Sample ID: J19385	Yes	None	-	No Action	
Laboratory Duplicates Sample ID: J19385	Yes	None	-	No Action	
Field Duplicates	Not collected				
QC Summary					
Validity of Data	Yes	None	-	No Action	No rejected data
Additional Notes:					

D.1.64 SDG J00639

SDG J00639 – Hexavalent Chromium QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** J00639	**W&C Project No.:**222007
Medium: Pore Water		**Analytes:** Hexavalent Chromium
Samples: J19383, J195M3, J195M4, J195M6, J195M5		

Laboratory: Test America, Richland, WA	**Date Data Assessment Completed:** 3/16/2010 **Completed By:** LEM	**Sample Collection Date:** 11/15/2009	**Sample Analysis Date:** 11/16/2009

QC Parameter	**All in Spec.?**	**Non-Compliant Results**	**Flag**	**Action/ Notes**	**Associated Samples**
Holding Times	Yes	None	-	No Action	
Detection Limits	Yes	None	-	No Action	
Blanks					
Preparation Blank	Yes	None	-	No Action	
Equipment Blank Sample ID:	Not collected				
Other QC Results					
LCS Results	Yes	None	-	No Action	
Matrix Spikes Sample ID: J195M5	Yes	None	-	No Action	
Laboratory Duplicates Sample ID: J195M5	Yes	None	-	No Action	
Field Duplicates	Not collected				
QC Summary					
Validity of Data	Yes	None	-	No Action	No rejected data
Additional Notes:					

D.1.65 SDG J00642

SDG J00642 – Radionuclides QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** J00642	**W&C Project No.:**222007	
Medium: Pore Water		**Analytes:** Tritium	
Samples: J193W2, J193W3, J193W4, J193W5, J193W6, J193W7, J193W8, J193W9, J193X0, J193X1, J19433, J195B0, J195B1, J195B2, J195B3			
Laboratory: Test America, Richland, WA	**Date Data Assessment Completed:** 3/24/2010 **Complete By:** LEM	**Sample Collection Date:** 11/16-11/21/2009	**Sample Analysis Date:** 12/12/2009

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No Action	
Detection Limits	Yes	MDAs and CRDLs are either less than or equal to reporting limit in the Work Plan.	-	No Action	
Blanks					
Method Blanks	Yes	None	-	No Action	
Other QC Results					
LCS Results	Yes	None	-	No Action	
Tracer Results	Yes	None	-	No Action	
Matrix Spikes Sample ID:	No	MS not analyzed	J	Qualify positive and non-detect results as estimated (J), since no MS was analyzed.	Impacts to all samples.
Lab Duplicates Sample ID: J193W2	No	RPD = 162.5%	-	No action because both sample and duplicate results are non-detect.	
Field Duplicate Sample ID: J193W7/J19433	No	RPD = 93.5%	-	No action based on criteria in the guidance.	
QC Summary					
Validity of Data	Yes	None	-	No Action	No rejected data
Additional Notes:					

D.1.66 SDG J00646

Validated by ELR - Included in Appendix F

D.1.67 SDG J00653

SDG J00653 – Radionuclides QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA		**SDG No.:** J00653		**W&C Project No.:**222007	
Medium: Pore Water				**Analytes:** Tritium, Total Uranium	
Samples: J19F83, J19F84					
Laboratory: Test America, Richland, WA	**Date Data Assessment Completed:** 3/18/2010 **Complete By:** LEM		**Sample Collection Date:** 1/11/2010	**Sample Analysis Date:** 1/22/2010	
QC Parameter	**All in Spec.?**	**Non-Compliant Results**	**Flag**	**Action/ Notes**	**Associated Samples**
Holding Times	Yes	None	-	No Action	
Detection Limits	No	CRDL for Total Uranium exceeds the reporting limit in the Work Plan. MDAs either less than or equal to reporting limit in the Work Plan.	-	No Action	
Blanks					
Method Blanks	No	Total Uranium = 0.000155 mg/L	-	No Action because sample results >5x blank concentration	
Other QC Results					
LCS Results	Yes	None	-	No Action	
Tracer Results	Yes	None	-	No Action	
Matrix Spikes Sample ID: J19F84: Total Uranium	No	MS not analyzed for tritium	J	Qualify positive and non-detect results as estimated (J), since no MS was analyzed.	Impacts to all samples for Tritium
Lab Duplicates Sample ID: J19F83: Total Uranium J19F84: Tritium	Yes	None	-	No Action	
Field Duplicate Sample ID:	Not collected				
QC Summary					
Validity of Data	Yes	None	-	No Action	No rejected data
Additional Notes:					

SDG J00653 – Hexavalent Chromium QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** J00653	**W&C Project No.:**222007
Medium: Pore Water		**Analytes:** Hexavalent Chromium
Samples: J19F83, J19F84		

Laboratory: Test America, Richland, WA	**Date Data Assessment Completed:** 3/16/2010 **Completed By:** LEM	**Sample Collection Date:** 1/11/2010	**Sample Analysis Date:** 1/12/2010

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No Action	
Detection Limits	Yes	None	-	No Action	
Blanks					
Preparation Blank	Yes	None	-	No Action	
Equipment Blank Sample ID:	Not collected				
Other QC Results					
LCS Results	Yes	None	-	No Action	
Matrix Spikes Sample ID: J19F84	Yes	None	-	No Action	
Laboratory Duplicates Sample ID: J19F84	Yes	None	-	No Action	
Field Duplicates	Not collected				
QC Summary					
Validity of Data	Yes	None	-	No Action	No rejected data
Additional Notes:					

D.1.68 SDG J00658

SDG J00658 – Radionuclides QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** J00658	**W&C Project No.:**222007
Medium: Pore Water		**Analytes:** Tritium
Samples: J195C5, J195C6, J195C8, J195C7, J195C9		

Laboratory: Test America, Richland, WA	**Date Data Assessment Completed:** 3/18/2010 **Complete By:** LEM	**Sample Collection Date:** 1/9-1/10/2010	**Sample Analysis Date:** 1/16/2010

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No Action	
Detection Limits	Yes	MDAs and CRDLs are either less than or equal to reporting limit in the Work Plan.	-	No Action	
Blanks					
Method Blanks	Yes	None	-	No Action	
Other QC Results					
LCS Results	Yes	None	-	No Action	
Tracer Results	Yes	None	-	No Action	
Matrix Spikes Sample ID:	No	MS not analyzed	J	Qualify positive and non-detect results as estimated (J), since no MS was analyzed.	Impacts to all samples
Lab Duplicates Sample ID: J195C5	No	RPD = 210.3 %	-	No Action because both sample and duplicate results are non-detect.	
Field Duplicate Sample ID:	Not collected				
QC Summary					
Validity of Data	Yes	None	-	No Action	No rejected data
Additional Notes:					

D.1.69 SDG J00663

SDG J00663 – Radionuclides QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** J00663	**W&C Project No.:**222007	
Medium: Pore Water		**Analytes:** Strontium-90, Tritium	
Samples: J19F44			
Laboratory: Test America, Richland, WA	**Date Data Assessment Completed:** 3/25/2010 **Complete By:** LEM	**Sample Collection Date:** 1/16/2010	**Sample Analysis Date:** 1/27-1/28/2010

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No Action	
Detection Limits	No	MDAs for Strontium exceed the reporting limit in the Work Plan. MDAs and CRDLs for Tritium are either less than or equal to the reporting limit in the Work Plan.	-	No Action	
Blanks					
Method Blanks	Yes	None	-	No Action	
Other QC Results					
LCS Results	Yes	None	-	No Action	
Tracer Results	Yes	None	-	No Action	
Matrix Spikes Sample ID:	No	MS not analyzed	J	Qualify positive and non-detect results as estimated (J), since no MS was analyzed.	Impacts to sample J19F44 for Tritium
Lab Duplicates Sample ID: J19F44	No	Strontium RPD = -594.4%	-	No action because both sample and duplicate results are non-detect.	
Field Duplicate Sample ID:	Not collected				
QC Summary					
Validity of Data	Yes	None	-	No Action	No rejected data
Additional Notes:					

SDG J00663 – Hexavalent Chromium QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** J00663	**W&C Project No.:**222007
Medium: Pore Water		**Analytes:** Hexavalent Chromium
Samples: J19F44		

Laboratory: Test America, Richland, WA	**Date Data Assessment Completed:** 3/16/2010 **Completed By:** LEM	**Sample Collection Date:** 1/16/2010	**Sample Analysis Date:** 1/17/2010

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No Action	
Detection Limits	Yes	None	-	No Action	
Blanks					
Preparation Blank	Yes	None	-	No Action	
Equipment Blank Sample ID:	Not collected				
Other QC Results					
LCS Results	Yes	None	-	No Action	
Matrix Spikes Sample ID: J19F58	Yes	None	-	No Action	
Laboratory Duplicates Sample ID: J19F58	Yes	None	-	No Action	
Field Duplicates	Not collected				
QC Summary					
Validity of Data	Yes	None	-	No Action	No rejected data
Additional Notes: QC is shared with SDG J00661, sample J19F58.					

D.1.70 SDG J00664

SDG J00664 – Radionuclides QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** J00664	**W&C Project No.:**222007	
Medium: Pore Water		**Analytes:** Strontium-90, Tritium	
Samples: J19F43			
Laboratory: Test America, Richland, WA	**Date Data Assessment Completed:** 3/25/2010 **Complete By:** LEM	**Sample Collection Date:** 1/15/2010	**Sample Analysis Date:** 1/27-1/28/2010

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No Action	
Detection Limits	No	MDAs for Strontium exceed the reporting limit in the Work Plan. MDAs and CRDLs for Tritium are either less than or equal to the reporting limit in the Work Plan.	-	No Action	
Blanks					
Method Blanks	Yes	None	-	No Action	
Other QC Results					
LCS Results	Yes	None	-	No Action	
Tracer Results	Yes	None	-	No Action	
Matrix Spikes Sample ID:	No	MS not analyzed	J	Qualify positive and non-detect results as estimated (J), since no MS was analyzed.	Impacts to sample J19F43 for Tritium
Lab Duplicates Sample ID: J19F43	No	Strontium = -102.9%	-	No action because both sample and duplicate results are non-detect.	
Field Duplicate Sample ID:	Not collected				
QC Summary					
Validity of Data	Yes	None	-	No Action	No rejected data
Additional Notes:					

SDG J00664 – Hexavalent Chromium QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** J00664	**W&C Project No.:**222007
Medium: Pore Water		**Analytes:** Hexavalent Chromium
Samples: J19F43		

Laboratory: Test America, Richland, WA	**Date Data Assessment Completed:** 3/16/2010 **Completed By:** LEM	**Sample Collection Date:** 1/15/2010	**Sample Analysis Date:** 1/16/2010

QC Parameter	**All in Spec.?**	**Non-Compliant Results**	**Flag**	**Action/ Notes**	**Associated Samples**
Holding Times	Yes	None	-	No Action	
Detection Limits	Yes	None	-	No Action	
Blanks					
Preparation Blank	Yes	None	-	No Action	
Equipment Blank Sample ID:	Not collected				
Other QC Results					
LCS Results	Yes	None	-	No Action	
Matrix Spikes Sample ID: J19F57	Yes	None	-	No Action	
Laboratory Duplicates Sample ID: J19F57	Yes	None	-	No Action	
Field Duplicates	Not collected				
QC Summary					
Validity of Data	Yes	None	-	No Action	No rejected data
Additional Notes: QC is shared with SDG J00659, sample J19F57.					

D.1.71 SDG J00665

Validated by ELR - Included in Appendix F

D.1.72 SDG J00669

SDG J00669 – Radionuclides QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA		**SDG No.:** J00669		**W&C Project No.:**222007	
Medium: Pore Water				**Analytes:** Strontium-90, Tritium	
Samples: J19H13					
Laboratory: Test America, Richland, WA	**Date Data Assessment Completed:** 3/25/2010 **Complete By:** LEM		**Sample Collection Date:** 1/18/2010		**Sample Analysis Date:** 1/28-1/29/2010
QC Parameter	**All in Spec.?**	**Non-Compliant Results**	**Flag**	**Action/ Notes**	**Associated Samples**
Holding Times	Yes	None	-	No Action	
Detection Limits	No	MDAs for Strontium exceed the reporting limit in the Work Plan. MDAs and CRDLs for Tritium are either less than or equal to the reporting limit in the Work Plan.	-	No Action	
Blanks					
Method Blanks	Yes	None	-	No Action	
Other QC Results					
LCS Results	Yes	None	-	No Action	
Tracer Results	Yes	None	-	No Action	
Matrix Spikes Sample ID:	No	MS not analyzed	J	Qualify positive and non-detect results as estimated (J), since no MS was analyzed.	Impacts to sample J19H13 for Tritium
Lab Duplicates Sample ID: J19H13	No	Strontium = 37.1%	-	No action because difference between sample and duplicate results are <1xRDL (MDA).	
Field Duplicate Sample ID:	Not collected				
QC Summary					
Validity of Data	Yes	None	-	No Action	No rejected data
Additional Notes:					

SDG J00669 – Hexavalent Chromium QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA		**SDG No.:** J00669		**W&C Project No.:**222007	
Medium: Pore Water				**Analytes:** Hexavalent Chromium	
Samples: J19H13					
Laboratory: Test America, Richland, WA	**Date Data Assessment Completed:** 3/16/2010 **Completed By:** LEM		**Sample Collection Date:** 1/18/2010	**Sample Analysis Date:** 1/19/2010	

QC Parameter	**All in Spec.?**	**Non-Compliant Results**	**Flag**	**Action/ Notes**	**Associated Samples**
Holding Times	Yes	None	-	No Action	
Detection Limits	Yes	None	-	No Action	
Blanks					
Preparation Blank	Yes	None	-	No Action	
Equipment Blank Sample ID:	Not collected				
Other QC Results					
LCS Results	Yes	None	-	No Action	
Matrix Spikes Sample ID: J19H13	Yes	None	-	No Action	
Laboratory Duplicates Sample ID: J19H13	Yes	None	-	No Action	
Field Duplicates	Not collected				
QC Summary					
Validity of Data	Yes	None	-	No Action	No rejected data
Additional Notes:					

D.1.73 SDG J00673

SDG J00673 – Radionuclides QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** J00673	**W&C Project No.:**222007	
Medium: Pore Water		**Analytes:** Strontium-90, Tritium	
Samples: J19HJ8			
Laboratory: Test America, Richland, WA	**Date Data Assessment Completed:** 3/25/2010 **Complete By:** LEM	**Sample Collection Date:** 1/23/2010	**Sample Analysis Date:** 1/30-2/3/2010

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No Action	
Detection Limits	No	MDAs for Strontium exceed the reporting limit in the Work Plan. MDAs and CRDLs for Tritium are either less than or equal to the reporting limit in the Work Plan.	-	No Action	
Blanks					
Method Blanks	Yes	None	-	No Action	
Other QC Results					
LCS Results	Yes	None	-	No Action	
Tracer Results	Yes	None	-	No Action	
Matrix Spikes Sample ID:	No	MS not analyzed	J	Qualify positive and non-detect results as estimated (J), since no MS was analyzed.	Impacts to sample J19HJ8 for Tritium
Lab Duplicates Sample ID: J19HJ8	No	Strontium = 208.3%	-	No action because both sample and duplicate results are non-detect.	
Field Duplicate Sample ID:	Not collected				
QC Summary					
Validity of Data	Yes	None	-	No Action	No rejected data
Additional Notes:					

SDG J00673 – Hexavalent Chromium QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** J00673	**W&C Project No.:**222007
Medium: Pore Water		**Analytes:** Hexavalent Chromium
Samples: J19HJ8		

Laboratory: Test America, Richland, WA	**Date Data Assessment Completed:** 3/16/2010 **Completed By:** LEM	**Sample Collection Date:** 1/23/2010	**Sample Analysis Date:** 1/24/2010

QC Parameter	**All in Spec.?**	**Non-Compliant Results**	**Flag**	**Action/ Notes**	**Associated Samples**
Holding Times	Yes	None	-	No Action	
Detection Limits	Yes	None	-	No Action	
Blanks					
Preparation Blank	Yes	None	-	No Action	
Equipment Blank Sample ID:	Not collected				
Other QC Results					
LCS Results	Yes	None	-	No Action	
Matrix Spikes Sample ID: J19HJ8	Yes	None	-	No Action	
Laboratory Duplicates Sample ID: J19HJ8	Yes	None	-	No Action	
Field Duplicates	Not collected				
QC Summary					
Validity of Data	Yes	None	-	No Action	No rejected data
Additional Notes:					

D.1.74 SDG J00674

SDG J00674 – Radionuclides QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** J00674	**W&C Project No.:**222007	
Medium: Pore Water		**Analytes:** Strontium-90, Tritium	
Samples: J19HJ9			
Laboratory: Test America, Richland, WA	**Date Data Assessment Completed:** 3/25/2010 **Complete By:** LEM	**Sample Collection Date:** 1/22/2010	**Sample Analysis Date:** 1/31-2/3/2010

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No Action	
Detection Limits	No	MDAs for Strontium exceed the reporting limit in the Work Plan. MDAs and CRDLs for Tritium are either less than or equal to the reporting limit in the Work Plan.	-	No Action	
Blanks					
Method Blanks	Yes	None	-	No Action	
Other QC Results					
LCS Results	Yes	None	-	No Action	
Tracer Results	Yes	None	-	No Action	
Matrix Spikes Sample ID:	No	MS not analyzed	J	Qualify positive and non-detect results as estimated (J), since no MS was analyzed.	Impacts to sample J19HJ9 for Tritium
Lab Duplicates Sample ID: J19HJ9	No	Strontium = 45%	-	No action because both sample and duplicate results are non-detect.	
Field Duplicate Sample ID:	Not collected				
QC Summary					
Validity of Data	Yes	None	-	No Action	No rejected data
Additional Notes:					

SDG J00674 – Hexavalent Chromium QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** J00674	**W&C Project No.:**222007
Medium: Pore Water		**Analytes:** Hexavalent Chromium
Samples: J19HJ9		

Laboratory: Test America, Richland, WA	**Date Data Assessment Completed:** 3/16/2010 **Completed By:** LEM	**Sample Collection Date:** 1/22/2010	**Sample Analysis Date:** 1/23/2010

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No Action	
Detection Limits	Yes	None	-	No Action	
Blanks					
Preparation Blank	Yes	None	-	No Action	
Equipment Blank Sample ID:	Not collected				
Other QC Results					
LCS Results	Yes	None	-	No Action	
Matrix Spikes Sample ID: J19HJ9	Yes	None	-	No Action	
Laboratory Duplicates Sample ID: J19HJ9	Yes	None	-	No Action	
Field Duplicates	Not collected				
QC Summary					
Validity of Data	Yes	None	-	No Action	No rejected data
Additional Notes:					

D.1.75 SDG J00679

SDG J00679 – Radionuclides QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA		**SDG No.:** J00679		**W&C Project No.:**222007	
Medium: Pore Water				**Analytes:** Strontium-90, Tritium	
Samples: J19FH0					
Laboratory: Test America, Richland, WA	**Date Data Assessment Completed:** 3/25/2010 **Complete By:** LEM		**Sample Collection Date:** 1/24/2010		**Sample Analysis Date:** 1/31-2/5/2010
QC Parameter	**All in Spec.?**	**Non-Compliant Results**	**Flag**	**Action/ Notes**	**Associated Samples**
Holding Times	Yes	None	-	No Action	
Detection Limits	No	MDAs for Strontium exceed the reporting limit in the Work Plan. MDAs and CRDLs for Tritium are either less than or equal to the reporting limit in the Work Plan.	-	No Action	
Blanks					
Method Blanks	Yes	None	-	No Action	
Other QC Results					
LCS Results	Yes	None	-	No Action	
Tracer Results	Yes	None	-	No Action	
Matrix Spikes Sample ID:	No	MS not analyzed	J	Qualify positive and non-detect results as estimated (J), since no MS was analyzed.	Impacts to sample J19FH0 for Tritium
Lab Duplicates Sample ID: J19FH0	No	Strontium = 122%	-	No action because both sample and duplicate results are non-detect.	
Field Duplicate Sample ID:	Not collected				
QC Summary					
Validity of Data	Yes	None	-	No Action	No rejected data
Additional Notes:					

SDG J00679 – Hexavalent Chromium QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** J00679	**W&C Project No.:**222007	
Medium: Pore Water		**Analytes:** Hexavalent Chromium	
Samples: J19FH0			
Laboratory: Test America, Richland, WA	**Date Data Assessment Completed:** 3/16/2010 **Completed By:** LEM	**Sample Collection Date:** 1/24/2010	**Sample Analysis Date:** 1/25/2010

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No Action	
Detection Limits	Yes	None	-	No Action	
Blanks					
Preparation Blank	Yes	None	-	No Action	
Equipment Blank Sample ID:	Not collected				
Other QC Results					
LCS Results	Yes	None	-	No Action	
Matrix Spikes Sample ID: J19FH0	Yes	None	-	No Action	
Laboratory Duplicates Sample ID: J19FH0	Yes	None	-	No Action	
Field Duplicates	Not collected				
QC Summary					
Validity of Data	Yes	None	-	No Action	No rejected data
Additional Notes:					

D.1.76 SDG J00680

SDG J00680 – Radionuclides QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** J00680	**W&C Project No.:**222007	
Medium: Pore Water		**Analytes:** Strontium-90, Tritium	
Samples: J19FH1			
Laboratory: Test America, Richland, WA	**Date Data Assessment Completed:** 3/25/2010 **Complete By:** LEM	**Sample Collection Date:** 1/24/2010	**Sample Analysis Date:** 1/31-2/5/2010

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No Action	
Detection Limits	No	MDAs for Strontium exceed the reporting limit in the Work Plan. MDAs and CRDLs for Tritium are either less than or equal to the reporting limit in the Work Plan.	-	No Action	
Blanks					
Method Blanks	Yes	None	-	No Action	
Other QC Results					
LCS Results	Yes	None	-	No Action	
Tracer Results	Yes	None	-	No Action	
Matrix Spikes Sample ID:	No	MS not analyzed	J	Qualify positive and non-detect results as estimated (J), since no MS was analyzed.	Impacts to sample J19FH1 for Tritium
Lab Duplicates Sample ID: J19FH1	No	Strontium = 207.6% Tritium = -548.7%	-	No action because both sample and duplicate results are non-detect.	
Field Duplicate Sample ID:	Not collected				
QC Summary					
Validity of Data	Yes	None	-	No Action	No rejected data
Additional Notes: Sample J19FH1 exceeds the CRDL for Strontium due to insufficient sample volume.					

SDG J00680 – Hexavalent Chromium QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** J00680	**W&C Project No.:**222007
Medium: Pore Water		**Analytes:** Hexavalent Chromium
Samples: J19FH1		

Laboratory: Test America, Richland, WA	**Date Data Assessment Completed:** 3/16/2010 **Completed By:** LEM	**Sample Collection Date:** 1/24/2010	**Sample Analysis Date:** 1/25/2010

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No Action	
Detection Limits	Yes	None	-	No Action	
Blanks					
Preparation Blank	Yes	None	-	No Action	
Equipment Blank Sample ID:	Not collected				
Other QC Results					
LCS Results	Yes	None	-	No Action	
Matrix Spikes Sample ID: J19FH1	Yes	None	-	No Action	
Laboratory Duplicates Sample ID: J19FH1	Yes	None	-	No Action	
Field Duplicates	Not collected				
QC Summary					
Validity of Data	Yes	None	-	No Action	No rejected data
Additional Notes:					

D.1.77 SDG J00688

SDG J00688 – Radionuclides QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** J00688	**W&C Project No.:**222007			
Medium: Pore Water	**Analytes:** Strontium-90, Total Uranium, Tritium				
Samples: J19F81, J19FC7, J19H06, J19HY1					
Laboratory: Test America, Richland, WA	**Date Data Assessment Completed:** 3/25/2010 **Complete By:** LEM	**Sample Collection Date:** 1/22-1/25/2010	**Sample Analysis Date:** 2/5-2/8/2010		
QC Parameter	**All in Spec.?**	**Non-Compliant Results**	**Flag**	**Action/ Notes**	**Associated Samples**
Holding Times	Yes	None	-	No Action	
Detection Limits	No	**MDAs** Strontium exceeds reporting limit in Work Plan. Total Uranium and Tritium less than reporting limit. **CRDLs** Total Uranium exceeds the reporting limit. Tritium is equal to the reporting limit.	-	No Action	
Blanks					
Method Blanks	Yes	None	-	No Action	
Other QC Results					
LCS Results	Yes	None	-	No Action	
Tracer Results	Yes	None	-	No Action	
Matrix Spikes Sample ID: J19FC7: Total Uranium	No	MS not analyzed for tritium	J	Qualify positive and non-detect results as estimated (J), since no MS was analyzed.	Impacts to samples J19F81, J19FC7, J19H06 for Tritium
Lab Duplicates Sample ID: J19HY1: Strontium J19F81: Total Uranium J19H06: Tritium	No	Strontium = 417.7% Tritium = 68.9%	-	No action because both sample and duplicate results are non-detect.	
Field Duplicate Sample IDs: J19H06/J19FC7	Yes	None	-	No Action	
QC Summary					
Validity of Data	Yes	None	-	No Action	No rejected data
Additional Notes:					

SDG J00688 – Hexavalent Chromium QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** J00688	**W&C Project No.:**222007
Medium: Pore Water		**Analytes:** Hexavalent Chromium
Samples: J19F81, J19H06		

Laboratory: Test America, Richland, WA	**Date Data Assessment Completed:** 3/16/2010 **Completed By:** LEM	**Sample Collection Date:** 1/25/2010	**Sample Analysis Date:** 1/26/2010

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No Action	
Detection Limits	Yes	None	-	No Action	
Blanks					
Preparation Blank	Yes	None	-	No Action	
Equipment Blank Sample ID:	Not collected				
Other QC Results					
LCS Results	Yes	None	-	No Action	
Matrix Spikes Sample ID: J19F81	Yes	None	-	No Action	
Laboratory Duplicates Sample ID: J19F81	Yes	None	-	No Action	
Field Duplicates	Not collected				
QC Summary					
Validity of Data	Yes	None	-	No Action	No rejected data
Additional Notes:					

D.1.78 SDG J00693

SDG J00693 – Radionuclides QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA		**SDG No.:** J00693		**W&C Project No.:**222007	
Medium: Pore Water				**Analytes:** Strontium-90, Tritium	
Samples: J19JF5					
Laboratory: Test America, Richland, WA	**Date Data Assessment Completed:** 3/25/2010 **Complete By:** LEM		**Sample Collection Date:** 1/24/2010		**Sample Analysis Date:** 2/9-2/12/2010

QC Parameter	**All in Spec.?**	**Non-Compliant Results**	**Flag**	**Action/ Notes**	**Associated Samples**
Holding Times	Yes	None	-	No Action	
Detection Limits	No	MDAs for Strontium exceed the reporting limit in the Work Plan. MDAs and CRDL for Tritium are either less than or equal to the reporting limit in the Work Plan.	-	No Action	
Blanks					
Method Blanks	Yes	None	-	No Action	
Other QC Results					
LCS Results	Yes	None	-	No Action	
Tracer Results	Yes	None	-	No Action	
Matrix Spikes Sample ID:	No	MS not analyzed	J	Qualify positive and non-detect results as estimated (J), since no MS was analyzed.	Impacts to sample J19JF5 for Tritium
Lab Duplicates Sample ID: J19JF5	No	Strontium = 76.8%	-	No action because both sample and duplicate results are non-detect.	
Field Duplicate Sample ID:	Not collected				
QC Summary					
Validity of Data	Yes	None	-	No Action	No rejected data
Additional Notes:					

SDG J00693 – Hexavalent Chromium QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** J00693	**W&C Project No.:**222007

Medium: Pore Water	**Analytes:** Hexavalent Chromium
Samples: J19JF5	

Laboratory: Test America, Richland, WA	**Date Data Assessment Completed:** 3/16/2010 **Completed By:** LEM	**Sample Collection Date:** 1/29/2010	**Sample Analysis Date:** 1/30/2010

QC Parameter	**All in Spec.?**	**Non-Compliant Results**	**Flag**	**Action/ Notes**	**Associated Samples**
Holding Times	Yes	None	-	No Action	
Detection Limits	Yes	None	-	No Action	
Blanks					
Preparation Blank	Yes	None	-	No Action	
Equipment Blank Sample ID:	Not collected				
Other QC Results					
LCS Results	Yes	None	-	No Action	
Matrix Spikes Sample ID: J19JF5	Yes	None	-	No Action	
Laboratory Duplicates Sample ID: J19JF5	Yes	None	-	No Action	
Field Duplicates	Not collected				
QC Summary					
Validity of Data	Yes	None	-	No Action	No rejected data
Additional Notes:					

D.1.79 SDG J00694

SDG J00694 – Radionuclides QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** J00694	**W&C Project No.:**222007
Medium: Pore Water		**Analytes:** Strontium-90, Tritium
Samples: J19JF6		

Laboratory: Test America, Richland, WA	**Date Data Assessment Completed:** 3/25/2010 **Complete By:** LEM	**Sample Collection Date:** 1/29/2010	**Sample Analysis Date:** 2/6-2/12/2010

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No Action	
Detection Limits	No	MDAs for Strontium exceed the reporting limit in the Work Plan. MDAs and CRDL for Tritium are either less than or equal to the reporting limit in the Work Plan.	-	No Action	
Blanks					
Method Blanks	Yes	None	-	No Action	
Other QC Results					
LCS Results	No	No LCS analyzed for Strontium	J	Qualify positive and non-detect results as estimated (J).	Impacts to sample J19JF6 - Strontium
Tracer Results	Yes	None	-	No Action	
Matrix Spikes Sample ID:	No	MS not analyzed	J	Qualify positive and non-detect results as estimated (J), since no MS was analyzed.	Impacts to sample J19JF6 for Tritium
Lab Duplicates Sample ID: J19JF6	Yes	None	-	No Action	
Field Duplicate Sample ID:	Not collected				
QC Summary					
Validity of Data	Yes	None	-	No Action	No rejected data
Additional Notes:					

SDG J00694 – Hexavalent Chromium QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** J00694	**W&C Project No.:**222007
Medium: Pore Water		**Analytes:** Hexavalent Chromium
Samples: J19JF6		

Laboratory: Test America, Richland, WA	**Date Data Assessment Completed:** 3/16/2010 **Completed By:** LEM	**Sample Collection Date:** 1/29/2010	**Sample Analysis Date:** 1/30/2010

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No Action	
Detection Limits	Yes	None	-	No Action	
Blanks					
Preparation Blank	Yes	None	-	No Action	
Equipment Blank Sample ID:	Not collected				
Other QC Results					
LCS Results	Yes	None	-	No Action	
Matrix Spikes Sample ID: J19JF6	Yes	None	-	No Action	
Laboratory Duplicates Sample ID: J19JF6	Yes	None	-	No Action	
Field Duplicates	Not collected				
QC Summary					
Validity of Data	Yes	None	-	No Action	No rejected data
Additional Notes:					

D.1.80 SDG J00698

SDG J00698 – Hexavalent Chromium QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** J00698	**W&C Project No.:**222007
Medium: Pore Water		**Analytes:** Hexavalent Chromium
Samples: J19J63		

Laboratory: Test America, Richland, WA	**Date Data Assessment Completed:** 3/16/2010 **Completed By:** LEM	**Sample Collection Date:** 1/30/2010	**Sample Analysis Date:** 1/31/2010

QC Parameter	**All in Spec.?**	**Non-Compliant Results**	**Flag**	**Action/ Notes**	**Associated Samples**
Holding Times	Yes	None	-	No Action	
Detection Limits	Yes	None	-	No Action	
Blanks					
Preparation Blank	Yes	None	-	No Action	
Equipment Blank Sample ID:	Not collected				
Other QC Results					
LCS Results	Yes	None	-	No Action	
Matrix Spikes Sample ID: J19J63	Yes	None	-	No Action	
Laboratory Duplicates Sample ID: J19J63	No	RPD = 97.4%	J	Qualify positive results as estimated (J) because difference between sample results is greater than 1xRDL.	Impacts to all samples
Field Duplicates Sample ID:	Not collected				
QC Summary					
Validity of Data	Yes	None	-	No Action	No rejected data
Additional Notes:					

D.1.81 SDG J00700

SDG J00700 – Hexavalent Chromium QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** J00700	**W&C Project No.:**222007
Medium: Pore Water		**Analytes:** Hexavalent Chromium
Samples: J19HY5		

Laboratory: Test America, Richland, WA	**Date Data Assessment Completed:** 3/16/2010 **Completed By:** LEM	**Sample Collection Date:** 1/30/2010	**Sample Analysis Date:** 1/31/2010

QC Parameter	**All in Spec.?**	**Non-Compliant Results**	**Flag**	**Action/ Notes**	**Associated Samples**
Holding Times	Yes	None	-	No Action	
Detection Limits	Yes	None	-	No Action	
Blanks					
Preparation Blank	Yes	None	-	No Action	
Equipment Blank Sample ID:	Not collected				
Other QC Results					
LCS Results	Yes	None	-	No Action	
Matrix Spikes Sample ID: J19HY5	Yes	None	-	No Action	
Laboratory Duplicates Sample ID: J19HY5	Yes	None	-	No Action	
Field Duplicates	Not collected				
QC Summary					
Validity of Data	Yes	None	-	No Action	No rejected data
Additional Notes:					

D.1.82 SDG J00701

SDG J00701 – Radionuclides QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** J00701	**W&C Project No.:**222007
Medium: Pore Water		**Analytes:** Strontium-90, Tritium
Samples: J19JF7		

Laboratory: Test America, Richland, WA	**Date Data Assessment Completed:** 3/25/2010 **Complete By:** LEM	**Sample Collection Date:** 1/30/2010	**Sample Analysis Date:** 2/6-2/12/2010

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No Action	
Detection Limits	No	MDAs for Strontium exceed the reporting limit in the Work Plan. MDAs and CRDL for Tritium are either less than or equal to the reporting limit in the Work Plan.	-	No Action	
Blanks					
Method Blanks	Yes	None	-	No Action	
Other QC Results					
LCS Results	Yes	None	-	No Action	
Tracer Results	Yes	None	-	No Action	
Matrix Spikes Sample ID:	No	MS not analyzed	J	Qualify positive and non-detect results as estimated (J), since no MS was analyzed.	Impacts to sample J19JF7 for Tritium
Lab Duplicates Sample ID: J19JF7	No	Strontium = 79.1% Tritium = 304%	-	No action because both sample and duplicate results are non-detect.	
Field Duplicate Sample ID:	Not collected				
QC Summary					
Validity of Data	Yes	None	-	No Action	No rejected data
Additional Notes:					

SDG J00701 – Hexavalent Chromium QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** J00701	**W&C Project No.:**222007
Medium: Pore Water		**Analytes:** Hexavalent Chromium
Samples: J19JF7		

Laboratory: Test America, Richland, WA	**Date Data Assessment Completed:** 3/16/2010 **Completed By:** LEM	**Sample Collection Date:** 1/30/2010	**Sample Analysis Date:** 1/31/2010

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No Action	
Detection Limits	Yes	None	-	No Action	
Blanks					
Preparation Blank	Yes	None	-	No Action	
Equipment Blank Sample ID:	Not collected				
Other QC Results					
LCS Results	Yes	None	-	No Action	
Matrix Spikes Sample ID: J19JF7	Yes	None	-	No Action	
Laboratory Duplicates Sample ID: J19JF7	Yes	None	-	No Action	
Field Duplicates	Not collected				
QC Summary					
Validity of Data	Yes	None	-	No Action	No rejected data
Additional Notes:					

D.1.83 SDG J00703

SDG J00703 – Radionuclides QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** J00703	**W&C Project No.:**222007	
Medium: Pore Water		**Analytes:** Strontium-90, Tritium	
Samples: J19JC9, J19HP1, J19HK2			
Laboratory: Test America, Richland, WA	**Date Data Assessment Completed:** 3/25/2010 **Complete By:** LEM	**Sample Collection Date:** 1/31/2010	**Sample Analysis Date:** 2/9-2/10/2010

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No Action	
Detection Limits	No	MDAs for Strontium exceed the reporting limit in the Work Plan. MDAs and CRDL for Tritium are either less than or equal to the reporting limit in the Work Plan.	-	No Action	
Blanks					
Method Blanks	Yes	None	-	No Action	
Other QC Results					
LCS Results	Yes	None	-	No Action	
Tracer Results	Yes	None	-	No Action	
Matrix Spikes Sample ID:	No	MS not analyzed	J	Qualify positive and non-detect results as estimated (J), since no MS was analyzed.	Impacts to all samples for Tritium
Lab Duplicates Sample ID: J19JC9: Tritium J19HP1: Strontium	No	Tritium = 44.2% Strontium = 75.5%	J	Qualify positive and non-detect results as estimated (J). No action because both sample and duplicate results are non-detect.	Impacts to all samples - Tritium
Field Duplicate Sample IDs: J19HP1/J19HK2	Yes	None	-	No Action	
QC Summary					
Validity of Data	Yes	None	-	No Action	No rejected data
Additional Notes:					

SDG J00703 – Hexavalent Chromium QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** J00703	**W&C Project No.:**222007
Medium: Pore Water		**Analytes:** Hexavalent Chromium
Samples: J19JC9, J19HP1, J19HK2		

Laboratory: Test America, Richland, WA	**Date Data Assessment Completed:** 3/16/2010 **Completed By:** LEM	**Sample Collection Date:** 1/31/2010	**Sample Analysis Date:** 2/1/2010

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No Action	
Detection Limits	Yes	None	-	No Action	
Blanks					
Preparation Blank	Yes	None	-	No Action	
Equipment Blank Sample ID:	Not collected				
Other QC Results					
LCS Results	Yes	None	-	No Action	
Matrix Spikes Sample ID: J19JC9, J19HP1, J19HK2	Yes	None	-	No Action	
Laboratory Duplicates Sample ID: J19JC9, J19HP1, J19HK2	Yes	None	-	No Action	
Field Duplicates Sample IDs: J19HP1/J19HK2	Yes	None	-	No Action	
QC Summary					
Validity of Data	Yes	None	-	No Action	No rejected data
Additional Notes: Three batches of QC samples were analyzed.					

D.1.84 SDG J00706

SDG J00706 – Radionuclides QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA		**SDG No.:** J00706		**W&C Project No.:**222007	
Medium: Pore Water				**Analytes:** Total Uranium, Tritium	
Samples: J19F82, J19HW6					
Laboratory: Test America, Richland, WA	**Date Data Assessment Completed:** 3/26/2010 **Complete By:** LEM		**Sample Collection Date:** 2/1/2010		**Sample Analysis Date:** 2/15-2/17/2010

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No Action	
Detection Limits	No	**MDAs** Total Uranium and Tritium are less than the reporting limit in the Work Plan. **CRDLs** Total Uranium exceeds the reporting limit in the Work Plan. Tritium is equal to the reporting limit.	-	No Action	
Blanks					
Method Blanks	Yes	None	-	No Action	
Other QC Results					
LCS Results	Yes	None	-	No Action	
Tracer Results	Yes	None	-	No Action	
Matrix Spikes Sample ID: J19F82: Total Uranium	No	MS not analyzed for Tritium	J	Qualify positive and non-detect results as estimated (J), since no MS was analyzed.	Impacts to all samples for Tritium
Lab Duplicates Sample ID: J19F82: Total Uranium J19HW6: Tritium	Yes	None	-	No Action	
Field Duplicate Sample ID:	Not collected				
QC Summary					
Validity of Data	Yes	None	-	No Action	No rejected data
Additional Notes:					

SDG J00706 – Hexavalent Chromium QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** J00706	**W&C Project No.:**222007
Medium: Pore Water		**Analytes:** Hexavalent Chromium
Samples: J19F82, J19JC2, J19HW6		

Laboratory: Test America, Richland, WA	**Date Data Assessment Completed:** 3/16/2010 **Completed By:** LEM	**Sample Collection Date:** 2/1/2010	**Sample Analysis Date:** 2/2/2010

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No Action	
Detection Limits	Yes	None	-	No Action	
Blanks					
Preparation Blank	Yes	None	-	No Action	
Equipment Blank Sample ID:	Not collected				
Other QC Results					
LCS Results	Yes	None	-	No Action	
Matrix Spikes Sample ID: J19F82	Yes	None	-	No Action	
Laboratory Duplicates Sample ID: J19F82	Yes	None	-	No Action	
Field Duplicates Sample IDs: J19HW6/J19JC2	Yes	None	-	No Action	
QC Summary					
Validity of Data	Yes	None	-	No Action	No rejected data
Additional Notes:					

D.1.85 SDG J00709

SDG J00709 – Radionuclides QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** J00709	**W&C Project No.:**222007
Medium: Pore Water		**Analytes:** Strontium-90, Tritium
Samples: J19JR5, J19JR8		

Laboratory: Test America, Richland, WA	**Date Data Assessment Completed:** 3/26/2010 **Complete By:** LEM	**Sample Collection Date:** 2/7/2010	**Sample Analysis Date:** 2/18-2/19/2010

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No Action	
Detection Limits	No	MDAs for Strontium exceed the reporting limit in the Work Plan. MDAs and CRDL for Tritium are either less than or equal to the reporting limit in the Work Plan.	-	No Action	
Blanks					
Method Blanks	Yes	None	-	No Action	
Other QC Results					
LCS Results	Yes	None	-	No Action	
Tracer Results	Yes	None	-	No Action	
Matrix Spikes Sample ID:	No	MS not analyzed	J	Qualify positive and non-detect results as estimated (J), since no MS was analyzed.	Impacts to all samples for Tritium
Lab Duplicates Sample ID: J19JR5: Strontium J19JR8: Tritium	Yes	None	-	No Action	
Field Duplicate Sample ID:	Not collected				
QC Summary					
Validity of Data	Yes	None	-	No Action	No rejected data
Additional Notes:					

SDG J00709 – Hexavalent Chromium QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** J00709	**W&C Project No.:**222007	
Medium: Pore Water		**Analytes:** Hexavalent Chromium	
Samples: J19JR5, J19JR8			
Laboratory: Test America, Richland, WA	**Date Data Assessment Completed:** 3/16/2010 **Completed By:** LEM	**Sample Collection Date:** 2/7/2010	**Sample Analysis Date:** 2/8/2010

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No Action	
Detection Limits	Yes	None	-	No Action	
Blanks					
Preparation Blank	Yes	None	-	No Action	
Equipment Blank Sample ID:	Not collected				
Other QC Results					
LCS Results	Yes	None	-	No Action	
Matrix Spikes Sample ID: J19JR8	Yes	None	-	No Action	
Laboratory Duplicates Sample ID: J19JR8	Yes	None	-	No Action	
Field Duplicates	Not collected				
QC Summary					
Validity of Data	Yes	None	-	No Action	No rejected data
Additional Notes:					

D.1.86 SDG J00714

Validated by ELR - Included in Appendix F

D.1.87 SDG J00717

SDG J00717 – Radionuclides QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** J00717	**W&C Project No.:**222007	
Medium: Pore Water		**Analytes:** Strontium-90, Tritium	
Samples: J19JR6, J19JR7			
Laboratory: Test America, Richland, WA	**Date Data Assessment Completed:** 3/26/2010 **Complete By:** LEM	**Sample Collection Date:** 2/6/2010	**Sample Analysis Date:** 2/16-2/19/2010

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No Action	
Detection Limits	No	MDAs for Strontium exceed the reporting limit in the Work Plan. MDAs and CRDL for Tritium are either less than or equal to the reporting limit in the Work Plan.	-	No Action	
Blanks					
Method Blanks	Yes	None	-	No Action	
Other QC Results					
LCS Results	No	Tritium = 79%	J	Qualify positive and non-detect results as estimated (J).	Impacts to all samples – Tritium
Tracer Results	Yes	None	-	No Action	
Matrix Spikes Sample ID:	No	MS not analyzed	J	Qualify positive and non-detect results as estimated (J), since no MS was analyzed.	Impacts to all samples for Tritium
Lab Duplicates Sample ID: J19JR6: Strontium J19JR7: Tritium	No	Strontium = 20.6%	-	No action because both sample and duplicate results are non-detect.	
Field Duplicate Sample ID:	Not collected				
QC Summary					
Validity of Data	Yes	None	-	No Action	No rejected data
Additional Notes:					

SDG J00717 – Hexavalent Chromium QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** J00717	**W&C Project No.:**222007
Medium: Pore Water		**Analytes:** Hexavalent Chromium
Samples: J19JR6, J19JR7		

Laboratory: Test America, Richland, WA	**Date Data Assessment Completed:** 3/16/2010 **Completed By:** LEM	**Sample Collection Date:** 2/6/2010	**Sample Analysis Date:** 2/7/2010

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No Action	
Detection Limits	Yes	None	-	No Action	
Blanks					
Preparation Blank	Yes	None	-	No Action	
Equipment Blank Sample ID:	Not collected				
Other QC Results					
LCS Results	Yes	None	-	No Action	
Matrix Spikes Sample ID: J19JR6, J19JR7	Yes	None	-	No Action	
Laboratory Duplicates Sample ID: J19JR6	No	RPD = 29.5%	J	Qualify positive results as estimated (J) because difference between sample results is greater than 1x RDL.	Impacts to sample J19JR6
Laboratory Duplicates Sample ID: J19JR7	Yes	None	-	No Action	
Field Duplicates	Not collected				
QC Summary					
Validity of Data	Yes	None	-	No Action	No rejected data
Additional Notes:					

D.1.88 SDG J00719

SDG J00719 – Radionuclides QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** J00719	**W&C Project No.:**222007
Medium: Pore Water		**Analytes:** Strontium-90, Tritium
Samples: J19JR9, J19JT2		

Laboratory: Test America, Richland, WA	**Date Data Assessment Completed:** 3/26/2010 **Complete By:** LEM	**Sample Collection Date:** 2/8/2010	**Sample Analysis Date:** 2/19-2/24/2010

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No Action	
Detection Limits	No	MDAs for Strontium exceed the reporting limit in the Work Plan. MDAs and CRDL for Tritium are either less than or equal to the reporting limit in the Work Plan.	-	No Action	
Blanks					
Method Blanks	Yes	None	-	No Action	
Other QC Results					
LCS Results	No	Tritium = 79%	J	Qualify positive and non-detect results as estimated (J).	Impacts to all samples - Tritium
Tracer Results	Yes	None	-	No Action	
Matrix Spikes Sample ID:	No	MS not analyzed	J	Qualify positive and non-detect results as estimated (J), since no MS was analyzed.	Impacts to all samples for Tritium
Lab Duplicates Sample ID: J19JT2: Strontium J19JR9: Tritium	Yes	None	-	No Action	
Field Duplicate Sample IDs: J19JT2/J19JR9	Yes	None	-	No Action	
QC Summary					
Validity of Data	Yes	None	-	No Action	No rejected data
Additional Notes:					

SDG J00719 – Hexavalent Chromium QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** J00719	**W&C Project No.:**222007
Medium: Pore Water		**Analytes:** Hexavalent Chromium
Samples: J19JR9, J19JT2		

Laboratory: Test America, Richland, WA	**Date Data Assessment Completed:** 3/26/2010 **Completed By:** LEM	**Sample Collection Date:** 2/8/2010	**Sample Analysis Date:** 2/9/2010

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No Action	
Detection Limits	Yes	None	-	No Action	
Blanks					
Preparation Blank	Yes	None	-	No Action	
Equipment Blank Sample ID:	Not collected				
Other QC Results					
LCS Results	Yes	None	-	No Action	
Matrix Spikes Sample ID: J19JR9	Yes	None	-	No Action	
Laboratory Duplicates Sample ID: J19JR9	Yes	None	-	No Action	
Field Duplicates Sample IDs: J19JT2/J19JR9	Yes	None	-	No Action	
QC Summary					
Validity of Data	Yes	None	-	No Action	No rejected data
Additional Notes:					

D.1.89 SDG J00729

SDG J00729 – Radionuclides QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** J00729	**W&C Project No.:**222007
Medium: Pore Water		**Analytes:** Strontium-90, Tritium
Samples: J19J72, J19J75		

Laboratory: Test America, Richland, WA	**Date Data Assessment Completed:** 3/26/2010 **Complete By:** LEM	**Sample Collection Date:** 2/13/2010	**Sample Analysis Date:** 2/22-2/23/2010

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No Action	
Detection Limits	No	MDAs for Strontium exceed the reporting limit in the Work Plan. MDAs and CRDL for Tritium are either less than or equal to the reporting limit in the Work Plan.	-	No Action	
Blanks					
Method Blanks	Yes	None	-	No Action	
Other QC Results					
LCS Results	Yes	None	-	No Action	
Tracer Results	Yes	None	-	No Action	
Matrix Spikes Sample ID:	No	MS not analyzed	J	Qualify positive and non-detect results as estimated (J), since no MS was analyzed.	Impacts to all samples for Tritium
Lab Duplicates Sample ID: J19J75: Strontium J19J72: Tritium	No	Strontium = 107.8%	-	No action because both sample and duplicate results are non-detect.	
Field Duplicate Sample ID:	Not collected				
QC Summary					
Validity of Data	Yes	None	-	No Action	No rejected data
Additional Notes: Samples did not meet the MDA due to insufficient sample volume.					

SDG J00729 – Hexavalent Chromium QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** J00729	**W&C Project No.:**222007
Medium: Pore Water		**Analytes:** Hexavalent Chromium
Samples: J19J72, J19J75		

Laboratory: Test America, Richland, WA	**Date Data Assessment Completed:** 3/26/2010 **Completed By:** LEM	**Sample Collection Date:** 2/13/2010	**Sample Analysis Date:** 2/14/2010

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No Action	
Detection Limits	Yes	None	-	No Action	
Blanks					
Preparation Blank	Yes	None	-	No Action	
Equipment Blank Sample ID:	Not collected				
Other QC Results					
LCS Results	Yes	None	-	No Action	
Matrix Spikes Sample ID: J19J72, J19J75	Yes	None	-	No Action	
Laboratory Duplicates Sample ID: J19J72	No	RPD = 78.8%	J	Qualify positive results as estimated (J) because difference between sample results is greater than 1xRDL.	Impacts to all samples
Laboratory Duplicates Sample ID: J19J75	Yes	None	-	No Action	
Field Duplicates	Not collected				
QC Summary					
Validity of Data	Yes	None	-	No Action	No rejected data
Additional Notes:					

D.1.90 SDG J00730

SDG J00730 – Radionuclides QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** J00730	**W&C Project No.:**222007	
Medium: Pore Water		**Analytes:** Strontium-90, Tritium	
Samples: J19K04, J19K05			
Laboratory: Test America, Richland, WA	**Date Data Assessment Completed:** 3/26/2010 **Complete By:** LEM	**Sample Collection Date:** 2/12/2010	**Sample Analysis Date:** 2/19-2/22/2010

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No Action	
Detection Limits	No	MDAs for Strontium exceed the reporting limit in the Work Plan. MDAs and CRDL for Tritium are either less than or equal to the reporting limit in the Work Plan.	-	No Action	
Blanks					
Method Blanks	Yes	None	-	No Action	
Other QC Results					
LCS Results	Yes	None	-	No Action	
Tracer Results	Yes	None	-	No Action	
Matrix Spikes Sample ID:	No	MS not analyzed	J	Qualify positive and non-detect results as estimated (J), since no MS was analyzed.	Impacts to all samples for Tritium
Lab Duplicates Sample ID: J19K05: Strontium J19K04: Tritium	No	Strontium = 22.3%	-	No action because the difference between sample results is <1x MDA.	
Field Duplicate Sample ID:	Not collected				
QC Summary					
Validity of Data	Yes	None	-	No Action	No rejected data
Additional Notes:					

SDG J00730 – Hexavalent Chromium QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** J00730	**W&C Project No.:**222007
Medium: Pore Water		**Analytes:** Hexavalent Chromium
Samples: J19K04, J19K05		

Laboratory: Test America, Richland, WA	**Date Data Assessment Completed:** 3/26/2010 **Completed By:** LEM	**Sample Collection Date:** 2/12/2010	**Sample Analysis Date:** 2/13/2010

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No Action	
Detection Limits	Yes	None	-	No Action	
Blanks					
Preparation Blank	Yes	None	-	No Action	
Equipment Blank Sample ID:	Not collected				
Other QC Results					
LCS Results	Yes	None	-	No Action	
Matrix Spikes Sample ID: J19K04, J19K05	Yes	None	-	No Action	
Laboratory Duplicates Sample ID: J19K05	No	RPD = 36.7%	J	Qualify positive results as estimated (J) because both sample and duplicate results are >5x MDA.	Impacts to all samples
Laboratory Duplicates Sample ID: J19K04	Yes	None	-	No Action	
Field Duplicates	Not collected				
QC Summary					
Validity of Data	Yes	None	-	No Action	No rejected data

Additional Notes: There was a small amount of solid in J19K05 (RPD = 36.7%) which could have caused the difference in the results.

D.1.91 SDG J00734

SDG J00734 – Radionuclides QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA		**SDG No.:** J00734		**W&C Project No.:**222007	
Medium: Pore Water				**Analytes:** Strontium-90, Tritium	
Samples: J19JM5, J19JM6					
Laboratory: Test America, Richland, WA	**Date Data Assessment Completed:** 3/26/2010 **Complete By:** LEM		**Sample Collection Date:** 2/14/2010		**Sample Analysis Date:** 2/23-2/24/2010
QC Parameter	**All in Spec.?**	**Non-Compliant Results**	**Flag**	**Action/ Notes**	**Associated Samples**
Holding Times	Yes	None	-	No Action	
Detection Limits	No	MDAs for Strontium exceed the reporting limit in the Work Plan. MDAs and CRDL for Tritium are either less than or equal to the reporting limit in the Work Plan.	-	No Action	
Blanks					
Method Blanks	Yes	None	-	No Action	
Other QC Results					
LCS Results	Yes	None	-	No Action	
Tracer Results	Yes	None	-	No Action	
Matrix Spikes Sample ID:	No	MS not analyzed	J	Qualify positive and non-detect results as estimated (J), since no MS was analyzed.	Impacts to all samples for Tritium
Lab Duplicates Sample ID: J19JM5: Tritium J19JM6: Strontium	No	Strontium = 25.9%	-	No action because both sample and duplicate results are non-detect.	
Field Duplicate Sample ID:	Not collected				
QC Summary					
Validity of Data	Yes	None	-	No Action	No rejected data
Additional Notes:					

SDG J00734 – Hexavalent Chromium QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** J00734	**W&C Project No.:**222007
Medium: Pore Water		**Analytes:** Hexavalent Chromium
Samples: J19JM5, J19JM6		

Laboratory: Test America, Richland, WA	**Date Data Assessment Completed:** 3/26/2010 **Completed By:** LEM	**Sample Collection Date:** 2/14/2010	**Sample Analysis Date:** 2/15/2010

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No Action	
Detection Limits	Yes	None	-	No Action	
Blanks					
Preparation Blank	Yes	None	-	No Action	
Equipment Blank Sample ID:	Not collected				
Other QC Results					
LCS Results	Yes	None	-	No Action	
Matrix Spikes Sample ID: J19JM5	Yes	None	-	No Action	
Laboratory Duplicates Sample ID: J19JM5	Yes	None	-	No Action	
Field Duplicates	Not collected				
QC Summary					
Validity of Data	Yes	None	-	No Action	No rejected data
Additional Notes:					

D.1.92 SDG J00737

SDG J00737 – Radionuclides QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** J00737	**W&C Project No.:**222007	
Medium: Pore Water		**Analytes:** Tritium	
Samples: J19K47, J19K48			
Laboratory: Test America, Richland, WA	**Date Data Assessment Completed:** 3/30/2010 **Complete By:** LEM	**Sample Collection Date:** 2/15/2010	**Sample Analysis Date:** 2/23-2/24/2010

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No Action	
Detection Limits	Yes	MDAs and CRDL for Tritium are either less than or equal to the reporting limit in the Work Plan.	-	No Action	
Blanks					
Method Blanks	Yes	None	-	No Action	
Other QC Results					
LCS Results	Yes	None	-	No Action	
Tracer Results	Yes	None	-	No Action	
Matrix Spikes Sample ID:	No	MS not analyzed	J	Qualify positive and non-detect results as estimated (J), since no MS was analyzed.	Impacts to all samples
Lab Duplicates Sample ID: J19K47	Yes	None	-	No Action	
Field Duplicate Sample ID:	Not collected				
QC Summary					
Validity of Data	Yes	None	-	No Action	No rejected data
Additional Notes:					

SDG J00737 – Hexavalent Chromium QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** J00737	**W&C Project No.:**222007
Medium: Pore Water		**Analytes:** Hexavalent Chromium
Samples: J19K47, J19K48		

Laboratory: Test America, Richland, WA	**Date Data Assessment Completed:** 3/30/2010 **Completed By:** LEM	**Sample Collection Date:** 2/15/2010	**Sample Analysis Date:** 2/16/2010

QC Parameter	**All in Spec.?**	**Non-Compliant Results**	**Flag**	**Action/ Notes**	**Associated Samples**
Holding Times	Yes	None	-	No Action	
Detection Limits	Yes	None	-	No Action	
Blanks					
Preparation Blank	Yes	None	-	No Action	
Equipment Blank Sample ID:	Not collected				
Other QC Results					
LCS Results	Yes	None	-	No Action	
Matrix Spikes Sample ID: J19K47	Yes	None	-	No Action	
Laboratory Duplicates Sample ID: J19K47	No	RPD = 35.3%	-	No action because the difference between sample results is <1x MDA.	
Field Duplicates	Not collected				
QC Summary					
Validity of Data	Yes	None	-	No Action	No rejected data
Additional Notes:					

D.1.93 SDG J00738

SDG J00738 – Radionuclides QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA		**SDG No.:** J00738		**W&C Project No.:**222007	
Medium: Pore Water				**Analytes:** Technetium-99	
Samples: J19KK1, J19KK2					
Laboratory: Test America, Richland, WA	**Date Data Assessment Completed:** 3/30/2010 **Complete By:** LEM		**Sample Collection Date:** 2/15/2010		**Sample Analysis Date:** 2/24/2010
QC Parameter	**All in Spec.?**	**Non-Compliant Results**	**Flag**	**Action/ Notes**	**Associated Samples**
Holding Times	Yes	None	-	No Action	
Detection Limits	Yes	MDAs and CRDL for Technetium-99 are either less than or equal to the reporting limit in the Work Plan.	-	No Action	
Blanks					
Method Blanks	Yes	None	-	No Action	
Other QC Results					
LCS Results	Yes	None	-	No Action	
Tracer Results	Yes	None	-	No Action	
Matrix Spikes Sample ID: J19KK2	Yes	None	-	No Action	
Lab Duplicates Sample ID: J19KK1	Yes	None	-	No Action	
Field Duplicate Sample ID:	Not collected				
QC Summary					
Validity of Data	Yes	None	-	No Action	No rejected data
Additional Notes:					

D.1.94 SDG J00741

SDG J00741 – Radionuclides QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** J00741	**W&C Project No.:**222007	
Medium: Pore Water		**Analytes:** Tritium	
Samples: J19K43, J19K44			
Laboratory: Test America, Richland, WA	**Date Data Assessment Completed:** 3/30/2010 **Complete By:** LEM	**Sample Collection Date:** 2/21/2010	**Sample Analysis Date:** 3/2-3/3/2010

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No Action	
Detection Limits	Yes	MDAs and CRDL for Tritium are either less than or equal to the reporting limit in the Work Plan.	-	No Action	
Blanks					
Method Blanks	Yes	None	-	No Action	
Other QC Results					
LCS Results	Yes	None	-	No Action	
Tracer Results	Yes	None	-	No Action	
Matrix Spikes Sample ID:	No	MS not analyzed	J	Qualify positive and non-detect results as estimated (J), since no MS was analyzed.	Impacts to all samples
Lab Duplicates Sample ID: J19K44	Yes	None	-	No Action	
Field Duplicate Sample ID:	Not collected				
QC Summary					
Validity of Data	Yes	None	-	No Action	No rejected data
Additional Notes:					

SDG J00741 – Hexavalent Chromium QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** J00741	**W&C Project No.:**222007
Medium: Pore Water		**Analytes:** Hexavalent Chromium
Samples: J19K43, J19K44		

Laboratory: Test America, Richland, WA	**Date Data Assessment Completed:** 3/30/2010 **Completed By:** LEM	**Sample Collection Date:** 2/21/2010	**Sample Analysis Date:** 2/22/2010

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No Action	
Detection Limits	Yes	None	-	No Action	
Blanks					
Preparation Blank	Yes	None	-	No Action	
Equipment Blank Sample ID:	Not collected				
Other QC Results					
LCS Results	Yes	None	-	No Action	
Matrix Spikes Sample ID: J19K44	Yes	None	-	No Action	
Laboratory Duplicates Sample ID: J19K44	Yes	None	-	No Action	
Field Duplicates	Not collected				
QC Summary					
Validity of Data	Yes	None	-	No Action	No rejected data
Additional Notes:					

D.1.95 SDG J00744

SDG J00744 – Radionuclides QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA		**SDG No.:** J00744		**W&C Project No.:**222007	
Medium: Pore Water				**Analytes:** Strontium-90, Tritium	
Samples: J19KB5, J19H12					
Laboratory: Test America, Richland, WA	**Date Data Assessment Completed:** 3/30/2010 **Complete By:** LEM		**Sample Collection Date:** 2/19/2010		**Sample Analysis Date:** 3/1-3/3/2010

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No Action	
Detection Limits	No	MDAs for Strontium exceed the reporting limit in the Work Plan. MDAs and CRDL for Tritium are either less than or equal to the reporting limit in the Work Plan.	-	No Action	
Blanks					
Method Blanks	Yes	None	-	No Action	
Other QC Results					
LCS Results	Yes	None	-	No Action	
Tracer Results	Yes	None	-	No Action	
Matrix Spikes Sample ID:	No	MS not analyzed	J	Qualify positive and non-detect results as estimated (J), since no MS was analyzed.	Impacts to all samples for Tritium
Lab Duplicates Sample ID: J19KB5: Tritium J19H12: Strontium	No	Strontium = 37.8%	-	No action because both sample and duplicate results are non-detect.	
Field Duplicate Sample ID:	Not collected				
QC Summary					
Validity of Data	Yes	None	-	No Action	No rejected data
Additional Notes:					

SDG J00744 – Hexavalent Chromium QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** J00744	**W&C Project No.:**222007	
Medium: Pore Water		**Analytes:** Hexavalent Chromium	
Samples: J19KB5, J19H12			
Laboratory: Test America, Richland, WA	**Date Data Assessment Completed:** 3/30/2010 **Completed By:** LEM	**Sample Collection Date:** 2/19/2010	**Sample Analysis Date:** 2/20/2010

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No Action	
Detection Limits	Yes	None	-	No Action	
Blanks					
Preparation Blank	Yes	None	-	No Action	
Equipment Blank Sample ID:	Not collected				
Other QC Results					
LCS Results	Yes	None	-	No Action	
Matrix Spikes Sample ID: J19KB5	Yes	None	-	No Action	
Laboratory Duplicates Sample ID: J19KB5	Yes	None	-	No Action	
Field Duplicates	Not collected				
QC Summary					
Validity of Data	Yes	None	-	No Action	No rejected data
Additional Notes:					

D.1.96 SDG J00747

SDG J00747 – Hexavalent Chromium QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** J00747	**W&C Project No.:**222007
Medium: Pore Water		**Analytes:** Hexavalent Chromium
Samples: J19372		

Laboratory: Test America, Richland, WA	**Date Data Assessment Completed:** 3/30/2010 **Completed By:** LEM	**Sample Collection Date:** 2/20/2010	**Sample Analysis Date:** 2/21/2010

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No Action	
Detection Limits	Yes	None	-	No Action	
Blanks					
Preparation Blank	Yes	None	-	No Action	
Equipment Blank Sample ID:	Not collected				
Other QC Results					
LCS Results	Yes	None	-	No Action	
Matrix Spikes Sample ID: J19372	Yes	None	-	No Action	
Laboratory Duplicates Sample ID: J19372	Yes	None	-	No Action	
Field Duplicates	Not collected				
QC Summary					
Validity of Data	Yes	None	-	No Action	No rejected data
Additional Notes:					

D.1.97 SDG J00748

SDG J00748 – Radionuclides QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** J00748	**W&C Project No.:**222007	
Medium: Pore Water		**Analytes:** Strontium-90, Tritium	
Samples: J19KB4			
Laboratory: Test America, Richland, WA	**Date Data Assessment Completed:** 3/30/2010 **Complete By:** LEM	**Sample Collection Date:** 2/20/2010	**Sample Analysis Date:** 3/1-3/5/2010

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No Action	
Detection Limits	No	MDAs for Strontium exceed the reporting limit in the Work Plan. MDAs and CRDL for Tritium are either less than or equal to the reporting limit in the Work Plan.	-	No Action	
Blanks					
Method Blanks	Yes	None	-	No Action	
Other QC Results					
LCS Results	Yes	None	-	No Action	
Tracer Results	Yes	None	-	No Action	
Matrix Spikes Sample ID:	No	MS not analyzed	J	Qualify positive and non-detect results as estimated (J), since no MS was analyzed.	Impacts to sample J19KB4 for Tritium
Lab Duplicates Sample ID: J19KB4	No	Strontium = 186.6%	-	No action because both sample and duplicate results are non-detect.	
Field Duplicate Sample ID:	Not collected				
QC Summary					
Validity of Data	Yes	None	-	No Action	No rejected data
Additional Notes:					

SDG J00748 – Hexavalent Chromium QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** J00748	**W&C Project No.:**222007	
Medium: Pore Water		**Analytes:** Hexavalent Chromium	
Samples: J19KB4			
Laboratory: Test America, Richland, WA	**Date Data Assessment Completed:** 3/30/2010 **Completed By:** LEM	**Sample Collection Date:** 2/20/2010	**Sample Analysis Date:** 2/21/2010

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No Action	
Detection Limits	Yes	None	-	No Action	
Blanks					
Preparation Blank	Yes	None	-	No Action	
Equipment Blank Sample ID:	Not collected				
Other QC Results					
LCS Results	Yes	None	-	No Action	
Matrix Spikes Sample ID: J19KB4	Yes	None	-	No Action	
Laboratory Duplicates Sample ID: J19KB4	Yes	None	-	No Action	
Field Duplicates	Not collected				
QC Summary					
Validity of Data	Yes	None	-	No Action	No rejected data
Additional Notes:					

D.1.98 SDG J00749

SDG J00749 – Radionuclides QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** J00749	**W&C Project No.:**222007
Medium: Pore Water		**Analytes:** Technetium-99
Samples: J19KK3, J19KM3		

Laboratory: Test America, Richland, WA	**Date Data Assessment Completed:** 3/30/2010 **Complete By:** LEM	**Sample Collection Date:** 2/21/2010	**Sample Analysis Date:** 3/4/2010

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No Action	
Detection Limits	Yes	MDAs and CRDL for Technetium-99 are either less than or equal to the reporting limit in the Work Plan.	-	No Action	
Blanks					
Method Blanks	Yes	None	-	No Action	
Other QC Results					
LCS Results	Yes	None	-	No Action	
Tracer Results	Yes	None	-	No Action	
Matrix Spikes Sample ID: J19KM3	Yes	None	-	No Action	
Lab Duplicates Sample ID: J19KK3	Yes	None	-	No Action	
Field Duplicate Sample IDs: J19KM3/J19KK3	Yes	None	-	No Action	
QC Summary					
Validity of Data	Yes	None	-	No Action	No rejected data
Additional Notes: QA/QC sample tracking spreadsheet shows that sample J19K43 is associated with field duplicate J19KK3. However, sample J19K43 was analyzed with SDG J00741 for different analytes.					

D.1.99 SDG J00753

SDG J00753 – Radionuclides QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** J00753	**W&C Project No.:**222007	
Medium: Pore Water		**Analytes:** Total Uranium, Tritium	
Samples: J19KX4			
Laboratory: Test America, Richland, WA	**Date Data Assessment Completed:** 3/30/2010 **Complete By:** LEM	**Sample Collection Date:** 2/22/2010	**Sample Analysis Date:** 3/3-3/5/2010

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No Action	
Detection Limits	No	**MDAs** Total Uranium and Tritium are less than the reporting limit in the Work Plan. **CRDLs** Total Uranium exceeds the reporting limit in the Work Plan. Tritium is equal to the reporting limit.	-	No Action	
Blanks					
Method Blanks	Yes	None	-	No Action	
Other QC Results					
LCS Results	Yes	None	-	No Action	
Tracer Results	Yes	None	-	No Action	
Matrix Spikes Sample ID: J19KX4: Total Uranium	No	MS not analyzed for Tritium	J	Qualify positive and non-detect results as estimated (J), since no MS was analyzed.	Impacts to sample J19KX4 for Tritium
Lab Duplicates Sample ID: J19KX4	Yes	None	-	No Action	
Field Duplicate Sample ID:	Not collected				
QC Summary					
Validity of Data	Yes	None	-	No Action	No rejected data
Additional Notes:					

SDG J00753 – Hexavalent Chromium QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** J00753	**W&C Project No.:**222007
Medium: Pore Water		**Analytes:** Hexavalent Chromium
Samples: J19KX4		

Laboratory: Test America, Richland, WA	**Date Data Assessment Completed:** 3/30/2010 **Completed By:** LEM	**Sample Collection Date:** 2/22/2010	**Sample Analysis Date:** 2/23/2010

QC Parameter	**All in Spec.?**	**Non-Compliant Results**	**Flag**	**Action/ Notes**	**Associated Samples**
Holding Times	Yes	None	-	No Action	
Detection Limits	Yes	None	-	No Action	
Blanks					
Preparation Blank	Yes	None	-	No Action	
Equipment Blank Sample ID:	Not collected				
Other QC Results					
LCS Results	Yes	None	-	No Action	
Matrix Spikes Sample ID:	No	Matrix Spike not analyzed.	J	Qualify positive and non-detect results as estimated (J), because Matrix Spike was not analyzed. See notes below.	Impacts to sample J19KX4
Laboratory Duplicates Sample ID:	No	Laboratory duplicate not analyzed.	J	Qualify positive and non-detect results as estimated (J), because laboratory duplicate was not analyzed. See notes below.	Impacts to sample J19KX4
Field Duplicates	Not collected				
QC Summary					
Validity of Data	Yes	None	-	No Action	No rejected data

Additional Notes: Insufficient sample volume to perform Matrix Spike and laboratory duplicate analyses.

D.1.100 SDG J00756

SDG J00756 – Radionuclides QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** J00756	**W&C Project No.:**222007			
Medium: Pore Water		**Analytes:** Total Uranium, Tritium			
Samples: J19K45, J19KX3					
Laboratory: Test America, Richland, WA	**Date Data Assessment Completed:** 4/1/2010 **Complete By:** LEM	**Sample Collection Date:** 2/26/2010	**Sample Analysis Date:** 3/11-3/16/2010		
QC Parameter	**All in Spec.?**	**Non-Compliant Results**	**Flag**	**Action/ Notes**	**Associated Samples**
Holding Times	Yes	None	-	No Action	
Detection Limits	No	**MDAs** Total Uranium and Tritium are less than the reporting limit in the Work Plan. **CRDLs** Total Uranium exceeds the reporting limit in the Work Plan. Tritium is equal to the reporting limit.	-	No Action	
Blanks					
Method Blanks	Yes	None	-	No Action	
Other QC Results					
LCS Results	Yes	None	-	No Action	
Tracer Results	Yes	None	-	No Action	
Matrix Spikes Sample ID: J19KX3: Total Uranium	No	MS not analyzed for Tritium	J	Qualify positive and non-detect results as estimated (J), since no MS was analyzed.	Impacts to all samples for Tritium
Lab Duplicates Sample ID: J19KX3: Total Uranium J19K45: Tritium	Yes	None	-	No Action	
Field Duplicate Sample ID:	Not collected				
QC Summary					
Validity of Data	Yes	None	-	No Action	No rejected data
Additional Notes:					

SDG J00756 – Hexavalent Chromium QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** J00756	**W&C Project No.:**222007
Medium: Pore Water		**Analytes:** Hexavalent Chromium
Samples: J19K45, J19KX3		

Laboratory: Test America, Richland, WA	**Date Data Assessment Completed:** 4/1/2010 **Completed By:** LEM	**Sample Collection Date:** 2/26/2010	**Sample Analysis Date:** 2/27/2010

QC Parameter	**All in Spec.?**	**Non-Compliant Results**	**Flag**	**Action/ Notes**	**Associated Samples**
Holding Times	Yes	None	-	No Action	
Detection Limits	Yes	None	-	No Action	
Blanks					
Preparation Blank	Yes	None	-	No Action	
Equipment Blank Sample ID:	Not collected				
Other QC Results					
LCS Results	Yes	None	-	No Action	
Matrix Spikes Sample ID: J19K45	Yes	None	-	No Action	
Laboratory Duplicates Sample ID: J19K45	Yes	None	-	No Action	
Field Duplicates	Not collected				
QC Summary					
Validity of Data	Yes	None	-	No Action	No rejected data
Additional Notes:					

D.1.101 SDG J00759

SDG J00759 – Radionuclides QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** J00759	**W&C Project No.:**222007	
Medium: Pore Water		**Analytes:** Strontium-90, Tritium	
Samples: J19JF8, J19JR4			
Laboratory: Test America, Richland, WA	**Date Data Assessment Completed:** 4/1/2010 **Complete By:** LEM	**Sample Collection Date:** 2/27/2010	**Sample Analysis Date:** 3/10-3/16/2010

QC Parameter	**All in Spec.?**	**Non-Compliant Results**	**Flag**	**Action/ Notes**	**Associated Samples**
Holding Times	Yes	None	-	No Action	
Detection Limits	No	MDAs for Strontium range from less than to greater than the reporting limit in the Work Plan. MDAs and CRDL for Tritium are either less than or equal to the reporting limit in the Work Plan.	-	No Action	
Blanks					
Method Blanks	Yes	None	-	No Action	
Other QC Results					
LCS Results	Yes	None	-	No Action	
Tracer Results	Yes	None	-	No Action	
Matrix Spikes Sample ID:	No	MS not analyzed	J	Qualify positive and non-detect results as estimated (J), since no MS was analyzed.	Impacts to all samples for Tritium
Lab Duplicates	No: Strontium	Laboratory duplicate not analyzed for Strontium	J	Qualify non-detect results as estimated (J), because laboratory duplicate was not analyzed. See notes below.	Impacts to all samples
Sample ID: J19JF8: Tritium	Yes: Tritium	None	-	No Action	
Field Duplicate Sample ID:	Not collected				
QC Summary					
Validity of Data	Yes	None	-	No Action	No rejected data
Additional Notes: Insufficient sample volume to perform laboratory duplicate analysis.					

SDG J00759 – Hexavalent Chromium QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** J00759	**W&C Project No.:**222007
Medium: Pore Water		**Analytes:** Hexavalent Chromium
Samples: J19JF8, J19JR4		

Laboratory: Test America, Richland, WA	**Date Data Assessment Completed:** 4/1/2010 **Completed By:** LEM	**Sample Collection Date:** 2/27/2010	**Sample Analysis Date:** 2/28/2010

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No Action	
Detection Limits	Yes	None	-	No Action	
Blanks					
Preparation Blank	Yes	None	-	No Action	
Equipment Blank Sample ID:	Not collected				
Other QC Results					
LCS Results	Yes	None	-	No Action	
Matrix Spikes Sample ID: J19JF8	Yes	None	-	No Action	
Laboratory Duplicates Sample ID: J19JF8	Yes	None	-	No Action	
Field Duplicates	Not collected				
QC Summary					
Validity of Data	Yes	None	-	No Action	No rejected data
Additional Notes:					

D.1.102 SDG J00765

SDG J00765 – Radionuclides QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** J00765	**W&C Project No.:**222007
Medium: Pore Water		**Analytes:** Strontium-90, Tritium
Samples: J19KF2, J19KB3		

Laboratory: Test America, Richland, WA	**Date Data Assessment Completed:** 4/1/2010 **Complete By:** LEM	**Sample Collection Date:** 2/28/2010	**Sample Analysis Date:** 3/12/2010

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No Action	
Detection Limits	No	MDAs for Strontium exceed the reporting limit in the Work Plan. MDAs and CRDL for Tritium are either less than or equal to the reporting limit in the Work Plan.	-	No Action	
Blanks					
Method Blanks	Yes	None	-	No Action	
Other QC Results					
LCS Results	Yes	None	-	No Action	
Tracer Results	Yes	None	-	No Action	
Matrix Spikes Sample ID:	No	MS not analyzed	J	Qualify positive and non-detect results as estimated (J), since no MS was analyzed.	Impacts to sample J19KF2 for Tritium
Lab Duplicates Sample ID: J19KF2	No	Strontium = -587.8% Tritium = 24%	- -	No action because both sample and duplicate results are non-detect No action because the difference between sample and duplicate results is <1xMDA.	
Field Duplicate Sample ID:	Not collected				
QC Summary					
Validity of Data	Yes	None	-	No Action	No rejected data
Additional Notes:					

SDG J00765 – Hexavalent Chromium QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** J00765	**W&C Project No.:**222007
Medium: Pore Water		**Analytes:** Hexavalent Chromium
Samples: J19KF2, J19KB3		

Laboratory: Test America, Richland, WA	**Date Data Assessment Completed:** 4/1/2010 **Completed By:** LEM	**Sample Collection Date:** 2/28/2010	**Sample Analysis Date:** 3/1/2010

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No Action	
Detection Limits	Yes	None	-	No Action	
Blanks					
Preparation Blank	Yes	None	-	No Action	
Equipment Blank Sample ID:	Not collected				
Other QC Results					
LCS Results	Yes	None	-	No Action	
Matrix Spikes Sample ID: J19KF2	Yes	None	-	No Action	
Laboratory Duplicates Sample ID: J19KF2	Yes	None	-	No Action	
Field Duplicates	Not collected				
QC Summary					
Validity of Data	Yes	None	-	No Action	No rejected data
Additional Notes:					

D.1.103 SDG K1755

SDG 1755 – VOC QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1755	**W&C Project No.:**222007
Medium: Pore Water	**Analytes:** VOA	
Samples: J193J9, J193P1, J193K0, J193K1, J193K2, J193K3, J193N9, J193P0, J193P3, J19422		

Laboratory: Lionville	**Date Data Assessment Completed:** 4/2/2010 **Complete By:** KAM	**Sample Collection Date:** 8/27-28/2009 and 9/1/2009	**Sample Analysis Date:** 9/3-4/2009

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No Action	
Detection Limits	No	$MeCl_2$ above criteria	-	No action based on guidance	
Blanks					
Blanks - Method	Yes	None	-	No Action	
Equipment Blank Sample ID:	Not Analyzed				
Trip Blank Sample ID: J193N9, J193P0, J193P3, J193P1	Yes	None	-	No Action	
Other QC Results					
Surrogate Recoveries	Yes	None	-	No Action	
LCS Results	Yes	None	-	No Action	
Matrix Spike/Matrix Spike Duplicate Sample ID: J19422	Yes	None	-	No Action	
Field Duplicates Sample ID: J19422/ J193K0, J193K1	Yes	None	-	No Action	
Summary					
Validity of Data	All QC criteria was met and no results qualified				
Additional Notes:					

D.1.104 SDG K1777

SDG K1777 – VOC QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1777	**W&C Project No.:**222007	
Medium: Pore Water		**Analytes:** VOA	
Samples: J195N2, J193J7, J193J8			
Laboratory: Lionville	**Date Data Assessment Completed:** 4/2/2010 **Complete By:** KAM	**Sample Collection Date:** 9/9/2009	**Sample Analysis Date:** 9/21/2009

QC Parameter	**All in Spec.?**	**Non-Compliant Results**	**Flag**	**Action/ Notes**	**Associated Samples**
Holding Times	Yes	None	-	No Action	
Detection Limits	No	$MeCl_2$ above criteria	-	No action based on guidance	
Blanks					
Blanks - Method	No	Acetone = 4.48 ug/L	UJ	For positive results less than 10x blank concentration, qualify as UJ and raise value to RDL	All samples, however only impacts J195N2 (10UJ).
Equipment Blank Sample ID:	Not Collected				
Trip Blank Sample ID: J195N2	No	Acetone = 3.78 ug/L	-	No action based on guidance	J193J7 and J193J8
Other QC Results					
Surrogate Recoveries	Yes	None	-	No Action	
LCS Results	Yes	None	-	No Action	
Matrix Spike/Matrix Spike Duplicate Sample ID: J193J7	No	**Non-compliant RPDs** 1,1,2,2-Tetrachloroethane = 22% 2-Butanone = 40% 2-Hexanone = 42% 4-methyl-2-pentanone = 41% Acetone = 43% Bromoform = 22%	J	Qualify positive and ND results as estimated (J) since the sample concentration is less than 5x the spike concentration	All samples
Field Duplicates Sample ID:	Not Collected				
Summary					
Validity of Data	Not all QC criteria was met, however no rejected results				
Additional Notes:					

D.1.105 SDG K1789

SDG 1789 – VOC QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1789	**W&C Project No.:**222007
Medium: Pore Water		**Analytes:** VOA
Samples: J193J5, J193J6, J193P2, J19779, J19781, J195N1, J195N0, J19780		

Laboratory: Lionville	**Date Data Assessment Completed:** 4/2/2010 **Complete By:** KAM	**Sample Collection Date:** 9/27-28/2009	**Sample Analysis Date:** 10/5/2009

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No Action	
Detection Limits	No	$MeCl_2$ above criteria	-	No action based on guidance	
Blanks					
Blanks - Method	Yes	None	-	No Action	
Equipment Blank Sample ID:	Not Collected				
Trip Blank Sample ID: J193P2	No	Chloroform = 1.16 ug/L	-	No action based on guidance	All samples
J19779, J19780	Yes	None	-	No Action	
Other QC Results					
Surrogate Recoveries	Yes	None	-	No Action	
LCS Results	Yes	None	-	No Action	
Matrix Spike/Matrix Spike Duplicate Sample ID: J193J6	Yes	None	-	No Action	
Field Duplicates Sample ID:	Not Collected				
Summary					
Validity of Data	All QC criteria was met and no results were qualified				
Additional Notes:					

D.1.106 SDG K1821

SDG K1821 – Metals QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1821	**W&C Project No.:**222007
Medium: Pore Water		**Analytes:** Metals
Samples: J19C98, J19C99		

Laboratory: Lionville	**Date Data Assessment Completed:** 4/6/2010 **Complete By:** LEM	**Sample Collection Date:** 10/25/2009	**Sample Analysis Date:** ICP and Hg – 11/3/2009

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No Action	
Detection Limits	Yes	None	-	No Action	
Blanks					
Preparation Blank	No	Magnesium = 27.7%	-	No action because sample results are greater than 5x the highest magnesium result in the blank.	
Equipment Blank Sample ID:	Not collected				
Other QC Results					
LCS Results	Yes	None	-	No Action	
Matrix Spike Sample ID: J19C98	Yes	None	-	No Action	
Lab Duplicate Sample ID: J19C98	No	Chromium = 25%	-	No action because the difference between both results is less than 1x the RDL.	
Field Duplicate Sample ID:	Not collected				
QC Summary					
Validity of Data	Yes; no data were qualified or rejected				
Additional Notes:					

SDG K1821 – Nitrate/Nitrite QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1821	**W&C Project No.:**222007	
Medium: Pore Water		**Analytes:** Nitrate/Nitrite as N	
Samples: J19C98, J19C99			
Laboratory: Lionville	**Date Data Assessment Completed:** 4/6/2010 **Complete By:** LEM	**Sample Collection Date:** 10/25/2009	**Sample Analysis Date:** 10/30/2009

QC Parameter	**All in Spec.?**	**Non-Compliant Results**	**Flag**	**Action/ Notes**	**Associated Samples**
Holding Times	Yes	None	-	No Action	
Detection Limit	Laboratory reporting limits not provided in SAP				
Method Blank	Yes	None	-	No Action	
LCS Results	Yes	None	-	No Action	
Matrix Spikes Sample ID: J19C99	Yes	None	-	No Action	
Lab Duplicate Sample ID: J19C98	No	RPD = 20%	-	No action because the difference between both results is less than 1x the RDL.	
Field Duplicate Sample ID:	Not collected				
QC Summary					
Validity of Data	Yes; no data were qualified or rejected				
Additional Notes:					

SDG K1821 – Anions QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1821	**W&C Project No.:**222007
Medium: Pore Water	**Analytes:** Bromide, Chloride, Fluoride, Nitrate, Nitrite, Orthophosphate, Sulfate	
Samples: J19C98, J19C99		

Laboratory: Lionville	**Date Data Assessment Completed:** 4/6/2010 **Complete By:** LEM	**Sample Collection Date:** 10/25/2009	**Sample Analysis Date:** 10/28/2009

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	No	Holding Time for nitrate, nitrite, and orthophosphate is 48 hours.	J	For holding times <2x criteria, qualify positive and non-detect results as estimated (J)	All samples for nitrate, nitrite, and orthophosphate qualified as J
Detection Limit	Laboratory reporting limits not provided in SAP				
Method Blank	Yes	None	-	No Action	
LCS Results	Yes	None	-	No Action	
Matrix Spikes Sample ID: J19C98	Yes	None	-	No Action	
Lab Duplicate Sample ID: J19C98	No	Nitrate = 36.1%	J	Qualify positive results as estimated (J) because difference between results is >1xRDL.	All samples for nitrate
Field Duplicate Sample ID:	Not collected				
QC Summary					
Validity of Data	Not all QC criteria met, however no rejected results				
Additional Notes:					

D.1.107 SDG K1825

SDG K1825 – DRO QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1825	**W&C Project No.:**222007	
Medium: Pore Water		**Analytes:** DRO/Motor Oil	
Samples: J193C8, J193C9, J193D0			
Laboratory: Lionville	**Date Data Assessment Completed:** 4/2/2010 **Completed By:** KAM	**Sample collection:** 11/4/2009	**Sample Analysis Date:** Extr: 11/10/2009 Anal: 11/12,16,17/2009

QC Parameter	**All in Spec.?**	**Non-Compliant Results**	**Flag**	**Action/ Notes**	**Associated Samples**
Holding Times	Yes	None	-	No Action	
Detection Limits	DRO in criteria, however no laboratory reporting limit for motor oil provided in SAP				
Surrogates	Yes	None	-	No Action	
Blanks					
Method Blank	Yes	None	-	No Action	
Equipment Blank Sample ID:	Not Collected				
Other QC					
LCS/LCS Duplicate Results	No	No LCS analyzed for motor oil **Non-compliant RPDs** DRO LCS Dup = 78%	J J	Qualify all motor oil results as estimated (J) Qualify positive and ND results for DRO as estimated (J)	All samples All samples
Matrix Spikes Sample ID:	No	No MS was analyzed for DRO or motor oil	J	Qualify positive and ND DRO and motor oil results as estimated (J)	All samples
Lab Duplicate Sample ID:	No	No lab duplicate analyzed for DRO or motor oil	J	Qualify positive and ND DRO and motor oil results as estimated (J)	All samples
Field Duplicate	Not Collected				
QC Summary					
Validity of Data					
Additional Notes:					

D.1.108 SDG K1833

Validated by ELR - Included in Appendix F

D.1.109 SDG K1908

SDG K1908 – VOC QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA		**SDG No.:** K1908	**W&C Project No.:**222007
Medium: Pore Water			**Analytes:** VOA
Samples: J19F75, J19F76			
Laboratory: Lionville	**Date Data Assessment Completed:** 4/5/2010 **Complete By:** KAM	**Sample Collection Date:** 1/11/2010	**Sample Analysis Date:** 1/22/2010

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No Action	
Detection Limits	No	$MeCl_2$ exceeds criteria in SAP	-	No action based on guidance	
Blanks					
Blanks - Method	Yes	None	-	No Action	
Equipment Blank Sample ID:	Not Collected				
Trip Blank Sample ID:	Not Collected				
Other QC Results					
Surrogate Recoveries	Yes	None	-	No Action	
LCS Results	Yes	None	-	No Action	
Matrix Spike/Matrix Spike Duplicate Sample ID: J19F76	Yes	None	-	No Action	
Field Duplicates Sample ID:	Not collected				
Summary					
Validity of Data	All QC criteria was met				
Additional Notes:					

SDG K1908 – Metals QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1908	**W&C Project No.:**222007	
Medium: Pore Water		**Analytes:** Metals	
Samples: J19F37, J19F45, J19F38, J19F46, J19F39, J19F47, J19F40, J19F48, J19F75, J19F79, J19F76, J19F80, J19H09, J19H11			
Laboratory: Lionville	**Date Data Assessment Completed:** 4/5/2010 **Complete By:** KAM	**Sample Collection Date:** 1/11,15-18/2010	**Sample Analysis Date:** ICP – 1/26/2010 Hg – 1/28/2010

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No Action	
Detection Limits	Yes	None	-	No Action	
Blanks					
Preparation Blank	No	Ba: 0.445 ug/L Mg: 22.4 Mn: 1.03	UJ	Qualify positive results <5x blank concentration as estimated non-detect (UJ)	All samples. Impacts the following: Mn: J19F45, J19F48, J19F79, J19F80, J19H11
Equipment Blank Sample ID:	Not Collected				
Other QC Results					
LCS Results	Yes	None	-	No Action	
Matrix Spike Sample ID: J19F37	No	**Non-compliant Recoveries** Al: 140%	J	Qualify positive results as estimated (J)	All samples
Lab Duplicate Sample ID: J19F37	Yes	None	-	No Action	
Field Duplicate Sample ID:	Not Collected				
QC Summary					
Validity of Data	Not all QC criteria was met, however no rejected results				
Additional Notes:					

SDG K1908 – TOC QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1908	**W&C Project No.:**222007	
Medium: Pore Water		**Analytes:** TOC	
Samples: J19F37, J19F38, J19F39, J19F40, J19F75, J19F76, J19H09			
Laboratory: Lionville	**Date Data Assessment Completed:** 4/5/2010 **Complete By:** KAM	**Sample Collection Date:** 1/11,15-18/2010	**Sample Analysis Date:** 1/25/2010

QC Parameter	**All in Spec.?**	**Non-Compliant Results**	**Flag**	**Action/ Notes**	**Associated Samples**
Holding Times	Yes	None	-	No Action	
Detection Limit	Yes	None	-	No Action	
Method Blank	Yes	None	-	No Action	
LCS Results	Yes	None	-	No Action	
Matrix Spikes Sample ID: J19F37	Yes	None	-	No Action	
Lab Duplicate Sample ID: J19F37	Yes	None	-	No Action	
Field Duplicate Sample ID:	Not Collected				
QC Summary					
Validity of Data	All QC criteria was met				
Additional Notes:					

SDG K1908 – Nitrate/Nitrite QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1908	**W&C Project No.:**222007	
Medium: Pore Water		**Analytes:** Nitrate/Nitrite as N	
Samples: J19F37, J19F38, J19F39, J19F40, J19F75, J19F76, J19H09			
Laboratory: Lionville	**Date Data Assessment Completed:** 4/6/2010 **Complete By:** KAM	**Sample Collection Date:** 1/11,15-18/2010	**Sample Analysis Date:** 1/22/2010

QC Parameter	**All in Spec.?**	**Non-Compliant Results**	**Flag**	**Action/ Notes**	**Associated Samples**
Holding Times	Yes	None	-	No Action	
Detection Limit	Laboratory reporting limits not provided in SAP				
Method Blank	Yes	None	-	No Action	
LCS Results	Yes	None	-	No Action	
Matrix Spikes Sample ID: J19F37	Yes	None	-	No Action	
Lab Duplicate Sample ID: J19F37	Yes	None	-	No Action	
Field Duplicate Sample ID:	Not Collected				
QC Summary					
Validity of Data	All QC criteria met				
Additional Notes:					

SDG K1908 – Anions QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1908	**W&C Project No.:**222007	
Medium: Pore Water		**Analytes:** Bromide, Chloride, Fluoride, Nitrate, Nitrite, Orthophosphate, Sulfate	
Samples: J19F37, J19F38, J19F39, J19F40, J19F75, J19F76, J19H09			
Laboratory: Lionville	**Date Data Assessment Completed:** 4/6/2010 **Complete By:** KAM	**Sample Collection Date:** 1/11,15-18/2010	**Sample Analysis Date:** 1/22/2010

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	No	Holding time for nitrate, nitrite, and orthophosphate is 48 hours.	J/R	For holding times >2x criteria, qualify positive results as estimated (J) and ND results as rejected	All samples Nitrate: all samples “J” applied Nitrite: all samples “R” applied Phosphate: all samples “R” applied
Detection Limit	Laboratory reporting limits not provided in SAP				
Method Blank	Yes	None	-	No Action	
LCS Results	Yes	None	-	No Action	
Matrix Spikes Sample ID: J19F39	Yes	None	-	No Action	
Lab Duplicate Sample ID: J19F38	Yes	None	-	No Action	
Field Duplicate Sample ID:	Not Collected				
QC Summary					
Validity of Data	No	Holding Times for nitrate, nitrite, and orthophosphate were >2x criteria	R	ND results were qualified as rejected	All samples for nitrite and orthophosphate
Additional Notes:					

D.1.110 SDG K1913

SDG K1913 – VOC QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1913	**W&C Project No.:**222007	
Medium: Pore Water		**Analytes:** VOA	
Samples: J19H02, J19F73, J19HH1			
Laboratory: Lionville	**Date Data Assessment Completed:** 4/5/2010 **Complete By:** KAM	**Sample Collection Date:** 1/25/2010	**Sample Analysis Date:** 1/31/2010 and 2/7/2010

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No Action	
Detection Limits	No	$MeCl_2$ exceeds criteria in SAP	-	No Action	
Blanks					
Blanks - Method	Yes	None	-	No Action	
Equipment Blank Sample ID: J19HH1	No	Acetone = 14.9 ug/L	-	No action since all results ND	
Trip Blank Sample ID:	Not Analyzed				
Other QC Results					
Surrogate Recoveries	Yes	None	-	No Action	
LCS Results	Yes	None	-	No Action	
Matrix Spike/Matrix Spike Duplicate Sample ID: J19F73	Yes	None	-	No Action	
Field Duplicates Sample ID:	Not Collected				
Summary					
Validity of Data	All QC criteria was met				
Additional Notes:					

Metals QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1913	**W&C Project No.:**222007
Medium: Pore Water		**Analytes:** Metals
Samples: J19H02, J19H04, J19F73, J19F77, J19FC6, J19FF6, J19FF8, J19FF7, J19FF9, J19HJ4, J19HJ6, J19HJ5, J19HJ7		

Laboratory: Lionville	**Date Data Assessment Completed:** 4/5/2010 **Complete By:** KAM	**Sample Collection Date:** 1/23-25/2010	**Sample Analysis Date:** ICP – 2/2/2010 Hg – 2/1/2010

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No Action	
Detection Limits	Yes	None	-	No Action	
Blanks					
Preparation Blank	No	Al: 23.7 ug/L Ca: 28.8 Fe: 12.8 Mg: 25.7 Mn: 0.549 Na: 47.2	UJ	Qualify positive results <5x blank concentration as estimated non-detect	All samples. Impacts the following: Al: J19H04, J19FF8, J19HJ6, J19HJ5, J19HJ7 Fe: J19H04, J19F77, J19HJ6, J19HJ7 Mn: J19HJ6, J19HJ5, J19HJ7
Equipment Blank Sample ID:	Not Collected				
Other QC Results					
LCS Results	Yes	None	-	No Action	
Matrix Spike Sample ID: J19H02	Yes	None	-	No Action	
Lab Duplicate Sample ID: J19H02	No	As: 28% Cr: 21%	J	Qualify arsenic results (positive and ND) as estimated (J) No action for chromium since difference between results <1x RDL	All samples for arsenic

Metals QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA		**SDG No.:** K1913		**W&C Project No.:**222007	
Medium: Pore Water				**Analytes:** Metals	
Samples: J19H02, J19H04, J19F73, J19F77, J19FC6, J19FF6, J19FF8, J19FF7, J19FF9, J19HJ4, J19HJ6, J19HJ5, J19HJ7					
Laboratory: Lionville	**Date Data Assessment Completed:** 4/5/2010 **Complete By:** KAM		**Sample Collection Date:** 1/23-25/2010		**Sample Analysis Date:** ICP – 2/2/2010 Hg – 2/1/2010

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Field Duplicate Sample ID: J19H04/J19FC6	No	Al: 169% B: 50.3% Cd: 41.46% Fe: 159% Mn: 30.4% U: 47.5%	-	No action based on guidance	
QC Summary					
Validity of Data	Not all QC criteria met, however no rejected results				
Additional Notes:					

SDG 1913 – TOC QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1913		**W&C Project No.:**222007	
Medium: Pore Water			**Analytes:** TOC	
Samples: J19H02, J19F73, J19FC5, J19FF6, J19FF7, J19HJ4, J19HJ5				
Laboratory: Lionville	**Date Data Assessment Completed:** 4/5/2010 **Complete By:** KAM		**Sample Collection Date:** 1/22-25/2010	**Sample Analysis Date:** 2/3/2010

QC Parameter	**All in Spec.?**	**Non-Compliant Results**	**Flag**	**Action/ Notes**	**Associated Samples**
Holding Times	Yes	None	-	No Action	
Detection Limit	Yes	None	-	No Action	
Method Blank	Yes	None	-	No Action	
LCS Results	Yes	None	-	No Action	
Matrix Spikes Sample ID: J19HJ4	Yes	None	-	No Action	
Lab Duplicate Sample ID: J19HJ4	No	TOC RPD = 35.4%	-	No action since difference between results <1x RDL	All samples
Field Duplicate Sample ID: J19FC5/J19H02	Yes	None	-	No Action	
QC Summary					
Validity of Data	All QC criteria met				
Additional Notes:					

SDG K1913 – Nitrate/Nitrite QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1913	**W&C Project No.:**222007	
Medium: Pore Water		**Analytes:** Nitrate/Nitrite	
Samples: J19H02, J19F73, J19FC5, J19FF6, J19FF7, J19HJ4, J19HJ5			
Laboratory: Lionville	**Date Data Assessment Completed:** 4/6/2010 **Complete By:** KAM	**Sample Collection Date:** 1/22-25/2010	**Sample Analysis Date:** 2/2/2010

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No Action	
Detection Limit	Laboratory reporting limits not provided in SAP				
Method Blank	Yes	None	-	No Action	
LCS Results	Yes	None	-	No Action	
Matrix Spikes Sample ID: J19H02	Yes	None	-	No Action	
Lab Duplicate Sample ID: J19H02	Yes	None	-	No Action	
Field Duplicate Sample ID: J19H02/J19FC5	Yes	None	-	No Action	
QC Summary					
Validity of Data	All QC criteria met				
Additional Notes:					

SDG K1913 – Anions QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1913	**W&C Project No.:**222007	
Medium: Pore Water		**Analytes:** Bromide, Chloride, Fluoride, Nitrate, Nitrite, Orthophosphate, Sulfate	
Samples: J19H02, J19F73, J19FC5, J19FF6, J19FF7, J19HJ4, J19HJ5			
Laboratory: Lionville	**Date Data Assessment Completed:** 4/6/2010 **Complete By:** KAM	**Sample Collection Date:** 1/22-25/2010	**Sample Analysis Date:** 1/28/2010

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	No	Holding time for nitrate, nitrite, and orthophosphate is 48 hours.	J J/R	For holding times <2x criteria, qualify positive and ND results as estimated (J). For holding times >2x criteria, qualify positive results as estimated (J) and ND results as rejected	J19H02, J19F73, J19FC5 J19FF6, J19FF7, J19HJ4, J19HJ5 All nitrate results qualified as "J"
Detection Limit	Laboratory reporting limits not provided in SAP				
Method Blank	Yes	None	-	No Action	
LCS Results	Yes	None	-	No Action	
Matrix Spikes Sample ID: J19F73	Yes	None	-	No Action	
Lab Duplicate Sample ID: J19F73	Yes	None	-	No Action	
Field Duplicate Sample ID: J19H02/J19FC5	Yes	None	-	No Action	
QC Summary					
Validity of Data	No	Holding Times for nitrate, nitrite, and orthophosphate were >2x criteria	R	ND results were qualified as rejected	J19FF6, J19FF7, J19HJ4, J19HJ5 for nitrite and orthophosphate
Additional Notes:					

D.1.111 SDG K1926

Validated by ELR - Included in Appendix F

D.1.112 SDG K1940

SDG K1940 – Metals QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.: K1940**	**W&C Project No.:**222007	
Medium: Pore Water		**Analytes:** Metals	
Samples: J19J65, J19J69, J19J66, J19J70, J19JP3, J19JP9, J19JP4, J19JP5, J19JP6, J19JR1, J19JR2, J19JR0			
Laboratory: Lionville	**Date Data Assessment Completed:** 4/7/2010 **Complete By:** LEM	**Sample Collection Date:** 2/5, 6, 7/2010	**Sample Analysis Date:** ICP – 2/27/2010 Hg – 2/19/2010

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No Action	
Detection Limits	Yes	None	-	No Action	
Blanks					
Preparation Blank	No	Al = 11.2 ug/L Ca = 20.8 Mn = 0.784 Hg = 0.0620	UJ	Qualify positive results <5x blank concentration as estimated non-detect (UJ)	Impacts the following samples: Al: J19J69, J19J66, J19JP9, J19JR1, J19JR2, J19JR0 Mn: J19JP9, J19JR1, J19JR2, J19JR0 Hg: J19J70, J19JP3,
Equipment Blank Sample ID:	Not collected				
Other QC Results					
LCS Results	Yes	None	-	No Action	
Matrix Spike Sample ID: J19J65: Hg J19J69: ICP	Yes	None	-	No Action	
Lab Duplicate Sample ID: J19J65: Hg J19J69: ICP	No	Al = 22%	-	No action for aluminum since difference between results <1x RDL	
Field Duplicate Sample ID:	Not collected				
QC Summary					
Validity of Data	Not all QC criteria met, but no rejected results				
Additional Notes:					

SDG 1940 – DRO QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA		**SDG No.:** K1940		**W&C Project No.:**222007	
Medium: Pore Water				**Analytes:** DRO/Motor Oil	
Samples: J19JP3, J19JP4, J19JP5, J19JP6					
Laboratory: Lionville	**Date Data Assessment Completed:** 4/7/2010 **Complete By:** LEM		**Sample Collection Date:** 2/6, 7/2010		**Sample Analysis Date:** Extr: 2/15/2010 Anal: 2/20/2010

QC Parameter	**All in Spec.?**	**Non-Compliant Results**	**Flag**	**Action/ Notes**	**Associated Samples**
Holding Times	Yes	None	-	No Action	
Detection Limits	DRO in criteria, however, no laboratory reporting limit for motor oil provided in SAP				
Surrogates	No	p-Terphenyl = 139%	-	No action because result is non-detect.	
Blanks					
Method Blanks	Yes	None	-	No Action	
Equipment Blank Sample ID:	Not collected				
Other QC Results					
LCS /LCS Duplicate Results	No	DRO LCS = 71% No LCS was analyzed for motor oil	J	Qualify positive and non-detect results as estimated (J).	Impacts to all samples
Matrix Spike Sample ID:	No	No MS was analyzed	J	Qualify positive and non-detect results as estimated (J).	Impacts to all samples
Lab Duplicates Sample ID:	No	No laboratory duplicate was analyzed	J	Qualify positive and non-detect results as estimated (J).	Impacts to all samples
Field Duplicate Sample ID:	Not collected				
QC Summary					
Validity of Data	Not all QC criteria met, but no rejected results				
Additional Notes:					

SDG K1940 – TOC QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1940	**W&C Project No.:**222007	
Medium: Pore Water		**Analytes:** TOC	
Samples: J19J65, J19J66, J19JP3, J19JP4, J19JP5, J19JP6			
Laboratory: Lionville	**Date Data Assessment Completed:** 4/7/2010 **Complete By:** LEM	**Sample Collection Date:** 2/5, 6, 7/2010	**Sample Analysis Date:** 2/22/2010

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No Action	
Detection Limit	Yes	None	-	No Action	
Method Blank	No	TOC = 0.3mg/L	UJ	Qualify positive results <5x blank concentration as estimated non-detect (UJ)	Impacts to sample J19J65
Equipment Blank Sample ID:	Not collected				
LCS Results	Yes	None	-	No Action	
Matrix Spikes Sample ID: J19J65	Yes	None	-	No Action	
Lab Duplicate Sample ID: J19J65	Yes	None	-	No Action	
Field Duplicate Sample ID:	Not collected				
QC Summary					
Validity of Data	Not all QC criteria met, but no rejected results				
Additional Notes:					

SDG K1940 – Nitrate/Nitrite QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1940	**W&C Project No.:**222007	
Medium: Pore Water		**Analytes:** Nitrate/Nitrite as N	
Samples: J19J65, J19J66, J19JP3, J19JP4, J19JP5, J19JP6			
Laboratory: Lionville	**Date Data Assessment Completed:** 4/7/2010 **Complete By:** LEM	**Sample Collection Date:** 2/5, 6, 7/2010	**Sample Analysis Date:** 2/17/2010

QC Parameter	**All in Spec.?**	**Non-Compliant Results**	**Flag**	**Action/ Notes**	**Associated Samples**
Holding Times	Yes	None	-	No Action	
Detection Limit	Laboratory reporting limits not provided in SAP				
Method Blank	Yes	None	-	No Action	
Equipment Blank Sample ID:	Not Collected				
LCS Results	Yes	None	-	No Action	
Matrix Spikes Sample ID: J19J65	No	Nitrate/Nitrite as N = 66%	J	Qualify positive results as estimated (J).	Impacts all samples
Lab Duplicate Sample ID: J19J65	No	RPD = 24%	J	Qualify positive results as estimated (J) because sample concentrations are >5x RDL.	Impacts all samples
Field Duplicate Sample ID:	Not Collected				
QC Summary					
Validity of Data	Not all QC criteria met, but no rejected results				
Additional Notes:					

SDG K1940 – Anions QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1940	**W&C Project No.:**222007	
Medium: Pore Water		**Analytes:** Bromide, Chloride, Fluoride, Nitrate, Nitrite, Orthophosphate, Sulfate	
Samples: J19J65, J19J66, J19JP3, J19JP4, J19JP5, J19JP6			
Laboratory: Lionville	**Date Data Assessment Completed:** 4/7/2010 **Complete By:** LEM	**Sample Collection Date:** 2/5, 6, 7/2010	**Sample Analysis Date:** 2/12/2010

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	No	Holding Time for nitrate, nitrite, and orthophosphate is 48 hours.	J/R	For holding times >2x criteria, qualify positive results as estimated (J) and ND results as rejected.	All samples for nitrate, nitrite, and orthophosphate
Detection Limit	Laboratory reporting limits not provided in SAP				
Method Blank	Yes	None	-	No Action	
Equipment Blank Sample ID:	Not Collected				
LCS Results	Yes	None	-	No Action	
Matrix Spikes Sample ID: J19JP3	Yes	None	-	No Action	
Lab Duplicate Sample ID: J19JP3	Yes	None	-	No Action	
Field Duplicate Sample ID:	Not collected				
QC Summary					
Validity of Data	No	Holding Time for nitrate, nitrite, and orthophosphate were >2x criteria	R	ND results qualified as rejected	All samples for nitrite and orthophosphate
Additional Notes:					

D.1.113 SDG K1943

SDG K1943 – Metals QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1943	**W&C Project No.:**222007
Medium: Pore Water		**Analytes:** Metals
Samples: J19JP7, J19JR3, J19JT0, J19JT1, J19FW7		

Laboratory: Lionville	**Date Data Assessment Completed:** 4/8/2010 **Complete By:** LEM	**Sample Collection Date:** 2/8/2010	**Sample Analysis Date:** ICP – 2/27/2010 Hg – 2/20/2010

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No Action	
Detection Limits	Yes	None	-	No Action	
Blanks					
Preparation Blank	No	Al = 11.2 ug/L Ca = 20.8 Mn = 0.784	UJ	Qualify positive results <5x blank concentration as estimated non-detect (UJ)	Impacts the following samples: Al: J19JR3, J19JT1, J19FW7 Mn: J19JR3, J19JT1
Equipment Blank Sample IDs: J19JP7, J19JR3/ J19FW7	No	Al: 20.9 ug/L B: 13.2 Ca: 118 Na: 540 Zn:4.49	-	No action based on guidance	
Other QC Results					
LCS Results	Yes	None	-	No Action	
Matrix Spike Sample ID: J19JP7 - ICP J19JR3 - Hg	No	MS was not analyzed for uranium	J	Qualify positive and non-detect results as estimated (J).	Impacts all samples for uranium
Lab Duplicate Sample ID: J19JP7 - ICP J19JR3 - Hg	No	Cr = 90% Ni = 87%	J -	Qualify positive results as estimated (J) since difference between results >1x RDL. No action since the difference between both results is <1x RDL.	Impacts the following samples: Cr: J19JP7, J19JR3, J19JT0, J19JT1
Field Duplicate Sample IDs: J19JP7/ J19JT0	Yes	None	-	No action based on	

SDG K1943 – Metals QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1943	**W&C Project No.:**222007
Medium: Pore Water		**Analytes:** Metals
Samples: J19JP7, J19JR3, J19JT0, J19JT1, J19FW7		

Laboratory: Lionville	**Date Data Assessment Completed:** 4/8/2010 **Complete By:** LEM	**Sample Collection Date:** 2/8/2010	**Sample Analysis Date:** ICP – 2/27/2010 Hg – 2/20/2010

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
(unfiltered Hg)				guidance	
J19JR3/ J19JT1 (filtered Hg)				No action based on guidance	
J19JP7/ J19JT0 (unfiltered ICP)	No	Al: 66.7% As: 200% Fe: 67.2% Pb: 30% Mn: 55% Zn: 55%	-	No action based on guidance	
J19JR3/ J19JT1 (filtered ICP)	No	Al: 81.6% Cr: 63.6% Fe: 200% Ni: 200% Zn: 47%	-		
QC Summary					
Validity of Data	Not all QC criteria met, but no rejected results				
Additional Notes:					

SDG 1943 – DRO QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1943	**W&C Project No.:**222007	
Medium: Pore Water		**Analytes:** DRO/Motor Oil	
Samples: J19JP7, J19JT0, J19FW7			
Laboratory: Lionville	**Date Data Assessment Completed:** 4/8/2010 **Complete By:** LEM	**Sample Collection Date:** 2/8/2010	**Sample Analysis Date:** Extr: 2/15/2010 Anal: 2/20/2010

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No Action	
Detection Limits	DRO in criteria, however, no laboratory reporting limit for motor oil provided in SAP				
Surrogates	Yes	None	-	No Action	
Blanks					
Method Blanks	Yes	None	-	No Action	
Equipment Blank Sample IDs: J19JP7/ J19FW7	Yes	None	-	No Action	
Other QC Results					
LCS /LCS Duplicate Results	No	No LCS analyzed for motor oil **Non-compliant Recoveries** DRO LCS = 71% DRO LCS Dup= 71%	J J	Qualify all motor oil results as estimated (J). Qualify positive and non-detect results for DRO as estimated (J).	Impacts to all samples
Matrix Spike Sample ID:	No	No MS was analyzed for DRO or motor oil	J	Qualify positive and non-detect DRO and motor oil results as estimated (J).	Impacts to all samples
Lab Duplicates Sample ID:	No	No laboratory duplicate was analyzed	J	Qualify positive and non-detect DRO and motor oil results as estimated (J).	Impacts to all samples
Field Duplicate Sample IDs: J19JP7/ J19JT0	Yes	None	-	No Action	
QC Summary					
Validity of Data	Not all QC criteria met, but no rejected results				
Additional Notes:					

SDG K1943 – TOC QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1943	**W&C Project No.:**222007	
Medium: Pore Water		**Analytes:** TOC	
Samples: J19JP7, J19JT0, J19FW7			
Laboratory: Lionville	**Date Data Assessment Completed:** 4/8/2010 **Complete By:** LEM	**Sample Collection Date:** 2/8/2010	**Sample Analysis Date:** 2/24-3/1/2010

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No Action	
Detection Limit	Yes	None	-	No Action	
Method Blank	No	TOC = 0.49 mg/L	UJ	Qualify positive results <5x blank concentration as estimated non-detect (UJ)	Impacts to samples J19JT0 and J19FW7
Equipment Blank Sample IDs: J19JP7/ J19FW7	No	TOC = 1.27 mg/L	-	No action based on guidance	
LCS Results	Yes	None	-	No Action	
Matrix Spikes Sample ID: J19JP7	Yes	None	-	No Action	
Lab Duplicate Sample ID: J19JP7	Yes	None	-	No Action	
Field Duplicate Sample IDs: J19JP7/ J19JT0	No	TOC = 116%	-	No action based on guidance	
QC Summary					
Validity of Data	Not all QC criteria met, but no rejected results				
Additional Notes:					

SDG K1943 – Nitrate/Nitrite QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1943	**W&C Project No.:**222007	
Medium: Pore Water		**Analytes:** Nitrate/Nitrite as N	
Samples: J19JP7, J19JT0, J19FW7			
Laboratory: Lionville	**Date Data Assessment Completed:** 4/8/2010 **Complete By:** LEM	**Sample Collection Date:** 2/8/2010	**Sample Analysis Date:** 2/17/2010

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No Action	
Detection Limit	Laboratory reporting limits not provided in SAP				
Method Blank	Yes	None	-	No Action	
Equipment Blank Sample IDs: J19JP7/ J19FW7	No	Nitrate/Nitrite as N = 0.24 mg/L	-	No action based on guidance	
LCS Results	Yes	None	-	No Action	
Matrix Spikes Sample ID: J19JP7	Yes	None	-	No Action	
Lab Duplicate Sample ID: J19JP7	Yes	None	-	No Action	
Field Duplicate Sample IDs: J19JP7/ J19JT0	Yes	None	-	No Action	
QC Summary					
Validity of Data	Yes; no data were qualified or rejected				
Additional Notes:					

SDG K1943 – Anions QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1943	**W&C Project No.:**222007	
Medium: Pore Water		**Analytes:** Bromide, Chloride, Fluoride, Nitrate, Nitrite, Orthophosphate, Sulfate	
Samples: J19JP7, J19JT0, J19FW7			
Laboratory: Lionville	**Date Data Assessment Completed:** 4/8/2010 **Complete By:** LEM	**Sample Collection Date:** 2/8/2010	**Sample Analysis Date:** 2/12/2010

QC Parameter	**All in Spec.?**	**Non-Compliant Results**	**Flag**	**Action/ Notes**	**Associated Samples**
Holding Times	No	Holding Time for nitrate, nitrite, and orthophosphate is 48 hours.	J	For holding times <2x criteria, qualify positive and ND results as estimated (J)	All samples for nitrate, nitrite, and orthophosphate
Detection Limit	Laboratory reporting limits not provided in SAP				
Method Blank	Yes	None	-	No Action	
Equipment Blank Sample IDs: J19JP7/ J19FW7	Yes	None	-	No Action	
LCS Results	Yes	None	-	No Action	
Matrix Spikes Sample ID: J19JP7	Yes	None	-	No Action	
Lab Duplicate Sample ID: J19JP7	No	Fluoride = 32.5%	-	No action because the difference between both results is <1x RDL.	
Field Duplicate Sample IDs: J19JP7/ J19JT0	Yes	None	-	No Action	
QC Summary					
Validity of Data	Not all QC criteria met, however no rejected results				
Additional Notes:					

D.1.114 SDG K1946

SDG K1946 – Metals QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1946	**W&C Project No.:**222007	
Medium: Pore Water		**Analytes:** Metals	
Samples: J19J67, J19J71, J19K00, J19K02, J19K01, J19K03, J19K36, J19K42, J19K35, J19K41, J19J64, J19J68, J19JM2, J19JM4, J19JM1, J19JM3			
Laboratory: Lionville	**Date Data Assessment Completed:** 4/8/2010 **Complete By:** LEM	**Sample Collection Date:** 2/12, 13, 14,15/2010	**Sample Analysis Date:** ICP – 3/8, 17, 18/2010 Hg – 2/20/2010

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No Action	
Detection Limits	Yes	None	-	No Action	
Blanks					
Preparation Blank 2/19/2010 (Hg)	No	Hg = 0.075 ug/L	UJ	Qualify positive results <5x blank concentration as estimated non-detect (UJ)	Impacts the following samples: Hg: J19J67, J19K35
3/8/2010 (ICP)	No	Al = 11.6 ug/L Ca = 27.9 Mg = 27.8 Mn = 0.605 K = 255	UJ	Qualify positive results <5x blank concentration as estimated non-detect (UJ)	Al: J19J71, J19K41 Mn: J19K41
3/16/2010 (ICP)	Yes	None	-	No Action	
Equipment Blank Sample IDs:	Not collected				
Other QC Results					
LCS Results 3/8/2010	No	Al: 73% Ba: 74% Be: 74% Cd: 77% Ca: 74% Cr: 74% Co: 74% Cu: 73% Fe: 76% Pb: 74% Mg: 76% Mn: 75% Ni: 74%	J	Qualify positive and non-detect results as estimated (J)	Impacts samples J19J71 and J19K41

SDG K1946 – Metals QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1946	**W&C Project No.:**222007	
Medium: Pore Water		**Analytes:** Metals	
Samples: J19J67, J19J71, J19K00, J19K02, J19K01, J19K03, J19K36, J19K42, J19K35, J19K41, J19J64, J19J68, J19JM2, J19JM4, J19JM1, J19JM3			
Laboratory: Lionville	**Date Data Assessment Completed:** 4/8/2010 **Complete By:** LEM	**Sample Collection Date:** 2/12, 13, 14,15/2010	**Sample Analysis Date:** ICP – 3/8, 17, 18/2010 Hg – 2/20/2010

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
		K: 75% Na: 74% V: 75% Zn: 74%			
3/16/2010	Yes	None	-	No Action	
Matrix Spike Sample ID: J19J67: Hg J19K00: ICP	No	MS was not analyzed for batch digested on 3/8/2010	J	Qualify positive and non-detect results as estimated (J).	Impacts samples J19J71 and J19K41
Lab Duplicate Sample ID: J19J67: Hg J19K00: ICP	No	Lab duplicate was not analyzed for batch digested on 3/8/2010 Zn = 22%	J -	Qualify positive and non-detect results as estimated (J). No action since the difference between both results is <1x RDL.	Impacts samples J19J71 and J19K41
Field Duplicate Sample IDs:	Not collected				
QC Summary					
Validity of Data	Not all QC criteria met, but no rejected results				
Additional Notes: All samples were redigested on 3/16/2010 due to low recoveries in the LCS, with the exception of samples J19J71 and J19J41. Samples J19J71 and J19K41 were reported from the initial digestion on 3/8/2010.					

SDG K1946 – TOC QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1946	**W&C Project No.:**222007	
Medium: Pore Water		**Analytes:** TOC	
Samples: J19J67, J19K00, J19K01, J19K36, J19K35, J19J64, J19JM2, J19JM1			
Laboratory: Lionville	**Date Data Assessment Completed:** 4/8/2010 **Complete By:** LEM	**Sample Collection Date:** 2/12, 13, 14, 15/2010	**Sample Analysis Date:** 3/1/2010

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No Action	
Detection Limit	Yes	None	-	No Action	
Method Blank	No	TOC = 0.22 mg/L	UJ	Qualify positive results <5x blank concentration as estimated non-detect (UJ)	Impacts to samples J19K01, J19K36, J19JM2
Equipment Blank Sample ID:	Not collected				
LCS Results	Yes	None	-	No Action	
Matrix Spikes Sample ID: J19J67	Yes	None	-	No Action	
Lab Duplicate Sample ID: J19J67	Yes	None	-	No Action	
Field Duplicate Sample ID:	Not collected				
QC Summary					
Validity of Data	Not all QC criteria met, but no rejected results				
Additional Notes:					

SDG K1946 – Nitrate/Nitrite QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1946	**W&C Project No.:**222007	
Medium: Pore Water		**Analytes:** Nitrate/Nitrite as N	
Samples: J19J67, J19K00, J19K01, J19K36, J19K35, J19J64, J19JM2, J19JM1			
Laboratory: Lionville	**Date Data Assessment Completed:** 4/8/2010 **Complete By:** LEM	**Sample Collection Date:** 2/12, 13, 14, 15/2010	**Sample Analysis Date:** 3/2/2010

QC Parameter	**All in Spec.?**	**Non-Compliant Results**	**Flag**	**Action/ Notes**	**Associated Samples**
Holding Times	Yes	None	-	No Action	
Detection Limit	Laboratory reporting limits not provided in SAP				
Method Blank	Yes	None	-	No Action	
Equipment Blank Sample IDs:	Not collected				
LCS Results	Yes	None	-	No Action	
Matrix Spikes Sample ID: J19JM2	Yes	None	-	No Action	
Lab Duplicate Sample ID: J19JM2	Yes	None	-	No Action	
Field Duplicate Sample IDs:	Not collected	None	-	No Action	
QC Summary					
Validity of Data	Yes; no data were qualified or rejected				
Additional Notes:					

SDG K1946 – Anions QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1946	**W&C Project No.:**222007	
Medium: Pore Water		**Analytes:** Bromide, Chloride, Fluoride, Nitrate, Nitrite, Orthophosphate, Sulfate	
Samples: J19J67, J19K00, J19K01, J19K36, J19K35, J19J64, J19JM2, J19JM1			
Laboratory: Lionville	**Date Data Assessment Completed:** 4/8/2010 **Complete By:** LEM	**Sample Collection Date:** 2/12, 13, 14, 15/2010	**Sample Analysis Date:** 2/23/2010

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	No	Holding Time for nitrate, nitrite, and orthophosphate is 48 hours.	J/R	For holding times >2x criteria, qualify positive results as estimated (J) and ND results as rejected (R).	All samples for nitrate, nitrite, and orthophosphate
Detection Limit	Laboratory reporting limits not provided in SAP				
Method Blank	Yes	None	-	No Action	
Equipment Blank Sample IDs:	Not collected				
LCS Results	Yes	None	-	No Action	
Matrix Spikes Sample ID: J19K00	Yes	None	-	No Action	
Lab Duplicate Sample ID: J19K00	Yes	None	-	No Action	
Field Duplicate Sample IDs:	Not collected				
QC Summary					
Validity of Data	No	Holding Time for nitrate, nitrite, and orthophosphate were >2x criteria	R	ND results qualified as rejected	All samples for nitrite and orthophosphate
Additional Notes:					

D.1.115 SDG K1962

SDG K1962 – VOC QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.: K1962**	**W&C Project No.:**222007	
Medium: Pore Water		**Analytes:** VOA	
Samples: J19KW8			
Laboratory: Lionville	**Date Data Assessment Completed:** 4/13/2010 **Complete By:** LEM	**Sample Collection Date:** 2/22/2010	**Sample Analysis Date:** 3/4/2010

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No Action	
Detection Limits	Yes	None	-	No Action	
Blanks					
Blanks - Method	Yes	None	-	No Action	
Equipment Blank Sample ID:	Not collected				
Trip Blank Sample ID:	Not collected				
Other QC Results					
Surrogate Recoveries	Yes	None	-	No Action	
LCS Results	Yes	None	-	No Action	
Matrix Spike/Matrix Spike Duplicate Sample ID: J19KW8	Yes	None	-	No Action	
Field Duplicates Sample ID:	Not collected				
Summary					
Validity of Data	Yes; no data were qualified or rejected				
Additional Notes:					

SDG K1962 – Metals QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1962	**W&C Project No.:**222007	
Medium: Pore Water		**Analytes:** Metals	
Samples: J19K31, J19K37, J19K32, J19K38, J19K97, J19KB1, J19H08, J19H10, J19K96, J19KB0, J19KW8, J19KX1			
Laboratory: Lionville	**Date Data Assessment Completed:** 4/13/2010 **Complete By:** LEM	**Sample Collection Date:** 2/19-22/2010	**Sample Analysis Date:** ICP – 3/12/2010 Hg – 3/11/2010

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No Action	
Detection Limits	Yes	None	-	No Action	
Blanks					
Preparation Blank	No	Al = 20.3 ug/L	UJ	Qualify positive results <5x highest blank concentration as estimated non-detect (UJ)	Impacts the following samples: Al: J19K37, J19K38, J19KB1, J19H10, J19KB0, J19KX1
Equipment Blank Sample IDs:	Not collected				
Other QC Results					
LCS Results	Yes	None	-	No Action	
Matrix Spike Sample ID: J19K31: Hg J19K32: ICP	Yes	None	-	No Action	
Lab Duplicate Sample ID: J19K31: Hg J19K32: ICP	Yes	None	-	No Action	
Field Duplicate	Not collected				
QC Summary					
Validity of Data	Not all QC criteria met, but no rejected results				
Additional Notes:					

SDG K1962 – TOC QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1962	**W&C Project No.:**222007	
Medium: Pore Water		**Analytes:** TOC	
Samples: J19K31, J19K32, J19K97, J19H08, J19K96, J19KW8			
Laboratory: Lionville	**Date Data Assessment Completed:** 4/13/2010 **Complete By:** LEM	**Sample Collection Date:** 2/19-22/2010	**Sample Analysis Date:** 3/9/2010

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No Action	
Detection Limit	Yes	None	-	No Action	
Method Blank	No	TOC = 0.19 mg/L	UJ	Qualify positive results <5x highest blank concentration as non-detect (UJ).	Impacts to samples J19K97, J19K96
Equipment Blank Sample IDs:	Not collected				
LCS Results	Yes	None	-	No Action	
Matrix Spikes Sample ID: J19K32	Yes	None	-	No Action	
Lab Duplicate Sample ID: J19K31	Yes	None	-	No Action	
Field Duplicate Sample ID:	Not collected				
QC Summary					
Validity of Data	Not all QC criteria met, but no rejected results.				
Additional Notes:					

SDG K1962 – Nitrate/Nitrite QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1962	**W&C Project No.:**222007	
Medium: Pore Water		**Analytes:** Nitrate/Nitrite as N	
Samples: J19K31, J19K32, J19K97, J19H08, J19K96, J19KW8			
Laboratory: Lionville	**Date Data Assessment Completed:** 4/13/2010 **Complete By:** LEM	**Sample Collection Date:** 2/19-22/2010	**Sample Analysis Date:** 3/10/2010

QC Parameter	**All in Spec.?**	**Non-Compliant Results**	**Flag**	**Action/ Notes**	**Associated Samples**
Holding Times	Yes	None	-	No Action	
Detection Limit	Laboratory reporting limits not provided in SAP				
Method Blank	Yes	None	-	No Action	
Equipment Blank Sample IDs:	Not collected				
LCS Results	Yes	None	-	No Action	
Matrix Spikes Sample ID: J19K31	Yes	None	-	No Action	
Lab Duplicate Sample ID: J19K31	Yes	None	-	No Action	
Field Duplicate Sample ID:	Not collected				
QC Summary					
Validity of Data	Yes; no data were qualified or rejected				
Additional Notes:					

SDG K1962 – Anions QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1962	**W&C Project No.:**222007	
Medium: Pore Water		**Analytes:** Bromide, Chloride, Fluoride, Nitrate, Nitrite, Orthophosphate, Sulfate	
Samples: J19K31, J19K32, J19K97, J19H08, J19K96, J19KW8			
Laboratory: Lionville	**Date Data Assessment Completed:** 4/13/2010 **Complete By:** LEM	**Sample Collection Date:** 2/19-22/2010	**Sample Analysis Date:** 3/10/2010

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	No	Holding Time for nitrate, nitrite, and orthophosphate is 48 hours.	J/R	For holding times >2x criteria, qualify positive results as estimated (J) and ND results as rejected (R).	Impacts all samples for nitrate, nitrite, and orthophosphate J19K31, J19K97, J19K96, J19KW8: Nitrate = J applied Nitrite = R applied Phosphate = R applied J19K32: Nitrate = J applied Nitrite = J applied Phosphate = R applied J19H08: Nitrate = R applied Nitrite = R applied Phosphate = R applied
Detection Limit	Laboratory reporting limits not provided in SAP				
Method Blank	Yes	None	-	No Action	
Equipment Blank Sample IDs:	No collected				
LCS Results	Yes	None	-	No Action	
Matrix Spikes Sample ID: J19K96	Yes	None	-	No Action	
Lab Duplicate Sample ID: J19K96	Yes	None	-	No Action	

SDG K1962 – Anions QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1962	**W&C Project No.:**222007
Medium: Pore Water		**Analytes:** Bromide, Chloride, Fluoride, Nitrate, Nitrite, Orthophosphate, Sulfate
Samples: J19K31, J19K32, J19K97, J19H08, J19K96, J19KW8		

Laboratory: Lionville	**Date Data Assessment Completed:** 4/13/2010 **Complete By:** LEM	**Sample Collection Date:** 2/19-22/2010	**Sample Analysis Date:** 3/10/2010

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Field Duplicate Sample ID:	Not collected				
QC Summary					
Validity of Data	No	Holding Time for nitrate, nitrite, and orthophosphate were >2x criteria	R	ND results qualified as rejected	Impacts the following samples: Nitrate: J19H08 Nitrite: J19K31, J19K97, J19H08, J19K96, J19KW8 Orthophosphate: all samples
Additional Notes:					

D.1.116 SDGK1963

SDG 1963 – VOC QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1963	**W&C Project No.:**222007
Medium: Pore Water	**Analytes:** VOA	
Samples: J19KW7		

Laboratory: Lionville	**Date Data Assessment Completed:** 4/16/2010 **Complete By:** KAM	**Sample Collection Date:** 2/26/2010	**Sample Analysis Date:** 3/4/2010

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No action	
Detection Limits	No	Detection limit for $MeCl_2$ exceeds criteria in SAP	-	No action based on guidance	
Blanks					
Blanks - Method	Yes	None	-	No action	
Equipment Blank Sample ID:	Not Collected				
Trip Blank Sample ID:	Not Analyzed				
Other QC Results					
Surrogate Recoveries	Yes	None	-	No action	
LCS Results	Yes	None	-	No action	
Matrix Spike/Matrix Spike Duplicate Sample ID: J19KW7	Yes	None	-	No action	
Field Duplicates Sample ID:	Not Collected				
Summary					
Validity of Data	All QC criteria met				
Additional Notes:					

SDG K1963 – Metals QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1963	**W&C Project No.:**222007
Medium: Pore Water		**Analytes:** Metals
Samples: J19K33, J19K39, J19KW7, J19KX0, K19JP2, J19JF0, J19JF4, J19K95, J19KF0, J19KF1		

Laboratory: Lionville	**Date Data Assessment Completed:** 4/16/2010 **Complete By:** KAM	**Sample Collection Date:** 2/26,27,28/2010	**Sample Analysis Date:** ICP – 3/19/2010 Hg – 3/13/2010

QC Parameter	**All in Spec.?**	**Non-Compliant Results**	**Flag**	**Action/ Notes**	**Associated Samples**
Holding Times	Yes	None	-	No action	
Detection Limits	Yes	None	-	No action	
Blanks					
Preparation Blank	No	Manganese = 0.531 ug/L	-	No action since all results are >5x blank concentration	
Equipment Blank Sample ID:	Not Collected				
Other QC Results					
LCS Results	Yes	None	-	No action	
Matrix Spike Sample ID: J19K39	Yes	None	-	No action	
Lab Duplicate Sample ID: J19K39	No	Aluminum = 37% Iron = 51% Manganese = 24% Zinc = 41%	-	No action since difference between initial and duplicate concentrations are <1x RDL	
Field Duplicate Sample ID:	Not Collected				
QC Summary					
Validity of Data	All QC criteria met				
Additional Notes:					

SDG K1963 – TOC QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1963	**W&C Project No.:**222007	
Medium: Pore Water		**Analytes:** TOC	
Samples: J19K33, J19KW7, J19JF0, J19KF0			
Laboratory: Lionville	**Date Data Assessment Completed:** 4/16/2010 **Complete By:** KAM	**Sample Collection Date:** 2/26,27,28/2010	**Sample Analysis Date:** 3/9/2010

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No action	
Detection Limit	Yes	None	-	No action	
Method Blank	No	TOC = 0.19 mg/L	-	No action since all results are >5x blank concentration	
Equipment Blank Sample ID:	Not Collected				
LCS Results	Yes	None	-	No Action	
Matrix Spikes Sample ID: J19K33	Yes	None	-	No Action	
Lab Duplicate Sample ID: J19K33	No	TOC RPD = 24.2%	-	No action since difference between results is <1x RDL	
Field Duplicate Sample ID:	Not Collected				
QC Summary					
Validity of Data	Not all QC criteria met, however no rejected results				
Additional Notes:					

SDG K1963 – Nitrate/Nitrite QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1963	**W&C Project No.:**222007	
Medium: Pore Water		**Analytes:** Nitrate/Nitrite as N	
Samples: J19K33, J19KW7, J19JF0, J19KF0			
Laboratory: Lionville	**Date Data Assessment Completed:** 4/16/2010 **Complete By:** KAM	**Sample Collection Date:** 2/26,27,28/2010	**Sample Analysis Date:** 3/10/2010

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No action	
Detection Limit	Detection limit not provided in SAP				
Method Blank	Yes	None	-	No action	
Equipment Blank Sample ID:	Not Collected				
LCS Results	Yes	None	-	No action	
Matrix Spikes Sample ID: J19K33	Yes	None	-	No action	
Lab Duplicate Sample ID: J19K33	Yes	None	-	No action	
Field Duplicate Sample ID:	Not Collected				
QC Summary					
Validity of Data	All QC criteria met				
Additional Notes:					

SDG K1963 – Anions QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1963	**W&C Project No.:**222007	
Medium: Pore Water		**Analytes:** Bromide, Chloride, Fluoride, Nitrate, Nitrite, Orthophosphate, Sulfate	
Samples: J19K33, J19KW7, J19JF0, J19KF0			
Laboratory: Lionville	**Date Data Assessment Completed:** 4/16/2010 **Complete By:** KAM	**Sample Collection Date:** 2/26,27,28/2010	**Sample Analysis Date:** 3/3/2010

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	Holding Time criteria for nitrate, nitrite, and orthophosphate is 48 hours	J/R	Holding time was exceeded by >2x criteria. Positive results are qualified as estimated (J) and non-detect results are qualified as rejected	All samples for nitrate, nitrite, and orthophosphate
Detection Limit	Detection limits not provided in SAP				
Method Blank	Yes	None	-	No action	
Equipment Blank Sample ID:	Not Collected				
LCS Results	Yes	None	-	No action	
Matrix Spikes Sample ID: J19K33	Yes	None	-	No action	
Lab Duplicate Sample ID: J19K33	Yes	None	-	No action	
Field Duplicate Sample ID:	Not Collected				

SDG K1963 – Anions QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1963	**W&C Project No.:**222007	
Medium: Pore Water		**Analytes:** Bromide, Chloride, Fluoride, Nitrate, Nitrite, Orthophosphate, Sulfate	
Samples: J19K33, J19KW7, J19JF0, J19KF0			
Laboratory: Lionville	**Date Data Assessment Completed:** 4/16/2010 **Complete By:** KAM	**Sample Collection Date:** 2/26,27,28/2010	**Sample Analysis Date:** 3/3/2010

QC Parameter	**All in Spec.?**	**Non-Compliant Results**	**Flag**	**Action/ Notes**	**Associated Samples**
QC Summary					
Validity of Data	No	Holding Time exceeded by >2x criteria	R	Qualify non-detect results as rejected	Nitrite: J19K33, J19KW7, J19JF0, J19KF0 Nitrate: J19KF0 Orthophosphate: J19K33, J19KW7, J19JF0
Additional Notes:					

D.2 SURFACE WATER

D.2.1 SDG J00565

SDG J00656 – Hexavalent Chromium QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** J00656	**W&C Project No.:**222007
Medium: Surface Water - GW Upwelling		**Analytes:** Hexavalent Chromium
Samples: J19F95, J19F94		

Laboratory: Test America, Richland, WA	**Date Data Assessment Completed:** 4/7/2010 **Completed By:** LEM	**Sample Collection Date:** 1/11/2010	**Sample Analysis Date:** 1/12/2010

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No Action	
Detection Limits	Yes	None	-	No Action	
Blanks					
Preparation Blank	Yes	None	-	No Action	
Equipment Blank Sample ID:	Not collected				
Other QC Results					
LCS Results	Yes	None	-	No Action	
Matrix Spikes Sample ID: J19F95	Yes	None	-	No Action	
Laboratory Duplicates Sample ID: J19F95	Yes	None	-	No Action	
Field Duplicates	Not collected				
QC Summary					
Validity of Data	Yes	None	-	No Action	No rejected data
Additional Notes:					

D.2.2 SDG J00659

SDG J00659 – Hexavalent Chromium QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** J00659	**W&C Project No.:**222007
Medium: Surface Water - GW Upwelling		**Analytes:** Hexavalent Chromium
Samples: J19F57		

Laboratory: Test America, Richland, WA	**Date Data Assessment Completed:** 4/7/2010 **Completed By:** LEM	**Sample Collection Date:** 1/15/2010	**Sample Analysis Date:** 1/16/2010

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No Action	
Detection Limits	Yes	None	-	No Action	
Blanks					
Preparation Blank	Yes	None	-	No Action	
Equipment Blank Sample ID:	Not collected				
Other QC Results					
LCS Results	Yes	None	-	No Action	
Matrix Spikes Sample ID: J19F57	Yes	None	-	No Action	
Laboratory Duplicates Sample ID: J19F57	Yes	None	-	No Action	
Field Duplicates	Not collected				
QC Summary					
Validity of Data	Yes	None	-	No Action	No rejected data
Additional Notes:					

D.2.3 SDG J00661

SDG J00661 – Hexavalent Chromium QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** J00661	**W&C Project No.:**222007	
Medium: Surface Water - GW Upwelling		**Analytes:** Hexavalent Chromium	
Samples: J19F58			
Laboratory: Test America, Richland, WA	**Date Data Assessment Completed:** 4/7/2010 **Completed By:** LEM	**Sample Collection Date:** 1/16/2010	**Sample Analysis Date:** 1/17/2010

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No Action	
Detection Limits	Yes	None	-	No Action	
Blanks					
Preparation Blank	Yes	None	-	No Action	
Equipment Blank Sample ID:	Not collected				
Other QC Results					
LCS Results	Yes	None	-	No Action	
Matrix Spikes Sample ID: J19F58	Yes	None	-	No Action	
Laboratory Duplicates Sample ID: J19F58	Yes	None	-	No Action	
Field Duplicates	Not collected				
QC Summary					
Validity of Data	Yes	None	-	No Action	No rejected data
Additional Notes:					

D.2.4 SDG J00666

SDG J00666 – Hexavalent Chromium QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** J00666	**W&C Project No.:**222007
Medium: Surface Water - GW Upwelling		**Analytes:** Hexavalent Chromium
Samples: J19F60, J19F59		

Laboratory: Test America, Richland, WA	**Date Data Assessment Completed:** 4/20/2010 **Completed By:** LEM	**Sample Collection Date:** 1/17/2010	**Sample Analysis Date:** 1/18/2010

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No Action	
Detection Limits	Yes	None	-	No Action	
Blanks					
Preparation Blank	Yes	None	-	No Action	
Equipment Blank Sample ID:	Not collected				
Other QC Results					
LCS Results	Yes	None	-	No Action	
Matrix Spikes Sample ID: J19F60	Yes	None	-	No Action	
Laboratory Duplicates Sample ID: J19F60	Yes	None	-	No Action	
Field Duplicates	Not collected				
QC Summary					
Validity of Data	Yes	None	-	No Action	No rejected data
Additional Notes:					

D.2.5 SDG J00668

SDG J00668 – Hexavalent Chromium QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA		**SDG No.:** J00668		**W&C Project No.:**222007	
Medium: Surface Water - GW Upwelling				**Analytes:** Hexavalent Chromium	
Samples: J19H27					
Laboratory: Test America, Richland, WA	**Date Data Assessment Completed:** 3/16/2010 **Completed By:** LEM		**Sample Collection Date:** 1/18/2010		**Sample Analysis Date:** 1/19/2010

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No Action	
Detection Limits	Yes	None	-	No Action	
Blanks					
Preparation Blank	Yes	None	-	No Action	
Equipment Blank Sample ID:	Not collected				
Other QC Results					
LCS Results	Yes	None	-	No Action	
Matrix Spikes Sample ID: J19H27	No	**Non-compliant Recovery** Cr+6 = 125%	-	No Action	No Impacts because sample J19H27 is non-detect.
		Non-compliant RPD 21%	J	Qualify positive and non-detects as estimated (J).	Impacts to J19H27
Laboratory Duplicates Sample ID: J19H27	Yes	None	-	No Action	
Field Duplicates	Not collected				
QC Summary					
Validity of Data	Yes	None	-	No Action	No rejected data
Additional Notes:					

D.2.6 SDG J00671

SDG J00671 – Hexavalent Chromium QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** J00671	**W&C Project No.:**222007
Medium: Surface Water - GW Upwelling		**Analytes:** Hexavalent Chromium
Samples: J19HT4		

Laboratory: Test America, Richland, WA	**Date Data Assessment Completed:** 3/18/2010 **Completed By:** LEM	**Sample Collection Date:** 1/23/2010	**Sample Analysis Date:** 1/24/2010

QC Parameter	**All in Spec.?**	**Non-Compliant Results**	**Flag**	**Action/ Notes**	**Associated Samples**
Holding Times	Yes	None	-	No Action	
Detection Limits	Yes	None	-	No Action	
Blanks					
Preparation Blank	Yes	None	-	No Action	
Equipment Blank Sample ID:	Not collected				
Other QC Results					
LCS Results	Yes	None	-	No Action	
Matrix Spikes Sample ID: J19HT4	Yes	None	-	No Action	
Laboratory Duplicates Sample ID: J19HT4	Yes	None	-	No Action	
Field Duplicates	Not collected				
QC Summary					
Validity of Data	Yes	None	-	No Action	No rejected data
Additional Notes:					

D.2.7 SDG J00676

SDG J00676 – Hexavalent Chromium QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** J00676	**W&C Project No.:**222007	
Medium: Surface Water - GW Upwelling		**Analytes:** Hexavalent Chromium	
Samples: J19HT2			
Laboratory: Test America, Richland, WA	**Date Data Assessment Completed:** 3/18/2010 **Completed By:** LEM	**Sample Collection Date:** 1/22/2010	**Sample Analysis Date:** 1/23/2010

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No Action	
Detection Limits	Yes	None	-	No Action	
Blanks					
Preparation Blank	Yes	None	-	No Action	
Equipment Blank Sample ID:	Not collected				
Other QC Results					
LCS Results	Yes	None	-	No Action	
Matrix Spikes Sample ID: J19HT2	Yes	None	-	No Action	
Laboratory Duplicates Sample ID: J19HT2	Yes	None	-	No Action	
Field Duplicates	Not collected				
QC Summary					
Validity of Data	Yes	None	-	No Action	No rejected data
Additional Notes:					

D.2.8 SDG J00677

SDG J00677 – Hexavalent Chromium QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** J00677	**W&C Project No.:**222007
Medium: Surface Water - GW Upwelling		**Analytes:** Hexavalent Chromium
Samples: J19FH7		

Laboratory: Test America, Richland, WA	**Date Data Assessment Completed:** 3/18/2010 **Completed By:** LEM	**Sample Collection Date:** 1/24/2010	**Sample Analysis Date:** 1/25/2010

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No Action	
Detection Limits	Yes	None	-	No Action	
Blanks					
Preparation Blank	Yes	None	-	No Action	
Equipment Blank Sample ID:	Not collected				
Other QC Results					
LCS Results	Yes	None	-	No Action	
Matrix Spikes Sample ID: J19FH7	Yes	None	-	No Action	
Laboratory Duplicates Sample ID: J19FH7	Yes	None	-	No Action	
Field Duplicates	Not collected				
QC Summary					
Validity of Data	Yes	None	-	No Action	No rejected data
Additional Notes:					

D.2.9 SDG J00678

SDG J00678 – Hexavalent Chromium QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA		**SDG No.:** J00678		**W&C Project No.:**222007	
Medium: Surface Water - GW Upwelling				**Analytes:** Hexavalent Chromium	
Samples: J19FH6					
Laboratory: Test America, Richland, WA	**Date Data Assessment Completed:** 3/18/2010 **Completed By:** LEM		**Sample Collection Date:** 1/24/2010		**Sample Analysis Date:** 1/25/2010
QC Parameter	**All in Spec.?**	**Non-Compliant Results**	**Flag**	**Action/ Notes**	**Associated Samples**
Holding Times	Yes	None	-	No Action	
Detection Limits	Yes	None	-	No Action	
Blanks					
Preparation Blank	Yes	None	-	No Action	
Equipment Blank Sample ID:	Not collected				
Other QC Results					
LCS Results	Yes	None	-	No Action	
Matrix Spikes Sample ID: J19FH6	Yes	None	-	No Action	
Laboratory Duplicates Sample ID: J19FH6	Yes	None	-	No Action	
Field Duplicates	Not collected				
QC Summary					
Validity of Data	Yes	None	-	No Action	No rejected data
Additional Notes:					

D.2.10 SDG J00687

SDG J00687 – Hexavalent Chromium QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA		**SDG No.:** J00687	**W&C Project No.:**222007		
Medium: Surface Water - GW Upwelling				**Analytes:** Hexavalent Chromium	
Samples: J19H21, J19F93, J19FD0					
Laboratory: Test America, Richland, WA	**Date Data Assessment Completed:** 3/18/2010 **Completed By:** LEM		**Sample Collection Date:** 1/25/2010	**Sample Analysis Date:** 1/26/2010	
QC Parameter	**All in Spec.?**	**Non-Compliant Results**	**Flag**	**Action/ Notes**	**Associated Samples**
Holding Times	Yes	None	-	No Action	
Detection Limits	Yes	None	-	No Action	
Blanks					
Preparation Blank	Yes	None	-	No Action	
Equipment Blank Sample ID:	Not collected				
Other QC Results					
LCS Results	Yes	None	-	No Action	
Matrix Spikes Sample ID: J19F93	Yes	None	-	No Action	
Laboratory Duplicates Sample ID: J19F93	Yes	None	-	No Action	
Field Duplicates Sample IDs: J19FD0/J19F93	Yes	None	-	No Action	
QC Summary					
Validity of Data	Yes	None	-	No Action	No rejected data
Additional Notes:					

D.2.11 SDG J00692

SDG J00692 – Hexavalent Chromium QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** J00692	**W&C Project No.:**222007
Medium: Surface Water - GW Upwelling		**Analytes:** Hexavalent Chromium
Samples: J19JK1		

Laboratory: Test America, Richland, WA	**Date Data Assessment Completed:** 4/7/2010 **Completed By:** LEM	**Sample Collection Date:** 1/29/2010	**Sample Analysis Date:** 1/30/2010

QC Parameter	**All in Spec.?**	**Non-Compliant Results**	**Flag**	**Action/ Notes**	**Associated Samples**
Holding Times	Yes	None	-	No Action	
Detection Limits	Yes	None	-	No Action	
Blanks					
Preparation Blank	Yes	None	-	No Action	
Equipment Blank Sample ID:	Not collected				
Other QC Results					
LCS Results	Yes	None	-	No Action	
Matrix Spikes Sample ID: J19JK1	Yes	None	-	No Action	
Laboratory Duplicates Sample ID: J19JK1	Yes	None	-	No Action	
Field Duplicates	Not collected				
QC Summary					
Validity of Data	Yes	None	-	No Action	No rejected data
Additional Notes:					

D.2.12 SDG J00696

SDG J00696 – Hexavalent Chromium QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** J00696	**W&C Project No.:**222007	
Medium: Surface Water - GW Upwelling		**Analytes:** Hexavalent Chromium	
Samples: J19JK2			
Laboratory: Test America, Richland, WA	**Date Data Assessment Completed:** 4/7/2010 **Completed By:** LEM	**Sample Collection Date:** 1/29/2010	**Sample Analysis Date:** 1/30/2010

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No Action	
Detection Limits	Yes	None	-	No Action	
Blanks					
Preparation Blank	Yes	None	-	No Action	
Equipment Blank Sample ID:	Not collected				
Other QC Results					
LCS Results	Yes	None	-	No Action	
Matrix Spikes Sample ID: J19JK2	Yes	None	-	No Action	
Laboratory Duplicates Sample ID: J19JK2	Yes	None	-	No Action	
Field Duplicates	Not collected				
QC Summary					
Validity of Data	Yes	None	-	No Action	No rejected data
Additional Notes:					

D.2.13 SDG J00699

SDG J00699 – Hexavalent Chromium QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** J00699	**W&C Project No.:**222007
Medium: Surface Water - GW Upwelling		**Analytes:** Hexavalent Chromium
Samples: J19JK3		

Laboratory: Test America, Richland, WA	**Date Data Assessment Completed:** 4/7/2010 **Completed By:** LEM	**Sample Collection Date:** 1/30/2010	**Sample Analysis Date:** 1/31/2010

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No Action	
Detection Limits	Yes	None	-	No Action	
Blanks					
Preparation Blank	Yes	None	-	No Action	
Equipment Blank Sample ID:	Not collected				
Other QC Results					
LCS Results	Yes	None	-	No Action	
Matrix Spikes Sample ID: J19JK3	Yes	None	-	No Action	
Laboratory Duplicates Sample ID: J19JK3	Yes	None	-	No Action	
Field Duplicates	Not collected				
QC Summary					
Validity of Data	Yes	None	-	No Action	No rejected data
Additional Notes:					

D.2.14 SDG J00702

SDG J00702 – Hexavalent Chromium QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA		**SDG No.:** J00702		**W&C Project No.:**222007	
Medium: Surface Water - GW Upwelling				**Analytes:** Hexavalent Chromium	
Samples: J19JD2, J19HT1, J19HT3					
Laboratory: Test America, Richland, WA	**Date Data Assessment Completed:** 4/7/2010 **Completed By:** LEM		**Sample Collection Date:** 1/31/2010	**Sample Analysis Date:** 2/1/2010	

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No Action	
Detection Limits	Yes	None	-	No Action	
Blanks					
Preparation Blank	Yes	None	-	No Action	
Equipment Blank Sample ID:	Not collected				
Other QC Results					
LCS Results	Yes	None	-	No Action	
Matrix Spikes Sample IDs: J19JD2, J19HT1, J19HT3	Yes	None	-	No Action	
Laboratory Duplicates Sample IDs: J19JD2, J19HT1, J19HT3	Yes	None	-	No Action	
Field Duplicates Sample IDs: J19HT1/ J19HT3	Yes	None	-	No Action	
QC Summary					
Validity of Data	Yes	None	-	No Action	No rejected data
Additional Notes: Three batches of QC samples were analyzed.					

D.2.15 SDG J00704

SDG J00704 – Hexavalent Chromium QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** J00704	**W&C Project No.:**222007
Medium: Surface Water - GW Upwelling		**Analytes:** Hexavalent Chromium
Samples: J19F96, J19HX1		

Laboratory: Test America, Richland, WA	**Date Data Assessment Completed:** 3/18/2010 **Completed By:** LEM	**Sample Collection Date:** 2/1/2010	**Sample Analysis Date:** 2/2/2010

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	No	Sample J19F96 exceeded holding time (<2x).	J	Qualify results as estimated (J).	Impacts to sample J19F96.
Detection Limits	Yes	None	-	No Action	
Blanks					
Preparation Blank	Yes	None	-	No Action	
Equipment Blank Sample ID:	Not collected				
Other QC Results					
LCS Results	Yes	None	-	No Action	
Matrix Spikes Sample ID: J19HX1	Yes	None	-	No Action	
Laboratory Duplicates Sample ID: J19HX1	Yes	None	-	No Action	
Field Duplicates	Not collected				
QC Summary					
Validity of Data	Yes	None	-	No Action	No rejected data
Additional Notes:					

D.2.16 SDG J00711

SDG J00711 – Hexavalent Chromium QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** J00711	**W&C Project No.:**222007
Medium: Surface Water - GW Upwelling		**Analytes:** Hexavalent Chromium
Samples: J19JV6, J19JV9		

Laboratory: Test America, Richland, WA	**Date Data Assessment Completed:** 3/18/2010 **Completed By:** LEM	**Sample Collection Date:** 2/7/2010	**Sample Analysis Date:** 2/8/2010

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No Action	
Detection Limits	Yes	None	-	No Action	
Blanks					
Preparation Blank	Yes	None	-	No Action	
Equipment Blank Sample ID:	Not collected				
Other QC Results					
LCS Results	Yes	None	-	No Action	
Matrix Spikes Sample ID: J19JV6	Yes	None	-	No Action	
Laboratory Duplicates Sample ID: J19JV6	Yes	None	-	No Action	
Field Duplicates	Not collected				
QC Summary					
Validity of Data	Yes	None	-	No Action	No rejected data
Additional Notes:					

D.2.17 SDG J00712

Validated by ELR - Included in Appendix F

D.2.18 SDG J00715

SDG J00715 – Hexavalent Chromium QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** J00715	**W&C Project No.:**222007	
Medium: Surface Water - GW Upwelling		**Analytes:** Hexavalent Chromium	
Samples: J19JV7, J19JV8			
Laboratory: Test America, Richland, WA	**Date Data Assessment Completed:** 3/24/2010 **Completed By:** LEM	**Sample Collection Date:** 2/6/2010	**Sample Analysis Date:** 2/7/2010

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No Action	
Detection Limits	Yes	None	-	No Action	
Blanks					
Preparation Blank	Yes	None	-	No Action	
Equipment Blank Sample ID:	Not collected				
Other QC Results					
LCS Results	Yes	None	-	No Action	
Matrix Spikes Sample ID: J19JV7, J19JV8	Yes	None	-	No Action	
Laboratory Duplicates Sample ID: J19JV7, J19JV8	Yes	None	-	No Action	
Field Duplicates	Not collected				
QC Summary					
Validity of Data	Yes	None	-	No Action	No rejected data
Additional Notes: Two batches of QC samples were analyzed.					

D.2.19 SDG J00718

SDG J00718 – Hexavalent Chromium QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** J00718	**W&C Project No.:**222007
Medium: Surface Water - GW Upwelling		**Analytes:** Hexavalent Chromium
Samples: J19JW0		

Laboratory: Test America, Richland, WA	**Date Data Assessment Completed:** 3/24/2010 **Completed By:** LEM	**Sample Collection Date:** 2/8/2010	**Sample Analysis Date:** 2/9/2010

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No Action	
Detection Limits	Yes	None	-	No Action	
Blanks					
Preparation Blank	Yes	None	-	No Action	
Equipment Blank Sample ID:	Not collected				
Other QC Results					
LCS Results	Yes	None	-	No Action	
Matrix Spikes Sample ID: J19JW0	Yes	None	-	No Action	
Laboratory Duplicates Sample ID: J19JW0	Yes	None	-	No Action	
Field Duplicates	Not collected				
QC Summary					
Validity of Data	Yes	None	-	No Action	No rejected data
Additional Notes:					

D.2.20 SDG J00728

SDG J00728 – Hexavalent Chromium QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** J00728	**W&C Project No.:**222007	
Medium: Surface Water - GW Upwelling		**Analytes:** Hexavalent Chromium	
Samples: J19J84, J19J87			
Laboratory: Test America, Richland, WA	**Date Data Assessment Completed:** 3/24/2010 **Completed By:** LEM	**Sample Collection Date:** 2/13/2010	**Sample Analysis Date:** 2/14/2010

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No Action	
Detection Limits	Yes	None	-	No Action	
Blanks					
Preparation Blank	Yes	None	-	No Action	
Equipment Blank Sample ID:	Not collected				
Other QC Results					
LCS Results	Yes	None	-	No Action	
Matrix Spikes Sample ID: J19J84, J19J87	Yes	None	-	No Action	
Laboratory Duplicates Sample ID: J19J84, J19J87	Yes	None	-	No Action	
Field Duplicates	Not collected				
QC Summary					
Validity of Data	Yes	None	-	No Action	No rejected data
Additional Notes: Two batches of QC samples were analyzed.					

D.2.21 SDG J00731

SDG J00731 – Hexavalent Chromium QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** J00731	**W&C Project No.:**222007
Medium: Surface Water - GW Upwelling		**Analytes:** Hexavalent Chromium
Samples: J19K16, J19K17		

Laboratory: Test America, Richland, WA	**Date Data Assessment Completed:** 3/24/2010 **Completed By:** LEM	**Sample Collection Date:** 2/12/2010	**Sample Analysis Date:** 2/13/2010

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No Action	
Detection Limits	Yes	None	-	No Action	
Blanks					
Preparation Blank	Yes	None	-	No Action	
Equipment Blank Sample ID:	Not collected				
Other QC Results					
LCS Results	Yes	None	-	No Action	
Matrix Spikes Sample ID: J19K16, J19K17	Yes	None	-	No Action	
Laboratory Duplicates Sample ID: J19K16, J19K17	Yes	None	-	No Action	
Field Duplicates	Not collected				
QC Summary					
Validity of Data	Yes	None	-	No Action	No rejected data
Additional Notes: Two batches of QC samples were analyzed.					

D.2.22 SDG J00735

SDG J00735 – Hexavalent Chromium QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** J00735	**W&C Project No.:**222007	
Medium: Surface Water - GW Upwelling		**Analytes:** Hexavalent Chromium	
Samples: J19JN2, J19JN3			
Laboratory: Test America, Richland, WA	**Date Data Assessment Completed:** 3/24/2010 **Completed By:** LEM	**Sample Collection Date:** 2/14/2010	**Sample Analysis Date:** 2/15/2010

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No Action	
Detection Limits	Yes	None	-	No Action	
Blanks					
Preparation Blank	Yes	None	-	No Action	
Equipment Blank Sample ID:	Not collected				
Other QC Results					
LCS Results	Yes	None	-	No Action	
Matrix Spikes Sample ID: J19JN2	Yes	None	-	No Action	
Laboratory Duplicates Sample ID: J19JN2	Yes	None	-	No Action	
Field Duplicates	Not collected				
QC Summary					
Validity of Data	Yes	None	-	No Action	No rejected data
Additional Notes:					

D.2.23 SDG J00742

SDG J00742 – Hexavalent Chromium QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** J00742	**W&C Project No.:**222007	
Medium: Surface Water - GW Upwelling		**Analytes:** Hexavalent Chromium	
Samples: J19H26, J19KC1			
Laboratory: Test America, Richland, WA	**Date Data Assessment Completed:** 3/24/2010 **Completed By:** LEM	**Sample Collection Date:** 2/19/2010	**Sample Analysis Date:** 2/20/2010

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No Action	
Detection Limits	Yes	None	-	No Action	
Blanks					
Preparation Blank	Yes	None	-	No Action	
Equipment Blank Sample ID:	Not collected				
Other QC Results					
LCS Results	Yes	None	-	No Action	
Matrix Spikes Sample ID: J19H26	Yes	None	-	No Action	
Laboratory Duplicates Sample ID: J19H26	Yes	None	-	No Action	
Field Duplicates	Not collected				
QC Summary					
Validity of Data	Yes	None	-	No Action	No rejected data
Additional Notes:					

D.2.24 SDG J00746

SDG J00746 – Hexavalent Chromium QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** J00746	**W&C Project No.:**222007
Medium: Surface Water - GW Upwelling		**Analytes:** Hexavalent Chromium
Samples: J19KC0		

Laboratory: Test America, Richland, WA	**Date Data Assessment Completed:** 3/24/2010 **Completed By:** LEM	**Sample Collection Date:** 2/20/2010	**Sample Analysis Date:** 2/21/2010

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No Action	
Detection Limits	Yes	None	-	No Action	
Blanks					
Preparation Blank	Yes	None	-	No Action	
Equipment Blank Sample ID:	Not collected				
Other QC Results					
LCS Results	Yes	None	-	No Action	
Matrix Spikes Sample ID: J19KC0	Yes	None	-	No Action	
Laboratory Duplicates Sample ID: J19KC0	Yes	None	-	No Action	
Field Duplicates	Not collected				
QC Summary					
Validity of Data	Yes	None	-	No Action	No rejected data
Additional Notes:					

D.2.25 SDG J00754

SDG J00754 – Hexavalent Chromium QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** J00754	**W&C Project No.:**222007
Medium: Surface Water - GW Upwelling		**Analytes:** Hexavalent Chromium
Samples: J19KY3		

Laboratory: Test America, Richland, WA	**Date Data Assessment Completed:** 3/24/2010 **Completed By:** LEM	**Sample Collection Date:** 2/22/2010	**Sample Analysis Date:** 2/23/2010

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No Action	
Detection Limits	Yes	None	-	No Action	
Blanks					
Preparation Blank	Yes	None	-	No Action	
Equipment Blank Sample ID:	Not collected				
Other QC Results					
LCS Results	Yes	None	-	No Action	
Matrix Spikes Sample ID: J19KY3	Yes	None	-	No Action	
Laboratory Duplicates Sample ID: J19KY3	Yes	None	-	No Action	
Field Duplicates	Not collected				
QC Summary					
Validity of Data	Yes	None	-	No Action	No rejected data
Additional Notes:					

D.2.26 SDG J00758

SDG J00758 – Hexavalent Chromium QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** J00758	**W&C Project No.:**222007
Medium: Surface Water - GW Upwelling		**Analytes:** Hexavalent Chromium
Samples: J19KY2		

Laboratory: Test America, Richland, WA	**Date Data Assessment Completed:** 4/7/2010 **Completed By:** LEM	**Sample Collection Date:** 2/26/2010	**Sample Analysis Date:** 2/27/2010

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No Action	
Detection Limits	Yes	None	-	No Action	
Blanks					
Preparation Blank	Yes	None	-	No Action	
Equipment Blank Sample ID:	Not collected				
Other QC Results					
LCS Results	Yes	None	-	No Action	
Matrix Spikes Sample ID: J19KY2	Yes	None	-	No Action	
Laboratory Duplicates Sample ID: J19KY2	Yes	None	-	No Action	
Field Duplicates	Not collected				
QC Summary					
Validity of Data	Yes	None	-	No Action	No rejected data
Additional Notes:					

D.2.27 SDG J00760

SDG J00760 – Hexavalent Chromium QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** J00760	**W&C Project No.:**222007
Medium: Surface Water - GW Upwelling		**Analytes:** Hexavalent Chromium
Samples: J19JK4, J19JV5		

Laboratory: Test America, Richland, WA	**Date Data Assessment Completed:** 4/7/2010 **Completed By:** LEM	**Sample Collection Date:** 2/27/2010	**Sample Analysis Date:** 2/28/2010

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No Action	
Detection Limits	Yes	None	-	No Action	
Blanks					
Preparation Blank	Yes	None	-	No Action	
Equipment Blank Sample ID:	Not collected				
Other QC Results					
LCS Results	Yes	None	-	No Action	
Matrix Spikes Sample ID: J19JK4, J19JV5	Yes	None	-	No Action	
Laboratory Duplicates Sample ID: J19JK4, J19JV5	Yes	None	-	No Action	
Field Duplicates	Not collected				
QC Summary					
Validity of Data	Yes	None	-	No Action	No rejected data
Additional Notes: Two batches of QC samples were analyzed.					

D.2.28 SDG J00764

SDG J00764 – Hexavalent Chromium QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** J00764	**W&C Project No.:**222007	
Medium: Surface Water - GW Upwelling		**Analytes:** Hexavalent Chromium	
Samples: J19KB9, J19KF5			
Laboratory: Test America, Richland, WA	**Date Data Assessment Completed:** 4/7/2010 **Completed By:** LEM	**Sample Collection Date:** 2/28/2010	**Sample Analysis Date:** 3/1/2010

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No Action	
Detection Limits	Yes	None	-	No Action	
Blanks					
Preparation Blank	Yes	None	-	No Action	
Equipment Blank Sample ID:	Not collected				
Other QC Results					
LCS Results	Yes	None	-	No Action	
Matrix Spikes Sample ID: J19KB9	Yes	None	-	No Action	
Laboratory Duplicates Sample ID: J19KB9	Yes	None	-	No Action	
Field Duplicates	Not collected				
QC Summary					
Validity of Data	Yes	None	-	No Action	No rejected data
Additional Notes:					

D.2.29 SDG K1905

SDG K1905 – VOC QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1905	**W&C Project No.:**222007	
Medium: Surface Water - GW Upwelling		**Analytes:** VOA	
Samples: K19F86, K19F87			
Laboratory: Lionville	**Date Data Assessment Completed:** 04/08/2010 **Complete By:** RDD	**Sample Collection Date:** 01/11/2010	**Sample Analysis Date:** 01/22/2010

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No action	
Detection Limits	Yes	None	-	No action	
Blanks					
Blanks - Method	Yes	None	-	No action	
Equipment Blank Sample ID:	None collected				
Trip Blank Sample ID:	None analyzed				
Other QC Results					
Surrogate Recoveries	Yes	None	-	No action	
LCS Results	No	Acetone = 162%	J	Qualify positive sample results as estimated (J).	All samples. No impact since both compounds ND for all samples.
Matrix Spike/Matrix Spike Duplicate Sample ID:J19F86	No	None	-	No action	
Field Duplicates Sample ID:	None collected				
Summary					
Validity of Data	Not all QC criteria were met, but no data were rejected.				
Additional Notes:					

SDG K1905 – Metals QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1905	**W&C Project No.:**222007
Medium: Surface water – GW Upwelling		**Analytes:** Metals
Samples: J19F49, J19F50, J19F87, J19F90, J19F86, J19F91		

Laboratory: Lionville	**Date Data Assessment Completed:** 04/08/2010 **Complete By:** RDD	**Sample Collection Date:** 1/11/2010, 1/15/2010, 1/16/2010	**Sample Analysis Date:** ICP – 01/27/2010 Hg – 01/28/2010

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No action	
Detection Limits	No	The detection limit for Si exceeds specification in work plan.	-	No action based on guidance.	
Blanks					
Preparation Blank	No	Al = 19 µg/L Ca = 27.5 µg/L	UJ	Qualify positive sample results < 5x the blank concentration as ND.	All samples. Impacts: Al – all samples Ca - None
Equipment Blank	None collected				
Other QC Results					
LCS Results	Yes	None	-	No action	
Matrix Spike Sample ID:J19F49	Yes	None	-	No action	
Lab Duplicate Sample ID:J19F49	Yes	None	-	No action	
Field Duplicate Sample ID:	None collected				
QC Summary					
Validity of Data	Not all QC criteria were met but no data were rejected.				
Additional Notes:					

SDG K1905 – Radionuclides QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1905	**W&C Project No.:**222007	
Medium: Surface water – GW Upwelling	**Analytes:** Gamma Spec, Isotopic Plutonium, Isotopic Thorium, Isotopic Uranium, total Strontium		
Samples: J19F49, J19F50, J19F86, J19F87			
Laboratory: Eberline	**Date Data Assessment Completed:** 04/08/2010 **Complete By:** RDD	**Sample Collection Date:** 1/11/2010, 1/15/2010, 1/16/2010	**Sample Analysis Date:** 1-2/2010

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No action	
Detection Limits	No	**RDL** Strontium **MDA** Ra-226 Ra-228	-	No action	
Blanks					
Method Blanks	Yes	None	-	No action	
Equipment Blank Sample ID:	None collected				
Other QC Results					
LCS Results	Yes	None	-	No action	
Tracer Results	Yes	None	-	No action	
Matrix Spike	None analyzed				
Lab Duplicates Sample ID:J19F49	Yes	None	-	No action	
Field Duplicate Sample ID:	None collected				
QC Summary					
Validity of Data	All QC parameters had compliant results.				
Additional Notes:					

SDG K1905 – DOC QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA		**SDG No.:** K1905	**W&C Project No.:**222007		
Medium: Surface water – GW Upwelling			**Analytes:** DOC		
Samples: J19F49, J19F50, J19F86, J19F87					
Laboratory: Lionville	**Date Data Assessment Completed:** 04/08/2010 **Complete By:** RDD		**Sample Collection Date:** 1/11/2010, 1/15/2010, 1/16/2010	**Sample Analysis Date:** 02/03/2010	
QC Parameter	**All in Spec.?**	**Non-Compliant Results**	**Flag**	**Action/ Notes**	**Associated Samples**
Holding Times	Yes	None	-	No action	
Detection Limit	Yes	None	-	No action	
Method Blank	Yes	None	-	No action	
Equipment Blank	None collected				
LCS Results	Yes	None	-	No action	
Matrix Spikes Sample ID: J19F49	Yes	None	-	No action	
Lab Duplicate Sample ID: J19F49	Yes	None	-	No action	
Field Duplicate	None collected				
QC Summary					
Validity of Data	All QC parameters were compliant with criteria.				
Additional Notes:					

SDG K1905 – Nitrate/Nitrite QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1905	**W&C Project No.:**222007	
Medium: Surface water – GW Upwelling		**Analytes:** Nitrate/Nitrite as N	
Samples: J19F49, J19F50			
Laboratory: Lionville	**Date Data Assessment Completed:** 04/08/2010 **Complete By:** RDD	**Sample Collection Date:** 1/15/2010, 1/16/2010	**Sample Analysis Date:**1/22/2010

QC Parameter	**All in Spec.?**	**Non-Compliant Results**	**Flag**	**Action/ Notes**	**Associated Samples**
Holding Times	Yes	None	-	No action	
Detection Limit	Lab reporting limits not provided in SAP				
Method Blank	Yes	None	-	No action	
Equipment Blank	None collected				
LCS Results	Yes	None	-	No action	
Matrix Spikes Sample ID: J19F49	Yes	None	-	No action	
Lab Duplicate Sample ID: J19F49	Yes	None	-	No action	
Field Duplicate Sample ID:	None collected				
QC Summary					
Validity of Data	All QC parameters were compliant with criteria.				
Additional Notes:					

SDG K1905 – Anions QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1905	**W&C Project No.:**222007	
Medium: Surface water – GW Upwelling		**Analytes:** Bromide, Chloride, Fluoride, Nitrate, Nitrite, Orthophosphate, Sulfate	
Samples: J19F49, J19F50, J19F86, J19F87			
Laboratory: Lionville	**Date Data Assessment Completed:** 04/08/2010 **Complete By:** RDD	**Sample Collection Date:** 1/11/2010, 1/15/2010, 1/16/2010	**Sample Analysis Date:** 1/22/2010

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	No	Holding times exceeding by > 2x limit for NO_3, NO_2, PO_4^{-3}	J/R	Qualify positive results as estimated (J) and ND results as rejected (R).	J19F49, J19F50 Nitrate – J applied Nitrite – R applied Phosphate – R applied
Detection Limits	Lab reporting limits not provided in SAP				
Method Blank	Yes	None	-	No action	
Equipment Blank	None collected				
LCS Results	Yes	None	-	No action	
Matrix Spikes Sample ID: K19F49	Yes	None	-	No action	
Lab Duplicate Sample ID: K19F49	Yes	None	-	No action	
Field Duplicate	None collected				
QC Summary					
Validity of Data	No – some rejected data	Data were rejected due to holding time exceedances.	R	Nitrite & orthophosphate qualified as rejected (R)	J19F49, J19F50
Additional Notes:					

D.2.30 SDG K1907

SDG K1907 – VOC QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA		**SDG No.:** K1907		**W&C Project No.:**222007	
Medium: Surface Water – GW Upwelling				**Analytes:** VOA	
Samples: J19FF0, J19FF1					
Laboratory: Lionville	**Date Data Assessment Completed:** 4/9/2010 **Complete By:** LEM			**Sample Collection Date:** 1/11/2010	**Sample Analysis Date:** 1/23/2010

QC Parameter	**All in Spec.?**	**Non-Compliant Results**	**Flag**	**Action/ Notes**	**Associated Samples**
Holding Times	Yes	None	-	No Action	
Detection Limits	Yes	None	-	No Action	
Blanks					
Blanks - Method	Yes	None	-	No Action	
Equipment Blank Sample ID:	Not collected				
Trip Blank Sample ID: J19FF0, J19FF1	Yes	None	-	No Action	
Other QC Results					
Surrogate Recoveries	Yes	None	-	No Action	
LCS Results	No	Acetone = 169%	J	Qualify positive results as estimated (J).	No impacts since all results for acetone are ND.
Matrix Spike/Matrix Spike Duplicate Sample ID: J19FF1	Yes	None	-	No Action	
Field Duplicates Sample ID:	Not collected				
Summary					
Validity of Data	Not all QC criteria met, but no rejected results				
Additional Notes:					

SDG K1907 – Metals QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1907	**W&C Project No.:**222007
Medium: Surface Water - GW Upwelling		**Analytes:** Metals
Samples: J19F51, J19F53, J19F54, J19F55, J19F52, J19F56, J19H23, J19H25		

Laboratory: Lionville	**Date Data Assessment Completed:** 4/9/2010 **Complete By:** LEM	**Sample Collection Date:** 1/15, 16, 17, 18/2010	**Sample Analysis Date:** ICP – 1/27/2010 Hg – 1/28/2010

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No Action	
Detection Limits	No Laboratory reporting limit not provided for Titanium in the Work Plan.	RDL for Silicon exceeds reporting limit provided in the Work Plan.	-	No Action	
Blanks					
Preparation Blank	No	Al = 19 ug/L Ca = 27.5	UJ	Qualify positive results <5x blank concentration as estimated non-detect (UJ)	Impacts the following samples: Al: J19F51, J19F55, J19F52, J19H23, J19H25
Equipment Blank Sample IDs:	Not collected				
Other QC Results					
LCS Results	Yes	None	-	No Action	
Matrix Spike Sample ID: J19F53: Hg J19F53: others	Yes	None	-	No Action	
Lab Duplicate Sample ID: J19F53: Hg J19F53: others	No	Mo = 41%	-	No action since the difference between both results is <1x RDL.	
Field Duplicate Sample IDs:	Not collected				
QC Summary					
Validity of Data	Not all QC criteria met, but no rejected results				
Additional Notes:					

SDG K1907 – Radionuclides QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.: K1907**	**W&C Project No.:**222007	
Medium: Surface Water - GW Upwelling	**Analytes:** Gamma Spec, Isotopic Plutonium, Isotopic Thorium, Isotopic Uranium, Sr-90		
Samples: J19F51, J19F52, J19H23			
Laboratory: Eberline	**Date Data Assessment Completed:** 4/9/2010 **Complete By:** LEM	**Sample Collection Date:** 1/17, 18/2010	**Sample Analysis Date:** 1/28, 2/2/2010

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No Action	
Detection Limits	No	**RDL** Strontium **MDA** Potassium-40 Radium-226 Radium-228 Americium-241 Beryllium-7 Ruthenium-106	-	No Action	All samples
Blanks					
Method Blanks	Yes	None	-	No Action	
Equipment Blank Sample ID:	Not collected				
Other QC Results					
LCS Results	Yes	None	-	No Action	
Tracer Results	Yes	None	-	No Action	
Lab Duplicates Sample ID: J19F49	No	Uranium-233/234: 87%	-	No action since the difference between both results is less than 1x the RDL	
Field Duplicate Sample ID:	Not collected				
QC Summary					
Validity of Data	Yes; no data were qualified or rejected				
Additional Notes: The duplicate analyses are for sample J19F49 from SDG 1905.					

SDG K1907 – DOC QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1907	**W&C Project No.:**222007	
Medium: Surface Water - GW Upwelling		**Analytes:** DOC, Total Hardness, Total Alkalinity	
Samples: J19F51, J19F52, J19H23			
Laboratory: Lionville	**Date Data Assessment Completed:** 4/9/2010 **Complete By:** LEM	**Sample Collection Date:** 1/17, 18/2010	**Sample Analysis Date:** DOC: 2/3/2010

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No Action	
Detection Limit	Yes	None	-	No Action	
Method Blank	Yes	None	-	No Action	
Equipment Blank Sample ID:	Not collected				
LCS Results	Yes	None	-	No Action	
Matrix Spikes Sample ID: J19F51	Yes	None	-	No Action	
Lab Duplicate Sample ID: J19F51	Yes	None	-	No Action	
Field Duplicate Sample ID:	Not collected				
QC Summary					
Validity of Data	Yes; no data were qualified or rejected				
Additional Notes:					

SDG K1907 – Nitrate/Nitrite QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1907	**W&C Project No.:**222007
Medium: Surface Water - GW Upwelling		**Analytes:** Nitrate/Nitrite as N
Samples: J19F51, J19F52, J19H23		

Laboratory: Lionville	**Date Data Assessment Completed:** 4/9/2010 **Complete By:** LEM	**Sample Collection Date:** 1/17, 18/2010	**Sample Analysis Date:** 1/22/2010

QC Parameter	**All in Spec.?**	**Non-Compliant Results**	**Flag**	**Action/ Notes**	**Associated Samples**
Holding Times	Yes	None	-	No Action	
Detection Limit	Laboratory reporting limits not provided in SAP				
Method Blank	Yes	None	-	No Action	
Equipment Blank Sample IDs:	Not collected				
LCS Results	Yes	None	-	No Action	
Matrix Spikes Sample ID: J19F51	No	Nitrate/Nitrite as N = 122%	J	Qualify positive results as estimated (J).	Impacts all samples
Lab Duplicate Sample ID: J19F51	Yes	None	-	No Action	
Field Duplicate Sample IDs:	Not collected				
QC Summary					
Validity of Data	Not all QC criteria met, but no rejected results				
Additional Notes:					

SDG K1907 – Anions QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1907	**W&C Project No.:**222007	
Medium: Surface Water - GW Upwelling		**Analytes:** Bromide, Chloride, Fluoride, Nitrate, Nitrite, Orthophosphate, Sulfate	
Samples: J19F51, J19F52, J19H23			
Laboratory: Lionville	**Date Data Assessment Completed:** 4/9/2010 **Complete By:** LEM	**Sample Collection Date:** 1/17, 18/2010	**Sample Analysis Date:** 1/22/2010

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	No	Holding Time for nitrate, nitrite, and orthophosphate is 48 hours.	J/R	For holding times >2x criteria, qualify positive results as estimated (J) and ND results as rejected (R).	Impacts samples J19F51and J19F52 for nitrate, nitrite, and orthophosphate Nitrate = J applied Nitrite = R applied Phosphate = R applied
Detection Limit	Laboratory reporting limits not provided in SAP				
Method Blank	Yes	None	-	No Action	
Equipment Blank Sample IDs:	Not collected				
LCS Results	Yes	None	-	No Action	
Matrix Spikes Sample ID: J19F51	Yes	None	-	No Action	
Lab Duplicate Sample ID: J19F51	Yes	None	-	No Action	
Field Duplicate Sample IDs:	Not collected				
QC Summary					
Validity of Data	No	Holding Time for nitrate, nitrite, and orthophosphate were >2x criteria	R	ND results qualified as rejected	samples J19F51and J19F52 for nitrite and orthophosphate
Additional Notes:					

D.2.31 SDG K1917

Validated by ELR - Included in Appendix F

D.2.32 SDG K1923

SDG K1923 – VOC QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1923	**W&C Project No.:**222007	
Medium: Surface water – GW Upwelling		**Analytes:** VOA	
Samples: K19F88, K19HW7 Trip Blanks: J19FW4, J19FF2			
Laboratory: Lionville	**Date Data Assessment Completed:** 04/09/2010 **Complete By:** RDD	**Sample Collection Date:** 02/01/2010	**Sample Analysis Date:** 02/12/2010

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No action	
Detection Limits	Yes	None	-	No action	
Blanks					
Blanks - Method	Yes	None	-	No action	
Equipment Blank Sample ID:	None collected				
Trip Blank Sample ID: J19FW4, J19FF2	No	Acetone = 33.8 µg/L in J19FW4	-	No action based on guidance.	
Other QC Results					
Surrogate Recoveries	Yes	None	-	No action	
LCS Results	Yes	None	-	No action.	
Matrix Spike/Matrix Spike Duplicate Sample ID:J19F88	No	None	-	No action.	.
Field Duplicates Sample ID:	None collected				
Summary					
Validity of Data	Not all QC criteria were met, but no data were rejected.				
Additional Notes:					

SDG K1923 – Metals QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1923	**W&C Project No.:**222007	
Medium: Surface water – GW Upwelling		**Analytes:** Metals	
Samples: J19JJ3, J19JJ7, J19JJ4, J19JJ8, J19JJ5, J19JJ9, J19HR3, J19HR7, J19JD0, J19JD1, J19HR5, J19HR9, J19F88, J19F92, J19HW7, J19HW9			
Laboratory: Lionville	**Date Data Assessment Completed:** 04/09/2010 **Complete By:** RDD	**Sample Collection Date:** 1/29/2010, 1/30/2010, 1/31/2010, 2/01/2010	**Sample Analysis Date:** ICP – 02/16/2010 Hg – 02/17/2010

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No action	
Detection Limits	No	The detection limit for Si exceeds specification in work plan.	-	No action based on guidance.	
Blanks					
Preparation Blank	No	Al = 18 µg/L Ca = 22.5 µg/L Cr = 1.3 µg/L Fe = 16.6 µg/L Mg = 20.3 µg/L Mn = 0.964 µg/L Mo = 0.536 µg/L Ni = 0.841 µg/L Si = 12.2 µg/L	UJ	Qualify positive sample results < 5x the blank concentration as ND.	All samples. Impacts: Al – all except J19JJ7, J19HR9, J19F92 Ca – None Cr –J19HR3, J19HR7 Fe – J19JJ3, J19JJ4, J19JJ5, J19HR3, J19HR7, J19JD0, J19HR5, J19HR9, J19F88, J19HW7 Mg –None Mn –J19JJ3, J19JJ4, J19JJ5, J19JJ8, J19HR3, J19HR7, J19JD0, J19JD1, J19HR5, J19HR5, J19F88, J19HW7, J19F92, J19HW9 Mo –all samples Ni – None Si -None
Equipment Blank Sample ID:	None collected				
Other QC Results					
LCS Results	Yes	None	-	No action	
Matrix Spike Sample ID:J19JJ3	Yes	None	-	No action	
Lab Duplicate Sample ID:J19JJ3	Yes	None	-	No action	

SDG K1923 – Metals QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1923	**W&C Project No.:**222007
Medium: Surface water – GW Upwelling		**Analytes:** Metals
Samples: J19JJ3, J19JJ7, J19JJ4, J19JJ8, J19JJ5, J19JJ9, J19HR3, J19HR7, J19JD0, J19JD1, J19HR5, J19HR9, J19F88, J19F92, J19HW7, J19HW9		

Laboratory: Lionville	**Date Data Assessment Completed:** 04/09/2010 **Complete By:** RDD	**Sample Collection Date:** 1/29/2010, 1/30/2010, 1/31/2010, 2/01/2010	**Sample Analysis Date:** ICP – 02/16/2010 Hg – 02/17/2010

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Field Duplicate Sample ID:J19HR3/J19HR5	Yes	None	-	No action based on criteria in guidance.	
Field Duplicate Sample ID:J19HR7/J19HR9	Yes	None	-	No action based on criteria in guidance.	
QC Summary					
Validity of Data	Not all QC criteria were met but no data were rejected.				
Additional Notes:					

SDG K1923 – Radionuclides QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1923	**W&C Project No.:**222007	
Medium: Surface water – GW Upwelling (1 of 2)		**Analytes:** Gamma Spec, Isotopic Plutonium, Isotopic Thorium, Isotopic Uranium	
Samples: J19F88, J19HW7			
Laboratory: Eberline	**Date Data Assessment Completed:** 04/09/2010 **Complete By:** RDD	**Sample Collection Date:** 2/01/2010	**Sample Analysis Date:** 2/2010

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No action	
Detection Limits	Yes		-	No action	
Blanks					
Method Blanks	Yes	None	-	No action	
Equipment Blank Sample ID:	None collected				
Other QC Results					
LCS Results	Yes	None	-	No action	
Tracer Results	Yes	None	-	No action	
Matrix Spike	None analyzed				
Lab Duplicates Sample ID:J19P88	Yes	None	-	No action	
Field Duplicate Sample ID:	None collected				
QC Summary					
Validity of Data	All QC parameters had compliant results.				
Additional Notes:					

SDG K1923 – Radionuclides QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1923	**W&C Project No.:**222007
Medium: Surface water – GW Upwelling (2 of 2)	**Analytes:** Gamma Spec, Carbon 14, Isotopic Plutonium, Isotopic Thorium, Isotopic Uranium, total strontium	
Samples: J19HR3, J19HR5, J19JD0, J19JJ3, J19JJ4, J19JJ5		

Laboratory: Eberline	**Date Data Assessment Completed:** 04/09/2010 **Complete By:** RDD	**Sample Collection Date:** 1/29/2010, 1/30/2010, 1/31/2010	**Sample Analysis Date:** 2/2010

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No action	
Detection Limits	Yes		-	No action	
Blanks					
Method Blanks	Yes	None	-	No action	
Equipment Blank Sample ID:	None collected				
Other QC Results					
LCS Results	Yes	None	-	No action	
Tracer Results	No	Thorium-230 J19HR3 = 26% J19HR5 = 24% Uranium J19JJ5 = 26%	J	Qualify positive and ND sample results as estimated.	Thorium J19HR3 J19HR5 Uranium J19JJ5
Matrix Spike (C_{14}) Sample ID:J19HR5	Yes	None	-	No action	
Lab Duplicates Sample ID:J19HR3	Yes	None	-	No action	
Field Duplicate Sample ID:J19HR5/J19HR3	Yes	None	-	No action	
QC Summary					
Validity of Data	Not all QC parameters had compliant results but no data were rejected.				
Additional Notes:					

SDG K1923 – DOC QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1923	**W&C Project No.:**222007
Medium: Surface water – GW Upwelling		**Analytes:** DOC
Samples: J19HR3, J19HR5, J19JD0, J19JJ3, J19JJ4, J19JJ5, J19F88, J19HW7		

Laboratory: Lionville	**Date Data Assessment Completed:** 04/09/2010 **Complete By:** RDD	**Sample Collection Date:** 1/29/2010, 1/30/2010, 1/31/2010, 2/01/2010	**Sample Analysis Date:** 02/18/2010

QC Parameter	**All in Spec.?**	**Non-Compliant Results**	**Flag**	**Action/ Notes**	**Associated Samples**
Holding Times	Yes	None	-	No action	
Detection Limit	Yes	None	-	No action	
Method Blank	Yes	None	-	No action	
Equipment Blank	None collected				
LCS Results	Yes	None	-	No action	
Matrix Spikes Sample ID: J19JJ4	Yes	None	-	No action	
Field Duplicate Sample ID: J19HR3/J19HR5	Yes	None	-	No action	
Lab Duplicate Sample ID: J19JJ3	Yes	None	-	No action	
QC Summary					
Validity of Data	All QC parameters were compliant with criteria.				
Additional Notes:					

D.2.33 SDG K1931

SDG K1931 – Metals QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA		**SDG No.:** K1931	**W&C Project No.:**222007
Medium: Surface Water - GW Upwelling			**Analytes:** Metals (Group 1 of 2)
Samples: J19J77, J19J81, J19J78, J19J82, J19JT6, J19JV2, J19JT4, J19JV0, J19JT7, J19JV3, J19JT5, J19JV1			
Laboratory: Lionville	**Date Data Assessment Completed:** 4/9/2010 **Complete By:** LEM	**Sample Collection Date:** 2/5, 6, 7/2010	**Sample Analysis Date:** ICP – 2/26/2010 Hg – 2/22/2010

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No Action	
Detection Limits	Yes; laboratory reporting limit not provided for titanium in SAP.	None	-	No Action	
Blanks					
Preparation Blank	No	Al = 10.4 ug/L	UJ	Qualify positive results <5x blank concentration as estimated non-detect (UJ)	Impacts the following samples: Al: J19J77, J19J81, J19J78, J19JT6, J19JT4, J19JT7, J19JT5, J19JV1
Equipment Blank Sample IDs:	Not collected				
Other QC Results					
LCS Results	Yes	None	-	No Action	
Matrix Spike Sample ID: J19J77: Hg J19J77: others	Yes	None	-	No Action	
Lab Duplicate Sample ID: J19J77: Hg J19J77: others	No	V = 27%	-	No action since the difference between both results is <1x RDL.	
Field Duplicate Sample IDs:	Not collected				
QC Summary					
Validity of Data	Not all QC criteria met, but no rejected results				
Additional Notes:					

SDG K1931 – Metals QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1931	**W&C Project No.:**222007
Medium: Surface Water - GW Upwelling		**Analytes:** Metals (Group 2 of 2)
Samples: J19JT8, J19JV4		

Laboratory: Lionville	**Date Data Assessment Completed:** 4/9/2010 **Complete By:** LEM	**Sample Collection Date:** 2/8/2010	**Sample Analysis Date:** ICP – 2/27/2010 Hg – 2/19/2010

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No Action	
Detection Limits	Yes; laboratory reporting limit not provided for titanium in SAP.	None	-	No Action	
Blanks					
Preparation Blank	No	Hg = 0.0620 Al = 10.4 ug/L	UJ	Qualify positive results <5x blank concentration as estimated non-detect (UJ)	Impacts the following samples: Hg: J19JV4 Al: J19JT8
Equipment Blank Sample IDs:	Not collected				
Other QC Results					
LCS Results	Yes	None	-	No Action	
Matrix Spike Sample ID: J19JV4: Hg J19JT8: others	Yes	None	-	No Action	
Lab Duplicate Sample ID: J19JV4: Hg J19JT8: others	No	Mn = 25%	-	No action since the difference between both results is <1x RDL.	
Field Duplicate Sample IDs:	Not collected				
QC Summary					
Validity of Data	Not all QC criteria met, but no rejected results				
Additional Notes:					

SDG K1931 – Radionuclides QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.: K1931**	**W&C Project No.:**222007	
Medium: Surface Water - GW Upwelling	**Analytes:** Gamma Spec, Isotopic Plutonium, Isotopic Thorium, Isotopic Uranium, Sr-90 (Group 1 of 2)		
Samples: J19JT4, J19JT5, J19JT6, J19JT7			
Laboratory: Eberline	**Date Data Assessment Completed:** 4/9/2010 **Complete By:** LEM	**Sample Collection Date:** 2/6, 7/2010	**Sample Analysis Date:** 2/17, 19, 22, 23/2010

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No Action	
Detection Limits	No	**RDL** Strontium **MDA** Potassium-40 Cesium-137 Radium-226 Radium-228 Europium-152 Europium-154 Europium-155 Americium-241 Beryllium-7 Ruthenium-106 Antimomy-125 Cesium-134	-	No Action	All samples
Blanks					
Method Blanks	Yes	None	-	No Action	
Equipment Blank Sample ID:	Not collected				
Other QC Results					
LCS Results	Yes	None	-	No Action	
Tracer Results	Yes	None	-	No Action	
Lab Duplicates Sample ID: J19J77	No	Uranium-233/234: 38%	-	No Action since the difference between both results is less than 1x the RDL	
Field Duplicate Sample ID:	Not collected				
QC Summary					
Validity of Data	Yes; no data were qualified or rejected				
Additional Notes:					

SDG K1931 – Radionuclides QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1931	**W&C Project No.:**222007

Medium: Surface Water - GW Upwelling	**Analytes:** Gamma Spec, Isotopic Plutonium, Isotopic Thorium, Isotopic Uranium, Sr-90 (Group 2 of 2)
Samples: J19J77, J19J78, J19JT8	

Laboratory: Eberline	**Date Data Assessment Completed:** 4/9/2010 **Complete By:** LEM	**Sample Collection Date:** 2/5, 8/2010	**Sample Analysis Date:** 2/19, 23, 24/2010

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No Action	
Detection Limits	No	**RDL** Strontium **MDA** Potassium-40 Radium-226 Radium-228 Americium-241 Beryllium-7 Ruthenium-106 Cesium-134	-	No Action	All samples
Blanks					
Method Blanks	Yes	None	-	No Action	
Equipment Blank Sample ID:	Not collected				
Other QC Results					
LCS Results	Yes	None	-	No Action	
Tracer Results	Yes	None	-	No Action	
Lab Duplicates Sample ID: J19JT4	No	Uranium-233/234: 41%	-	No Action since the difference between both results is less than 1x the RDL	
Field Duplicate Sample ID:	Not collected				
QC Summary					
Validity of Data	Yes; no data were qualified or rejected				
Additional Notes:					

SDG K1931 – DOC QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1931	**W&C Project No.:**222007	
Medium: Surface Water – GW Upwelling		**Analytes:** DOC (Group 1 of 2)	
Samples: J19J77, J19J78, J19JT6, J19JT4, J19JT7, J19JT5			
Laboratory: Lionville	**Date Data Assessment Completed:** 4/9/2010 **Complete By:** LEM	**Sample Collection Date:** 2/5, 6, 7/2010	**Sample Analysis Date:** 2/22/2010

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No Action	
Detection Limit	Yes	None	-	No Action	
Method Blank	No	DOC = 0.298 mg/L	-	No action since sample results >5x blank concentration.	
Equipment Blank Sample ID:	Not collected				
LCS Results	Yes	None	-	No Action	
Matrix Spikes Sample ID: J19J77	Yes	None	-	No Action	
Lab Duplicate Sample ID: J19J77	Yes	None	-	No Action	
Field Duplicate Sample ID:	Not collected				
QC Summary					
Validity of Data	Yes; no data were qualified or rejected				
Additional Notes:					

SDG K1931 – DOC QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1931	**W&C Project No.:**222007	
Medium: Surface Water – GW Upwelling		**Analytes:** DOC (Group 2 of 2)	
Samples: J19JT8			
Laboratory: Lionville	**Date Data Assessment Completed:** 4/9/2010 **Complete By:** LEM	**Sample Collection Date:** 2/8/2010	**Sample Analysis Date:** 2/24/2010

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No Action	
Detection Limit	Yes	None	-	No Action	
Method Blank	No	DOC = 0.491 mg/L	UJ	Qualify positive results <5x blank concentration as estimated non-detect (UJ).	Impacts to sample J19JT8
Equipment Blank Sample ID:	Not collected				
LCS Results	Yes	None	-	No Action	
Matrix Spikes Sample ID: J19JT8	Yes	None	-	No Action	
Lab Duplicate Sample ID: J19JT8	Yes	None	-	No Action	
Field Duplicate Sample ID:	Not collected				
QC Summary					
Validity of Data	Not all QC criteria met, but no rejected results				
Additional Notes:					

D.2.34 SDG K1944

SDG K1944 – Metals QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1944	**W&C Project No.:**222007
Medium: Surface Water – GW Upwelling		**Analytes:** Metals
Samples: J19K12, J19K14, J19K13, J19K15, J19J76, J19J80, J19J79, J19J83, J19JM8, J19JN0, J19JM9, J19JN1, J19K53, J19K59, J19K54, J19K60, J19FW8		

Laboratory: Lionville	**Date Data Assessment Completed:** 4/12/2010 **Complete By:** LEM	**Sample Collection Date:** 2/12-15/2010	**Sample Analysis Date:** ICP – 3/17/2010 Hg – 3/2/2010

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No Action	
Detection Limits	No Laboratory reporting limit not provided for titanium in Work Plan.	RDL for silicon exceeds reporting limit provided in the Work Plan.	-	No Action	
Blanks					
Preparation Blank	No	Al = 19.87 ug/L Ba = 0.389 Ca = 3805 Fe = 10.7 Mn = 0.582 Mo = 0.566	UJ	Qualify positive results <5x blank concentration as estimated non-detect (UJ)	Impacts the following samples: Al: J19K12, J19K13, J19J76, J19J80, J19J79, J19JM8, J19JN0, J19JM9, J19JN1, J19K53, J19K54, J19K60 Ca: J19FW8 Fe: J19K12, J19K13, J19J79, J19JM8, J19JM9, J19K53, J19K60 Mn: J19K12, J19K13, J19J76, J19J80, J19J79, J19JM8, J19JM9, J19K53, J19K59, J19K54, J19K60 Mo: J19K12, J19K13, J19K15, J19J76, J19J80, J19J79, J19J83, J19JM8, J19JN0, J19JM9, J19JN1, J19K53, J19K59, J19K54,

SDG K1944 – Metals QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1944	**W&C Project No.:**222007	
Medium: Surface Water – GW Upwelling		**Analytes:** Metals	
Samples: J19K12, J19K14, J19K13, J19K15, J19J76, J19J80, J19J79, J19J83, J19JM8, J19JN0, J19JM9, J19JN1, J19K53, J19K59, J19K54, J19K60, J19FW8			
Laboratory: Lionville	**Date Data Assessment Completed:** 4/12/2010 **Complete By:** LEM	**Sample Collection Date:** 2/12-15/2010	**Sample Analysis Date:** ICP – 3/17/2010 Hg – 3/2/2010

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
					J19K60
Equipment Blank Sample IDs: J19K54, J19K60/ J19FW8	No	B = 2.59 ug/L Ca = 31.2 Na = 56.7 Zn = 8.86		No action based on guidance	
Other QC Results					
LCS Results	Yes	None	-	No Action	
Matrix Spike Sample ID: J19K14: Hg J19K12: others	No	Si = 39%	J	Qualify positive and non-detect results as estimated (J).	Impacts all samples
Lab Duplicate Sample ID: J19K14: Hg J19K12: others	No	Al = 21% Fe = 38% Mo = 23%	-	No action since the difference between both results is <1x RDL.	
Field Duplicate Sample IDs:	Not collected				
QC Summary					
Validity of Data	Not all QC criteria met, but no rejected results				
Additional Notes:					

SDG K1944 – Radionuclides QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.: K1944**	**W&C Project No.:**222007
Medium: Surface Water – GW Upwelling	**Analytes:** Gamma Spec, Isotopic Plutonium, Isotopic Thorium, Isotopic Uranium, Technetium-99, Sr-90, Tritium	
Samples: J19J76, J19J79, J19JM8, J19JM9, J19K12, J19K13, J19K53, J19K54, J19KK4, J19KK5		

Laboratory: Eberline	**Date Data Assessment Completed:** 4/12/2010 **Complete By:** LEM	**Sample Collection Date:** 2/12-15/2010	**Sample Analysis Date:** 2/23-3/2/2010

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No Action	
Detection Limits	No	**RDL** Strontium **MDA** Potassium-40 Radium-226 Radium-228 Beryllium-7 Ruthenium-106	-	No Action	All samples
Blanks					
Method Blanks	Yes	None	-	No Action	
Equipment Blank Sample ID:	Not collected				
Other QC Results					
LCS Results	Yes	None	-	No Action	
Tracer Results	Yes	None	-	No Action	
Matrix Spike Sample ID: J19K53: Tritium	Yes	None	-	No Action	
Lab Duplicates Sample ID: J19J76	No	Uranium-233/234: 63%	-	No action since the difference between both results is less than 1x the RDL	
Field Duplicate Sample ID:	Not collected				
QC Summary					
Validity of Data	Yes; no data were qualified or rejected				
Additional Notes:					

SDG K1944 – DOC QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1944	**W&C Project No.:**222007
Medium: Surface Water – GW Upwelling		**Analytes:** DOC
Samples: J19K12, J19K13, J19J76, J19J79, J19JM8, J19JM9, J19K53, J19K54, J19FW8		

Laboratory: Lionville	**Date Data Assessment Completed:** 4/12/2010 **Complete By:** LEM	**Sample Collection Date:** 2/12-15/2010	**Sample Analysis Date:** 3/1/2010

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No Action	
Detection Limit	Yes	None	-	No Action	
Method Blank	No	DOC = 0.734 mg/L	UJ	Qualify positive results <5x highest blank concentration as estimated non-detect (UJ).	Impacts all samples
Equipment Blank Sample IDs: J19K54/ J19FW8	No	DOC = 0.909 mg/L	-	No action based on guidance	
LCS Results	Yes	None	-	No Action	
Matrix Spikes Sample ID: J19K12	Yes	None	-	No Action	
Lab Duplicate Sample ID: J19K12	Yes	None	-	No Action	
Field Duplicate Sample ID:	Not collected				
QC Summary					
Validity of Data	Not all QC criteria met, but no rejected results				
Additional Notes:					

SDG K1944 – Nitrate/Nitrite QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1944	**W&C Project No.:**222007
Medium: Surface Water – GW Upwelling		**Analytes:** Nitrate/Nitrite as N
Samples: J19K12, J19K13, J19J76, J19J79, J19JM8, J19JM9, J19K53, J19K54, J19FW8		

Laboratory: Lionville	**Date Data Assessment Completed:** 4/12/2010 **Complete By:** LEM	**Sample Collection Date:** 2/12-15/2010	**Sample Analysis Date:** 3/2/2010

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No Action	
Detection Limit	Laboratory reporting limits not provided in SAP				
Method Blank	Yes	None	-	No Action	
Equipment Blank Sample IDs: J19K54/ J19FW8	No	Nitrate/Nitrite as N = 0.07 mg/L	-	No action based on guidance	
LCS Results	Yes	None	-	No Action	
Matrix Spikes Sample ID: J19K12	Yes	None	-	No Action	
Lab Duplicate Sample ID: J19K12	Yes	None	-	No Action	
Field Duplicate Sample IDs:	Not collected				
QC Summary					
Validity of Data	Yes; no data were qualified or rejected				
Additional Notes:					

SDG K1944 – Anions QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1944	**W&C Project No.:**222007	
Medium: Surface Water – GW Upwelling		**Analytes:** Bromide, Chloride, Fluoride, Nitrate, Nitrite, Orthophosphate, Sulfate	
Samples: J19K12, J19K13, J19K53, J19K54, J19FW8			
Laboratory: Lionville	**Date Data Assessment Completed:** 4/12/2010 **Complete By:** LEM	**Sample Collection Date:** 2/12, 15/2010	**Sample Analysis Date:** 3/10/2010

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	No	Holding Time for nitrate, nitrite, and orthophosphate is 48 hours.	J/R	For holding times >2x criteria, qualify positive results as estimated (J) and ND results as rejected (R).	Impacts all samples for nitrate, nitrite, and orthophosphate For samples J19K12, J19K13, J19K53, J19K54 Nitrate = J applied Nitrite = R applied Phosphate = R applied For sample J19FW8 Nitrate = R applied Nitrite = R applied Phosphate = R applied
Detection Limit	Laboratory reporting limits not provided in SAP				
Method Blank	Yes	None	-	No Action	
Equipment Blank Sample IDs: J19K54/ J19FW8	Yes	None	-	No Action	
LCS Results	Yes	None	-	No Action	
Matrix Spikes Sample ID: J19K53	Yes	None	-	No Action	
Lab Duplicate Sample ID: J19K53	No	F = 20.2	-	No action since the difference between both results is <1x RDL	

SDG K1944 – Anions QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1944	**W&C Project No.:**222007	
Medium: Surface Water – GW Upwelling		**Analytes:** Bromide, Chloride, Fluoride, Nitrate, Nitrite, Orthophosphate, Sulfate	
Samples: J19K12, J19K13, J19K53, J19K54, J19FW8			
Laboratory: Lionville	**Date Data Assessment Completed:** 4/12/2010 **Complete By:** LEM	**Sample Collection Date:** 2/12, 15/2010	**Sample Analysis Date:** 3/10/2010

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
		Cl = 23.4	J	Qualify positive results as estimated (J) because difference between both results is >1x RDL.	Impacts the following samples: Cl: J19K12, J19K13, J19K53, J19K54
Field Duplicate Sample IDs:	Not collected				
QC Summary					
Validity of Data	No	Holding Time for nitrate, nitrite, and orthophosphate were >2x criteria	R	ND results qualified as rejected	Impacts the following samples: Nitrate: J19FW8 Nitrite and orthophosphate: J19K12, J19K13, J19K53, J19K54, J19FW8
Additional Notes:					

D.2.35 SDG K1952

SDG K1952 – VOC QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1952	**W&C Project No.:**222007
Medium: Surface Water – GW Upwelling	**Analytes:** VOA	
Samples: J19KX7, J19FW6		

Laboratory: Lionville	**Date Data Assessment Completed:** 4/12/2010 **Complete By:** LEM	**Sample Collection Date:** 2/22/2010	**Sample Analysis Date:** 3/4/2010

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No Action	
Detection Limits	Yes	None	-	No Action	
Blanks					
Blanks - Method	Yes	None	-	No Action	
Equipment Blank Sample ID:	Not collected				
Trip Blank Sample ID: J19KX7, J19KY0/ J19FW6	Yes	None	-	No Action	
Other QC Results					
Surrogate Recoveries	Yes	None	-	No Action	
LCS Results	Yes	None	-	No Action	
Matrix Spike/Matrix Spike Duplicate Sample ID: J19KX7	Yes	None	-	No Action	
Field Duplicates Sample ID:	Not collected				
Summary					
Validity of Data	Yes; no data were qualified or rejected				
Additional Notes:					

SDG K1952 – Metals QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1952	**W&C Project No.:**222007	
Medium: Surface Water – GW Upwelling		**Analytes:** Metals	
Samples: J19H22, J19H24, J19K63, J19KB7, J19K62, J19K66, J19K49, J19K55, J19K50, J19K56, J19K52, J19K58, J19KX7, J19KY0			
Laboratory: Lionville	**Date Data Assessment Completed:** 4/12/2010 **Complete By:** LEM	**Sample Collection Date:** 2/19-22/2010	**Sample Analysis Date:** ICP – 3/18/2010 Hg – 3/11/2010

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No Action	
Detection Limits	No Laboratory reporting limit not provided for titanium in Work Plan.	RDL for silicon exceeds reporting limit provided in the Work Plan.	-	No Action	
Blanks					
Preparation Blank	No	Al = 14.3 ug/L	UJ	Qualify positive results <5x blank concentration as estimated non-detect (UJ)	Impacts the following samples: Al: J19H22, J19K63, J19K62, J19KX7
Equipment Blank Sample IDs:	Not collected				
Other QC Results					
LCS Results	Yes	None	-	No Action	
Matrix Spike Sample ID: J19H24: Hg J19H22: others	Yes	None	-	No Action	
Lab Duplicate Sample ID: J19H24: Hg J19H22: others	No	Fe = 33%	-	No action since the difference between both results is <1x RDL.	
Field Duplicate Sample IDs: J19K49/ J19K52 (unfiltered samples)	No	B: 40.5% Cr: 200% Mo: 200% Ni: 200% P: 200%	-	No action based on guidance	

SDG K1952 – Metals QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1952	**W&C Project No.:**222007
Medium: Surface Water – GW Upwelling		**Analytes:** Metals
Samples: J19H22, J19H24, J19K63, J19KB7, J19K62, J19K66, J19K49, J19K55, J19K50, J19K56, J19K52, J19K58, J19KX7, J19KY0		

Laboratory: Lionville	**Date Data Assessment Completed:** 4/12/2010 **Complete By:** LEM	**Sample Collection Date:** 2/19-22/2010	**Sample Analysis Date:** ICP – 3/18/2010 Hg – 3/11/2010

QC Parameter	**All in Spec.?**	**Non-Compliant Results**	**Flag**	**Action/ Notes**	**Associated Samples**
J19K55/ J19K58 (filtered samples)		B: 3805% Li: 20.4% Mo: 200% Ti: 200% Zn: 200%			
QC Summary					
Validity of Data	Not all QC criteria met, but no rejected results				
Additional Notes:					

SDG K1952 – Radionuclides QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA		**SDG No.:** K1952		**W&C Project No.:**222007	
Medium: Surface Water – GW Upwelling			**Analytes:** Gamma Spec, Isotopic Plutonium, Isotopic Thorium, Isotopic Uranium, Technetium-99, Sr-90, Tritium		
Samples: J19H22, J19K49, J19K50, J19K52, J19K62, J19K63, J19KK6, J19KM4, J19KX7					
Laboratory: Eberline	**Date Data Assessment Completed:** 4/12/2010 **Complete By:** LEM		**Sample Collection Date:** 2/19-22/2010	**Sample Analysis Date:** 3/2-3/8/2010	

QC Parameter	**All in Spec.?**	**Non-Compliant Results**	**Flag**	**Action/ Notes**	**Associated Samples**
Holding Times	Yes	None	-	No Action	
Detection Limits	No	**RDL** Strontium **MDA** Potassium-40 Radium-226 Radium-228 Beryllium-7 Ruthenium-106	-	No Action	All samples
Blanks					
Method Blanks	Yes	None	-	No Action	
Equipment Blank Sample ID:	Not collected				
Other QC Results					
LCS Results	Yes	None	-	No Action	
Tracer Results	Yes	None	-	No Action	
Matrix Spike Sample ID: J19K50: Tritium	Yes	None	-	No Action	
Lab Duplicates Sample ID: J19H22	No	Uranium-238: 98%	-	No action since the difference between both results is less than 1x the RDL	
Field Duplicate Sample IDs: J19K49/ J19K52: Gamma Spec, Isotopic Thorium, Isotopic Uranium, Sr-90, Tritium	No	Uranium-238 = 200%	-	No action based on guidance	
J19KM4/ J19KK6: Technetium-99	Yes	None	-	No Action	
QC Summary					

SDG K1952 – Radionuclides QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1952	**W&C Project No.:**222007

Medium: Surface Water – GW Upwelling	**Analytes:** Gamma Spec, Isotopic Plutonium, Isotopic Thorium, Isotopic Uranium, Technetium-99, Sr-90, Tritium

Samples: J19H22, J19K49, J19K50, J19K52, J19K62, J19K63, J19KK6, J19KM4, J19KX7

Laboratory: Eberline	**Date Data Assessment Completed:** 4/12/2010 **Complete By:** LEM	**Sample Collection Date:** 2/19-22/2010	**Sample Analysis Date:** 3/2-3/8/2010

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Validity of Data	Yes; no data were qualified or rejected				
Additional Notes:					

SDG K1952 – DOC QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1952	**W&C Project No.:**222007			
Medium: Surface Water – GW Upwelling		**Analytes:** DOC			
Samples: J19H22, J19K63, J19K62, J19K49, J19K50, J19K52, J19KX7					
Laboratory: Lionville	**Date Data Assessment Completed:** 4/12/2010 **Complete By:** LEM	**Sample Collection Date:** 2/19-22/2010	**Sample Analysis Date:** 3/9/2010		
QC Parameter	**All in Spec.?**	**Non-Compliant Results**	**Flag**	**Action/ Notes**	**Associated Samples**
Holding Times	Yes	None	-	No Action	
Detection Limit	Yes	None	-	No Action	
Method Blank	Yes	None	-	No Action	
Equipment Blank Sample IDs:	Not collected				
LCS Results	Yes	None	-	No Action	
Matrix Spikes Sample ID: J19K63	Yes	None	-	No Action	
Lab Duplicate Sample ID: J19K63	Yes	None	-	No Action	
Field Duplicate Sample ID: J19K49/ J19K52	Yes	None	-	No Action	
QC Summary					
Validity of Data	Yes; no data were qualified or rejected				
Additional Notes:					

SDG K1952 – Nitrate/Nitrite QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1952	**W&C Project No.:**222007	
Medium: Surface Water – GW Upwelling		**Analytes:** Nitrate/Nitrite as N	
Samples: J19H22, J19K63, J19K62, J19K49, J19K50, J19K52			
Laboratory: Lionville	**Date Data Assessment Completed:** 4/12/2010 **Complete By:** LEM	**Sample Collection Date:** 2/19-22/2010	**Sample Analysis Date:** 3/10/2010

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No Action	
Detection Limit	Laboratory reporting limits not provided in SAP				
Method Blank	Yes	None	-	No Action	
Equipment Blank Sample IDs:	Not collected				
LCS Results	Yes	None	-	No Action	
Matrix Spikes Sample ID: J19H22	Yes	None	-	No Action	
Lab Duplicate Sample ID: J19H22	Yes	None	-	No Action	
Field Duplicate Sample ID: J19K49/ J19K52	No	Nitrate/Nitrite as N = 57%	-	No action based on guidance	
QC Summary					
Validity of Data	Yes; no data were qualified or rejected				
Additional Notes:					

SDG K1952 – Anions QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1952	**W&C Project No.:**222007
Medium: Surface Water – GW Upwelling		**Analytes:** Bromide, Chloride, Fluoride, Nitrate, Nitrite, Orthophosphate, Sulfate
Samples: J19H22, J19K63, J19K62, J19K49, J19K50, J19K52		

Laboratory: Lionville	**Date Data Assessment Completed:** 4/12/2010 **Complete By:** LEM	**Sample Collection Date:** 2/19-22/2010	**Sample Analysis Date:** 3/10/2010

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	No	Holding Time for nitrate, nitrite, and orthophosphate is 48 hours.	J/R	For holding times >2x criteria, qualify positive results as estimated (J) and ND results as rejected (R).	Impacts all samples for nitrate, nitrite, and orthophosphate Nitrate = J applied Nitrite = R applied Phosphate = R applied
Detection Limit	Laboratory reporting limits not provided in SAP				
Method Blank	Yes	None	-	No Action	
Equipment Blank Sample IDs:	No collected				
LCS Results	Yes	None	-	No Action	
Matrix Spikes Sample ID: J19H22	No	Orthophosphate = 126%	-	No action since all results are non-detect.	
Lab Duplicate Sample ID: J19H22	No	Nitrate = 82.6%	J	Qualify positive results as estimated (J) because both results are >5x RDL.	Impacts all samples for nitrate
Field Duplicate Sample ID: J19K49/ J19K52	No	Nitrate = 37.9%	-	No action based on guidance	
QC Summary					
Validity of Data	No	Holding Time for nitrate, nitrite, and orthophosphate were >2x criteria	R	ND results qualified as rejected	Impacts all samples for nitrite and orthophosphate
Additional Notes:					

D.2.36 SDG K1955

SDG K1955 – VOC QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1955	**W&C Project No.:**222007
Medium: Surface Water – GW Upwelling	**Analytes:** VOA	
Samples: J19KJ3, J19KX6		

Laboratory: Lionville	**Date Data Assessment Completed:** 4/13/2010 **Complete By:** LEM	**Sample Collection Date:** 2/26/2010	**Sample Analysis Date:** 3/5/2010

QC Parameter	**All in Spec.?**	**Non-Compliant Results**	**Flag**	**Action/ Notes**	**Associated Samples**
Holding Times	Yes	None	-	No Action	
Detection Limits	Yes	None	-	No Action	
Blanks					
Blanks - Method	Yes	None	-	No Action	
Equipment Blank Sample ID:	Not collected				
Trip Blank Sample ID: J19KX6, J19KX9/ J19 KJ3	Yes	None	-	No Action	
Other QC Results					
Surrogate Recoveries	Yes	None	-	No Action	
LCS Results	Yes	None	-	No Action	
Matrix Spike/Matrix Spike Duplicate Sample ID: J19KX6	Yes	None	-	No Action	
Field Duplicates Sample ID:	Not collected				
Summary					
Validity of Data	Yes; no data were qualified or rejected				
Additional Notes:					

SDG K1955 – Metals QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1955	**W&C Project No.:**222007	
Medium: Surface Water – GW Upwelling		**Analytes:** Metals	
Samples: J19JJ6, J19JK0, J19KF4, J19K51, J19K57, J19KX6, J19KX9, J19JT3, J19JT9, J19KF3, J19K61, J19K65			
Laboratory: Lionville	**Date Data Assessment Completed:** 4/13/2010 **Complete By:** LEM	**Sample Collection Date:** 2/26-28/2010	**Sample Analysis Date:** ICP – 3/19/2010 Hg – 3/13/2010

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No Action	
Detection Limits	No Laboratory reporting limit not provided for titanium in Work Plan.	RDL for silicon exceeds reporting limit provided in the Work Plan.	-	No Action	
Blanks					
Preparation Blank	No	Al = 24.2 ug/L Fe = 31.5 Ni = 1.43	UJ	Qualify positive results <5x blank concentration as estimated non-detect (UJ)	Impacts the following samples: Al: J19JJ6, J19JK0, J19KF4, J19K51, J19KX6, J19KX9, J19JT3, J19JT9, J19KF3, J19K61 Fe: J19JJ6, J19K51, J19KX6, J19JT3, J19KF3, J19K61 Ni: J19JK0, J19K51, J19K57, J19JT3
Equipment Blank Sample IDs:	Not collected				
Other QC Results					
LCS Results	Yes	None	-	No Action	
Matrix Spike Sample ID: J19JK0: Hg J19JJ6: others	Yes	None	-	No Action	

SDG K1955 – Metals QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1955	**W&C Project No.:**222007
Medium: Surface Water – GW Upwelling		**Analytes:** Metals
Samples: J19JJ6, J19JK0, J19KF4, J19K51, J19K57, J19KX6, J19KX9, J19JT3, J19JT9, J19KF3, J19K61, J19K65		

Laboratory: Lionville	**Date Data Assessment Completed:** 4/13/2010 **Complete By:** LEM	**Sample Collection Date:** 2/26-28/2010	**Sample Analysis Date:** ICP – 3/19/2010 Hg – 3/13/2010

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Lab Duplicate Sample ID: J19JK0: Hg J19JJ6: others	No	Al = 21% Fe = 53% Li = 38% Ti = 32% Zn = 123%	-	No action since the difference between both results is <1x RDL.	
Field Duplicate	Not collected				
QC Summary					
Validity of Data	Not all QC criteria met, but no rejected results				
Additional Notes:					

SDG K1955 – Radionuclides QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.: K1955**	**W&C Project No.:**222007

Medium: Surface Water – GW Upwelling	**Analytes:** Gamma Spec, Isotopic Plutonium, Isotopic Thorium, Isotopic Uranium, Sr-90, Carbon-14, Tritium
Samples: J19JJ6, J19JT3, J19K51, J19K61, J19KF3, J19KX6, J19L13	

Laboratory: Eberline	**Date Data Assessment Completed:** 4/13/2010 **Complete By:** LEM	**Sample Collection Date:** 2/26-28/2010	**Sample Analysis Date:** 3/8-3/11/2010

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No Action	
Detection Limits	No	**RDL** Strontium Carbon-14 **MDA** Carbon-14 Potassium-40 Radium-226 Radium-228 Beryllium-7 Ruthenium-106	-	No Action	All samples
Blanks					
Method Blanks	Yes	None	-	No Action	
Equipment Blank Sample ID:	Not collected				
Other QC Results					
LCS Results	Yes	None	-	No Action	
Tracer Results	Yes	None	-	No Action	
Matrix Spike Sample ID: J19K51: Tritium J19L13: Carbon-14	Yes	None	-	No Action	
Lab Duplicates Sample ID: J19JJ6	No	Uranium-233/234: 29% Uranium-238: 29%	-	No action since the difference between both results is less than 1x the RDL	
Field Duplicate	Not collected				
QC Summary					
Validity of Data	Yes; no data were qualified or rejected				
Additional Notes:					

SDG K1955 – DOC QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1955	**W&C Project No.:**222007
Medium: Surface Water - GW Upwelling		**Analytes:** DOC
Samples: J19JJ6, J19K51, J19KX6, J19JT3, J19KF3, J19K61		

Laboratory: Lionville	**Date Data Assessment Completed:** 4/13/2010 **Complete By:** LEM	**Sample Collection Date:** 2/26-28/2010	**Sample Analysis Date:** 3/12/2010

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No Action	
Detection Limit	Yes	None	-	No Action	
Blanks					
Method Blank	No	DOC = 0.305 mg/L	-	No action because sample results are >5x highest blank concentration.	
Equipment Blank Sample IDs:	Not collected				
Other QC					
LCS Results	Yes	None	-	No Action	
Matrix Spikes Sample ID: J19JJ6	Yes	None	-	No Action	
Lab Duplicate Sample ID: J19JJ6	Yes	None	-	No Action	
Field Duplicate Sample ID:	Not collected				
QC Summary					
Validity of Data	Yes; no data were qualified or rejected				
Additional Notes:					

SDG K1955 – Nitrate/Nitrite QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1955	**W&C Project No.:**222007
Medium: Surface Water – GW Upwelling		**Analytes:** Nitrate/Nitrite as N
Samples: J19K51, J19K61		

Laboratory: Lionville	**Date Data Assessment Completed:** 4/13/2010 **Complete By:** LEM	**Sample Collection Date:** 2/26, 28/2010	**Sample Analysis Date:** 3/10/2010

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No Action	
Detection Limit	Laboratory reporting limits not provided in SAP				
Blanks					
Method Blank	Yes	None	-	No Action	
Equipment Blank Sample IDs:	Not collected				
Other QC					
LCS Results	Yes	None	-	No Action	
Matrix Spikes Sample ID: J19K51	Yes	None	-	No Action	
Lab Duplicate Sample ID: J19K61	Yes	None	-	No Action	
Field Duplicate Sample ID:	Not collected				
QC Summary					
Validity of Data	Yes; no data were qualified or rejected				
Additional Notes:					

SDG K1955 – Anions QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1955	**W&C Project No.:**222007	
Medium: Surface Water – GW Upwelling		**Analytes:** Bromide, Chloride, Fluoride, Nitrate, Nitrite, Orthophosphate, Sulfate	
Samples: J19K51, J19K61			
Laboratory: Lionville	**Date Data Assessment Completed:** 4/13/2010 **Complete By:** LEM	**Sample Collection Date:** 2/26, 28/2010	**Sample Analysis Date:** 3/3, 10/2010

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	No	Holding Time for nitrate, nitrite, and orthophosphate is 48 hours.	J/R	For holding times >2x criteria, qualify positive results as estimated (J) and ND results as rejected (R).	Impacts all samples for nitrate, nitrite, and orthophosphate Sample J19K51: Nitrate = J applied Nitrite = J applied Phosphate = R applied Sample J19K61: Nitrate = J applied Nitrite = R applied Phosphate = R applied
Detection Limit	Laboratory reporting limits not provided in SAP				
Blanks					
Method Blank	Yes	None	-	No Action	
Equipment Blank Sample IDs:	No collected				
Other QC					
LCS Results	Yes	None	-	No Action	
Matrix Spikes Sample ID: J19K51	No	F = 146%	J	Qualify positive and non-detect results as estimated (J).	Impacts to all samples.
Lab Duplicate Sample ID: J19K51	No	Nitrate = 48.5%	-	No action because the difference between sample results is <1x RDL.	
Field Duplicate	Not collected				

SDG K1955 – Anions QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1955	**W&C Project No.:**222007	
Medium: Surface Water – GW Upwelling		**Analytes:** Bromide, Chloride, Fluoride, Nitrate, Nitrite, Orthophosphate, Sulfate	
Samples: J19K51, J19K61			
Laboratory: Lionville	**Date Data Assessment Completed:** 4/13/2010 **Complete By:** LEM	**Sample Collection Date:** 2/26, 28/2010	**Sample Analysis Date:** 3/3, 10/2010

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Sample ID:					
QC Summary					
Validity of Data	No	Holding Time for nitrate, nitrite, and orthophosphate were >2x criteria	R	ND results qualified as rejected	Impacts the following samples: Nitrite: J19K61 Orthophosphate: J19K51, J19K61
Additional Notes:					

D.3 SEDIMENT

D.3.1 SDG J00657

SDG J00657 – Hexavalent Chromium QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** J00657	**W&C Project No.:**222007
Medium: Sediment – GW Upwelling		**Analytes:** Hexavalent Chromium
Samples: J19FB3, J19FB2		

Laboratory: Test America, Richland, WA	**Date Data Assessment Completed:** 3/30/2010 **Completed By:** LEM	**Sample Collection Date:** 1/11/2010	**Sample Analysis Date:** 1/12/2010

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No Action	
Detection Limits	Yes	None	-	No Action	
Blanks					
Preparation Blank	Yes	None	-	No Action	
Equipment Blank Sample ID:	Not collected				
Other QC Results					
LCS Results	No	Cr+6 = 61%	J	Qualify positive and non-detect results as estimated (J).	Impacts all samples
Matrix Spikes Sample ID: J19FB2	Yes	None	-	No Action	
Laboratory Duplicates Sample ID: J19FB2	Yes	None	-	No Action	
Field Duplicates	Not collected				
QC Summary					
Validity of Data	Yes	None	-	No Action	No rejected data
Additional Notes: Defective stirring magnet may have attributed to low LCS.					

D.3.2 SDG J00660

SDG J00660 – Hexavalent Chromium QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** J00660	**W&C Project No.:**222007	
Medium: Sediment – GW Upwelling		**Analytes:** Hexavalent Chromium	
Samples: J19F67			
Laboratory: Test America, Richland, WA	**Date Data Assessment Completed:** 3/30/2010 **Completed By:** LEM	**Sample Collection Date:** 1/15/2010	**Sample Analysis Date:** 1/16/2010

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No Action	
Detection Limits	Yes	None	-	No Action	
Blanks					
Preparation Blank	Yes	None	-	No Action	
Equipment Blank Sample ID:	Not collected				
Other QC Results					
LCS Results	Yes	None	-	No Action	
Matrix Spikes Sample ID: J19F67	No	Cr+6 = 19%	R	Qualify non-detect result as rejected (R) because recovery was <30%.	Impacts to sample J19F67
Laboratory Duplicates Sample ID: J19F67	Yes	None	-	No Action	
Field Duplicates	Not collected				
QC Summary					
Validity of Data	No	Matrix Spike	R	Samples were rejected based on matrix spike results.	Impacts to sample J19F67
Additional Notes:					

D.3.3 SDG J00662

SDG J00662 – Hexavalent Chromium QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** J00662	**W&C Project No.:**222007
Medium: Sediment – GW Upwelling		**Analytes:** Hexavalent Chromium
Samples: J19F68		

Laboratory: Test America, Richland, WA	**Date Data Assessment Completed:** 3/30/2010 **Completed By:** LEM	**Sample Collection Date:** 1/16/2010	**Sample Analysis Date:** 1/17/2010

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No Action	
Detection Limits	Yes	None	-	No Action	
Blanks					
Preparation Blank	Yes	None	-	No Action	
Equipment Blank Sample ID:	Not collected				
Other QC Results					
LCS Results	Yes	None	-	No Action	
Matrix Spikes Sample ID:	No	MS/MSD not analyzed	J	Qualify positive and non-detect results as estimated (J) because Matrix Spike was not analyzed. See notes below.	Impacts to sample J19F68
Laboratory Duplicates Sample ID:	No	Laboratory duplicate not analyzed	J	Qualify positive and non-detect results as estimated (J).	Impacts to sample J19F68
Field Duplicates	Not collected				
QC Summary					
Validity of Data	Yes	None	-	No Action	No rejected data
Additional Notes: Insufficient sample volume to perform Matrix Spike and laboratory duplicate analyses.					

D.3.4 SDG J00667

SDG J00667 – Hexavalent Chromium QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** J00667	**W&C Project No.:**222007
Medium: Sediment – GW Upwelling		**Analytes:** Hexavalent Chromium
Samples: J19F65		

Laboratory: Test America, Richland, WA	**Date Data Assessment Completed:** 3/30/2010 **Completed By:** LEM	**Sample Collection Date:** 1/17/2010	**Sample Analysis Date:** 1/18/2010

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No Action	
Detection Limits	Yes	None	-	No Action	
Blanks					
Preparation Blank	Yes	None	-	No Action	
Equipment Blank Sample ID:	Not collected				
Other QC Results					
LCS Results	Yes	None	-	No Action	
Matrix Spikes Sample ID: J19F65	Yes	None	-	No Action	
Laboratory Duplicates Sample ID: J19F65	No	RPD = 39.3%	-	No action because both sample and duplicate results are non-detect.	
Field Duplicates	Not collected				
QC Summary					
Validity of Data	Yes	None	-	No Action	No rejected data
Additional Notes:					

D.3.5 SDG J00670

SDG J00670 – Hexavalent Chromium QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** J00670	**W&C Project No.:**222007
Medium: Sediment – GW Upwelling		**Analytes:** Hexavalent Chromium
Samples: J19F66, J19H37		

Laboratory: Test America, Richland, WA	**Date Data Assessment Completed:** 3/30/2010 **Completed By:** LEM	**Sample Collection Date:** 1/18/2010	**Sample Analysis Date:** 1/19/2010

QC Parameter	**All in Spec.?**	**Non-Compliant Results**	**Flag**	**Action/ Notes**	**Associated Samples**
Holding Times	Yes	None	-	No Action	
Detection Limits	Yes	None	-	No Action	
Blanks					
Preparation Blank	Yes	None	-	No Action	
Equipment Blank Sample ID:	Not collected				
Other QC Results					
LCS Results	Yes	None	-	No Action	
Matrix Spikes Sample ID: J19F66	Yes	None	-	No Action	
Laboratory Duplicates Sample ID: J19F66	Yes	None	-	No Action	
Field Duplicates	Not collected				
QC Summary					
Validity of Data	Yes	None	-	No Action	No rejected data
Additional Notes:					

D.3.6 SDG J00672

SDG J00672 – Hexavalent Chromium QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** J00672	**W&C Project No.:**222007
Medium: Sediment – GW Upwelling		**Analytes:** Hexavalent Chromium
Samples: J19HV6		

Laboratory: Test America, Richland, WA	**Date Data Assessment Completed:** 3/30/2010 **Completed By:** LEM	**Sample Collection Date:** 1/23/2010	**Sample Analysis Date:** 1/24/2010

QC Parameter	**All in Spec.?**	**Non-Compliant Results**	**Flag**	**Action/ Notes**	**Associated Samples**
Holding Times	Yes	None	-	No Action	
Detection Limits	Yes	None	-	No Action	
Blanks					
Preparation Blank	Yes	None	-	No Action	
Equipment Blank Sample ID:	Not collected				
Other QC Results					
LCS Results	Yes	None	-	No Action	
Matrix Spikes Sample ID: J19HV6	Yes	None	-	No Action	
Laboratory Duplicates Sample ID: J19HV6	Yes	None	-	No Action	
Field Duplicates	Not collected				
QC Summary					
Validity of Data	Yes	None	-	No Action	No rejected data
Additional Notes:					

D.3.7 SDG J00675

SDG J00675 – Hexavalent Chromium QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** J00675	**W&C Project No.:**222007
Medium: Sediment – GW Upwelling		**Analytes:** Hexavalent Chromium
Samples: J19HV5		

Laboratory: Test America, Richland, WA	**Date Data Assessment Completed:** 3/30/2010 **Completed By:** LEM	**Sample Collection Date:** 1/22/2010	**Sample Analysis Date:** 1/23/2010

QC Parameter	**All in Spec.?**	**Non-Compliant Results**	**Flag**	**Action/ Notes**	**Associated Samples**
Holding Times	Yes	None	-	No Action	
Detection Limits	Yes	None	-	No Action	
Blanks					
Preparation Blank	Yes	None	-	No Action	
Equipment Blank Sample ID:	Not collected				
Other QC Results					
LCS Results	Yes	None	-	No Action	
Matrix Spikes Sample ID: J19HV5	Yes	None	-	No Action	
Laboratory Duplicates Sample ID: J19HV5	No	RPD = 46.2%	J	Qualify positive results as estimated (J) because both sample and duplicate results are >5x MDA.	Impacts to sample J19HV5
Field Duplicates	Not collected				
QC Summary					
Validity of Data	Yes	None	-	No Action	No rejected data
Additional Notes:					

D.3.8 SDG J00681

SDG J00681 – Hexavalent Chromium QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** J00681	**W&C Project No.:**222007
Medium: Sediment – GW Upwelling		**Analytes:** Hexavalent Chromium
Samples: J19FJ4		

Laboratory: Test America, Richland, WA	**Date Data Assessment Completed:** 3/31/2010 **Completed By:** LEM	**Sample Collection Date:** 1/24/2010	**Sample Analysis Date:** 1/25/2010

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No Action	
Detection Limits	Yes	None	-	No Action	
Blanks					
Preparation Blank	Yes	None	-	No Action	
Equipment Blank Sample ID:	Not collected				
Other QC Results					
LCS Results	Yes	None	-	No Action	
Matrix Spikes Sample ID: J19FJ4	No	Cr+6 = 31%	J	Qualify positive results as estimated (J) because recovery was <70%.	Impacts to sample J19FJ4
Laboratory Duplicates Sample ID: J19FJ4	Yes	None	-	No Action	
Field Duplicates	Not collected				
QC Summary					
Validity of Data	Yes	None	-	No Action	No rejected data
Additional Notes: Sample J19HV4 is a duplicate that was collected for Sample J19FJ4. Sample J19HV4 was analyzed with SDG J00682.					

D.3.9 SDG J00682

SDG J00682 – Hexavalent Chromium QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** J00682	**W&C Project No.:**222007	
Medium: Sediment – GW Upwelling		**Analytes:** Hexavalent Chromium	
Samples: J19HV4			
Laboratory: Test America, Richland, WA	**Date Data Assessment Completed:** 3/31/2010 **Completed By:** LEM	**Sample Collection Date:** 1/24/2010	**Sample Analysis Date:** 1/25/2010

QC Parameter	**All in Spec.?**	**Non-Compliant Results**	**Flag**	**Action/ Notes**	**Associated Samples**
Holding Times	Yes	None	-	No Action	
Detection Limits	Yes	None	-	No Action	
Blanks					
Preparation Blank	Yes	None	-	No Action	
Equipment Blank Sample ID:	Not collected				
Other QC Results					
LCS Results	Yes	None	-	No Action	
Matrix Spikes Sample ID: J19HV4	No	Cr+6 = 34%	J	Qualify non-detect results as estimated (J) because recovery was <70%.	Impacts to sample J19HV4
Laboratory Duplicates Sample ID: J19HV4	Yes	None	-	No Action	
Field Duplicates Sample IDs: J19FJ4/ J19HV4	No	RPD = 200%	-	No action based on guidance	
QC Summary					
Validity of Data	Yes	None	-	No Action	No rejected data
Additional Notes: Sample J19HV4 is a duplicate collected for J19FJ4. Sample J19FJ4 was analyzed with SDG J00681.					

D.3.10 SDG J00683

SDG J00683 – Hexavalent Chromium QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** J00683	**W&C Project No.:**222007
Medium: Sediment – GW Upwelling		**Analytes:** Hexavalent Chromium
Samples: J19FJ5		

Laboratory: Test America, Richland, WA	**Date Data Assessment Completed:** 3/31/2010 **Completed By:** LEM	**Sample Collection Date:** 1/24/2010	**Sample Analysis Date:** 1/25/2010

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No Action	
Detection Limits	Yes	None	-	No Action	
Blanks					
Preparation Blank	Yes	None	-	No Action	
Equipment Blank Sample ID:	Not collected				
Other QC Results					
LCS Results	Yes	None	-	No Action	
Matrix Spikes Sample ID: J19FJ5	No	Cr+6 = 56%	J	Qualify non-detect results as estimated (J) because recovery was <70%.	Impacts to sample J19FJ5
Laboratory Duplicates Sample ID: J19FJ5	Yes	None	-	No Action	
Field Duplicates	Not collected				
QC Summary					
Validity of Data	Yes	None	-	No Action	No rejected data
Additional Notes:					

D.3.11 SDG J00689

SDG J00689 – Hexavalent Chromium QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** J00689	**W&C Project No.:**222007
Medium: Sediment – GW Upwelling		**Analytes:** Hexavalent Chromium
Samples: J19FD2, J19H30, J19FB1		

Laboratory: Test America, Richland, WA	**Date Data Assessment Completed:** 3/31/2010 **Completed By:** LEM	**Sample Collection Date:** 1/25/2010	**Sample Analysis Date:** 1/26/2010

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No Action	
Detection Limits	Yes	None	-	No Action	
Blanks					
Preparation Blank	Yes	None	-	No Action	
Equipment Blank Sample ID:	Not collected				
Other QC Results					
LCS Results	Yes	None	-	No Action	
Matrix Spikes Sample ID: J19FD2	Yes	None	-	No Action	
Laboratory Duplicates Sample ID: J19FD2	Yes	None	-	No Action	
Field Duplicates Sample IDs: J19H30/ J19FD2	Yes	None	-	No Action	
QC Summary					
Validity of Data	Yes	None	-	No Action	No rejected data
Additional Notes:					

D.3.12 SDG J00695

SDG J00695 – Hexavalent Chromium QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** J00695	**W&C Project No.:**222007	
Medium: Sediment – GW Upwelling		**Analytes:** Hexavalent Chromium	
Samples: J19JL5			
Laboratory: Test America, Richland, WA	**Date Data Assessment Completed:** 3/31/2010 **Completed By:** LEM	**Sample Collection Date:** 1/29/2010	**Sample Analysis Date:** 1/30/2010

QC Parameter	**All in Spec.?**	**Non-Compliant Results**	**Flag**	**Action/ Notes**	**Associated Samples**
Holding Times	Yes	None	-	No Action	
Detection Limits	Yes	None	-	No Action	
Blanks					
Preparation Blank	Yes	None	-	No Action	
Equipment Blank Sample ID:	Not collected				
Other QC Results					
LCS Results	Yes	None	-	No Action	
Matrix Spikes Sample ID: J19JL5	Yes	None	-	No Action	
Laboratory Duplicates Sample ID: J19JL5	Yes	None	-	No Action	
Field Duplicates	Not collected				
QC Summary					
Validity of Data	Yes	None	-	No Action	No rejected data
Additional Notes:					

D.3.13 SDG J00697

SDG J00697 – Hexavalent Chromium QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA		**SDG No.:** J00697		**W&C Project No.:**222007	
Medium: Sediment – GW Upwelling				**Analytes:** Hexavalent Chromium	
Samples: J19JL4					
Laboratory: Test America, Richland, WA	**Date Data Assessment Completed:** 3/31/2010 **Completed By:** LEM		**Sample Collection Date:** 1/30/2010	**Sample Analysis Date:** 1/31/2010	

QC Parameter	**All in Spec.?**	**Non-Compliant Results**	**Flag**	**Action/ Notes**	**Associated Samples**
Holding Times	Yes	None	-	No Action	
Detection Limits	Yes	None	-	No Action	
Blanks					
Preparation Blank	Yes	None	-	No Action	
Equipment Blank Sample ID:	Not collected				
Other QC Results					
LCS Results	Yes	None	-	No Action	
Matrix Spikes Sample ID: J19JL4	Yes	None	-	No Action	
Laboratory Duplicates Sample ID: J19JL4	Yes	None	-	No Action	
Field Duplicates	Not collected				
QC Summary					
Validity of Data	Yes	None	-	No Action	No rejected data
Additional Notes:					

D.3.14 SDG J00705

SDG J00705 – Hexavalent Chromium QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** J00705	**W&C Project No.:**222007
Medium: Sediment – GW Upwelling		**Analytes:** Hexavalent Chromium
Samples: J19HX8, J19FB4		

Laboratory: Test America, Richland, WA	**Date Data Assessment Completed:** 3/31/2010 **Completed By:** LEM	**Sample Collection Date:** 2/1/2010	**Sample Analysis Date:** 2/2/2010

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No Action	
Detection Limits	Yes	None	-	No Action	
Blanks					
Preparation Blank	Yes	None	-	No Action	
Equipment Blank Sample ID:	Not collected				
Other QC Results					
LCS Results	Yes	None	-	No Action	
Matrix Spikes Sample ID: J19FB4	No	Cr+6 = 16%	R	Qualify positive results as estimated (J) and non-detect results as rejected (R) because recovery was <30%.	Impacts to all samples. All samples ND so all samples rejected.
Laboratory Duplicates Sample ID: J19FB4	Yes	None	-	No Action	
Field Duplicates	Not collected				
QC Summary					
Validity of Data	No	Matrix Spike	R	Samples were rejected based on matrix spike results.	Impacts to all samples
Additional Notes:					

D.3.15 SDG J00707

SDG J00707 – Hexavalent Chromium QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** J00707	**W&C Project No.:**222007
Medium: Sediment – GW Upwelling		**Analytes:** Hexavalent Chromium
Samples: J19HV3		

Laboratory: Test America, Richland, WA	**Date Data Assessment Completed:** 3/31/2010 **Completed By:** LEM	**Sample Collection Date:** 1/31/2010	**Sample Analysis Date:** 2/1/2010

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No Action	
Detection Limits	Yes	None	-	No Action	
Blanks					
Preparation Blank	Yes	None	-	No Action	
Equipment Blank Sample ID:	Not collected				
Other QC Results					
LCS Results	Yes	None	-	No Action	
Matrix Spikes Sample ID: J19HV3	Yes	None	-	No Action	
Laboratory Duplicates Sample ID: J19HV3	Yes	None	-	No Action	
Field Duplicates	Not collected				
QC Summary					
Validity of Data	Yes	None	-	No Action	No rejected data
Additional Notes:					

D.3.16 SDG J00710

SDG J00710 – Hexavalent Chromium QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** J00710	**W&C Project No.:**222007
Medium: Sediment – GW Upwelling		**Analytes:** Hexavalent Chromium
Samples: J19JW8, J19JX1		

Laboratory: Test America, Richland, WA	**Date Data Assessment Completed:** 3/31/2010 **Completed By:** LEM	**Sample Collection Date:** 2/7/2010	**Sample Analysis Date:** 2/8/2010

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No Action	
Detection Limits	Yes	None	-	No Action	
Blanks					
Preparation Blank	Yes	None	-	No Action	
Equipment Blank Sample ID:	Not collected				
Other QC Results					
LCS Results	Yes	None	-	No Action	
Matrix Spikes Sample ID: J19JW8	Yes	None	-	No Action	
Laboratory Duplicates Sample ID: J19JW8	Yes	None	-	No Action	
Field Duplicates	Not collected				
QC Summary					
Validity of Data	Yes	None	-	No Action	No rejected data
Additional Notes:					

D.3.17 SDG J00713

SDG J00713 – Hexavalent Chromium QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** J00713	**W&C Project No.:**222007	
Medium: Sediment – GW Upwelling		**Analytes:** Hexavalent Chromium	
Samples: J19J97, J19J98			
Laboratory: Test America, Richland, WA	**Date Data Assessment Completed:** 3/31/2010 **Completed By:** LEM	**Sample Collection Date:** 2/5/2010	**Sample Analysis Date:** 2/6/2010

QC Parameter	**All in Spec.?**	**Non-Compliant Results**	**Flag**	**Action/ Notes**	**Associated Samples**
Holding Times	Yes	None	-	No Action	
Detection Limits	Yes	None	-	No Action	
Blanks					
Preparation Blank	Yes	None	-	No Action	
Equipment Blank Sample ID:	Not collected				
Other QC Results					
LCS Results	Yes	None	-	No Action	
Matrix Spikes Sample ID: J19J98	No	Cr+6 = 67%	J	Qualify positive and non-detect results as estimated (J) because recovery was <70%.	Impacts to all samples
Laboratory Duplicates Sample ID: J19J98	No	RPD = 32.8%	J	Qualify positive results as estimated (J) because both sample and duplicate results are >5x MDA.	Impacts to all samples
Field Duplicates	Not collected				
QC Summary					
Validity of Data	Yes	None	-	No Action	No rejected data
Additional Notes:					

D.3.18 SDG J00716

SDG J00716 – Hexavalent Chromium QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** J00716	**W&C Project No.:**222007	
Medium: Sediment – GW Upwelling		**Analytes:** Hexavalent Chromium	
Samples: J19JW9, J19JX0			
Laboratory: Test America, Richland, WA	**Date Data Assessment Completed:** 3/31/2010 **Completed By:** LEM	**Sample Collection Date:** 2/6/2010	**Sample Analysis Date:** 2/7/2010

QC Parameter	**All in Spec.?**	**Non-Compliant Results**	**Flag**	**Action/ Notes**	**Associated Samples**
Holding Times	Yes	None	-	No Action	
Detection Limits	Yes	None	-	No Action	
Blanks					
Preparation Blank	Yes	None	-	No Action	
Equipment Blank Sample ID:	Not collected				
Other QC Results					
LCS Results	Yes	None	-	No Action	
Matrix Spikes Sample ID: J19JW9, J19JX0	Yes	None	-	No Action	
Laboratory Duplicates Sample ID: J19JW9	Yes	None	-	No Action	
Laboratory Duplicates Sample ID: J19JX0	No	RPD = 33.2%	-	No action because both sample and duplicate results are non-detect.	
Field Duplicates	Not collected				
QC Summary					
Validity of Data	Yes	None	-	No Action	No rejected data
Additional Notes:					

D.3.19 SDG J00720

SDG J00720 – Hexavalent Chromium QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** J00720	**W&C Project No.:**222007

Medium: Sediment – GW Upwelling	**Analytes:** Hexavalent Chromium
Samples: J19JW7, J19JX2	

Laboratory: Test America, Richland, WA	**Date Data Assessment Completed:** 3/31/2010 **Completed By:** LEM	**Sample Collection Date:** 2/8/2010	**Sample Analysis Date:** 2/9/2010

QC Parameter	**All in Spec.?**	**Non-Compliant Results**	**Flag**	**Action/ Notes**	**Associated Samples**
Holding Times	Yes	None	-	No Action	
Detection Limits	Yes	None	-	No Action	
Blanks					
Preparation Blank	Yes	None	-	No Action	
Equipment Blank Sample ID:	Not collected				
Other QC Results					
LCS Results	Yes	None	-	No Action	
Matrix Spikes Sample ID: J19JW7	Yes	None	-	No Action	
Laboratory Duplicates Sample ID: J19JW7	Yes	None	-	No Action	
Field Duplicates	Not collected				
QC Summary					
Validity of Data	Yes	None	-	No Action	No rejected data
Additional Notes:					

D.3.20 SDG J00727

SDG J00727 – Hexavalent Chromium QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** J00727	**W&C Project No.:**222007
Medium: Sediment – GW Upwelling		**Analytes:** Hexavalent Chromium
Samples: J19J96		

Laboratory: Test America, Richland, WA	**Date Data Assessment Completed:** 3/31/2010 **Completed By:** LEM	**Sample Collection Date:** 2/13/2010	**Sample Analysis Date:** 2/14/2010

QC Parameter	**All in Spec.?**	**Non-Compliant Results**	**Flag**	**Action/ Notes**	**Associated Samples**
Holding Times	Yes	None	-	No Action	
Detection Limits	Yes	None	-	No Action	
Blanks					
Preparation Blank	Yes	None	-	No Action	
Equipment Blank Sample ID:	Not collected				
Other QC Results					
LCS Results	Yes	None	-	No Action	
Matrix Spikes (No MSD) Sample ID: J19J96	Yes	None	-	No Action	
Laboratory Duplicates Sample ID:	No	Laboratory duplicate not analyzed	J	Qualify positive and non-detect results as estimated (J) because laboratory duplicate was not analyzed. See notes below.	Impacts to sample J19J96
Field Duplicates	Not collected				
QC Summary					
Validity of Data	Yes	None	-	No Action	No rejected data
Additional Notes: Insufficient sample volume to perform laboratory duplicate analysis.					

D.3.21 SDG J00732

SDG J00732 – Hexavalent Chromium QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** J00732	**W&C Project No.:**222007
Medium: Sediment – GW Upwelling		**Analytes:** Hexavalent Chromium
Samples: J19K22, J19K23		

Laboratory: Test America, Richland, WA	**Date Data Assessment Completed:** 3/31/2010 **Completed By:** LEM	**Sample Collection Date:** 2/12/2010	**Sample Analysis Date:** 2/13/2010

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No Action	
Detection Limits	Yes	None	-	No Action	
Blanks					
Preparation Blank	Yes	None	-	No Action	
Equipment Blank Sample ID:	Not collected				
Other QC Results					
LCS Results	Yes	None	-	No Action	
Matrix Spikes (No MSD) Sample ID: J19K22, J19K23	Yes	None	-	No Action	
Laboratory Duplicates Sample ID:	No	Laboratory duplicates not analyzed	J	Qualify positive and non-detect results as estimated (J) because laboratory duplicates were not analyzed. See notes below.	Impacts to all samples
Field Duplicates	Not collected				
QC Summary					
Validity of Data	Yes	None	-	No Action	No rejected data
Additional Notes: Insufficient sample volume to perform laboratory duplicate analyses.					

D.3.22 SDG J00733

Validated by ELR - Included in Appendix F

D.3.23 SDG J00736

Validated by ELR - Included in Appendix F

D.3.24 SDG J00740

SDG J00740 – Hexavalent Chromium QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA		**SDG No.:** J00740		**W&C Project No.:**222007	
Medium: Sediment – GW Upwelling				**Analytes:** Hexavalent Chromium	
Samples: J19K83, J19K84					
Laboratory: Test America, Richland, WA	**Date Data Assessment Completed:** 3/31/2010 **Completed By:** LEM		**Sample Collection Date:** 2/21/2010		**Sample Analysis Date:** 2/22/2010
QC Parameter	**All in Spec.?**	**Non-Compliant Results**	**Flag**	**Action/ Notes**	**Associated Samples**
Holding Times	Yes	None	-	No Action	
Detection Limits	Yes	None	-	No Action	
Blanks					
Preparation Blank	Yes	None	-	No Action	
Equipment Blank Sample ID:	Not collected				
Other QC Results					
LCS Results	Yes	None	-	No Action	
Matrix Spikes Sample ID: J19K83	Yes	None	-	No Action	
Laboratory Duplicates Sample ID: J19K83	Yes	None	-	No Action	
Field Duplicates	Not collected				
QC Summary					
Validity of Data	Yes	None	-	No Action	No rejected data
Additional Notes:					

D.3.25 SDG J00743

SDG J00743 – Hexavalent Chromium QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** J00743	**W&C Project No.:**222007	
Medium: Sediment – GW Upwelling		**Analytes:** Hexavalent Chromium	
Samples: J19H38, J19KD4			
Laboratory: Test America, Richland, WA	**Date Data Assessment Completed:** 3/31/2010 **Completed By:** LEM	**Sample Collection Date:** 2/19/2010	**Sample Analysis Date:** 2/20/2010

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No Action	
Detection Limits	Yes	None	-	No Action	
Blanks					
Preparation Blank	Yes	None	-	No Action	
Equipment Blank Sample ID:	Not collected				
Other QC Results					
LCS Results	Yes	None	-	No Action	
Matrix Spikes Sample ID: J19H38	Yes	None	-	No Action	
Matrix Spikes Sample ID: J19KD4	No	Cr+6 = 36%	J	Qualify positive results as estimated (J) because recovery was <70%.	Impacts to all samples
Laboratory Duplicates Sample ID: J19H38	No	RPD = 34.4%	-	No action because difference between sample and duplicate results are <2xMDA.	
Laboratory Duplicates Sample ID: J19KD4	Yes	None	-	No Action	
Field Duplicates	Not collected				
QC Summary					
Validity of Data	Yes	None	-	No Action	No rejected data
Additional Notes:					

D.3.26 SDG J00745

SDG J00745 – Hexavalent Chromium QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** J00745	**W&C Project No.:**222007
Medium: Sediment – GW Upwelling		**Analytes:** Hexavalent Chromium
Samples: J19KD3		

Laboratory: Test America, Richland, WA	**Date Data Assessment Completed:** 3/31/2010 **Completed By:** LEM	**Sample Collection Date:** 1/20/2010	**Sample Analysis Date:** 2/21/2010

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No Action	
Detection Limits	Yes	None	-	No Action	
Blanks					
Preparation Blank	Yes	None	-	No Action	
Equipment Blank Sample ID:	Not collected				
Other QC Results					
LCS Results	Yes	None	-	No Action	
Matrix Spikes Sample ID: J19KD3	Yes	None	-	No Action	
Laboratory Duplicates Sample ID: J19KD3	No	RPD = 31.8%	J	Qualify positive results as estimated (J) because both sample and duplicate results are >5x MDA.	Impacts to sample J19KD3
Field Duplicates	Not collected				
QC Summary					
Validity of Data	Yes	None	-	No Action	No rejected data
Additional Notes:					

D.3.27 SDG J00752

SDG J00752 – Hexavalent Chromium QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA		**SDG No.:** J00752	**W&C Project No.:**222007
Medium: Sediment – GW Upwelling			**Analytes:** Hexavalent Chromium
Samples: J19L02			
Laboratory: Test America, Richland, WA	**Date Data Assessment Completed:** 3/31/2010 **Completed By:** LEM	**Sample Collection Date:** 2/22/2010	**Sample Analysis Date:** 2/23/2010

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No Action	
Detection Limits	Yes	None	-	No Action	
Blanks					
Preparation Blank	Yes	None	-	No Action	
Equipment Blank Sample ID:	Not collected				
Other QC Results					
LCS Results	Yes	None	-	No Action	
Matrix Spikes Sample ID: J19L02	Yes	None	-	No Action	
Laboratory Duplicates Sample ID: J19L02	Yes	None	-	No Action	
Field Duplicates	Not collected				
QC Summary					
Validity of Data	Yes	None	-	No Action	No rejected data
Additional Notes:					

D.3.28 SDG J00757

SDG J00757 – Hexavalent Chromium QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA		**SDG No.:** J00757		**W&C Project No.:**222007	
Medium: Sediment – GW Upwelling				**Analytes:** Hexavalent Chromium	
Samples: J19K85, J19K86, J19L01					
Laboratory: Test America, Richland, WA	**Date Data Assessment Completed:** 3/31/2010 **Completed By:** LEM		**Sample Collection Date:** 2/26/2010	**Sample Analysis Date:** 2/27/2010	
QC Parameter	**All in Spec.?**	**Non-Compliant Results**	**Flag**	**Action/ Notes**	**Associated Samples**
Holding Times	Yes	None	-	No Action	
Detection Limits	Yes	None	-	No Action	
Blanks					
Preparation Blank	Yes	None	-	No Action	
Equipment Blank Sample ID:	Not collected				
Other QC Results					
LCS Results	Yes	None	-	No Action	
Matrix Spikes Sample ID: J19L01	No	Cr+6 = 12%	R	Qualify positive results as estimated (J) and non-detect results as rejected (R) because recovery was <30%.	Impacts to all samples. All samples ND so all rejected.
Laboratory Duplicates Sample ID: J19L01	Yes	None	-	No Action	
Field Duplicates Sample IDs: J19K85/ J19K86	Yes	None	-	No Action	
QC Summary					
Validity of Data	No	Matrix Spike	R	Samples were rejected based on matrix spike results.	Impacts to all samples
Additional Notes:					

D.3.29 SDG J00762

SDG J00762 – Hexavalent Chromium QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA		**SDG No.:** J00762		**W&C Project No.:**222007	
Medium: Sediment – GW Upwelling				**Analytes:** Hexavalent Chromium	
Samples: J19JL6, J19JD5					
Laboratory: Test America, Richland, WA	**Date Data Assessment Completed:** 3/31/2010 **Completed By:** LEM		**Sample Collection Date:** 2/27/2010		**Sample Analysis Date:** 2/28/2010
QC Parameter	**All in Spec.?**	**Non-Compliant Results**	**Flag**	**Action/ Notes**	**Associated Samples**
Holding Times	Yes	None	-	No Action	
Detection Limits	Yes	None	-	No Action	
Blanks					
Preparation Blank	Yes	None	-	No Action	
Equipment Blank Sample ID:	Not collected				
Other QC Results					
LCS Results	Yes	None	-	No Action	
Matrix Spikes Sample ID: J19JL6, J19JD5	Yes	None	-	No Action	
Laboratory Duplicates Sample ID: J19JL6	Yes	None	-	No Action	
Field Duplicates	Not collected				
QC Summary					
Validity of Data	Yes	None	-	No Action	No rejected data
Additional Notes:					

D.3.30 SDG J00763

SDG J00763 – Hexavalent Chromium QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA		**SDG No.:** J00763		**W&C Project No.:**222007	
Medium: Sediment – GW Upwelling				**Analytes:** Hexavalent Chromium	
Samples: J19KD2, J19KF8					
Laboratory: Test America, Richland, WA	**Date Data Assessment Completed:** 3/31/2010 **Completed By:** LEM		**Sample Collection Date:** 2/28/2010		**Sample Analysis Date:** 3/1/2010
QC Parameter	**All in Spec.?**	**Non-Compliant Results**	**Flag**	**Action/ Notes**	**Associated Samples**
Holding Times	Yes	None	-	No Action	
Detection Limits	Yes	None	-	No Action	
Blanks					
Preparation Blank	Yes	None	-	No Action	
Equipment Blank Sample ID:	Not collected				
Other QC Results					
LCS Results	Yes	None	-	No Action	
Matrix Spikes Sample ID: J19KF8	No	Cr+6 = 54%	J	Qualify non-detect results as estimated (J) because recovery was <70%.	Impacts to all samples
Laboratory Duplicates Sample ID: J19KF8	Yes	None	-	No Action	
Field Duplicates	Not collected				
QC Summary					
Validity of Data	Yes	None	-	No Action	No rejected data
Additional Notes:					

D.3.31 SDG K1906

SDG K1906 – VOC QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1906	**W&C Project No.:**222007	
Medium: Sediment – GW Upwelling		**Analytes:** VOA	
Samples: J19FD4, J19FD5, J19F98, J19F99			
Laboratory: Lionville	**Date Data Assessment Completed:** 04/09/2010 **Complete By:** JAR	**Sample Collection Date:** 01/11/2010	**Sample Analysis Date:** 01/21/2010

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No action	
Detection Limits	No	Lab RL greater than Project RL for 1,1,1-trichloroethane	-	No action based on guidance	
Blanks					
Blanks - Method	No	Methylene chloride = 3.66 ug/kg	UJ	Qualify positive results less than ten times method blank concentration as non-detected estimated (UJ)	Impacts the following samples: Methylene chloride – J19F98, J19F99
Equipment Blank Sample ID:					
Trip Blank Sample ID:		Methylene chloride =	-	No action based on guidance	Impacts the following samples: Methylene chloride – J19F98, J19F99
J19FD4	No	3.34 ug/kg			
J19FD5	No	3.18 ug/kg			
Other QC Results					
Surrogate Recoveries	Yes	None	-	No action	
LCS Results	No	Acetone = 214%	-	Qualify positive results as estimated (J)	Impacts the following samples: None; all acetone results are non-detected
Matrix Spike/Matrix Spike Duplicate Sample ID: J19F98	No	Acetone = 197%/223% 2-Butanone =	-	Qualify positive results for acetone and 2-	Impacts the following samples: None; all acetone and 2-butanone results are non-detected

SDG K1906 – VOC QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1906	**W&C Project No.:**222007

Medium: Sediment – GW Upwelling	**Analytes:** VOA
Samples: J19FD4, J19FD5, J19F98, J19F99	

Laboratory: Lionville	**Date Data Assessment Completed:** 04/09/2010 **Complete By:** JAR	**Sample Collection Date:** 01/11/2010	**Sample Analysis Date:** 01/21/2010

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
		158%		butanone as estimated (J)	
Field Duplicates Sample ID:	None collected				
Summary					
Validity of Data	No, but no data were rejected				
Additional Notes: Samples reported on a wet weight basis.					

SDG K1906 – Metals QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1906	**W&C Project No.:**222007	
Medium: Sediment – GW Upwelling		**Analytes:** Metals	
Samples: J19F61, J19F62, J19F63, J19F64, J19H33, J19F98, J19F99			
Laboratory: Lionville	**Date Data Assessment Completed:** 04/15/2010 **Complete By:** JAR	**Sample Collection Date:** 01/11/2010 – 01/18/2010	**Sample Analysis Date:** ICP – 02/01/2010 Hg – 01/27/2010

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No action	
Detection Limits	No	Lab RLs greater than Project RLs for following analytes: Ca, Fe, P, Zn	-	No action required by guidance	
Blanks					
Preparation Blank	No	Sn = 1.26 mg/kg	UJ	Qualify results less than five times blank concentration as non-detected estimated (UJ)	Impacts the following samples: Sn - All samples
Equipment Blank Sample ID:	None collected				
Other QC Results					
LCS Results	No	Sb = 63% Si = 41%	J	Qualify positive and non-detected results as estimated (J)	Impacts the following samples: Sb, Si – All samples
Matrix Spike Sample ID: J19F61	No	Sb = 53% Ca = 1600% Cr = 64% Cu = 60% Mg = 61% Sr = 141% U = 170% Zn = 53%	J	Qualify positive results for Ca, Sr, and U as estimated (J) and qualify positive and non-detected results for Sb, Cr, Cu, Mg, and Zn as estimated (J)	Impacts the following samples: Sb, Ca, Cr, Cu, Mg, Sr, Zn – All samples U – J19F99; remaining samples non-detected
Lab Duplicate Sample ID: J19F61	No	Ba = 35% Cr = 35% Cu = 31% Mn = 53% Si = 43%	J	Qualify non-detect and positive results for Ba, Cr, Cu, Mn, and Si as estimated (J)	Impacts the following samples: Ba, Cr, Cu, Mn, Si – All samples

SDG K1906 – Metals QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA		**SDG No.:** K1906	**W&C Project No.:**222007
Medium: Sediment – GW Upwelling			**Analytes:** Metals
Samples: J19F61, J19F62, J19F63, J19F64, J19H33, J19F98, J19F99			
Laboratory: Lionville	**Date Data Assessment Completed:** 04/15/2010 **Complete By:** JAR	**Sample Collection Date:** 01/11/2010 – 01/18/2010	**Sample Analysis Date:** ICP – 02/01/2010 Hg – 01/27/2010

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Field Duplicate Sample ID:	None collected				
QC Summary					
Validity of Data	No, but no data were rejected				
Additional Notes: Sample results reported on wet weight basis.					

SDG K1906 – Radionuclides QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1906	**W&C Project No.:**222007

Medium: Sediment – GW Upwelling	**Analytes:** Gamma Spec, Isotopic Plutonium, Isotopic Thorium, Isotopic Uranium, Sr-90
Samples: J19F61, J19F63, J19F64, J19F98, J19F99, J19H33	

Laboratory: Eberline	**Date Data Assessment Completed:** 04/09/2010 **Complete By:** JAR	**Sample Collection Date:** 01/11/2010 – 01/18/2010	**Sample Analysis Date:** 01/26/2010 – 02/02/2010

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No action	
Detection Limits	No	MDC>RDL for following analytes - **J19F64**: Eu-152, Eu-154 **J19F99, J19H33:** Co-60, Ra-226, Ra-228, Eu-152, Eu-154, Eu-155	-	No action required by guidance	
Blanks					
Method Blanks	Yes	None	-	No action	
Equipment Blank Sample ID:	None collected				
Other QC Results					
LCS Results	Yes	None	-	No action	
Tracer Results	Yes	None	-	No action	
Lab Duplicates Sample ID: J19F61	Yes	None	-	No action	
Field Duplicate Sample ID:	None collected				
QC Summary					
Validity of Data	Yes; no data were rejected				
Additional Notes:					

SDG K1906 – TOC QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1906	**W&C Project No.:**222007	
Medium: Sediment – GW Upwelling		**Analytes:** TOC	
Samples: J19F61, J19F63, J19F64, J19H33, J19F98			
Laboratory: Lionville	**Date Data Assessment Completed:** 04/09/2010 **Complete By:** JAR	**Sample Collection Date:** 01/11/2010 – 01/18/2010	**Sample Analysis Date:** 02/04/2010

QC Parameter	**All in Spec.?**	**Non-Compliant Results**	**Flag**	**Action/ Notes**	**Associated Samples**
Holding Times	Yes	None	-	No action	
Detection Limit	Yes	None	-	No action	
Method Blank	No	TOC = 5.06 mg/kg	-	Qualify positive results less than five times blank concentration as non-detected estimated (UJ)	Impacts the following samples: TOC – None; all results greater than five times blank concentration
Equipment Blank Sample ID:	None collected				
LCS Results	Yes	None	-	No action	
Matrix Spikes Sample ID: J19F98	No	TOC = 27%	-	Qualify positive and non-detected results as estimated (J)	Impacts the following samples: None; sample concentration in matrix spike is greater than four times the spike concentration; no qualifiers required
Lab Duplicate Sample ID: J19F98	No	TOC = 49%	J	Qualify results as estimated (J)	Impacts the following samples: All samples
Field Duplicate Sample ID:	None collected				
QC Summary					
Validity of Data	No, but no data were rejected				
Additional Notes:					

D.3.32 SDG K1918

Validated by ELR - Included in Appendix F

D.3.33 SDG K1922

SDG K1922 – VOC QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1922	**W&C Project No.:**222007
Medium: Sediment – GW Upwelling		**Analytes:** VOA
Samples: J19F97, J19FD6, J19FV8, J19HX4		

Laboratory: Lionville	**Date Data Assessment Completed:** 04/09/2010 **Complete By:** RDD	**Sample Collection Date:** 02/01/2010	**Sample Analysis Date:** 02/04/2010

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No action	
Detection Limits	Yes	None	-	No action	
Blanks					
Blanks - Method	Yes	None	-	No action	
Equipment Blank Sample ID:	None collected				
Trip Blank Sample ID: J19FV8, J19FD6	Yes	None	-	No action	
Other QC Results					
Surrogate Recoveries	Yes	None	-	No action	
LCS Results	No	2-butanone =191% 2-hexanone =175% Acetone = 194%	-	Qualify positive sample results as estimated (J).	All samples. No impact since all compounds ND for all samples.
Matrix Spike/Matrix Spike Duplicate Sample ID:J19F97	No	**Non-compliant Recoveries** Acetone = 153%/101% **Non-compliant RPDs** 2-butanone =33% Acetone = 41%	J	Qualify positive and ND sample results as estimated (J).	All samples. Impacts include: 2-butanone – all samples Acetone – all samples
Field Duplicates Sample ID:	None collected				
Summary					
Validity of Data	Not all QC criteria were met, but no data were				

SDG K1922 – VOC QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1922	**W&C Project No.:**222007

Medium: Sediment – GW Upwelling	**Analytes:** VOA

Samples: J19F97, J19FD6, J19FV8, J19HX4

Laboratory: Lionville	**Date Data Assessment Completed:** 04/09/2010 **Complete By:** RDD	**Sample Collection Date:** 02/01/2010	**Sample Analysis Date:** 02/04/2010

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
	rejected.				

Additional Notes:

SDG K1922 – Metals QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA		**SDG No.:** K1922		**W&C Project No.:**222007	
Medium: Sediment – GW Upwelling				**Analytes:** Metals	
Samples: J19JK6, J19HT5, J19HX4, J19F97, J19JK7					
Laboratory: Lionville	**Date Data Assessment Completed:** 04/09/2010 **Complete By:** RDD		**Sample Collection Date:** 1/29/2010, 1/30/2010, 1/31/2010, 02/01/2010	**Sample Analysis Date:** ICP – 02/18/2010 Hg – 02/21/2010	

QC Parameter	**All in Spec.?**	**Non-Compliant Results**	**Flag**	**Action/ Notes**	**Associated Samples**
Holding Times	Yes	None	-	No action	
Detection Limits	No	The detection limit for Ca, Fe, P, Zn exceeds specification in work plan.	-	No action based on guidance.	
Blanks					
Preparation Blank	No	Cr = 0.285 mg/kg Sn = 0.894 mg/kg	UJ	Qualify positive sample results < 5x the blank concentration as ND.	All samples. Impacts: Cr – None Sn – all samples
Equipment Blank	None collected				
Other QC Results					
LCS Results	No	Si = 61%	J	Qualify positive and ND sample results as estimated (J).	All samples
Matrix Spike Sample ID:J19F97	No	Sb = 63%	J	Qualify positive and ND sample results as estimated (J).	All samples
Lab Duplicate Sample ID:J19F97	Yes	None	-	No action	
Field Duplicate Sample ID:	None collected				
QC Summary					
Validity of Data	Not all QC criteria were met but no data were rejected.				
Additional Notes:					

SDG K1922 – Radionuclides QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1922	**W&C Project No.:**222007
Medium: Sediment – GW Upwelling	Group 1 of 2	**Analytes:** Gamma Spec, Carbon 14 (J19HT5 only), Isotopic Plutonium, Isotopic Thorium, Isotopic Uranium, total Strontium
Samples: J19HT5, J19JK6		

Laboratory: Eberline	**Date Data Assessment Completed:** 04/09/2010 **Complete By:** RDD	**Sample Collection Date:** 1/30/2010, 1/31/2010	**Sample Analysis Date:** 2/2010

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No action	
Detection Limits	No	Europium 154 detection limit for J19JK6 slightly exceeds limit specified in the work plan.	-	No action based on guidance	
Blanks					
Method Blanks	Yes	None	-	No action	
Equipment Blank Sample ID:	None collected				
Other QC Results					
LCS Results	Yes	None	-	No action	
Tracer Results	Yes	None	-	No action	
Matrix Spike (C_{14})	No	MS not analyzed	J	Qualify positive and ND results as estimated (J).	J19HT5
Lab Duplicates Sample ID:J19HT5	Yes	None	-	No action	
Field Duplicate Sample ID:	None collected				
QC Summary					
Validity of Data	Although not all QC parameters had compliant results, no data were rejected.				
Additional Notes:					

SDG K1922 – Radionuclides QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1922	**W&C Project No.:**222007
Medium: Sediment – GW Upwelling	Group 2 of 2	**Analytes:** Gamma Spec, Isotopic Plutonium, Isotopic Thorium, Isotopic Uranium, total Strontium
Samples: J19F97, J19HX4, J19JK7		

Laboratory: Eberline	**Date Data Assessment Completed:** 04/09/2010 **Complete By:** RDD	**Sample Collection Date:** 1/29/2010, 2/01/2010	**Sample Analysis Date:** 2/2010

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No action	
Detection Limits	No	Cobalt 60, cesium 137, radium 226, radium 228, europium 152, europium 154, europium 156, detection limits for J19HX4 and J19HK7 (except for cesium 137) exceed limit specified in the work plan.	-	No action based on guidance	
Blanks					
Method Blanks	Yes	None	-	No action	
Equipment Blank Sample ID:	None collected				
Other QC Results					
LCS Results	Yes	None	-	No action	
Tracer Results	Yes	None	-	No action	
Lab Duplicates Sample ID:J19F97	Yes	None	-	No action	
Field Duplicate Sample ID:	None collected				
QC Summary					
Validity of Data	All QC parameters had compliant results.				
Additional Notes:					

SDG K1922 – TOC QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1922	**W&C Project No.:**222007	
Medium: Sediment – GW Upwelling		**Analytes:** TOC	
Samples: J19JK6, J19HT5, J19HX4, J19F97, J19JK7			
Laboratory: Lionville	**Date Data Assessment Completed:** 04/09/2010 **Complete By:** RDD	**Sample Collection Date:** 1/29/2010, 1/30/2010, 1/31/2010, 02/01/2010	**Sample Analysis Date:** 03/02/2010

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	No	Holding time exceeded <2x limit.	J	Qualify positive and ND sample results as estimated (J).	All samples
Detection Limit	Yes	None	-	No action	
Method Blank	Yes	None	-	No action	
Equipment Blank	None collected				
LCS Results	Yes	None	-	No action	
Matrix Spikes Sample ID: J19JK6	Yes	None	-	No action	
Lab Duplicate Sample ID: J19JK6	No	TOC = 32%	J	Qualify positive results as estimated (J).	All samples. All impacted since all have positive results.
Field Duplicate	None collected				
QC Summary					
Validity of Data	Not all QC parameters were compliant with criteria, but none rejected				
Additional Notes:					

D.3.34 SDG K1932

SDG K1932 – Metals QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1932	**W&C Project No.:**222007	
Medium: Sediment – GW Upwelling		**Analytes:** Metals (Group 1 of 2)	
Samples: J19J89, J19J90, J19JW2, J19JW3, J19JW4, J19JW5			
Laboratory: Lionville	**Date Data Assessment Completed:** 0416/2010 **Complete By:** LEM	**Sample Collection Date:** 2/5, 6, 7/2010	**Sample Analysis Date:** ICP – 3/4/2010 Hg – 2/23/2010

QC Parameter	**All in Spec.?**	**Non-Compliant Results**	**Flag**	**Action/ Notes**	**Associated Samples**
Holding Times	Yes	None	-	No action	
Detection Limits	No	Reporting limits for Fe, P, U, and Zn exceed reporting limit provided in the Work Plan.	-	No action based on guidance.	
Blanks					
Preparation Blank	No	Sn = 0.913	UJ	Qualify positive sample results < 5x the highest blank concentration as estimated non-detect (UJ).	Impacts all samples for tin (Sn).
		Ca = 5.4 mg/kg Mg = 2.8 P = 16.9 K = 16.5	-	No action because sample results are >5x the highest blank concentration.	
		Se = 0.246	-	No action because results are non-detect.	
Equipment Blank	Not collected				
Other QC Results					
LCS Results	Yes	None	-	No action	
Matrix Spike Sample ID: J19J90	No	**Non-compliant Recoveries** Sb = 61%	J	Qualify positive and non-detect results as estimated (J).	Impacts all samples for antimony (Sb).
		Al = 323% Cr = 135% Fe = -2340% Mn = 43% Si = 396%	-	No action since the sample concentration >4x spike concentration.	
Lab Duplicate Sample ID:J19J90	No	Tl = 43%	-	No action since the difference between results is <2x RDL.	
Field Duplicate	Not collected				
QC Summary					
Validity of Data	Not all QC criteria met, but no rejected results.				
Additional Notes:					

SDG K1932 – Metals QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1932	**W&C Project No.:**222007	
Medium: Sediment – GW Upwelling		**Analytes:** Metals (Group 2 of 2)	
Samples: J19JW1, J19JW6			
Laboratory: Lionville	**Date Data Assessment Completed:** 4/16/2010 **Complete By:** LEM	**Sample Collection Date:** 2/8/2010	**Sample Analysis Date:** ICP – 3/4/2010 Hg – 2/23/2010

QC Parameter	**All in Spec.?**	**Non-Compliant Results**	**Flag**	**Action/ Notes**	**Associated Samples**
Holding Times	Yes	None	-	No action	
Detection Limits	No	Reporting limits for Fe, P, U, and Zn exceed reporting limit provided in the Work Plan.	-	No action based on guidance.	
Blanks					
Preparation Blank	No	Sn = 0.913 Ca = 5.4 mg/kg Mg = 2.8 P = 16.9 K = 16.5 Se = 0.246	UJ - -	Qualify positive sample results < 5x the highest blank concentration as estimated non-detect (UJ). No action because sample results are >5x the highest blank concentration. No action because results are non-detect.	Impacts sample J19JW1 for tin (Se). Tin is >5x the blank concentration in sample J19JW6.
Equipment Blank	Not collected				
Other QC Results					
LCS Results	Yes	None	-	No action	
Matrix Spike Sample ID: J19JW1	No	**Non-compliant Recoveries** Al = -471% Fe = 1190% Mn = 128% Si = -20% Sb = 62% Cr = 133%	- J	No action because sample concentration >4x spike concentration. Qualify positive and non-detect results as estimated (J).	Impacts all samples for Sb and Cr.
Lab Duplicate Sample ID: J19JW1	No	Al = 35% Cr = 49% Si = 35% Sr = 49%	J	Qualify non-detect and positive results as estimated (J) since both results are >5x RDL.	Impacts all samples for Al, Cr, Si, and Sr.

SDG K1932 – Metals QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1932	**W&C Project No.:**222007
Medium: Sediment – GW Upwelling		**Analytes:** Metals (Group 2 of 2)
Samples: J19JW1, J19JW6		

Laboratory: Lionville	**Date Data Assessment Completed:** 4/16/2010 **Complete By:** LEM	**Sample Collection Date:** 2/8/2010	**Sample Analysis Date:** ICP – 3/4/2010 Hg – 2/23/2010

QC Parameter	**All in Spec.?**	**Non-Compliant Results**	**Flag**	**Action/ Notes**	**Associated Samples**
		Na = 95%	J	Qualify non-detect and positive results as estimated since difference between results is >2x RDL.	Impacts all samples for Na.
		K = 56%	-	No action since difference between results is <2x RDL.	
Field Duplicate Sample ID:	Not collected				
QC Summary					
Validity of Data	Not all QC criteria met, but no rejected results.				
Additional Notes:					

SDG K1932 – Radionuclides QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1932	**W&C Project No.:**222007	
Medium: Sediment – GW Upwelling	**Analytes:** Gamma Spec, Isotopic Plutonium, Isotopic Thorium, Isotopic Uranium, Sr-90 (Group 1 of 2)		
Samples: J19J89, J19J90, J19JW1, J19JW6			
Laboratory: Eberline	**Date Data Assessment Completed:** 4/16/2010 **Complete By:** LEM	**Sample Collection Date:** 2/5, 8/2010	**Sample Analysis Date:** 2/18-24/2010

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No action	
Detection Limits	Yes	None	-	No action	
Blanks					
Method Blanks	Yes	None	-	No action	
Equipment Blank	Not collected				
Other QC Results					
LCS Results	Yes	None	-	No action	
Tracer Results	Yes	None	-	No action	
Lab Duplicates Sample ID: J19J89	No	Thorium-228 = 125% Thorium 232 = 42% Uranium-233/234 = 47%	-	No action since the difference between results is <2x RDL.	
Field Duplicate Sample ID:	Not collected				
QC Summary					
Validity of Data	Yes, no data were qualified or rejected.				
Additional Notes:					

SDG K1932 – Radionuclides QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1932	**W&C Project No.:**222007	
Medium: Sediment – GW Upwelling	**Analytes:** Gamma Spec, Isotopic Plutonium, Isotopic Thorium, Isotopic Uranium, Sr-90 (Group 2 of 2)		
Samples: J19JW2, J19JW3, J19JW4, J19JW5			
Laboratory: Eberline	**Date Data Assessment Completed:** 4/16/2010 **Complete By:** LEM	**Sample Collection Date:** 2/6, 7/2010	**Sample Analysis Date:** 2/18-23/2010

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No action	
Detection Limits	Yes	None	-	No action	
Blanks					
Method Blanks	Yes	None	-	No action	
Equipment Blank	Not collected				
Other QC Results					
LCS Results	Yes	None	-	No action	
Tracer Results	Yes	None	-	No action	
Lab Duplicates Sample ID: J19JW2	No	Thorium-228 = 43% Uranium-233/234 = 40% Uranium-238 = 33%	-	No action since the difference between results is <2x RDL.	
Field Duplicate Sample ID:	Not collected				
QC Summary					
Validity of Data	Yes, no data were qualified or rejected.				
Additional Notes:					

SDG K1932 – TOC QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1932	**W&C Project No.:**222007	
Medium: Sediment – GW Upwelling		**Analytes:** TOC (Group 1 of 2)	
Samples: J19J89, J19J90, J19JW3, J19JW4, J19JW5			
Laboratory: Lionville	**Date Data Assessment Completed:** 04/16/2010 **Complete By:** LEM	**Sample Collection Date:** 2/5, 6, 7/2010	**Sample Analysis Date:** 3/2/2010

QC Parameter	**All in Spec.?**	**Non-Compliant Results**	**Flag**	**Action/ Notes**	**Associated Samples**
Holding Times	Yes	None.	-	No action	
Detection Limit	Yes	None	-	No action	
Method Blank	Yes	None	-	No action	
Equipment Blank	Not collected				
LCS Results	Yes	None	-	No action	
Matrix Spikes Sample ID: J19J89	Yes	None	-	No action	
Lab Duplicate Sample ID: J19J89	No	TOC = 34%	J	Qualify positive results as estimated because both results are >5xRDL.	Impacts all samples
Field Duplicate Sample ID:	Not collected				
QC Summary					
Validity of Data	Not all QC criteria met, but no rejected results.				
Additional Notes:					

SDG K1932 – TOC QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1932	**W&C Project No.:**222007
Medium: Sediment – GW Upwelling		**Analytes:** TOC (Group 2 of 2)
Samples: J19JW1		

Laboratory: Lionville	**Date Data Assessment Completed:** 4/16/2010 **Complete By:** LEM	**Sample Collection Date:** 2/8/2010	**Sample Analysis Date:** 3/8/2010

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	No	Holding time for TOC is 28 days	J	For holding times <2x criteria, qualify positive and non-detect results as estimated (J).	Impacts to sample J19JW1
Detection Limit	Yes	None	-	No action	
Method Blank	Yes	None	-	No action	
Equipment Blank	Not collected				
LCS Results	Yes	None	-	No action	
Matrix Spikes Sample ID: J19JW1	Yes	None	-	No action	
Lab Duplicate Sample ID: J19JW1	No	TOC = 76%	J	Qualify positive results as estimated because difference between results is >2x RDL.	Impacts to sample J19JW1
Field Duplicate Sample ID:	Not collected				
QC Summary					
Validity of Data	Not all QC criteria met, but no rejected results.				
Additional Notes:					

D.3.35 SDG K1945

SDG K1945 – Metals QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1945	**W&C Project No.:**222007	
Medium: Sediment – GW Upwelling		**Analytes:** Metals	
Samples: J19K18, J19K19, J19J88, J19JN4, J19JN5, J19K75, J19K76			
Laboratory: Lionville	**Date Data Assessment Completed:** 4/19/2010 **Complete By:** LEM	**Sample Collection Date:** 2/12, 13, 14, 15/2010	**Sample Analysis Date:** ICP – 3/10/2010 Hg – 3/4/2010

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No action	
Detection Limits	No	Reporting limits for Ca, Fe, P, U, and Zn exceed reporting limit provided in the Work Plan.	-	No action based on guidance.	
Blanks					
Preparation Blank	No	Sn = 1.12 mg/kg Li = 0.414 mg/kg P = 22 K = 15.7	UJ -	Qualify positive sample results < 5x the highest blank concentration as estimated non-detect (UJ). No action because sample results are >5x the highest blank concentration.	Impacts all samples for tin (Sn).
Equipment Blank	Not collected				
Other QC Results					
LCS Results	No	Sb = 132%	J	Qualify positive sample results as estimated (J).	Impacts to samples J19K75, J19K76 for Sb
Matrix Spike Sample ID: J19J88: Hg J19JN4: Others	No	**Non-compliant Recoveries** Sb = 67% P = 56% Zn = 48% Al = 220% Fe = -4040% Mn = 33% Si = 174%	J -	Qualify positive and non-detect results as estimated (J). No action since the sample concentration >4x spike concentration.	Impacts to all samples for Sb, P, and Zn.
Lab Duplicate Sample ID: J19J88: Hg J19JN4: Others	No	Si = 35%	J	Qualify positive and non-detect results as estimated (J) since both sample and duplicate results are >5x RDL .	Impacts to all samples for Si
Field Duplicate	Not collected				
QC Summary					

SDG K1945 – Metals QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1945	**W&C Project No.:**222007	
Medium: Sediment – GW Upwelling		**Analytes:** Metals	
Samples: J19K18, J19K19, J19J88, J19JN4, J19JN5, J19K75, J19K76			
Laboratory: Lionville	**Date Data Assessment Completed:** 4/19/2010 **Complete By:** LEM	**Sample Collection Date:** 2/12, 13, 14, 15/2010	**Sample Analysis Date:** ICP – 3/10/2010 Hg – 3/4/2010

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Validity of Data	Not all QC criteria met, but no rejected results.				
Additional Notes:					

SDG K1945 – Radionuclides QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1945	**W&C Project No.:**222007
Medium: Sediment – GW Upwelling	**Analytes:** Gamma Spec, Isotopic Plutonium, Isotopic Thorium, Isotopic Uranium, Sr-90, Technetium 99 (J19K75, J19KK8), Tritium (J19K75, J19K76)	
Samples: J19J88, J19JN4, J19JN5, J19K18, J19K19, J19K75, J19K76, J19KK8		

Laboratory: Eberline	**Date Data Assessment Completed:** 4/19/2010 **Complete By:** LEM	**Sample Collection Date:** 2/12, 13, 14, 15/2010	**Sample Analysis Date:** 2/26/2010, 3/1, 2/2010

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No action	
Detection Limits	Yes	None	-	No action	
Blanks					
Method Blanks	Yes	None	-	No action	
Equipment Blank	Not collected				
Other QC Results					
LCS Results	Yes	None	-	No action	
Tracer Results	Yes	None	-	No action	
Matrix Spike Sample ID:	No	MS not analyzed for tritium	J	Qualify positive and non-detect results as estimated (J), since no MS was analyzed for tritium.	Impacts to samples J19K75, J19K76 for tritium
Lab Duplicates Sample ID: J19K76: Tritium J19KK8: Technetium 99 J19J88: Others	No	Uranium-233/234 = 33%	-	No action since the difference between results is <2x RDL.	
Field Duplicate Sample ID:	Not collected				
QC Summary					
Validity of Data	Not all QC criteria met, but no rejected results				
Additional Notes:					

SDG K1945 – TOC QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA		**SDG No.:** K1945		**W&C Project No.:**222007	
Medium: Sediment – GW Upwelling				**Analytes:** TOC	
Samples: J19K18, J19K19, J19J88, J19JN4, J19JN5, J19K75, J19K76					
Laboratory: Lionville	**Date Data Assessment Completed:** 4/19/2010 **Complete By:** LEM			**Sample Collection Date:** 2/12, 13, 14, 15/2010	**Sample Analysis Date:** 3/5, 8/2010
QC Parameter	**All in Spec.?**	**Non-Compliant Results**	**Flag**	**Action/ Notes**	**Associated Samples**
Holding Times	Yes	None.	-	No action.	
Detection Limit	Yes	None	-	No action	
Method Blank	Yes	None	-	No action	
Equipment Blank	Not collected				
LCS Results	Yes	None	-	No action	
Matrix Spikes Sample ID: J19JN4	Yes	None	-	No action	
Lab Duplicate Sample ID: J19JN4	No	TOC = 54%	J	Qualify non-detect and positive results as estimated because both results are >5xRDL.	Impacts to all samples
Field Duplicate Sample ID:	Not collected				
QC Summary					
Validity of Data	Not all QC criteria met, but no rejected results.				
Additional Notes:					

D.3.36 SDG K1953

SDG K1953 – VOC QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1953	**W&C Project No.:**222007
Medium: Sediment – GW Upwelling	**Analytes:** VOA	
Samples: J19KY6, J19FV9		

Laboratory: Lionville	**Date Data Assessment Completed:** 04/09/2010 **Complete By:** RDD	**Sample Collection Date:** 02/22/2010	**Sample Analysis Date:** 03/02/2010

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No action	
Detection Limits	Yes	None	-	No action	
Blanks					
Blanks - Method	Yes	None	-	No action	
Equipment Blank Sample ID:	None collected				
Trip Blank Sample ID: J19FV9	Yes	None	-	No action based on guidance.	
Other QC Results					
Surrogate Recoveries	Yes	None	-	No action	
LCS Results	No	2-butanone =154% Acetone = 169%	-	Qualify positive sample results as estimated (J).	All samples. No impact since all compounds ND for all samples.
Matrix Spike/Matrix Spike Duplicate Sample ID:J19KY6	No	**Non-compliant Recoveries** 2-Butanone =153%/147% Acetone = 178%/174%	-	Qualify positive sample results as estimated (J).	All samples. Impacts include: 2-butanone – None Acetone – None
Field Duplicates Sample ID:	None collected				
Summary					
Validity of Data	Not all QC criteria were met, but no data were rejected.				
Additional Notes:					

SDG K1953 – Metals QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1953	**W&C Project No.:**222007	
Medium: Sediment - GW Upwelling		**Analytes:** Metals	
Samples: J19H34, J19K71, J19K72, J19KC5, J19KC6, J19KY6			
Laboratory: Lionville	**Date Data Assessment Completed:** 04/09/2010 **Complete By:** RDD	**Sample Collection Date:** 2/19/2010, 2/20/2010, 2/21/2010, 2/22/2010	**Sample Analysis Date:** ICP – 03/16-17/2010 Hg – 03/09/2010

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No action	
Detection Limits	No	The detection limit for Ca, Fe, P, Zn exceeds specification in work plan.	-	No action based on guidance.	
Blanks					
Preparation Blank	No	Se = 0.283 mg/kg Si = 2.00 mg/kg Sn = 1.58 mg/kg Zn = 1.28 mg/kg	UJ	Qualify positive sample results < 5x the blank concentration as ND.	All samples. Impacts: Se –J19H34, J19KC5, J19KC6 Si – None Sn – all samples Zn - None
Equipment Blank	None collected				
Other QC Results					
LCS Results	No	Si = 31%	J	Qualify positive and ND sample results as estimated (J).	All samples
Matrix Spike Sample ID:J19H34	No	Sb = 52% Bi = 0% Cr = 140% P = 4% U = 0% Zn = 64%	J/R	Qualify positive and ND sample results of Sb and Zn and positive sample results of Cr, Bi, P, U as estimated (J). Qualify ND results of Bi, P, U as rejected (R).	All samples. Impacts include Sb- all samples Bi – all samples rejected(R). Cr – all samples P –all samples estimated(J). U –J19KY6 estimated, all others rejected. Zn – all samples
Lab Duplicate Sample ID:J19H34	Yes	None	-	No action	
Field Duplicate Sample ID:	None collected				
QC Summary					
Validity of Data	No	Low MS recoveries (<30%) for Bi = 0% P = 4% U = 0%	R	Qualify ND results of Bi, P, U as rejected (R).	All samples
Additional Notes:					

SDG K1953 – Radionuclides QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA		**SDG No.:** K1953		**W&C Project No.:**222007	
Medium: Sediment - GW Upwelling			**Analytes:** Gamma Spec, Tritium, technetium 99, Isotopic Plutonium, Isotopic Thorium, Isotopic Uranium, total Strontium		
Samples: J19H34, J19K71, J19K72, J19KC5, J19KC6, J19KM5, J19KY6					
Laboratory: Eberline	**Date Data Assessment Completed:** 04/09/2010 **Complete By:** RDD		**Sample Collection Date:** 2/19/2010, 2/20/2010, 2/21/2010, 2/22/2010		**Sample Analysis Date:** 2-3/2010

QC Parameter	**All in Spec.?**	**Non-Compliant Results**	**Flag**	**Action/ Notes**	**Associated Samples**
Holding Times	Yes	None	-	No action	
Detection Limits	Yes	Cobalt 60, cesium 137, radium 226, radium 228, europium 152, europium 154, europium 156, detection limits for J19K71 exceed limits specified in the work plan.	-	No action required as specified in guidance.	
Blanks					
Method Blanks	Yes	None	-	No action	
Equipment Blank Sample ID:	None collected				
Other QC Results					
LCS Results	Yes	None	-	No action	
Tracer Results	Yes	None	-	No action	
Lab Duplicates Sample ID:J19H34	Yes	None	-	No action	
Field Duplicate Sample ID:	None collected				
QC Summary					
Validity of Data	All QC parameters had compliant results.				
Additional Notes:					

SDG K1953 – TOC QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1953	**W&C Project No.:**222007
Medium: Sediment - GW Upwelling		**Analytes:** TOC
Samples: J19H34, J19K71, J19K72, J19KC5, J19KC6, J19KY6		

Laboratory: Lionville	**Date Data Assessment Completed:** 04/09/2010 **Complete By:** RDD	**Sample Collection Date:** 2/19/2010, 2/20/2010, 2/21/2010, 2/22/2010	**Sample Analysis Date:** 03/10/2010

QC Parameter	**All in Spec.?**	**Non-Compliant Results**	**Flag**	**Action/ Notes**	**Associated Samples**
Holding Times	Yes	None		No action	
Detection Limit	Yes	None	-	No action	
Method Blank	No	TOC = 10.3 mg/kg	-	Qualify concentrations < 5x the blank result as ND.	All samples, however no impacts.
Equipment Blank	None collected				
LCS Results	Yes	None	-	No action	
Matrix Spikes Sample ID: J19KC5	Yes	None	-	No action	
Lab Duplicate Sample ID: J19KC5	No	TOC = 38%	J	Qualify positive results as estimated (J).	All samples. Impacts to all samples.
Field Duplicate	None collected				
QC Summary					
Validity of Data	All QC parameters were compliant with criteria.				
Additional Notes:					

D.3.37 SDG K1956

SDG K1956 – VOC QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1956	**W&C Project No.:**222007
Medium: Sediment - GW Upwelling		**Analytes:** VOA
Samples: J19KY5		

Laboratory: Lionville	**Date Data Assessment Completed:** 04/13/2010 **Complete By:** RDD	**Sample Collection Date:** 02/26/2010	**Sample Analysis Date:** 03/08/2010

QC Parameter	**All in Spec.?**	**Non-Compliant Results**	**Flag**	**Action/ Notes**	**Associated Samples**
Holding Times	Yes	None	-	No action	
Detection Limits	No	1,1,1-TCA, 1,2-DCA, 2-butanone, $MeCl_2$ limits exceed those in work plan.	-	No action based on criteria in guidance	
Blanks					
Blanks - Method	No	$MeCl_2$ = 3.68 µg/kg	UJ	Qualify positive results < 5x the blank concentration as ND (UJ).	All samples. Impacts J19KY5
Equipment Blank Sample ID:	None collected				
Trip Blank Sample ID: J19KJ6	No	$MeCl_2$ = 2.68 µg/kg	-	No action based on criteria in guidance.	
Other QC Results					
Surrogate Recoveries	Yes	None	-	No action	
LCS Results	No	2-butanone =195% 2-hexanone =184% Acetone = 227% Bromomethane = 159%	-	Qualify positive sample results as estimated (J).	All samples. No impact since all compounds ND.
Matrix Spike/Matrix Spike Duplicate Sample ID:J19KY5	Yes	None	-	No action	
Field Duplicates Sample ID:	None collected				
Summary					
Validity of Data	Not all QC criteria were met, but no data were rejected.				
Additional Notes:					

SDG K1956 – Metals QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1956	**W&C Project No.:**222007	
Medium: Sediment - GW Upwelling		**Analytes:** Metals (Group 1 of 2)	
Samples: J19JD3, J19KC4			
Laboratory: Lionville	**Date Data Assessment Completed:** 0413/2010 **Complete By:** RDD	**Sample Collection Date:** 2/27/2010, 2/28/2010	**Sample Analysis Date:** ICP – 03/22/2010 Hg – 03/12/2010

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No action	
Detection Limits	No	The detection limit for Ca, Fe, P, Zn exceeds specification in work plan.	-	No action based on guidance.	
Blanks					
Preparation Blank	No	Sn = 2.24 mg/kg	UJ	Qualify positive sample results < 5x the blank concentration as ND.	All samples. Impacts: Sn – all samples
Equipment Blank	None collected				
Other QC Results					
LCS Results	No	Si = 61%	J	Qualify positive and ND sample results as estimated (J).	All samples
Matrix Spike Sample ID:J19KC4	No	**Non-compliant Recoveries** Sb = 65% Ba = 58% Ca = 28% P = -8% V = 32% Zn = 53%	J	Qualify positive Ca and P and positive and ND sample results of Sb, Ba, V and Zn as estimated (J). Qualify as rejected ND sample results of Ca and P.	All sample results qualified as estimated (J). Ca and P: all positive results so all “J”
Lab Duplicate Sample ID:J19KC4	No	Al = 32% As = 34% Cu = 44% Pb = 76% Li = 43% Mg = 76% Ni = 68% Si = 40% Na= 80% Sr = 36% Zn = 45%	J	Qualify positive and ND sample results as estimated.	All samples
Field Duplicate	None collected				
QC Summary					
Validity of Data	Not all QC criteria were met but no data were rejected.				
Additional Notes:					

SDG K1956 – Metals QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1956	**W&C Project No.:**222007	
Medium: Sediment - GW Upwelling		**Analytes:** Metals (Group 2 of 2)	
Samples: J19K73, J19K74, J19KY5, J19JK8, J19KF6			
Laboratory: Lionville	**Date Data Assessment Completed:** 0413/2010 **Complete By:** RDD	**Sample Collection Date:** 2/26/2010, 2/27/2010, 2/28/2010	**Sample Analysis Date:** ICP – 03/22/2010 Hg – 03/17/2010

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No action	
Detection Limits	No	The detection limit for Ca, Fe, P, Zn exceeds limits specified in work plan.	-	No action based on guidance.	
Blanks					
Preparation Blank	No	Sn = 2.24 mg/kg	UJ	Qualify positive sample results < 5x the blank concentration as ND.	All samples. Impacts: Sn – all samples
Equipment Blank	None collected				
Other QC Results					
LCS Results	No	Si = 61%	J	Qualify positive and ND sample results as estimated (J).	All samples
Matrix Spike Sample ID:J19K73	No	**Non-compliant Recoveries** Sb = 54% P = 54% Zn = 1%	J	Qualify positive Zn and positive and ND sample results of Sb, Ba, V and Zn as estimated (J). Qualify as rejected ND sample results of Zn.	All samples Zn: all positive results, so all “J”
Lab Duplicate Sample ID:J19K73	No	Ba = 43% Co = 49% Pb = 31% Mn = 83% V = 31% Zn = 40%	J	Qualify positive and ND sample results as estimated.	All samples
Field Duplicate Sample ID: J19K73/J19K74	No	Cr = 32% Na = 33%	-	No action based on criteria in guidance.	
QC Summary					
Validity of Data	Not all QC criteria were met but no data were rejected.				
Additional Notes:					

SDG K1956 – Radionuclides QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA		**SDG No.:** K1956	**W&C Project No.:**222007
Medium: Sediment - GW Upwelling		**Analytes:** Gamma Spec, Carbon 14 (J19JD3, J19KF6 only), Isotopic Plutonium, Isotopic Thorium, Isotopic Uranium, total Strontium, tritium (J19K73 and J19K74)	
Samples: J19JD3, J19JK8, J19K73, J19K74, J19KC4, J19KF6, J19KY5			
Laboratory: Eberline	**Date Data Assessment Completed:** 04/12/2010 **Complete By:** RDD	**Sample Collection Date:** 2/26/2010, 2/27/2010, 2/28/2010	**Sample Analysis Date:** 3/2010

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No action	
Detection Limits	No	Europium 154 detection limit for J19JD3 slightly exceeds limit specified in the work plan.	-	No action based on guidance	
Blanks					
Method Blanks	Yes	None	-	No action	
Equipment Blank	None collected				
Other QC Results					
LCS Results	Yes	None	-	No action	
Tracer Results	Yes	None	-	No action	
Matrix Spike (C_{14} and tritium)	No	MS not analyzed	J	Qualify positive and ND results as estimated (J).	C_{14} -J19JD3, J19KF6 Tritium – J19K73, J19K74
Lab Duplicates Sample ID:J19JD3	Yes	None	-	No action	
Field Duplicate Sample ID:J19K73/J19K74	Yes	None	-	No action	
QC Summary					
Validity of Data	Although not all QC parameters had compliant results, no data were rejected.				
Additional Notes:					

SDG K1956 – TOC QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1956	**W&C Project No.:**222007	
Medium: Sediment - GW Upwelling		**Analytes:** TOC	
Samples: J19K73, J19K74, J19KY5, J19JK8, J19KF6			
Laboratory: Lionville	**Date Data Assessment Completed:** 04/13/2010 **Complete By:** RDD	**Sample Collection Date:** 2/26/2010, 2/27/2010, 2/28/2010	**Sample Analysis Date:** 03/10/2010, 3/11/2010

QC Parameter	**All in Spec.?**	**Non-Compliant Results**	**Flag**	**Action/ Notes**	**Associated Samples**
Holding Times	Yes	None.	-	No action.	
Detection Limit	Yes	None	-	No action	
Method Blank	No	TOC = 10.3 mg/kg (3/10/2010) TOC = 4.98 mg/kg (3/11/2010)	-	Qualify positive sample results < 5x the blank concentration as ND.	All samples. No impact since all sample concentrations > 5x blank result.
Equipment Blank	None collected				
LCS Results	Yes	None	-	No action	
Matrix Spikes Sample ID: J19JK8	Yes	None	-	No action	
Lab Duplicate Sample ID: J19JK8	Yes	None	-	No action.	
Field Duplicate Sample ID: J19K73/J19K74	No	TOC = 45%	-	No action based on criteria in guidance	
QC Summary					
Validity of Data	Not all QC parameters were compliant with criteria, but none rejected				
Additional Notes:					

APPENDIX E

FISH TISSUE DATA QUALITY ASSESSMENT WORKSHEETS

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APPENDIX E
FISH TISSUE DATA QUALITY ASSESSMENT WORKSHEETS

E.1 FISH

E.1.1 SDG J00469

Validated by AMEC - Included in Appendix G

E.1.2 SDG J00486

Validated by AMEC - Included in Appendix G

E.1.3 SDG J00558

Validated by AMEC - Included in Appendix G

E.1.4 SDG J00559

Validated by AMEC - Included in Appendix G

E.1.5 SDG J00564

Validated by AMEC - Included in Appendix G

E.1.6 SDG J00568

Validated by AMEC - Included in Appendix G

E.1.7 SDG J00569

Validated by AMEC - Included in Appendix G

E.1.8 SDG J00581

Validated by AMEC - Included in Appendix G

E.1.9 SDG J00588

Validated by AMEC - Included in Appendix G

E.1.10 SDG K1579

SDG K1579. Pesticides QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1579	**W&C Project No.:**222007	
Medium: Fish Tissue **Fish Type:** Whitefish	Data set 1 of 1	**Analytes:** Pesticides	
Samples: **Liver/Kidney** – J18J59, J18J60, J18J61, J18J62, J18J63, J18K11, J18K12, J18K13, J18K14, J18K15, J18K52, J18K53, J18K54, J18K55, J18K56, J18KD3, J18KD4, J18KD5, J18KD6, J18KD7			
Laboratory: Lionville	**Date Data Assessment Completed:** 03/27/2010 **Complete By:** JAR	**Sample Collection Date:** 04/01/2009	**Sample Analysis Date:** Extr: 06/23/2009 Anal: 06/25/2009 – 07/02/2009

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	No	Extraction holding time exceeded; samples extracted more than two times the holding limit – collected 04/01/2009, extracted 06/23/2009	J/R	Qualify positive results as estimated (J) and non-detected results as rejected (R)	Impacts the following samples: All samples; positive results qualified as estimated (J) and non-detected results qualified as rejected (R)
Detection Limits	No	RLs exceeded for all except heptachlor, heptachlor epoxide, alpha-chlordane, gamma-chlordane, and methoxychlor	-	No action based on guidance	
Blanks					
Method Blank	Yes	None	-	No action	
Equipment Blank Sample ID:	None collected				
Other QC Results					
Surrogate Recoveries	Yes	None	-	No action	
LCS Results	No	No LCS results for toxaphene	J	Qualify all associated results as estimated (J)	Impacts the following samples: All samples
Matrix Spike/ Matrix Spike Duplicate Sample ID: J18K11	No No	No MS/MSD results for toxaphene Heptachlor = 46%; RPD = 41	J J	Qualify all associated results as estimated (J) Qualify all associated	Impacts the following samples: Toxaphene – All samples Heptachlor, 4,4'-DDT, Endrin

SDG K1579. Pesticides QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1579	**W&C Project No.:**222007
Medium: Fish Tissue **Fish Type:** Whitefish	Data set 1 of 1	**Analytes:** Pesticides

Samples:
Liver/Kidney – J18J59, J18J60, J18J61, J18J62, J18J63, J18K11, J18K12, J18K13, J18K14, J18K15, J18K52, J18K53, J18K54, J18K55, J18K56, J18KD3, J18KD4, J18KD5, J18KD6, J18KD7

Laboratory: Lionville	**Date Data Assessment Completed:** 03/27/2010 **Complete By:** JAR	**Sample Collection Date:** 04/01/2009	**Sample Analysis Date:** Extr: 06/23/2009 Anal: 06/25/2009 – 07/02/2009

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
		4,4'-DDT = 14%/25%; RPD = 52 Endrin Aldehyde = 7.8%/6.7% Methoxychlor = 28%/32%		results as estimated (J)	Aldehyde, Methoxychlor - All samples
J18KD3	No	Endrin Aldehyde = 8.5%/8.7% 4,4'-DDT = 46%	J	Qualify all associated results as estimated (J)	Endrin Aldehyde, 4,4'-DDT - All samples
Field Duplicate Sample ID:	None collected				
QC Summary					
Validity of Data	No; non-detected results in all samples qualified as rejected (R) due to extraction holding time exceeded by more than twice the holding time				
Additional Notes: Sample results reported on a wet weight basis.					

SDG K1579. Metals QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1579	**W&C Project No.:**222007
Medium: Fish Tissue **Fish Type:** Whitefish		**Analytes:** Metals
Samples: **Liver/Kidney** – J18J59, J18J60, J18J61, J18J62, J18J63, J18K11, J18K12, J18K13, J18K14, J18K15, J18K52, J18K53, J18K54, J18K55, J18K56, J18KD3, J18KD4, J18KD5, J18KD6, J18KD7		

Laboratory: Lionville	**Date Data Assessment Completed:** 03/27/2010 **Complete By:** JAR	**Sample Collection Date:** 04/01/2009	**Sample Analysis Date:** ICP – 06/13/2009 Hg – 06/12/2009

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	No	Hg holding time exceeded; samples analyzed more than two times the holding time	J	Qualify positive results as estimated (J) and non-detected results for Hg as rejected (R)	Impacts the following samples: All samples; Hg results all positive detections and qualified as estimated (J)
Detection Limits	No	RLs exceeded for Al, Be, Ca, Fe, P, K, Zn, Cu, Si	-	No action based on guidance	
Blanks					
Preparation Blank	No	Ca = 19.7 mg/kg Mg = 3.02 mg/kg Se = 0.408 mg/kg Sn = 1.08 mg/kg U = 2.04 mg/kg Zn = 5.65 mg/kg	UJ	Qualify results less than 5X blank concentration as non-detected estimated (UJ)	Impacts the following results: Mg – None; all results >5X blank or reported non-detect Se – J18J59 Sn – All except J18J59, J18KD4 U – J18KD5 Zn – All except J18J61 Ca – J18J59, J18J62, J18K12, J18K14, J18K15, J18KD3, J18KD4, J18KD6
Equipment Blank Sample ID:	None collected				
Other QC Results					
LCS Results	No	Si = 62%	J	Qualify positive and non-detected results as estimated	Impacts the following samples: Si - All samples

SDG K1579. Metals QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1579	**W&C Project No.:**222007
Medium: Fish Tissue **Fish Type:** Whitefish		**Analytes:** Metals
Samples: **Liver/Kidney** – J18J59, J18J60, J18J61, J18J62, J18J63, J18K11, J18K12, J18K13, J18K14, J18K15, J18K52, J18K53, J18K54, J18K55, J18K56, J18KD3, J18KD4, J18KD5, J18KD6, J18KD7		

Laboratory: Lionville	**Date Data Assessment Completed:** 03/27/2010 **Complete By:** JAR	**Sample Collection Date:** 04/01/2009	**Sample Analysis Date:** ICP – 06/13/2009 Hg – 06/12/2009

QC Parameter	**All in Spec.?**	**Non-Compliant Results**	**Flag**	**Action/ Notes**	**Associated Samples**
				(J)	
Matrix Spike Sample ID: J18J59	No	K = 146%	J	Qualify positive results as estimated (J)	Impacts the following samples: K – All samples
Lab Duplicate Sample ID: J18J59	Yes	None	-	No action	
Field Duplicate Sample ID:	None collected				
QC Summary					
Validity of Data	No, but no data were rejected				
Additional Notes: Sample results reported on “as received” basis (wet weight).					

SDG K1579. Radionuclides QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1579	**W&C Project No.:**222007
Medium: Fish Tissue **Fish Type:** Whitefish	Data set 1 of 2	**Analytes:** C14, Gamma Spec, Tritium, Isotopic Plutonium, Isotopic Thorium, Isotopic Uranium, Sr-90, Tc-99

Samples:
Liver/Kidney – J18J59, J18J60, J18J61, J18J62, J18J63, J18K11, J18K12, J18K13, J18K14, J18K15

Laboratory:	**Date Data Assessment Completed:**	**Sample Collection Date:**	**Sample Analysis Date:**
Eberline	03/27/2010 **Complete By:** JAR	04/01/2009	04/14/2009 – 05/25/2009

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No action	
Detection Limits	No	MDA > RDL for Co-60, Ra-226, Ra-228, Eu-152, Eu-154, Eu-155, Cs-137	-	No action based on guidance	
Blanks					
Method Blanks	No	Th-230 = 0.495 pCi/g	J	Qualify results less than 5X blank concentration as estimated (J)	Impacts the following results: Th-230 – J18J59, J18J61, J18J62, J18J63, J18K12, K18K13, J18K15
Other QC Results					
LCS Results	Yes	None	-	No action	
Tracer Results	Yes	None	-	No action	
Matrix Spike (C-14, Tritium)	No	MS not analyzed for C-14 or tritium	J	Qualify positive and non-detected results for C-14 and tritium as estimated (J)	Impacts the following samples: All samples
Lab Duplicates Sample ID: J18J59	Yes	None	-	No action	
Field Duplicate Sample ID:	None collected				
QC Summary					
Validity of Data	No, but no data were rejected				
Additional Notes:					

SDG K1579. Radionuclides QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1579	**W&C Project No.:**222007
Medium: Fish Tissue **Fish Type:** Whitefish	Data set 2 of 2	**Analytes:** C14, Gamma Spec, Tritium, Isotopic Plutonium, Isotopic Thorium, Isotopic Uranium, Sr-90, Tc-99

Samples:
Liver/Kidney – J18K52, J18K53, J18K54, J18K55, J18K56, J18KD3, J18KD4, J18KD5, J18KD6, J18KD7

Laboratory: Eberline	**Date Data Assessment Completed:** 03/27/2010 **Complete By:** JAR	**Sample Collection Date:** 04/01/2009	**Sample Analysis Date:** 04/15/2009 – 05/26/2009

QC Parameter	**All in Spec.?**	**Non-Compliant Results**	**Flag**	**Action/ Notes**	**Associated Samples**
Holding Times	Yes	None	-	No action	
Detection Limits	No	MDA > RDL for Co-60, Ra-226, Ra-228, Eu-152, Eu-154, Eu-155, Cs-137	-	No action based on guidance	
Blanks					
Method Blanks	No	Th-230 = 0.292 pCi/g	J	Qualify results less than 5X blank concentration as estimated (J)	Impacts the following results: Th-230 – J18K52, J18K53, J18K54, J18K55, J18K56, K18KD3, J18KD4, J18KD5, J18KD7
Other QC Results					
LCS Results	Yes	None	-	No action	
Tracer Results	Yes	None	-	No action	
Matrix Spike (C-14, Tritium)	No	No MS analyzed for C-14 or tritium	J	Qualify positive and non-detected results for C-14 and tritium as estimated (J)	Impacts the following samples: All samples
Lab Duplicates Sample ID: J18K52	Yes	None	-	No action	
Field Duplicate Sample ID:	None collected				
QC Summary					
Validity of Data	No, but no data were rejected				
Additional Notes:					

E.1.11 SDG K1608

Validated by ELR - Included in Appendix F

E.1.12 SDG K1618

SDG K1618 – Pesticides QC Summary Sheet

<table>
<tr><td colspan="2">Project: Hanford – Columbia River Component of the RCBRA</td><td>SDG No.: K1618</td><td>W&C Project No.:222007</td></tr>
<tr><td colspan="3">Medium: Fish Tissue
Fish Type: Whitefish</td><td>Analytes: Pesticides</td></tr>
<tr><td colspan="4">Samples:
Carcass – J18J69, J18J70, J18J71, J18J72, J18J73, J18K25
Fillet – J18J06, J18J07, J18J08, J18J09, J18J10, J18J88</td></tr>
<tr><td>Laboratory: Lionville</td><td>Date Data Assessment Completed: 3/18/2010
Complete By: KAM</td><td>Sample Collection Date: 4/28-30/2009</td><td>Sample Analysis Date: Extr: 5/7/2009
Anal: 5/8-9/2009</td></tr>
</table>

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No Action	
Detection Limits	No	Detection limits exceeded for most pesticides	-	No action based on guidance	
Blanks					
Method Blank	Yes	None	-	No Action	
Equipment Blank Sample ID:	Not Analyzed				
Other QC Results					
Surrogate Recoveries	Yes	None	-	No Action	
LCS Results	No	No LCS results for toxaphene	J	Qualify all associated results as estimated (J)	All samples
Matrix Spike/ Matrix Spike Duplicate Sample ID: J18J06	No	**Non-compliant Recoveries** Endrin aldehyde: 42.6% No MS/MSD results for toxaphene	J J	Qualify positive and non-detect results as estimated (J) Qualify all associated results as estimated (J)	All samples
Field Duplicates Sample ID:	Not Collected				
Summary					
Validity of Data	Not all QC criteria met, however no rejected results				
Additional Notes:					

SDG K1618 – Metals QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1618	**W&C Project No.:**222007	
Medium: Fish Tissue **Fish Type:** Whitefish		**Analytes:** Metals	
Samples: **Carcass** – J18J69, J18J70, J18J71, J18J72, J18J73, J18K25 **Fillet** – J18J06, J18J07, J18J08, J18J09, J18J10, J18J88			
Laboratory: Lionville	**Date Data Assessment Completed:** 3/18/2010 **Complete By:** KAM	**Sample Collection Date:** 4/28-30/2009	**Sample Analysis Date:** ICP – 5/26/2009 Hg – 5/20/2009

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No Action	
Detection Limits	No	Be, Ca, Cr, Fe, K, Sn, and Zn detection limits exceeded specifications in work plan	-	No action based on guidance	
Blanks					
Preparation Blank	No	Lead = 0.455 mg/kg wet Manganese = 0.229 Tin = 0.682	UJ	Qualify sample results less than 5x the blank concentration as estimated non-detect (UJ)	All samples. Impacts the following: Pb: J18J07, J18J09 Mn: J18J06, J18J07, J18J08, J18J09, J18J10, J18J72, J18J88, J18K25
Equipment Blank Sample ID:	Not Analyzed				
Other QC Results					
LCS Results	No	Antimony = 193% Arsenic = 182% Vanadium = 131%	J	Qualify positive sample results as estimated (J)	All samples for arsenic and vanadium, however no impacts to antimony since results are ND.
		Lead = 51%	J	Qualify positive and ND sample results as estimated (J)	All samples
Matrix Spikes Sample ID: J18J06	No	Calcium RPD = 57%	J	Qualify positive results as estimated (J)	All samples

SDG K1618 – Metals QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1618	**W&C Project No.:**222007
Medium: Fish Tissue **Fish Type:** Whitefish		**Analytes:** Metals
Samples: **Carcass** – J18J69, J18J70, J18J71, J18J72, J18J73, J18K25 **Fillet** – J18J06, J18J07, J18J08, J18J09, J18J10, J18J88		

Laboratory: Lionville	**Date Data Assessment Completed:** 3/18/2010 **Complete By:** KAM	**Sample Collection Date:** 4/28-30/2009	**Sample Analysis Date:** ICP – 5/26/2009 Hg – 5/20/2009

QC Parameter	**All in Spec.?**	**Non-Compliant Results**	**Flag**	**Action/ Notes**	**Associated Samples**
Lab Duplicates Sample ID: J18J06	No	**RPD** Barium = 127% Boron = 100% Calcium = 55% Copper = 37% Manganese = 57% Silicon = 40% Strontium = 62%	J	Qualify calcium results as estimated since both results are greater than 5x RDL. No action for others.	All samples, however only impacts calcium.
Field Duplicate Sample ID:	Not Collected				
QC Summary					
Validity of Data	Not all QC criteria met, however no rejected results				
Additional Notes:					

SDG K1618 – Radionuclides QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1618	**W&C Project No.:**222007	
Medium: Fish Tissue **Fish Type:** Whitefish	**Analytes:** C14, Gamma Spec, Tritium, Isotopic Plutonium, Isotopic Thorium, Isotopic Uranium, Sr-90, Tc-99		
Samples: **Carcass** – J18J69, J18J70, J18J71, J18J72, J18J73, J18K25 **Fillet** – J18J06, J18J07, J18J08, J18J09, J18J10, J18J88			
Laboratory: Eberline	**Date Data Assessment Completed:** 3/18/2010 **Complete By:** KAM	**Sample Collection Date:** 4/28-30/2009	**Sample Analysis Date:** 5-6/2009

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No Action	
Detection Limits	No	**RDL** All RDLs either less than or equal to reporting limit in work plan **MDA** Uranium-238 Ruthenium-106	-	No action based on guidance	
Blanks					
Method Blanks	Yes	None	-	No Action	
Other QC Results					
LCS Results	Yes	None	-	No Action	
Tracer Results	No	J18J72 = 113% for Thorium	J	Qualify positive results as estimated (J)	Sample J18J72 for Th-230. No impacts to Th-228 and Th-232 since results ND.
Matrix Spike – C_{14}, Tritium	No	No MS analyzed for C_{14} or tritium	J	Qualify positive and non-detect results as estimated (J)	All samples for C_{14} and tritium
Lab Duplicates Sample ID: J18J06	Yes	None	-	No Action	
Field Duplicate Sample ID:	Not Collected				
QC Summary					
Validity of Data	Not all QC criteria met, however no rejected results				
Additional Notes:					

E.1.13 SDG K1709

SDG J1709 – Pesticides QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1709	**W&C Project No.:**222007	
Medium: Fish Tissue **Fish Type:** Sturgeon		**Analytes:** Pesticides – Group 1 of 2	
Samples: **Carcass** – J19026, J19273, J19294, J19284, J192B4 **Fillet** – J19025, J19272, J19293, J19283, J192B3			
Laboratory: Lionville	**Date Data Assessment Completed:** 3/17/2010 **Complete By:** KAM	**Sample Collection Date:** 7/28-30/2009, 8/3/2009	**Sample Analysis Date:** 8/10/2009 extr 8/14,19/2009 anal

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No Action	
Detection Limits	No	Detection limits exceeded for most pesticides	-	No action based on guidance	
Blanks					
Method Blank	Yes	None	-	No Action	
Equipment Blank Sample ID:	Not Analyzed				
Other QC Results					
Surrogate Recoveries	No	Decachlorobiphenyl below criteria for samples J19294, J19283, J19284, J192B3, J192B4	J	Qualify positive and non-detect results as estimated (J)	Samples J19294, J19283, J19284, J192B3, J192B4
LCS Results	No	No LCS results for toxaphene	J	Qualify all associated results as estimated (J)	All samples
Matrix Spike/ Matrix Spike Duplicate Sample ID: J19025	No	**Non-compliant recoveries:** Delta-BHC: 38%/39% Heptachlor: 44%/45% Aldrin: 44%/45% Heptachlor epoxide: 46%/46% Gamma-chlordane: 49% Endrin aldehyde: 9%/12% Endosulfan I: /48%	J	Qualify positive and non-detect results as estimated (J)	All samples
		No MS/MSD results for toxaphene	J	Qualify all associated	All samples

SDG J1709 – Pesticides QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1709	**W&C Project No.:**222007
Medium: Fish Tissue **Fish Type:** Sturgeon		**Analytes:** Pesticides – Group 1 of 2
Samples: **Carcass** – J19026, J19273, J19294, J19284, J192B4 **Fillet** – J19025, J19272, J19293, J19283, J192B3		

Laboratory: Lionville	**Date Data Assessment Completed:** 3/17/2010 **Complete By:** KAM	**Sample Collection Date:** 7/28-30/2009, 8/3/2009	**Sample Analysis Date:** 8/10/2009 extr 8/14,19/2009 anal

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
				results as estimated (J)	
Field Duplicates Sample ID:	Not Collected				
Summary					
Validity of Data	Not all QC criteria met, however no rejected results				
Additional Notes:					

SDG K1709 – Pesticides QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1709	**W&C Project No.:**222007
Medium: Fish Tissue **Fish Type:** Sturgeon		**Analytes:** Pesticides – Group 2 of 2
Samples: **Kidney** – J19028, J19275, J19286, J19296, J192B6 **Liver** – J19027, J19274, J19285, J19295, J192B5		

Laboratory: Lionville	**Date Data Assessment Completed:** 3/17/2010 **Complete By:** KAM	**Sample Collection Date:** 7/28-30/2009, 8/3/2009	**Sample Analysis Date:** 8/25/2009 extr 9/1,3,8/2009 anal

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	No	All samples extracted <2x holding time	J	Qualify positive and non-detect results as estimated (J)	All samples
Detection Limits	No	Detection limits exceeded for most pesticides	-	No action based on guidance	
Blanks					
Method Blank	Yes	None	-	No Action	
Equipment Blank Sample ID:	Not Analyzed				
Other QC Results					
Surrogate Recoveries	Yes	None	-	No Action	
LCS Results	No	No LCS results for toxaphene	J	Qualify all associated results as estimated (J)	All samples
Matrix Spike/ Matrix Spike Duplicate Sample ID: J19027	No	**Non-compliant recoveries:** 4,4'-DDT: 3.25%/0.962% Endrin aldehyde: 10%/14% Methoxychlor: /47% Endrin ketone: /44%	J	Qualify positive and non-detect results as estimated (J)	All samples
		Non-compliant RPDs Endrin aldehyde: 44%	J	Qualify all results as estimated (J)	All samples
		No MS/MSD results for toxaphene	J	Qualify all results as estimated (J)	All samples

SDG K1709 – Pesticides QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1709	**W&C Project No.:**222007

Medium: Fish Tissue **Fish Type:** Sturgeon	**Analytes:** Pesticides – Group 2 of 2

Samples:
Kidney – J19028, J19275, J19286, J19296, J192B6
Liver – J19027, J19274, J19285, J19295, J192B5

Laboratory: Lionville	**Date Data Assessment Completed:** 3/17/2010 **Complete By:** KAM	**Sample Collection Date:** 7/28-30/2009, 8/3/2009	**Sample Analysis Date:** 8/25/2009 extr 9/1,3,8/2009 anal

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Field Duplicate Sample ID:	Not Collected				
QC Summary					
Validity of Data	Not all QC criteria met, however no rejected results				
Additional Notes:					

SDG K1709 – Metals QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1709	**W&C Project No.:**222007
Medium: Fish Tissue **Fish Type:** Sturgeon		**Analytes:** Metals – Group 1 of 2

Samples:
Carcass – J19026, J19273, J19294, J19284, J192B4
Fillet – J19025, J19272, J19293, J19283, J192B3

Laboratory: Lionville	**Date Data Assessment Completed:** 3/18/2010 **Complete By:** KAM	**Sample Collection Date:** 7/28-30/2009, 8/3/2009	**Sample Analysis Date:** ICP – 8/12/2009 Hg – 8/17/2009

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No Action	
Detection Limits	No	Detection limits exceeded for most metals	-	No action based on guidance	
Blanks					
Preparation Blank	No	Al = 43.4 mg/kg Ca = 12.9 Cr = 0.491 Mg = 3.80 Si = 6.08 Sn = 2.66	UJ	Qualify sample results <5x blank concentration as estimated non-detect (UJ)	All samples. Impacts to the following: Ca: J19272, J19283, J192B3 Cr: J19026, J19273, J19293, J19294, J19283, J19284, J192B3, J192B4 Si: All samples Sn: J19025, J19272, J19273, J19293, J19294, J19283, J19284, J192B3, J192B4
Equipment Blank Sample ID:	Not Analyzed				
Other QC Results					
LCS Results	Yes	None	-	No Action	
Matrix Spikes Sample ID: J19025	No	Phosphorus = 143%	-	No qualification since sample result is greater than 4x spiked amount	All samples

SDG K1709 – Metals QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1709	**W&C Project No.:**222007	
Medium: Fish Tissue **Fish Type:** Sturgeon		**Analytes:** Metals – Group 1 of 2	
Samples: **Carcass** – J19026, J19273, J19294, J19284, J192B4 **Fillet** – J19025, J19272, J19293, J19283, J192B3			
Laboratory: Lionville	**Date Data Assessment Completed:** 3/18/2010 **Complete By:** KAM	**Sample Collection Date:** 7/28-30/2009, 8/3/2009	**Sample Analysis Date:** ICP – 8/12/2009 Hg – 8/17/2009

QC Parameter	**All in Spec.?**	**Non-Compliant Results**	**Flag**	**Action/ Notes**	**Associated Samples**
Lab Duplicates Sample ID: J19025	No	Barium RPD = 34%	-	No action since difference between results is less than 2x RDL	All samples
Field Duplicate Sample ID:	Not Collected				
QC Summary					
Validity of Data	Not all QC criteria met, however no rejected results				
Additional Notes:					

SDG K1709 – Metals QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1709	**W&C Project No.:**222007
Medium: Fish Tissue **Fish Type:** Sturgeon		**Analytes:** Metals – Group 2 of 2
Samples: **Kidney** – J19028, J19275, J19286, J19296, J192B6 **Liver** – J19027, J19274, J19285, J19295, J192B5		

Laboratory: Lionville	**Date Data Assessment Completed:** 3/18/2010 **Complete By:** KAM	**Sample Collection Date:** 7/28-30/2009, 8/3/2009	**Sample Analysis Date:** ICP – 9/5/2009 Hg – 8/28/2009

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	No	Samples analyzed beyond holding time criteria (<2x) for Hg	J	Qualify positive and non-detect results as estimated (J)	Samples J19027, J19028, J19274, J19275, J19285, and J19286 for Hg
Detection Limits	No	Be, Ca, Fe, Li, P, K, Sn, U, and Zn detection limits exceeded specifications in work plan	-	No action based on guidance	
Blanks					
Preparation Blank	No	Mg: 0.842 mg/kg wet Sn: 0.865	UJ	Qualify results <5x blank concentration as estimated non-detect (UJ)	All samples. Impacts to the following: Sn: All samples
Equipment Blank Sample ID:	Not Analyzed				
Other QC Results					
LCS Results	No	Si = 133%	J	Qualify positive results as estimated (J)	All samples
Matrix Spikes Sample ID: J19027	Yes	None	-	No Action	
Lab Duplicates Sample ID: J19027	Yes	None	-	No Action	
Field Duplicate Sample ID:	Not Collected				
QC Summary					
Validity of Data	Not all QC criteria met, however no rejected results				
Additional Notes:					

SDG K1709 – Radionuclides QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1709	**W&C Project No.:**222007
Medium: Fish Tissue **Fish Type:** Sturgeon	**Analytes:** C14, Gamma Spec, Tritium, Isotopic Plutonium, Isotopic Thorium, Isotopic Uranium, Sr-90, Tc-99	

Samples:
Carcass – J19026, J19273, J19294, J19284, J192B4
Fillet – J19025, J19272, J19293, J19283, J192B3
Kidney – J19028, J19275, J19286, J19296, J192B6
Liver – J19027, J19274, J19285, J19295, J192B5

Laboratory: Eberline	**Date Data Assessment Completed:** 3/18/2010 **Complete By:** KAM	**Sample Collection Date:** 7/28-30/2009, 8/3/2009	**Sample Analysis Date:** 8/2009

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No Action	
Detection Limits	Yes	**RDL** All RDLs either less than or equal to reporting limit in work plan **MDA** Uranium-238	-	No Action	
Blanks					
Method Blanks	Yes	None	-	No Action	
Other QC Results					
LCS Results	Yes	None	-	No Action	
Tracer Results	Yes	None	-	No Action	
Matrix Spike – C_{14}, Tritium	No	MS not analyzed for C_{14} or tritium	J	Qualify positive and non-detect results as estimated (J)	All samples for C_{14} or tritium
Lab Duplicates Sample ID: J19025	Yes	None	-	No Action	
Field Duplicate Sample ID:	Not Collected				
QC Summary					
Validity of Data	Not all QC criteria met, however no rejected results				
Additional Notes:					

E.1.14 SDG K1714

SDG K1714 – Pestícides QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1714	**W&C Project No.:**222007
Medium: Fish Tissue **Fish Type:** Sturgeon		**Analytes:** Pesticides – Group 1 of 2
Samples: **Carcass** – J19318, J192D4, J192F5, J192Y7, & J19307 **Fillet** – J19317, J192D3, J192F4, J192Y6, & J19306		

Laboratory:	**Date Data Assessment Completed:**	**Sample Collection Date:**	**Sample Analysis Date:**
Lionville	3/19/10 **Complete By:** SRK	8/4/2009 – 8/6/2009	Extr: 8/17/09 Anal: 8/19/09

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No action	
Detection Limits	No	Detection limits exceeded for all except heptachlor, heptachlor epoxide, alpha-chlordane, gamma-chlordane, and methoxychlor	-	No action based on guidance	
Blanks					
Method Blank	Yes	None	-	No action	
Equipment Blank Sample ID:	Not collected				
Other QC Results					
Surrogate Recoveries	No	Decachlorobiphenyl below criteria for samples J19318, J192F5, J192F4, J192D4, and J192D3 Tetrachloro-meta-xylene above criteria for sample J19307	J J	Qualify positive and non-detect results as estimated (J) Qualify positive results as estimated (J)	Samples J19318, J192F5, J192F4, J192D4, and J192D3, Sample J19307
LCS Results	No	No LCS results for toxaphene	J	Qualify all associated results as estimated (J)	All samples
Matrix Spikes Sample ID: J192D3	No	No MS/MSD results for toxaphene **Non-compliant recoveries:** Delta-BHC: 44%/44% 4,4'-DDE: 47.3% 4,4'-DDT: 44%/46%	J	Qualify positive and non-detect results as estimated (J)	All samples

SDG K1714 – Pesticides QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA		**SDG No.:** K1714	**W&C Project No.:**222007
Medium: Fish Tissue **Fish Type:** Sturgeon			**Analytes:** Pesticides – Group 1 of 2
Samples: **Carcass** – J19318, J192D4, J192F5, J192Y7, & J19307 **Fillet** – J19317, J192D3, J192F4, J192Y6, & J19306			
Laboratory: Lionville	**Date Data Assessment Completed:** 3/19/10 **Complete By:** SRK	**Sample Collection Date:** 8/4/2009 – 8/6/2009	**Sample Analysis Date:** Extr: 8/17/09 Anal: 8/19/09

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
		Endrin aldehyde: 49%/34% Methoxychlor: 44%/43% **Non-compliant RPD:** Endrin aldehyde: 34.1%			
Lab Duplicates Sample ID:	Not analyzed				
Field Duplicate Sample ID:	Not collected				
QC Summary					
Validity of Data	Some results qualified, none rejected.				
Additional Notes:					

SDG K1714 – Pesticides QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1714	**W&C Project No.:**222007
Medium: Fish Tissue **Fish Type:** Sturgeon		**Analytes:** Pesticides – Group 2 of 2

Samples:
Kidney – J19320, J192D6, J192F7, J192Y9, & J19309
Liver – J19319, J192D5, J192F6, J192Y8, & J19308

Laboratory: Lionville	**Date Data Assessment Completed:** 3/19/10 **Complete By:** SRK	**Sample Collection Date:** 8/4/2009 – 8/6/2009	**Sample Analysis Date:** Extr: 9/16/09 Anal: 10/09/09 – 10/11/09

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	No	Samples were 36 days outside of hold time	J/R	Qualify positive results as estimated (J) and non-detect as rejected (R)	All samples
Detection Limits	No	Detection limits exceeded for all except heptachlor, heptachlor epoxide, alpha-chlordane, gamma-chlordane, and methoxychlor	-	No action based on guidance	
Blanks					
Method Blank	Yes	None	-	No action	
Equipment Blank Sample ID:	Not collected				
Other QC Results					
Surrogate Recoveries	No	Decachlorobiphenyl below criteria for J19308 Tetrachloro-meta-xylene above criteria for J19308	J	Qualify positive and non-detect results as estimated (J)	J19308
LCS Results	Yes	None	-	No action	
Matrix Spikes Sample ID: J192D5	No	No MS/MSD results for toxaphene **Non-compliant recovery:** Endrin aldehyde: 34%/29%	J	Qualify positive and non-detect results as estimated (J)	All samples
Lab Duplicates Sample ID:	Not analyzed				
Field Duplicate Sample ID:	Not collected				
QC Summary					
Validity of Data	Data qualified and rejected.				
Additional Notes:					

SDG K1714 – Metals QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1714	**W&C Project No.:**222007
Medium: Fish Tissue **Fish Type:** Sturgeon		**Analytes:** Metals – Group 1 of 2
Samples: **Carcass** – J19318, J192D4, J192F5, J192Y7, & J19307 **Fillet** – J19317, J192D3, J192F4, J192Y6, & J19306		

Laboratory: Lionville	**Date Data Assessment Completed:** 3/19/2010 **Complete By:** SRK	**Sample Collection Date:** 8/4/2009 – 8/6/2009	**Sample Analysis Date:** ICP – 9/3/09 Hg – 8/20/09

QC Parameter	**All in Spec.?**	**Non-Compliant Results**	**Flag**	**Action/ Notes**	**Associated Samples**
Holding Times	Yes	None	-	No action	
Detection Limits	No	Detection limits exceeded for Be, Ca, Fe, Li P, K, Sn, U, & Zn	-	No action based on guidance	
Blanks					
Preparation Blank	No	Tin: 0.928 mg/kg	UJ	Qualify sample results <5x blank concentration as estimated non-detect (UJ)	J19318, J192D4, J192F5, J192Y7, J19317, J192D3, J192F4, J192Y6, & J19306
Equipment Blank Sample ID:	Not collected				
Other QC Results					
LCS Results	No	Silicon: 204%	J	Qualify positive sample results as estimated (J)	J192D3, J192D4, J192F4, & J192F5
Matrix Spikes Sample ID: J192D3	Yes	None	-	No action	
Lab Duplicates Sample ID: J192D3	No	Silicon: 35% RPD	-	No qualification since difference between sample results is less than 2x IDL	
Field Duplicate Sample ID:	Not collected				
QC Summary					
Validity of Data	Some results qualified, none rejected.				
Additional Notes: No MSD.					

SDG K1714 – Metals QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1714	**W&C Project No.:**222007
Medium: Fish Tissue **Fish Type:** Sturgeon		**Analytes:** Metals – Group 2 of 2
Samples: **Kidney** – J19320, J192D6, J192F7, J192Y9, & J19309 **Liver** – J19319, J192D5, J192F6, J192Y8, & J19308		

Laboratory: Lionville	**Date Data Assessment Completed:** 3/19/2010 **Complete By:** SRK	**Sample Collection Date:** 8/4/2009 – 8/6/2009	**Sample Analysis Date:** ICP – 9/24/09 Hg – 9/21/09

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	No	Hg analyzed 46-48 days after collection	J	Qualify positive and non-detect results as estimated (J)	All samples
Detection Limits	No	Detection limits exceeded for Be, Ca, Fe, Li P, K, Sn, U, & Zn	-	No action based on guidance	
Blanks					
Preparation Blank	No	Silicon: 1.69 mg/kg	UJ	Qualify sample results <5x blank concentration as estimated non-detect (UJ)	J19320, J19309, J19308, J192Y9, J192Y8, J192F7, J192F6, J192D6, & J192D5
Equipment Blank Sample ID:	Not collected				
Other QC Results					
LCS Results	No	Hg: 145%	J	Qualify positive sample results as estimated (J)	All samples
Matrix Spikes Sample ID: J192D5	Yes	None	-	No action	
Lab Duplicates Sample ID: J192D5	No	Tin: 32% RPD	-	No qualification since difference between sample results is less than 2x IDL	
Field Duplicate Sample ID:	Not collected				
QC Summary					
Validity of Data	Some results qualified, none rejected.				
Additional Notes: No MSD.					

SDG K1714 – Radionuclides QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1714	**W&C Project No.:**222007

Medium: Fish Tissue **Fish Type:** Sturgeon	**Analytes:** Radionuclides: C14, Gamma Spec, Tritium, Isotopic Plutonium, Isotopic Thorium, Isotopic Uranium, Sr-90, Tc-99

Samples:
Carcass – J19318, J192D4, J192F5, J192Y7, & J19307
Fillet – J19317, J192D3, J192F4, J192Y6, & J19306
Kidney – J19320, J192D6, J192F7, J192Y9, & J19309
Liver – J19319, J192D5, J192F6, J192Y8, & J19308

Laboratory: Eberline	**Date Data Assessment Completed:** 3/23/10 **Complete By:** SRK	**Sample Collection Date:** 8/4/2009 – 8/6/2009	**Sample Analysis Date:** 8/18/09 – 9/21/09

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No action	
Detection Limits	No	MDA exceeds RDL for Th230, Co60, Cs137, Ra226, Ra228, Eu152, Eu154, Eu155, Th232, U235, U238, Am241, Ru106, and Cs134	-	No action based on guidance	
Blanks					
Method Blanks	Yes	None	-	No action	
Other QC Results					
LCS Results	Yes	None	-	No action	
Tracer Results	Yes	None	-	No action	
Matrix Spike – C14, Tritium Sample ID:	No	Not analyzed	J	Qualify positive results and non-detect for C14 and tritium as estimated (J)	All samples
Lab Duplicates Sample ID: J19308	Yes	None	-	No action	
Field Duplicate Sample ID:	Not collected				
QC Summary					
Validity of Data	Some results qualified, none rejected.				
Additional Notes:					

E.1.15 SDG K1725

SDG K1725 – Pesticides QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1725	**W&C Project No.:**222007	
Medium: Fish Tissue **Fish Type:** Sturgeon		**Analytes:** Pesticides – Group 1 of 2	
Samples: **Kidney** – J193K7, J193L7, J193M9, J19441, J19451 **Liver** – J193K6, J193L6, J193M8, J19440, J19450			
Laboratory: Lionville	**Date Data Assessment Completed:** 3/19/2010 **Complete By:** KAM	**Sample Collection Date:** 8/6,10-12,17/2009	**Sample Analysis Date:** Extr: 9/16/2009 Anal: 10/12/2009

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	No	Samples extracted more than 2x the holding time	J/R	Qualify positive results as estimated (J) and ND results as rejected (R)	J193K7, J193L7, J193M9, J19441, J193K6, J193L6, J193M8
		Samples extracted less than 2x the holding time	J	Qualify positive and ND results as estimated (J)	J19450, J19451, J19440
Detection Limits	No	Detection limits exceeded for most pesticides	-	No action based on guidance	
Blanks					
Method Blank	Yes	None	-	No Action	
Equipment Blank Sample ID:	Not Analyzed				
Other QC Results					
Surrogate Recoveries		Decachlorobiphenyl below criteria for samples J193K6, J193L6, J193M8, J19440, J19450	J	Qualify positive and non-detect results as estimated (J)	Samples J193K6, J193L6, J193M8, J19440, J19450
LCS Results	No	No LCS results for toxaphene	J	Qualify all results (positive and non-detect) as estimated (J)	All samples
Matrix Spike/ Matrix Spike Duplicate Sample ID: J193K6	No	**Non-compliant Recoveries** 4,4'-DDT: 18.9%/13.1% Endrin aldehyde: 44%/46% Methoxychlor: 35%/28% **Non-compliant RPDs** 4,4'-DDE: 43% 4,4'-DDT: 36%	J	Qualify positive and nondetect results as estimated (J)	All samples

SDG K1725 – Pesticides QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1725	**W&C Project No.:**222007
Medium: Fish Tissue **Fish Type:** Sturgeon		**Analytes:** Pesticides – Group 1 of 2
Samples: **Kidney** – J193K7, J193L7, J193M9, J19441, J19451 **Liver** – J193K6, J193L6, J193M8, J19440, J19450		

Laboratory: Lionville	**Date Data Assessment Completed:** 3/19/2010 **Complete By:** KAM	**Sample Collection Date:** 8/6,10-12,17/2009	**Sample Analysis Date:** Extr: 9/16/2009 Anal: 10/12/2009

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
		No MS analyzed for toxaphene	J J	Qualify all results as estimated (J) Qualify positive and nondetect results as estimated (J)	All samples All samples
Field Duplicate Sample ID:	Not Collected				
QC Summary					
Validity of Data	No	Holding time greater than 2x criteria	R	Qualify non-detect results as rejected (R)	J193K7, J193L7, J193M9, J19441, J193K6, J193L6, J193M8
Additional Notes:					

SDG K1725 – Pesticides QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1725	**W&C Project No.:**222007
Medium: Fish Tissue **Fish Type:** Sturgeon		**Analytes:** Pesticides – Group 2 of 2

Samples:
Carcass – J193K5, J193L5, J193M7, J19439, J19449
Fillet – J193K4, J193L4, J193M6, J19438, J19448

Laboratory: Lionville	**Date Data Assessment Completed:** 3/19/2010 **Complete By:** KAM	**Sample Collection Date:** 8/6,10-12,17/2009	**Sample Analysis Date:** Extr: 8/25/2009 Anal: 9/1-2/2009

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	No	Samples extracted less than 2x the holding time	J	Qualify positive and ND results as estimated (J)	J193K4, J193K5, J193L4, J193L5
Detection Limits	No	Detection limits exceeded for most pesticides	-	No action based on guidance	
Blanks					
Method Blank	Yes	None	-	No Action	
Equipment Blank Sample ID:	Not Analyzed				
Other QC Results					
Surrogate Recoveries		Decachlorobiphenyl below criteria for samples J193L4 and J193L5	J	Qualify positive and non-detect results as estimated (J)	Samples J193L4 and J193L5
LCS Results	No	No LCS results for toxaphene	J	Qualify all results (positive and non-detect) as estimated (J)	All samples
Matrix Spike/ Matrix Spike Duplicate Sample ID: J193K4	No	**Non-compliant Recoveries** Delta-BHC: 48% 4,4'-DDT: 43% Endrin aldehyde: 23%	J	Qualify positive and nondetect results as estimated (J)	All samples
		Non-compliant RPDs 4,4'-DDT: 38.5% Endrin aldehyde: 97.1% Methoxychlor: 33.5%	J	Qualify positive and nondetect results as estimated (J)	All samples
		No MS analyzed for toxaphene	J	Qualify positive and nondetect results as estimated (J)	All samples

SDG K1725 – Pesticides QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1725	**W&C Project No.:**222007
Medium: Fish Tissue **Fish Type:** Sturgeon		**Analytes:** Pesticides – Group 2 of 2
Samples: **Carcass** – J193K5, J193L5, J193M7, J19439, J19449 **Fillet** – J193K4, J193L4, J193M6, J19438, J19448		

Laboratory: Lionville	**Date Data Assessment Completed:** 3/19/2010 **Complete By:** KAM	**Sample Collection Date:** 8/6,10-12,17/2009	**Sample Analysis Date:** Extr: 8/25/2009 Anal: 9/1-2/2009

QC Parameter	**All in Spec.?**	**Non-Compliant Results**	**Flag**	**Action/ Notes**	**Associated Samples**
Field Duplicate Sample ID:	Not Collected				
QC Summary					
Validity of Data	Not all QC criteria met, however not results were rejected				
Additional Notes:					

SDG K1725 – Metals QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1725	**W&C Project No.:**222007	
Medium: Fish Tissue **Fish Type:** Sturgeon		**Analytes:** Metals – Group 1 of 2	
Samples: **Kidney** – J193K7, J193L7, J193M9, J19441, J19451 **Liver** – J193K6, J193L6, J193M8, J19440, J19450			
Laboratory: Lionville	**Date Data Assessment Completed:** 3/19/2010 **Complete By:** KAM	**Sample Collection Date:** 8/6,10-12,17/2009	**Sample Analysis Date:** ICP – 9/29/2009 Hg – 9/21/2009

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	No	Holding time between collection and analysis was <2 times the limit for Mercury	J	Qualify positive and ND results as estimated (J)	All samples for Hg
Detection Limits	No	Be, Ca, Fe, P, K, Sn, U, and Zn detection limits exceeded specifications in work plan	-	No action based on guidance	
Blanks					
Preparation Blank	No	Ca: 8.63 mg/kg Sn: 1.20 Zn: 1.25	UJ	Qualify positive results less than 5x blank concentration as estimated non-detect (UJ)	All samples. Impacts the following: Ca: J19440 Sn: All samples
Equipment Blank Sample ID:	Not Analyzed				
Other QC Results					
LCS Results	Yes	None	-	No Action	
Matrix Spikes Sample ID: J193K6	Yes	None	-	No Action	
Lab Duplicates Sample ID: J193K6	Yes	None	-	No Action	
Field Duplicate Sample ID:	Not Collected				
QC Summary					
Validity of Data	Not all QC criteria met, however not results were rejected				
Additional Notes:					

SDG K1725 – Metals QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1725	**W&C Project No.:**222007
Medium: Fish Tissue **Fish Type:** Sturgeon		**Analytes:** Metals – Group 2 of 2
Samples: **Carcass** – J193K5, J193L5, J193M7, J19439, J19449 **Fillet** – J193K4, J193L4, J193M6, J19438, J19448		

Laboratory: Lionville	**Date Data Assessment Completed:** 3/19/2010 **Complete By:** KAM	**Sample Collection Date:** 8/6,10-12,17/2009	**Sample Analysis Date:** ICP – 9/4/2009 Hg – 8/28/2009

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No Action	
Detection Limits	No	Be, Ca, Fe, Li, P, K, Sn, U, and Zn detection limits exceeded specifications in work plan	-	No action based on guidance	
Blanks					
Preparation Blank	No	Sn: 1.41 mg/kg wet	UJ	Qualify positive results less than 5x RDL as estimated non-detect (UJ)	All samples. Impacts the following: Sn: All samples except J193L5, J19449
Equipment Blank Sample ID:	Not Analyzed				
Other QC Results					
LCS Results	No	Si: 140%	J	Qualify positive results as estimated (J)	All samples
Matrix Spikes Sample ID: J193K4	Yes	None	-	No Action	
Lab Duplicates Sample ID: J193K4	No	Ba: 95% Cr: 133% Fe: 44%	J	Qualify positive results as estimated (J) if difference between concentrations is greater than 2x RDL	All samples, however only impacts chromium (positive results for all samples).
Field Duplicate Sample ID:	Not Collected				
QC Summary					
Validity of Data	Not all QC criteria met, however not results were rejected				
Additional Notes:					

SDG K1725 – Radionuclides QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1725	**W&C Project No.:**222007

Medium: Fish Tissue **Fish Type:** Sturgeon	**Analytes:** C14, Gamma Spec, Tritium, Isotopic Plutonium, Isotopic Thorium, Isotopic Uranium, Sr-90, Tc-99

Samples:
Carcass – J193K5, J193L5, J193M7, J19439, J19449
Fillet – J193K4, J193L4, J193M6, J19438, J19448
Kidney – J193K7, J193L7, J193M9, J19441, J19451
Liver – J193K6, J193L6, J193M8, J19440, J19450

Laboratory: Eberline	**Date Data Assessment Completed:** 3/19/2010 **Complete By:** KAM	**Sample Collection Date:** 8/6,10-12,17/2009	**Sample Analysis Date:** 9/2009

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No Action	
Detection Limits	No	**RDL** All RDLs either less than or equal to reporting limit in work plan **MDA** Uranium-238 Ruthenium-106	-	No action based on guidance	
Blanks					
Method Blanks	Yes	None	-	No Action	
Other QC Results					
LCS Results	Yes	None	-	No Action	
Tracer Results	Yes	None	-	No Action	
Matrix Spike – C_{14}, Tritium	No	No MS analyzed for C_{14} or tritium	J	Qualify positive and non-detect results as estimated (J)	All samples for C_{14} and tritium
Lab Duplicates Sample ID: J193K7	No	Thorium-230 = 146%	-	No action since difference between results is less than 2X RDL	
Field Duplicate Sample ID:	Not Collected				
QC Summary					
Validity of Data	Not all QC criteria met, however not results were rejected				
Additional Notes:					

E.1.16 SDG K1735

Validated by ELR - Included in Appendix F

E.1.17 SDG K1758

SDG K1758 – Pesticides QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1758	**W&C Project No.:**222007
Medium: Fish Tissue **Fish Type:** Bass		**Analytes:** Pesticides

Samples:
Liver/Kidney – J19047, J19048, J19049, J19050, J19051, J190D0, J190D1, J190D2, J190D3, J190D4, J190J5, J190J6, J190J7, J190J8, J190J9, J190N1, J190N2, J190N3, J190N4, J190N5

Laboratory:	**Date Data Assessment Completed:**	**Sample Collection Date:**	**Sample Analysis Date:**
Lionville	3/19/2010 **Complete By:** KAM	9/1/2009	Extr: 11/29/2009 Anal: 12/1/2009

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	No	Samples extracted >2x hold time	J/R	Qualify positive results as estimated (J) and ND results as rejected	All samples
Detection Limits	No	Detection limits exceeded for most pesticides	-	No action based on guidance	
Blanks					
Method Blank	Yes	None	-	No Action	
Equipment Blank Sample ID:	Not Analyzed				
Other QC Results					
Surrogate Recoveries	Yes	None	-	No Action	
LCS Results	No	No LCS results for toxaphene	J	Qualify all associated results as estimated (J)	All samples
Matrix Spike/ Matrix Spike Duplicate Sample ID: J19048	No	No MS/MSD results for toxaphene **Non-compliant recoveries** 4,4'-DDE: 160%/177% 4,4'-DDD: 188%/206% Methoxychlor: /153%	J -	Qualify all associated results as estimated (J) No action for methoxychlor since result ND. No action	

SDG K1758 – Pesticides QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA		**SDG No.:** K1758		**W&C Project No.:**222007	
Medium: Fish Tissue **Fish Type:** Bass				**Analytes:** Pesticides	
Samples: **Liver/Kidney** – J19047, J19048, J19049, J19050, J19051, J190D0, J190D1, J190D2, J190D3, J190D4, J190J5, J190J6, J190J7, J190J8, J190J9, J190N1, J190N2, J190N3, J190N4, J190N5					
Laboratory: Lionville	**Date Data Assessment Completed:** 3/19/2010 **Complete By:** KAM		**Sample Collection Date:** 9/1/2009		**Sample Analysis Date:** Extr: 11/29/2009 Anal: 12/1/2009
QC Parameter	**All in Spec.?**	**Non-Compliant Results**	**Flag**	**Action/ Notes**	**Associated Samples**
				for DDE and DDE since results <5x spike concentration	
		Endrin aldehyde: 2%/2%	J	Qualify positive and ND results as estimated (J)	All samples
		Non-compliant RPDs 4,4'-DDT: 32.3%	J	Qualify all associated results as estimated (J)	All samples
Field Duplicate Sample ID:	Not Collected				
QC Summary					
Validity of Data	No	Holding Time	R	Samples extracted more than 2x the holding limit	All ND results for all samples
Additional Notes:					

SDG K1758 – Metals QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1758	**W&C Project No.:**222007
Medium: Fish Tissue **Fish Type:** Bass		**Analytes:** Metals

Samples:
Liver/Kidney – J19047, J19048, J19049, J19050, J19051, J190D0, J190D1, J190D2, J190D3, J190D4, J190J5, J190J6, J190J7, J190J8, J190J9, J190N1, J190N2, J190N3, J190N4, J190N5

Laboratory: Lionville	**Date Data Assessment Completed:** 3/19/2010 **Complete By:** KAM	**Sample Collection Date:** 9/1/2009	**Sample Analysis Date:** ICP – 11/19/2009 Hg – 11/18/2009

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	No	Samples analyzed more than 2x the holding limit for mercury	J	Qualify positive results as estimated (J) and ND results as rejected	All samples for mercury qualified as estimated (J) since no ND results
Detection Limits	No	Be, Ca, Fe, Li, P, K, Sn, U, and Zn detection limits exceeded specifications in work plan	-	No Action	
Blanks					
Preparation Blank	Yes	None	-	No Action	
Equipment Blank Sample ID:	Not Analyzed				
Other QC Results					
LCS Results	No	Silicon: 54%	J	Qualify positive results as estimated (J)	All samples
Matrix Spike Sample ID: J19047	No	**Non-compliant recoveries** Iron: 63% Potassium: 60% Tin: 58%	J	Qualify positive results as estimated (J)	All samples
Lab Duplicates Sample ID: J19047	Yes	None	-	No Action	
Field Duplicate Sample ID:	Not Collected				
QC Summary					
Validity of Data	Not all QC criteria were met, but no data was rejected				
Additional Notes:					

SDG K1758 – Radionuclides QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1758	**W&C Project No.:**222007

Medium: Fish Tissue **Fish Type:** Bass	**Analytes:** C14, Gamma Spec, Tritium, Isotopic Plutonium, Isotopic Thorium, Isotopic Uranium, Sr-90, Tc-99

Samples:
Liver/Kidney – J19047, J19048, J19049, J19050, J19051, J190D0, J190D1, J190D2, J190D3, J190D4, J190J5, J190J6, J190J7, J190J8, J190J9, J190N1, J190N2, J190N3, J190N4, J190N5

Laboratory: Eberline	**Date Data Assessment Completed:** 3/19/2010 **Complete By:** KAM	**Sample Collection Date:** 9/1/2009	**Sample Analysis Date:** 9-10/2009

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No Action	
Detection Limits	No	**RDL** All RDLs either less than or equal to reporting limit in work plan **MDA** Potassium-40 Uranium-238 Ruthenium-106	-	No action based on guidance	
Blanks					
Method Blanks	Yes	None	-	No Action	
Other QC Results					
LCS Results	Yes	None	-	No Action	
Tracer Results	Yes	None	-	No Action	
Matrix Spike (C-14, Tritium)	No	No MS analyzed for C-14 or tritium	J	Qualify all results as estimated (J)	All samples for C-14 and tritium
Lab Duplicates Sample ID: J19047	Yes	None	-	No Action	
Field Duplicate Sample ID:	Not Collected				
QC Summary					
Validity of Data	Not all QC criteria was met, however no results were rejected				
Additional Notes:					

E.1.18 SDG K1759

SDG K1759 – Pesticides QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1759	**W&C Project No.:**222007	
Medium: Fish Tissue **Fish Type:** Bass		**Analytes:** Pesticides	
Samples: **Carcass** – J190D5, J190D7, J190D9, J190K0, J190K1, J190K2, J190K3, J190K4 **Fillet** – J190H0, J190H1, J190H2, J190H3, J190H4, J19067, J19069, J19071			
Laboratory: Lionville	**Date Data Assessment Completed:** 3/30/2010 **Complete By:** KAM	**Sample Collection Date:** 9/1-2/2009	**Sample Analysis Date:** Extr: 11/30/2009 Anal: 12/3-5/2009

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	No	Samples extracted >2x holding time	J/R	Qualify positive results as estimated (J) and ND results as rejected	All samples
Detection Limits	No	Detection limits exceed criteria for all pesticides	-	No action based on criteria	
Blanks					
Method Blank	Yes	None	-	No Action	
Equipment Blank Sample ID:	Not Analyzed				
Other QC Results					
Surrogate Recoveries	Yes	None	-	No Action	
LCS Results	No	No LCS results for toxaphene Delta-BHC: 47%	J J	Qualify all associated results as estimated (J) Qualify all associated results as estimated (J)	All samples All samples
Matrix Spike/ Matrix Spike Duplicate Sample ID: J190K0	No	No MS/MSD results for toxaphene **Non-compliant recoveries** 4,4'-DDE: 165%	J J	Qualify all associated results as estimated (J) Qualify positive results as estimated (J)	All samples All samples
Field Duplicate Sample ID:	Not Collected				
QC Summary					

SDG K1759 – Pesticides QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1759	**W&C Project No.:**222007
Medium: Fish Tissue **Fish Type:** Bass		**Analytes:** Pesticides
Samples: **Carcass** – J190D5, J190D7, J190D9, J190K0, J190K1, J190K2, J190K3, J190K4 **Fillet** – J190H0, J190H1, J190H2, J190H3, J190H4, J19067, J19069, J19071		

Laboratory: Lionville	**Date Data Assessment Completed:** 3/30/2010 **Complete By:** KAM	**Sample Collection Date:** 9/1-2/2009	**Sample Analysis Date:** Extr: 11/30/2009 Anal: 12/3-5/2009

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Validity of Data	No	Holding Time – samples extracted >2x holding time criteria	R	Qualify ND results as rejected	All samples
Additional Notes:					

SDG K1759 – Metals QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1759	**W&C Project No.:**222007
Medium: Fish Tissue **Fish Type:** Bass		**Analytes:** Metals

Samples:
Carcass – J190D5, J190D7, J190D9, J190K0, J190K1, J190K2, J190K3, J190K4
Fillet – J190H0, J190H1, J190H2, J190H3, J190H4, J19067, J19069, J19071

Laboratory: Lionville	**Date Data Assessment Completed:** 3/30/2010 **Complete By:** KAM	**Sample Collection Date:** 9/1-2/2009	**Sample Analysis Date:** ICP – 11/19/2009 Hg – 11/20/2009

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	No	Samples extracted for Hg analysis >2x holding time	J	Qualify positive results as estimated (J) and ND results as rejected	All samples for Hg qualified as estimated (J) since no ND results
Detection Limits	No	Detection limits exceeded criteria for Be, Ca, Fe, Li, Mg, P, K, Sn, U, and Zn	-	No action based on criteria	
Blanks					
Preparation Blank	Yes	None	-	No Action	
Equipment Blank Sample ID:	Not Analyzed				
Other QC Results					
LCS Results	No	Si: 56%	J	Qualify positive and ND results as estimated (J)	All samples
Matrix Spike Sample ID: J190D5	No	Ca: 966%	J	Qualify positive results as estimated (J)	All samples
Lab Duplicate Sample ID: J190D5	No	Ba: 122% Cd: >20% Ca: 130% Mg: 68% Mn: 163% P:117% St: 134% Sn: 34% U: >20% V: 79% Zn: 38%	J	Qualify positive results for Ba, Mg, and Mn as estimated (J). No action for others since either 1) both concentrations >5x IDL or 2) difference between results is <2x IDL	All samples
Field Duplicate Sample ID:	Not Collected				
QC Summary					

SDG K1759 – Metals QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1759	**W&C Project No.:**222007	
Medium: Fish Tissue **Fish Type:** Bass		**Analytes:** Metals	
Samples: **Carcass** – J190D5, J190D7, J190D9, J190K0, J190K1, J190K2, J190K3, J190K4 **Fillet** – J190H0, J190H1, J190H2, J190H3, J190H4, J19067, J19069, J19071			
Laboratory: Lionville	**Date Data Assessment Completed:** 3/30/2010 **Complete By:** KAM	**Sample Collection Date:** 9/1-2/2009	**Sample Analysis Date:** ICP – 11/19/2009 Hg – 11/20/2009

QC Parameter	**All in Spec.?**	**Non-Compliant Results**	**Flag**	**Action/ Notes**	**Associated Samples**
Validity of Data	Not all QC criteria met, however no rejected results				
Additional Notes:					

SDG K1759 – Metals QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1759	**W&C Project No.:**222007	
Medium: Fish Tissue **Fish Type:** Bass		**Analytes:** Metals	
Samples: **Carcass** – J190D6, J190D8 **Fillet** – J19068, J19070			
Laboratory: Lionville	**Date Data Assessment Completed:** 5/28/2010 **Complete By:** KAM	**Sample Collection Date:** 9/2/2009	**Sample Analysis Date:** ICP – 4/19/2010

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	No	Samples extracted analysis <2x holding time	J	Qualify positive and non-detect results as estimated (J)	All samples
Detection Limits	No	Detection limits exceeded criteria for Be, Ca, Fe, P, K, Zn	-	No action based on criteria	
Blanks					
Preparation Blank	No	Mn: 0.413 mg/kg P: 5.71 mg/kg Si: 2.63 mg/kg Sn: 1.15 mg/kg	UJ	Qualify results less than 5X blank concentration as non-detected estimated (UJ)	Impacts the following samples: Silicon: All samples Manganese and Tin: J19068, J19070
Equipment Blank Sample ID:	Not Analyzed				
Other QC Results					
LCS Results	Yes	None	-	No Action	
Matrix Spike Sample ID: J19D06	No	Ca: 966% P: 1260%	J	Qualify positive results as estimated (J)	All samples
Lab Duplicate Sample ID: J190D6	No	Ba: 124% Ca: 105% Mg: 49% Mn: 127% P: 92% St: 124% Sn: 53% V: 47%	J	Qualify positive and non-detect results for Ca, Mg, P, and St as estimated (J). Qualify positive results for Ba as estimated (J). No action for Mg, Sn, and V since the	All samples

SDG K1759 – Metals QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1759	**W&C Project No.:**222007	
Medium: Fish Tissue **Fish Type:** Bass		**Analytes:** Metals	
Samples: **Carcass** – J190D6, J190D8 **Fillet** – J19068, J19070			
Laboratory: Lionville	**Date Data Assessment Completed:** 5/28/2010 **Complete By:** KAM	**Sample Collection Date:** 9/2/2009	**Sample Analysis Date:** ICP – 4/19/2010

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
				difference between results is <2x IDL	
Field Duplicate Sample ID:	Not Collected				
QC Summary					
Validity of Data	Not all QC criteria met, however no rejected results				
Additional Notes:					

SDG K1759 – Radionuclides QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1759	**W&C Project No.:**222007	
Medium: Fish Tissue **Fish Type:** Bass	**Analytes:** C14, Gamma Spec, Tritium, Isotopic Plutonium, Isotopic Thorium, Isotopic Uranium, Sr-90, Tc-99		
Samples: **Carcass** – J190D5, J190D6, J190D7, J190D8, J190D9, J190K0, J190K1, J190K2, J190K3, J190K4 **Fillet** – J190H0, J190H1, J190H2, J190H3, J190H4, J19067, J19068, J19069, J19070, J19071			
Laboratory: Eberline	**Date Data Assessment Completed:** 3/30/2010 **Complete By:** KAM	**Sample Collection Date:** 9/1-2/2009	**Sample Analysis Date:** 9-10/2009

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No Action	
Detection Limits	No	**RDL** All RDLs either less than or equal to reporting limit in work plan **MDA** Uranium-238 Ruthenium-106	-	No action based on guidance	
Blanks					
Method Blanks	Yes	None	-	No Action	
Other QC Results					
LCS Results	Yes	None	-	No Action	
Tracer Results	Yes	None	-	No Action	
Matrix Spike (C-14, Tritium)	No	No MS analyzed for C_{14} or tritium	J	Qualify positive and ND results as estimated (J)	All samples
Lab Duplicates Sample ID: J190D5	Yes	None	-	No Action	
Field Duplicate Sample ID:	Not Collected				
QC Summary					
Validity of Data	Not all QC criteria met, however no rejected results				
Additional Notes:					

E.1.19 SDG K1761

SDG K1761 – Pesticides QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1761	**W&C Project No.:**222007
Medium: Fish Tissue **Fish Type:** Sturgeon	Data set 1 of 2	**Analytes:** Pesticides

Samples:
Carcass – J19469, J19479, J19489, J194B0, J194C1
Fillet – J19468, J19478, J19488, J19499, J194C0

Laboratory:	**Date Data Assessment Completed:**	**Sample Collection Date:**	**Sample Analysis Date:**
Lionville	03/27/2010 **Complete By:** JAR	09/03/2009 – 09/09/2009	Extr: 09/23/2009 Anal: 10/14/2009 – 10/15/2009

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	No	Extraction holding time exceeded but within two times the holding limit	J	Qualify positive and non-detected results as estimated (J)	Impacts the following samples: J19468, J19469, J19479, J19478, J19488, J19489, J19499, J194B0
Detection Limits	No	RLs exceeded for all except heptachlor, heptachlor epoxide, alpha-chlordane, gamma-chlordane, and methoxychlor	-	No action based on guidance	
Blanks					
Method Blank	Yes	None	-	No action	
Equipment Blank Sample ID:	None collected				
Other QC Results					
Surrogate Recoveries	No	DCB = 26% to 35% (below criteria)	J	Qualify positive and non-detected results as estimated (J)	Impacts the following samples: J19479, J19478, J19488, J19489, J19499, J194B0, J194C0, J194C1
LCS Results	No	No LCS results for toxaphene	J	Qualify all associated results as estimated (J)	Impacts the following samples: All samples
Matrix Spike/ Matrix Spike Duplicate Sample ID:	No	No MS/MSD results for toxaphene	J	Qualify all associated results as estimated (J)	Impacts the following samples: Toxaphene – All samples

SDG K1761 – Pesticides QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1761	**W&C Project No.:**222007
Medium: Fish Tissue **Fish Type:** Sturgeon	Data set 1 of 2	**Analytes:** Pesticides

Samples:
Carcass – J19469, J19479, J19489, J194B0, J194C1
Fillet – J19468, J19478, J19488, J19499, J194C0

Laboratory:	**Date Data Assessment Completed:**	**Sample Collection Date:**	**Sample Analysis Date:**
Lionville	03/27/2010 **Complete By:** JAR	09/03/2009 – 09/09/2009	Extr: 09/23/2009 Anal: 10/14/2009 – 10/15/2009

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
J19468	No	Endrin Aldehyde = 34%/47%; RPD = 32	J	Qualify all associated results as estimated (J)	Endrin Aldehyde - All samples
Field Duplicate Sample ID:	None collected				
QC Summary					
Validity of Data	No, but no data were rejected				

Additional Notes: Sample results reported on a wet weight basis.

SDG K1761 – Pesticides QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1761	**W&C Project No.:**222007	
Medium: Fish Tissue **Fish Type:** Sturgeon	Data set 2 of 2	**Analytes:** Pesticides	
Samples: **Kidney** – J19471, J19481, J19491, J194B2, J194C3 **Liver** – J19470, J19480, J19490, J194B1, J194C2			
Laboratory: Lionville	**Date Data Assessment Completed:** 03/27/2010 **Complete By:** JAR	**Sample Collection Date:** 09/03/2009 – 09/09/2009	**Sample Analysis Date:** Extr: 12/03/2009 Anal: 12/10,15/2009

QC Parameter	**All in Spec.?**	**Non-Compliant Results**	**Flag**	**Action/ Notes**	**Associated Samples**
Holding Times	No	Extraction holding time exceeded; samples extracted more than two times the holding time	J/R	Qualify positive results as estimated (J) and non-detected results as rejected (R)	Impacts the following samples: All samples; positive results qualified as estimated (J) and non-detected results qualified as rejected (R)
Detection Limits	No	RLs exceeded for all except heptachlor, heptachlor epoxide, alpha-chlordane, gamma-chlordane, and methoxychlor	-	No action based on guidance	
Blanks					
Method Blank	Yes	None	-	No action	
Equipment Blank Sample ID:	None collected				
Other QC Results					
Surrogate Recoveries	No	DCB = 30%, 34% (below criteria)	J	Qualify positive and non-detected results as estimated (J)	Impacts the following samples: J19480, J19481
LCS Results	No	No LCS results for toxaphene	J	Qualify all associated results as estimated (J)	Impacts the following samples: All samples
Matrix Spike/ Matrix Spike Duplicate	No	No MS/MSD results for toxaphene	J	Qualify all associated results as estimated (J)	Impacts the following samples: Toxaphene – All samples
Sample ID: J19470	No	4,4'-DDE =	J	Qualify all	4,4'-DDT, Endrin

SDG K1761 – Pesticides QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1761	**W&C Project No.:**222007
Medium: Fish Tissue **Fish Type:** Sturgeon	Data set 2 of 2	**Analytes:** Pesticides
Samples: **Kidney** – J19471, J19481, J19491, J194B2, J194C3 **Liver** – J19470, J19480, J19490, J194B1, J194C2		

Laboratory: Lionville	**Date Data Assessment Completed:** 03/27/2010 **Complete By:** JAR	**Sample Collection Date:** 09/03/2009 – 09/09/2009	**Sample Analysis Date:** Extr: 12/03/2009 Anal: 12/10,15/2009

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
		177%/184% 4,4'-DDD = 158%/153% 4,4'-DDT = 45%/38% Endrin Aldehyde = 49%/44%		associated positive and non-detected results for 4,4'-DDT and endrin aldehyde as estimated (J); qualify all positive results for 4,4'-DDE and 4,4'-DDD as estimated (J)	Aldehyde - All samples 4,4'-DDE, 4,4'-DDD – All samples
Field Duplicate Sample ID:	None collected				
QC Summary					
Validity of Data	No; non-detected results in all samples qualified as rejected (R) due to extraction holding time exceeded by more than twice the holding time				
Additional Notes: Sample results reported on a wet weight basis.					

SDG K1761 – Metals QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1761	**W&C Project No.:**222007
Medium: Fish Tissue **Fish Type:** Sturgeon	Data set 1 of 2	**Analytes:** Metals

Samples:
Carcass – J19469, J19479, J19489, J194B0, J194C1
Fillet – J19468, J19478, J19488, J19499, J194C0

Laboratory: Lionville	**Date Data Assessment Completed:** 03/27/2010 **Complete By:** JAR	**Sample Collection Date:** 09/03/2009 – 09/09/2009	**Sample Analysis Date:** ICP – 09/16/2009 Hg – 09/14/2009

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No action	
Detection Limits	No	RLs exceeded for Be, Ca, Fe, P, K, Zn	-	No action based on guidance	
Blanks					
Preparation Blank	No	Sn = 1.02 mg/kg	UJ	Qualify results less than 5X blank concentration as non-detected estimated (UJ)	Impacts the following results: Sn – All samples
Equipment Blank Sample ID:	None collected				
Other QC Results					
LCS Results	No	Si = 55%	J	Qualify positive and non-detected results as estimated (J)	Impacts the following samples: Si - All samples
Matrix Spike Sample ID: J19468	Yes	None	-	No action	
Lab Duplicate Sample ID: J19468	Yes	None	-	No action	
Field Duplicate Sample ID:	None collected				
QC Summary					
Validity of Data	No, but no data were rejected				

Additional Notes: Sample results reported on “as received” basis (wet weight).

SDG K1761 – Metals QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1761	**W&C Project No.:**222007
Medium: Fish Tissue **Fish Type:** Sturgeon	Data set 2 of 2	**Analytes:** Metals

Samples:
Kidney – J19471, J19481, J19491, J194B2, J194C3
Liver – J19470, J19480, J19490, J194B1, J194C2

Laboratory: Lionville	**Date Data Assessment Completed:** 03/27/2010 **Complete By:** JAR	**Sample Collection Date:** 09/03/2009 – 09/09/2009	**Sample Analysis Date:** ICP – 12/04/2009 Hg – 12/01/2009

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	No	Hg holding time exceeded; samples analyzed more than two times the holding time	J	Qualify positive results as estimated (J) and non-detected results for Hg as rejected (R)	Impacts the following samples: All samples; Hg results all positive detections and qualified as estimated (J)
Detection Limits	No	RLs exceeded for Be, Ca, Fe, P, K, Zn	-	No action based on guidance	
Blanks					
Preparation Blank	No	Fe = 3.86 mg/kg Sn = 1.08 mg/kg	UJ	Qualify results less than 5X blank concentration as non-detected estimated (UJ)	Impacts the following results: Fe – None; all results greater than 5X blank Sn – All samples
Equipment Blank Sample ID:	None collected				
Other QC Results					
LCS Results	No	Si = 58%	J	Qualify positive and non-detected results as estimated (J)	Impacts the following samples: Si - All samples
Matrix Spike Sample ID: J19470	No	Fe = 17%	J	Qualify positive and non-detected results as estimated (J)	Impacts the following samples: Fe – All samples
Lab Duplicate Sample ID: J19470	Yes	None	-	No action	
Field Duplicate Sample ID:	None collected				
QC Summary					
Validity of Data	No, but no data were rejected				

Additional Notes: Sample results reported on “as received” basis (wet weight).

SDG K1761 – Radionuclides QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1761	**W&C Project No.:**222007

Medium: Fish Tissue **Fish Type:** Sturgeon	**Analytes:** C14, Gamma Spec, Tritium, Isotopic Plutonium, Isotopic Thorium, Isotopic Uranium, Sr-90, Tc-99

Samples:
Carcass – J19469, J19479, J19489, J194B0, J194C1
Fillet – J19468, J19478, J19488, J19499, J194C0
Kidney – J19471, J19481, J19491, J194B2, J194C3
Liver – J19470, J19480, J19490, J194B1, J194C2

Laboratory: Eberline	**Date Data Assessment Completed:** 03/27/2010 **Complete By:** JAR	**Sample Collection Date:** 09/03/2009 – 09/09/2009	**Sample Analysis Date:** 09/25/2009 – 10/19/2009

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No action	
Detection Limits	No	MDA > RDL for Co-60, Ra-226, Ra-228, Eu-152, Eu-154, Eu-155, Cs-137	-	No action based on guidance	
Blanks					
Method Blanks	Yes	None	-	No action	
Other QC Results					
LCS Results	Yes	None	-	No action	
Tracer Results	Yes	None	-	No action	
Matrix Spike (C-14, Tritium)	No	MS not analyzed for C-14 or tritium	J	Qualify positive and non-detected results for C-14 and tritium as estimated (J)	Impacts the following samples: All samples
Lab Duplicates Sample ID: J19468	Yes	None	-	No action	
Field Duplicate Sample ID:	None collected				
QC Summary					
Validity of Data	No, but no data were rejected				
Additional Notes:					

E.1.20 SDG K1769

SDG K1769 – Pesticides QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1769	**W&C Project No.:**222007
Medium: Fish Tissue **Fish Type:** Sturgeon		**Analytes:** Pesticides – Group 1 of 2
Samples: **Carcass** – J194Y6, J195P3, J195R5, J195X2, J19602 **Fillet** – J194Y5, J195P2, J195R4, J195X1, J19601		

Laboratory: Lionville	**Date Data Assessment Completed:** 3/31/2010 **Complete By:** RDD	**Sample Collection Date:** 9/10/2009, 9/14/2009, 9/15/2009	**Sample Analysis Date:** Extr: 9/23/2009 Anal:10/15-16/2009

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No action	
Detection Limits	No	For most samples, detection limits of all compounds exceed the limits contained in the work plan.	-	No action.	
Blanks					
Method Blank	Yes	None	-	No action	
Equipment Blank	None analyzed				
Other QC Results					
Surrogate Recoveries	No	DCB<LCL for J194Y6 DCB<LCL for J195P3 DCB<LCL for J195P2 DCB<LCL for J195R4 DCB<LCL for J195R5 DCB<LCL for J195X1 DCB<LCL for J195X2 DCB<LCL for J19601 DCB<LCL for J19602	J	Qualify positive and ND sample results as estimated (J).	J194Y6, J195P3, J195P2, J195R4, J195R5, J195X1, J195X2, J19601, J19602
LCS Results	No	No LCS results for toxaphene	J	Qualify all associated results as estimated (J)	All samples
Matrix Spike/ Matrix Spike Duplicate Sample ID:J194Y5	No	No MS/MSD results for toxaphene. Endrin aldehyde = 29%/32%	J	Qualify all associated results as estimated (J) for toxaphene and endrin aldehyde.	All samples
Field Duplicate	None analyzed				
QC Summary					
Validity of Data	Not all QC parameters were met but no data were rejected.				
Additional Notes:					

SDG K1769 – Pesticides QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1769	**W&C Project No.:**222007
Medium: Fish Tissue **Fish Type:** Sturgeon		**Analytes:** Pesticides – Group 2 of 2

Samples:
Kidney – J194Y8, J195P5, J195R7, J195X4, J19604
Liver – J194Y7, J195P4, J195R6, J195X3, J19603

Laboratory: Lionville	**Date Data Assessment Completed:** 4/06/2010 **Completed By:** RDD	**Sample Collection Date:** 9/10/2009, 9/14/2009, 9/15/2009	**Sample Analysis Date:** Extr: 12/03/2009 Anal:12/10,15/2009

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	No	Holding times are > 2x the limit for all samples.	R/J	Qualify positive results as estimated (J) and ND results as rejected (R)	All samples
Detection Limits	No	For most samples, detection limits of all compounds exceed the limits contained in the work plan.	-	No action.	
Blanks					
Method Blank	Yes	None	-	No action	
Equipment Blank	None analyzed				
Other QC Results					
Surrogate Recoveries	Yes	None	-	No action	
LCS Results	No	No LCS results for toxaphene	J	Qualify all associated results as estimated (J)	All samples
Matrix Spike/ Matrix Spike Duplicate Sample ID:J194Y7	No	No MS/MSD results for toxaphene. Delta-BHC = 58%/47% 4,4'-DDE= 156%/135% 4,4'-DDD = 171%/136% Endrin aldehyde = 37%/37%	J	Qualify positive results of 4,4'-DDE and 4,4'-DDD and positive and ND sample results of delta-BHC and endrin aldehyde as estimated (J)	All samples
Field Duplicate	None analyzed				
QC Summary					
Validity of Data	Some of the data rejected due to holding time exceedances.				
Additional Notes:					

SDG K1769 – Metals QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:**K1769	**W&C Project No.:**222007
Medium: Fish Tissue **Fish Type:** Sturgeon		**Analytes:** Metals – Group 1 of 2
Samples: **Carcass** – J194Y6, J195P3, J195R5, J195X2, J19602 **Fillet** – J194Y5, J195P2, J195R4, J195X1, J19601		

Laboratory: Lionville	**Date Data Assessment Completed:** 3/31/2010 **Complete By**: RDD	**Sample Collection Date:** 9/10/2009, 9/14/2009, 9/15/2009	**Sample Analysis Date:** ICP – 9/30/2009, 10/01/2009 Hg – 9/23/2009

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No action	
Detection Limits	No	RDLs for Be, Ca, Fe, Sn exceed work plan limits for several samples.	-	No action	
Blanks					
Preparation Blank	No	Ca = 8.63 mg/kg Sn =1.2 mg/kg Zn = 1.25 mg/kg	UJ	Qualify positive sample results < 5X the blank concentrations as ND.	Impacts the following: Ca - J195R4 Sn – all samples Zn –all samples except J19602 and J194Y6
Equipment Blank Sample ID:	None analyzed				
Other QC Results					
LCS Results	Yes	None	-	No action	
Matrix Spike Sample ID:J194Y5	Yes	None	-	No action	
Lab Duplicate Sample ID:J194Y5	Yes	None	-	No action	
Field Duplicate Sample ID:	Not collected				
QC Summary					
Validity of Data	Not all QC parameters were met, but no data were rejected.				
Additional Notes: Dry Weight concentrations.					

SDG K1769 – Metals QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA		**SDG No.:**K1769	**W&C Project No.:**222007		
Medium: Fish Tissue **Fish Type:** Sturgeon			**Analytes:** Metals – Group 2 of 2		
Samples: **Kidney** – J194Y8, J195P5, J195R7, J195X4, J19604 **Liver** – J194Y7, J195P4, J195R6, J195X3, J19603					
Laboratory: Lionville	**Date Data Assessment Completed:** 4/6/2010 **Complete By**: RDD		**Sample Collection Date:** 9/10/2009, 9/14/2009, 9/15/2009		**Sample Analysis Date:** ICP – 12/02/2009 Hg – 12/01/2009

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	No	Hg holding time exceeded by > 2x limit.	J	Qualify positive results as estimated (J) and ND results as rejected (R).	All samples. Since all samples have detections of mercury, the results are qualified as estimated (J).
Detection Limits	No	RDLs for Be, Ca, Fe, Sn exceed work plan limits for several samples.	-	No action	
Blanks					
Preparation Blank	No	Sn =0.738 mg/kg	UJ	Qualify positive sample results < 5X the blank concentrations as ND.	Impacts the following: Sn – all samples
Equipment Blank Sample ID:	None analyzed				
Other QC Results					
LCS Results	No	Si = 55%	J	Qualify positive and ND sample results of Si as estimated (J).	All samples
Matrix Spike Sample ID:J194Y7	Yes	None	-	No action	
Lab Duplicate Sample ID:J194Y7	Yes	None	-	No action	
Field Duplicate Sample ID:	Not collected				
QC Summary					
Validity of Data	Not all QC criteria met, however no rejected results				
Additional Notes: Dry Weight concentrations.					

SDG K1769 – Radionuclides QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:**K1769	**W&C Project No.:**222007	
Medium: Fish Tissue **Fish Type:** Sturgeon		**Analytes:** C14, Gamma Scam, Tritium, Isotopic Plutonium, Isotopic Thorium, Isotopic Uranium, Sr-90, Tc-99	
Samples: **Carcass** – J194Y6, J195P3, J195R5, J195X2, J19602 **Fillet** – J194Y5, J195P2, K195R4, J195X1, J19601 **Kidney** – J194Y8, J195P5, J195R7, J195X4, J19604 **Liver** – J194Y7, J195P4, J195R6, J195X3, J19603			
Laboratory: Eberline	**Date Data Assessment Completed:** 03/29/2010 **Completed By:** RDD	**Sample Collection Date:** 9/10/2009, 9/14/2009, 9/15/2009	**Sample Analysis Date:** 10/2009

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No action	
Detection Limits	No	Ruthenium 106, Cobalt 60, Radium 226, Radium 228, Europium 152, Europium 154, Europium 155 MDAs exceed limits specified in plan for J195X3, J195X4, J19604.	-	No action based on guidance.	
Blanks					
Method Blanks	Yes	None	-	No action	
Other QC Results					
LCS Results	Yes	None	-	No action	
Tracer Results	Yes	None	-	No action	
Matrix Spike (C-14, tritium)	No	MS not analyzed for C-14 or tritium	J	Qualify positive and ND sample results as estimated (J).	All samples
Lab Duplicates Sample ID:Y194Y5	Yes	None	-	No action	
Field Duplicate Sample ID:	None analyzed				
QC Summary					
Validity of Data	Not all QC criteria were met, but no data were rejected.				
Additional Notes:					

E.1.21 SDG K1774

SDG K1774 – Pesticides QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1774	**W&C Project No.:**222007

Medium: Fish Tissue **Fish Type:** Sturgeon	**Analytes:** Pesticides – Group 1 of 2

Samples:
Carcass – J19621, J19632, J19642, J19652
Fillet – J19620, J19631, K19641, J19651

Laboratory: Lionville	**Date Data Assessment Completed:** 4/06/2010 **Complete By:** RDD	**Sample Collection Date:** 9/16/2009, 9/17/2009	**Sample Analysis Date:** Extr: 9/23/2009 Anal:10/15/2009, 10/16/2009

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No action	
Detection Limits	No	For most samples, detection limits of all compounds exceed the limits contained in the work plan.	-	No action	
Blanks					
Method Blank	Yes	None	-	No action	
Equipment Blank Sample ID:	None analyzed				
Other QC Results					
Surrogate Recoveries	Yes	None	-	No action	
LCS Results	No	No LCS results for toxaphene	J	Qualify all associated results as estimated (J)	All samples
Matrix Spike/ Matrix Spike Duplicate Sample ID:J19620	No	No MS/MSD results for toxaphene. **Non-compliant recoveries** 4,4'-DDE = 178%/173% **Non-compliant RPDs** Endosulfan sulfate = 31%	J	Qualify all associated results for toxaphene and positive results of 4,4'-DDE as estimated (J). No action for non-compliant ND RPD.	All samples No action for Endosulfan sulfate because all results ND.
Field Duplicate Sample ID:	None analyzed				
QC Summary					
Validity of Data	Not all QC parameters were met, but no data were rejected.				
Additional Notes:					

SDG K1774 – Pesticides QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1774	**W&C Project No.:**222007
Medium: Fish Tissue **Fish Type:** Sturgeon		**Analytes:** Pesticides – Group 2 of 2

Samples:
Kidney – J19623, J19634, J19644, J19654
Liver – J19622, J19633, J19643, J19653

Laboratory: Lionville	**Date Data Assessment Completed:** 4/06/2010 **Completed By:** RDD	**Sample Collection Date:** 9/16/2009, 9/17/2009	**Sample Analysis Date:** Extr: 12/03/2009 Anal:12/22/2009, 12/15/2009

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	No	Holding times are > 2x the limit for all samples.	R/J	Qualify positive results as estimated (J) and ND results as rejected (R)	All samples
Detection Limits	No	For most samples, detection limits of all compounds exceed the limits contained in the work plan.	-	No action.	
Blanks					
Method Blank	Yes	None	-	No action	
Equipment Blank Sample ID:	None analyzed				
Other QC Results					
Surrogate Recoveries	Yes	None	-	No action	
LCS Results	No	No LCS results for toxaphene	J	Qualify all associated results as estimated (J)	All samples
Matrix Spike/ Matrix Spike Duplicate Sample ID:J194Y7	No	No MS/MSD results for toxaphene. **Non-compliant Recoveries** Delta-BHC = 37%/41% 4,4'-DDT= 34%/36% Endrin Aldehyde =39%/39% Methoxychlor =39%/47% **Non-compliant RPDs** all compliant	J	Qualify positive and ND sample results of delta-BHC, 4,4'-DDT, endrin aldehyde and methoxychlor as estimated (J).	All samples
Field Duplicate Sample ID:	None analyzed				
QC Summary					
Validity of Data	Some data rejected due to holding time exceedances > 2x limit.				
Additional Notes:					

SDG K1774 – Metals QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:**K1774	**W&C Project No.:**222007
Medium: Fish Tissue **Fish Type:** Sturgeon		**Analytes:** Metals (Group 1 of 2)
Samples: **Kidney** – J19623, J19634, J19644, J19654 **Liver** – J19622, J19633, J19643, J19653		

Laboratory: Lionville	**Date Data Assessment Completed:** 4/06/2010 **Complete By**: RDD	**Sample Collection Date:** 9/16/2009, 9/17/2009	**Sample Analysis Date:** ICP – 12/03/2009 Hg – 12/01/2009

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	No	Holding time for Hg exceeded by > 2x limit.	J	Qualify positive results as estimated (J) and ND results as rejected (R).	All samples. Since all samples have detections of mercury, the results are qualified as estimated (J).
Detection Limits	No	RDLs for Be, Ca, Fe, P, Sn, Zn exceed work plan limits for several samples.	-	No action	
Blanks					
Preparation Blank	No	Li = 0.677 mg/kg Sn =1.24 mg/kg	UJ	Qualify positive sample results < 5X the blank concentrations as ND.	Impacts the following: Li – None, all ND Sn – all samples
Equipment Blank Sample ID:	None analyzed				
Other QC Results					
LCS Results	Yes	None	-	No action	
Matrix Spike Sample ID: J19622	Yes	None	-	No action	
Lab Duplicate Sample ID: J19622	Yes	None	-	No action	
Field Duplicate Sample ID:	Not collected				
QC Summary					
Validity of Data	Not all QC parameters were met, but no data were rejected.				
Additional Notes:					

SDG K1744 – Metals QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:**K1774	**W&C Project No.:**222007
Medium: Fish Tissue **Fish Type:** Sturgeon		**Analytes:** Metals (Group 2 of 2)

Samples:
Carcass – J19621, J19632, J19642, J19652
Fillet – J19620, J19631, K19641, J19651

Laboratory: Lionville	**Date Data Assessment Completed:** 4/06/2010 **Complete By**: RDD	**Sample Collection Date:** 9/16/2009, 9/17/2009	**Sample Analysis Date:** ICP – 10/06/2009 Hg – 09/25/2009

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None.	-	No action.	
Detection Limits	No	RDLs for Be, Ca, Fe, Sn exceed work plan limits for several samples.	-	No action	
Blanks					
Preparation Blank	No	Ca = 4.74 mg/kg Mg = 1.24 mg/kg P = 19.8 mg/kg K = 28.5 mg/kg Sn =0.988 mg/kg	UJ	Qualify positive sample results < 5X the blank concentrations as ND.	Impacts the following: Ca – None Mg – None P – None K – None Sn – all samples except J19621.
Equipment Blank Sample ID:	None analyzed				
Other QC Results					
LCS Results	No	Si = 55%	J	Qualify positive and ND sample results of Si as estimated (J).	All samples
Matrix Spike Sample ID:J19620	Yes	None	-	No action	
Lab Duplicate Sample ID:J19620	Yes	None	-	No action	
Field Duplicate Sample ID:	Not collected				
QC Summary					
Validity of Data	Not all QC parameters were met, but no data were rejected.				
Additional Notes:					

SDG K1774 –Radionuclides QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:**K1774	**W&C Project No.:**222007

Medium: Fish Tissue **Fish Type:** Sturgeon	**Analytes:** C14, Gamma Scan, Tritium, Isotopic Plutonium, Isotopic Thorium, Isotopic Uranium, Sr-90, Tc-99

Samples:
Carcass – J19621, J19632, J19642, J19652,
Fillet – J19620, J19631, K19641, J19651
Kidney – J19623, J19634, J19644, J19654
Liver – J19622, J19633, J19643, J19653

Laboratory: Eberline	**Date Data Assessment Completed:** 04/06/2010 **Completed By:** RDD	**Sample Collection Date:** 9/16/2009, 9/17/2009	**Sample Analysis Date:** 10/2009

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No action	
Detection Limits	No	Cobalt 60, Radium 226, Radium 228, Europium 152, Europium 154, Europium 155 MDAs exceed limits specified in plan for at least three samples.	-	No action based on guidance.	
Blanks					
Method Blanks	Yes	None	-	No action	
Other QC Results					
LCS Results	Yes	None	-	No action	
Tracer Results	Yes	None	-	No action	
Matrix Spike (C-14, tritium)	No	MS/MSD samples were not analyzed for C-14 or tritium.	J	Qualify positive and ND sample results as estimated (J).	All samples
Lab Duplicates Sample ID:Y19654	Yes	None	-	No action	
Field Duplicate Sample ID:	None analyzed				
QC Summary					
Validity of Data	Not all QC criteria were met, but no data were rejected.				
Additional Notes:					

E.1.22 SDG K1785

SDG K1785 – Pesticides QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA
SDG No.: K1785
W&C Project No.:222007
Medium: Fish Tissue
Fish Type: Walleye
Analytes: Pesticides – Group 1 of 3
Samples:
Carcass – J18XB6, J18XB7, J18XB8, J18XB9, J18XC0, J18XH1, J18XH2, J18XH3, J18XH4, J18XH5, J19748
Fillet – J18XD1, J18XD2, J18XD3, J18XD4, J18XD5, J19746, J18X86, J18X87, J18X89, J18X88, J18X90
Laboratory: Lionville
Date Data Assessment Completed: 4/8/2010
Complete By: KAM
Sample Collection Date: 9/21,24,25/2009
Sample Analysis Date: Extr: 10/6,7/2009 Anal: 10/20-23/2009

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	No	Sample extracted <2x holding time	J	Qualify positive and ND results as estimated (J)	Sample J19746
Detection Limits	No	Detection limits exceeded for many pesticides	-	No action based on guidance	
Blanks					
Method Blank	Yes	None	-	No Action	
Equipment Blank Sample ID:	Not Analyzed				
Other QC Results					
Surrogate Recoveries	No	Low recoveries (but >10%) of Decachlorobiphenyl in samples J18XB7, J18XB9, J18XC0, J18XD1, J18XD2, J18XH5, J19748	J	Qualify positive and ND results was estimated (J)	Samples J18XB7, J18XB9, J18XC0, J18XD1, J18XD2, J18XH5, J19748
LCS Results	No	No LCS results for toxaphene	J	Qualify all associated results as estimated (J)	All samples
Matrix Spike/ Matrix Spike Duplicate Sample ID:	No	No MS/MSD results for toxaphene **Non-compliant Recoveries** 4,4'-DDT: 46.6%/46.6% Endrin aldehyde: 43.5%/41.4%	J J	Qualify all associated results as estimated (J) Qualify positive and ND results as estimated (J)	All samples All samples

SDG K1785 – Pesticides QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1785	**W&C Project No.:**222007	
Medium: Fish Tissue **Fish Type:** Walleye		**Analytes:** Pesticides – Group 1 of 3	
Samples: **Carcass** – J18XB6, J18XB7, J18XB8, J18XB9, J18XC0, J18XH1, J18XH2, J18XH3, J18XH4, J18XH5, J19748 **Fillet** – J18XD1, J18XD2, J18XD3, J18XD4, J18XD5, J19746, J18X86, J18X87, J18X89, J18X88, J18X90			
Laboratory: Lionville	**Date Data Assessment Completed:** 4/8/2010 **Complete By:** KAM	**Sample Collection Date:** 9/21,24,25/2009	**Sample Analysis Date:** Extr: 10/6,7/2009 Anal: 10/20-23/2009

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Field Duplicate Sample ID:	Not Collected				
QC Summary					
Validity of Data	Not all QC criteria met, however no rejected results				
Additional Notes:					

SDG K1785 – Pesticides QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1785	**W&C Project No.:**222007	
Medium: Fish Tissue **Fish Type:** Walleye		**Analytes:** Pesticides – Group 2 of 3	
Samples: **Liver/Kidney** – J18XB1, J18XB2, J18XB3, J18XB4, J18XB5			
Laboratory: Lionville	**Date Data Assessment Completed:** 4/8/2010 **Complete By:** KAM	**Sample Collection Date:** 9/24-25/2009	**Sample Analysis Date:** Extr: 12/16/2009 Anal: 12/28/2009

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	No	Samples extracted >2x holding time	J/R	Qualify positive results as estimated (J) and ND results as rejected	All samples
Detection Limits	No	Detection limits exceeded for many pesticides	-	No action based on guidance	
Blanks					
Method Blank	Yes	None	-	No Action	
Equipment Blank Sample ID:	Not Analyzed				
Other QC Results					
Surrogate Recoveries	Yes	None	-	No Action	
LCS Results	No	No LCS results for toxaphene	J	Qualify all associated results as estimated (J)	All samples
Matrix Spike/ Matrix Spike Duplicate Sample ID: J18XB5	No	No MS/MSD results for toxaphene	J	Qualify all associated results as estimated (J)	All samples
		Non-compliant Recoveries: 4,4'-DDT: 20.9%/14% Endrin Aldehyde: 5%/2.1% Methoxychlor: 37%/18%	J	Qualify positive and ND results as estimated (J)	All samples
		Non-compliant RPDs 4,4'-DDT: 39.3% Endrin Aldehyde: 81.7% Methoxychlor: 69.1% Endrin Ketone: 33.1%	J	Qualify positive and ND results as estimated (J)	All samples

SDG K1785 – Pesticides QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1785	**W&C Project No.:**222007
Medium: Fish Tissue **Fish Type:** Walleye		**Analytes:** Pesticides – Group 2 of 3
Samples: **Liver/Kidney** – J18XB1, J18XB2, J18XB3, J18XB4, J18XB5		

Laboratory: Lionville	**Date Data Assessment Completed:** 4/8/2010 **Complete By:** KAM	**Sample Collection Date:** 9/24-25/2009	**Sample Analysis Date:** Extr: 12/16/2009 Anal: 12/28/2009

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Field Duplicate Sample ID:	Not Collected				
QC Summary					
Validity of Data	No	Holding Time - Samples extracted >2x holding time	R	Qualify all ND results as rejected	All samples
Additional Notes:					

SDG K1785 – Pesticides QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1785	**W&C Project No.:**222007
Medium: Fish Tissue **Fish Type:** Walleye, Sturgeon		**Analytes:** Pesticides – Group 3 of 3

Samples:
Walleye Liver/Kidney – J18XF6, J18XF7, J18XF8, J18XF9, J18XH0, J19747
Sturgeon Viscera – J195V7, J195V8, J195V9, J195W0, J19661, J19662

Laboratory:	**Date Data Assessment Completed:**	**Sample Collection Date:**	**Sample Analysis Date:**
Lionville	4/8/2010 **Complete By:** KAM	9/21,24-25/2010	Extr: 12/24/2009 Anal: 1/12-13/2010

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	No	Samples extracted >2x holding time	J/R	Qualify positive results as estimated (J) and ND results as rejected	All samples
Detection Limits	No	Detection limits exceeded for many pesticides	-	No action based on guidance	
Blanks					
Method Blank	Yes	None	-	No Action	
Equipment Blank Sample ID:	Not Analyzed				
Other QC Results					
Surrogate Recoveries	Yes	None	-	No Action	
LCS Results	No	No LCS results for toxaphene	J	Qualify all associated results as estimated (J)	All samples
Matrix Spike/ Matrix Spike Duplicate Sample ID: J18XF6	No	No MS/MSD results for toxaphene **Non-compliant Recoveries** 4,4'-DDT: 24.3%/19.7% Endrin aldehyde: 2.20%/0% Methoxychlor: 35.5%/28.9%	J J	Qualify all associated results as estimated (J) Qualify positive and ND results as estimated (J)	All samples All samples
Field Duplicate Sample ID:		Not Collected			
QC Summary					
Validity of Data	No	Holding Time - Samples extracted >2x holding time	R	Qualify all ND results as rejected	All samples
Additional Notes:					

E.1.23 SDG K1813

SDG K1813 – Pesticides QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1813	**W&C Project No.:**222007
Medium: Fish Tissue **Fish Type:** Carp		**Analytes:** Pesticides

Samples:
Carcass – J19667, J19668, J196C0, J196C1, J196C2, J196C3, J196J0, J196X8, J196X9, J196Y0
Fillet – J19236, J19237, J19682, J19683, K19684, J19685, J196D5, J196K5, J196K6, J196K7

Laboratory:	**Date Data Assessment Completed:**	**Sample Collection Date:**	**Sample Analysis Date:**
Lionville	4/07/2010 **Complete By:** RDD	10/21/2009, 10/22/2009	Extr: 11/04/2009 Anal:11/09/2009, 11/10/2009, 11/11/2009

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None.	-	No action.	
Detection Limits	No	For most samples, detection limits of all compounds exceed the limits contained in the work plan.	-	No action.	
Blanks					
Method Blank	Yes	None	-	No action	
Equipment Blank	None analyzed				
Other QC Results					
Surrogate Recoveries	No	DCB < LCL for J196C1; DCB < LCL for J196C3; DCB < LCL for J196K5; DCB < LCL for J196K6; DCB < LCL for J196K8; DCB < LCL for J196K9; DCB < LCL for J19667; DCB < LCL for J19236; DCB < LCL for J19237; DCB < LCL for J19668	J	Qualify positive and ND sample results as estimated (J).	J196C1 J196C3 J196K5 J196K6 J196K8 J196K9 J19667 J19236 J19237 J19668
LCS Results	No	No LCS results for toxaphene	J	Qualify all associated results as estimated (J)	All samples
Matrix Spike/ Matrix Spike Duplicate Sample ID:J196Y0	No	No MS/MSD results for toxaphene. **Non-compliant Recoveries** Endrin aldehyde = 10%/8% **Non-compliant RPDs** All are compliant.	J	Qualify all associated positive and ND results for toxaphene and endrin aldehyde as estimated (J).	All samples
Field Duplicate	None analyzed				
QC Summary					
Validity of Data	Not all QC parameters were met, but no data were rejected.				
Additional Notes:					

SDG K1813 – Metals QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:**K1813	**W&C Project No.:**222007
Medium: Fish Tissue **Fish Type:** Carp		**Analytes:** Metals

Samples:
Carcass – J19667, J19668, J196C0, J196C1, J196C2, J196C3, J196J0, J196X8, J196X9, J196Y0
Fillet – J19236, J19237, J19682, J19683, K19684, J19685, J196D5, J196K5, J196K6, J196K7

Laboratory: Lionville	**Date Data Assessment Completed:** 4/07/2010 **Complete By**: RDD	**Sample Collection Date:** 10/21/2009, 10/22/2009	**Sample Analysis Date:** ICP – 11/02/2009 Hg – 10/30/2009

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None.	-	No action.	
Detection Limits	No	RDLs for Be, Ca, Fe, P, Sn, Zn exceed work plan limits for several samples.	-	No action	
Blanks					
Preparation Blank	No	Sn =1.02 mg/kg	-	Qualify positive sample results < 5X the blank concentrations as ND.	Impacts the following: Sn – None
Equipment Blank Sample ID:	None analyzed				
Other QC Results					
LCS Results	No	Si = 50%	J	Qualify positive and ND results as estimated (J).	All samples
Matrix Spike Sample ID: J19682	No	Ca = -4%	J	Qualify positive sample results of calcium as estimated (J) and ND results as rejected (R).	Impacts – All samples have positive calcium concentrations. Therefore, the results are qualified as estimated (J).
Lab Duplicate Sample ID: J19682	No	**Non-compliant RPDs** Sr = 40% Sn = 76%	J	Qualify positive sample results as estimated (J). No action for ND results.	Impacts- since all results have detections, results for both elements qualified as estimated for all samples.
Field Duplicate: Sample ID:	Not collected				
QC Summary					
Validity of Data	Not all QC parameters were met, but no data were rejected.				
Additional Notes:					

SDG K1813 – Radionuclides QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:**K1813	**W&C Project No.:**222007
Medium: Fish Tissue **Fish Type:** Carp	**Analytes:** C14, Gamma Scan, Tritium, Isotopic Plutonium, Isotopic Thorium, Isotopic Uranium, Sr-90, Tc-99	
Samples: **Carcass** – J19667, J19668, J196C0, J196C1, J196C2, J196C3, J196J0, J196X8, J196X9, J196Y0 **Fillet** – J19236, J19237, J19682, J19683, K19684, J19685, J196D5, J196K5, J196K6, J196K7		

Laboratory: Eberline	**Date Data Assessment Completed:** 04/06/2010 **Completed By:** RDD	**Sample Collection Date:** 10/21/2009, 10/22/2009	**Sample Analysis Date:** 11-12/2009

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No action	
Detection Limits	No	Cobalt 60, Radium 226, Radium 228, Europium 152, Europium 154,and/or Europium 155 MDAs exceed limits specified in plan for some samples.	-	No action based on guidance.	
Blanks					
Method Blanks	Yes	None	-	No action	
Other QC Results					
LCS Results	Yes	None	-	No action	
Tracer Results	Yes	None	-	No action	
Matrix Spike (C-14, tritium)	No	MS/MSD samples were not analyzed for C-14 or tritium	J	Qualify positive and ND sample results as estimated (J).	All samples
Lab Duplicates Sample ID:Y19236	Yes	None	-	No action	
Field Duplicate Sample ID:	None analyzed				
QC Summary					
Validity of Data	Not all QC criteria were met, but no data were rejected.				
Additional Notes:					

E.1.24 SDG K1839

Validated by ELR - Included in Appendix F

E.1.25 SDG K1847

SDG K1847 – Pesticides QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1847	**W&C Project No.:**222007	
Medium: Fish Tissue **Fish Type:** Sucker and Carp		**Analytes:** Pesticides	
Samples: **Sucker Carcass** – J191V7, J191V9, J191V8, J191V6, J191V5, J19221, J19222 J19223 **Sucker Fillet** – J191R4, J191R5, J191R6, J191R7, J191R8, J191X1, J191X2, J191X3 **Carp Carcass** – J196C4, J196J4 **Carp Fillet** – J19686, J196D9			
Laboratory: Lionville	**Date Data Assessment Completed:** 3/22/2010 **Complete By:** KAM	**Sample Collection Date:** 12/1,3/2009	**Sample Analysis Date:** Extr: 12/9/2009 Anal: 12/22,24/2009

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No Action	
Detection Limits	No	Detection limits exceeded for most pesticides	-	No action based on guidance	
Blanks					
Method Blank	Yes	None	-	No Action	
Equipment Blank Sample ID:	Not Analyzed				
Other QC Results					
Surrogate Recoveries	No	Decachlorobiphenyl below criteria for samples J191V8 and J191V5	J	Qualify positive and ND results as estimated (J)	Samples J191V8 and J191V5
LCS Results	No	No LCS results for toxaphene	J	Qualify all associated results as estimated (J)	All samples
Matrix Spike/ Matrix Spike Duplicate Sample ID: J191X1	No	No MS/MSD results for toxaphene **Non-compliant recoveries** Endrin aldehyde: 43%	J J	Qualify all associated results as estimated (J) Qualify positive and ND results as estimated (J)	All samples All samples
Field Duplicate Sample ID:	Not Collected				
QC Summary					

SDG K1847 – Pesticides QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1847	**W&C Project No.:**222007
Medium: Fish Tissue **Fish Type:** Sucker and Carp		**Analytes:** Pesticides

Samples:
Sucker Carcass – J191V7, J191V9, J191V8, J191V6, J191V5, J19221, J19222 J19223
Sucker Fillet – J191R4, J191R5, J191R6, J191R7, J191R8, J191X1, J191X2, J191X3
Carp Carcass – J196C4, J196J4
Carp Fillet – J19686, J196D9

Laboratory: Lionville	**Date Data Assessment Completed:** 3/22/2010 **Complete By:** KAM	**Sample Collection Date:** 12/1,3/2009	**Sample Analysis Date:** Extr: 12/9/2009 Anal: 12/22,24/2009

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Validity of Data	Not all QC criteria met, however no results rejected				
Additional Notes:					

SDG K1847 – Metals QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1847	**W&C Project No.:**222007
Medium: Fish Tissue **Fish Type:** Sucker and Carp		**Analytes:** Metals

Samples:
Sucker Carcass – J191V7, J191V9, J191V8, J191V6, J191V5, J19221, J19222 J19223
Sucker Fillet – J191R4, J191R5, J191R6, J191R7, J191R8, J191X1, J191X2, J191X3
Carp Carcass – J196C4, J196J4
Carp Fillet – J19686, J196D9

Laboratory:	**Date Data Assessment Completed:**	**Sample Collection Date:**	**Sample Analysis Date:**
Lionville	3/22/2010 **Complete By:** KAM	12/1,3/2009	ICP and Hg – 12/11/2009

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No Action	
Detection Limits	No	Detection limits exceed criteria for Be, Ca, Fe, P, K, Sn, U, and Zn	-	No action based on guidance	
Blanks					
Preparation Blank	No	Tin: 1.10 mg/kg	UJ	Qualify positive results <5x blank concentration as estimated non-detect (UJ)	All samples. Impacts all samples for tin except J19222, J196D9, and J196J4
Equipment Blank Sample ID:	Not Analyzed				
Other QC Results					
LCS Results	Yes	None	-	No Action	
Matrix Spike Sample ID: J191X1	No	**Non-compliant recoveries** Calcium: 221%	J	Qualify positive sample results as estimated (J)	All samples
Lab Duplicates Sample ID: J191X1	Yes	None	-	No Action	
Field Duplicate Sample ID:	Not Collected				
QC Summary					
Validity of Data	Not all QC criteria met, however no results rejected				
Additional Notes:					

SDG K1847 – Radionuclides QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1847	**W&C Project No.:**222007

Medium: Fish Tissue **Fish Type:** Sucker and Carp	**Analytes:** C14, Gamma Spec, Tritium, Isotopic Plutonium, Isotopic Thorium, Isotopic Uranium, Sr-90, Tc-99

Samples:
Sucker Carcass – J191V7, J191V9, J191V8, J191V6, J191V5, J19221, J19222 J19223
Sucker Fillet – J191R4, J191R5, J191R6, J191R7, J191R8, J191X1, J191X2, J191X3
Carp Carcass – J196C4, J196J4
Carp Fillet – J19686, J196D9

Laboratory: Eberline	**Date Data Assessment Completed:** 3/22/2010 **Complete By:** KAM	**Sample Collection Date:** 12/1,3/2009	**Sample Analysis Date:** 12/2009

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No Action	
Detection Limits	No	**RDL** All RDLs either less than or equal to reporting limit in work plan **MDA** Uranium-238 Ruthenium-106	-	No action based on criteria	
Blanks					
Method Blanks	Yes	None	-	No Action	
Other QC Results					
LCS Results	Yes	None	-	No Action	
Tracer Results	Yes	None	-	No Action	
Matrix Spike (C-14, Tritium)	No	No MS for C_{14} or tritium was analyzed	J	Qualify positive and ND results as estimated (J)	All samples
Lab Duplicates Sample ID: J191R4	Yes	None	-	No Action	
Field Duplicate Sample ID:	Not Collected				
QC Summary					
Validity of Data	Not all QC criteria met, however no results rejected				
Additional Notes:					

E.1.26 SDG K1852

SDG K1852 – Pesticides QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1852	**W&C Project No.:**222007	
Medium: Fish Tissue **Fish Type:** Carp and Sucker		**Analytes:** Pesticides – Group 1 of 2	
Samples: **Carp Kidney** – J19256, J19257, J196B5 **Carp Liver** – J19251, J19252, J196B0, J196B1, J196B2, J196B3, J196B4, **Sucker Liver/Kidney** – J191V0, J191V1, J191V2, J191V3, J191V4, J191Y6, J191Y7, J191Y8			
Laboratory: Lionville	**Date Data Assessment Completed:** 3/29/2010 **Complete By:** KAM	**Sample Collection Date:** 12/7-9/2009	**Sample Analysis Date:** Extr: 1/21/2010 Anal: 1/25-27/2010

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	No	Samples extracted >2x holding time	J/R	Qualify positive results as estimated (J) and ND results as rejected	All samples
Detection Limits	No	Detection limits exceeded criteria for all pesticides	-	No action based on criteria	
Blanks					
Method Blank	Yes	None	-	No Action	
Equipment Blank Sample ID:	Not Analyzed				
Other QC Results					
Surrogate Recoveries	No	Samples J19252, J19251, and J191Y8 had low recoveries for Decachlorobiphenyl	J	Qualify positive and ND results as estimated (J)	Samples J19252, J19251, and J191Y8
LCS Results	No	No LCS results for toxaphene	J	Qualify all associated results as estimated (J)	All samples
Matrix Spike/ Matrix Spike Duplicate Sample ID: J191V0	No	No MS/MSD results for toxaphene **Non-compliant recoveries** Endrin aldehyde: 30.7%/34.7%	J J	Qualify all associated results as estimated (J) Qualify positive and ND results as estimated (J)	All samples All samples
Field Duplicate Sample ID:	Not Collected				
QC Summary					
Validity of Data	No	Holding Time – samples extracted >2x holding time criteria	R	Qualify ND results as rejected	All samples
Additional Notes:					

SDG K1852 – Pesticides QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1852	**W&C Project No.:**222007
Medium: Fish Tissue **Fish Type:** Carp		**Analytes:** Pesticides – Group 2 of 2
Samples: **Kidney** – J196B6, J196B7, J196B8, J196B9, J196H5, J196H9, J196X2, J196X3, J196X4, J196X5, J196X6 **Liver** – J196H0, J196H4, J196W7, J196W8, J196W9, J196X0, J196X1		

Laboratory: Lionville	**Date Data Assessment Completed:** 3/29/2010 **Complete By:** KAM	**Sample Collection Date:** 12/7-8/2009	**Sample Analysis Date:** Extr: 1/26/2010 and 2/11/2010 Anal: 2/2,6,8,19/2010

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	No	Samples extracted >2x holding time	J/R	Qualify positive results as estimated (J) and ND results as rejected	All samples
Detection Limits	No	Detection limit exceeds criteria for all pesticides	-	No action based on guidance	
Blanks					
Method Blank	Yes	None	-	No Action	
Equipment Blank Sample ID:	Not Analyzed				
Other QC Results					
Surrogate Recoveries	No	J196X3 had low recoveries for Tetrachloro-meta-xylene and Decachlorobiphenyl	J	Qualify positive and ND results as estimated (J)	J196X3
LCS Results	No	No LCS results for toxaphene	J	Qualify all associated results as estimated (J)	All samples
		4,4'-DDE: 152% 4,4'-DDD: 152%	J	Qualify positive and ND results as estimated	All samples
Matrix Spike/ Matrix Spike Duplicate Sample ID: J196B6	No	No MS/MSD results for toxaphene	J	Qualify all associated results as estimated (J)	All samples
		Non-compliant recoveries 4,4'-DDE: 151% 4,4'-DDD: 215%/164%	J	Qualify positive results as estimated (J)	All samples
		4,4-DDT: 42%	J	Qualify positive	All samples

SDG K1852 – Pesticides QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1852	**W&C Project No.:**222007
Medium: Fish Tissue **Fish Type:** Carp		**Analytes:** Pesticides – Group 2 of 2
Samples: **Kidney** – J196B6, J196B7, J196B8, J196B9, J196H5, J196H9, J196X2, J196X3, J196X4, J196X5, J196X6 **Liver** – J196H0, J196H4, J196W7, J196W8, J196W9, J196X0, J196X1		

Laboratory: Lionville	**Date Data Assessment Completed:** 3/29/2010 **Complete By:** KAM	**Sample Collection Date:** 12/7-8/2009	**Sample Analysis Date:** Extr: 1/26/2010 and 2/11/2010 Anal: 2/2,6,8,19/2010

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
		Endrin aldehyde: 2.2%/37%		and ND results as estimated (J)	
		Non-compliant RPDs 4,4'-DDT: 61.2% Endrin aldehyde: 178% Methoxyxhlor: 52.5%	J	Qualify positive and ND results as estimated (J)	All samples
Field Duplicate Sample ID:	Not Collected				
QC Summary					
Validity of Data	No	Holding Time – samples extracted >2x holding time	R	Qualify ND results as rejected	All samples
Additional Notes:					

SDG K1852 – Metals QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1852	**W&C Project No.:**222007
Medium: Fish Tissue **Fish Type:** Carp and Sucker		**Analytes:** Metals – Group 1 of 2

Samples:
Carp Kidney – J19256, J19257, J196B5
Carp Liver – J19251, J19252, J196B0, J196B1, J196B2, J196B3, J196B4,
Sucker Liver/Kidney – J191V0, J191V1, J191V2, J191V3, J191V4, J191Y6, J191Y7, J191Y8

Laboratory:	**Date Data Assessment Completed:**	**Sample Collection Date:**	**Sample Analysis Date:**
Lionville	3/29/2010 **Complete By:** KAM	12/7-8/2009	ICP – 1/19/2010 Hg – 1/22/2010

QC Parameter	**All in Spec.?**	**Non-Compliant Results**	**Flag**	**Action/ Notes**	**Associated Samples**
Holding Times	No	Sample results for Hg extracted <2x holding time	J	Qualify positive and ND results as estimated (J)	All samples for Hg
Detection Limits	No	Detection limits exceed criteria for Be, Ca, Fe, Li, P, K, Sn, U, and Zn	-	No action based on criteria	
Blanks					
Preparation Blank	No	Mg: 1.45 mg/kg Sn: 1.23	UJ	Qualify positive results <5x blank concentration as estimated non-detect (UJ)	All samples for Sn. Impacts all samples except J191V2, J191V3, J191Y7, and J196B2
Equipment Blank Sample ID:	Not Analyzed				
Other QC Results					
LCS Results	No	Si: 68%	J	Qualify positive and ND results as estimated (J)	All samples
Matrix Spike Sample ID:J191V0	No	Fe: 66% P: 42%	J	Qualify positive and ND results as estimated (J)	All samples
Lab Duplicate Sample ID: J191V0	Yes	None	-	No Action	
Field Duplicate Sample ID:	Not Collected				
QC Summary					
Validity of Data	Not all QC criteria met, however no rejected results				
Additional Notes:					

SDG K1852 – Metals QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1852	**W&C Project No.:**222007
Medium: Fish Tissue **Fish Type:** Carp		**Analytes:** Metals – Group 2 of 2

Samples:
Kidney – J196B6, J196B7, J196B8, J196B9, J196H5, J196H9, J196X2, J196X3, J196X4, J196X5, J196X6
Liver – J196H0, J196H4, J196W7, J196W8, J196W9, J196X0, J196X1

Laboratory:	**Date Data Assessment Completed:**	**Sample Collection Date:**	**Sample Analysis Date:**
Lionville	3/29/2010 **Complete By:** KAM	12/7-8/2009	ICP – 1/30/2010 Hg – 1/26/2010

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	No	Samples extracted <2x holding time for Hg	J	Qualify positive and ND results as estimated (J)	All samples for Hg
Detection Limits	No	Detection limits exceeded criteria for Be, Ca, Fe, P, K, Sn, U, and Zn	-	No action based on criteria	
Blanks					
Preparation Blank	No	Sn: 1.35 mg/kg	UJ	Qualify positive results <5x blank concentration as estimated non-detect (UJ)	All samples for Sn
Equipment Blank Sample ID:	Not Analyzed				
Other QC Results					
LCS Results	No	Si: 54%	J	Qualify positive and ND results as estimated (J)	All samples
Matrix Spike Sample ID: J196B6	Yes	None	-	No Action	
Lab Duplicate Sample ID: J196B6	Yes	None	-	No Action	
Field Duplicate Sample ID:	Not Collected				
QC Summary					
Validity of Data	Not all QC criteria met, however no rejected results				
Additional Notes:					

SDG K1852 – Radionuclides QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1852	**W&C Project No.:**222007

Medium: Fish Tissue Group 1 of 2 **Fish Type:** Carp and Sucker	**Analytes:** C14, Gamma Spec, Tritium, Isotopic Plutonium, Isotopic Thorium, Isotopic Uranium, Sr-90, Tc-99

Samples:
Carp Kidney – J19256, J19257, J196B5
Carp Liver – J19251, J19252, J196B0, J196B1, J196B2, J196B3, J196B4,
Sucker Liver/Kidney – J191V0, J191V1, J191V2, J191V3, J191V4, J191Y6, J191Y7, J191Y8

Laboratory: Eberline	**Date Data Assessment Completed:** 3/29/2010 **Complete By:** KAM	**Sample Collection Date:** 12/7-8/2009	**Sample Analysis Date:** 12/2009

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No Action	
Detection Limits	No	**RDL** All RDLs either less than or equal to reporting limit in work plan **MDA** Uranium-238 Ruthenium-106	-	No action based on guidance	
Blanks					
Method Blanks	Yes	None	-	No Action	
Other QC Results					
LCS Results	Yes	None	-	No Action	
Tracer Results	Yes	None	-	No Action	
Matrix Spike (C-14, Tritium)	No	No MS analyzed for C_{14} or tritium	J	Qualify all results as estimated (J)	All samples
Lab Duplicates Sample ID: J191V0	Yes	None	-	No Action	
Field Duplicate Sample ID:	Not Collected				
QC Summary					
Validity of Data	Not all QC criteria met, however no rejected results				
Additional Notes:					

SDG K1852 – Radionuclides QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1852	**W&C Project No.:**222007
Medium: Fish Tissue Group 2 of 2 **Fish Type:** Carp	**Analytes:** C14, Gamma Spec, Tritium, Isotopic Plutonium, Isotopic Thorium, Isotopic Uranium, Sr-90, Tc-99	

Samples:
Kidney – J196B6, J196B7, J196B8, J196B9, J196H5, J196H9, J196X2, J196X3, J196X4, J196X5, J196X6
Liver – J196H0, J196H4, J196W7, J196W8, J196W9, J196X0, J196X1

Laboratory: Eberline	**Date Data Assessment Completed:** 3/29/2010 **Complete By:** KAM	**Sample Collection Date:** 12/7-8/2009	**Sample Analysis Date:** 12/2009

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No Action	
Detection Limits	No	**RDL** All RDLs either less than or equal to reporting limit in work plan **MDA** Uranium-238 Ruthenium-106	-	No action based on guidance	
Blanks					
Method Blanks	Yes	None	-	No Action	
Other QC Results					
LCS Results	Yes	None	-	No Action	
Tracer Results	Yes	None	-	No Action	
Matrix Spike (C-14, Tritium)	No	No MS analyzed for C_{14} or tritium	J	Qualify all results as estimated (J)	All samples
Lab Duplicates Sample ID: J196B6	Yes	None	-	No Action	
Field Duplicate Sample ID:	Not Collected				
QC Summary					
Validity of Data	Not all QC criteria met, however no rejected results				
Additional Notes:					

E.1.27 SDG K1863

SDG K1863 – Pesticides QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1863	**W&C Project No.:**222007
Medium: Fish Tissue **Fish Type:** Sucker & Carp		**Analytes:** Pesticides – Group 1 of 3

Samples:
Sucker Carcass – J191P1, J191P2, J191P3, J19220, J19224, J190V5, J190V6, J191N9, & J191P0
Carp Carcass – J19669, J196J1
Sucker Fillet – J191X0, J191X4, J190R4, J190R5, J191H3, J191H4, J191H5, J191H6, & J191H7
Carp Fillet – J19238, J196D6

Laboratory: Lionville	**Date Data Assessment Completed:** 3/31/2010 **Complete By:** SRK	**Sample Collection Date:** 12/14/09 – 12/15/09	**Sample Analysis Date:** Extr: 12/29/09 Anal: 1/14/10 – 1/15/10

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	No	Extracted one day out of holding time	J	Qualify positive and ND as estimated (J)	J191P1, J191P2, J191P3, J191N9, J191P0, J191H3, J191H4, J191H5, J191H6, & J191H7
Detection Limits	No	Detection limits exceeded for most pesticides	-	No action based on guidance	
Blanks					
Method Blank	Yes	None	-	No action	
Equipment Blank Sample ID:	Not analyzed				
Other QC Results					
Surrogate Recoveries	Yes	None	-	No action	
LCS Results	No	No LCS results for toxaphene	J	Qualify all associated results as estimated (J)	All samples
Matrix Spike Sample ID: J191H3	No	No MS/MSD results for toxaphene **Non-compliant recoveries** Endrin aldehyde: 47%/48%	J J	Qualify all associated results as estimated (J) Qualify positive and ND results as estimated (J)	All samples All samples for endrin aldehyde
Field Duplicate Sample ID:	Not collected				
QC Summary					
Validity of Data	Some results qualified, none rejected.				
Additional Notes:					

SDG K1863 – Pesticides QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA		**SDG No.:** K1863	**W&C Project No.:**222007
Medium: Fish Tissue **Fish Type:** Sucker			**Analytes:** Pesticides – Group 2 of 3
Samples: **Liver/Kidney** – J190V0, J190V1, J191N4, J191N5, J191N6, J191N7, & J191N8			
Laboratory: Lionville	**Date Data Assessment Completed:** 3/24/2010 **Complete By:** SRK	**Sample Collection Date:** 12/15/2009	**Sample Analysis Date:** Extr: 2/2/10 Anal: 2/8/10

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	No	37 days out of extraction holding time (>2x)	J/R	Qualify positive results as estimated (J) and reject (R) ND	All samples
Detection Limits	No	Detection limits exceeded for most pesticides	-	No action based on guidance	
Blanks					
Method Blank	Yes	None	-	No action	
Equipment Blank Sample ID:	Not analyzed				
Other QC Results					
Surrogate Recoveries	Yes	None	-	No action	
LCS Results	No	No LCS results for toxaphene	J	Qualify all associated results as estimated (J)	All samples
Matrix Spike Sample ID: J190V0	No	No MS/MSD results for toxaphene	J	Qualify all associated results as estimated (J)	All samples
		Non-compliant recoveries 4,4'-DDT: /42% Endrin aldehyde: 47%/48%	J	Qualify positive and ND results as estimated (J)	All samples for 4,4'-DDT and endrin aldehyde
Field Duplicate Sample ID:	Not collected				
QC Summary					
Validity of Data	No	Hold Time – exceeded criteria by more than 2x	R	ND results qualified as rejected (R)	All samples
Additional Notes:					

SDG K1863 – Pesticides QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1863	**W&C Project No.:**222007
Medium: Fish Tissue **Fish Type:** Sucker & Carp		**Analytes:** Pesticides – Group 3 of 3
Samples: **Carp Kidney** – J19258 & J196H6 **Carp Liver** – J19253 & J196H1 **Sucker Liver/Kidney** – J191Y5 & J191Y9		

Laboratory: Lionville	**Date Data Assessment Completed:** 3/24/10 **Complete By:** SRK	**Sample Collection Date:** 12/15/09	**Sample Analysis Date:** Extr: 2/2/10 Anal: 2/9/10

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	No	37 days out of extraction holding time (>2x)	J/R	Qualify positive results as estimated (J) and reject (R) ND	All samples
Detection Limits	No	Detection limits exceeded for most pesticides	-	No action based on guidance	
Blanks					
Method Blank	Yes	None	-	No action	
Equipment Blank Sample ID:	Not collected				
Other QC Results					
Surrogate Recoveries	Yes	None	-	No action	
LCS Results	No	No LCS results for toxaphene	J	Qualify all associated results as estimated (J)	All samples
Matrix Spike/ Matrix Spike Duplicate	No	No MS/MSD results for toxaphene	J	Qualify all associated results as estimated (J)	All samples
Sample ID:J191Y5		**Non-compliant recoveries** Endrin aldehyde: 39%	J	Qualify positive and ND results as estimated (J)	All samples for endrin aldehyde
		Non-compliant RPD Endrin aldehyde: 32%	J	Qualify positive and ND results as estimated (J)	All samples for endrin aldehyde
Field Duplicate Sample ID:	Not analyzed				
QC Summary					
Validity of Data	No	Hold Time – exceeded criteria by more than 2x	R	ND results qualified as rejected (R)	All samples
Additional Notes:					

SDG K1863 – Metals QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1863	**W&C Project No.:**222007
Medium: Fish Tissue **Fish Type:** Sucker & Carp		**Analytes:** Metals – Group 1 of 3

Samples:
Sucker Carcass – J191P1, J191P2, J191P3, J19220, J19224, J190V5, J190V6, J191N9, & J191P0
Carp Carcass – J19669 & J196J1
Sucker Fillet – J191X0, J191X4, J190R4, J190R5, J191H3, J191H4, J191H5, J191H6, & J191H7
Carp Fillet – J19238 & J196D6

Laboratory: Lionville	**Date Data Assessment Completed:** 3/24/10 **Complete By:** SRK	**Sample Collection Date:** 12/14/09 – 12/15/09	**Sample Analysis Date:** ICP – 1/4/09 Hg – 12/30/09

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No action	
Detection Limits	No	Be, Ca, Fe, Li, P, K, Sn, U, and Zn	-	No action based on guidance	
Blanks					
Preparation Blank	No	Tin: 0.922 mg/kg	UJ	Qualify positive results <5x blank concentration as estimated non-detect (UJ)	All samples. Impacts all samples for tin except J191H3, J191N9, J191H5, J191H6, J191X0, J196D6, J196J1 & J19238
Equipment Blank Sample ID:	Not collected				
Other QC Results					
LCS Results	Yes	None	-	No action	
Matrix Spike/ Matrix Spike Duplicate Sample ID: J191H3 and J19238	No	J191H3 – P: 166% J19238 – Ca: 63% P: 52%	J	Qualify positive and non-detect as estimated (J/UJ)	All samples. Impacts all samples for Ca only.
Lab Duplicates Sample ID: J191H3	No	Ba: 58% RPD Ca: 52% RPD Cr: 50% RPD Sr: 64%	J	Qualify positive as estimated (J)	All samples. Impacts all samples for Ca only.
Field Duplicate Sample ID:	Not analyzed				
QC Summary					
Validity of Data	Some results qualified, none rejected.				
Additional Notes:					

SDG K1863 – Metals QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1863	**W&C Project No.:**222007
Medium: Fish Tissue **Fish Type:** Sucker		**Analytes:** Metals – Group 2 of 3
Samples: **Liver/Kidney** – J190V0, J190V1, J191N4, J191N5, J191N6, J191N7, & J191N8		

Laboratory: Lionville	**Date Data Assessment Completed:** 3/24/10 **Complete By:** SRK	**Sample Collection Date:** 12/15/09	**Sample Analysis Date:** ICP – 2/3/10 Hg – 1/29/10

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	No	Samples received outside of Hg holding time (<2x)	J	Qualify positive and ND as estimated (J)	All samples for Hg
Detection Limits	No	Be, Ca, Fe, Li, P, K, Sn, U, and Zn	-	No action based on guidance	
Blanks					
Preparation Blank	Yes	None	-	No action	
Equipment Blank Sample ID:	Not collected				
Other QC Results					
LCS Results	No	Sb: 139%	-	Qualify positive results as estimated (J)	All samples, however no action since all results ND.
Matrix Spike/ Matrix Spike Duplicate Sample ID: J190V0	Yes	None	-	No action	
Lab Duplicates Sample ID: J190V0	Yes	None	-	No action	
Field Duplicate Sample ID:	Not analyzed				
QC Summary					
Validity of Data	Some results qualified, none rejected.				
Additional Notes:					

SDG K1863 – Metals QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1863	**W&C Project No.:**222007
Medium: Fish Tissue **Fish Type:** Sucker & Carp		**Analytes:** Metals – Group 3 of 3

Samples:
Carp Kidney – J19258 & J196H6
Carp Liver – J19253 & J196H1
Sucker Liver/Kidney – J191Y5 & J191Y9

Laboratory: Lionville	**Date Data Assessment Completed:** 3/24/10 **Complete By:** SRK	**Sample Collection Date:** 12/15/09	**Sample Analysis Date:** ICP – 2/3/10 Hg – 1/29/10

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	No	Samples analyzed outside of Hg holding time (<2x)	J	Qualify positive and ND as estimated (J)	All samples for Hg
Detection Limits	No	Be, Ca, Fe, Li, P, K, Sn, U, and Zn	-	No action based on guidance	
Blanks					
Preparation Blank	Yes	None	-	No action	
Equipment Blank Sample ID:	Not collected				
Other QC Results					
LCS Results	No	Sb: 139%	-	Qualify positive as estimated (J)	All samples, however no action since all results ND.
Matrix Spike/ Matrix Spike Duplicate Sample ID: J191Y5	Yes	None	-	No action	
Lab Duplicates Sample ID: J191Y5	No	Si: 33% RPD	-	Difference is less than 2x IDL so no action based on guidance.	
Field Duplicate Sample ID:	Not analyzed				
QC Summary					
Validity of Data	Some results qualified, none rejected.				
Additional Notes:					

SDG K1863 – Radionuclides QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1863	**W&C Project No.:**222007
Medium: Fish Tissue **Fish Type:** Sucker	Group 1 of 2	**Analytes:** C14, Gamma Spec, Tritium, Isotopic Plutonium, Isotopic Thorium, Isotopic Uranium, Sr-90, Tc-99

Samples:
Carcass – J190V5, J190V6, J191N9, & J191P0
Fillet – J190R4, J190R5, J191H3, J191H4, J191H5, J191H6, & J191H7
Liver/Kidney – J190V0, J190V1, J191N4, J191N5, J191N6, J191N7, & J191N8

Laboratory: Eberline	**Date Data Assessment Completed:** 3/24/2010 **Complete By:** SRK	**Sample Collection Date:** 12/14/09 – 12/15/09	**Sample Analysis Date:** 12/2009 – 1/2010

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No Action	
Detection Limits	No	**RDL** All RDLs either less than or equal to reporting limit in work plan **MDA** Cobalt-60 Radium-226 Radium-228 Europium-152 Europium-154 Ruthenium-106	-	No action based on guidance	
Blanks					
Method Blanks	Yes	None	-	No Action	
Other QC Results					
LCS Results	Yes	None	-	No Action	
Tracer Results	Yes	None	-	No Action	
Matrix Spike (C-14, Tritium)	No	No MS analyzed for C_{14} or tritium	J	Qualify all results as estimated (J)	All samples for C_{14} and tritium
Lab Duplicates Sample ID: J190V0	Yes	None	-	No Action	
Field Duplicate Sample ID:	Not analyzed				
QC Summary					
Validity of Data	Some results qualified, none rejected.				
Additional Notes:					

SDG K1863 – Radionuclides QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1863	**W&C Project No.:**222007
Medium: Fish Tissue **Fish Type:** Sucker and Carp	Group 2 of 2	**Analytes:** C14, Gamma Spec, Tritium, Isotopic Plutonium, Isotopic Thorium, Isotopic Uranium, Sr-90, Tc-99

Samples:
Sucker Carcass – J191P1, J191P2, J191P3, J19220, & J19224
Carp Carcass – J19669 & J196J1
Sucker Fillet – J191X0 & J191X4
Carp Fillet – J19238 & J196D6
Carp Kidney – J19258 & J196H6
Carp Liver – J19253 & J196H1
Sucker Liver/Kidney – J191Y5 & J191Y9

Laboratory: Eberline	**Date Data Assessment Completed:** 3/24/2010 **Complete By:** SRK	**Sample Collection Date:** 12/14/09 – 12/15/09	**Sample Analysis Date:** 12/2009 – 1/2010

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No Action	
Detection Limits	No	**RDL** All RDLs either less than or equal to reporting limit in work plan **MDA** Cobalt-60 Radium-226 Radium-228 Europium-152 Europium-154 Ruthenium-106	-	No action based on guidance	
Blanks					
Method Blanks	Yes	None	-	No Action	
Other QC Results					
LCS Results	Yes	None	-	No Action	
Tracer Results	Yes	None	-	No Action	
Matrix Spike (C-14, Tritium)	No	No MS analyzed for C_{14} or tritium	J	Qualify all results as estimated (J)	All samples for C_{14} and tritium
Lab Duplicates Sample ID: J191Y5	Yes	None	-	No Action	
Field Duplicate Sample ID:	Not Collected				
QC Summary					
Validity of Data	Some results qualified, none rejected.				
Additional Notes:					

E.1.28 SDG K1919

SDG K1919 – Pesticides QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1919	**W&C Project No.:**222007
Medium: Fish Tissue **Fish Type:** Carp	Data set 1 of 2	**Analytes:** Pesticides
Samples: **Carcass** – J19670 **Fillet** –**Kidney** – J19239		

Laboratory: Lionville	**Date Data Assessment Completed:** 04/01/2010 **Complete By:** JAR	**Sample Collection Date:** 01/21/2010	**Sample Analysis Date:** Extr: 02/11/2010 Anal: 02/19/2010

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	No	Extraction holding time exceeded but within two times the holding limit	J	Qualify positive and non-detected results as estimated (J)	Impacts the following samples: J19670, J19239
Detection Limits	No	RLs exceeded for all except heptachlor, heptachlor epoxide, alpha-chlordane, gamma-chlordane, and methoxychlor	-	No action based on guidance	
Blanks					
Method Blank	Yes	None	-	No action	
Equipment Blank Sample ID:	None collected				
Other QC Results					
Surrogate Recoveries	No	DCB = 33% (below criteria)	J	Qualify positive and non-detected results as estimated (J)	Impacts the following samples: J19239
LCS Results	No	No LCS results for toxaphene	J	Qualify all associated results as estimated (J)	Impacts the following samples: All samples
Matrix Spike/ Matrix Spike Duplicate Sample ID: J19670	No No	No MS/MSD results for toxaphene Endrin Aldehyde = 34%/15%; RPD = 78	J J	Qualify all associated results as estimated (J) Qualify all associated results as estimated (J)	Impacts the following samples: Toxaphene – All samples Endrin Aldehyde - All samples

SDG K1919 – Pesticides QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1919	**W&C Project No.:**222007	
Medium: Fish Tissue **Fish Type:** Carp	Data set 1 of 2	**Analytes:** Pesticides	
Samples: **Carcass** – J19670 **Fillet** –**Kidney** – J19239			
Laboratory: Lionville	**Date Data Assessment Completed:** 04/01/2010 **Complete By:** JAR	**Sample Collection Date:** 01/21/2010	**Sample Analysis Date:** Extr: 02/11/2010 Anal: 02/19/2010

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Field Duplicate Sample ID:	None collected				
QC Summary					
Validity of Data	No, but no data were rejected				
Additional Notes: Sample results reported on a wet weight basis.					

SDG K1919 – Pesticides QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1919	**W&C Project No.:**222007
Medium: Fish Tissue **Fish Type:** Carp	Data set 2 of 2	**Analytes:** Pesticides

Samples:
Kidney – J19259
Liver/Kidney – J19254

Laboratory: Lionville	**Date Data Assessment Completed:** 04/01/2010 **Complete By:** JAR	**Sample Collection Date:** 01/21/2010	**Sample Analysis Date:** Extr: 03/04/2010 Anal: 03/15/2010

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	No	Extraction holding time exceeded; samples extracted more than two times the holding time	J/R	Qualify positive results as estimated (J) and non-detected results as rejected (R)	Impacts the following samples: All samples; positive results qualified as estimated (J) and non-detected results qualified as rejected (R)
Detection Limits	No	RLs exceeded for all except heptachlor, heptachlor epoxide, alpha-chlordane, gamma-chlordane, and methoxychlor	-	No action based on guidance	
Blanks					
Method Blank	Yes	None	-	No action	
Equipment Blank Sample ID:	None collected				
Other QC Results					
Surrogate Recoveries	Yes	None	-	No action	
LCS Results	No	No LCS results for toxaphene	J	Qualify all associated results as estimated (J)	Impacts the following samples: All samples
Matrix Spike/ Matrix Spike Duplicate Sample ID: J19254	No No	No MS/MSD results for toxaphene Endrin Aldehyde = 13%/16%	J J	Qualify all associated results as estimated (J) Qualify all associated positive and	Impacts the following samples: Toxaphene – All samples Endrin Aldehyde – All samples

SDG K1919 – Pesticides QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1919	**W&C Project No.:**222007
Medium: Fish Tissue **Fish Type:** Carp	Data set 2 of 2	**Analytes:** Pesticides
Samples: **Kidney** – J19259 **Liver/Kidney** – J19254		

Laboratory: Lionville	**Date Data Assessment Completed:** 04/01/2010 **Complete By:** JAR	**Sample Collection Date:** 01/21/2010	**Sample Analysis Date:** Extr: 03/04/2010 Anal: 03/15/2010

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
				non-detected results for endrin aldehyde as estimated (J)	
Field Duplicate Sample ID:	None collected				
QC Summary					
Validity of Data	No; non-detected results in all samples qualified as rejected (R) due to extraction holding time exceeded by more than twice the holding time				
Additional Notes: Sample results reported on a wet weight basis.					

SDG K1919 – Metals QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1919	**W&C Project No.:**222007
Medium: Fish Tissue **Fish Type:** Carp	Data set 1 of 2	**Analytes:** Metals
Samples: **Carcass** – J19670 **Fillet** – J19239		

Laboratory: Lionville	**Date Data Assessment Completed:** 04/01/2010 **Complete By:** JAR	**Sample Collection Date:** 01/21/2010	**Sample Analysis Date:** ICP – 02/04/2010 Hg – 01/29/2010

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No action	
Detection Limits	No	RLs exceeded for Be, Ca, Fe, P, K, Zn	-	No action based on guidance	
Blanks					
Preparation Blank	No	Mg = 2.14 mg/kg Sn = 1.02 mg/kg	UJ	Qualify results less than 5X blank concentration as non-detected estimated (UJ)	Impacts the following results: Mg - None Sn – All samples
Equipment Blank Sample ID:	None collected				
Other QC Results					
LCS Results	No	Si = 69%	J	Qualify positive and non-detected results as estimated (J)	Impacts the following samples: Si - All samples
Matrix Spike Sample ID: J19670	Yes	None	-	No action	
Lab Duplicate Sample ID: J19670	No	RPD or absolute difference between results > 2x RL for: Ba: Difference >2x RL Ca: RPD = 45 P: RPD = 34 Sr: RPD = 50	J	Qualify positive and non-detected results as estimated (J)	Impacts the following samples: Ba, Ca, P, Sr – All samples
Field Duplicate Sample ID:	None collected				
QC Summary					
Validity of Data	No, but no data were rejected				
Additional Notes: Sample results reported on “as received” basis (wet weight).					

SDG K1919 – Metals QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA		**SDG No.:** K1919	**W&C Project No.:**222007
Medium: Fish Tissue **Fish Type:** Carp		Data set 2 of 2	**Analytes:** Metals
Samples: **Kidney** – J19259 **Liver** – J19254			
Laboratory: Lionville	**Date Data Assessment Completed:** 04/07/2010 **Complete By:** JAR	**Sample Collection Date:** 01/21/2010	**Sample Analysis Date:** ICP – 03/15/2010 Hg – 03/12/2010

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	No	Hg holding time exceeded but within two times HT	J	Qualify positive and non-detected results for Hg as estimated (J)	Impacts the following samples: All samples
Detection Limits	No	RLs exceeded for Be, Ca, Fe, P, K, Zn	-	No action based on guidance	
Blanks					
Preparation Blank	No	Si = 1.96 mg/kg Sn = 1.3 mg/kg	UJ	Qualify results less than 5X blank concentration as non-detected estimated (UJ)	Impacts the following results: Si – J19259 Sn – All samples
Equipment Blank Sample ID:	None collected				
Other QC Results					
LCS Results	No	Si = 61%	J	Qualify positive and non-detected results as estimated (J)	Impacts the following samples: Si - All samples
Matrix Spike Sample ID: J19254	Yes	None	-	No action	
Lab Duplicate Sample ID: J19254	No	Al absolute difference >2xRL	J	Qualify positive and non-detected results for Al as estimated (J)	Impacts the following samples: All samples
Field Duplicate Sample ID:	None collected				
QC Summary					
Validity of Data	No, but no data were rejected				
Additional Notes: Sample results reported on “as received” basis (wet weight).					

SDG K1919 – Radionuclides QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K1919	**W&C Project No.:**222007

Medium: Fish Tissue **Fish Type:** Carp	**Analytes:** C14, Gamma Spec, Tritium, Isotopic Plutonium, Isotopic Thorium, Isotopic Uranium, Sr-90, Tc-99

Samples:
Carcass – J19670
Fillet – J19239
Kidney – J19259
Liver – J19254

Laboratory: Eberline	**Date Data Assessment Completed:** 04/01/2010 **Complete By:** JAR	**Sample Collection Date:** 01/21/2010	**Sample Analysis Date:** 02/08/2010 – 02/17/2010

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No action	
Detection Limits	No	MDA > RDL for Co-60, Ra-226, Ra-228, Eu-152, Eu-154, Eu-155, Cs-137	-	No action based on guidance	
Blanks					
Method Blanks	Yes	None	-	No action	
Other QC Results					
LCS Results	Yes	None	-	No action	
Tracer Results	Yes	None	-	No action	
Matrix Spike (C-14, Tritium)	No	MS not analyzed for C-14 or tritium	J	Qualify positive and non-detected results for C-14 and tritium as estimated (J)	Impacts the following samples: All samples
Lab Duplicates Sample ID: J19254	Yes	None	-	No action	
Field Duplicate Sample ID:	None collected				
QC Summary					
Validity of Data	No, but no data were rejected				
Additional Notes:					

E.1.29 SDG K2124

SDG K2124: Radionuclides QC Summary Table

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K2124	**W&C Project No.:**222007	
Medium: Fish Tissue **Fish Type** - Walleye		**Analytes:** C14, Gamma Spec, Tritium, Isotopic Plutonium, Isotopic Thorium, Isotopic Uranium, Sr-90, Tc-99	
Samples: Walleye Liver/Kidney J18WX1, J18WX2, J18WX3, J18XL1, J18XL2, J18XL3, J18XL4, J18XL5			
Laboratory: Eberline	**Date Data Evaluation Completed:** 8/30/10 **Completed by:** RDD	**Sample Collection Date:** 7/02/10	**Sample Analysis Date:** 07/10 and 8/10

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No action	
Detection Limits	No	MDA > RDL for Co-60, Ra-226, Ra-228, Eu-152, Eu-154, Eu-155, Cs-137	-	No action based on guidance.	
Blanks					
Method Blanks	Yes	None	-	No action	
Other QC. Results					
LCS Results	Yes	None	-	No action	
Matrix Spikes C_{14}, Tritium	No	No MS analyzed for C_{14} or tritium	J	Qualify positive and non-detect results as estimated (J)	All samples for C14 and tritium
Tracer Results	Yes	None	-	No action	
Lab Duplicates J18X1	No	RPD K_{40} = 46%	J	Qualify sample results as estimated (J).	J18X1
Summary					
Validity of Data	Not all QC criteria met, however no results rejected				
Additional Notes					

SDG K2124: Metals QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K2124	**W&C Project No.:**222007
Medium: Fish Tissue **Fish Type:** Walleye		**Analytes:** Metals
Samples: Walleye Liver/Kidney J18WX1, J18WX2, J18WX3, J18XL1, J18XL2, J18XL3, J18XL4, J18XL5		

Laboratory: Lionville	**Date Data Assessment Completed:** 8/31/2010 **Complete By:** RDD	**Sample Collection Date:** 7/02/2010	**Sample Analysis Date:** ICP – 8/09/2010 Hg – 7/29/10

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	None	
Detection Limits	No	Detection limit exceeded criteria for Be, Ca, Fe, Li, P, K, Sn, and Zn	-	No action based on guidance	
Blanks					
Preparation Blank	No	Ca: 4.98 mg/kg	UJ	Qualify positive results <5x blank concentration as estimated non-detect (UJ)	All samples. No impacts to any sample since all >5x blank result.
Equipment Blank Sample ID:	Not Analyzed				
Other QC Results					
LCS Results	Yes	None	-	No Action	
Matrix Spike Sample ID: J18WX1	Yes	None	-	No Action	
Lab Duplicate Sample ID: J18WX1	Yes	None	-	No Action	
Field Duplicate Sample ID:	Not Collected				
QC Summary					
Validity of Data	Not all QC criteria was met, however no rejected results				
Additional Notes:					

E.1.30 SDG K2125

SDG K2125: Radionuclides QC Summary Table

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K2125	**W&C Project No.:**222007			
Medium: Fish Tissue **Fish Type** - Walleye	**Analytes:** C14, Gamma Spec, Tritium, Isotopic Plutonium, Isotopic Thorium, Isotopic Uranium, Sr-90, Tc-99				
Samples: Walleye Fillet/Carcass J18WV6, J18WV7, J18WV8, J18WX7, J18WX8, J18WX9, JU18XJ6, J18XJ7, J18XJ8, J18XJ9, J18XK0, J18XL6, J18XL7, J18XL8, J18XL9, J18XM0					
Laboratory: Eberline	**Date Data Evaluation Completed:** 8/31/10 **Completed by:** RDD	**Sample Collection Date:** 7/01/10	**Sample Analysis Date:** 8/10		
QC Parameter	**All in Spec.?**	**Non-Compliant Results**	**Flag**	**Action/ Notes**	**Associated Samples**
Holding Times	Yes	None	-	No action	
Detection Limits	No	MDA > RDL for Co-60, Ra-226, Ra-228, Eu-152, Eu-154, Eu-155, Cs-137	-	No action based on guidance.	
Blanks					
Method Blanks	Yes	None, all ND	-	No action	
Other QC. Results					
LCS Results	Yes	None	-	No action	
Matrix Spikes C_{14}, Tritium	No	MS was not analyzed for C_{14} or tritium	J	Qualify positive and non-detect results as estimated (J)	All samples above
Tracer Results	Yes	None	-	No action	
Lab Duplicates J18WV6	Yes	None	-	No action	
Field Duplicates					
Summary					
Validity of Data	Not all QC criteria met, however no results rejected				
Additional Notes					

SDG K2125. Pesticides QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K2125	**W&C Project No.:**222007
Medium: Fish Tissue **Fish Type:** Walleye		**Analytes:** Pesticides
Samples: Walleye Fillet/Carcass J18WV6, J18WV7, J18WV8, J18WX7, J18WX8, J18WX9, JU18XJ6, J18XJ7, J18XJ8, J18XJ9, J18XK0, J18XL6, J18XL7, J18XL8, J18XL9, J18XM0		

Laboratory: Lionville	**Date Data Assessment Completed:** 8/31/2010 **Complete By:** RDD	**Sample Collection Date:** 7/01/2010	**Sample Analysis Date:** 7/13/2010 extr 7/26/2010, 7/27/2010 anal

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No Action	
Detection Limits	No	Detection limits exceeded for all pesticide compounds except alpha, gamma chlordane and heptachlor.	-	No action based on guidance	
Blanks					
Method Blank	Yes	None	-	No Action	
Equipment Blank Sample ID:	Not Analyzed				
Other QC Results					
Surrogate Recoveries	Yes	None	-	No action	
LCS Results	No	No LCS results for toxaphene	J	Qualify all associated results as estimated (J)	All samples
Matrix Spike/ Matrix Spike Duplicate Sample ID: J18XJ6	No	**Non-compliant recoveries:** Endrin aldehyde: 31%/47% No MS/MSD results for toxaphene	J	Qualify positive and non-detect sample results of toxaphene and endrin aldehyde as estimated (J).	All samples
Field Duplicates Sample ID:	Not Collected				
Summary					
Validity of Data	Not all QC criteria met, however no rejected results				
Additional Notes:					

SDG K2125. Metals QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K2125	**W&C Project No.:**222007	
Medium: Fish Tissue **Fish Type:** Walleye		**Analytes:** Metals	
Samples: Walleye Fillet/Carcass J18WV6, J18WV7, J18WV8, J18WX7, J18WX8, J18WX9, JU18XJ6, J18XJ7, J18XJ8, J18XJ9, J18XK0, J18XL6, J18XL7, J18XL8, J18XL9, J18XM0			
Laboratory: Lionville	**Date Data Assessment Completed:** 8/31/2010 **Complete By:** RDD	**Sample Collection Date:** 7/01/2010	**Sample Analysis Date:** ICP – 7/15/2010 except 7/17/2010 for P Hg – 7/29/10

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	None	
Detection Limits	No	Detection limit exceeded criteria for Be, Ca, Fe, Li, P, K, Sn, and Zn	-	No action based on guidance	
Blanks					
Preparation Blank	No	Al = 7.78 mg/kg B = 0.701 mg/kg Ca = 14 mg/kg Mg = 1.42 mg/kg Sr = 0.11 mg/kg Sn = 0.785 mg/kg	UJ	Qualify positive results <5x blank concentration as estimated non-detect (UJ)	All samples. Impacts: Al – J18XL6 Sn – all except J18XJ6, J18WX9, J18WV8, B, Ca, Mg, Sr – None
Equipment Blank Sample ID:	Not Analyzed				
Other QC Results					
LCS Results	Yes	None	-	No Action	
Matrix Spike Sample ID: J18XJ6	No	Ca = 46% Hg = 140%	J	Qualify positive and ND sample concentrations of Ca and positive sample concentrations of Hg as estimated (J).	All above. Impacts: Ca – all above Hg – all above
Lab Duplicate Sample ID: J18XJ6	No	**Non-Compliant RPDs**: Ca = 40% Sr = 49%	J	Qualify positive and ND sample concentrations of Ca and Sr as estimated (J)	All above
Field Duplicate Sample ID:	Not Collected				
QC Summary					

SDG K2125. Metals QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** K2125	**W&C Project No.:**222007	
Medium: Fish Tissue **Fish Type:** Walleye		**Analytes:** Metals	
Samples: Walleye Fillet/Carcass J18WV6, J18WV7, J18WV8, J18WX7, J18WX8, J18WX9, JU18XJ6, J18XJ7, J18XJ8, J18XJ9, J18XK0, J18XL6, J18XL7, J18XL8, J18XL9, J18XM0			
Laboratory: Lionville	**Date Data Assessment Completed:** 8/31/2010 **Complete By:** RDD	**Sample Collection Date:** 7/01/2010	**Sample Analysis Date:** ICP – 7/15/2010 except 7/17/2010 for P Hg – 7/29/10

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Validity of Data	Not all QC criteria was met, however no rejected results				
Additional Notes:					

APPENDIX F

THIRD PARTY DATA VALIDATION PACKAGES

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APPENDIX F
THIRD PARTY DATA VALIDATION PACKAGES

F.1 2008-2009 SURFACE WATER, SEDIMENT & SOIL DATA VALIDATION

F.1.1 Surface Water

F.1.1.1 SDG J00212

SAF-RC-115
Columbia River Component of the RCBRA – Surface Water
FINAL VALIDATION PACKAGE

COMPLETE COPY OF VALIDATION PACKAGE TO:

Kathy Wendt H4-21

COMMENTS:

SDG J00212 **SAF-RC-115**

Sampling Location: **WBT-1SW**
WBW-1SW
RG-1SW

Date: 6 April 2009
To: Washington Closure Hanford Inc. (technical representative)
From: ELR Consulting
Project: Columbia River Component of the RCBRA – Surface Water
Subject: Wet Chemistry - Data Package No. J00212-TAL

INTRODUCTION

This memo presents the results of data validation on Data Package No. J00212 prepared by TestAmerica Laboratory Inc. (TAL). A list of samples validated along with the analyses reported and the method of analysis is provided in the following table.

Sample ID	Sample Date	Media	Validation	Analyte
J17K64	10/17/08	Water	C	See note 1
J17K65	10/17/08	Water	C	See note 1
J17K66	10/17/08	Water	C	See note 1
J17K69	10/17/08	Water	C	See note 1

1 – Chromium VI by 7196A.

Data validation was conducted in accordance with the Washington Closure Hanford (WCH) validation statement of work and the Remedial Investigation Work Plan for Hanford Site Releases to the Columbia River (DOE/RL-2008-11, Rev. 0, September 2008). Appendices 1 through 6 provide the following information as indicated below:

Appendix 1. Glossary of Data Reporting Qualifiers
Appendix 2. Summary of Data Qualification
Appendix 3. Annotated Laboratory Reports
Appendix 4. Laboratory Narrative and Chain-of-Custody Documentation
Appendix 5. Data Validation Supporting Documentation
Appendix 6. Additional Documentation Requested by Client

DATA QUALITY PARAMETERS

- **Holding Times**

Analytical holding times for metals are assessed to ascertain whether the holding time requirements were met by the laboratory. The holding time requirements are as follows: Soil samples must be analyzed within 24 hours for chromium VI.

If holding times are exceeded, but not by greater than two times the limit, all associated sample results are qualified as estimates and flagged "J" for detects and "UJ" for non-detects. If holding times are exceeded by greater than two times the limit, all associated detectable sample results are qualified as estimates and flagged "J" and all non-detects are rejected and flagged "UR".

All holding times were acceptable.

- **Method Blanks**

Method Blanks

Method blank analyses are performed to determine the extent of laboratory contamination introduced through sampling, sample preparation and analysis. At least one acceptable method blank analysis must be conducted for every 20 samples. No contaminants should be present in the method blank. All blank results must fall below the contract required detection limit (CRDL) to be acceptable.

All method blank results were acceptable.

Field (Equipment) Blank

No field blanks were submitted for analysis.

- **Accuracy**

Matrix Spike and Laboratory Control Sample

Matrix spike (MS) and laboratory control sample (LCS) analyses are used to assess the analytical accuracy of the reported data. The matrix spike is used to assess the effect of the matrix on the ability to accurately quantify sample concentrations. Recoveries must fall within the range of 65% to 135%. Samples with a recovery of less than 30% and a sample result below the IDL are rejected and flagged "UR". Samples with a recovery of 30% to 69% and a sample result less than the IDL are qualified "UJ". Samples with a recovery of greater than 130% or less than 70% and a sample result greater than the IDL are qualified as estimates and flagged "J". Finally, for samples with a recovery greater than 130% and a sample result less than the IDL, no qualification is required.

All accuracy results were acceptable.

- **Precision**

Laboratory Duplicate Samples

Analytical precision is expressed by the relative percent differences (RPD) between the recoveries of matrix spike duplicate (MSD) analyses performed on a sample in the analytical batch. Precision may alternatively be assessed using unspiked duplicate analyses performed on a sample in the analytical batch. If both sample and replicate activities (concentrations) are greater than five times the CRDL and the RPD is less than 35%, no qualification is required. If either activity (concentration) is less than five times the CRDL, the RPD control limit is less than or equal to two times the CRDL. If the RPD is outside the applicable control limit, associated results are qualified as estimated detects or estimated non-detects.

All laboratory duplicate results were acceptable.

Field Duplicate

One set of field duplicates (J17K68/J17K69) were submitted for analysis. Field blanks are compared using the same criteria as for laboratory duplicates. Under the WCH statement of work, no qualification is required.

- **Analytical Detection Levels**

Reported analytical detection levels are compared against the required quantitation limits (RQLs) to ensure that laboratory detection levels meet the required criteria. All analytes met the RQL.

- **Completeness**

Data package J00212 was submitted for validation and verified for completeness. Completeness is based on the percentage of data determined to be valid (i.e., not rejected). The completion percentage was 100%.

MAJOR DEFICIENCIES

None found.

MINOR DEFICIENCIES

None found.

REFERENCES

Washington Closure Hanford Contract #S00W307A00 (March 2008), *Data Validation Services*.

DOE/RL-2008-11, Rev.0, *Remedial Investigation Work Plan for Hanford Site Releases to the Columbia River*, September 2008.

Appendix 1

Glossary of Data Reporting Qualifiers

Qualifiers which may be applied by data validators in compliance with WCH validation SOW are as follows:

U - Indicates the compound or analyte was analyzed for and not detected in the sample. The value reported is the sample quantitation limit corrected for sample dilution and moisture content by the laboratory.

UJ - Indicates the compound or analyte was analyzed for and not detected in the sample. Due to a minor QC deficiency identified during the data validation, the associated quantitation limit is an estimate.

J - Indicates the compound or analyte was analyzed for and detected. Due to a minor QC deficiency identified during the data validation, the associated concentration is an estimate, but the data are usable for decision-making purposes.

BJ - Applied to inorganic analyses only. Indicates the analyte concentration was greater than the IDL but less than the CRDL and is considered an estimated value.

R - Indicates the compound or analyte was analyzed for, detected, and due to an identified major QC deficiency, the data are unusable.

UR - Indicates the compound or analyte was analyzed for and not detected in the sample. Additionally, the data is unusable due to an identified major QC deficiency.

NJ - Indicates presumptive evidence of a compound at an estimated value. The data may not be valid for some specific applications (i.e., usable for decision-making purposes).

N - Indicates presumptive evidence of a compound. The data may not be valid for some specific applications (i.e., usable for decision-making purposes).

Appendix 2

Summary of Data Qualification

WET CHEMISTRY DATA QUALIFICATION SUMMARY*

SDG: J00212	**REVIEWER:** ELR	**Project:** RCBRA	**PAGE 1 OF 1**
COMMENTS: No qualifiers assigned			

* - The Qualified Data Summary Table includes laboratory applied "U" qualifiers not specifically identified here. The laboratory applied "U" qualifiers are included to minimize misinterpretation of results contained in the table.

Appendix 3

Annotated Laboratory Reports

FORM I

SAMPLE RESULTS

Date: 01-Dec-08

Lab Name:	TestAmerica	SDG:	J00212	Collection Date:	10/17/2008 6:10:00 PM
Lot-Sample No.:	J8J210132-1	Report No. :	40305	Received Date:	10/17/2008 6:22:00 PM
Client Sample ID:	J17K64	COC No. :	RC-115-10	Matrix:	WATER

Ordered by Client Sample ID, Batch No.

Parameter	Result	Qual	Count Error (2 σ)	Total Uncert (2 σ)	MDC,MDA, Action Lev	Rpt Unit, Lc	Yield CRDL(RL)	Rst/MDC, Rst/TotUcert	Analysis, Prep Date	Total Sa Size	Aliquot Size	Primary Detector
Batch: 8295254	7196_CR6			Work Order: K08HC1AA			Report DB ID: 9K08HC10					
HEXCHROME	2.00E-03	U		0.0E+00	2.00E-03	mg/L	N/A 3.50E-01	1. N/A	10/17/08		200.0 ML	

No. of Results: 1 Comments:

4/4/09

TestAmerica
rptSTLRchSample V5.2 A2002

MDC|MDA,Lc - Detection, Decision Level based on instrument background or blank, adjusted by the sample Efficiency, Yield, and Volume.
U Qual - Analyzed for but not detected above limiting criteria. Limit criteria is less than the Mdc/Mda or Total Uncert or not identified by gamma scan software.

FORM I

SAMPLE RESULTS

Date: 01-Dec-08

Lab Name:	TestAmerica	**SDG:**	J00212	**Collection Date:**	10/17/2008 1:20:00 PM
Lot-Sample No.:	J8J210132-2	**Report No.:**	40305	**Received Date:**	10/17/2008 6:22:00 PM
Client Sample ID:	J17K55	**COC No.:**	RC-115-11	**Matrix:**	WATER

Ordered by Client Sample ID, Batch No.

Batch: 8295254 7196_CR6 Work Order: K0SHL1AA Report DB ID: 9K0SHL10

Parameter	Result	Qual	Count Error (1 s)	Total Uncert (2 s)	MDC/MDA, Action Lev	Rpt Unit, Lc	Yield CRDL(RL)	Ret/MDC, Ret/TotUncert	Analysis, Prep Date	Total Sa Size	Aliquot Size	Primary Detector
HEXCHROME	2.00E-03	U		0.0E+00	2.0E-03	mg/L	N/A	1	10/17/08		100.0	
							3.50E-01	N/A			mL	

No. of Results: 1 Comments:

4/4/09

TestAmerica
rptSTLRchSample
V5.2 A2062

MDC|MDA,Lc - Detection, Decision Level based on instrument background or blank, adjusted by the sample Efficiency, Yield, and Volume.
U Qual - Analyzed for but not detected above limiting criteria. Limit criteria is less than the Mdc/Mda or Total Uncert or not identified by gamma scan software.

FORM I
SAMPLE RESULTS

Date: 01-Dec-08

Lab Name: TestAmerica
Lot-Sample No.: J8J210132-3
Client Sample ID: J17K56

SDG: J00212
Report No. : 40305
COC No. : RC-115-12

Collection Date: 10/17/2008 9:52:00 AM
Received Date: 10/17/2008 8:22:00 PM
Matrix: WATER

Ordered by Client Sample ID, Batch No.

Parameter	Result	Qual	Count Error (2 σ)	Total Uncert (2 σ)	MDC|MDL, Action Lev	Rpt Unit, Lc	Yield CRDL(RL)	Rst/MDC, Rst/TotUcert	Analysis, Prep Date	Total Sa Size	Aliquot Size	Primary Detector
Batch: 8295254	7196_CA8			Work Order: K05HC1AA			Report DB ID: 9K05H015					
HEXCHROME	2.00E-03	U		0.0E+00	2.00E-03	mg/L	N/A 3.50E-01	1. N/A	10/17/08		100.0 ML	

No. of Results: 1 Comments:

4/4/09

TestAmerica
rptSTLRchSample
V5.2 A2002

MDC|MDA,Lc - Detection, Decision Level based on instrument background or blank, adjusted by the sample Efficiency, Yield, and Volume.
U Qual - Analyzed for but not detected above limiting criteria. Limit criteria is less than the Mdc/Mda or Total Uncert or not identified by gamma scan software.

FORM I

SAMPLE RESULTS

Date: 01-Dec-05

Lab Name: TestAmerica
Lot-Sample No.: J8J210132-4
Client Sample ID: J17R69

SDG: J00212
Report No. : 40305
COC No. : RC-115-27

Collection Date: 10/17/2008 10:40:00 AM
Received Date: 10/17/2008 8:22:00 PM
Matrix: WATER

Ordered by Client Sample ID, Batch No.

Parameter	Result	Qual	Count Error (± s)	Total Uncert (± s)	MDC|MDA, Action Lvl	Rpt Unit, Lc	Yield CRDL(RL)	Ra/MDC, Ra/TotUcert	Analysis, Prep Date	Total Sa Size	Aliquot Size	Primary Detector
Batch: 8294254	7196_CR6			Work Order: K08H21AA			Report DB ID: 9K08H210					
HEXCHROME	2.00E-03	U		0.0E+00	2.00E-03	mg/L	N/A	I.	10/17/08		100.0	
							3.50E-01	N/A			ML	

No. of Results: 1 Comments:

4/4/09

TestAmerica
rptSTLRchSample
V5.2 A2002

MDC|MDA,Lc - Detection, Decision Level based on instrument background or blank, adjusted by the sample Efficiency, Yield, and Volume.
U Qual - Analyzed for but not detected above limiting criteria. Limit criteria is less than the Mdc/Mda or Total Uncert or not identified by gamma scan software.

Appendix 4

Laboratory Narrative and Chain-of-Custody Documentation

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Certificate of Analysis

Washington Hanford Closure
2620 Fermi Avenue
Richland, WA 99354

December 1, 2008

Attention: Joan Kessner

SAF Number	:	RC-115
Date SDG Closed	:	October 17, 2008
Number of Samples	:	Four (4)
Sample Type	:	Water
SDG Number	:	J00212
Data Deliverable	:	45-Day / Summary

CASE NARRATIVE

I. Introduction

On October 17, 2008 four water samples were received at TestAmerica for chemistry analysis. Upon receipt, the samples were assigned the following laboratory ID number to correspond with the Washington Closure Hanford (WCH) specific ID:

WCH ID#	TARL ID#	MATRIX	DATE OF RECEIPT
J17K64	K08HC	WATER	10/17/08
J17K65	K08HL	WATER	10/17/08
J17K66	K08H0	WATER	10/17/08
J17R69	K08H2	WATER	10/17/08

II. Sample Receipt

The samples were received in good condition and no anomalies were noted during check-in.

III. Analytical Results/Methodology

The analytical results for this report are presented by laboratory sample ID. Each set of data includes sample identification information, analytical results and the appropriate associated statistical errors.

The requested analyses were:

Chemical Analysis
Hexavalent Chromium by EPA method 7196A

IV. Quality Control

The analytical results for each analysis performed includes a minimum of one laboratory control sample (LCS), one method (reagent) blank, and one duplicate sample analysis. Any exceptions have been noted in the "Comments" section.

QC and sample results are reported in the same units.

V. Comments

Chemical Analysis

Hexavalent Chromium by EPA method 7196A:

The LCS, batch blank, sample, sample duplicate (J17K64), sample matrix spike (J17K64) and sample matrix spike duplicate (J17K64) results are within contractual requirements.

I certify that this Certificate of Analysis is in compliance with the SOW, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hard copy data package has been authorized by the Laboratory Manager, or a designee as verified by the following signature.

Reviewed and approved:

Sandra Segor
Project Manager

Collector: Lisa Schiffbauer

Company Contact: Joan Kessner

Telephone No.: 375-4688

Project Coordinator: WEISS, AL

Price Code: 7K

Data Turnaround: 45 Days

Project Designation: Columbia River Component of the RCBRA - Surface Water

Sampling Location: WBT-15W

SAF No.: RC-115

Ice Chest No.:

Field Logbook No.: EL-1630

COA: E55CRC6530

Method of Shipment: FED EX

Shipped To: TestAmerica Incorporated, Richland

Offsite Property No.:

Bill of Lading/Air Bill No.:

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

Preservation	Cool 4C
Type of Container	GP
No. of Container(s)	1
Volume	500mL
SAMPLE ANALYSIS	Chromium, Hex - 7196

Sample No.	Matrix *	Sample Date	Sample Time	Chromium, Hex - 7196
J17K84 K08HC	WATER	10/17/08	1810	X

CHAIN OF POSSESSION

Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
L Schiffbaur	10/17/08 1835	Brett M[illegible]	10/17/08 1835
Brett M[illegible]	10/17/08 2005	Kim Boyd Kim Boyd	10/17/08 2005
Kim Boyd Kim Boyd	10/17/08 2033	Dee Petty	10/18/08 [illegible]

SPECIAL INSTRUCTIONS

J00212
J8J210132
due 12/1/08

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION — Received By: Title: Date/Time:

FINAL SAMPLE DISPOSITION — Disposal Method: Disposed By: Date/Time:

WCH-EE-011

Collector [illegible]	Company Contact Joan Kessner	Telephone No. 375-4689	Project Coordinator WEISS, RL
Project Designation Columbia River Component of the RCBRA - Surface Water	Sampling Location WBW-15W		SAF No. XC-115
Ice Chest No.	Field Logbook No. EL-1636	COA 3ESCRC0125	Method of Shipment FED EX
Shipped To TestAmerica Incorporated, Richland	Offsite Property No.		Bill of Lading/Air Bill No.

Price Code 7K

Data Turnaround 45 Days

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

Preservation	Cool 4C
Type of Container	GP
No. of Container(s)	1
Volume	500mL
SAMPLE ANALYSIS	Chromium hex - 7196

Sample No.	Matrix *	Sample Date	Sample Time	Chromium hex - 7196
H7K56 [illegible]	WATER	10/17/08	~~1223~~ 1922	X

CHAIN OF POSSESSION

Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
	10/17/08 1855		10/17/08 1855
	10/17/08 2005		10/17/08 2005
	10/17/08 2022		10/17/08 2022

SPECIAL INSTRUCTIONS

J00212

J8J210132

due 12/1/08

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION — Received By — Title — Date/Time

FINAL SAMPLE DISPOSITION — Disposal Method — Disposed By — Date/Time

WCH-EE-041

Ken [illegible]

Project Designation Columbia River Component of the RCBRA - Surface Water	**Company Contact** Joan Kessner	**Telephone No.** 375-4688	**Project Coordinator** WEISS, RL	**Price Code** 7K	**Data Turnaround** 45 Days
Ice Chest No.	**Sampling Location** RC-35W		**SAF No.** RC-115		
Shipped To TestAmerica Incorporated, Richland	**Field Logbook No.** EL-1630	**COA** BESCRC0621	**Method of Shipment** FED EX		
	Offsite Property No.		**Bill of Lading/Air Bill No.**		

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

Preservation	Cool 4C
Type of Container	G/P
No. of Container(s)	1
Volume	500mL

SAMPLE ANALYSIS

Sample No.	Matrix *	Sample Date	Sample Time	Chromium Hex - 24 Hr
J17K86	WATER	10/17/08	0752	X
108140				

CHAIN OF POSSESSION Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
[illegible]	10/17/08 1855	Brett [illegible]	10/17/08 1855
Brett [illegible]	10/17/08 2005	Kim Boyd Kim Boyd	10/17/08 2005
Kim Boyd Kim Boyd	10/17/08 2235	Dru Petty D Petty	10/17/08 2235

SPECIAL INSTRUCTIONS

J00212
J8J200132
due 12/1/08

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Collector [illegible]	Company Contact Joan Kessner	Telephone No. 375-6568	Project Coordinator WEISS, RL
Project Designation Columbia River Component of the RCBRA - Surface Water	Sampling Location RC-150		SAF No. RC-115
Ice Chest No.	Field Logbook No. EL-1630	COA R2SCA1.6520	Method of Shipment FED EX
Shipped To TestAmerica Incorporated, Richland	Offsite Property No.		Bill of Lading/Air Bill No.

Price Code 7K

Data Turnaround 45 Days

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

Preservation	[illegible]
Type of Container	GP
No. of Container(s)	1
Volume	500mL

SAMPLE ANALYSIS

Sample No.	Matrix *	Sample Date	Sample Time	[illegible]
J17963	WATER	10/17/08	1040	X
L09HZ				

CHAIN OF POSSESSION

Sign/Print Names

Relinquished By/Removed From	Date/Time 10/17/08 1355	Received By/Stored In Brett Mayhew	Date/Time 10/17/08 1355
Relinquished By/Removed From Brett Mayhew	Date/Time 10/17/08 2005	Received By/Stored In Kim Beyer | Kim Beyer	Date/Time 10/17/08 2005
Relinquished By/Removed From Kim Beyer | Kim Beyer	Date/Time 10/21/08 2033	Received By/Stored In [illegible]	Date/Time 10/21/08 [illegible]
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time

SPECIAL INSTRUCTIONS

[illegible] 10/21/08

~~J00HZ~~ J00212

J83210132

due 12/1/08

Matrix *

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Appendix 5

Data Validation Supporting Documentation

GENERAL CHEMISTRY ANALYSIS DATA VALIDATION CHECKLIST

VALIDATION LEVEL:	A	B	[✓ C]	D	E
PROJECT:	RCRA SW		DATA PACKAGE:	J00212	
VALIDATOR:	ELR	LAB: TA		DATE:	4/4/09
			SDG:	J00212	

ANALYSES PERFORMED					
Anions/IC	TOC	TOX	TPH-418.1	Oil and Grease	Alkalinity
Ammonia	BOD/COD	Chloride	[✓ Chromium-VI]	pH	NO_3/NO_2
Sulfate	TDS	TKN	Phosphate		

SAMPLES/MATRIX

J17K64 J17K65 J17K66 J17K67

water

1. DATA PACKAGE COMPLETENESS AND CASE NARRATIVE

Technical verification documentation present? .... Yes [✓ No] N/A

Comments:

2. INSTRUMENT PERFORMANCE AND CALIBRATIONS (Levels D and E)

Initial calibrations performed on all instruments? .... Yes No [✓ N/A]

Initial calibrations acceptable? .... Yes No [✓ N/A]

ICV and CCV checks performed on all instruments? .... Yes No [✓ N/A]

ICV and CCV checks acceptable? .... Yes No [✓ N/A]

Standards traceable? .... Yes No [✓ N/A]

Standards expired? .... Yes No [✓ N/A]

Calculation check acceptable? .... Yes No [✓ N/A]

Comments:

GENERAL CHEMISTRY ANALYSIS DATA VALIDATION CHECKLIST

3. BLANKS (Levels B, C, D, and E)

ICB and CCB checks performed for all applicable analyses? (Levels D, E) Yes No [✓ N/A]

ICB and CCB results acceptable? (Levels D, E) Yes No [✓ N/A]

Laboratory blanks analyzed? [✓ Yes] No N/A

Laboratory blank results acceptable? [✓ Yes] No N/A

Field blanks analyzed? (Levels C, D, E) Yes [✓ No] N/A

Field blank results acceptable? (Levels C, D, E) Yes No [✓ N/A]

Transcription/calculation errors? (Levels D, E) Yes No [✓ N/A]

Comments: NO FB

4. ACCURACY (Levels C, D, and E)

Spike samples analyzed? [✓ Yes] No N/A

Spike recoveries acceptable? [✓ Yes] No N/A

Sike standards NIST traceable? (Levels D, E) Yes No [✓ N/A]

Spike standards expired? (Levels D, E) Yes No [✓ N/A]

LCS/BSS samples analyzed? [✓ Yes] No N/A

LCS/BSS results acceptable? [✓ Yes] No N/A

Standards traceable? (Levels D, E) Yes No [✓ N/A]

Standards expired? (Levels D, E) Yes No [✓ N/A]

Transcription/calculation errors? (Levels D, E) Yes No [✓ N/A]

Performance audit sample(s) analyzed? Yes [✓ No] N/A

Performance audit sample results acceptable? Yes No [✓ N/A]

Comments: NO PAS

GENERAL CHEMISTRY ANALYSIS DATA VALIDATION CHECKLIST

5. PRECISION (Levels C, D, and E)

Duplicate RPD values acceptable? .... [✓ Yes] No N/A

Duplicate results acceptable? .... [✓ Yes] No N/A

MS/MSD standards NIST traceable? (Levels D, E) .... Yes No [✓ N/A]

MS/MSD standards expired? (Levels D, E) .... Yes No [✓ N/A]

Field duplicate RPD values acceptable? .... [✓ Yes] No N/A

Field split RPD values acceptable? .... Yes No [✓ N/A]

Transcription/calculation errors? (Levels D, E) .... Yes No [✓ N/A]

Comments:

6. HOLDING TIMES (all levels)

Samples properly preserved? .... [✓ Yes] No N/A

Sample holding times acceptable? .... [✓ Yes] No ~~N/A~~

Comments: ~~PH — 72x — UR~~ [illegible] 4/4/09

GENERAL CHEMISTRY ANALYSIS DATA VALIDATION CHECKLIST

7. RESULT QUANTITATION AND DETECTION LIMITS (all levels)

Results reported for all requested analyses? .... [✓ Yes] No N/A

Results supported in the raw data? (Levels D, E) .... Yes No [✓ N/A]

Samples properly prepared? (Levels D, E) .... Yes No [✓ N/A]

Detection limits meet RDL? .... [✓ Yes] No N/A

Transcription/calculation errors? (Levels D, E) .... Yes No [✓ N/A]

Comments:

Appendix 6

Additional Documentation Requested by Client

Sample Results Summary

Date: 01-Dec-06

TestAmerica TARL

Ordered by Method, Batch No., Client Sample ID.

Report No. : 40305

SDG No: J00212

Batch	Client Id Work Order	Parameter	Result +- Uncertainty (2σ)	Qual	Units	Tracer Yield	MDC or MDA	CRDL	RPD
8295254 7198_CR6									
	J17K64								
	K08HC1AA	HEXCHROME	2.00E-03 +- 0.00E+00	U	mg/L	N/A	2.00E-03	3.50E-01	
	K08HC1AE	HEXCHROME	2.00E-03 +- 0.00E+00	U	mg/L	N/A	2.00E-03	3.50E-01	0.0
	J17K65								
	K08HL1AA	HEXCHROME	2.00E-03 +- 0.00E+00	U	mg/L	N/A	2.00E-03	3.50E-01	
	J17K66								
	K08H01AA	HEXCHROME	2.00E-03 +- 0.00E+00	U	mg/L	N/A	2.00E-03	3.50E-01	
	J17R69								
	K08H21AA	HEXCHROME	2.00E-03 +- 0.00E+00	U	mg/L	N/A	2.00E-03	3.50E-01	

No. of Results: 5

---

stAmerica　RPD - Relative Percent Difference.

tSTLRchSaSum ary2 V5.7 A2002　U Qual - Analyzed for but not detected above limiting criteria. Limit criteria is less than the Mdc/Mda or Total Uncert or not identified by gamma scan software.

QC Results Summary

TestAmerica TARL

Ordered by Method, Batch No. QC Type..

Date: 01-Dec-08

Report No. : 40305

SDG No.: J00212

Batch Work Order	Parameter	Result +- Uncertainty (2s)	Qual	Units	Tracer Yield	LCS Recovery	Bias	MDC|MDA
196_CR6								
8296264 MATRIX SPIKE, J17K64								
K08HC1AC	HEXCHROME	2.32E-01 +- 0.00E+00		mg/L	N/A	88%	-0.1	2.00E-03
K08HC1AD	HEXCHROME	2.26E-01 +- 0.00E+00		mg/L	N/A	86%	-0.1	2.00E-03
8296254 LCS,								
K08TM1AC	HEXCHROME	5.04E-01 +- 0.00E+00		mg/L	N/A	101%	0.0	2.00E-03
8296254 BLANK QC,								
K08TM1AA	HEXCHROME	2.00E-03 +- 0.00E+00	U	mg/L	N/A			2.00E-03

No. of Results: 4

---

tAmerica Bias - (Result/Expected)-1 as defined by ANSI N 13.30.

TL_RchQcSum U Qual - Analyzed for but not detected above limiting criteria. Limit criteria is less than the Mdc/Mda or Total Uncert or not identified by gamma scan software.

y V5.2 A2002

F.1.1.2 SDG J00217

SAF-RC-115
Columbia River Component of the RCBRA – Surface Water
FINAL VALIDATION PACKAGE

COMPLETE COPY OF VALIDATION PACKAGE TO:

Kathy Wendt H4-21

COMMENTS:

SDG J00217 **SAF-RC-115**

Sampling Location: **PRD-3SW / PRD-4SW**
RBLS-1SW

Date: 6 April 2009
To: Washington Closure Hanford Inc. (technical representative)
From: ELR Consulting
Project: Columbia River Component of the RCBRA – Surface Water
Subject: Wet Chemistry - Data Package No. J00217-TAL

INTRODUCTION

This memo presents the results of data validation on Data Package No. J00217 prepared by TestAmerica Laboratory Inc. (TAL). A list of samples validated along with the analyses reported and the method of analysis is provided in the following table.

Sample ID	Sample Date	Media	Validation	Analyte
J17RL1	10/29/08	Water	C	See note 1
J17RL2	10/29/08	Water	C	See note 1
J17RL3	10/29/08	Water	C	See note 1

1 – Chromium VI by 7196A.

Data validation was conducted in accordance with the Washington Closure Hanford (WCH) validation statement of work and the Remedial Investigation Work Plan for Hanford Site Releases to the Columbia River (DOE/RL-2008-11, Rev. 0, September 2008). Appendices 1 through 6 provide the following information as indicated below:

Appendix 1. Glossary of Data Reporting Qualifiers
Appendix 2. Summary of Data Qualification
Appendix 3. Annotated Laboratory Reports
Appendix 4. Laboratory Narrative and Chain-of-Custody Documentation
Appendix 5. Data Validation Supporting Documentation
Appendix 6. Additional Documentation Requested by Client

DATA QUALITY PARAMETERS

- **Holding Times**

Analytical holding times for metals are assessed to ascertain whether the holding time requirements were met by the laboratory. The holding time requirements are as follows: Soil samples must be analyzed within 24 hours for chromium VI.

If holding times are exceeded, but not by greater than two times the limit, all associated sample results are qualified as estimates and flagged "J" for detects and "UJ" for non-detects. If holding times are exceeded by greater than two times the limit, all associated detectable sample results are qualified as estimates and flagged "J" and all non-detects are rejected and flagged "UR".

All holding times were acceptable.

- **Method Blanks**

Method Blanks

Method blank analyses are performed to determine the extent of laboratory contamination introduced through sampling, sample preparation and analysis. At least one acceptable method blank analysis must be conducted for every 20 samples. No contaminants should be present in the method blank. All blank results must fall below the contract required detection limit (CRQL) to be acceptable.

All method blank results were acceptable.

Field (Equipment) Blank

No field blanks were submitted for analysis.

- **Accuracy**

Matrix Spike and Laboratory Control Sample

Matrix spike (MS) and laboratory control sample (LCS) analyses are used to assess the analytical accuracy of the reported data. The matrix spike is used to assess the effect of the matrix on the ability to accurately quantify sample concentrations. Recoveries must fall within the range of 65% to 135%. Samples with a recovery of less than 30% and a sample result below the IDL are rejected and flagged "UR". Samples with a recovery of 30% to 69% and a sample result less than the IDL are qualified "UJ". Samples with a recovery of greater than 130% or less than 70% and a sample result greater than the IDL are qualified as estimates and flagged "J". Finally, for samples with a recovery greater than 130% and a sample result less than the IDL, no qualification is required.

All accuracy results were acceptable.

- **Precision**

Laboratory Duplicate Samples

Analytical precision is expressed by the relative percent differences (RPD) between the recoveries of matrix spike duplicate (MSD) analyses performed on a sample in the analytical batch. Precision may alternatively be assessed using unspiked duplicate analyses performed on a sample in the analytical batch. If both sample and replicate activities (concentrations) are greater than five times the CRDL and the RPD is less than 35%, no qualification is required. If either activity (concentration) is less than five times the CRDL, the RPD control limit is less than or equal to two times the CRDL. If the RPD is outside the applicable control limit, associated results are qualified as estimated detects or estimated non-detects.

All laboratory duplicate results were acceptable.

Field Duplicate

No field duplicates were submitted for analysis.

· Analytical Detection Levels

Reported analytical detection levels are compared against the required quantitation limits (RQLs) to ensure that laboratory detection levels meet the required criteria. All analytes met the RQL.

· Completeness

Data package J00217 was submitted for validation and verified for completeness. Completeness is based on the percentage of data determined to be valid (i.e., not rejected). The completion percentage was 100%.

MAJOR DEFICIENCIES

None found.

MINOR DEFICIENCIES

None found.

REFERENCES

Washington Closure Hanford Contract #S00W307A00 (March 2008). *Data Validation Services.*

DOE/RL-2008-11, Rev.0, *Remedial Investigation Work Plan for Hanford Site Releases to the Columbia River*, September 2008.

Appendix 1

Glossary of Data Reporting Qualifiers

Qualifiers which may be applied by data validators in compliance with WCH validation SOW are as follows:

U - Indicates the compound or analyte was analyzed for and not detected in the sample. The value reported is the sample quantitation limit corrected for sample dilution and moisture content by the laboratory.

UJ - Indicates the compound or analyte was analyzed for and not detected in the sample. Due to a minor QC deficiency identified during the data validation, the associated quantitation limit is an estimate.

J - Indicates the compound or analyte was analyzed for and detected. Due to a minor QC deficiency identified during the data validation, the associated concentration is an estimate, but the data are usable for decision-making purposes.

BJ - Applied to inorganic analyses only. Indicates the analyte concentration was greater than the IDL but less than the CRDL and is considered an estimated value.

R - Indicates the compound or analyte was analyzed for, detected, and due to an identified major QC deficiency, the data are unusable.

UR - Indicates the compound or analyte was analyzed for and not detected in the sample. Additionally, the data is unusable due to an identified major QC deficiency.

NJ - Indicates presumptive evidence of a compound at an estimated value. The data may not be valid for some specific applications (i.e., usable for decision-making purposes).

N - Indicates presumptive evidence of a compound. The data may not be valid for some specific applications (i.e., usable for decision-making purposes).

Appendix 2

Summary of Data Qualification

WET CHEMISTRY DATA QUALIFICATION SUMMARY*

SDG: J00217	**REVIEWER:** **ELR**	**Project:** **RCBRA**	**PAGE 1 OF 1**
COMMENTS: No qualifiers assigned			

* - The Qualified Data Summary Table includes laboratory applied "U" qualifiers not specifically identified here. The laboratory applied "U" qualifiers are included to minimize misinterpretation of results contained in the table.

Appendix 3

Annotated Laboratory Reports

FORM I

SAMPLE RESULTS

Date: 10-Dec-08

Lab Name:	TestAmerica	SDG:	J00217	Collection Date:	10/29/2008 1:40:00 PM
Lot-Sample No.:	J8J300158-1	Report No.:	40349	Received Date:	10/30/2008 8:40:00 AM
Client Sample ID:	J17RL1	COC No.:	RC-115-34	Matrix:	WATER

Ordered by Client Sample ID, Batch No.

Parameter	Result	Qual	Count Error (2 σ)	Total Uncert (2 σ)	MDC|MDA, Action Lev	Rpt Unit, Lc	Yield CRDL(RL)	Rst/MDC, Rst/TotUcert	Analysis, Prep Date	Total Sa Size	Aliquot Size	Primary Detector
Batch: 8304287	7196_CRS			Work Order: X1X0N1AA			Report DB ID: 9K1X0N10					
HEXCHROME	3.70E-03	U		0.0E+00	3.70E-03	mg/L	N/A	1.	10/30/08		100.0	
							~~3.50E-04~~ 3.70E-03	N/A			ML	

No. of Results: 1 Comments:

SES 12/16/08

4/4/09

000009

MDC|MDA,Lc - Detection, Decision Level based on instrument background or blank, adjusted by the sample Efficiency, Yield, and Volume.
U Qual - Analyzed for but not detected above limiting criteria. Limit criteria is less than the Mdc/Mda or Total Uncert or not identified by gamma scan software.

FORM I

SAMPLE RESULTS

Date: 10-Dec-08

Lab Name:	TestAmerica	SDG:	J30217	Collection Date:	10/29/2008 3:55:00 PM
Lot-Sample No.:	J8J300186-2	Report No. :	40349	Received Date:	10/30/2008 8:40:00 AM
Client Sample ID:	J17RL2	COC No. :	RC-115-34	Matrix:	WATER

Ordered by Client Sample ID, Batch No.

Batch: 8304287 7196_CR6 Work Order: KEXHC1AA Report DB ID: 9K1XH0E0

Parameter	Result	Qual	Count Error (±σ)	Total Count(±σ)	MDC|MDA, Action Lev	Rpt Unit, Lc	Yield CRDL(RL)	Rst/MDC, Rst/TotUcert	Analysis, Prep Date	Total Sa Size	Aliquot Size	Primary Detector
HEXCHROME	3.70E-03	U		0.0E+00	3.70E-03	mg/L	N/A	1.	10/30/08		100.0	
							~~3.58E-04~~	N/A			ML	

No. of Results: 1 Comments:

3.70E-03
SCS 12/[illegible]

4/4/09

000030

TestAmerica MDC|MDA,Lc - Detection, Decision Level based on instrument background or blank, adjusted by the sample Efficiency, Yield, and Volume.

U Qual - Analyzed for but not detected above limiting criteria. Limit criteria is less than the Mdc/Mda or Total Uncert or not identified by gamma scan software.

FORM I
SAMPLE RESULTS

Date: 10-Dec-08

Lab Name: TestAmerica
Lot-Sample No.: J8J300186-3
Client Sample ID: J17RL3

SDG: J00217
Report No.: 40349
COC No.: RC-115-35

Collection Date: 10/29/2008 11:35:00 AM
Received Date: 10/30/2008 8:40:00 AM
Matrix: WATER

Ordered by Client Sample ID, Batch No.

Parameter	Result	Qual	Count Error (±σ)	Total Uncert (±σ)	MDC|MDA, Action Lev	Rpt Unit, Lc	Yield CRDL(RL)	Rst/MDC, Rst/TotUcert	Analysis, Prep Date	Total Sa Size	Aliquot Size	Primary Detector
Batch: 8304287	7195_CR6			Work Order: K1XN31AA			Report DB ID: 9K1XN319					
HEXCHROME	3.70E-03	U		0.0E+00	3.70E-03	mg/L	N/A	1.	10/30/08		100.5	
							~~3.50E-04~~ 3.70E-03	N/A			ML	

No. of Results: 1   Comments:

SES 1/28/09

K 4/4/09

TestAmerica
rptSTLRchSample
V5.2 A2002

MDC|MDA,Lc - Detection, Decision Level based on instrument background or blank, adjusted by the sample Efficiency, Yield, and Volume.
U Qual - Analyzed for but not detected above limiting criteria. Limit criteria is less than the Mdc/Mda or Total Uncert or not identified by gamma scan software.

Appendix 4

Laboratory Narrative and Chain-of-Custody Documentation

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Certificate of Analysis

Washington Hanford Closure
2620 Fermi Avenue
Richland, WA 99354

December 11, 2008

Attention: Joan Kessner

SAF Number : RC-115
Date SDG Closed : October 30, 2008
Number of Samples : Three (3)
Sample Type : Water
SDG Number : J00217
Data Deliverable : 45-Day / Summary

CASE NARRATIVE

I. Introduction

On October 30, 2008 three water samples were received at TestAmerica for chemistry analysis. Upon receipt, the samples were assigned the following laboratory ID number to correspond with the Washington Closure Hanford (WCH) specific ID:

WCH ID#	TARL ID#	MATRIX	DATE OF RECEIPT
J17RL1	K1XNM	WATER	10/30/08
J17RL2	K1XN0	WATER	10/30/08
J17RL3	K1XN3	WATER	10/30/08

II. Sample Receipt

The samples were received in good condition and no anomalies were noted during check-in.

III. Analytical Results/Methodology

The analytical results for this report are presented by laboratory sample ID. Each set of data includes sample identification information, analytical results and the appropriate associated statistical errors.

The requested analyses were:

Chemical Analysis
Hexavalent Chromium by EPA method 7196A

IV. Quality Control

The analytical results for each analysis performed includes a minimum of one laboratory control sample (LCS), one method (reagent) blank, and one duplicate sample analysis. Any exceptions have been noted in the "Comments" section.

QC and sample results are reported in the same units.

V. Comments

Chemical Analysis
Hexavalent Chromium by EPA method 7196A:
The LCS, batch blank, sample, sample duplicate (J17RL1), sample matrix spike (J17RL1) and sample matrix spike duplicate (J17RL1) results are within contractual requirements.

I certify that this Certificate of Analysis is in compliance with the SOW, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hard copy data package has been authorized by the Laboratory Manager, or a designee as verified by the following signature.

Reviewed and approved:

Sandra Seger
Project Manager

TESTAMERICA

Washington Closure Hanford | **CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST** | RC-115-36 | Page 1 of 1

Collector Ken Sivertsoff	Company Contact Joan Kessner	Telephone No. 375-4588	Project Coordinator WEISS, RL
Project Designation Columbia River Component of the RCBRA - Surface Water	Sampling Location PRD-15W / PRD-45W		SAF No. RC-115
Ice Chest No.	Field Logbook No. EL-1631	COA 205CRE 6580	Method of Shipment HAND DELIVER
Shipped To TestAmerica Incorporated, Richland	Offsite Property No. N/A		Bill of Lading/Air Bill No.

Price Code 7K

Data Turnaround 45 Days

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

Preservation	Cool 4C
Type of Container	P
No. of Container(s)	1
Volume	500mL
SAMPLE ANALYSIS J00217 J8J300180 Due 12/15/08	Chromium Hex - 7196

Sample No.	Matrix *	Sample Date	Sample Time	Chromium Hex - 7196
J17RL1 KIYNM	WATER	[illegible]	1340	X
J17RL2 KIYN0	WATER	10/29/08	1555	X

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Ken Sivertsoff	10/29/08 1818	REF C	10/29/08 1818
Ref. C	10/30/08 0930	Kim Rogel / Kim Rogel	10/30/08 0930
Kim Rogel / Kim Rogel	10/30/08 0940	K.K. LJLANE TAL	10/30/08 0940

SPECIAL INSTRUCTIONS

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-015

17 000015

STAMBET CA

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-115-35 Page 1 of 1

Collector: Jon Sromeuff

Company Contact: Joan Kessler
Telephone No.: 375-4555

Project Coordinator: WEISS, R.L.

Price Code: 7K

Data Turnaround: 45 Days

Project Designation: Columbia River Component of the RCBRA - Surface Water

Sampling Location: RBLS-1 SW

SAF No.: RC-115

Ice Chest No.:

Field Logbook No.: EL-1630

COA: BESCAC6520

Method of Shipment: HAND DELIVER

Shipped To: TestAmerica Incorporated, Richland

Offsite Property No.: N/A

Bill of Lading/Air Bill No.:

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

J00217
J3J300186
Q.E1218108

Preservation	Cool 4C
Type of Container	P
No. of Container(s)	1
Volume	500mL
SAMPLE ANALYSIS	Chromium Hex - 7196

Sample No.	Matrix *	Sample Date	Sample Time	
J17R13 LIYNJ3	WATER	10/29/08	1135	X

CHAIN OF POSSESSION Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Jon Sromeuff / Su...L	10/29/08 1115	Ref C	10/29/08 1117
Ref C	10/30/08 0320	Kim Royal Kim Royal	10/30/08 0320
Kim Royal Kim Royal	10/30/08 0340	LILANZ TAL	103008 0340

SPECIAL INSTRUCTIONS

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION — Received By: Title: Date/Time:

FINAL SAMPLE DISPOSITION — Disposal Method: Disposed By: Date/Time:

WCH-EE-015

18

0000016

Appendix 5

Data Validation Supporting Documentation

GENERAL CHEMISTRY ANALYSIS DATA VALIDATION CHECKLIST

VALIDATION LEVEL:	A	B	[✓ C]	D	E

PROJECT: CRC RCBRA

DATA PACKAGE: J00217

VALIDATOR: ELR

LAB: TA

DATE: 4/4/09

SDG: J00217

ANALYSES PERFORMED

Anions/IC	TOC	TOX	TPH-418.1	Oil and Grease	Alkalinity
Ammonia	BOD/COD	Chloride	[✓ Chromium-VI]	pH	NO_3/NO_2
Sulfate	TDS	TKN	Phosphate		

SAMPLES/MATRIX

J17RL1 J17RL2 J17RL3

Water

1. DATA PACKAGE COMPLETENESS AND CASE NARRATIVE

Technical verification documentation present? .... Yes [✓ No] N/A

Comments:

2. INSTRUMENT PERFORMANCE AND CALIBRATIONS (Levels D and E)

Initial calibrations performed on all instruments? .... Yes No [✓ N/A]

Initial calibrations acceptable? .... Yes No [✓ N/A]

ICV and CCV checks performed on all instruments? .... Yes No [✓ N/A]

ICV and CCV checks acceptable? .... Yes No [✓ N/A]

Standards traceable? .... Yes No [✓ N/A]

Standards expired? .... Yes No [✓ N/A]

Calculation check acceptable? .... Yes No [✓ N/A]

Comments:

GENERAL CHEMISTRY ANALYSIS DATA VALIDATION CHECKLIST

3. BLANKS (Levels B, C, D, and E)

ICB and CCB checks performed for all applicable analyses? (Levels D, E)........ Yes No [✓ N/A]

ICB and CCB results acceptable? (Levels D, E)........ Yes No [✓ N/A]

Laboratory blanks analyzed?........ [✓ Yes] No N/A

Laboratory blank results acceptable?........ [✓ Yes] No N/A

Field blanks analyzed? (Levels C, D, E)........ Yes [✓ No] N/A

Field blank results acceptable? (Levels C, D, E)........ Yes No [✓ N/A]

Transcription/calculation errors? (Levels D, E)........ Yes No [✓ N/A]

Comments: NO FB

4. ACCURACY (Levels C, D, and E)

Spike samples analyzed?........ [✓ Yes] No N/A

Spike recoveries acceptable?........ [✓ Yes] No N/A

Sike standards NIST traceable? (Levels D, E)........ Yes No [✓ N/A]

Spike standards expired? (Levels D, E)........ Yes No [✓ N/A]

LCS/BSS samples analyzed?........ [✓ Yes] No N/A

LCS/BSS results acceptable?........ [✓ Yes] No N/A

Standards traceable? (Levels D, E)........ Yes No [✓ N/A]

Standards expired? (Levels D, E)........ Yes No [✓ N/A]

Transcription/calculation errors? (Levels D, E)........ Yes No [✓ N/A]

Performance audit sample(s) analyzed?........ Yes [✓ No] N/A

Performance audit sample results acceptable?........ Yes No [✓ N/A]

Comments: NO PAS

GENERAL CHEMISTRY ANALYSIS DATA VALIDATION CHECKLIST

5. PRECISION (Levels C, D, and E)

Duplicate RPD values acceptable? .... [✓ Yes] No N/A
Duplicate results acceptable? .... [✓ Yes] No N/A
MS/MSD standards NIST traceable? (Levels D, E) .... Yes No [✓ N/A]
MS/MSD standards expired? (Levels D, E) .... Yes No [✓ N/A]
Field duplicate RPD values acceptable? .... Yes No [✓ N/A]
Field split RPD values acceptable? .... Yes No [✓ N/A]
Transcription/calculation errors? (Levels D, E) .... Yes No [✓ N/A]
Comments:

6. HOLDING TIMES (all levels)

Samples properly preserved? .... [✓ Yes] No N/A
Sample holding times acceptable? .... [✓ Yes] No N/A
Comments:

GENERAL CHEMISTRY ANALYSIS DATA VALIDATION CHECKLIST

7. RESULT QUANTITATION AND DETECTION LIMITS (all levels)

Results reported for all requested analyses? .... [✓ Yes] No N/A

Results supported in the raw data? (Levels D, E) .... Yes No [✓ N/A]

Samples properly prepared? (Levels D, E) .... Yes No [✓ N/A]

Detection limits meet RDL? .... [✓ Yes] No N/A

Transcription/calculation errors? (Levels D, E) .... Yes No [✓ N/A]

Comments:

Appendix 6

Additional Documentation Requested by Client

QC Results Summary

TestAmerica TARL

Ordered by Method, Batch No, QC Type,.

Date: 10-Dec-08

Report No. : 40349

SDG No.: J00217

Batch Work Order	Parameter	Result +- Uncertainty (2s)	Qual	Units	Tracer Yield	LCS Recovery	Bias	MDC|MDA
7196_CR6								
8304267 MATRIX SPIKE, J17RL1								
K1XNM1AC	HEXCHROME	2.72E-01 +- 0.00E+00		mg/L	N/A	103%	0.0	3.70E-03
K1XNM1AD	HEXCHROME	2.68E-01 +- 0.00E+00		mg/L	N/A	102%	0.0	3.70E-03
8304267 LCS,								
K1XQX1AC	HEXCHROME	5.03E-01 +- 0.00E+00		mg/L	N/A	101%	0.0	3.70E-03
8304267 BLANK QC,								
K1XQK1AA	HEXCHROME	3.70E-03 +- 0.00E+00	U	mg/L	N/A			3.70E-03

No. of Results: 4

TestAmerica Bias - (Result/Expected)-1 as defined by ANSI N13.30.

rptSTLRchQcSummary V5.2 A2002 U Qual - Analyzed for but not detected above limiting criteria. Limit criteria is less than the Mdc/Mda or Total Uncert or not identified by gamma scan software.

Sample Results Summary

TestAmerica TARL

Ordered by Method, Batch No., Client Sample ID.

Date: 10-Dec-08

Report No. : 40349

SDG No: J00217

Batch	Client Id / Work Order	Parameter	Result +- Uncertainty (2s)	Qual	Units	Tracer Yield	MDC or MDA	CRDL	RPD
8304267 7196_CR6									
	J17RL1							3.70E-03	
	K1XNM1AA	HEXCHROME	3.70E-03 +- 0.00E+00	U	mg/L	N/A	3.70E-03	~~3.50E-01~~	
	K1XNM1AE	HEXCHROME	3.70E-03 +- 0.00E+00	U	mg/L	N/A	3.70E-03	~~3.50E-01~~	0.0
	J17RL2								
	K1XN01AA	HEXCHROME	3.70E-03 +- 0.00E+00	U	mg/L	N/A	3.70E-03	~~3.50E-01~~	
	J17RL3								
	K1XN31AA	HEXCHROME	3.70E-03 +- 0.00E+00	U	mg/L	N/A	3.70E-03	~~3.60E-01~~	

No. of Results: 4

[illegible]

TestAmerica

rptSTLRchSaSummary2 V5.2 A2002

RPD - Relative Percent Difference.

U Qual - Analyzed for but not detected above limiting criteria. Limit criteria is less than the Mdc/Mda or Total Uncert or not identified by gamma scan software.

F.1.1.3 SDG K1401

SAF-RC-115
Columbia River Component of the RCBRA – Surface Water
FINAL VALIDATION PACKAGE

COMPLETE COPY OF VALIDATION PACKAGE TO:

Kathy Wendt H4-21

COMMENTS:

SDG K1401 **SAF-RC-115**

Sampling Location: **WBT-1SW**
WBW-1SW
RG-1SW

Date: 13 April 2009
To: Washington Closure Hanford Inc. (technical representative)
From: ELR Consulting
Project: Columbia River Component of the RCBRA - Surface Water
Subject: Radiochemistry - Data Package No. K1401-EB

INTRODUCTION

This memo presents the results of data validation on Data Package No. K1401 prepared by Eberline Services (EB). A list of samples validated along with the analyses reported and the method of analysis is provided in the following table.

Sample ID	Sample Date	Media	Validation	Data
J17K50	10/17/08	Water	C	See note 1
J17K51	10/17/08	Water	C	See note 1
J17K52	10/17/08	Water	C	See note 1
J17K67	10/17/08	Water	C	See note 1

1 – Tritium, carbon-14, total strontium, technetium-99, alpha spectroscopy & gamma spectroscopy.

Data validation was conducted in accordance with the Washington Closure Hanford (WCH) validation statement of work and the Remedial Investigation Work Plan for Hanford Site Releases to the Columbia River (DOE/RL-2008-11, Rev. 0, September 2008). Appendices 1 through 6 provide the following information as indicated below:

Appendix 1. Glossary of Data Reporting Qualifiers
Appendix 2. Summary of Data Qualification
Appendix 3. Qualified Data Summary and Annotated Laboratory Reports
Appendix 4. Laboratory Narrative and Chain-of-Custody Documentation
Appendix 5. Data Validation Supporting Documentation
Appendix 6. Additional Data Requested by Client

DATA QUALITY PARAMETERS

- **Holding Times**

Holding times are calculated from Chain-of-Custody forms to determine the validity of the results. The maximum holding time for radiochemical analysis is 6 months.

All holding times were acceptable.

- **Preparation (Method) Blanks**

Laboratory Blanks

Blank samples are analyzed to determine if positive results are due to laboratory reagent, sample container, or detector contamination. If blank analysis results indicate the presence of an analyte above the minimum detectable activity (MDA), the following qualifiers are applied: All positive sample results less than five times the highest blank concentration are qualified as estimates and flagged "J"; sample results below the MDA are qualified as undetected and flagged "U"; sample results above the MDA and greater than five times the highest blank concentration are not qualified.

All blank results were acceptable (although the MDA for tritium and cesium-137 exceeded QC limits).

Field (Equipment) Blank

No field blanks were submitted for analysis.

- **Accuracy**

Accuracy is evaluated from laboratory control sample (LCS) or blank spike sample (BSS) batch samples and spiked samples from the analytical batch. Measured activities are compared to the known added amounts. The acceptable LCS or BSS and matrix spike (MS) recovery range is 70-130%. In addition, samples may be spiked with a radiochemical tracer to assist in isolating the radioisotope of interest with the yield of the tracer being used in calculating sample activity. The acceptable range for tracer recovery is 20% to 105%. Spike sample results outside the above ranges result in associated sample results being qualified as estimates, or not qualified, depending on the activity of the individual sample. Results are rejected for LCS/BSS recoveries of less than 30% and tracer recoveries of less than 20%, and tracer recoveries of greater than 115% for detected results.

Due to the lack of an LCS analysis, all thorium-228 and thorium-232 results were qualified as estimates and flagged "J".

All other accuracy results were acceptable.

- **Laboratory Duplicates**

Analytical precision is expressed by the relative percent differences (RPD) between the recoveries of duplicate matrix spike analyses performed on a sample in the analytical batch. Precision may alternatively be assessed using unspiked duplicate analyses performed on a sample in the analytical batch. If both sample and replicate activities (concentrations) are greater than five times the contract required detection limit (CRDL) and the RPD is less than 20%, no qualification is required. If either activity (concentration) is less than five times the CRDL, the RPD control limit is less than or equal to two times the CRDL. If the RPD is outside the applicable control limit, associated results are qualified as estimated detects or estimated non-detects.

All duplicate results were acceptable.

Field Duplicates

One set of field duplicates (J17K52/J17K67) were submitted for analysis. Laboratory duplicates are compared using the same criteria as for laboratory duplicates. All field duplicate results were acceptable.

- **Detection Levels**

Reported analytical detection levels for undetected analytes are compared against the project RQLs to ensure that laboratory detection levels meet the required criteria. Fourteen analytes exceeded the RQL. Under the WCH statement of work, no qualification is required. All other analytes met the RQL.

- **Completeness**

Data package No. K1401 was submitted for validation and verified for completeness. Completeness is based on the percentage of data determined to be valid (i.e., not rejected). The completion percentage was 100%.

MAJOR DEFICIENCIES

None found.

MINOR DEFICIENCIES

The following minor deficiencies were noted:

- Due to the lack of an LCS analysis, all thorium-228 and thorium-232 results were qualified as estimates and flagged "J".

Data flagged "J" indicates that the associated concentration is an estimate, but under the WCH statement of work, the data may be usable for decision-making purposes. All other validated results are considered accurate within the standard error associated with the methods.

REFERENCES

Fluor Hanford Data Validation Contract #29776 (June 2006), *Validation Statement of Work*, through Washington Closure Hanford Work Order #WB6081.

DOE/RL-2008-11, Rev.0, *Remedial Investigation Work Plan for Hanford Site Releases to the Columbia River*, September 2008.

Appendix 1

Glossary of Data Reporting Qualifiers

Qualifiers which may be applied by data validators in compliance with the WCH statement of work are as follows:

U - Indicates the compound or analyte was analyzed for and not detected above the minimum detectable activity (MDA) in the sample. The value reported is the sample result corrected for sample dilution and moisture content by the laboratory. The data is usable for decision making purposes.

UJ - Indicates the compound or analyte was analyzed for and not detected at concentrations above the minimum detectable activity (MDA) in the sample. Due to a minor QC deficiency identified during the data validation, the associated quantitation limit is an estimate, but is usable for decision making purposes.

J - Indicates the compound or analyte was analyzed for and detected. Due to a minor QC deficiency identified during the data validation, the associated concentration is an estimate, but the data are usable for decision-making purposes.

R - Indicates the compound or analyte was analyzed for, detected, and due to an identified major QC deficiency, the data are unusable.

UR - Indicates the compound or analyte was analyzed for and not detected in the sample. Additionally, the data is unusable due to an identified major QC deficiency.

Appendix 2

Summary of Data Qualification

RADIOCHEMISTRY DATA QUALIFICATION SUMMARY*

SDG: K1401	**REVIEWER: ELR**	**Project: RCBRA**	**PAGE_1_OF_1**
COMPOUND	QUALIFIER	SAMPLES AFFECTED	REASON
Thorium-228 Thorium-232	J	All	No LCS analysis

* - The Qualified Data Summary Table includes laboratory applied "U" qualifiers not specifically identified here. The laboratory applied "U" qualifiers are included to minimize misinterpretation of results contained in the table.

Appendix 3

Qualified Data Summary and Annotated Laboratory Reports

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1401

7228-001 J17K50

DATA SHEET

SDG	7228	Client/Case no	Hanford SDG K1401
Contact	Melissa C. Mannion	Contract	No. S00W235A00
Lab sample id	R810171-01	Client sample id	J17K50
Dept sample id	7228-001	Location/Matrix	WBT-18W WATER
Received	10/21/08	Collected/Volume	10/17/08 18:10 5.25 L
		Custody/SAF No	RC-115 3 RC-115

ANALYTE	CAS NO	RESULT pCi/L	2σ ERR (COUNT)	MDA pCi/L	RDL pCi/L	QUALI-FIERS	TEST
Tritium	10028-17-8	32.4	94	157	400	U	H
Carbon 14	14762-75-5	3.32	35	58.6	200	U	C
Total Strontium	SR-RAD	0.188	0.25	0.460	2.00	U	SR
Technetium 99	14133-76-7	0.229	2.0	5.01	15.0	U	TC
Thorium 228	14274-82-9	0.016	0.095	0.195		U J	TH
Thorium 230	14269-63-7	0.220	0.13	0.120	1.00		TH
Thorium 232	TH-232	0	0.031	0.120	1.00	U J	TH
Uranium 233/234	U-233/234	2.41	0.17	0.046	1.00		U
Uranium 235	15117-96-1	0.158	0.046	0.025	1.00		U
Uranium 238	U-238	2.10	0.16	0.039	1.00		U
Plutonium 238	13981-16-3	0.049	0.099	0.236	1.00	U	PU
Plutonium 239/240	PU-239/240	0.025	0.049	0.188	1.00	U	PU
Potassium 40	13966-00-2	U		928		U	GAM
Cobalt 60	10198-40-0	U		12.6	25.0	U	GAM
Cesium 137	10045-97-3	U		29.9	15.0	U	GAM
Radium 226	13982-63-3	U		45.8		U	GAM
Radium 228	15262-20-1	U		59.3		U	GAM
Europium 152	14683-23-9	U		38.2	50.0	U	GAM
Europium 154	15585-10-1	U		35.9	50.0	U	GAM
Europium 155	14391-16-3	U		44.9	50.0	U	GAM
Thorium 228	14274-82-9	U		23.2		U	GAM
Thorium 232	TH-232	U		59.3		U	GAM
Uranium 235	15117-96-1	U		66.3		U	GAM
Uranium 238	U-238	U		1440		U	GAM
Americium 241	14596-10-2	U		82.0		U	GAM
Beryllium 7	13966-02-4	U		122		U	GAM
Ruthenium 106	13967-48-1	U		112		U	GAM
Antimony 125	14234-35-6	U		31.0		U	GAM

ColumbiaRiverComp.ofRCBRA-Surf.Water

4/11/09

Lab id	EBRLNE
Protocol	Hanford1
Version	Ver 1.0
Form	DVD-DS
Version	3.06
Report date	01/08/09

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1401

7228-001 J17K50

DATA SHEET, cont

SDG	7228	Client/Case no	Hanford SDG K1401
Contact	Melissa C. Mannion	Contract	No. S00W235A00
Lab sample id	E810171-01	Client sample id	J17K50
Dept sample id	7228-001	Location/Matrix	WBT-1SW WATER
Received	10/21/08	Collected/Volume	10/17/08 18:10 5.25 L
		Custody/SAF No	EC-115-3 RC-115

ANALYTE	CAS NO	RESULT pCi/L	2σ ERR (COUNT)	MDA pCi/L	RDL pCi/L	QUALI-FIERS	TEST
Cesium 134	13967-70-9	U		15.4		U	GAM

ColumbiaRiverComp.ofRCBRA-Surf.Water

4/6/09

Lab id	EBRLNE
Protocol	Hanford1
Version	Ver 1.0
Form	DVD-DS
Version	3.06
Report date	01/08/09

EBERLINE SERVICES/RICHMOND
SAMPLE DELIVERY GROUP K1401

7228-002

J17K51

DATA SHEET

SDG	7228	Client/Case no	Hanford	SDG K1401
Contact	Melissa C. Mannion	Contract	No. 800W235A00	
Lab sample id	K810171-02	Client sample id	J17K51	
Dept. sample id	7228-002	Location/Matrix	WBN-7SW	WATER
Received	10/21/08	Collected/Volume	10/17/08 13:20	5.25 L
		Custody/SAF No	RC-115-4	RC-115

ANALYTE	CAS NO	RESULT pCi/L	2σ ERR (COUNT)	MDA pCi/L	MDL pCi/L	QUALIFIERS	TEST
Tritium	10028-17-8	77.4	95	157	400	U	H
Carbon 14	14762-75-5	16.2	35	59.0	200	U	C
Total Strontium	SR-RAD	0.097	0.23	0.444	2.00	U	SR
Technetium 99	14133-76-7	0.274	1.2	3.46	15.0	U	TC
Thorium 228	14274-82-9	0	0.037	0.142		U J	TH
Thorium 230	14269-63-7	0.240	0.15	0.141	1.00		TH
Thorium 232	TH-232	0	0.037	0.141	1.00	U J	TH
Uranium 233/234	U-233/234	1.69	0.18	0.053	1.00		U
Uranium 235	15117-96-1	0.119	0.052	0.040	1.00		U
Uranium 238	U-238	1.48	0.17	0.047	1.00		U
Plutonium 238	13981-16-3	-0.026	0.10	0.249	1.00	U	PU
Plutonium 239/240	PU-239/240	0.234	0.16	0.199	1.00		PU
Potassium 40	13966-00-2	U		94.8		U	GAM
Cobalt 60	10198-40-0	U		8.20	25.0	U	GAM
Cesium 137	10045-97-3	U		8.12	15.0	U	GAM
Radium 226	13982-63-3	U		22.5		U	GAM
Radium 228	15262-20-1	U		35.6		U	GAM
Europium 152	14683-23-9	U		17.4	50.0	U	GAM
Europium 154	15585-10-1	U		21.9	50.0	U	GAM
Europium 155	14391-16-3	U		17.2	50.0	U	GAM
Thorium 228	14274-82-9	U		11.5		U	GAM
Thorium 232	TH-232	U		35.6		U	GAM
Uranium 235	15117-96-1	U		25.0		U	GAM
Uranium 238	U-238	U		917		U	GAM
Americium 241	14596-10-2	U		9.82		U	GAM
Beryllium 7	13966-02-4	U		67.1		U	GAM
Ruthenium 106	13967-48-1	U		65.7		U	GAM
Antimony 125	14234-35-6	U		17.8		U	GAM

ColumbiaRiverComp.ofRCBRA-Surf.Water

K 4/11/09

Lab id	EBRLNE
Protocol	Hanford1
Version	Ver 1.0
Form	DVD-DS
Version	1.06
Report date	01/08/09

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1401

7228-002

J17K51

DATA SHEET, cont

SDG	7228	Client/Case no	Hanford SDG K1401
Contact	Melissa C. Mannion	Contract	No. 800W235A00
Lab sample id	R810171-02	Client sample id	J17K51
Dept sample id	7228-002	Location/Matrix	WBW-18W WATER
Received	10/21/08	Collected/Volume	10/17/08 13:20 5.25 L
		Custody/SAF No	RC-115-4 RC-115

ANALYTE	CAS NO	RESULT pCi/L	2σ ERR (COUNT)	MDA pCi/L	RDL pCi/L	QUALI-FIERS	TEST
Cesium 134	13967-70-9	U		10.6		U	GAM

ColumbiaRiverComp.ofRCBRA-Surf.Water

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Lab id EBERLINE
Protocol Hanford1
Version Ver 1.0
Form DVD-DS
Version 3.06
Report date 01/08/09

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1401

DATA SHEET

SDG	7228	Client/Case no	Hanford SDG_K1401
Contact	Melissa C. Mannion	Contract	No. 500W235A00
Lab sample id	R810171-03	Client sample id	J17K52
Dept sample id	7228-003	Location/Matrix	RG-1SW WATER
Received	10/21/00	Collected/Volume	10/17/00 09:52 5.25 L
		Custody/SAF No	RC-115-5 RC-115

ANALYTE	CAS NO	RESULT pCi/L	2σ ERR (COUNT)	MDA pCi/L	RDL pCi/L	QUALI-FIERS	TEST
Tritium	10028-17-8	87.4	96	157	400	U	H
Carbon 14	14762-75-5	18.3	35	58.0	200	U	C
Total Strontium	SR-RAD	-0.041	0.23	0.482	2.00	U	SR
Technetium 99	14133-76-7	-0.452	1.1	3.20	15.0	U	TC
Thorium 228	14274-82-9	0	0.075	0.179		U J	TH
Thorium 230	14269-63-7	0.130	0.11	0.142	1.00	U	TH
Thorium 232	TH-232	0	0.037	0.142	1.00	U J	TH
Uranium 233/234	U-233/234	4.10	0.29	0.070	1.00		U
Uranium 235	15117-96-1	0.254	0.070	0.038	1.00		U
Uranium 238	U-238	3.88	0.28	0.055	1.00		U
Plutonium 238	13981-16-3	-0.048	0.049	0.232	1.00	U	PU
Plutonium 239/240	PU-239/240	0.024	0.048	0.105	1.00	U	PU
Potassium 40	13966-00-2	U		104		U	GAM
Cobalt 60	10198-40-0	U		10.2	25.0	U	GAM
Cesium 137	10045-97-3	U		9.53	15.0	U	GAM
Radium 226	13982-63-3	U		18.8		U	GAM
Radium 228	15262-20-1	U		37.0		U	GAM
Europium 152	14683-23-9	U		23.4	50.0	U	GAM
Europium 154	15585-10-1	U		31.2	50.0	U	GAM
Europium 155	14391-16-3	U		17.6	50.0	U	GAM
Thorium 228	14274-82-9	U		13.6		U	GAM
Thorium 232	TH-232	U		37.8		U	GAM
Uranium 235	15117-96-1	U		30.5		U	GAM
Uranium 238	U-238	U		1050		U	GAM
Americium 241	14596-10-2	U		9.91		U	GAM
Beryllium 7	13966-02-4	U		96.0		U	GAM
Ruthenium 106	13967-48-1	U		78.3		U	GAM
Antimony 125	14234-35-6	U		20.7		U	GAM

ColumbiaRiverComp.ofRCBRA-Surf.Water

4/11/09

Lab id	EBRLNE
Protocol	Hanford1
Version	Ver 1.0
Form	DVD-DS
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EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1401

7228-003 J17K52

DATA SHEET, cont

SDG	7228	Client/Case no	Hanford SDG K1401
Contact	Melissa C. Mannion	Contract	No. 900W235A00
Lab sample id	R810171-03	Client sample id	J17K52
Dept sample id	7228-003	Location/Matrix	RC-15M WATER
Received	10/21/08	Collected/Volume	10/17/08 09:52 5.25 L
		Custody/SAF No	RC-115-5 RC-115

ANALYTE	CAS NO	RESULT pCi/L	2σ ERR (COUNT)	MDA pCi/L	RDL pCi/L	QUALI-FIERS	TEST
Cesium 134	13967-70-9	U		12.1		U	GAM

ColumbiaRiverComp.ofRCBRA-Surf.Water

V 4/11/09

Lab id	EBRLNE
Protocol	Hanford1
Version	Ver 1.0
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EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1401

7228-004 J17R67

DATA SHEET

SDG	7228	Client/Case no	Hanford	SDG K1401
Contact	Melissa C. Mannion	Contract	No. 6000235800	
Lab sample id	R810171-04	Client sample id	J17R67	
Dept sample id	7228-004	Location/Matrix	RG-10W	WATER
Received	10/21/08	Collected/Volume	10/17/08 10:40	5.25 L
		Custody/SAF No	RC-115-5	RC-115

ANALYTE	CAS NO	RESULT pCi/L	2σ ERR (COUNT)	MDA pCi/L	RDL pCi/L	QUALI-FIERS	TEST
Tritium	10028-17-8	45.0	94	156	400	U	H
Carbon 14	14762-75-5	22.2	35	58.3	200	U	C
Total Strontium	SR-RAD	0.329	0.31	0.561	2.00	U	SR
Technetium 99	14133-76-7	12.1	1.8	3.72	15.0		TC
Thorium 228	14274-82-9	0	0.075	0.179		U J	TH
Thorium 230	14269-63-7	0.149	0.15	0.143	1.00		TH
Thorium 232	TH-232	0.037	0.074	0.142	1.00	U J	TH
Uranium 233/234	U-233/234	4.06	0.26	0.049	1.00		U
Uranium 235	15117-96-1	0.243	0.067	0.030	1.00		U
Uranium 238	U-238	3.17	0.23	0.047	1.00		U
Plutonium 238	13981-16-3	0.068	0.14	0.216	1.00	U	PU
Plutonium 239/240	PU-239/240	0	0.045	0.173	1.00	U	PU
Potassium 40	13966-00-2	U		125		U	GAM
Cobalt 60	10198-40-0	U		7.71	25.0	U	GAM
Cesium 137	10045-97-3	U		7.28	15.0	U	GAM
Radium 226	13982-63-3	U		16.0		U	GAM
Radium 228	15262-20-1	U		33.2		U	GAM
Europium 152	14683-23-9	U		20.6	50.0	U	GAM
Europium 154	15585-10-1	U		21.9	50.0	U	GAM
Europium 155	14391-16-3	U		24.7	50.0	U	GAM
Thorium 228	14274-82-9	U		15.3		U	GAM
Thorium 232	TH-232	U		33.2		U	GAM
Uranium 235	15117-96-1	U		36.7		U	GAM
Uranium 238	U-238	U		913		U	GAM
Americium 241	14596-10-2	U		24.8		U	GAM
Beryllium 7	13966-02-4	U		74.8		U	GAM
Ruthenium 106	13967-48-1	U		59.0		U	GAM
Antimony 125	14234-35-6	U		16.0		U	GAM

ColumbiaRiverComp.ofRCBRA.Surf.Water

4/11/09

Lab id	EBRLNE
Protocol	Hanford1
Version	Ver 1.0
Form	DVD-DS
Version	3.06
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DATA SHEET, cont

SDG	7228	Client/Case no	Hanford SDG K1401
Contact	Melissa C. Mannion	Contract	No. 800W235A00
Lab sample id	R810171-04	Client sample id	J17R67
Dept sample id	7228-004	Location/Matrix	RG-1SW WATER
Received	10/21/08	Collected/Volume	10/17/08 10:40 5.25 L
		Custody/SAF No	RC-115-5 RC-115

ANALYTE	CAS NO	RESULT pCi/L	2σ ERR (COUNT)	MDA pCi/L	RDL pCi/L	QUALI-FIERS	TEST
Cesium 134	13967-70-9	U		6.80		U	GAM

ColumbiaRiverComp.ofRCBRA-Surf.Water

4/11/09

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Lab id	EBRLNE
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Appendix 4

Laboratory Narrative and Chain-of-Custody Documentation

Case Narrative

1.0 GENERAL

Washington Closure Hanford (WCH) Sample Delivery Group K1401 was composed of four water samples designated under SAF No. RC-115 with a Project Designation of: Columbia River Component of the RCBRA – Surface Water.

The sample was received as stated on the Chain-of-Custody documents. Any discrepancies are noted on the Eberline Services Sample Receipt Checklist included in the original report. The results were sent to WCH via e-mail January 8, 2009.

2.0 ANALYSIS NOTES

2.1 Tritium Analysis

No problems were encountered during the course of the analyses.

2.2 Carbon-14 Analysis

No problems were encountered during the course of the analyses.

2.3 Strontium-90 Analysis

No problems were encountered during the course of the analyses.

2.4 Technetium-99 Analysis

No problems were encountered during the course of the analyses.

2.5 Isotopic Thorium Analysis

No problems were encountered during the course of the analyses.

2.6 Isotopic Uranium Analysis

No problems were encountered during the course of the analyses.

2.7 Isotopic Plutonium Analysis

No problems were encountered during the course of the analyses.

2.8 Gamma Spectroscopy

No problems were encountered during the course of the analyses.

3.0 Case Narrative Certification Statement

"I certify that this data package is in compliance with the SOW, both technically and for completeness, for other then the conditions detailed above. Release of the data obtained in this hard copy data package has been authorized by the Laboratory Manager or a designee, as verified by the following signature."

Melissa Mannion
Melissa C. Mannion
Senior Program Manager

1/12/09
Date

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-115-3

Page 2 of 2

Collector: Ian Sovereign

Company Contact: Joan Kessner

Telephone No.: 375-4688

Project Coordinator: WEISS, RL

Price Code: 7K N

Data Turnaround: 45 Days

Project Designation: Columbia River Component of the RCBRA - Surface Water

Sampling Location: WBT-1SW KH01 (7228)

SAF No.: RC-115

Ice Chest No.: WCH-08-013

Field Logbook No.: EL-1630

COA: HESCRC6520

Method of Shipment: FED EX

Shipped To: EBERLINE SERVICES LIONVILLE

Offsite Property No.:

Bill of Lading/Air Bill No.: 792129693392

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

0000020

Preservation	HNO3 to pH <2	None	None	HNO3 to pH <2	HNO3 to pH <2	HCl to pH <2
Type of Container	G/P	G/P	P	G/P	G/P	G/P
No. of Container(s)	1	1	1	2	2	1
Volume	1000mL 3	125mL	125mL	1000mL	1000mL	250mL
SAMPLE ANALYSIS	See item (1) in Special Instructions.	Carbon-14	Tritium - H3	Strontium-89,90 - Total Sr	Isotopic Uranium, Pu, Th	Technetium-99

Sample No.	Matrix *	Sample Date	Sample Time						
J17K50	WATER	10/17/08	1810	X	X	X	X	X	X
J17K57	WATER								

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
	10/17/08 2055	RSF. 4	10/17/08 2055
RSF A	10/20/08 0441	Dan Heidelberg	10/20/08 0441
Dan Heidelberg	10/20/08 1310	FedEx	10/20/08 1310
FED EX			10/21/08 08:45

SPECIAL INSTRUCTIONS

3 [illegible]
(1) Gamma Spec - (Full List) [Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Ruthenium-106]
(gamma - Ra 226, Ra 228)

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab

ACM 10/23/08

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION — Received By: Title: Date/Time:

FINAL SAMPLE DISPOSITION — Disposal Method: Disposed By: Date/Time:

WCH-EE-011

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-115-4

Page 2 of 2

Collector	Company Contact: Joan Kessner Telephone No.: 375-4638	Project Coordinator: WEISS, RL	Price Code: 7K N Data Turnaround: 45 Days
Project Designation: Columbia River Component of the RCBRA - Surface Water	Sampling Location: WBW-1SW K1401 (7228)	SAF No.: RC-115	
Ice Chest No. WCH-08-013	Field Logbook No.: EL-1630 COA: BESCRC6520	Method of Shipment: FED EX	
Shipped To: [✓ EBERLINE SERVICES] LIONVILLE	Offsite Property No.	Bill of Lading/Air Bill No. 7921 2969 3592	

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

E200021

Preservation	HNO3 to pH <2	None	None	HNO3 to pH <2	HNO3 to pH <2	HCl to pH <2
Type of Container	G/P	G/P	P	G/P	G/P	G/P
No. of Container(s)	1	1	1	2	2	1
Volume	1000mL	125mL	125mL	3000mL	1000mL	250mL
SAMPLE ANALYSIS	See item (1) in Special Instructions	~~Carbon-14~~ C14 MCM 10/31/08	Tritium - H3	Strontium-89,90 - Total Sr	Isotopic Uranium Pu, Th	Technetium-99

Sample No.	Matrix *	Sample Date	Sample Time						
J17K51	WATER	10/17/08	1320	X	~~X~~ X	X	X	X	X
J17K58	WATER								

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
	10/17/08 2255	REF. A	10/17/08 2055
	10/20/08 0811	Dan Heidelberg	10/20/08 0811
Dan Heidelberg	10/20/08 1310	FedEx	10/20/08 1310
FED EX			10/21/08 08:45

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) {Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Ruthenium-106}

(gamma - Ra 226, Ra 228)

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab

MCM 10/20/08

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-115-5

Page 2 of 2

Collector Jan Stuikoff	**Company Contact** Joan Kessner **Telephone No.** 375-4688	**Project Coordinator** WEISS, RL	**Price Code** 7K N **Data Turnaround** 45 Days
Project Designation Columbia River Component of the RCBRA - Surface Water	**Sampling Location** RO-ISW K1401 (7228)	**SAF No.** RC-115	
Ice Chest No. WCH-08-013	**Field Logbook No.** EL-1630 **COA** BESCRC6530	**Method of Shipment** FED EX	
Shipped To EBERLINE SERVICES RICHMOND / OAK RIDGE / LIONVILLE	**Offsite Property No.**	**Bill of Lading/Air Bill No.** 792129693342	

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

Preservation	HNO3 to pH <2	None	None	HNO3 to pH <2	HNO3 to pH <2	HCl to pH <2
Type of Container	G/P	G/P	P	G/P	G/P	G/P
No. of Container(s)	3	1	1	2	1	1
Volume	1000mL	125mL	125mL	1000mL	1000mL	250mL
SAMPLE ANALYSIS	See item(s) in Special Instructions	~~Carbon-14~~ C14 mcm 10/23/8	Tritium - H3	Strontium-89,90 - Total Sr	Isotopic Uranium, Pu, Th	Technetium-99 mcm 10/23/8

000022

Sample No.	Matrix *	Sample Date	Sample Time						
J17K52	WATER	10/17/08	0952	X	~~X~~	X	X	X	X
J17K58	WATER				C X				

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
J. Stuikoff / J. Stuikoff	10/17/08 2055	RIF BA 10/17/08	10/17/08 2055
RIF A	10/20/08 0840	Dan Heidelberg	10/20/08 0840
Dan Heidelberg	10/20/08 1310	Fed Ex	10/20/08 1310
FED EX			10/22/08 08:45

SPECIAL INSTRUCTIONS

[illegible]

(1) Gamma Spec - (RCI List) (Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Ruthenium-106)

(gamma - Ra226, Ra228) mcm 10/23/8

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab.

Matrix *

S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Washington Closure Hanford | **CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST** | RC-115-26 | Page 2 of 2

Collector Jon Stueckle	Company Contact Joan Kessner Telephone No. 375-4688	Project Coordinator WEISS, RL	Price Code 7K N Data Turnaround **45 Days**
Project Designation Columbia River Component of the RCBRA - Surface Water	Sampling Location RC-1SW KH01 (7228)	SAF No. RC-115	
Ice Chest No. WCH-08-013	Field Logbook No. EL-1630 COA BESCRC6530	Method of Shipment FED EX	
Shipped To EBERLINE SERVICES, LIONVILLE	Offsite Property No.	Bill of Lading/Air Bill No. 792129683592	

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

0000023

Preservation	HNO3 to pH <2	None	None	HNO3 to pH <2	HNO3 to pH <2	H2SO4 pH <2
Type of Container	G/P	G/P	P	G/P	G/P	G/P
No. of Container(s)	1	1	1	2	2	1
Volume	10.0mL	125mL	125mL	1000mL	1000mL	250mL
SAMPLE ANALYSIS	See item (1) in Special Instructions	~~Carbon-14~~ CH 10/17/08 mcm	Tritium - H3	Strontium-89,90 - Total Sr	Isotopic Uranium; Pu, Th	Technetium-99

Sample No.	Matrix *	Sample Date	Sample Time						
J17R67	WATER	10/17/08	1040	X	~~X~~	X	X	X	X
J17R68	WATER				X				

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Jon Stueckle	10/17/08 2055	REF. 4	10/17/08 2055
REF. 4	10/24/08 0739	Don Heidelberg	10/24/08 0739
Don Heidelberg	10/24/08 1310	Fed Ex	10/24/08 1310
FED EX			10/24/08 08:45

SPECIAL INSTRUCTIONS

3/4 inches

(1) Gamma Spec - (Full List) (Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Ruthenium-106)

(gamma - Ra226, Ra228)

Sampler unavailable to remove samples from controlled storage. Shipper received samples from storage location using custody of samples for shipment to lab.

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

Appendix 5

Data Validation Supporting Documentation

APPENDIX A

RADIOCHEMICAL DATA VALIDATION CHECKLIST

VALIDATION LEVEL:	A	B	[✓ C]	D	E

PROJECT: RCRA		DATA PACKAGE: E1401	
VALIDATOR: ELR	LAB: EB		DATE: 4/5/09
		SDG: E1401	

ANALYSES PERFORMED				
☐ Gross Alpha/Beta	[✓ ☐ Strontium-90]	☐ Technetium-99	[✓ ☐ Alpha Spectroscopy]	[✓ ☐ Gamma Spectroscopy]
☐ Total Uranium	☐ Radium	[✓ ☐ Tritium]	Z-14	Tc-99

SAMPLES/MATRIX

J17K50 J17K51 J17K52 J17K67

Water

1. Completeness ☐ N/A

Technical verification forms present? Yes [✓ No] N/A

Comments:

2. Initial Calibration (Levels D, E) ☒ N/A

Instruments/detectors calibrated? Yes No N/A

Initial calibration acceptable? Yes No N/A

Standards NIST traceable? Yes No N/A

Standards Expired? Yes No N/A

Calculation check acceptable? Yes No N/A

Comments:

3. Continuing Calibration (Levels D, E) ☒ N/A

Calibration checked within required frequency? .... Yes No N/A

Calibration check acceptable? .... Yes No N/A

Calibration check standards traceable? .... Yes No N/A

Calibration check standards expired? .... Yes No N/A

Calculation check acceptable? .... Yes No N/A

Comments:

4. Background Counts (Levels D, E) .... ☒ N/A

Background Counts checked within required frequency? .... Yes No N/A

Background Counts acceptable? .... Yes No N/A

Calculation check acceptable? .... Yes No N/A

Comments:

5. Blanks (Levels B, C, D, E) .... ☐ N/A

Method blank analyzed within required frequency? .... [✓ Yes] No N/A

Method blank results acceptable? .... [✓ Yes] No N/A

Analytes detected in method blank? .... Yes [✓ No] N/A

Field blank(s) analyzed? .... Yes [✓ No] N/A

Field blank results acceptable? .... Yes No [✓ N/A]

Analytes detected in field blank(s)? .... Yes No [✓ N/A]

Transcription/Calculation Errors? (Levels D, E) .... Yes No [✓ N/A]

Comments: 34 over RQL no FB

cesium-137 non RQL

6. Laboratory Control Samples or Blank Spike Samples (Levels C, D, E) .... ☐ N/A

LCS /BSS analyzed within required frequency? .... [✓ Yes] No N/A

LCS/BSS recoveries acceptable? .... [✓ Yes] No N/A

LCS/BSS traceable? (Levels D,E) .... Yes No [✓ N/A]

LCS/BSS expired? (Levels D,E) .... Yes No [✓ N/A]

LCS/BSS levels correct? (Levels D,E) .... Yes No [✓ N/A]

Transcription/Calculation Errors? (Levels D, E) .... Yes No [✓ N/A]

Comments: no thorium-229 or 232 LCS - J all

7. Chemical Carrier Recovery (Levels C, D, E) .... ☒ N/A

Chemical carrier added? .... Yes No N/A

Chemical recovery acceptable? .... Yes No N/A

Chemical carrier traceable? (Levels D, E) .... Yes No N/A

Chemical carrier expired? (Levels D, E) .... Yes No N/A

Transcription/Calculation errors? (Levels D, E) .... Yes No N/A

Comments:

8. Tracer Recovery (Levels C, D, E) .... ☐ N/A

Tracer added? .... [✓ Yes] No N/A

Tracer recovery acceptable? .... [✓ Yes] No N/A

Tracer traceable? (Levels D, E) .... Yes No [✓ N/A]

Tracer expired? (Levels D, E) .... Yes No [✓ N/A]

Transcription/Calculation errors? (Levels D, E) .... Yes No [✓ N/A]

Comments:

9. Matrix Spikes (Levels C, D, E) .... ☐ N/A

Matrix spike analyzed? .... [✓ Yes] No N/A

Spike recoveries acceptable? .... [✓ Yes] No N/A

Spike source traceable? (Levels D, E) .... Yes No [✓ N/A]

Spike source expired? Levels D, E) .... Yes No [✓ N/A]

Transcription/Calculation Errors? (Levels D, E) .... Yes No [✓ N/A]

Comments:

10. Duplicates (Levels C, D, E) .... ☐ N/A

Duplicates Analyzed at required frequency? .... [✓ Yes] No N/A

RPD Values Acceptable? .... [✓ Yes] No N/A

Transcription/Calculation Errors? (Levels D, E) .... Yes No [✓ N/A]

Comments:

11. Field QC Samples (Levels C, D E) .... ☐ N/A

Field duplicate sample(s) analyzed? .... [✓ Yes] No N/A

Field duplicate RPD values acceptable? .... [✓ Yes] No N/A

Field split sample(s) analyzed? .... Yes [✓ No] N/A

Field split RPD values acceptable? .... Yes No [✓ N/A]

Performance audit sample(s) analyzed? .... Yes [✓ No] N/A

Performance audit sample results acceptable? .... Yes No [✓ N/A]

Comments: No FS or PAS

12. Holding Times (All levels)

Are sample holding times acceptable? .... [✓ Yes] No N/A

Comments:

13. Results and Detection Limits (All Levels) ☐ N/A

Results reported for all required sample analyses? [✓ Yes] No N/A

Results supported in raw data?(Levels D, E) Yes No [✓ N/A]

Results Acceptable? (Levels D, E) Yes No [✓ N/A]

Transcription/Calculation errors? (Levels D, E) Yes No [✓ N/A]

MDA's meet required detection limits? Yes [✓ No] N/A

Transcription/calculation errors? (Levels D, E) Yes No [✓ N/A]

Comments: 14C over

60 ~~||||~~ 51 - ||| 52 - ||| 67 - |||

Appendix 6

Additional Documentation Requested by Client

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1401

7228-006 Method Blank

METHOD BLANK

SDG 7228
Contact Melissa C. Mannion
Client/Case no Hanford
Contract No. S00W235A00
SDG K1401

Lab sample id K810171-06
Dept sample id 7228-006
Client sample id Method Blank
Material/Matrix WATER
SAF No RC-115

ANALYTE	CAS NO	RESULT pCi/L	2σ ERR (COUNT)	MDA pCi/L	RDL pCi/L	QUALI-FIERS	TEST
Tritium	10028-17-8	449	930	1560	400	U	H
Carbon 14	14762-75-5	-6.97	34	57.4	200	U	C
Total Strontium	SR-RAD	-0.104	0.26	0.555	2.00	U	SR
Technetium 99	14133-76-7	-0.422	1.4	4.04	15.0	U	TC
Thorium 228	14274-82-9	-0.019	0.075	0.179		U	TH
Thorium 230	14269-63-7	0.093	0.11	0.142	1.00	U	TH
Thorium 232	TH-232	0	0.037	0.142	1.00	U	TH
Uranium 233/234	U-233/234	0.030	0.061	0.231	1.00	U	U
Uranium 235	15117-96-1	0	0.073	0.280	1.00	U	U
Uranium 238	U-238	0.030	0.061	0.231	1.00	U	U
Plutonium 238	13981-16-3	-0.018	0.14	0.268	1.00	U	PU
Plutonium 239/240	PU-239/240	0	0.035	0.134	1.00	U	PU
Potassium 40	13966-00-2	U		280		U	GAM
Cobalt 60	10198-40-0	U		11.8	25.0	U	GAM
Cesium 137	10045-97-3	U		18.5	15.0	U	GAM
Radium 226	13982-63-3	U		23.8		U	GAM
Radium 228	15262-20-1	U		50.9		U	GAM
Europium 152	14683-23-9	U		29.2	50.0	U	GAM
Europium 154	15585-10-1	U		33.8	50.0	U	GAM
Europium 155	14391-16-3	U		36.0	50.0	U	GAM
Thorium 228	14274-82-9	U		36.7		U	GAM
Thorium 232	TH-232	U		50.9		U	GAM
Uranium 235	15117-96-1	U		50.8		U	GAM
Uranium 238	U-238	U		1320		U	GAM
Americium 241	14596-10-2	U		63.0		U	GAM
Beryllium 7	13966-02-4	U		75.4		U	GAM
Ruthenium 106	13967-48-1	U		91.7		U	GAM
Antimony 125	14234-35-6	U		28.0		U	GAM
Cesium 134	13967-70-9	U		14.4		U	GAM

ColumbiaRiverComp.ofRCBRA-Surf.Water

Lab id EBRLNE
Protocol Hanford1
Version Ver 1.0
Form DVD-DS
Version 3.06
Report date 01/08/09

7228-006 Method Blank

BLANK, cont.

SDG	7228	Client/Case no	Hanford	SDG K1401
Contact	Melissa C. Mannion	Contract	No. 800W235A00	
Lab sample id	R810171-06	Client sample id	Method Blank	
Dept sample id	7228-006	Material/Matrix		WATER
		SAF No	RC-115	

QC-BLANK 60010

Lab id	EBRLNE
Protocol	Hanford1
Version	Ver 1.0
Form	DVD-DG
Version	3.06
Report date	01/08/09

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP E1401

7226-005

Lab Control Sample

LAB CONTROL SAMPLE

SDG	7226	Client/Case no	Hanford SDG E1401
Contact	Melissa C. Mannion	Contract	NO. 0004715A00
Lab sample id	8810171-05	Client sample id	LAB Control Sample
Dept sample id	7226-005	Material/Matrix	WATER
		SAF NO	RC 115

ANALYTE	RESULT pCi/L	2σ ERR (COUNT)	MDA pCi/L	RDL pCi/L	QUALI-FIERS	TEST	ADDED pCi/L	2σ ERR pCi/L	REC %	3σ LMTS (TOTAL)	PROTOCOL LIMITS
Tritium	23700	1500	1560	400		H	25200	1000	94	82-118	80-120
Carbon 14	6910	190	57.9	200		C	7970	320	87	88-115	80-120
Total Strontium	18.6	0.94	0.439	2.00		SR	18.4	0.74	101	81-119	80-120
Technetium 99	1040	56	3.73	15.0		TC	1090	44	95	80-120	80-120
Thorium 230	21.3	2.0	0.160	1.00		TH	18.9	0.76	113	79-122	80-120
Uranium 233/234	18.7	0.88	0.205	1.00		U	18.5	0.74	100	85-115	80-120
Uranium 235	14.7	0.58	0.024	1.00		U	15.1	0.60	97	86-114	80-120
Uranium 238	20.2	0.77	0.271	1.00		U	20.2	0.81	100	86-114	80-120
Plutonium 238	21.3	2.1	0.192	1.00		PU	23.4	0.94	91	82-118	80-120
Plutonium 239/240	23.4	2.2	0.191	1.00		PU	26.4	1.1	89	82-118	80-120
Cobalt 60	839	34	16.5	26.0		GAM	838	33	100	86-114	80-120
Cesium 137	968	35	14.8	15.0		GAM	920	37	106	86-114	80-120

ColumbiaRiver/Temp.ofPCBRA-Surf.Water

QA-LCS 68017

LAB CONTROL SAMPLES
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Page 11

Lab id	EBRLSB
Protocol	Hanford1
Version	Ver 1.0
Form	DVD-LCS
Version	3.06
Report date	01/08/99

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1401

7228-007

J17X46

DUPLICATE

SDG	7228			Client/Case no	Hanford SDG K1401
Contact	Melissa C. Mannion			Contract	NO. 300M235A00
DUPLICATE		ORIGINAL			
Lab sample id	R810171-07	Lab sample id	R810171-01	Client sample id	J17X50
Dept sample id	7228-007	Dept sample id	7228-001	Location/Matrix	WBT-18P WATER
		Received	10/21/08	Collected/Volume	10/17/08 14:10 5.25 L
				Custody/SAF No	EC-115 1 EC-115

ANALYTE	DUPLICATE pCi/L	2σ ERR (COUNT)	MDA pCi/L	RDL pCi/L	QUALI-FIERS	TEST	ORIGINAL pCi/L	2σ ERR (COUNT)	MDA pCi/L	QUALI-FIERS	RPD %	3σ TPU	DER σ
Tritium	60.6	94	154	400	U	H	72.4	94	157	U	-		0.3
Carbon 14	10.1	36	57.4	200	U	C	4.37	35	58.6	U			0.6
Total Strontium	0.070	0.26	0.510	2.00	U	SR	0.184	0.25	0.461	U	-		0.7
Technetium 99	-0.416	3.4	5.65	15.0	U	TC	0.277	3.0	5.01	U			0.5
Thorium 228	0.035	0.14	0.269		U	TH	0.016	0.080	0.145	U	-		0.2
Thorium 230	0.105	0.11	0.134	1.00	U	TH	0.330	0.13	0.120		71	158	1.3
Thorium 232	0	0.035	0.134	1.00	U	TH	0	0.012	0.120	U			0
Uranium 233/234	2.87	0.33	0.050	1.00		U	2.41	0.17	0.046		17	23	2.3
Uranium 235	0.168	0.055	0.030	1.00		U	0.158	0.046	0.025		27	64	0.8
Uranium 238	2.47	0.30	0.043	1.00		U	2.10	0.16	0.019		16	24	2.1
Plutonium 238	0.017	0.14	0.259	1.00	U	PU	0.049	0.099	0.236	U			0.4
Plutonium 239/240	-0.017	0.034	0.129	1.00	U	PU	0.026	0.049	0.188	U	-		1.4
Potassium 40	U		434		U	GAM	U		438	U	-		2.0
Cobalt 60	U		10.9	25.0	U	GAM	U		12.6	U	-		0.1
Cesium 137	U		15.9	15.0	U	GAM	U		25.9	U	-		0.8
Radium 226	U		36.3		U	GAM	U		45.0	U	-		0.4
Radium 228	U		49.7		U	GAM	U		59.7	U	-		0.2
Europium 152	U		44.9	50.0	U	GAM	U		38.2	U	-		0.2
Europium 154	U		46.2	60.0	U	GAM	U		36.9	U			0.4
Europium 155	U		16.9	50.0	U	GAM	U		44.9	U	-		0.3
Thorium 228	U		24.7		U	GAM	U		23.2	U	-		0.1
Thorium 232	U		49.7		U	GAM	U		59.3	U	-		0.2
Uranium 235	U		62.5		U	GAM	U		44.3	U	-		0.1
Uranium 238	U		1940		U	GAM	U		1440	U	-		0.4
Americium 241	U		17.2		U	GAM	U		93.0	U			1.5
Beryllium 7	U		161		U	GAM	U		133	U	-		0.4
Ruthenium 106	U		130		U	GAM	U		113	U	-		0.2
Antimony 125	U		17.7		U	GAM	U		31.0	U	-		0.3

ColumbiaRiverComp,CERCLA-Surf.Water

DUPLICATES
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Page 12

Lab id EBERLINE
Protocol Hanford1
Version Ver. 1.0
Form DVD-DUP
Version 3.06
Report date 01/09/09

DUPLICATE, cont.

SDG	7228
Contact	Melissa C. Manning

	DUPLICATE		ORIGINAL
Lab sample id	S810171-07	Lab sample id	S810171-01
Dept sample id	7228-007	Dept sample id	7228-001
		Received	10/21/08

Client/Case no	Hanford	SDG K1401
Contract	NO. 8004W235A00	
Client sample id	J17E50	
Location/Matrix	WBT-LOW	WATER
Collected/volume	10/17/08 18:30	8.25 L
Custody/SAF No	RC-118-2	RC-118

ANALYTE	DUPLICATE pCi/L	2σ ERR (COUNT)	MDA pCi/L	RDL pCi/L	QUALI-FIERS	TEST	ORIGINAL pCi/L	2σ ERR (COUNT)	MDA pCi/L	QUALI-FIERS	RPD %	3σ TOT	DER σ
Cesium 134	U		21.3		U	GAM	U		18.4	U	-		0.4

ColumbiaRiverComp.ofRCBRA-Surf.wate.

QC-DUP#1 sample

Lab id	EBERLINE
Protocol	Hanford1
Version	Ver 1.0
Form	DVD-DUP
Version	3.06
Report date	01/08/09

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1401

7220-008

J17E50

MATRIX SPIKE

SDG 7220

Contact Melissa C. Mannion

MATRIX SPIKE

Lab sample id N810171-08

Dept sample id 7220-008

ORIGINAL

Lab sample id N810171-01

Dept sample id 7220-001

Received 10/21/08

Client/Case no Hanford SDG K1401

Contract No. S00M2135A00

Client sample id J17E50

Location/Matrix WRT-1?? WATER

Collected/Volume 10/17/08 15:10 5.35 L

Custody/SAF No BC-115-2 BC 115

ANALYTE	SPIKE pCi/L	2σ ERR (COUNT)	MDA pCi/L	RDL pCi/L	QUALIFIERS	TEST	ADDED pCi/L	2σ ERR pCi/L	ORIGINAL pCi/L	2σ ERR (COUNT)	REC %	3σ LMTS (TOTAL)	PROTOCOL LIMITS
Tritium	24300	410	157	400	X	H	25600	1000	12.4	94	95	84-110	60-140
Carbon 14	24000	270	90.2	200	X	C	23900	960	3.37	35	100	84-116	60-140

ColumbiaRiverComp.nfwComp-surf Water

QC-MS#1 44030

MATRIX SPIKED
Page 1
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Lab id EBERLINE
Protocol Hanford
Version Ver 1.0
Form DVD-MS
Version 3.06
Report date 01/08/09

Date: 13 April 2009
To: Washington Closure Hanford (technical representative)
From: ELR Consulting
Project: Columbia River Component of the RCBRA – Surface Water
Subject: Wet Chemistry - Data Package No. K1401-LLI

INTRODUCTION

This memo presents the results of data validation on Data Package No. K1401 prepared by Lionville Laboratory Inc. (LLI). A list of samples validated along with the analyses reported and the method of analysis is provided in the following table.

Sample ID	Sample Date	Media	Validation	Date
J17K50	10/17/08	Water	C	See note 1
J17K51	10/17/08	Water	C	See note 1
J17K52	10/17/08	Water	C	See note 1
J17K67	10/17/08	Water	C	See note 1

1 – Alkalinity by 310.1, hardness by 130.2 and soluble organic carbon by 415.1
* - Sample temperature not validated per WCH.

Data validation was conducted in accordance with the Washington Closure Hanford (WCH) validation statement of work and the Remedial Investigation Work Plan for Hanford Site Releases to the Columbia River (DOE/RL-2008-112, Rev. 0, September 2008). Appendices 1 through 6 provide the following information as indicated below:

Appendix 1. Glossary of Data Reporting Qualifiers
Appendix 2. Summary of Data Qualification
Appendix 3. Qualified Data Summary and Annotated Laboratory Reports
Appendix 4. Laboratory Narrative and Chain-of-Custody Documentation
Appendix 5. Data Validation Supporting Documentation
Appendix 6. Additional Documentation Requested by Client

DATA QUALITY PARAMETERS

- **Holding Times**

Analytical holding times for metals are assessed to ascertain whether the holding time requirements were met by the laboratory. The holding time requirements are as follows: Samples must be analyzed within 6 months for hardness, 28 days for soluble organic carbon and 14 days for alkalinity.

If holding times are exceeded, but not by greater than two times the limit, all associated sample results are qualified as estimates and flagged "J" for detects and "UJ" for non-detects. If holding times are exceeded by greater than two times the limit, all associated detectable sample results are qualified as estimates and flagged "J" and all non-detects are rejected and flagged "UR".

Due to the holding time being exceeded by less than twice the limit, the SOC result in sample J17K67 was qualified as an estimate and flagged "J".

All other holding times were acceptable.

- **Method Blanks**

Method Blanks

Method blank analyses are performed to determine the extent of laboratory contamination introduced through sampling, sample preparation and analysis. At least one acceptable method blank analysis must be conducted for every 20 samples. No contaminants should be present in the method blank. All blank results must fall below the contract required detection limit (CRQL) to be acceptable.

All method blank results were acceptable.

Field (Equipment) Blank

No field blanks were submitted for analysis.

- **Accuracy**

Matrix Spike and Laboratory Control Sample

Matrix spike (MS) and laboratory control sample (LCS) analyses are used to assess the analytical accuracy of the reported data. The matrix spike is used to assess the effect of the matrix on the ability to accurately quantify sample concentrations. Recoveries must fall within the range of 70% to 130%. Samples with a recovery of less than 30% and a sample result below the IDL are rejected and flagged "UR". Samples with a recovery of 30% to 69% and a sample result less than the IDL are qualified "UJ". Samples with a recovery of greater than 130% or less than 70% and a sample result greater than the IDL are qualified as estimates and flagged "J". Finally, for samples with a recovery greater than 130% and a sample result less than the IDL, no qualification is required.

Due to the lack of a matrix spike analysis, all alkalinity results were qualified as estimates and flagged "J".

All other accuracy results were acceptable.

- **Precision**

Laboratory Duplicate Samples

Analytical precision is expressed by the relative percent differences (RPD) between the recoveries of matrix spike duplicate (MSD) analyses performed on a sample in the analytical batch. Precision may alternatively be assessed using unspiked duplicate analyses perfomed on a sample in the analytical batch. If both sample and replicate activities (concentrations) are greater than five times the CRDL and the RPD is less than 20%, no qualification is required. If either activity (concentration) is less than five times the CRDL, the RPD control limit is less than or equal to two times the CRDL. If the RPD is outside the applicable control limit, associated results are qualified as estimated detects or estimated non-detects.

All laboratory duplicate results were acceptable.

Field Duplicate

One set of field duplicates (J17K52/J17K67) were submitted for analysis. Laboratory duplicates are compared using the same criteria as for laboratory duplicates. The RPD for SOC (154%) was outside QC limits. Under the WCH statement of work, no qualification is required. All other field duplicate results were acceptable.

- **Analytical Detection Levels**

Reported analytical detection levels are compared against the required quantitation limits (RQLs) to ensure that laboratory detection levels meet the required criteria. All analytes met the RQL.

- **Completeness**

Data package No. K1401 was submitted for validation and verified for completeness. Completeness is based on the percentage of data determined to be valid (i.e., not rejected). The completion percentage was 92%

MAJOR DEFICIENCIES

None found.

MINOR DEFICIENCIES

The following minor deficiencies were noted:

- Due to the holding time being exceeded by less than twice the limit, the SOC result in sample J17K67 was qualified as an estimate and flagged "J".

- Due to the lack of a matrix spike analysis, all alkalinity results were qualified as estimates and flagged "J".

Data flagged "J" indicates that the associated concentration is an estimate, but under the WCH statement of work, the data may be usable for decision-making purposes. All other validated results are considered accurate within the standard error associated with the methods.

REFERENCES

Washington Closure Hanford Contract #S00W307A00 (March 2008). *Data Validation Services*, March 2008.

DOE/RL-2008-11, Rev.0, *Remedial Investigation Work Plan for Hanford Site Releases to the Columbia River*, September 2008.

Appendix 1

Glossary of Data Reporting Qualifiers

Qualifiers which may be applied by data validators in compliance with WCH validation SOW are as follows:

U - Indicates the compound or analyte was analyzed for and not detected in the sample. The value reported is the sample quantitation limit corrected for sample dilution and moisture content by the laboratory.

UJ - Indicates the compound or analyte was analyzed for and not detected in the sample. Due to a minor QC deficiency identified during the data validation, the associated quantitation limit is an estimate.

J - Indicates the compound or analyte was analyzed for and detected. Due to a minor QC deficiency identified during the data validation, the associated concentration is an estimate, but the data are usable for decision-making purposes.

BJ - Applied to inorganic analyses only. Indicates the analyte concentration was greater than the IDL but less than the CRDL and is considered an estimated value.

R - Indicates the compound or analyte was analyzed for, detected, and due to an identified major QC deficiency, the data are unusable.

UR - Indicates the compound or analyte was analyzed for and not detected in the sample. Additionally, the data is unusable due to an identified major QC deficiency.

NJ - Indicates presumptive evidence of a compound at an estimated value. The data may not be valid for some specific applications (i.e., usable for decision-making purposes).

N - Indicates presumptive evidence of a compound. The data may not be valid for some specific applications (i.e., usable for decision-making purposes).

Appendix 2

Summary of Data Qualification

WET CHEMISTRY DATA QUALIFICATION SUMMARY*

SDG: K1401	**REVIEWER:** **ELR**	**Project:** **RCBRA**	**PAGE 1 OF 1**
COMPOUND	QUALIFIER	SAMPLES AFFECTED	REASON
SOC	J	J17K67	Hold time
Alkalinity	J	All	No MS analysis

* - The Qualified Data Summary Table includes laboratory applied "U" qualifiers not specifically identified here. The laboratory applied "U" qualifiers are included to minimize misinterpretation of results contained in the table.

Appendix 3

Qualified Data Summary and Annotated Laboratory Reports

Lionville Laboratory, Inc.

INORGANICS DATA SUMMARY REPORT 12/08/08

CLIENT: WC-HANFORD RC-11x K1401 LVL LOT #: 0810L105
WORK ORDER: L0049 001-001-0001-00

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
002	J17K51	Alkalinity	211 J	MG/L	2.0	1.0
		Hardness	208	MG/L	2.0	1.0
		Soluble Organic Carbon	3.1	MG/L	0.50	1.0
-004	J17K53	Alkalinity	266 J	MG/L	2.0	1.0
		Hardness	245	MG/L	2.0	1.0
		Soluble Organic Carbon	14.1	MG/L	0.50	1.0
006	J17K57	Alkalinity	263 J	MG/L	2.0	1.0
		Hardness	277	MG/L	2.0	1.0
		Soluble Organic Carbon	1.8 J	MG/L	0.50	1.0
-008	J17K59	Alkalinity	206 J	MG/L	2.0	1.0
		Hardness	225	MG/L	2.0	1.0
		Soluble Organic Carbon	2.1	MG/L	0.50	1.0

K 5/20/09

Appendix 4

Laboratory Narrative and Chain-of-Custody Documentation

LvLI
LIONVILLE LABORATORY INC.

Analytical Report

Client: WC-HANFORD RC-115 K1401
LVL#: 08101.109

W.O.#: 60049-001-001-0001-00
Date Received: 10-21-08

INORGANIC NARRATIVE

1. This narrative covers the analyses of 4 water samples.

2. The samples were prepared and analyzed in accordance with the methods checked on the attached glossary. On the Inorganic Data Summary Report, Soluble Organic Carbon represents the client requested Dissolved Organic Carbon (DOC).

   Lionville Lab (LvL) is NELAP accredited by the State of Pennsylvania. For a complete list of accrediting authorities and the corresponding analytes/methods, please contact your Project Manager. LvL certifies that all test results meet the requirements of NELAC with any exception noted in the following statements.

3. Sample holding times as required by the method and/or contract were met with the exception of DOC for sample J17R67 due to a logging error.

4. The results presented in this report are derived from samples that met LvL's sample acceptance policy with the exception of DOC as noted on the Sample Receipt Checklist.

5. The method blanks were within the method criteria.

6. The Laboratory Control Samples (LCS) were within the laboratory control limits. The duplicate LCS were within the 20% Relative Percent Difference (RPD) control limit.

7. The matrix spike recoveries were within the 75-125% control limits.

8. The replicate analyses were within the 20% RPD control limit.

9. I certify that this sample data package is in compliance with SOW requirements, both technically and for completeness, other than the conditions detailed above. Release of the data contained in this hard copy package has been authorized by the Laboratory Manager or a designee, as verified by the following signature.

Judy Stone
Iain Daniels
Laboratory Manager
Lionville Laboratory

12/9/08
Date

agw16 104

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

lector Van Strykoff	Company Contact Joan Kessner	Telephone No. 373-4681	Project Coordinator WEISS, RL
Price Code 7K	Data Turnaround 45 Days		
ject Designation Columbia River Component of the RCBRA - Surface Water	Sampling Location WBW-15W		SAF No. RC-113
Chest No. WCH-08-010, 012, 014, 017	Field Logbook No. EL-1630	COA BESCRC6320	Method of Shipment FED EX
pped To EBERLINE SERVICES (LIONVILLE)	Offsite Property No.		Bill of Lading/Air Bill No. 792773338820

OSSIBLE SAMPLE HAZARDS/REMARKS

ecial Handling and/or Storage

000013

			Preservation	HNO3 to pH <2	Cool 4°C ~~HNO3 to pH <2~~	Cool 4C	Cool 4°C ~~[illegible]~~	HNO3 or H2SO4 to pH	Cool 4C	Cool 4C	HCl or H2SO4 to pH <2 Cool	Cool 4C	HCl to pH<2 Cool 4C
			Type of Container	G/P	G/P	G/P	aG	G/P	aG	aG	aGs	aG	aG
			No. of Container(s)	1	1	1	1	1	4	4	3	2	3
			Volume	500mL	500mL	250mL	125mL	250mL	1000mL	1000mL	40mL	1000mL	1000mL
SAMPLE ANALYSIS				See item (1) in Special Instructions.	FILTERED ICP Metals - 6010TR; FILTERED Mercury - 7470	Alkalinity - 310.1	Dissolved Organic Carbon - 415.1M	Hardness - 130.2	PCBs - 8082	Pesticides - 8081	See item (2) in Special Instructions.	Semi-VOA - 8270A (TCL)	TPH-Diesel Range - WTPH-D+
Sample No.	Matrix *	Sample Date	Sample Time										
7K51	WATER	10/17/08	1320	X		X	X	X	X	X	X	X	X
7K58	WATER	10/17/08	1320		X								

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Van Strykoff	10/17/08 2055	Ref. C	10/17/08 2055
Ref. C	10/20/08 1037	Kim Royal Kim Royal	10/20/08 1037
Kim Royal Kim Royal	10/20/08 1321	Fed EX	10/20/08 1321
Fed Ex	10/21/08 0925		10-21-08 0925

SPECIAL INSTRUCTIONS

(1) ICP Metals - 6010TR (Clean List) {Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Titanium, Uranium, Vanadium, Zinc}; Mercury - 7470 - {CV}

(2) VOA - 8260A (TCL) {1,1,1-Trichloroethane, 1,1,2,2-Tetrachloroethane, 1,1,2-Trichloroethane, 1,1-Dichloroethane, 1,1-Dichloroethene, 1,2-Dichloroethane, 1,2-Dichloropropane, 2-Butanone, 2-Hexanone, 4-Methyl-2-Pentanone, Acetone, Benzene, Bromodichloromethane, Bromoform, Bromomethane, Carbon disulfide, Carbon tetrachloride, Chlorobenzene, Chloroethane, Chloroform, Chloromethane, cis-1,2-Dichloroethylene, cis-1,3-Dichloropropene, Dibromochloromethane, Ethylbenzene, Methylene chloride, Styrene, Tetrachloroethene, Toluene, trans-1,2-Dichloroethylene, trans-1,3-Dichloropropene, Trichloroethene, Vinyl chloride, Xylenes (total)}

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab.

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

ABORATORY SECTION	Received By	Title	Date/Time
NAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

CH-EE-011

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

ler Ian Stupakoff	Company Contact Joan Kessner	Telephone No. 375-4688	Project Coordinator WEISS, RL	Price Code 7K
lect Designation Columbia River Component of the RCBRA - Surface Water	Sampling Location RO-13W		SAF No. RC-115	Data Turnaround 45 Days
Chest No. WCH-08-010,012,014,017	Field Logbook No. EL-1630	COA BESCRO6520	Method of Shipment FED EX	
Ioned To EBERLINE SERVICES [✓ LIONVILLE]	Offsite Property No.		Bill of Lading/Air Bill No. 792773338820	

OSSIBLE SAMPLE HAZARDS/REMARKS

pecial Handling and/or Storage

000014

Sample No.	Matrix *	Sample Date	Sample Time										
			Preservation	HNO3 to pH <2	Cool 4C ~~HNO3 to pH <2~~	Cool 4C	Cool 4C ~~H2SO4 to pH <2 Cool~~	HNO3 or H2SO4 to pH	Cool 4C	Cool 4C	HCl or H2SO4 to pH <2 Cool	Cool 4C	HCl to pH <2 Cool 4C
			Type of Container	G/P	G/P	G/P	aG	G/P	aG	aG	aG*	aG	aG
			No. of Container(s)	1	1	1	1	1	4	4	2	2	3
			Volume	500mL	500mL	150mL	125mL	250mL	1000mL	1000mL	40mL	1000mL	1000mL
			SAMPLE ANALYSIS	See item (1) in Special Instructions.	FILTERED ICP Metals - 6010TR; FILTERED Mercury - 7470	Alkalinity - 310.1	Dissolved Organic Carbon - 415.1M	Hardness - 130.2	PCBs - 8082	Pesticides - 8081	See item (2) in Special Instructions.	Semi-VOA - 8270A (TCL)	TPH Diesel Range - WTPH-D +
7K52	WATER	10/17/08	0952	X		X	X	X	X	X	X	X	X
7K59	WATER	10/17/08	0952		X								

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
	10/17/08 2055	REF. B	10/17/08 2055
REF B	10/20/08 1130	Kim Boyd Kim Boyd	10/20/08 1130
Kim Boyd Kim Boyd	10/20/08 1321	Fed EX	10/20/08 1321
Fed Ex	10/21/08 0925		10/21/08 0925

SPECIAL INSTRUCTIONS

(1) ICP Metals - 6010TR (Client List) [Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Titanium, Uranium, Vanadium, Zinc]; Mercury - 7470 - (CV)
(2) VOA - 8260A (TCL) [1,1,1-Trichloroethane, 1,1,2,2-Tetrachloroethane, 1,1,2-Trichloroethane, 1,1-Dichloroethane, 1,1-Dichloroethene, 1,2-Dichloroethane, 1,2-Dichloropropane, 2-Butanone, 2-Hexanone, 4-Methyl-2-Pentanone, Acetone, Benzene, Bromodichloromethane, Bromoform, Bromomethane, Carbon disulfide, Carbon tetrachloride, Chlorobenzene, Chloroethane, Chloroform, Chloromethane, cis-1,2-Dichloroethylene, cis-1,3-Dichloropropene, Dibromochloromethane, Ethylbenzene, Methylene chloride, Styrene, Tetrachloroethene, Toluene, trans-1,2-Dichloroethylene, trans-1,3-Dichloropropene, Trichloroethene, Vinyl chloride, Xylenes (total)]

Samples unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab.

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

ABORATORY SECTION	Received By	Title	Date/Time
INAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

000000016

llector Lorn STUPAKOFF	Company Contact Joan Kessner	Telephone No. 375-4688	Project Coordinator WEISS, RL
Price Code 7K		Data Turnaround 45 Days	
oject Designation Columbia River Component of the RCBRA - Surface Water	Sampling Location RG-1SW		SAF No. RC-115
Chest No. WCH-08-010, 012, 014, 017	Field Logbook No. EL-1630	COA BESCRC6520	Method of Shipment FED EX
ipped To EBERLINE SERVICES/ [✓ LIONVILLE]	Offsite Property No.		Bill of Lading/Air Bill No. 792773338820

OSSIBLE SAMPLE HAZARDS/REMARKS

pecial Handling and/or Storage

0000015

Preservation	HNO3 to pH <2	None	Cool 4C	Cool 4C	HNO3 or H2SO4 to pH	Cool 4C	Cool 4C	HCl or H2SO4 to pH <2 Cool	Cool 4C	HCl to pH <2 Cool 4C
Type of Container	G/P	G/P	G/P	G	G/P	aG	aG	aGs*	aG	aG
No. of Container(s)	1	1	1	1	1	4	4	1 ~~2~~ LS 10/17/08	2	3
Volume	500mL	500mL	250mL	125mL	250mL	1000mL	1000mL	40mL	1000mL	1000mL
SAMPLE ANALYSIS	See Item (1) in Special Instructions.	FILTERED ICP Metals - 6010TR; FILTERED Mercury - 7470	Alkalinity - 310.1	Dissolved Organic Carbon - 415.1M	Hardness - 130.2	PCBs - 8082	Pesticides - 8081	See Item (2) in Special Instructions.	Semi-VOA - 8270A (TCL)	TPH Diesel Range - WTPH-D +

Sample No.	Matrix *	Sample Date	Sample Time										
17R87	WATER	10/17/08	1040	X		X	X	X	X	X	X	X	X
17R88	WATER	10/17/08	1040		X								

CHAIN OF POSSESSION Sign/Print Names

inquished By/Removed From L. SL [illegible]	Date/Time 10/17/08 2055	Received By/Stored In Ref. C	Date/Time 10/17/08 2055
inquished By/Removed From Ref. C	Date/Time 10/20/08	Received By/Stored In Kim Royal Kim Royal	Date/Time 10/20/08 1205
inquished By/Removed From Kim Royal Kim Royal	Date/Time 10/20/08 1521	Received By/Stored In Fed EX	Date/Time 10/20/08 1521
inquished By/Removed From Fed Ex	Date/Time 10/21/08 0940	Received By/Stored In	Date/Time 10-21-08 0940
inquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
inquished By/Removed From	Date/Time	Received By/Stored In	Date/Time

SPECIAL INSTRUCTIONS

(1) ICP Metals - 6010TR (Client List) (Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Titanium, Uranium, Vanadium, Zinc); Mercury - 7470 - (CV)

(2) VOA - 8260A (TCL) (1,1,1-Trichloroethane, 1,1,2,2-Tetrachloroethane, 1,1,2-Trichloroethane, 1,1-Dichloroethane, 1,1-Dichloroethene, 1,2-Dichloroethane, 1,2-Dichloropropane, 2-Butanone, 2-Hexanone, 4-Methyl-2-Pentanone, Acetone, Benzene, Bromodichloromethane, Bromoform, Bromomethane, Carbon disulfide, Carbon tetrachloride, Chlorobenzene, Chloroethane, Chloroform, Chloromethane, cis-1,2-Dichloroethylene, cis-1,3-Dichloropropene, Dibromochloromethane, Ethylbenzene, Methylenechloride, Styrene, Tetrachloroethene, Toluene, trans-1,2-Dichloroethylene, trans-1,3-Dichloropropene, Trichloroethene, Vinyl chloride, Xylenes (total))

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab.

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

ABORATORY SECTION	Received By	Title	Date/Time
INAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

CH-EE-011

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

ector Kyl Stuerkoff	Company Contact John Kessner	Telephone No. 375-4688	Project Coordinator WEISS, RL	Price Code 7K
ject Designation Columbia River Component of the RCBRA - Surface Water	Sampling Location WBT-1SW		SAF No. RC-115	Data Turnaround 45 Days
Chart No. WCH-08-010, 012, 014, 017	Field Logbook No. EL-1630	COA BBSCRC6520	Method of Shipment FED EX	
ped To EBERLINE SERVICES [✓ LIONVILLE]	Offsite Property No.		Bill of Lading/Air Bill No. 792173338820	

SSIBLE SAMPLE HAZARDS/REMARKS

ecial Handling and/or Storage

Preservation	HNO3 to pH <2	Cool 4 C Ag HNO3	Cool 4C	Cool 4 C Adjusted	HNO3 or H2SO4 to pH <2	Cool 4C	Cool 4C	HCl or H2SO4 to pH <2 Cool 4C	Cool 4C	HCl to pH<2 Cool 4C
Type of Container	G/P	G/P	G/P	aG	G/P	aG	aG	aGs*	aG	aG
No. of Container(s)	1	1	1	1	1	4	4	3	2	3
Volume	500mL	500mL	250mL	125mL	250mL	1000mL	1000mL	40mL	1000mL	1000mL
SAMPLE ANALYSIS	See item (1) in Special Instructions.	FILTERED ICP Metals - 6010TR; FILTERED Mercury - 7470	Alkalinity - 310.1	Dissolved Organic Carbon - 415.1M	Hardness - 130.2	PCBs - 8082	Pesticides - 8081	See item (2) in Special Instructions.	Semi-VOA - 8270A (TCL)	TPH-Diesel Range - WTPH-D +

Sample No.	Matrix *	Sample Date	Sample Time										
K50	WATER	10/17/08	1210	X		X	X	X	X	X	X	X	X
K57	WATER	10/17/08	1210		X								

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
SL Koffman	10/17/08 2055	REF. B	10/17/08 2055
REF. B	10/20/08 1007	Kim Royal Kim Royal	10/20/08 1007
Kim Royal Kim Royal	10/20/08 1321	Fed Ex	10/20/08 1321
Fed Ex	10/21/08 0925		10/21/08 0925

SPECIAL INSTRUCTIONS

(1) ICP Metals - 6010TR (Client List) {Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Titanium, Uranium, Vanadium, Zinc}; Mercury - 7470 - (CV)

(2) VOA - 8260A (TCL) {1,1,1-Trichloroethane, 1,1,2,2-Tetrachloroethane, 1,1,2-Trichloroethane, 1,1-Dichloroethane, 1,1-Dichloroethene, 1,2-Dichloroethane, 1,2-Dichloropropane, 2-Butanone, 2-Hexanone, 4-Methyl-2-Pentanone, Acetone, Benzene, Bromodichloromethane, Bromoform, Bromomethane, Carbon disulfide, Carbon tetrachloride, Chlorobenzene, Chloroethane, Chloroform, Chloromethane, cis-1,2-Dichloroethylene, cis-1,3-Dichloropropene, Dibromochloromethane, Ethylbenzene, Methylenechloride, Styrene, Tetrachloroethene, Toluene, trans-1,2-Dichloroethylene, trans-1,3-Dichloropropene, Trichloroethene, Vinyl chloride, Xylenes (total)}

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab.

Matrix *

S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

BORATORY SECTION	Received By	Title	Date/Time
AL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

000016

000000017

Lionville Laboratory Incorporated

SAMPLE RECEIPT CHECKLIST (SRC)

CLIENT: WC HANFORD
Project/[✓ SAF]/SOW/Release #: RC-115
Date: 10/21/08

LvLI Batch #: 0810L109
Sample Custodian:

NOTE: EXPLAIN ALL DISCREPANCIES

1. Samples Hand Delivered or [✓ Shipped] Carrier Fed Ex Airbill # 7939 7363 3649 7927 7333 9920 7977 4825 5263 7921 2970 1372

2. Custody Seals on coolers or shipping containers intact, signed & dated? ☑ Yes ☐ No ☐ No Seals

3. Outside of coolers or shipping containers are free from damage? ☑ Yes ☐ No Comments:

4. All expected paperwork received (coc & other client specific information) sealed in plastic bag and easily accessible? ☑ Yes ☐ No

5. Samples received cooled or ambient? Temp 2.9° 2.3 2.5 2.4° °C Cooler # WCH-08-010 WCH-08-012 WCH-08-014 WCH-08-017

How was the temperature taken? ☑ IR ☐ Temp. Blank ☐ Other (Specify):

Is the Temp. Criteria met for these samples? (Hg in soils @ 4°C) ☑ Yes ☐ No

6. Custody seals on sample containers intact, signed and dated? ☑ Yes ☐ No ☐ No Seals

7. COC (Client & LvLI) signed & dated? ☑ Yes ☐ No

8. Sample containers are intact? ☑ Yes [illegible] ☐ No

9. All samples on COC received? ☐ Yes ☑ No #006 DOC NOT Rec'd Rec'd one
All samples received on COC? ☐ Yes ☐ No EACH W/ED J17K49

10. All sample label information matches COC? ☑ Yes ☐ No

11. Samples properly preserved? (If #5 is no, then this is no.) ☑ Yes ☐ No

12. Samples received within hold times? ☑ Yes ☐ No
Short holds taken to wet lab? ☐ Yes ☐ No ☑ N/A

13. VOA, TOC, TOX free of headspace? (DOC) ☐ Yes ☐ No ☐ N/A Head Space

14. QC stickers placed on bottles designated by client? ☐ Yes ☐ No ☑ N/A

15. Shipment meets LvLI Sample Acceptance Policy? (Identify all bottles that do not meet the policy, which is on the reverse of this page.) ☐ Yes ☑ No

16. Project Manager contacted concerning any discrepancies? ☑ Yes ☐ No ☐ N/A
Person Contacted O-JOHNSON Date 10-21-08

LvLI

Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
WC-HANFORD RC-115 K1401

DATE RECEIVED: 10/21/08

LVL LOT # :0810L109

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
J17K51						
ALKALINITY	002	W	08LAKA33	10/17/08	10/22/08	10/22/08
ALKALINITY	002 REP	W	08LAKA33	10/17/08	10/22/08	10/22/08
HARDNESS	002	W	08LHD004	10/17/08	10/24/08	10/24/08
HARDNESS	002 REP	W	08LHD004	10/17/08	10/24/08	10/24/08
HARDNESS	002 MS	W	08LHD004	10/17/08	10/24/08	10/24/08
SOLUBLE ORGANIC CARB	002	W	08LTC021	10/17/08	11/05/08	11/05/08
SOLUBLE ORGANIC CARB	002 REP	W	08LTC021	10/17/08	11/05/08	11/05/08
SOLUBLE ORGANIC CARB	002 MS	W	08LTC021	10/17/08	11/05/08	11/05/08
J17K52						
ALKALINITY	004	W	08LAKA33	10/17/08	10/22/08	10/22/08
HARDNESS	004	W	08LHD004	10/17/08	10/24/08	10/24/08
SOLUBLE ORGANIC CARB	004	W	08LTC021	10/17/08	11/05/08	11/05/08
J17R67						
ALKALINITY	006	W	08LAKA33	10/17/08	10/22/08	10/22/08
HARDNESS	006	W	08LHD004	10/17/08	10/24/08	10/24/08
SOLUBLE ORGANIC CARB	006	W	08LTC026	10/17/08	12/02/08	12/02/08
SOLUBLE ORGANIC CARB	006 REP	W	08LTC026	10/17/08	12/02/08	12/02/08
SOLUBLE ORGANIC CARB	006 MS	W	08LTC026	10/17/08	12/02/08	12/02/08
J17K50						
ALKALINITY	008	W	08LAKA33	10/17/08	10/22/08	10/22/08
HARDNESS	008	W	08LHD004	10/17/08	10/24/08	10/24/08
SOLUBLE ORGANIC CARB	008	W	08LTC021	10/17/08	11/05/08	11/05/08

LAB QC:

ALKALINITY	MB1	W	08LAKA33	N/A	10/22/08	10/22/08
ALKALINITY	MB1 BS	W	08LAKA33	N/A	10/22/08	10/22/08
ALKALINITY	MB1 BSD	W	08LAKA33	N/A	10/22/08	10/22/08
HARDNESS	MB1	W	08LHD004	N/A	10/24/08	10/24/08

Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
WC-HANFORD WC-115 K1401

DATE RECEIVED: 10/21/08 LVL LOT # :0810L109

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
HARDNESS	MB1 BS	W	08LHD004	N/A	10/24/08	10/24/08
HARDNESS	MB1 BSD	W	08LHD004	N/A	10/24/08	10/24/08
SOLUBLE ORGANIC CARB	MB1	W	08LTC021	N/A	11/05/08	11/05/08
SOLUBLE ORGANIC CARB	MB1 BS	W	08LTC021	N/A	11/05/08	11/05/08
SOLUBLE ORGANIC CARB	MB1	W	08LTC026	N/A	12/02/08	12/02/08
SOLUBLE ORGANIC CARB	MB1 BS	W	08LTC026	N/A	12/02/08	12/02/08

Appendix 5

Data Validation Supporting Documentation

GENERAL CHEMISTRY ANALYSIS DATA VALIDATION CHECKLIST

VALIDATION LEVEL:	A	B	[✓ C]	D	E

PROJECT: RCBRA	DATA PACKAGE: K1401

VALIDATOR: ELR	LAB: LLI	DATE: 4/5/09

	SDG: K1401

ANALYSES PERFORMED					
Anions/IC	TOC	TOX	TPH-418.1	Oil and Grease	[✓ Alkalinity]
Ammonia	BOD/COD	Chloride	Chromium-VI	pH	NO_3/NO_2
Sulfate	TDS	TKN	Phosphate	[✓ SOC]	

SAMPLES/MATRIX

J17K51 J17K52 J17K67 J17K50

water

1. DATA PACKAGE COMPLETENESS AND CASE NARRATIVE

Technical verification documentation present? .... Yes [✓ No] N/A

Comments:

2. INSTRUMENT PERFORMANCE AND CALIBRATIONS (Levels D and E)

Initial calibrations performed on all instruments? .... Yes No [✓ N/A]

Initial calibrations acceptable? .... Yes No [✓ N/A]

ICV and CCV checks performed on all instruments? .... Yes No [✓ N/A]

ICV and CCV checks acceptable? .... Yes No [✓ N/A]

Standards traceable? .... Yes No [✓ N/A]

Standards expired? .... Yes No [✓ N/A]

Calculation check acceptable? .... Yes No [✓ N/A]

Comments:

GENERAL CHEMISTRY ANALYSIS DATA VALIDATION CHECKLIST

3. BLANKS (Levels B, C, D, and E)

ICB and CCB checks performed for all applicable analyses? (Levels D, E).......... Yes No [✓ N/A]
ICB and CCB results acceptable? (Levels D, E).......... Yes No [✓ N/A]
Laboratory blanks analyzed?.......... [✓ Yes] No N/A
Laboratory blank results acceptable?.......... [✓ Yes] No N/A
Field blanks analyzed? (Levels C, D, E).......... Yes [✓ No] N/A
Field blank results acceptable? (Levels C, D, E).......... Yes No [✓ N/A]
Transcription/calculation errors? (Levels D, E).......... Yes No [✓ N/A]
Comments: no FB

4. ACCURACY (Levels C, D, and E)

Spike samples analyzed?.......... [✓ Yes] No N/A
Spike recoveries acceptable?.......... [✓ Yes] No N/A
Sike standards NIST traceable? (Levels D, E).......... Yes No [✓ N/A]
Spike standards expired? (Levels D, E).......... Yes No [✓ N/A]
LCS/BSS samples analyzed?.......... [✓ Yes] No N/A
LCS/BSS results acceptable?.......... [✓ Yes] No N/A
Standards traceable? (Levels D, E).......... Yes No [✓ N/A]
Standards expired? (Levels D, E).......... Yes No [✓ N/A]
Transcription/calculation errors? (Levels D, E).......... Yes No [✓ N/A]
Performance audit sample(s) analyzed?.......... Yes [✓ No] N/A
Performance audit sample results acceptable?.......... Yes No [✓ N/A]
Comments: alkalinity ms - J. all no PAS

GENERAL CHEMISTRY ANALYSIS DATA VALIDATION CHECKLIST

5. PRECISION (Levels C, D, and E)

Duplicate RPD values acceptable? .... [✓ Yes] No N/A
Duplicate results acceptable? .... [✓ Yes] No N/A
MS/MSD standards NIST traceable? (Levels D, E) .... Yes No [✓ N/A]
MS/MSD standards expired? (Levels D, E) .... Yes No [✓ N/A]
Field duplicate RPD values acceptable? .... Yes [✓ No] N/A
Field split RPD values acceptable? .... Yes No [✓ N/A]
Transcription/calculation errors? (Levels D, E) .... Yes No [✓ N/A]

Comments:

FD - SOC - (54)% - J all 9/4/[illegible]

6. HOLDING TIMES (all levels)

Samples properly preserved? .... [✓ Yes] ~~[✓ No]~~ N/A [illegible]
Sample holding times acceptable? .... Yes [✓ No] N/A

Comments: ~~SOC - headspace - J all~~ 5/[illegible]
J — R67 - SOC - HT <2X - J all ~~[illegible]~~ 9/[illegible]
~~plus headspace~~ - R[illegible] 4/4/[illegible]

GENERAL CHEMISTRY ANALYSIS DATA VALIDATION CHECKLIST

7. RESULT QUANTITATION AND DETECTION LIMITS (all levels)

Results reported for all requested analyses? .... [✓ Yes] No N/A

Results supported in the raw data? (Levels D, E) .... Yes No [✓ N/A]

Samples properly prepared? (Levels D, E) .... Yes No [✓ N/A]

Detection limits meet RDL? .... [✓ Yes] No N/A

Transcription/calculation errors? (Levels D, E) .... Yes No [✓ N/A]

Comments:

Appendix 6

Additional Documentation Requested by Client

Lionville Laboratory, Inc.

INORGANICS METHOD BLANK DATA SUMMARY PAGE 12/08/00

CLIENT: WC-HANFORD RC-118 W1401

WORK ORDER: 40049-001-001-0001-00

LVL LOT #: 0810L109

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
BLANK10	08LAKA33-MB1	Alkalinity	0.50 u	MG/L	0.50	1.0
BLANK10	08LHD004-MB1	Hardness	0.50 u	MG/L	0.50	1.0
BLANK10	08LTC021-MB1	Soluble Organic Carbon	0.50 u	MG/L	0.50	1.0
BLANK10	08LTC026-MB1	Soluble Organic Carbon	0.50 u	MG/L	0.50	1.0

```
                                   Lionville Laboratory, Inc.

                         INORGANICS ACCURACY REPORT  12/08/08


CLIENT: WC-HANFORD WC-11G X1401                          LVL LOT #: 0810L109
WORK ORDER: 20549-001-001-0001-00
                                                         SPIKED   INITIAL    SPIKED             DILUTION
SAMPLE     SITE ID                ANALYTE                SAMPLE   RESULT     AMOUNT  %RECOV     FACTOR(SPK)
-------    -------------------    ---------------------  -------  -------    ------  -------    ----------
-002       J17XS1                 Hardness               288       208        80.0   100.4            1.0
                                  Soluble Organic Carbon   8.4       3.3       5.0   101.4            1.0
-006       J17X67                 Soluble Organic Carbon   6.8       1.8       5.0   101.6            1.0
BLANK10    08LAXA33-MB1           Alkalinity             102         0.50u   100     102.5            1.0
                                  Alkalinity  MSD        102         0.50u   100     102.5            1.0
BLANK10    08LHD004-MB1           Hardness                41.2       0.50u    40.0   103.0            1.0
                                  Hardness  MSD           40.2       0.50u    40.0   100.4            1.0
BLANK10    08LTC021-MB1           Soluble Organic Carbon   4.9       0.50u     5.0    97.7            1.0
BLANK10    08LTC024-MB1           Soluble Organic Carbon   5.0       0.50u     5.0   100.4            1.0
```

Lionville Laboratory, Inc.

INORGANICS DUPLICATE SPIKE REPORT 12/04/94

CLIENT: WC-HANFORD RC-115 K1401
WORK ORDER: 60049-001-001-0001-00

LVL LOT #: 9410L109

SAMPLE	SITE ID	ANALYTE	SPIKE#1 %RECOV	SPIKE#2 %RECOV	%DIFF
BLANK10	94LAKA33-MB1	Alkalinity	103.5	103.6	0.10
BLANK10	94LHD004-MB1	Hardness	103.0	100.4	2.6

Lionville Laboratory, Inc.

INORGANICS PRECISION REPORT 12/08/05

CLIENT: WC-HANFORD BC-115 X1401 LVL LOT #: 0510L105

WORK ORDER: 60049-001-001-0001-00

SAMPLE	SITE ID	ANALYTE	INITIAL RESULT	REPLICATE	RPD	DILUTION FACTOR(REP)
-002REP	J17R51	Alkalinity	211	209	0.95	1.0
		Hardness	206	204	1.0	1.0
		Soluble Organic Carbon	3.3	3.2	3.1	1.0
-009REP	J17R67	Soluble Organic Carbon	1.8	1.8	0.00	1.0

Date: 13 April 2009
To: Washington Closure Hanford (technical representative)
From: ELR Consulting
Project: Columbia River Component of the RCBRA – Surface Water
Subject: PCB/Pesticide - Data Package No. K1401-LLI

INTRODUCTION

This memo presents the results of data validation on Data Package No. K1401 prepared by Lionville Laboratory Inc. (LLI). A list of samples validated along with the analyses reported and the method of analysis is provided in the following table.

Sample ID	Sample Date	Media	Validation	Data
J17K50	10/17/08	Water	C	See note 1
J17K51	10/17/08	Water	C	See note 1
J17K52	10/17/08	Water	C	See note 1
J17R67	10/17/08	Water	C	See note 1

1 – Pesticides by 8081A and PCBs by 8082.

Data validation was conducted in accordance with the Washington Closure Hanford (WCH) validation statement of work and the Remedial Investigation Work Plan for Hanford Site Releases to the Columbia River (DOE/RL-2008-11, Rev. 0, September 2008). Appendices 1 through 6 provide the following information as indicated below:

Appendix 1. Glossary of Data Reporting Qualifiers
Appendix 2. Summary of Data Qualification
Appendix 3. Qualified Data Summary and Annotated Laboratory Reports
Appendix 4. Laboratory Narrative and Chain-of-Custody Documentation
Appendix 5. Data Validation Supporting Documentation

DATA QUALITY OBJECTIVES

Holding Times & Sample Preservation

Sample data were assessed to ascertain whether the holding time requirements were met by the laboratory. The holding time requirements are as follows: Samples must be extracted within 7 days of the date of sample collection and analyzed within 40 days from the date of extraction.

If holding times are exceeded by less than or equal to twice times the limit, all associated sample results are qualified as estimates and flagged "J" for detects and "UJ" for non-detects. If holding times are exceeded by greater than two times the limit, all associated detected sample results are qualified as estimates and flagged "J" and all non-detects are rejected and flagged "UR".

All holding times were acceptable.

- **Method Blank**

Method blank analyses are performed to determine the extent of laboratory contamination introduced through sampling, sample preparation or analysis. At least one method blank analysis must be conducted for every 20 samples. Method blanks should not contain target compounds at a concentration greater than required quantitation limit (RQL). If target compounds are present, sample results less than five times the blank concentration are qualified as undetected and flagged "U". If the sample result is less than five times the blank concentration and less than RQL, the result is qualified as undetected and elevated to the RQL

All method blank results were acceptable.

Field Blanks

No field blanks were submitted for analysis.

- **Accuracy**

Matrix Spike & Laboratory Control Sample

Matrix spike (MS) and laboratory control sample (LCS) analyses are used to assess the analytical accuracy of the reported data. The matrix spike is used to assess the effect of the matrix on the ability to accurately quantify sample concentrations. Recoveries must fall within the range of 50% to 150%. If spike recoveries are outside control limits, detected sample results less than five times the spike concentration are qualified as estimates and flagged "J". Non-detected sample results with spike recoveries outside control limits are qualified as estimates and flagged "UJ". Sample results greater than five times the spike concentration require no qualification.

Due to the lack of a matrix spike, matrix spike duplicate or LCS analysis, all toxaphene results were qualified as estimates and flagged "J".

Due to matrix spike duplicate and LCS results outside QC limits, all endosulfan II results were qualified as estimates and flagged "J".

All other accuracy results were acceptable.

Surrogate Recovery

The analysis of surrogate compounds provides a measure of performance for individual samples. Matrix-specific surrogate compound recovery control windows have been established by the laboratory. When a surrogate compound recovery is outside the control window, all positively identified target compounds associated with the unacceptable surrogate recoveries are qualified as estimates and flagged "J". Non-detected compounds with surrogate recoveries less than the lower control limit are qualified as having an estimated detection limit and flagged "UJ". Non-detected compounds with surrogate recoveries above the upper control limit require no qualification.

All surrogate results were acceptable.

- **Precision**

Matrix Spike/Matrix Spike Duplicate Samples

Matrix spike/matrix spike duplicate results provide matrix-specific information on the precision of the method for specific target compound classes. Precision is expressed as the relative percent difference (RPD) between the recoveries of duplicate matrix spike analyses performed on a sample. For water samples, results must be within RPD limits of plus/minus 20%. If RPD values are out of specification and the sample concentration is less than five times the spike concentration, all associated detected sample results are qualified as estimates and flagged "J". If RPD values are out of specification and the sample concentration is greater than five times the spike concentration, no qualification is required.

Due to the lack of a matrix spike and matrix spike duplicate analysis, all toxaphene results were qualified as estimates and flagged "J".

All other precision results were acceptable.

Field Duplicate Samples

One set of field duplicates (J17K52/J17R67) were submitted for analysis. Laboratory duplicates are compared using the same criteria as for laboratory duplicates. All field duplicate results were acceptable.

- **Analytical Detection Levels**

Reported analytical detection levels are compared against the project specific RQLs to ensure that laboratory detection levels meet the required criteria. All results met the RQL.

- **Completeness**

Data Package No. K1401 was submitted for validation and verified for completeness. Completeness is based on the percentage of data determined to be valid (i.e., not rejected). The completion percentage was 100%.

MAJOR DEFICIENCIES

None found.

MINOR DEFICIENCIES

The following minor deficiencies were noted:

- Due to the lack of a matrix spike, matrix spike duplicate or LCS analysis, all toxaphene results were qualified as estimates and flagged "J".
- Due to matrix spike results outside QC limits, all endosulfan II results were qualified as estimates and flagged "J".

Data flagged "J" indicates that the associated concentration is an estimate, but under the WCH statement of work, the data may be usable for decision-making purposes. All other validated results are considered accurate within the standard error associated with the methods.

REFERENCES

Fluor Data Validation Contract #29776 (June 2006), *Validation Statement of Work*, through Washington Closure Hanford Work Order #WB6081.

DOE/RL-2008-11, Rev.0, *Remedial Investigation Work Plan for Hanford Site Releases to the Columbia River*, September 2008.

Appendix 1

Glossary of Data Reporting Qualifiers

Qualifiers which may be applied by data validators in compliance with the procedures herein are as follows:

U - Indicates the compound or analyte was analyzed for and not detected in the sample. The value reported is the sample quantitation limit corrected for sample dilution and moisture content by the laboratory.

UJ - Indicates the compound or analyte was analyzed for and not detected in the sample. Due to a minor QC deficiency identified during the data validation, the associated quantitation limit is an estimate.

J - Indicates the compound or analyte was analyzed for and detected. Due to a minor QC deficiency identified during the data validation, the associated quantitation limit is an estimate.

R - Indicates the compound or analyte was analyzed for, detected, and due to an identified major QC deficiency, the data are unusable.

UR - Indicates the compound or analyte was analyzed for and not detected in the sample. Additionally, the data is unusable due to an identified major QC deficiency.

NJ - Indicates presumptive evidence of a compound at an estimated value. The data may not be valid for some specific applications (i.e., usable for decision-making purposes).

N - Indicates presumptive evidence of a compound. The data may not be valid for some specific applications (i.e., usable for decision-making purposes).

Appendix 2

Summary of Data Qualification

PESTICIDE/PCB ORGANIC DATA QUALIFICATION SUMMARY*

SDG: K1401	**REVIEWER: ELR**	**Project: RCBRA**	**PAGE 1 OF 1**
COMPOUND	QUALIFIER	SAMPLES AFFECTED	REASON
Toxaphene	J	All	No MS, MSD or LCS analysis
Endosulfan II	J	All	MSD and LCS recovery

* - The Qualified Data Summary Table includes laboratory applied "U" qualifiers not specifically identified here. The laboratory applied "U" qualifiers are included to minimize misinterpretation of results contained in the table.

Appendix 3

Qualified Data Summary and Annotated Laboratory Reports

Lionville Laboratory, Inc.

PCBs by GC

Report Date: 11/07/08 14:26

RFW Batch Number: 0810L109 Client: MC-HANFORD RC-115 K1401 Work Order: 60049001001 Page: 1

		Cust ID:	J17K51		J17K51		J17K51		J17K52		J17R67		J17K50	
Sample Information		RFW#:	002		002 MS		002 MSD		004		006		008	
		Matrix:	WATER		WATER		WATER		WATER		WATER		WATER	
		D.F.:	1.00		1.00		1.00		1.00		1.00		1.00	
		Units:	UG/L		UG/L		UG/L		UG/L		UG/L		UG/L	
Surrogate:	Tetrachloro-m-xylene		84	%	91	%	86	%	81	%	85	%	83	%
	Decachlorobiphenyl		72	%	80	%	77	%	69	%	48	%	71	%
				fl		fl		fl		fl		fl		fl
Aroclor-1016			0.40	U	83	%	80	%	0.40	U	0.40	U	0.40	U
Aroclor-1221			0.40	U	0.40	U	0.40	U	0.40	U	0.40	U	0.40	U
Aroclor-1232			0.40	U	0.40	U	0.40	U	0.40	U	0.40	U	0.40	U
Aroclor-1242			0.40	U	0.40	U	0.40	U	0.40	U	0.40	U	0.40	U
Aroclor-1248			0.40	U	0.40	U	0.40	U	0.40	U	0.40	U	0.40	U
Aroclor-1254			0.40	U	0.40	U	0.40	U	0.40	U	0.40	U	0.40	U
Aroclor-1260			0.40	U	120	%	112	%	0.40	U	0.40	U	0.40	U

		Cust ID:	PBLKWL		PBLKWL BS	
Sample Information		RFW#:	08LE0528-MB1		08LE0528-MB1	
		Matrix:	WATER		WATER	
		D.F.:	1.00		1.00	
		Units:	UG/L		UG/L	
Surrogate:	Tetrachloro-m-xylene		87	%	91	%
	Decachlorobiphenyl		86	%	80	%
				fl		fl
Aroclor-1016			0.40	U	78	%
Aroclor-1221			0.40	U	0.40	U
Aroclor-1232			0.40	U	0.40	U
Aroclor-1242			0.40	U	0.40	U
Aroclor-1248			0.40	U	0.40	U
Aroclor-1254			0.40	U	0.40	U
Aroclor-1260			0.40	U	106	%

4/11/09

U= Analyzed, not detected. J= Present below detection limit. B= Present in blank. NR= Not reported. NS= Not spiked.
%= Percent recovery. D= Diluted out. I= Interference. NA= Not Applicable. *= Outside of EPA CLP QC

Lionville Laboratory, Inc.

Pesticide/PCBs by GC, CLP List

Report Date: 11/03/08 13:59

RFW Batch Number: 0810L109 Client: WC-HANFORD RC-115 X1401 Work Order: 60049001001 Page: 1

	Cust ID:	J17K51		J17K51		J17K51		J17K52		J17R67		J17K50	
Sample Information	RFW#:	002		002 MS		002 MSD		004		006		008	
	Matrix:	WATER		WATER		WATER		WATER		WATER		WATER	
	D.F.:	1.00		1.00		1.00		1.00		1.00		1.00	
	Units:	UG/L		UG/L		UG/L		UG/L		UG/L		UG/L	
Surrogate:	Tetrachloro-m-xylene	78	%	77	%	75	%	75	%	76	%	74	%
	Decachlorobiphenyl	72	%	75	%	79	%	72	%	55	%	76	%
			fl		fl		fl		fl		fl		fl
Alpha-BHC		0.050	U	98	%	94	%	0.050	U	0.050	U	0.050	U
gamma-BHC (Lindane)		0.050	U	97	%	94	%	0.050	U	0.050	U	0.050	U
Beta-BHC		0.050	U	90	%	87	%	0.050	U	0.050	U	0.050	U
Heptachlor		0.050	U	88	%	84	%	0.050	U	0.050	U	0.050	U
Delta-BHC		0.050	U	63	%	61	%	0.050	U	0.050	U	0.050	U
Aldrin		0.050	U	92	%	89	%	0.050	U	0.050	U	0.050	U
Heptachlor epoxide		0.050	U	94	%	90	%	0.050	U	0.050	U	0.050	U
gamma-Chlordane		0.050	U	96	%	92	%	0.050	U	0.050	U	0.050	U
Endosulfan I		0.050	U	97	%	93	%	0.050	U	0.050	U	0.050	U
alpha-Chlordane		0.050	U	95	%	92	%	0.050	U	0.050	U	0.050	U
4,4'-DDE		0.050	U	86	%	81	%	0.050	U	0.050	U	0.050	U
Dieldrin		0.050	U	97	%	93	%	0.050	U	0.050	U	0.050	U
Endrin		0.050	U	98	%	94	%	0.050	U	0.050	U	0.050	U
4,4'-DDD		0.050	U	96	%	93	%	0.050	U	0.050	U	0.050	U
Endosulfan II		0.050	U J	80	%	74 *	%	0.050	U J	0.050	U J	0.050	U J
4,4'-DDT		0.050	U	88	%	85	%	0.050	U	0.050	U	0.050	U
Endrin aldehyde		0.050	U	89	%	86	%	0.050	U	0.050	U	0.050	U
Endosulfan sulfate		0.050	U	82	%	79	%	0.050	U	0.050	U	0.050	U
Methoxychlor		0.050	U	87	%	84	%	0.050	U	0.050	U	0.050	U
Endrin ketone		0.050	U	95	%	92	%	0.050	U	0.050	U	0.050	U
Toxaphene		0.50	U J	0.50	U	0.50	U	0.50	U J	0.50	U J	0.50	U J

U= Analyzed, not detected. J= Present below detection limit. B= Present in blank. NR= Not reported. NS= Not spiked. %= Percent recovery. D= Diluted out. I= Interference. NA= Not Applicable. *= Outside of EPA CLP QC

4/11/09

		Cust ID:	PBLKWL		PBLKWL BS	
Sample Information		RFW#:	08LE0528-MB1		08LE0528-MB1	
		Matrix:	WATER		WATER	
		D.F.:	1.00		1.00	
		Units:	UG/L		UG/L	
Surrogate:	Tetrachloro-m-xylene		79	%	74	%
	Decachlorobiphenyl		96	%	86	%
				fl		fl
Alpha-BHC			0.050	U	98	%
gamma-BHC (Lindane)			0.050	U	97	%
Beta-BHC			0.050	U	89	%
Heptachlor			0.050	U	87	%
Delta-BHC			0.050	U	64	%
Aldrin			0.050	U	91	%
Heptachlor epoxide			0.050	U	93	%
gamma-Chlordane			0.050	U	96	%
Endosulfan I			0.050	U	100	%
alpha-Chlordane			0.050	U	96	%
4,4'-DDE			0.050	U	100	%
Dieldrin			0.050	U	98	%
Endrin			0.050	U	95	%
4,4'-DDD			0.050	U	100	%
Endosulfan II			0.050	U	78 *	%
4,4'-DDT			0.050	U	94	%
Endrin aldehyde			0.050	U	87	%
Endosulfan sulfate			0.050	U	84	%
Methoxychlor			0.050	U	90	%
Endrin ketone			0.050	U	98	%
Toxaphene			0.50	U	0.50	U

VL
4/11/09

000012

U= Analyzed, not detected. J= Present below detection limit. B= Present in blank. NR= Not reported. NS= Not spiked.
%= Percent recovery. D= Diluted out. I= Interference. NA= Not Applicable. *= Outside of EPA CLP QC

Appendix 4

Laboratory Narrative and Chain-of-Custody Documentation

LvLI
LIONVILLE LABORATORY INC.

Case Narrative

Client: WC-HANFORD RC-115
LVL #: 0810L109
SDG/SAF # K1401 / RC-115

W.O. #: 60049-001-001-0001-00
Date Received: 10-21-2008

CHLORINATED PESTICIDES

Four (4) water samples were collected on 10-17-2008.

The samples and their associated QC samples were extracted on 10-23-2008 and analyzed according to Lionville Laboratory SOPs based on SW846, 3rd Edition procedures on 10-27,28-2008. The extraction procedure was based on method 3520C and the extracts were analyzed based on method 8081A.

The following is a summary of the QC results accompanying the sample results. Lionville Laboratory (LvL) certifies that all test results meet the requirements of NELAC except as noted below:

1. Discrepancies from the Sample Acceptance Policy have been recorded on the Sample Receipt checklist.
2. All required holding times for extraction and analysis have been met.
3. The method blank was below the reporting limits for all target compounds.
4. All surrogate recoveries were within acceptance criteria.
5. One (1) of twenty (20) blank spike recoveries was outside acceptance criteria. A copy of the Sample Discrepancy Report (SDR# 08GC140) has been enclosed.
6. One (1) of forty (40) matrix spike recoveries was outside acceptance criteria. A copy of the Sample Discrepancy Report (SDR# 08GC140) has been enclosed.
7. All initial calibrations associated with this data set were within acceptance criteria.
8. All continuing calibration standards analyzed prior to sample extracts were within acceptance criteria.

9. LvL is NELAP accredited by the State of Pennsylvania. For a complete listing of accrediting authorities and the corresponding analytes/methods, please contact your Project Manager.

10. I certify that this sample data package is in compliance with SOW requirements, both technically and for completeness, other than the conditions detailed above. Release of the data contained in this hard-copy data package has been authorized by the laboratory manager or a designee, as verified by the following signature.

by Iain Daniels
Laboratory Manager
Lionville Laboratory

11/10/08
Date

Lionville Laboratory Sample Discrepancy Report (SDR)

SDR #: 08GC146

Initiator: CAC
Date: 11/03/08
Client: WC Hanford
Batch: 0810L109
Samples: 002MSD + BS
Method: SW846/MCAWW/CLP
Parameter: Pest
Matrix:
Prep Batch:

1. Reason for SDR

a. COC Discrepancy
__ Tech Profile Error
__ Transcription Error
__ Client Request
__ Wrong Test Code
__ Sampler Error on C-O-C
__ Other ______________

b. General Discrepancy
__ Missing Sample/Extract*
__ Hold Time Exceeded
__ Improper Bottle Type
__ Container Broken
__ Insufficient Sample*
__ Not Amenable to Analysis
__ Wrong Sample Pulled
__ Preservation Wrong
__ Label ID's Illegible
__ Received Past Hold

Note*: Verified by [Log-In] or [Prep Group] (circle)...signature/date: ______________

c. Problem (Include all relevant specific results; attach data if necessary)

Endosulfan II recovery is low in both MSD/BS

2. Known or Probable Causes(s)

3. Discussion and Proposed Action
__ Re-log
  __ Entire Batch
  __ Following Samples: ______
__ Re-leach
__ Re-extract
__ Re-digest
__ Revise EDD
__ Change Test Code to ______
__ Place On/Take Off Hold (circle)

Other Description:

BS is 78%

Narrate

28

4. Project Manager Instructions...signature/date: 11/10/08
✓ Concur with Proposed Action
__ Disagree with Proposed Action; See Instruction
__ Include in Case Narrative
__ Client Contacted:
Date/Person ______________
__ Add
__ Cancel

5. Final Action...signature/date: 11/10/08
__ Verified re-[log][leach][extract][digest][analysis] (circle)
✓ Included in Case Narrative
__ Hard Copy COC Revised
__ Electronic COC Revised
__ EDD Corrections Completed

Other Explanation:

When Final Action has been recorded, forward original to QA for diposition.

Route
__ Lab Manager: Daniels
__ Project Mgr (circle): Johnson / Stone
__ Sample Prep (circle): Ford
__ Log-In: King

Route
__ Metals: Welsh / ______________
__ Inorganic: Perrona / ______________
__ GC/LC: Carey / ______________
__ MS VOA: Rubino / ______________
__ MS BNA: Carden / ______________
__ Other: ______________

000016

QA-139-A-0206

LVLI
LIONVILLE LABORATORY INC.

Case Narrative

Client: WC-HANFORD RC-115
LVL #: 0810L109
SDG/SAF # K1401 / RC-115

W.O. #: 60049-001-001-0001-00
Date Received: 10-21-2008

PCB

Four (4) water samples were collected on 10-17-2008.

The samples and their associated QC samples were extracted on 10-23-2008 and analyzed according to Lionville Laboratory SOPs based on SW846, 3rd Edition procedures on 10-28,29-2008. The extraction procedure was based on method 3520C and the extracts were analyzed based on method 8082.

The following is a summary of the QC results accompanying the sample results. Lionville Laboratory (LVL) certifies that all test results meet the requirements of NELAC except as noted below:

1. Discrepancies from the Sample acceptance policy have been recorded on the Sample Receipt Checklist.
2. All samples were extracted and analyzed within hold time.
3. The sample and associated QC samples received Copper-Sulfur and Sulfuric Acid cleanups according to Lionville Laboratory SOPs based on SW846 methods 3660A and 3665A respectively.
4. The method blank was below the reporting limits for all target compounds.
5. All obtainable surrogate recoveries were within acceptance criteria.
6. All blank spike recoveries were within acceptance criteria.
7. All matrix spike recoveries were within acceptance criteria.
8. All initial calibrations associated with this data set were within acceptance criteria.
9. All continuing calibration standards analyzed prior to sample extracts were within acceptance criteria.

10. LVL is NELAP accredited by the State of Pennsylvania. For a complete listing of accrediting authorities and the corresponding analytes/methods, please contact your Project Manager.

11. I certify that this sample data package is in compliance with SOW requirements, both technically and for completeness, other than the conditions detailed above. Release of the data contained in this hard-copy data package has been authorized by the laboratory manager or a designee, as verified by the following signature.

Iain Daniels
Laboratory Manager
Lionville Laboratory

11/10/08
Date

Washington Closure Hanford | **CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST**

lector Ian Stygalkoff	Company Contact Joan Kessner	Telephone No. 375-4688	Project Coordinator WEISS, RL	Price Code 7K
ject Designation Columbia River Component of the RCBRA - Surface Water	Sampling Location WBW-1SW		SAF No. RC-115	Data Turnaround 45 Days
Chest No. WCH-08-010, 012, 014, 017	Field Logbook No. EL-1630	COA BESCRC6520	Method of Shipment FED EX	
pped To EBERLINE SERVICES (LIONVILLE)	Offsite Property No.		Bill of Lading/Air Bill No. 792773338820	

OSSIBLE SAMPLE HAZARDS/REMARKS

ecial Handling and/or Storage

Preservation	HNO3 to pH <2	Cool 4C All w/ HNO3 to pH <2	Cool 4C	Cool 4C H3PO4 to pH <2 Cool	HNO3 or H2SO4 to pH	Cool 4C	Cool 4C	HCl or H2SO4 to pH <2 Cool	Cool 4C	HCl to pH <2 Cool 4C
Type of Container	G/P	G/P	G/P	aG	G/P	aG	aG	aG*	aG	aG
No. of Container(s)	1	1	1	1	1	5	4	3	2	3
Volume	500mL	500mL	250mL	125mL	250mL	1000mL	1000mL	40mL	1000mL	1000mL
SAMPLE ANALYSIS	See item (1) in Special Instructions.	FILTERED ICP Metals - 6010TR; FILTERED Mercury - 7470	Alkalinity - 310.1	Dissolved Organic Carbon - 415.1	Hardness - 130.2	PCBs - 8082	Pesticides - 8081	See item (2) in Special Instructions.	Semi-VOA - 8270A (TCL)	TPH Diesel Range - WTPH-D +

Sample No.	Matrix *	Sample Date	Sample Time										
K61	WATER	10/17/08	1320	X		X	X	X	X	X	X	X	X
K58	WATER	10/17/08	1320		X								

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
	10/17/08 2055	Ref. C.	10/17/08 2055
Ref. C.	10/20/08 1037	Kim Royal Kim Royal	10/20/08 1037
Kim Royal Kim Royal	10/20/08 1321	Fed EX	10/20/08 1321
Fed Ex	10/21/08 0925		10-21-08 0925

SPECIAL INSTRUCTIONS

(1) ICP Metals - 6010TR (Client List) {Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Titanium, Uranium, Vanadium, Zinc}; Mercury - 7470 - (CV)

(2) VOA - 8260A (TCL) {1,1,1-Trichloroethane, 1,1,2,2-Tetrachloroethane, 1,1,2-Trichloroethane, 1,1-Dichloroethane, 1,1-Dichloroethene, 1,2-Dichloroethane, 1,2-Dichloropropane, 2-Butanone, 2-Hexanone, 4-Methyl-2-Pentanone, Acetone, Benzene, Bromodichloromethane, Bromoform, Bromomethane, Carbon disulfide, Carbon tetrachloride, Chlorobenzene, Chloroethane, Chloroform, Chloromethane, cis-1,2-Dichloroethylene, cis-1,3-Dichloropropene, Dibromochloromethane, Ethylbenzene, Methylene chloride, Styrene, Tetrachloroethene, Toluene, trans-1,2-Dichloroethylene, trans-1,3-Dichloropropene, Trichloroethene, Vinyl chloride, Xylenes (total)}

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab.

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

ORATORY SECTION	Received By		Title		Date/Time
AL SAMPLE SPOSITION	Disposal Method		Disposed By		Date/Time

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

llector Ian Stupakoff	Company Contact Joan Kessner	Telephone No. 375-4688	Project Coordinator WEISS, RL	Price Code 7K Data Turnaround 45 Days
oject Designation Columbia River Component of the RCBRA - Surface Water	Sampling Location RG-15W		SAF No. RC-115	
Chest No. WCH-08-010, 012, 014, 017	Field Logbook No. EL-1630	COA BESCRC6520	Method of Shipment FED EX	
ipped To EBERLINE SERVICES [✓ LIONVILLE]	Offsite Property No.		Bill of Lading/Air Bill No. 792773338820	

OSSIBLE SAMPLE HAZARDS/REMARKS

ecial Handling and/or Storage

Preservation				HNO3 to pH <2	Cool 4C Mercury ~~HNO3 to pH <2~~	Cool 4C	Cool 4C ~~H2SO4 to pH <2 Cool~~	HNO3 or H2SO4 to pH	Cool 4C	Cool 4C	HCl or H2SO4 to pH <2 Cool	Cool 4C	HCl to pH <2 Cool 4C
Type of Container				G/P	G/P	G/P	aG	G/P	aG	aG	aGs*	aG	aG
No. of Container(s)				1	1	1	1	1	4	4	2	2	3
Volume				500mL	500mL	250mL	125mL	250mL	1000mL	1000mL	40mL	1000mL	1000mL
SAMPLE ANALYSIS				See item (1) in Special Instructions.	FILTERED ICP Metals - 6010TR, FILTERED Mercury - 7470	Alkalinity - 310.1	Dissolved Organic Carbon - 415.1 M	Hardness - 130.2	PCBs - 8082	Pesticides - 8081	See item (2) in Special Instructions.	Semi-VOA - 8270A (TCL)	Total-Diesel Range - WTPH-D +
Sample No.	Matrix *	Sample Date	Sample Time										
K52	WATER	10/17/08	0952	X		X	X	X	X	X	X	X	X
K59	WATER	10/17/08	0952		X								

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
	10/17/08 2055	REF. B	10/17/08 2055
F. B	10/20/08 1130	Kim Boyd Kim Boyd	10/20/08 1130
Kim Boyd Kim Boyd	10/20/08 1321	Fed EX	10/20/08 1321
Fed Ex	10/21/08 0925		10/21/08 0925

SPECIAL INSTRUCTIONS

(1) ICP Metals - 6010TR (Client List) [Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Titanium, Uranium, Vanadium, Zinc]; Mercury - 7470 - (CV)
(2) VOA - 8260A (TCL) [1,1,1-Trichloroethane, 1,1,2,2-Tetrachloroethane, 1,1,2-Trichloroethane, 1,1-Dichloroethane, 1,1-Dichloroethene, 1,2-Dichloroethane, 1,2-Dichloropropane, 2-Butanone, 2-Hexanone, 4-Methyl-2-Pentanone, Acetone, Benzene, Bromodichloromethane, Bromoform, Bromomethane, Carbon disulfide, Carbon tetrachloride, Chlorobenzene, Chloroethane, Chloroform, Chloromethane, cis-1,2-Dichloroethylene, cis-1,3-Dichloropropene, Dibromochloromethane, Ethylbenzene, Methylene chloride, Styrene, Tetrachloroethene, Toluene, trans-1,2-Dichloroethylene, trans-1,3-Dichloropropene, Trichloroethene, Vinyl chloride, Xylenes (total)]

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab.

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

BORATORY SECTION	Received By	Title	Date/Time
AL SAMPLE SPOSITION	Disposal Method	Disposed By	Date/Time

A-EE-011

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-115-26

ollector: Ron Stupakoff

Company Contact: Joan Kessner | Telephone No.: 375-4688

Project Coordinator: WEISS, RL

Price Code: 7K

Data Turnaround: 45 Days

roject Designation: Columbia River Component of the RCBRA - Surface Water

Sampling Location: RG-1SW

SAF No.: RC-115

Chest No.: WCH-08-010, 012, 014, 017

Field Logbook No.: EL-1630

COA: BESCRC6520

Method of Shipment: FED EX

hipped To: EBERLINE SERVICES/ DONVILLE

Offsite Property No.:

Bill of Lading/Air Bill No.: 792773338820

OSSIBLE SAMPLE HAZARDS/REMARKS

pecial Handling and/or Storage

000021

000000011

Preservation	HNO3 to pH <2	None	Cool 4C	Cool 4C	HNO3 or H2SO4 to pH <2	Cool 4C	Cool 4C	HCl or H2SO4 to pH <2 Cool 4C	Cool 4C	HCl to pH <2 Cool 4C
Type of Container	G/P	G/P	G/P	G	G/P	aG	aG	aGs*	aG	aG
No. of Container(s)	1	1	1	1	1	4	4	1 / LE 10/20/08	2	3
Volume	500mL	500mL	250mL	125mL	250mL	1000mL	1000mL	40mL	1000mL	1000mL
SAMPLE ANALYSIS	See item (1) in Special Instructions.	FILTERED ICP Metals - 6010TR; FILTERED Mercury - 7470	Alkalinity - 310.1	Dissolved Organic Carbon - 415.1M	Hardness - 130.2	PCBs - 8082	Pesticides - 8081	See item (2) in Special Instructions.	Semi-VOA - 8270A (TCL)	TPH-Diesel Range - WTPH-D +

Sample No.	Matrix *	Sample Date	Sample Time										
17R57	WATER	10/17/08	1040	X		X	X	X	X	X	X	X	X
7R68	WATER	10/17/08	1040		X								

CHAIN OF POSSESSION

Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
RF	10/17/08 2055	Ref. C	10/17/08 2055
Ref. C	10/20/08	Kim Royal	10/20/08 1205
Kim Royal	10/20/08 1521	Fed EX	10/20/08 1521
	10/21/08 0940		10-21-08 0940

SPECIAL INSTRUCTIONS

(1) ICP Metals - 6010TR (Client List) {Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Titanium, Uranium, Vanadium, Zinc}; Mercury - 7470 - (CV)

(2) VOA - 8260A (TCL) {1,1,1-Trichloroethane, 1,1,2,2-Tetrachloroethane, 1,1,2-Trichloroethane, 1,1-Dichloroethane, 1,1-Dichloroethene, 1,2-Dichloroethane, 1,2-Dichloropropane, 2-Butanone, 2-Hexanone, 4-Methyl-2-Pentanone, Acetone, Benzene, Bromodichloromethane, Bromoform, Bromomethane, Carbon disulfide, Carbon tetrachloride, Chlorobenzene, Chloroethane, Chloroform, Chloromethane, cis-1,2-Dichloroethylene, cis-1,3-Dichloropropene, Dibromochloromethane, Ethylbenzene, Methylene chloride, Styrene, Tetrachloroethene, Toluene, trans-1,2-Dichloroethylene, trans-1,3-Dichloropropene, Trichloroethene, Vinyl chloride, Xylenes (total)}

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab.

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

ABORATORY SECTION — Received By: | Title: | Date/Time:

INAL SAMPLE DISPOSITION — Disposal Method: | Disposed By: | Date/Time:

CH-EE-011

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-113-3 | [illegible]

lector Kari Sturakoff	Company Contact Joan Kessner	Telephone No. 375-4681	Project Coordinator WEISS, RL	Price Code 7K
ject Designation Columbia River Component of the RCBRA - Surface Water	Sampling Location WBT-1SW		SAF No. RC-113	Data Turnaround 45 Days
Chest No. WCH-08-010, 012, 014, 017	Field Logbook No. BL-1630	COA BESCRC6520	Method of Shipment FED EX	
ipped To EBERLINE SERVICES (LIONVILLE)	Offsite Property No.		Bill of Lading/Air Bill No. 792173338920	

OSSIBLE SAMPLE HAZARDS/REMARKS

pecial Handling and/or Storage

Preservation	HNO3 to pH <2	Cool 4 C All Wet ~~HNO3 to pH <2~~	Cool 4C	Cool 4 C Alcohol ~~[illegible]~~	HNO3 or H2SO4 to pH	Cool 4C	Cool 4C	HCl or H2SO4 to pH <2 Cool	Cool 4C	HCl to pH<2 Cool 4C
Type of Container	G/P	G/P	G/P	aG	G/P	aG	aG	aGs*	aG	aG
No. of Container(s)	1	1	1	1	1	4	4	3	2	3
Volume	500mL	500mL	250mL	125mL	250mL	1000mL	1000mL	40mL	1000mL	1000mL
SAMPLE ANALYSIS	See item (1) in Special Instructions	FILTERED ICP Metals - 6010TR; FILTERED Mercury - 7470	Alkalinity - 310.1	Dissolved Organic Carbon - 415.1M	Hardness - 130.2	PCBs - 8082	Pesticides - 8081	See item (2) in Special Instructions	Semi-VOA - 8270A (TCL)	TPH-Diesel Range - WTPH D+

Sample No.	Matrix *	Sample Date	Sample Time										
7K50	WATER	10/17/08	1212	X		X	X	X	X	X	X	X	X
7K57	WATER	10/17/08	1210		X								

000022

CHAIN OF POSSESSION

Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Sturakoff	10/17/08 2055	REF. B	10/17/08 2055
REF. B	10/20/08 1007	Kim Boyd Kim Boyd	10/20/08 1007
Kim Boyd Kim Boyd	10/20/08 1321	Fed EX	10/20/08 1321
[illegible]	10/21/08 0925	[illegible]	10/21/08 0925

SPECIAL INSTRUCTIONS

(1) ICP Metals - 6010TR (Client List) {Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Titanium, Uranium, Vanadium, Zinc}; Mercury - 7470 - (CV)

(2) VOA - 8260A (TCL) {1,1,1-Trichloroethane, 1,1,2,2-Tetrachloroethane, 1,1,2-Trichloroethane, 1,1-Dichloroethane, 1,1-Dichloroethene, 1,2-Dichloroethane, 1,2-Dichloropropane, 2-Butanone, 2-Hexanone, 4-Methyl-2-Pentanone, Acetone, Benzene, Bromodichloromethane, Bromoform, Bromomethane, Carbon disulfide, Carbon tetrachloride, Chlorobenzene, Chloroethane, Chloroform, Chloromethane, cis-1,2-Dichloroethylene, cis-1,3-Dichloropropene, Dibromochloromethane, Ethylbenzene, Methylenechloride, Styrene, Tetrachloroethene, Toluene, trans-1,2-Dichloroethylene, trans-1,3-Dichloropropene, Trichloroethene, Vinyl chloride, Xylenes (total)}

Sampler unavailable to remove samples
from controlled storage. Shipper removed
samples from storage location taking
custody of samples for shipment to lab.

Matrix *

S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

BORATORY SECTION	Received By		Title		Date/Time
NAL SAMPLE DISPOSITION	Disposal Method		Disposed By		Date/Time

M-EE-011

Appendix 5

Data Validation Supporting Documentation

PCB DATA VALIDATION CHECKLIST

VALIDATION LEVEL:	A	B	[✓ C]	D	E
PROJECT:	RCBRA		DATA PACKAGE:	K1401	
VALIDATOR:	ELR	LAB: LLI		DATE:	4/5/09
			SDG:	K1401	
ANALYSES PERFORMED					
[✓ SW-846 8081]	SW-846 8081 (TCLP)	[✓ SW-846 8082]	SW-846 8081 (TCLP)		
SAMPLES/MATRIX					
J17K51 J17K52 J17K50 J17R67					
				Water	

1. DATA PACKAGE COMPLETENESS AND CASE NARRATIVE

Technical verification documentation present? .... Yes [✓ No] N/A

Comments:

2. INSTRUMENT PERFORMANCE AND CALIBRATIONS (Levels D and E)

Initial calibrations acceptable? .... Yes No [✓ N/A]

Continuing calibrations acceptable? .... Yes No [✓ N/A]

Standards traceable? .... Yes No [✓ N/A]

Standards expired? .... Yes No [✓ N/A]

Calculation check acceptable? .... Yes No [✓ N/A]

DDT and endrin breakdowns acceptable? .... Yes No [✓ N/A]

Comments:

PCB DATA VALIDATION CHECKLIST

3. BLANKS (Levels B, C, D, and E)

Calibration blanks analyzed? (Levels D, E) .... Yes No [✓ N/A]

Calibration blank results acceptable? (Levels D, E) .... Yes No [✓ N/A]

Laboratory blanks analyzed? .... [✓ Yes] No N/A

Laboratory blank results acceptable? .... [✓ Yes] No N/A

Field/trip blanks analyzed? (Levels C, D, E) .... Yes [✓ No] N/A

Field/trip blank results acceptable? (Levels C, D, E) .... Yes No [✓ N/A]

Transcription/calculation errors? (Levels D, E) .... Yes No [✓ N/A]

Comments: no FB

4. ACCURACY (Levels C, D, and E)

Surrogates analyzed? .... [✓ Yes] No N/A

Surrogate recoveries acceptable? .... [✓ Yes] No N/A

Surrogates traceable? (Levels D, E) .... Yes No [✓ N/A]

Surrogates expired? (Levels D, E) .... Yes No [✓ N/A]

MS/MSD samples analyzed? .... [✓ Yes] No N/A

MS/MSD results acceptable? .... Yes [✓ No] N/A

MS/MSD standards NIST traceable? (Levels D, E) .... Yes No [✓ N/A]

MS/MSD standards expired? (Levels D, E) .... Yes No [✓ N/A]

LCS/BSS samples analyzed? .... [✓ Yes] No N/A

LCS/BSS results acceptable? .... Yes [✓ No] N/A

Standards traceable? (Levels D, E) .... Yes No [✓ N/A]

Standards expired? (Levels D, E) .... Yes No [✓ N/A]

Transcription/calculation errors? (Levels D, E) .... Yes No [✓ N/A]

Performance audit sample(s) analyzed? .... Yes [✓ No] N/A

Performance audit sample results acceptable? .... Yes No [✓ N/A]

Comments: MSD - endosulfan II (78%) - J all
LCS - endosulfan II (78%) - J all
no PAs
toxaphene - no MS/MSD/LCS - J all

PCB DATA VALIDATION CHECKLIST

5. PRECISION (Levels C, D, and E)

Duplicate RPD values acceptable? .... [✓ Yes] [✓ No] N/A

Duplicate results acceptable? .... [✓ Yes] [✓ No] N/A

MS/MSD standards NIST traceable? (Levels D, E) .... Yes No [✓ N/A]

MS/MSD standards expired? (Levels D, E) .... Yes No [✓ N/A]

Field duplicate RPD values acceptable? .... [✓ Yes] No N/A

Field split RPD values acceptable? .... Yes No [✓ N/A]

Transcription/calculation errors? (Levels D, E) .... Yes No [✓ N/A]

Comments: Acceptable - No MS/MSD - J all

6. SYSTEM PERFORMANCE (Levels D and E)

Chromatographic performance acceptable? .... Yes No [✓ N/A]

Positive results resolved acceptably? .... Yes No [✓ N/A]

Comments:

7. HOLDING TIMES (all levels)

Samples properly preserved? .... [✓ Yes] No N/A

Sample holding times acceptable? .... [✓ Yes] No N/A

Comments:

PCB DATA VALIDATION CHECKLIST

8. COMPOUND IDENTIFICATION, QUANTITATION, AND DETECTION LIMITS (all levels)

Compound identification acceptable? (Levels D, E) .... Yes No [✓ N/A]

Compound quantitation acceptable? (Levels D, E) .... Yes No [✓ N/A]

Results reported for all requested analyses? .... [✓ Yes] No N/A

Results supported in the raw data? (Levels D, E) .... Yes No [✓ N/A]

Samples properly prepared? (Levels D, E) .... Yes No [✓ N/A]

Detection limits meet RDL? .... [✓ Yes] No N/A

Transcription/calculation errors? (Levels D, E) .... Yes No [✓ N/A]

Comments:

9. SAMPLE CLEANUP (Levels D and E)

Florisil ® (or other absorbent) cleanup performed? .... Yes No [✓ N/A]

Lot check performed? .... Yes No [✓ N/A]

Check recoveries acceptable? .... Yes No [✓ N/A]

GPC cleanup performed? .... Yes No [✓ N/A]

GPC check performed? .... Yes No [✓ N/A]

GPC check recoveries acceptable? .... Yes No [✓ N/A]

GPC calibration performed? .... Yes No [✓ N/A]

GPC calibration check performed? .... Yes No [✓ N/A]

GPC calibration check retention times acceptable? .... Yes No [✓ N/A]

Check/calibration materials traceable? .... Yes No [✓ N/A]

Check/calibration materials Expired? .... Yes No [✓ N/A]

Analytical batch QC given similar cleanup? .... Yes No [✓ N/A]

Transcription/Calculation Errors? .... Yes No [✓ N/A]

Comments:

Date: 13 April 2009
To: Washington Closure Hanford (technical representative)
From: ELR Consulting
Project: Columbia River Component of the RCBRA – Surface Water
Subject: Inorganic - Data Package No. K1401-LLI

INTRODUCTION

This memo presents the results of data validation on Data Package No. K1401 prepared by Lionville Laboratory Inc. (LLI). A list of samples validated along with the analyses reported and the method of analysis is provided in the following table.

Sample ID	Sample Date	Media	Validation	Analyses
J17K50	10/17/08	Water	C	See note 1
J17K51	10/17/08	Water	C	See note 1
J17K52	10/17/08	Water	C	See note 1
J17K57	10/17/08	Water	C	See note 1
J17K58	10/17/08	Water	C	See note 1
J17K59	10/17/08	Water	C	See note 1
J17R87	10/17/08	Water	C	See note 1
J17R88	10/17/08	Water	C	See note 1

1 - ICP metals (6010B) and mercury (7471A).

Data validation was conducted in accordance with the Washington Closure Hanford (WCH) validation statement of work and the Remedial Investigation Work Plan for Hanford Site Releases to the Columbia River (DOE/RL-2008-11, Rev. 0, September 2008). Appendices 1 through 6 provide the following information as indicated below:

Appendix 1. Glossary of Data Reporting Qualifiers
Appendix 2. Summary of Data Qualification
Appendix 3. Qualified Data Summary and Annotated Laboratory Reports
Appendix 4. Laboratory Narrative and Chain-of-Custody Documentation
Appendix 5. Data Validation Supporting Documentation
Appendix 6. Additional Documentation Requested by Client

DATA QUALITY PARAMETERS

- **Holding Times**

Analytical holding times for metals are assessed to ascertain whether the holding time requirements were met by the laboratory. The holding time requirements are as follows: Samples must be analyzed within 6 months for ICP metals and 28 days for mercury.

All holding times were acceptable.

- **Preparation (Method) Blanks**

Preparation Blanks

At least one preparation blank, consisting of deionized distilled water processed through each sample preparation and analysis procedure, must be prepared and analyzed with every sample delivery group. In the case of positive blank results, samples with digestate concentrations less than five times the preparation blank value have had their associated values qualified as non-detected and flagged "U". Samples with concentrations of greater than five times the highest blank concentration do not require qualification.

In the case of negative blank results, if the absolute value exceeds the contract required detection limit (CRDL), all nondetects are rejected and flagged "UR" and all detects that are less than ten times the absolute value of the associated preparation blank result are qualified as estimates and flagged "J". If the absolute value of the negative preparation blank is greater than the instrument detection limit (IDL) and less than or equal to the CRDL, all nondetects are qualified as estimates and flagged "UJ" and all detects less than ten times the absolute value of the blank are qualified as estimates and flagged "J". If the sample results are greater than ten times the absolute value of the preparation blank, no qualification is necessary.

All preparation blank results were acceptable.

Field (Equipment) Blank

No field blanks were submitted for analysis.

- **Accuracy**

Matrix Spike and Laboratory Control Sample

Matrix spike (MS) and laboratory control sample (LCS) analyses are used to assess the analytical accuracy of the reported data. The matrix spike is used to assess the effect of the matrix on the ability to accurately quantify sample concentrations. Recoveries must fall within the range of 80% to 120%. Samples with a recovery of less than 30% and a sample result below the IDL are rejected and flagged "UR". Samples with a recovery of 30% to 79% and a sample result less than the IDL are qualified "UJ". Samples with a recovery of greater than 120% or less than 20% and a sample result greater than the IDL are qualified as estimates and flagged "J". Finally, for samples with a recovery greater than 120% and a sample result less than the IDL, no qualification is required.

Due to a matrix spike recovery outside QC limits, all tin (63.9%), antimony (69.1%) and silver (42.8%) results were qualified as estimates and flagged "J".

All other accuracy results were acceptable.

- **Precision**

Laboratory Duplicate Samples

Analytical precision is expressed by the relative percent differences (RPD) between the recoveries of matrix spike duplicate (MSD) analyses performed on a sample in the analytical batch. Precision may alternatively be assessed using unspiked duplicate analyses performed on a sample in the analytical batch. If both sample and replicate activities (concentrations) are greater than five times the CRDL and the RPD is less than 20%, no qualification is required. If either activity (concentration) is less than five times the CRDL, the RPD control limit is less than or equal to two times the CRDL. If the RPD is outside the applicable control limit, associated results are qualified as estimated detects or estimated non-detects.

All laboratory duplicate results were acceptable.

Field Duplicate

Two sets of field duplicates (J17K52/J17K67 & J17K59/J17K68) were submitted for analysis. Laboratory duplicates are compared using the same criteria as for laboratory duplicates. All field duplicate results were acceptable.

- **Analytical Detection Levels**

Reported analytical detection levels are compared against the 100 and 300 Area RQLs to ensure that laboratory detection levels meet the required criteria. All results met the RQL.

- **Completeness**

Data package No. K1401 was submitted for validation and verified for completeness. Completeness is based on the percentage of data determined to be valid (i.e., not rejected). The completion percentage was 100%.

MAJOR DEFICIENCIES

None found.

MINOR DEFICIENCIES

The following minor deficiency was noted:

- Due to a matrix spike recovery outside QC limits, all tin (63.9%), antimony (69.1%) and silver (42.8%) results were qualified as estimates and flagged "J".

Data flagged "J" indicates that the associated concentration is an estimate, but under the WCH statement of work, the data may be usable for decision-making purposes. All other validated results are considered accurate within the standard error associated with the methods.

REFERENCES

Fluor Hanford Data Validation Contract #29776 (June 2006), *Validation Statement of Work*, through Washington Closure Hanford Work Order #WB6081.

DOE/RL-2008-11, Rev.0, *Remedial Investigation Work Plan for Hanford Site Releases to the Columbia River*, September 2008.

Appendix 1

Glossary of Data Reporting Qualifiers

Qualifiers which may be applied by data validators in compliance with WCH validation SOW are as follows:

U - Indicates the compound or analyte was analyzed for and not detected in the sample. The value reported is the sample quantitation limit corrected for sample dilution and moisture content by the laboratory.

UJ - Indicates the compound or analyte was analyzed for and not detected in the sample. Due to a minor QC deficiency identified during the data validation, the associated quantitation limit is an estimate.

J - Indicates the compound or analyte was analyzed for and detected. Due to a minor QC deficiency identified during the data validation, the associated concentration is an estimate, but the data are usable for decision-making purposes.

BJ - Applied to inorganic analyses only. Indicates the analyte concentration was greater than the IDL but less than the CRDL and is considered an estimated value.

R - Indicates the compound or analyte was analyzed for, detected, and due to an identified major QC deficiency, the data are unusable.

UR - Indicates the compound or analyte was analyzed for and not detected in the sample. Additionally, the data is unusable due to an identified major QC deficiency.

NJ - Indicates presumptive evidence of a compound at an estimated value. The data may not be valid for some specific applications (i.e., usable for decision-making purposes).

N - Indicates presumptive evidence of a compound. The data may not be valid for some specific applications (i.e., usable for decision-making purposes).

Appendix 2

Summary of Data Qualification

METALS DATA QUALIFICATION SUMMARY*

SDG: K1401	**REVIEWER:** **ELR**	**Project:** **RCBRA**	**PAGE 1 OF 1**
COMPOUND	QUALIFIER	SAMPLES AFFECTED	REASON
Tin Antimony Silver	J	All	Matrix spike recovery

* - The Qualified Data Summary Table includes laboratory applied "U" qualifiers not specifically identified here. The laboratory applied "U" qualifiers are included to minimize misinterpretation of results contained in the table.

Appendix 3

Qualified Data Summary and Annotated Laboratory Reports

Lionville Laboratory, Inc.

INORGANICS DATA SUMMARY REPORT 12/01/08

CLIENT: WC-HANFORD RC-118 K1401

LVL LOT #: 0810L104

WORK ORDER: 60049-001-001-0001-00

SAMPLE	SITE ID	ANALYTE	RESULT		UNITS	REPORTING LIMIT	DILUTION FACTOR
-008	J17X80	Silver, Total	0.50	uJ	UG/L	0.50	1.0
		Aluminum, Total	50.0		UG/L	20.0	1.0
		Arsenic, Total	3.8		UG/L	2.5	1.0
		Boron, Total	61.8		UG/L	5.5	1.0
		Barium, Total	43.3		UG/L	0.50	1.0
		Beryllium, Total	0.20	u	UG/L	0.20	1.0
		Bismuth, Total	3.0	u	UG/L	3.0	1.0
		Calcium, Total	43600		UG/L	20.0	1.0
		Cadmium, Total	0.25	u	UG/L	0.25	1.0
		Cobalt, Total	1.0	u	UG/L	1.0	1.0
		Chromium, Total	1.0	u	UG/L	1.0	1.0
		Copper, Total	1.0	u	UG/L	1.0	1.0
		Iron, Total	73.6		UG/L	22.8	1.0
		Mercury, Total	0.04	u	UG/L	0.04	1.0
		Potassium, Total	8930		UG/L	344	1.0
		Lithium, Total	9.4		UG/L	0.70	1.0
		Magnesium, Total	25800		UG/L	12.5	1.0
		Manganese, Total	4.0		UG/L	0.30	1.0
		Molybdenum, Total	2.7		UG/L	1.5	1.0
		Sodium, Total	47300		UG/L	10.0	1.0
		Nickel, Total	3.6		UG/L	1.0	1.0
		Phosphorus, Total	35.0	u	UG/L	35.0	1.0
		Lead, Total	1.7		UG/L	1.5	1.0
		Antimony, Total	1.8	uJ	UG/L	1.8	1.0
		Selenium, Total	3.0	u	UG/L	3.0	1.0
		Silicon, Total	7810		UG/L	33.4	1.0
		Tin, Total	3.0	uJ	UG/L	3.0	1.0
		Strontium, Total	344		UG/L	0.15	1.0
		Titanium, Total	2.6		UG/L	0.60	1.0
		Thallium, Total	3.0	u	UG/L	3.0	1.0
		Uranium, Total	10.0	u	UG/L	10.0	1.0
		Vanadium, Total	5.4		UG/L	0.76	1.0
		Zinc, Total	8.4		UG/L	3.0	1.0

✓ 4/11/09

Lionville Laboratory, Inc.

INORGANICS DATA SUMMARY REPORT 12/01/08

CLIENT: WC-HANFORD RC-118 K1401 LVL LOT #: 0810L109

WORK ORDER: 40049 001-001-0001-00

SAMPLE	SITE ID	ANALYTE	RESULT		UNITS	REPORTING LIMIT	DILUTION FACTOR
-002	J17K51	Silver, Total	0.40	uJ	UG/L	0.40	1.0
		Aluminum, Total	71.6		UG/L	20.0	1.0
		Arsenic, Total	5.0		UG/L	2.5	1.0
		Boron, Total	34.7		UG/L	2.6	1.0
		Barium, Total	47.1		UG/L	0.10	1.0
		Beryllium, Total	0.25	u	UG/L	0.25	1.0
		Bismuth, Total	7.0	u	UG/L	5.0	1.0
		Calcium, Total	44600		UG/L	10.0	1.0
		Cadmium, Total	0.31	u	UG/L	0.31	1.0
		Cobalt, Total	1.0	u	UG/L	1.0	1.0
		Chromium, Total	1.6		UG/L	1.0	1.0
		Copper, Total	1.0	u	UG/L	1.0	1.0
		Iron, Total	180		UG/L	22.5	1.0
		Mercury, Total	0.04	u	UG/L	0.04	1.0
		Potassium, Total	4240		UG/L	248	1.0
		Lithium, Total	6.8		UG/L	0.20	1.0
		Magnesium, Total	11100		UG/L	12.5	1.0
		Manganese, Total	4.0		UG/L	0.29	1.0
		Molybdenum, Total	1.5	u	UG/L	1.5	1.0
		Sodium, Total	37600		UG/L	16.6	1.0
		Nickel, Total	1.0	u	UG/L	1.0	1.0
		Phosphorus, Total	38.0	u	UG/L	38.0	1.0
		Lead, Total	2.4		UG/L	1.5	1.0
		Antimony, Total	1.8	uJ	UG/L	1.8	1.0
		Selenium, Total	3.0	u	UG/L	3.0	1.0
		Silicon, Total	9290		UG/L	77.4	1.0
		Tin, Total	2.0	uJ	UG/L	2.0	1.0
		Strontium, Total	334		UG/L	0.15	1.0
		Titanium, Total	8.5		UG/L	0.80	1.0
		Thallium, Total	5.0	u	UG/L	5.0	1.0
		Uranium, Total	16.0	u	UG/L	16.0	1.0
		Vanadium, Total	13.1		UG/L	0.70	1.0
		Zinc, Total	2.0	u	UG/L	2.0	1.0

4/11/09

Lionville Laboratory, Inc.

INORGANICS DATA SUMMARY REPORT 12/01/08

CLIENT: WC-HANFORD RC-115 K1401
WORK ORDER: 40046-001-001-0001-00

LVL LOT #: 0810L109

SAMPLE	SITE ID	ANALYTE	RESULT		UNITS	REPORTING LIMIT	DILUTION FACTOR
-004	B1XK11	Silver, Total	0.40	u	UG/L	0.50	1.0
		Aluminum, Total	11.4		UG/L	20.0	1.0
		Arsenic, Total	6.4		UG/L	1.5	1.0
		Boron, Total	28.7		UG/L	2.5	1.0
		Barium, Total	27.8		UG/L	0.40	1.0
		Beryllium, Total	0.25	u	UG/L	0.25	1.0
		Bismuth, Total	2.0	u	UG/L	2.0	1.0
		Calcium, Total	44400		UG/L	50.0	1.0
		Cadmium, Total	0.25	u	UG/L	0.25	1.0
		Cobalt, Total	1.0	u	UG/L	1.0	1.0
		Chromium, Total	1.0	u	UG/L	1.0	1.0
		Copper, Total	1.0	u	UG/L	1.0	1.0
		Iron, Total	81.0		UG/L	22.4	1.0
		Mercury, Total	0.04	u	UG/L	0.04	1.0
		Potassium, Total	8860		UG/L	244	1.0
		Lithium, Total	16.4		UG/L	0.20	1.0
		Magnesium, Total	27300		UG/L	12.8	1.0
		Manganese, Total	2.2		UG/L	0.20	1.0
		Molybdenum, Total	3.5		UG/L	1.5	1.0
		Sodium, Total	42390		UG/L	19.9	1.0
		Nickel, Total	1.0	u	UG/L	1.0	1.0
		Phosphorus, Total	14.8		UG/L	25.0	1.0
		Lead, Total	1.5	u	UG/L	1.5	1.0
		Antimony, Total	1.5	u	UG/L	1.5	1.0
		Selenium, Total	1.7		UG/L	1.0	1.0
		Silicon, Total	15000		UG/L	33.4	1.0
		Tin, Total	7.0	u	UG/L	7.0	1.0
		Strontium, Total	141		UG/L	0.15	1.0
		Titanium, Total	6.1		UG/L	0.60	1.0
		Thallium, Total	3.0	u	UG/L	3.0	1.0
		Uranium, Total	10.0	u	UG/L	10.0	1.0
		Vanadium, Total	18.0		UG/L	0.70	1.0
		Zinc, Total	13.3		UG/L	7.0	1.0

4/14/09

Lionville Laboratory, Inc.

INORGANICS DATA SUMMARY REPORT 11/01/04

CLIENT: WC HANFORD RC-116 K1401 LVL LOT #: 0410L109

WORK ORDER: 60049-001-001-0001-00

SAMPLE	SITE ID	ANALYTE	RESULT		UNITS	REPORTING LIMIT	DILUTION FACTOR
-008	J17RJ7	Silver, Soluble	0.80	u J	UG/L	0.80	1.0
		Aluminum, Soluble	20.0	u	UG/L	20.0	1.0
		Arsenic, Soluble	4.5		UG/L	3.8	1.0
		Boron, Soluble	27.9		UG/L	2.5	1.0
		Barium, Soluble	56.1		UG/L	0.50	1.0
		Beryllium, Soluble	0.35	u	UG/L	0.35	1.0
		Bismuth, Soluble	3.0	u	UG/L	3.0	1.0
		Calcium, Soluble	41400		UG/L	16.6	1.0
		Cadmium, Soluble	0.28	u	UG/L	0.28	1.0
		Cobalt, Soluble	1.0	u	UG/L	1.0	1.0
		Chromium, Soluble	1.0	u	UG/L	1.0	1.0
		Copper, Soluble	1.4		UG/L	1.0	1.0
		Iron, Soluble	22.8	u	UG/L	22.8	1.0
		Mercury, Soluble	0.06	u	UG/L	0.06	1.0
		Potassium, Soluble	2480		UG/L	244	1.0
		Lithium, Soluble	6.3		UG/L	0.36	1.0
		Magnesium, Soluble	21400		UG/L	12.8	1.0
		Manganese, Soluble	1.1		UG/L	0.30	1.0
		Molybdenum, Soluble	1.6	u	UG/L	1.6	1.0
		Sodium, Soluble	34900		UG/L	30.9	1.0
		Nickel, Soluble	1.0	u	UG/L	1.0	1.0
		Phosphorus, Soluble	21.0	u	UG/L	21.0	1.0
		Lead, Soluble	1.5	u	UG/L	1.5	1.0
		Antimony, Soluble	1.5	u J	UG/L	1.5	1.0
		Selenium, Soluble	3.0	u	UG/L	3.0	1.0
		Silicon, Soluble	6190		UG/L	33.4	1.0
		Tin, Soluble	3.0	u J	UG/L	3.0	1.0
		Strontium, Soluble	313		UG/L	0.43	1.0
		Titanium, Soluble	0.80	u	UG/L	0.80	1.0
		Thallium, Soluble	3.0	u	UG/L	3.0	1.0
		Uranium, Soluble	10.0	u	UG/L	10.0	1.0
		Vanadium, Soluble	19.4		UG/L	0.70	1.0
		Zinc, Soluble	7.7		UG/L	1.0	1.0

4/11/09

Lionville Laboratory, Inc.

INORGANICS DATA SUMMARY REPORT 12/01/04

CLIENT: WC-HANFORD RC-119 71497 LVL LOT #: 0410L109

WORK ORDER: 40646-001-001-0001-00

SAMPLE	SITE ID	ANALYTE	RESULT		UNITS	REPORTING LIMIT	DILUTION FACTOR
-003	J17K64	Silver, Soluble	0.16	uJ	UG/L	0.16	1.0
		Aluminum, Soluble	20.0	u	UG/L	20.0	1.0
		Arsenic, Soluble	3.8		UG/L	2.8	1.0
		Boron, Soluble	44.8		UG/L	3.6	1.0
		Barium, Soluble	40.2		UG/L	0.50	1.0
		Beryllium, Soluble	0.20	u	UG/L	0.20	1.0
		Bismuth, Soluble	3.0	u	UG/L	3.0	1.0
		Calcium, Soluble	41900		UG/L	29.9	1.0
		Cadmium, Soluble	0.20	u	UG/L	0.20	1.0
		Cobalt, Soluble	1.0	u	UG/L	1.0	1.0
		Chromium, Soluble	1.0	u	UG/L	1.0	1.0
		Copper, Soluble	1.0	u	UG/L	1.0	1.0
		Iron, Soluble	30.6		UG/L	22.5	1.0
		Mercury, Soluble	0.05	u	UG/L	0.04	1.0
		Potassium, Soluble	3610		UG/L	346	1.0
		Lithium, Soluble	8.7		UG/L	0.29	1.0
		Magnesium, Soluble	29400		UG/L	12.6	1.0
		Manganese, Soluble	1.4		UG/L	0.30	1.0
		Molybdenum, Soluble	2.4		UG/L	1.6	1.0
		Sodium, Soluble	46600		UG/L	10.0	1.0
		Nickel, Soluble	1.6		UG/L	1.0	1.0
		Phosphorus, Soluble	24.0	u	UG/L	24.0	1.0
		Lead, Soluble	2.0		UG/L	1.8	1.0
		Antimony, Soluble	1.1	uJ	UG/L	1.1	1.0
		Selenium, Soluble	3.4		UG/L	3.0	1.0
		Silicon, Soluble	8450		UG/L	33.4	1.0
		Tin, Soluble	5.0	uJ	UG/L	5.0	1.0
		Strontium, Soluble	161		UG/L	0.15	1.0
		Titanium, Soluble	0.72		UG/L	0.50	1.0
		Thallium, Soluble	5.0	u	UG/L	5.0	1.0
		Uranium, Soluble	10.0	u	UG/L	10.0	1.0
		Vanadium, Soluble	8.3		UG/L	0.76	1.0
		Zinc, Soluble	10.3		UG/L	3.0	1.0

4/11/09

Lionville Laboratory, Inc.

INORGANICS DATA SUMMARY REPORT 12/01/04

CLIENT: WC-HANFORD RC-115 K1491 LVL LOT #: 0410L109

WORK ORDER: 40949-003-001-0001-00

SAMPLE	SITE ID	ANALYTE	RESULT		UNITS	REPORTING LIMIT	DILUTION FACTOR
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-008	B17R39	Silver, Soluble	0.50	UJ	UG/L	0.50	1.0
		Aluminum, Soluble	20.0	U	UG/L	20.0	1.0
		Arsenic, Soluble	4.3		UG/L	2.9	1.0
		Boron, Soluble	72.5		UG/L	3.1	1.0
		Barium, Soluble	26.3		UG/L	0.50	1.0
		Beryllium, Soluble	0.20	U	UG/L	0.20	1.0
		Bismuth, Soluble	5.0	U	UG/L	5.0	1.0
		Calcium, Soluble	47000		UG/L	20.0	1.0
		Cadmium, Soluble	0.20	U	UG/L	0.20	1.0
		Cobalt, Soluble	1.0	U	UG/L	1.0	1.0
		Chromium, Soluble	1.0	U	UG/L	1.0	1.0
		Copper, Soluble	1.0	U	UG/L	1.0	1.0
		Iron, Soluble	22.5	U	UG/L	22.5	1.0
		Mercury, Soluble	0.04	U	UG/L	0.04	1.0
		Potassium, Soluble	7180		UG/L	246	1.0
		Lithium, Soluble	13.7		UG/L	0.30	1.0
		Magnesium, Soluble	23400		UG/L	12.6	1.0
		Manganese, Soluble	1.0		UG/L	0.20	1.0
		Molybdenum, Soluble	3.8		UG/L	1.8	1.0
		Sodium, Soluble	28400		UG/L	10.0	1.0
		Nickel, Soluble	1.0	U	UG/L	1.0	1.0
		Phosphorus, Soluble	72.8		UG/L	26.0	1.0
		Lead, Soluble	1.6	U	UG/L	1.6	1.0
		Antimony, Soluble	1.5	UJ	UG/L	2.4	1.0
		Selenium, Soluble	3.0	U	UG/L	3.0	1.0
		Silicon, Soluble	15100		UG/L	27.4	1.0
		Tin, Soluble	2.0	UJ	UG/L	2.0	1.0
		Strontium, Soluble	152		UG/L	0.15	1.0
		Titanium, Soluble	0.60	U	UG/L	0.60	1.0
		Thallium, Soluble	2.0	U	UG/L	2.0	1.0
		Uranium, Soluble	10.0	U	UG/L	10.0	1.0
		Vanadium, Soluble	11.0		UG/L	0.70	1.0
		Zinc, Soluble	3.0	U	UG/L	3.0	1.0

4/11/05

Lionville Laboratory, Inc.

INORGANICS DATA SUMMARY REPORT 12/01/08

CLIENT: WC-HANFORD RG-118 K1461
WORK ORDER: 00048-001-001-0001-00

LVL LOT #: 0810L193

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
-006	J17847	Silver, Total	0.50 u J	UG/L	0.50	1.0
		Aluminum, Total	27.9	UG/L	20.0	1.0
		Arsenic, Total	7.8	UG/L	2.9	1.0
		Boron, Total	39.5	UG/L	2.6	1.0
		Barium, Total	30.3	UG/L	0.50	1.0
		Beryllium, Total	0.16 u	UG/L	0.16	1.0
		Bismuth, Total	1.0 u	UG/L	1.0	1.0
		Calcium, Total	56400	UG/L	20.0	1.0
		Cadmium, Total	0.16 u	UG/L	0.16	1.0
		Cobalt, Total	1.0 u	UG/L	1.0	1.0
		Chromium, Total	1.0 u	UG/L	1.0	1.0
		Copper, Total	1.3	UG/L	1.0	1.0
		Iron, Total	58.3	UG/L	22.5	1.0
		Mercury, Total	0.06 u	UG/L	0.06	1.0
		Potassium, Total	8720	UG/L	246	1.0
		Lithium, Total	18.7	UG/L	0.30	1.0
		Magnesium, Total	17500	UG/L	13.5	1.0
		Manganese, Total	2.0	UG/L	0.30	1.0
		Molybdenum, Total	5.4	UG/L	1.8	1.0
		Sodium, Total	43700	UG/L	10.0	1.0
		Nickel, Total	7.0 u	UG/L	7.0	1.0
		Phosphorus, Total	41.2	UG/L	34.6	1.0
		Lead, Total	1.9 U	UG/L	1.9	1.0
		Antimony, Total	1.9 u J	UG/L	1.9	1.0
		Selenium, Total	4.3	UG/L	3.0	1.0
		Silicon, Total	18300	UG/L	33.6	1.0
		Tin, Total	3.0 u J	UG/L	3.0	1.0
		Strontium, Total	389	UG/L	0.15	1.0
		Titanium, Total	6.3	UG/L	0.50	1.0
		Thallium, Total	7.0 u	UG/L	7.0	1.0
		Uranium, Total	10.0 u	UG/L	10.0	1.0
		Vanadium, Total	18.3	UG/L	0.70	1.0
		Zinc, Total	4.6	UG/L	3.0	1.0

4/11/09

Lionville Laboratory, Inc.

INORGANICS DATA SUMMARY REPORT 12/01/88

CLIENT: [illegible] MC-118 K1461 LVL LOT #: 8812L107

WORK ORDER: 40049-001-001-0001-00

SAMPLE	SITE ID	ANALYTE	RESULT		UNITS	REPORTING LIMIT	DILUTION FACTOR
-007	J17R44	Silver, Soluble	0.50	u J	UG/L	0.50	1.0
		Aluminum, Soluble	10.0	u	UG/L	10.0	1.0
		Arsenic, Soluble	8.6		UG/L	2.5	1.0
		Boron, Soluble	77.4		UG/L	2.9	1.0
		Barium, Soluble	24.7		UG/L	0.50	1.0
		Beryllium, Soluble	0.25	u	UG/L	0.25	1.0
		Bismuth, Soluble	3.0	u	UG/L	3.0	1.0
		Calcium, Soluble	11700		UG/L	50.0	1.0
		Cadmium, Soluble	0.25	u	UG/L	0.25	1.0
		Cobalt, Soluble	1.0	u	UG/L	1.0	1.0
		Chromium, Soluble	1.6	u	UG/L	1.6	1.0
		Copper, Soluble	1.0	u	UG/L	1.0	1.0
		Iron, Soluble	14.5		UG/L	12.4	1.0
		Mercury, Soluble	0.06	u	UG/L	0.06	1.0
		Potassium, Soluble	8330		UG/L	348	1.0
		Lithium, Soluble	13.4		UG/L	0.50	1.0
		Magnesium, Soluble	71900		UG/L	13.8	1.0
		Manganese, Soluble	1.1		UG/L	0.20	1.0
		Molybdenum, Soluble	2.1		UG/L	1.3	1.0
		Sodium, Soluble	41100		UG/L	10.0	1.0
		Nickel, Soluble	1.0	u	UG/L	1.0	1.0
		Phosphorus, Soluble	24.4		UG/L	21.0	1.0
		Lead, Soluble	1.5	u	UG/L	1.5	1.0
		Antimony, Soluble	1.8	u J	UG/L	1.8	1.0
		Selenium, Soluble	1.6	u	UG/L	1.6	1.0
		Silicon, Soluble	13400		UG/L	33.4	1.0
		Tin, Soluble	3.0	u J	UG/L	3.0	1.0
		Strontium, Soluble	288		UG/L	0.18	1.0
		Titanium, Soluble	1.1		UG/L	0.50	1.0
		Thallium, Soluble	3.0	u	UG/L	3.0	1.0
		Uranium, Soluble	10.0	u	UG/L	10.0	1.0
		Vanadium, Soluble	14.1		UG/L	0.70	1.0
		Zinc, Soluble	3.4		UG/L	2.0	1.0

4/11/89

Appendix 4

Laboratory Narrative and Chain-of-Custody Documentation

LIONVILLE LABORATORY INC.

Analytical Report

Client: WC-HANFORD RC-115
LVL#: 0810L109
SDG/SAF#: K1401/RC-115

W.O.#: 60049-001-001-0001-00
Date Received: 10-21-08

METALS CASE NARRATIVE

The following is a summary of the QC results accompanying the sample results. Lionville Laboratory (LvL) certifies that all test results meet the requirements of NELAC except as noted below.

1. This narrative covers the analyses of 8 water samples.

2. The samples were prepared and analyzed in accordance with <u>SW-846</u> protocol. All field samples for ICP analysis have been concentrated 2-fold during digestion so that the contract required detection limits (CRDL) for target analytes could be met. The resultant preconcentration factors were applied to the field sample concentrations, the preparation blank (MB), matrix spike (MS), duplicate, and laboratory control samples (LCS) only.

   The samples were run on a different instrument for Aluminum, Potassium, Phosphorous, Sodium, and Silicon due to sample matrix.

3. All analyses were performed within the required holding times.

4. Please refer to the Sample Receipt Check List for sample discrepancies in LvLI's sample acceptance policy.

5. All Initial and Continuing Calibration Verifications (ICV/CCVs) were within the 90-110% control limits (80-120% for Mercury).

6. All Initial and Continuing Calibration Blanks (ICB/CCBs) were within control limits (less than the LOQ).

7. All preparation/method blanks (MB) were within method criteria (less than the Limit of Quantitation (3-10X the LOD), MB value less than 5% of the RCRA limit, or samples greater than 20X MB value). Refer to the Inorganics Method Blank Data Summary.

8. All ICP Interference Check Standards were within control limits.

9. All laboratory control samples (LCS) were within the 80-120% control limits. Refer to the

The results presented in this report relate only to the analytical testing and conditions of the samples at receipt and during storage. All pages of this report are integral parts of the analytical data. Therefore, this report should only be reproduced in its entirety of 38 pages.

Inorganics Laboratory Control Standards Report.

10. The matrix spike (MS) recoveries for 4 analytes were outside the 75-125% control limits. Refer to the Inorganics Accuracy Report.

11. For analytes where the ICP MS is out-of-control, a post-digestion MS (PDS) and serial dilution are performed. A PDS was prepared at meaningful concentration level for the following analytes:

		PDS	PDS
Sample ID	Element	Concentration (ppb)	% Recovery
J17K58	Silicon	5,000	134.8
	Antimony	100	108.5
	Silver	100	105.4
	Tin	100	113.8

12. The duplicate analyses for 4 analytes were outside the 20% Relative Percent Difference (RPD) control limits. Refer to the Inorganics Precision Report.

13. For the purposes of this report, the data has been reported to the Limit of Detection (LOD). Values between the LOD and the Limit of Quantitation (LOQ) are acquired in a region of less-certain quantification.

14. Soluble and total digestates were prepared within the same preparation batch and will be noted as such on the Inorganics Data Summary Report.

15. LvL is NELAP accredited by the state of Pennsylvania. For a complete listing of accrediting authorities and the corresponding analytes/methods, please contact your Project Manager.

16. I certify that this sample data package is in compliance with SOW requirements, both technically and for completeness, other than the conditions detailed above. Release of the data contained in this hard-copy data package has been authorized by the Laboratory Manager or a designee, as verified by the following signature.

Iain Daniels
Laboratory Manager
Lionville Laboratory

12/3/08
Date

dm/m10-109

LvLI

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

Collector	Company Contact Joan Kessner	Telephone No. 375-4681	Project Coordinator WEISS, RL
Project Designation Columbia River Component of the RCBRA - Surface Water	Sampling Location VOA trip blank		SAF No. RC-115
Ice Chest No. WCH-08-010, 012, 014, 017	Field Logbook No. EL-1630	COA BESCRC6520	Method of Shipment FED EX
Shipped To EBERLINE SERVICES [✓ LIONVILLE]	Offsite Property No.		Bill of Lading/Air Bill No. 79 277 3338820

Price Code 7K

Data Turnaround 45 Days

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

001021

Preservation	HCl or H2SO4 to pH <2 Cool
Type of Container	aG*
No. of Container(s)	3
Volume	40mL
SAMPLE ANALYSIS	See item (1) in Special Instructions.

Sample No.	Matrix *	Sample Date	Sample Time	
J17K73	WATER	10/17/08	1030	X

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
	10/17/08 2055	Ref. B	10/17/08 2055
Ref. B	10/20/08 1240	Kim Boyd	10/20/08 1240
Kim Boyd	10/20/08 1321	Fed EX	10/20/08 1321
Fed Ex	10-21-08 0925		10-21-08 0925

SPECIAL INSTRUCTIONS

(1) VOA - 8260A (TCL) {1,1,1-Trichloroethane, 1,1,2,2-Tetrachloroethane, 1,1,2-Trichloroethane, 1,1-Dichloroethane, 1,1-Dichloroethene, 1,2-Dichloroethane, 1,2-Dichloropropane, 2-Butanone, 2-Hexanone, 4-Methyl-2-Pentanone, Acetone, Benzene, Bromodichloromethane, Bromoform, Bromomethane, Carbon disulfide, Carbon tetrachloride, Chlorobenzene, Chloroethane, Chloroform, Chloromethane, cis-1,2-Dichloroethylene, cis-1,3-Dichloropropene, Dibromochloromethane, Ethylbenzene, Methylenechloride, Styrene, Tetrachloroethene, Toluene, trans-1,2-Dichloroethylene, trans-1,3-Dichloropropene, Trichloroethene, Vinyl chloride, Xylenes (total)}

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab.

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

000000975

Washington Closure Hanford | **CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST**

ollector Ian Spyakoff	Company Contact Joan Kessner	Telephone No. 375-4688	Project Coordinator WEISS, RL	Price Code 7K
roject Designation Columbia River Component of the RCBRA - Surface Water	Sampling Location WBW-15W		SAF No. RC-115	Data Turnaround 45 Days
e Chest No. WCH-08-010, 012, 014, 017	Field Logbook No. EL-1630	COA BESCRC6520	Method of Shipment FED EX	
hipped To EBERLINE SERVICES [✓ LIONVILLE]	Offsite Property No.		Bill of Lading/Air Bill No. 792773338820	

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

			Preservation	HNO3 to pH <2	Cool 4 C HNO3 to pH ~~[illegible]~~	Cool 4C	Cool 4C H2SO4 ~~[illegible]~~	HNO3 or H2SO4 to pH	Cool 4C	Cool 4C	HCl or H2SO4 to pH <2 Cool	Cool 4C	HCl to pH <2 Cool 4C
			Type of Container	G/P	G/P	G/P	aG	G/P	aG	aG	aGs*	aG	aG
			No. of Container(s)	1	1	1	1	1	4	4	3	2	3
			Volume	500mL	500mL	250mL	125mL	250mL	1000mL	1000mL	40mL	1000mL	1000mL
SAMPLE ANALYSIS				See item (1) in Special Instructions	FILTERED ICP Metals - 6010TR; FILTERED Mercury - 7470	Alkalinity - 310.1	Dissolved Organic Carbon - 415.1M	Hardness - 130.2	PCBs - 8082	Pesticides - 8081	See item (2) in Special Instructions	Semi-VOA - 8270A (TCL)	TPH-Diesel Range - WTPH-D +
Sample No.	Matrix *	Sample Date	Sample Time										
17K51	WATER	10/17/08	1320	X		X	X	X	X	X	X	X	X
17K58	WATER	10/17/08	1320		X								

CHAIN OF POSSESSION — Sign/Print Names

elinquished By/Removed From Ian Spyakoff	Date/Time 10/17/08 2055	Received By/Stored In Ref. C.	Date/Time 10/17/08 2055
elinquished By/Removed From Ref. C	Date/Time 10/20/08 1037	Received By/Stored In Kim Royal Kim Royal	Date/Time 10/20/08 1037
elinquished By/Removed From Kim Royal Kim Royal	Date/Time 10/20/08 1321	Received By/Stored In Fed Ex	Date/Time 10/20/08 1321
elinquished By/Removed From Fed Ex	Date/Time 10/21/08 0925	Received By/Stored In	Date/Time 10-21-08 0925
elinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
elinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time

SPECIAL INSTRUCTIONS

(1) ICP Metals - 6010TR (Client List) (Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Titanium, Uranium, Vanadium, Zinc); Mercury - 7470 - (CV)
(2) VOA - 8260A (TCL) (1,1,1-Trichloroethane, 1,1,2,2-Tetrachloroethane, 1,1,2-Trichloroethane, 1,1-Dichloroethane, 1,1-Dichloroethene, 1,2-Dichloroethane, 1,2-Dichloropropane, 2-Butanone, 2-Hexanone, 4-Methyl-2-Pentanone, Acetone, Benzene, Bromodichloromethane, Bromoform, Bromomethane, Carbon disulfide, Carbon tetrachloride, Chlorobenzene, Chloroethane, Chloroform, Chloromethane, cis-1,2-Dichloroethylene, cis-1,3-Dichloropropene, Dibromochloromethane, Ethylbenzene, Methylene chloride, Styrene, Tetrachloroethene, Toluene, trans-1,2-Dichloroethylene, trans-1,3-Dichloropropene, Trichloroethene, Vinyl chloride, Xylenes (total))

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab.

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

Collector Ian Stopakoff	Company Contact Joan Kessner	Telephone No. 375-4681	Project Coordinator WEISS, RL
Project Designation Columbia River Component of the RCBRA - Surface Water	Sampling Location RO-1SW		SAF No. RC-115
Ice Chest No. WCH-08-010, 012, 014, 017	Field Logbook No. EL-1630	COA BESCRC6520	Method of Shipment FED EX
Shipped To EBERLINE SERVICES [✓ LIONVILLE]	Offsite Property No.		Bill of Lading/Air Bill No. 792773338820

Price Code 7K

Data Turnaround 45 Days

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

Preservation	HNO3 to pH <2	Cool 4C [illegible] HNO3 to pH <2	Cool 4C	Cool 4C [illegible] H3PO4 to pH <2 Cool	HNO3 or H2SO4 to pH	Cool 4C	Cool 4C	HCl or H2SO4 to pH <2 Cool	Cool 4C	HCl to pH <2 Cool 4C
Type of Container	G/P	G/P	G/P	aG	G/P	aG	aG	aGs*	aG	aG
No. of Container(s)	1	1	1	1	1	4	4	2 / [illegible]	2	1
Volume	500mL	500mL	250mL	125mL	250mL	1000mL	1000mL	40mL	1000mL	1000mL
SAMPLE ANALYSIS	See item (1) in Special Instructions.	Pb,Tl,Sb ICP Metals - 6010TR; Pb,Tl,Sb Mercury - 7470	Alkalinity - 310.1	Dissolved Organic Carbon - 415.1M	Hardness - 130.1	PCBs - 8082	Pesticides - 8081	See item (2) in Special Instructions.	Semi-VOA - 8270A (TCL)	TPH-Diesel Range - WTPH-D +

Sample No.	Matrix *	Sample Date	Sample Time										
J17K52	WATER	10/17/08	0952	X		X	X	X	X	X	X	X	X
J17K58	WATER	10/17/08	0952		X								

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
I. Stopakoff	10/17/08 2055	REF. B	10/17/08 2055
Ref B	10/20/08 1130	Kim Boyd Kim Boyd	10/20/08 1130
Kim Boyd Kim Boyd	10/20/08 1321	Fed EX	10/20/08 1321
Fed Ex	10/21/08 0925		10/21/08 0925

SPECIAL INSTRUCTIONS

(1) ICP Metals - 6010TR (Client List) (Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Titanium, Uranium, Vanadium, Zinc]; Mercury - 7470 - [CV]
(2) VOA - 8260A (TCL) [1,1,1-Trichloroethane, 1,1,2,2-Tetrachloroethane, 1,1,2-Trichloroethane, 1,1-Dichloroethane, 1,1-Dichloroethene, 1,2-Dichloroethane, 1,2-Dichloropropane, 2-Butanone, 2-Hexanone, 4-Methyl-2-Pentanone, Acetone, Benzene, Bromodichloromethane, Bromoform, Bromomethane, Carbon disulfide, Carbon tetrachloride, Chlorobenzene, Chloroethane, Chloroform, Chloromethane, cis-1,2-Dichloroethylene, cis-1,3-Dichloropropene, Dibromochloromethane, Ethylbenzene, Methylene chloride, Styrene, Tetrachloroethene, Toluene, trans-1,2-Dichloroethylene, trans-1,3-Dichloropropene, Trichloroethene, Vinyl chloride, Xylenes (total)]

Sampler unavailable to remove samples
from controlled storage. Shipper removed
samples from storage location taking
custody of samples for shipment to lab.

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

000000035

Collector: Brv Stupakoff

Company Contact: Joan Kessner

Telephone No.: 375-4688

Project Coordinator: WEISS, RL

Price Code: 7K

Data Turnaround: 45 Days

Project Designation: Columbia River Component of the RCBRA - Surface Water

Sampling Location: RG-1SW

SAF No.: RC-115

Ice Chest No.: WCH-08-010, 012, 014, 017

Field Logbook No.: EL-1630

COA: BESCRC6520

Method of Shipment: FED EX

Shipped To: EBERLINE SERVICES/ LIONVILLE

Offsite Property No.:

Bill of Lading/Air Bill No.: 792773538820

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

0000024

Preservation	HNO3 to pH <2	None	Cool 4C	Cool 4C	HNO3 or H2SO4 to pH	Cool 4C	Cool 4C	HCl or H2SO4 to pH <2 Cool	Cool 4C	HCl to pH <2 Cool 4C
Type of Container	G/P	G/P	G/P	G	G/P	aG	aG	aGs*	aG	aG
No. of Container(s)	1	1	1	1	1	4	4	1 / 12	2	3
Volume	500mL	500mL	250mL	125mL	250mL	1000mL	1000mL	40mL	1000mL	1000mL
SAMPLE ANALYSIS	See item (1) in Special Instructions.	FILTERED ICP Metals - 6010TS; FILTERED Mercury - 7470	Alkalinity - 310.1	Dissolved Organic Carbon - 415.1M	Hardness - 130.2	PCBs - 8082	Pesticides - 8081	See item (2) in Special Instructions.	Semi-VOA - 8270A (TCL)	TPH-Diesel Range - WTPH-D +

Sample No.	Matrix *	Sample Date	Sample Time										
J17R67	WATER	10/17/08	1040	X		X	X	X	X	X	X	X	X
J17R68	WATER	10/17/08	1040		X								

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
B. Stupakoff	10/17/08 2055	Ref. C	10/17/08 2055
Ref. C	10/20/08	Kim Royal	10/20/08 1205
Kim Royal	10/20/08 1521	Fed EX	10/20/08 1521
FedEx	10/21/08 0940		10-21-08 0940

SPECIAL INSTRUCTIONS

(1) ICP Metals - 6010TS (Client List) {Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Titanium, Uranium, Vanadium, Zinc}; Mercury - 7470 - (CV)

(2) VOA - 8260A (TCL) {1,1,1-Trichloroethane, 1,1,2,2-Tetrachloroethane, 1,1,2-Trichloroethane, 1,1-Dichloroethane, 1,1-Dichloroethene, 1,2-Dichloroethane, 1,2-Dichloropropane, 2-Butanone, 2-Hexanone, 4-Methyl-2-Pentanone, Acetone, Benzene, Bromodichloromethane, Bromoform, Bromomethane, Carbon disulfide, Carbon tetrachloride, Chlorobenzene, Chloroethane, Chloroform, Chloromethane, cis-1,2-Dichloroethylene, cis-1,3-Dichloropropene, Dibromochloromethane, Ethylbenzene, Methylene chloride, Styrene, Tetrachloroethene, Toluene, trans-1,2-Dichloroethylene, trans-1,3-Dichloropropene, Trichloroethene, Vinyl chloride, Xylenes (total)}

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab.

Matrix *

S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION — Received By: Title: Date/Time:

FINAL SAMPLE DISPOSITION — Disposal Method: Disposed By: Date/Time:

WCH-EE-011

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

Collector [illegible]	Company Contact Joan Kessner	Telephone No. 375-4688	Project Coordinator WEISS, RL
Project Designation Columbia River Component of the RCBRA - Surface Water	Sampling Location WDT-1SW		SAP No. RC-115
Ice Chest No. WCH-08-010, 012, 014, 017	Field Logbook No. EL-1630	COA BESCRC6520	Method of Shipment FED EX
Shipped To EBERLINE SERVICES [✓ LIONVILLE]	Offsite Property No.		Bill of Lading/Air Bill No. 79277 3338920

Price Code 7K

Data Turnaround 45 Days

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

			Preservation	HNO3 to pH <2	Cool 4 C [illegible] ~~HNO3 to pH <2~~	Cool 4C	Cool 4 C [illegible] ~~[illegible]~~	HNO3 or H2SO4 to pH	Cool 4C	Cool 4C	HCl or H2SO4 to pH <2 Cool	Cool 4C	HCl to pH <2 Cool 4C
			Type of Container	G/P	G/P	G/P	aG	G/P	aG	aG	aGs*	aG	aG
			No. of Container(s)	1	1	1	1	1	4	4	3	2	3
			Volume	500mL	500mL	250mL	125mL	250mL	1000mL	1000mL	40mL	1000mL	1000mL
			SAMPLE ANALYSIS	See item (1) in Special Instructions.	FILTERED ICP Metals - 6010TR; FILTERED Mercury - 7470	Alkalinity - 310.1	Dissolved Organic Carbon - 415.1 or	Hardness - 130.2	PCBs - 8082	Pesticides - 8081	See item (2) in Special Instructions.	Semi-VOA - 8270A (TCL)	TPH-Diesel Range - WTPH-D +
Sample No.	Matrix *	Sample Date	Sample Time										
J17K50	WATER	10/17/08	1310	X		X	X	X	X	X	X	X	X
J17K57	WATER	10/17/08	1310		X								

W000025

CHAIN OF POSSESSION		Sign/Print Names	
Relinquished By/Removed From [illegible]	Date/Time 10/17/08 2055	Received By/Stored In REF. 3	Date/Time 10/17/08 2055
Relinquished By/Removed From Ref. 3	Date/Time 10/20/08 1007	Received By/Stored In Kim Boyd · Kim Boyd	Date/Time 10/20/08 1007
Relinquished By/Removed From Kim Boyd Kim Boyd	Date/Time 10/20/08 1321	Received By/Stored In Fed Ex	Date/Time 10/20/08 1321
Relinquished By/Removed From Fed Ex	Date/Time 10/21/08 0925	Received By/Stored In [illegible]	Date/Time 10/21/08 0925
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time

SPECIAL INSTRUCTIONS

(1) ICP Metals - 6010TR (Client List) {Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Titanium, Uranium, Vanadium, Zinc}; Mercury - 7470 - (CV)
(2) VOA - 8260A (TCL) {1,1,1-Trichloroethane, 1,1,2,2-Tetrachloroethane, 1,1,2-Trichloroethane, 1,1-Dichloroethane, 1,1-Dichloroethene, 1,2-Dichloroethane, 1,2-Dichloropropane, 2-Butanone, 2-Hexanone, 4-Methyl-2-Pentanone, Acetone, Benzene, Bromodichloromethane, Bromoform, Bromomethane, Carbon disulfide, Carbon tetrachloride, Chlorobenzene, Chloroethane, Chloroform, Chloromethane, cis-1,2-Dichloroethylene, cis-1,3-Dichloropropene, Dibromochloromethane, Ethylbenzene, Methylene chloride, Styrene, Tetrachloroethene, Toluene, trans-1,2-Dichloroethylene, trans-1,3-Dichloropropene, Trichloroethene, Vinyl chloride, Xylenes (total)}

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab.

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

000000837

Appendix 6

Data Validation Supporting Documentation

INORGANIC ANALYSIS DATA VALIDATION CHECKLIST

VALIDATION LEVEL:	A	B	[✓ C]	D	E
PROJECT: RCBRA			DATA PACKAGE: K1401		
VALIDATOR: ELR		LAB: LLI		DATE: 4/5/09	
			SDG: K1401		
ANALYSES PERFORMED					
[✓ SW-846/ICP]	SW-846/GFAA	[✓ SW-846/Hg]	SW-846 Cyanide		
SAMPLES/MATRIX					
J17K50 J17K51 J17K52 J17K57					
J17K58 J17K59 J17K67 J17K68					

1. DATA PACKAGE COMPLETENESS AND CASE NARRATIVE

Technical verification documentation present? .... Yes [✓ No] N/A

Comments:

2. INSTRUMENT PERFORMANCE AND CALIBRATIONS (Levels D and E)

Initial calibrations performed on all instruments? .... Yes No [✓ N/A]

Initial calibrations acceptable? .... Yes No [✓ N/A]

ICP interference checks acceptable? .... Yes No [✓ N/A]

ICV and CCV checks performed on all instruments? .... Yes No [✓ N/A]

ICV and CCV checks acceptable? .... Yes No [✓ N/A]

Standards traceable? .... Yes No [✓ N/A]

Standards expired? .... Yes No [✓ N/A]

Calculation check acceptable? .... Yes No [✓ N/A]

Comments:

INORGANIC ANALYSIS DATA VALIDATION CHECKLIST

3. BLANKS (Levels B, C, D, and E)

ICB and CCB checks performed for all applicable analyses? (Levels D, E) .... Yes No [✓ N/A]

ICB and CCB results acceptable? (Levels D, E) .... Yes No [✓ N/A]

Laboratory blanks analyzed? .... [✓ Yes] No N/A

Laboratory blank results acceptable? .... [✓ Yes] No N/A

Field blanks analyzed? (Levels C, D, E) .... Yes [✓ No] N/A

Field blank results acceptable? (Levels C, D, E) .... Yes No [✓ N/A]

Transcription/calculation errors? (Levels D, E) .... Yes No [✓ N/A]

Comments: no FB

4. ACCURACY (Levels C, D, and E)

MS/MSD samples analyzed? .... [✓ Yes] No N/A

MS/MSD results acceptable? .... Yes [✓ No] N/A

MS/MSD standards NIST traceable? (Levels D, E) .... Yes No [✓ N/A]

MS/MSD standards expired? (Levels D, E) .... Yes No [✓ N/A]

LCS/BSS samples analyzed? .... [✓ Yes] No N/A

LCS/BSS results acceptable? .... [✓ Yes] No N/A

Standards traceable? (Levels D, E) .... Yes No [✓ N/A]

Standards expired? (Levels D, E) .... Yes No [✓ N/A]

Transcription/calculation errors? (Levels D, E) .... Yes No [✓ N/A]

Performance audit sample(s) analyzed? .... Yes [✓ No] N/A

Performance audit sample results acceptable? .... Yes No [✓ N/A]

Comments: tin (63.2%) antimony (69.1%) silver (47.8%) - J all

no PAS

INORGANIC ANALYSIS DATA VALIDATION CHECKLIST

5. PRECISION (Levels C, D, and E)

Duplicate RPD values acceptable? .... [✓ Yes] No N/A

Duplicate results acceptable? .... [✓ Yes] No N/A

MS/MSD standards NIST traceable? (Levels D, E) .... Yes No [✓ N/A]

MS/MSD standards expired? (Levels D, E) .... Yes No [✓ N/A]

Field duplicate RPD values acceptable? .... [✓ Yes] No N/A

Field split RPD values acceptable? .... Yes No [✓ N/A]

Transcription/calculation errors? (Levels D, E) .... Yes No [✓ N/A]

Comments:

6. ICP QUALITY CONTROL (Levels D and E)

ICP serial dilution samples analyzed? .... Yes No [✓ N/A]

ICP serial dilution %D values acceptable? .... Yes No [✓ N/A]

ICP post digestion spike required? .... Yes No [✓ N/A]

ICP post digestion spike values acceptable? .... Yes No [✓ N/A]

Standards traceable? .... Yes No [✓ N/A]

Standards expired? .... Yes No [✓ N/A]

Transcription/calculation errors? .... Yes No [✓ N/A]

Comments:

INORGANIC ANALYSIS DATA VALIDATION CHECKLIST

7. FURNACE AA QUALITY CONTROL (Levels D and E)

Duplicate injections performed as required? .... Yes No [✓ N/A]
Duplicate injection %RSD values acceptable? .... Yes No [✓ N/A]
Analytical spikes performed as required? .... Yes No [✓ N/A]
Analytical spike recoveries acceptable? .... Yes No [✓ N/A]
Standards traceable? .... Yes No [✓ N/A]
Standards expired? .... Yes No [✓ N/A]
MSA performed as required? .... Yes No [✓ N/A]
MSA results acceptable? .... Yes No [✓ N/A]
Transcription/calculation errors? .... Yes No [✓ N/A]
Comments:

8. HOLDING TIMES (all levels)

Samples properly preserved? .... [✓ Yes] No N/A
Sample holding times acceptable? .... [✓ Yes] No N/A
Comments:

INORGANIC ANALYSIS DATA VALIDATION CHECKLIST

9. RESULT QUANTITATION AND DETECTION LIMITS (all levels)

Results reported for all requested analyses? .... [✓ Yes] No N/A

Results supported in the raw data? (Levels D, E) .... Yes No [✓ N/A]

Samples properly prepared? (Levels D, E) .... Yes No [✓ N/A]

Detection limits meet RDL? .... [✓ Yes] No N/A

Transcription/calculation errors? (Levels D, E) .... Yes No [✓ N/A]

Comments: ____________

Appendix 6

Additional Documentation Requested by Client

Lionville Laboratory, Inc.

INORGANICS METHOD BLANK DATA SUMMARY PAGE 12/01/98

CLIENT: WC-HANFORD RC-116 K1401

LVL LOT #: 9810L163

WORK ORDER: 40063-001-001-0001-00

SAMPLE	SITE ID	ANALYTE	RESULT		UNITS	REPORTING LIMIT	DILUTION FACTOR
BLANK1	98L0417-MB1	Silver, Total	0.50	u	UG/L	0.50	1.0
		Aluminum, Total	20.0	u	UG/L	20.0	1.0
		Arsenic, Total	2.5	u	UG/L	2.5	1.0
		Boron, Total	3.6	u	UG/L	3.6	1.0
		Barium, Total	0.80	u	UG/L	0.80	1.0
		Beryllium, Total	0.30	u	UG/L	0.30	1.0
		Bismuth, Total	2.0	u	UG/L	2.0	1.0
		Calcium, Total	20.0	u	UG/L	20.0	1.0
		Cadmium, Total	0.30	u	UG/L	0.30	1.0
		Cobalt, Total	1.0	u	UG/L	1.0	1.0
		Chromium, Total	1.0	u	UG/L	1.0	1.0
		Copper, Total	1.0	u	UG/L	1.0	1.0
		Iron, Total	22.4	u	UG/L	22.4	1.0
		Potassium, Total	344	u	UG/L	344	1.0
		Lithium, Total	0.48		UG/L	0.30	1.0
		Magnesium, Total	13.8	u	UG/L	13.8	1.0
		Manganese, Total	0.30	u	UG/L	0.30	1.0
		Molybdenum, Total	1.8	u	UG/L	1.8	1.0
		Sodium, Total	21.5		UG/L	10.0	1.0
		Nickel, Total	1.0	u	UG/L	1.0	1.0
		Phosphorus, Total	25.0	u	UG/L	25.0	1.0
		Lead, Total	1.6	u	UG/L	1.6	1.0
		Antimony, Total	1.6	u	UG/L	1.6	1.0
		Selenium, Total	2.0	u	UG/L	2.0	1.0
		Silicon, Total	33.4	u	UG/L	33.4	1.0
		Tin, Total	3.0	u	UG/L	3.0	1.0
		Strontium, Total	0.18	u	UG/L	0.18	1.0
		Titanium, Total	0.50	u	UG/L	0.50	1.0
		Thallium, Total	3.0	u	UG/L	3.0	1.0
		Uranium, Total	10.0	u	UG/L	10.0	1.0
		Vanadium, Total	0.70	u	UG/L	0.70	1.0
		Zinc, Total	3.0	u	UG/L	3.0	1.0
BLANK1	98C0136-MB1	Mercury, Total	0.04	u	UG/L	0.04	1.0

Lionville Laboratory, Inc.

INORGANICS ACCURACY REPORT 12/01/00

CLIENT: WC-HANFORD DC-115 X1461 LVL LOT #: 0010L108

WORK ORDER: 40049-001-001-0001-00

SAMPLE	SITE ID	ANALYTE	SPIKED SAMPLE	INITIAL RESULT	SPIKED AMOUNT	%RECOV	DILUTION FACTOR (REP)
-003	J17K61	Silver, Soluble	10.7	0.50u	25.0	42.8	1.0
		Aluminum, Soluble	1020	79.9 u	1000	102.2	1.0
		Arsenic, Soluble	994	3.8	1000	99.0	1.0
		Boron, Soluble	506	46.8	500	91.8	1.0
		Barium, Soluble	1040	60.3	1000	98.0	1.0
		Beryllium, Soluble	24.6	0.38u	25.0	98.4	1.0
		Bismuth, Soluble	2470	3.0 u	2500	98.8	1.0
		Calcium, Soluble	54200	41700	12500	99.7	1.0
		Cadmium, Soluble	23.9	0.26u	25.0	95.6	1.0
		Cobalt, Soluble	244	1.0 u	250	97.7	1.0
		Chromium, Soluble	98.8	1.0 u	100	98.8	1.0
		Copper, Soluble	127	1.0 u	125	101.6	1.0
		Iron, Soluble	599	79.8	500	104.8	1.0
		Mercury, Soluble	1.0	0.06u	1.0	101.4	1.0
		Potassium, Soluble	18200	5610	12500	100.4	1.0
		Lithium, Soluble	604	8.7	500	119.1	1.0
		Magnesium, Soluble	41200	28600	12500	100.8	1.0
		Manganese, Soluble	251	1.7	250	99.7	1.0
		Molybdenum, Sol	493	2.6	500	98.1	1.0
		Sodium, Soluble	59400	45400	12500	112.0	1.0
		Nickel, Soluble	248	1.6	250	98.6	1.0
		Phosphorus, Soluble	2660	25.0 u	2500	106.4	1.0
		Lead, Soluble	249	2.0	250	98.8	1.0
		Antimony, Soluble	171	1.6 u	250	68.4	1.0
		Selenium, Soluble	980	3.4	1000	97.6	1.0
		Silicon, Soluble	1880	6440	600	-760.0 *	1.0
		Tin, Soluble	310	3.0 u	500	62.0	1.0
		Strontium, Soluble	547	253	300	98.0	1.0
		Titanium, Soluble	486	0.73	500	97.1	1.0
		Thallium, Soluble	981	3.0 u	1000	98.1	1.0
		Uranium, Soluble	2410	10.0 u	2500	96.4	1.0
		Vanadium, Soluble	241	4.7	250	94.5	1.0
		Zinc, Soluble	256	16.3	250	95.9	1.0

Lionville Laboratory, Inc.

INORGANICS PRECISION REPORT 12/01/98

CLIENT: WC-HANFORD WC-115 K1401 LVL LOT #: 9811L163

WORK ORDER: 60048-001-001-0001-00

SAMPLE	SITE ID	ANALYTE	INITIAL RESULT	REPLICATE	RPD	DILUTION FACTOR(REP)
-003REP	J17X44	Silver, Soluble	0.500	0.50u	NC	1.0
		Aluminum, Soluble	20.0 u	20.0 u	NC	1.0
		Arsenic, Soluble	2.6	2.8	6.7	1.0
		Boron, Soluble	46.0	44.4	3.4	1.0
		Barium, Soluble	40.7	40.6	0.22	1.0
		Beryllium, Soluble	0.20u	0.20u	NC	1.0
		Bismuth, Soluble	2.0 u	2.0 u	NC	1.0
		Calcium, Soluble	41900	41900	0.061	1.0
		Cadmium, Soluble	0.20u	0.20u	NC	1.0
		Cobalt, Soluble	1.0 u	1.0 u	NC	1.0
		Chromium, Soluble	1.0 u	1.0 u	NC	1.0
		Copper, Soluble	1.0 u	1.0 u	NC	1.0
		Iron, Soluble	20.6	20.3	1.4	1.0
		Mercury, Soluble	0.04u	0.04u	NC	1.0
		Potassium, Soluble	5610	5470	2.4	1.0
		Lithium, Soluble	8.7	9.2	5.6	1.0
		Magnesium, Soluble	28600	28600	0.036	1.0
		Manganese, Soluble	1.8	1.9	5.4	1.0
		Molybdenum, Sol	2.6	2.8	7.4	1.0
		Sodium, Soluble	45600	43800	4.0	1.0
		Nickel, Soluble	1.4	1.0 U	~~NC~~ 200	1.0
		Phosphorus, Soluble	20.0 u	20.0 u	NC	1.0
		Lead, Soluble	3.0	1.5 u	~~NC~~ 200	1.0
		Antimony, Soluble	1.5 u	1.5 u	NC	1.0
		Selenium, Soluble	2.4	2.0 u	~~NC~~ 200	1.0
		Silicon, Soluble	5490	5900	7.2	1.0
		Tin, Soluble	2.0 u	2.0 u	NC	1.0
		Strontium, Soluble	357	355	0.23	1.0
		Titanium, Soluble	0.75	1.0	22.4	1.0
		Thallium, Soluble	3.0 u	3.0 u	NC	1.0
		Uranium, Soluble	10.0 u	10.0 u	NC	1.0
		Vanadium, Soluble	5.3	5.2	1.9	1.0
		Zinc, Soluble	10.3	11.1	7.6	1.0

NC Corrected RPD
Agm 12/1/98

Date: 13 April 2009
To: Washington Closure Hanford (technical representative)
From: ELR Consultants
Project: Columbia River Component of the RCBRA – Surface Water
Subject: Semivolatile - Data Package No. K1401-LLI

INTRODUCTION

This memo presents the results of data validation on Data Package No. K1401 prepared by Lionville Laboratory Inc. (LLI). A list of samples validated along with the analyses reported and the method of analysis is provided in the following table.

Sample ID	Sample Date	Media	Validation	Data
J17K50	10/17/08	Water	C	See note 1
J17K51	10/17/08	Water	C	See note 1
J17K52	10/17/08	Water	C	See note 1
J17R67	10/17/08	Water	C	See note 1

1 – Semivolatiles by 8270C & diesel range organics by 8015B.

Data validation was conducted in accordance with the Washington Closure Hanford (WCH) validation statement of work and the Remedial Investigation Work Plan for Hanford Site Releases to the Columbia River (DOE/RL-2008-11, Rev. 0, September 2008). Appendices 1 through 6 provide the following information as indicated below:

Appendix 1. Glossary of Data Reporting Qualifiers
Appendix 2. Summary of Data Qualification
Appendix 3. Qualified Data Summary and Annotated Laboratory Reports
Appendix 4. Laboratory Narrative and Chain-of-Custody Documentation
Appendix 5. Data Validation Supporting Documentation

DATA QUALITY OBJECTIVES

- **Holding Times & Sample Preservation**

Analytical holding times were assessed to ascertain whether the holding time requirements were met by the laboratory. The holding time requirements are as follows: Samples must be extracted within 7 days of the date of sample collection and analyzed within 40 days from the date of extraction.

If holding times are exceeded, but not by greater than two times the limit, all associated sample results are qualified as estimates and flagged "J" for detects and "UJ" for non-detects. If holding times are exceeded by greater than two times the limit, all associated detectable sample results are qualified as estimates and flagged "J" and all non-detects are rejected and flagged "UR".

All holding times were acceptable.

- **Method Blanks**

Method blank analyses are conducted to determine the extent of laboratory contamination introduced through sampling, sample preparation and analysis. At least one acceptable method blank analysis must be conducted for every 20 samples. No contaminants should be present in the method blank. Analytical results for analytes present in any sample at less than five times the concentration of that analyte found in the associated blank are qualified as non-detects and flagged "U". Common laboratory contaminants present in samples at less than ten times the concentration of that analyte found in the associated blank are qualified as non-detects. If a sample result is less than the CRQL and is less than five times (or less than ten times for lab contaminants) the highest associated blank result, the sample result value is raised to the CRQL level and qualified as undetected "U".

All method blank results were acceptable.

Field Blanks

No field blanks were submitted for analysis.

- **Accuracy**

Matrix Spike/Matrix Spike Duplicate & Blank Spike Recoveries

Matrix spike/matrix spike duplicate analyses are used to assess the analytical accuracy of the reported data and the effect of the matrix on the ability to accurately quantify sample concentrations. Matrix spike/matrix spike duplicate analyses are performed in duplicate using five compounds for which percent recoveries must be within a range of 50-150% or within laboratory control limits. If spike recoveries are outside control limits, detected sample results less than five times the spike concentration are qualified as estimates and flagged "J". Undetected sample results with spike recoveries below control limits are qualified as estimates and flagged "UJ". Undetected sample results are not qualified if the spike recovery is above control limits. Sample results greater than five times the spike concentration require no qualification.

Due to a matrix spike and/or matrix spike duplicate recoveries outside QC limits, all 2,4-dichlorophenol (56%), 4-chloroanaline (2%), 3-nitroanaline (5%) and 3,3'-dichlorobenzidine (0% & 10%) results were qualified as estimates and flagged "J".

Due to a matrix spike and matrix spike duplicate results outside QC limits (78% & 57%), all diesel range organic results were qualified as estimates and flagged "J".

Due to the lack of an LCS recovery, all semivolatile results were qualified as estimates and flagged "J".

Due to the lack of a matrix spike, matrix spike duplicate or LCS analysis, all motor oil results were qualified as estimates and flagged "J".

All other accuracy results were acceptable.

Surrogate Recovery

The analyses of surrogate compounds provide a measure of performance for individual samples. Matrix-specific surrogate compound recovery control windows have been established by the EPA CLP program. If two surrogates of the same class of compounds (base/neutral or acid) are out of control limits, all associated sample results greater than the contract required quantitation limit (CRQL) are qualified as estimates and flagged "J". Sample results less than the CRQL and below the lower control limit are qualified as estimates and flagged "UJ". Sample results less than the CRQL with recoveries above the upper control limit require no qualification. If a surrogate recovery is less than 10%, detects are qualified as estimates and flagged "J" and nondetects are rejected and flagged "UR".

Due to a surrogate recovery outside QC limits (11%), the 2-chlorophenol, 2,4-dichlorophenol and 4-chloro-3-methylphenol results in sample J17K50 were qualified as estimates and flagged "J".

All other surrogate results were acceptable.

Precision

Matrix Spike/Matrix Spike Duplicate Samples

Matrix spike (MS)/matrix spike duplicate (MSD) results provide matrix-specific information on the precision of the method for specific target compound classes. Precision is expressed by the relative percent difference (RPD) between the recoveries of duplicate matrix spike analyses performed on a sample. Samples results must be within RPD limits of +/-20%. If RPD values are out of specification and the sample concentration is less than five times the spike concentration, all associated detected sample results are qualified as estimates and flagged "J". If RPD values are out of specification and the sample concentration is greater than five times the spike concentration, no qualification is required.

Due to RPDs outside QC limits, all 2-nitrophenol (46%), 2,4-dichlorophenol (39%), 4-chloroanaline (185%), 2-nitroanaline (24%), 3-nitroanaline (180%), 2,4-dinitrophenol (39%), 4-nitrophenol (23%), 4-nitroanaline (81%), 4,6-dinitro-2-methylphenol (26%), n-nitrosodiphenylamine (55%), pentachlorophenol (26%), 3,3'-dichlorobenzidine (200%), bis(2-ethylhexyl)phthalate (21%), di-n-octylphthalate (22%), benzo(b)fluroanthene (20.3%), benzo(k)fluoranthene (21.5%), benzo(a)pyrene (22%) and dibenz(a,h)anthracene (21%) results were qualified as estimates and flagged "J".

Due to an RPD outside QC limits (31%), all diesel range organic results were qualified as estimates and flagged "J".

All other precision results were acceptable.

Field Duplicate Samples

One set of field duplicates (J17K52/J17R67) were submitted for analysis. Laboratory duplicates are compared using the same criteria as for laboratory duplicates. All field duplicate results were acceptable.

- **Analytical Detection Levels**

Reported analytical detection levels are compared against the required quantitation limits (RQL's) to ensure that laboratory detection levels meet the required criteria. Twenty-eight analytes exceeded the RQL. Under the WCH statement of work, no qualification is required. All other analytes met the RQL.

- **Completeness**

Data package No. K1401 was submitted for validation and verified for completeness. Completeness is based on the percentage of data determined to be valid (i.e., not rejected). The completion percentage was 100%.

MAJOR DEFICIENCIES

None found.

MINOR DEFICIENCIES

The following minor deficiencies were noted:

- Due to a matrix spike and/or matrix spike duplicate recoveries outside QC limits, all 2,4-dichlorophenol (56%), 4-chloroanaline (2%), 3-nitroanaline (5%) and 3,3'-dichlorobenzidine (0% & 10%) results were qualified as estimates and flagged "J".
- Due to a matrix spike and matrix spike duplicate results outside QC limits (76% & 57%), all diesel range organic results were qualified as estimates and flagged "J".

- Due to the lack of an LCS recovery, all semivolatile results were qualified as estimates and flagged "J".

- Due to the lack of a matrix spike, matrix spike duplicate or LCS analysis, all motor oil results were qualified as estimates and flagged "J".

- Due to a surrogate recovery outside QC limits (11%), the 2-chlorophenol, 2,4-dichlorophenol and 4-chloro-3-methylphenol results in sample J17K50 were qualified as estimates and flagged "J".

- Due to RPDs outside QC limits, all 2-nitrophenol (46%), 2,4-dichlorophenol (39%), 4-chloroanaline (185%), 2-nitroanaline (24%), 3-nitroanaline (180%), 2,4-dinitrophenol (39%), 4-nitrophenol (23%), 4-nitroanaline (81%), 4,6-dinitro-2-methylphenol (26%), n-nitrosodiphenylamine (55%), pentachlorophenol (26%), 3,3'-dichlorobenzidine (200%), bis(2-ethylhexyl)phthalate (21%), di-n-octylphthalate (22%), benzo(b)fluroanthene (20.3%), benzo(k)fluoranthene (21.5%), benzo(a)pyrene (22%) and dibenz(a,h)anthracene (21%) results were qualified as estimates and flagged "J".

- Due to an RPD outside QC limits (31%), all diesel range organic results were qualified as estimates and flagged "J".

Data flagged "J" indicates that the associated concentration is an estimate, but under the WCH statement of work, the data may be usable for decision-making purposes. All other validated results are considered accurate within the standard error associated with the methods.

Twenty-eight analytes exceeded the RQL. Under the WCH statement of work, no qualification is required.

REFERENCES

Fluor Hanford Data Validation Contract #29776 (June 2006), *Validation Statement of Work*, through Washington Closure Hanford Work Order #WB6081.

DOE/RL-2008-11, Rev.0, *Remedial Investigation Work Plan for Hanford Site Releases to the Columbia River*, September 2008.

Appendix 1

Glossary of Data Reporting Qualifiers

Qualifiers which may be applied by data validators in compliance with the WCH validation SOW are as follows:

U	-	Indicates the compound or analyte was analyzed for and not detected in the sample. The value reported is the same quantitation limit corrected for sample dilution and moisture content by the laboratory.
UJ	-	Indicates the compound or analyte was analyzed for and not detected in the sample. Due to a minor QC deficiency identified during the data validation, the associated quantitation limit is an estimate.
J	-	Indicates the compound or analyte was analyzed for and detected. Due to a minor QC deficiency identified during the data validation, the associated quantitation limit is an estimate.
R	-	Indicates the compound or analyte was analyzed for, detected, and due to an identified major QC deficiency, the data are unusable.
UR	-	Indicates the compound or analyte was analyzed for and not detected in the sample. Additionally, the data is unusable due to an identified major QC deficiency.
NJ	-	Indicates presumptive evidence of a compound at an estimated value. The data may not be valid for some specific applications (i.e., usable for decision-making purposes).
N	-	Indicates presumptive evidence of a compound. The data may not be valid for some specific applications usable for decision-making purposes).

Appendix 2

Summary of Data Qualification

SEMIVOLATILE ORGANIC CHEMISTRY DATA QUALIFICATION SUMMARY*

SDG: K1401	REVIEWER: ELR	Project: RCBRA	PAGE_1_OF_1
COMPOUND	QUALIFIER	SAMPLES AFFECTED	REASON
2,4-dichlorophenol 4-chloroanaline 3-nitroanaline 3,3'-dichlorobenzidine	J	All	MS/MSD recovery
All semivolatile organics	J	All	LCS recovery
2-chlorophenol 2,4-dichlorophenol 4-chloro-3-methylphenol	J	K1750	Surrogate recovery
2-nitrophenol 2,4-dichlorophenol 4-chloroanaline 2-nitroanaline 3-nitroanaline 2,4-dinitrophenol 4-nitrophenol 4-nitroanaline 4,6-dinitro-2-methylphenol n-nitrosodiphenylamine pentachlorophenol 3,3'-dichlorobenzidine bis(2-ethylhexyl)phthalate di-n-octylphthalate benzo(b)fluroanthene benzo(k)fluoranthene benzo(a)pyrene dibenz(a,h)anthracene	J	All	RPD
Motor oil	J	All	No MS, MSD or LCS
Diesel range organics	J	All	MS/MSD recovery
Diesel range organics	J	All	RPD

* - The Qualified Data Summary Table includes laboratory applied "U" qualifiers not specifically identified here. The laboratory applied "U" qualifiers are included to minimize misinterpretation of results contained in the table.

Appendix 3

Qualified Data Summary and Annotated Laboratory Reports

	Cust ID:	J17K51		J17K51		J17K51		J17K52		J17K67		J17K50	
Sample Information	RFW#:	002		002 MS		002 MSD		004		006		008	
	Matrix:	WATER		WATER		WATER		WATER		WATER		WATER	
	D.F.:	1.00		1.00		1.00		1.00		1.00		1.00	
	Units:	ug/L		ug/L		ug/L		ug/L		ug/L		ug/L	
	Nitrobenzene-d5	59	%	89	%	77	%	81	%	70	%	81	%
Surrogate Recovery	2-Fluorobiphenyl	62	%	88	%	97	%	78	%	71	%	78	%
	Terphenyl-d14	77	%	89	%	107	%	97	%	85	%	87	%
	Phenol-d5	63	%	85	%	90	%	76	%	74	%	21	%
	2-Fluorophenol	62	%	87	%	67	%	72	%	74	%	11 *	%
	2,4,6-Tribromophenol	70	%	95	%	81	%	81	%	77	%	14	%
			fl		fl		fl		fl		fl		fl
Phenol		10	U	92	%	93	%	10	U	10	U	10	U
bis(2-Chloroethyl)ether		10	U	97	%	107	%	10	U	10	U	10	U
2-Chlorophenol		10	U	81	%	74	%	10	U	10	U	10	U
1,3-Dichlorobenzene		10	U	68	%	68	%	10	U	10	U	10	U
1,4-Dichlorobenzene		10	U	69	%	70	%	10	U	10	U	10	U
1,2-Dichlorobenzene		10	U	75	%	76	%	10	U	10	U	10	U
2-Methylphenol		10	U	85	%	96	%	10	U	10	U	10	U
2,2'-oxybis(1-Chloropropane)		10	U	99	%	109	%	10	U	10	U	10	U
3/4 Methylphenol		10	U	87	%	94	%	10	U	10	U	10	U
N-Nitroso-di-n-propylamine		10	U	101	%	114	%	10	U	10	U	10	U
Hexachloroethane		10	U	65	%	66	%	10	U	10	U	10	U
Nitrobenzene		10	U	93	%	82	%	10	U	10	U	10	U
Isophorone		10	U	85	%	75	%	10	U	10	U	10	U
2-Nitrophenol		10	U	86	%	54	%	10	U	10	U	10	U
2,4-Dimethylphenol		10	U	89	%	73	%	10	U	10	U	10	U
bis(2-Chloroethoxy)methane		10	U	88	%	89	%	10	U	10	U	10	U
2,4-Dichlorophenol		10	U	83	%	56 *	%	10	U	10	U	10	U
1,2,4-Trichlorobenzene		10	U	73	%	62	%	10	U	10	U	10	U
Naphthalene		10	U	79	%	68	%	10	U	10	U	10	U
4-Chloroaniline		10	U	2 *	%	52	%	10	U	10	U	10	U
Hexachlorobutadiene		10	U	72	%	60	%	10	U	10	U	10	U
4-Chloro-3-methylphenol		10	U	87	%	72	%	10	U	10	U	10	U
2-Methylnaphthalene		10	U	82	%	74	%	10	U	10	U	10	U
Hexachlorocyclopentadiene		10	U	59	%	65	%	10	U	10	U	10	U
2,4,6-Trichlorophenol		10	U	87	%	74	%	10	U	10	U	10	U
2,4,5-Trichlorophenol		25	U	85	%	72	%	25	U	25	U	25	U

*= Outside of EPA CLP QC limits.

4/11/09

Cust ID:	J17K51		J17K51		J17K51		J17K52		J17R67		J17K50	
RFW#:	002		002 MS		002 MSD		004		006		008	
2-Chloronaphthalene	10	U	83	%	97	%	10	U	10	U	10	U
2-Nitroaniline	25	U	81	%	103	%	25	U	25	U	25	U
Dimethylphthalate	10	U	96	%	114	%	10	U	10	U	10	U
Acenaphthylene	10	U	81	%	97	%	10	U	10	U	10	U
2,6-Dinitrotoluene	10	U	86	%	103	%	10	U	10	U	10	U
3-Nitroaniline	25	U	5 *	%	94	%	25	U	25	U	25	U
Acenaphthene	10	U	82	%	100	%	10	U	10	U	10	U
2,4-Dinitrophenol	25	U	143 *	%	96	%	25	U	25	U	25	U
4-Nitrophenol	25	U	91	%	72	%	25	U	25	U	25	U
Dibenzofuran	10	U	85	%	100	%	10	U	10	U	10	U
2,4-Dinitrotoluene	10	U	88	%	104	%	10	U	10	U	10	U
Diethylphthalate	10	U	98	%	114	%	10	U	10	U	10	U
4-Chlorophenyl-phenylether	10	U	95	%	111	%	10	U	10	U	10	U
Fluorene	10	U	85	%	101	%	10	U	10	U	10	U
4-Nitroaniline	25	U	34	%	80	%	25	U	25	U	25	U
4,6-Dinitro-2-methylphenol	25	U	120	%	92	%	25	U	25	U	25	U
N-Nitrosodiphenylamine (1)	10	U	50	%	88	%	10	U	10	U	10	U
4-Bromophenyl-phenylether	10	U	83	%	100	%	10	U	10	U	10	U
Hexachlorobenzene	10	U	82	%	98	%	10	U	10	U	10	U
Pentachlorophenol	25	U	120 *	%	92	%	25	U	25	U	25	U
Phenanthrene	10	U	85	%	98	%	10	U	10	U	10	U
Anthracene	10	U	83	%	96	%	10	U	10	U	10	U
Carbazole	10	U	78	%	94	%	10	U	10	U	10	U
Di-n-butylphthalate	0.7	J	92	%	102	%	0.7	J	10	U	0.7	J
Fluoranthene	10	U	81	%	93	%	10	U	10	U	10	U
Pyrene	10	U	85	%	97	%	10	U	10	U	10	U
Butylbenzylphthalate	10	U	99	%	121	%	10	U	10	U	10	U
3,3'-Dichlorobenzidine	10	U	0	%	10	%	10	U	10	U	10	U
Benzo(a)anthracene	10	U	82	%	99	%	10	U	10	U	10	U
Chrysene	10	U	82	%	100	%	10	U	10	U	10	U
bis(2-Ethylhexyl)phthalate	10	U	95	%	117	%	0.6	J	10	U	1	J
Di-n-octyl phthalate	10	U	97	%	121	%	10	U	10	U	10	U
Benzo(b)fluoranthene	10	U	84	%	103	%	10	U	10	U	10	U
Benzo(k)fluoranthene	10	U	83	%	103	%	10	U	10	U	10	U
Benzo(a)pyrene	10	U	77	%	96	%	10	U	10	U	10	U
Indeno(1,2,3-cd)pyrene	10	U	78	%	95	%	10	U	10	U	10	U
Dibenz(a,h)anthracene	10	U	79	%	98	%	10	U	10	U	10	U
Benzo(g,h,i)perylene	10	U	77	%	94	%	10	U	10	U	10	U

(1) - Cannot be separated from Diphenylamine. *= Outside of EPA CLP QC limits.

4/11/09

	Cust ID:	SBLKZC		SBLKZC BS	
Sample Information	RFW#:	08LE0522-MB1		08LE0522-MB1	
	Matrix:	WATER		WATER	
	D.F.:	1.00		1.00	
	Units:	ug/L		ug/L	
	Nitrobenzene-d5	99	%	94	%
Surrogate	2-Fluorobiphenyl	93	%	89	%
Recovery	Terphenyl-d14	139	%	142 *	%
	Phenol-d5	102	%	99	%
	2-Fluorophenol	98	%	96	%
	2,4,6-Tribromophenol	103	%	102	%
			fl		fl
Phenol		10	U	0 *	%
bis(2-Chloroethyl)ether		10	U	0 *	%
2-Chlorophenol		10	U	0 *	%
1,3-Dichlorobenzene		10	U	0 *	%
1,4-Dichlorobenzene		10	U	0 *	%
1,2-Dichlorobenzene		10	U	0 *	%
2-Methylphenol		10	U	0 *	%
2,2'-oxybis(1-Chloropropane)		10	U	0 *	%
3/4 Methylphenol		10	U	0 *	%
N-Nitroso-di-n-propylamine		10	U	0 *	%
Hexachloroethane		10	U	0 *	%
Nitrobenzene		10	U	0 *	%
Isophorone		10	U	0 *	%
2-Nitrophenol		10	U	0 *	%
2,4-Dimethylphenol		10	U	0 *	%
bis(2-Chloroethoxy)methane		10	U	0 *	%
2,4-Dichlorophenol		10	U	0 *	%
1,2,4-Trichlorobenzene		10	U	0 *	%
Naphthalene		10	U	0 *	%
4-Chloroaniline		10	U	0 *	%
Hexachlorobutadiene		10	U	0 *	%
4-Chloro-3-methylphenol		10	U	0 *	%
2-Methylnaphthalene		10	U	0 *	%
Hexachlorocyclopentadiene		10	U	0 *	%
2,4,6-Trichlorophenol		10	U	0 *	%
2,4,5-Trichlorophenol		25	U	0 *	%

*= Outside of EPA CLP QC limits.

4/11/09

Cust ID: SBLKZC SBLKZC BS

RFW#: 08LE0522-MB1 08LE0522-MB1

2-Chloronaphthalene	10	U	0 * %
2-Nitroaniline	25	U	0 * %
Dimethylphthalate	10	U	0 * %
Acenaphthylene	10	U	0 * %
2,6-Dinitrotoluene	10	U	0 * %
3-Nitroaniline	25	U	0 * %
Acenaphthene	10	U	0 * %
2,4-Dinitrophenol	25	U	0 * %
4-Nitrophenol	25	U	0 * %
Dibenzofuran	10	U	0 * %
2,4-Dinitrotoluene	10	U	0 * %
Diethylphthalate	10	U	0 * %
4-Chlorophenyl-phenylether	10	U	0 * %
Fluorene	10	U	0 * %
4-Nitroaniline	25	U	0 * %
4,6-Dinitro-2-methylphenol	25	U	0 * %
N-Nitrosodiphenylamine (1)	10	U	0 * %
4-Bromophenyl-phenylether	10	U	0 * %
Hexachlorobenzene	10	U	0 * %
Pentachlorophenol	25	U	0 * %
Phenanthrene	10	U	0 * %
Anthracene	10	U	0 * %
Carbazole	10	U	0 * %
Di-n-butylphthalate	10	U	0 * %
Fluoranthene	10	U	0 * %
Pyrene	10	U	0 * %
Butylbenzylphthalate	10	U	0 * %
3,3'-Dichlorobenzidine	10	U	0 %
Benzo(a)anthracene	10	U	0 * %
Chrysene	10	U	0 * %
bis(2-Ethylhexyl)phthalate	10	U	0 * %
Di-n-octyl phthalate	10	U	0 * %
Benzo(b)fluoranthene	10	U	0 * %
Benzo(k)fluoranthene	10	U	0 * %
Benzo(a)pyrene	10	U	0 * %
Indeno(1,2,3-cd)pyrene	10	U	0 * %
Dibenz(a,h)anthracene	10	U	0 * %
Benzo(g,h,i)perylene	10	U	0 * %

(1) - Cannot be separated from Diphenylamine. *= Outside of EPA CLP QC limits.

V 4/11/09

000014

DIESEL RANGE ORGANICS BY GC

Report Date: 11/03/08 13:35

RFW Batch Number: 0810L109 Client: MC-HANFORD RC-115 K1401 Work Order: 60049001001 Page: 1

	Cust ID:	J17K51	J17K52	J17R67	J17R67	J17R67	J17K50
Sample Information	RFW#:	002	004	006	006 MS	006 MSD	008
	Matrix:	WATER	WATER	WATER	WATER	WATER	WATER
	D.F.:	1.00	1.00	1.00	1.00	1.00	1.00
	Units:	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
	p-Terphenyl	72 %	62 %	84 %	63 %	35 %	80 %
Diesel Range Organics		100 U J	100 U J	28 J J	78 %	57 %	100 U J
Motor Oil Range Organics		300 U J	300 U J	300 U J	NS	NS	300 U J

	Cust ID:	BLK	BLK BS
Sample Information	RFW#:	08LE0526-MB1	08LE0526-MB1
	Matrix:	WATER	WATER
	D.F.:	1.00	1.00
	Units:	ug/L	ug/L
	p-Terphenyl	82 %	50 %
Diesel Range Organics		100 U J	70 %
Motor Oil Range Organics		300 U J	NS

4/4/09

U= Analyzed, not detected. J= Present below detection limit. B= Present in blank. NR= Not reported. NS= Not spiked. %= Percent recovery. D= Diluted out. I= Interference. NA= Not Applicable. *= Outside of EPA CLP QC

4/4/09

Appendix 4

Laboratory Narrative and Chain-of-Custody Documentation

LVLI
LIONVILLE LABORATORY INC.

Case Narrative

Client: WC-HANFORD RC-115 K1399
LVL #: 0810L109

W.O. #: 60049-001-001-0001-00
Date Received: 10-21-2008

SEMIVOLATILE

Four (4) water samples were collected on 10-17-2008.

The samples and their associated QC samples were extracted according to Lionville Laboratory SOPs based on SW 846 method 3520C on 10-22-2008 and analyzed according to criteria set forth in Lionville Laboratory SOPs based on SW 846 Method 8270C for TCL Semivolatile target compounds on 10-28-2008 and 11-01,02-2008.

The following is a summary of QC results accompanying the sample results. Lionville Laboratory (LVL) certifies that all test results meet the requirements of NELAC except as noted below:

1. Discrepancies from the sample acceptance policy have been recorded on the Sample Receipt Checklist.
2. Samples were extracted and analyzed within holding time.
3. Non-target compounds were detected in these samples.
4. Two (2) of forty-eight (48) surrogate recoveries were outside acceptance criteria. However, surrogate recovery acceptance criteria were met (i.e., no more than one outlier per fraction {acid and base neutral} and no recoveries less than 10%).
5. Five (5) of one hundred twenty-eight (128) matrix spike recoveries were outside acceptance criteria. A copy of the Sample Discrepancy Report (SDR# 08MS254) has been enclosed.
6. Sixty-three (63) of sixty-four (64) blank spike recoveries were outside acceptance criteria. A copy of the Sample Discrepancy Report (SDR# 08MS254) has been enclosed.
7. The method blank was below the reporting limit for all target compounds.
8. All initial calibrations associated with this data set were within acceptance criteria.
9. All continuing calibration standards analyzed prior to sample extracts were within acceptance criteria.
10. Internal standard area and retention time criteria were met.
11. Manual integrations are performed according to SOP QA-125 to produce quality data with the utmost integrity. All manual integrations are required to be technically valid and properly documented. Appropriate technical flags are defined in the Glossary ("Technical Flags For Manual Integration").

LVLI
LIONVILLE LABORATORY INC.

12. LVL is NELAP accredited by the State of Pennsylvania. For a complete listing of accrediting authorities and the corresponding analytes/methods, please contact your Project Manager.

13. I certify, that this sample data package is in compliance with SOW requirements, both technically and for completeness, other than the conditions detailed above. Release of the data, contained in this hard-copy data package, has been authorized, by the Laboratory Manager or a designee, as verified by the following signature.

Iain Daniels
Laboratory Manager
Lionville Laboratory

11/25/18
Date

000018

K1401

Lionville Laboratory Sample Discrepancy Report (SDR)

SDR #: 08ML114

Initiator: Sharon Sayler
Date: 11-10-08
Client: WC Hanford RL115 Ehyu

Batch: 08I0L109
Samples: BS, MS, MSD
Method: [✓ GW/HS]/CA/W/CLP

Parameter: 8270
Matrix: Ground Water
Prep Batch: 08IEH(22

1. Reason for SDR

a. COC Discrepancy
__ Tech Profile Error
__ Transcription Error
__ Client Request
__ Wrong Test Code
__ Sampler Error on C-O-C
__ Other ______________

b. General Discrepancy
__ Missing Sample/Extract*
__ Hold Time Exceeded
__ Improper Bottle Type
__ Container Broken
__ Insufficient Sample*
__ Not Amenable to Analysis
__ Wrong Sample Pulled
__ Preservation Wrong
__ Label ID's Illegible
__ Received Past Hold

Note*: Verified by (Log-In) or (Prep Group) (circle)...signature/date: ______________

c. Problem (include all relevant specific results; attach data if necessary)

① No or low recovery of several spike analytes in the MS + MSD (2,4-dichlorophenol, 4,6-[illegible] 3-nitroaniline)

② No spike added to BS (analyst error)

2. Known or Probable Causes(s) Acidic phenols, chloroanilines, nitroanilines are subject to erratic chromatographic behavior especially if the GC system is contaminated with high boiling material

11/14/08

3. Discussion and Proposed Action

__ Re-log
__ Entire Batch
__ Following Samples: ________
__ Re-leach
__ Re-extract
__ Re-digest
__ Revise EDD
__ Change Test Code to ________
__ Place On/Take Off Hold (circle)

Other Description:

Narrate

4. Project Manager Instructions...signature/date: 11/17/08

✓ Concur with Proposed Action
__ Disagree with Proposed Action; See Instruction
__ Include in Case Narrative
✓ Client Contacted
Date/Person: 11/17/08
__ Add
__ Cancel

5. Final Action...signature/date: ______________

__ Verified re-[log][leach][extract][digest][analysis] (circle)
✓ Included in Case Narrative
__ Hard Copy COC Revised
__ Electronic COC Revised
__ EDD Corrections Completed

Other Explanation:

When Final Action has been recorded, forward original to QA for diposition.

Route
__ Lab Manager: Daniels
✓ Project Mgr (circle): [✓ Johnson] Stone
__ Sample Prep (circle): Ford
__ Log-In: King

Route
__ Metals: Welsh / ______________
__ Inorganic: Perrone / ______________
__ GC/LC: Carey / ______________
__ MS VOA: Rubino / ______________
✓ MS BNA: [✓ Cardenas] / ______________
__ Other: ______________

LvLI
LIONVILLE LABORATORY INC.

Case Narrative

Client: WC-HANFORD RC-115
LVL #: 0810L109
SDG/SAF # K1401 /RC-115

W.O. #: 60049-001-001-0001-00
Date Received: 10-21-2008

DIESEL RANGE ORGANICS

Four (4) water samples were collected on 10-17-2008.

The samples and their associated QC samples were extracted on 10-22-2008 and analyzed according to Lionville Laboratory SOPs based on SW846, 3rd Edition procedure on 10-27,28-2008. The extraction procedure was based on method 3520C and the extracts were analyzed based on method 8015B for Diesel Range Organics (DRO).

The following is a summary of QC results accompanying the sample results. Lionville Laboratory (LvL) certifies that all test results meet the requirements of NELAC except as noted below:

1. Discrepancies from the Sample acceptance policy have been recorded on the Sample Receipt Checklist.
2. The method blank was below the reporting limits for all target compounds.
3. All obtainable surrogate recoveries were within acceptance criteria.
4. All blank spike recoveries were within acceptance criteria.
5. All matrix spike recoveries were within acceptance criteria.
6. All initial calibrations associated with this data set were within acceptance criteria.
7. All continuing calibration standards analyzed prior to sample extracts were within acceptance criteria.

The results presented in this report relate only to the analytical testing and conditions of the samples at receipt and during storage. All pages of this report are integral parts of the analytical data. Therefore, this report should only be reproduced in its entirety of 13 pages.
r:\group\data\2008\dro\wc-hanford\0810-109cw2.doc

8. LvLI is NELAP accredited by the State of Pennsylvania. For a complete listing of accrediting authorities and the corresponding analytes/methods, please contact your Project Manager.

9. I certify that this sample data package is in compliance with SOW requirements, both technically and for completeness, other than the conditions detailed above. Release of the data contained in this hard-copy data package has been authorized by the laboratory Manager or a designee, as verified by the following signature.

Iain Daniels
Laboratory Manager
Lionville Laboratory

11/10/08
Date

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-115-4

Collector: Ann Spyakoff	Company Contact: Joan Kessner	Telephone No.: 375-4688	Project Coordinator: WEISS, RL
Project Designation: Columbia River Component of the RCBRA - Surface Water	Sampling Location: WBW-1SW		SAF No.: RC-115
Ice Chest No. WCH-08-010, 012, 014, 017	Field Logbook No.: BL-1630	COA: BESCRC6520	Method of Shipment: FED EX
Shipped To: EBERLINE SERVICES LIONVILLE	Offsite Property No.		Bill of Lading/Air Bill No. 792773338820

Price Code: 7K

Data Turnaround: 45 Days

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

000022

			Preservation	HNO3 to pH <2	Cool 4C [illegible]	Cool 4C	Cool 4C [illegible]	HNO3 or H2SO4 to pH	Cool 4C	Cool 4C	HCl or H2SO4 to pH <2 Cool	Cool 4C	HCl to pH <2 Cool 4C
			Type of Container	G/P	G/P	G/P	aG	G/P	aG	aG	aGs*	aG	aG
			No. of Container(s)	1	1	1	1	1	4	4	3	2	3
			Volume	500mL	500mL	250mL	125mL	250mL	1000mL	1000mL	40mL	1000mL	1000mL
SAMPLE ANALYSIS				See item (1) in Special Instructions	FILTERED ICP Metals - 6010TR; FILTERED Mercury - 7470	Alkalinity - 310.1	Dissolved Organic Carbon - 415.1M	Hardness - 130.2	PCBs - 8082	Pesticides - 8081	See item (2) in Special Instructions	Semi-VOA - 8270A (TCL)	TPH-Diesel Range - WTPH-D+
Sample No.	Matrix *	Sample Date	Sample Time										
J17K57	WATER	10/17/08	1320	X		X	X	X	X	X	X	X	X
J17K58	WATER	10/17/08	1320		X								

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Ann Spyakoff	10/17/08 2055	Ref. C	10/17/08 2055
Ref. C	10/20/08 1037	Kim Boyd Kim Boyd	10/20/08 1037
Kim Boyd Kim Boyd	10/20/08 1321	Fed Ex	10/20/08 1321
Fed Ex	10/21/08 0925		10-21-08 0925

SPECIAL INSTRUCTIONS

(1) ICP Metals - 6010TR (Clear List) {Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Titanium, Uranium, Vanadium, Zinc}; Mercury - 7470 - (CV)
(2) VOA - 8260A (TCL) {1,1,1-Trichloroethane, 1,1,2,2-Tetrachloroethane, 1,1,2-Trichloroethane, 1,1-Dichloroethane, 1,1-Dichloroethene, 1,2-Dichloroethane, 1,2-Dichloropropane, 2-Butanone, 2-Hexanone, 4-Methyl-2-Pentanone, Acetone, Benzene, Bromodichloromethane, Bromoform, Bromomethane, Carbon disulfide, Carbon tetrachloride, Chlorobenzene, Chloroethane, Chloroform, Chloromethane, cis-1,2-Dichloroethylene, cis-1,3-Dichloropropene, Dibromochloromethane, Ethylbenzene, Methylene chloride, Styrene, Tetrachloroethene, Toluene, trans-1,2-Dichloroethylene, trans-1,3-Dichloropropene, Trichloroethene, Vinyl chloride, Xylenes (total)}

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab.

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

Collector: Ian Stupakoff

Company Contact: Joan Kessner

Telephone No.: 375-4688

Project Coordinator: WEISS, RL

Price Code: 7K

Data Turnaround: 45 Days

Project Designation: Columbia River Component of the RCBRA - Surface Water

Sampling Location: RG-1SW

SAF No.: RG-115

Ice Chest No.: WCH-08-010, 012, 014, 017

Field Logbook No.: EL-1630

COA: BESCRC6520

Method of Shipment: FED EX

Shipped To: EBERLINE SERVICES (LIONVILLE)

Offsite Property No.:

Bill of Lading/Air Bill No.: 792773338820

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

000023

000000010

Preservation	HNO3 to pH <2	Cool 4C ~~HNO3 to pH <2~~	Cool 4C	Cool 4C ~~H3PO4 or H2SO4 to pH<2 Cool~~	HNO3 or H2SO4 to pH <2	Cool 4C	Cool 4C	HCl or H2SO4 to pH <2 Cool	Cool 4C	HCl to pH <2 Cool 4C
Type of Container	G/P	G/P	G/P	aG	G/P	aG	aG	aG*	aG	aG
No. of Container(s)	1	1	1	1	1	4	4	3	2	3
Volume	500mL	500mL	250mL	125mL	250mL	1000mL	1000mL	40mL	1000mL	1000mL
SAMPLE ANALYSIS	See item (1) in Special Instructions.	FILTERED ICP Metals - 6010TR; FILTERED Mercury - 7470	Alkalinity - 310.1	Dissolved Organic Carbon - 415.1	Hardness - 130.1	PCBs - 8082	Pesticides - 8081	See item (2) in Special Instructions.	Semi-VOA - 8270A (TCL)	TPH-Diesel Range - WTPH-D +

Sample No.	Matrix *	Sample Date	Sample Time										
J17K52	WATER	10/17/08	0952	X		X	X	X	X	X	X	X	X
J17K59	WATER	10/17/08	0952		X								

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
I Stupakoff / Ian	10/17/08 2055	REF. B	10/17/08 2055
Ref B	10/20/08 1130	Kim Pogal Kim Pogal	10/20/08 1130
Kim Pogal Kim Pogal	10/20/08 1321	Fed EX	10/20/08 1321
	10/21/08 0925		10/21/08 0925

SPECIAL INSTRUCTIONS

(1) ICP Metals - 6010TR (Chem List) {Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Titanium, Uranium, Vanadium, Zinc}; Mercury - 7470 - (CV)

(2) VOA - 8260A (TCL) {1,1,1-Trichloroethane, 1,1,2,2-Tetrachloroethane, 1,1,2-Trichloroethane, 1,1-Dichloroethane, 1,1-Dichloroethene, 1,2-Dichloroethane, 1,2-Dichloropropane, 2-Butanone, 2-Hexanone, 4-Methyl-2-Pentanone, Acetone, Benzene, Bromodichloromethane, Bromoform, Bromomethane, Carbon disulfide, Carbon tetrachloride, Chlorobenzene, Chloroethane, Chloroform, Chloromethane, cis-1,2-Dichloroethylene, cis-1,3-Dichloropropene, Dibromochloromethane, Ethylbenzene, Methylenechloride, Styrene, Tetrachloroethene, Toluene, trans-1,2-Dichloroethylene, trans-1,3-Dichloropropene, Trichloroethene, Vinyl chloride, Xylenes (total)}

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SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-115-26

Collector Lori STUPAKOFF	Company Contact Joan Kessner	Telephone No. 375-4688	Project Coordinator WEISS, RL
Project Designation Columbia River Component of the RCBRA - Surface Water	Sampling Location RG-1SW		SAF No. RC-115
Ice Chest No. WCH-08-010, 012, 014, 017	Field Logbook No. EL-1630	COA DESCRC6520	Method of Shipment FED EX
Shipped To EBERLINE SERVICES/ LIONVILLE	Offsite Property No.		Bill of Lading/Air Bill No. 792773338820

Price Code 7K

Data Turnaround 45 Days

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

000024

			Preservation	HNO3 to pH <2	None	Cool 4C	Cool 4C	HNO3 or H2SO4 to pH <2	Cool 4C	Cool 4C	HCl or H2SO4 to pH <2 Cool 4C	Cool 4C	HCl to pH <2 Cool 4C
			Type of Container	G/P	G/P	G/P	G	G/P	aG	aG	aGs*	aG	aG
			No. of Container(s)	1	1	1	1	1	4	4	1 / LE [illegible]	2	3
			Volume	500mL	500mL	250mL	125mL	250mL	1000mL	1000mL	40mL	1000mL	1000mL
SAMPLE ANALYSIS				See item (1) in Special Instructions.	FILTERED ICP Metals - 6010TR; FILTERED Mercury - 7470	Alkalinity - 310.1	Dissolved Organic Carbon - 415.1M	Hardness - 130.2	PCBs - 8082	Pesticides - 8081	See item (2) in Special Instructions.	Semi-VOA - 8270A (TCL)	TPH-Diesel Range - WTPH-D+
Sample No.	Matrix *	Sample Date	Sample Time										
J17R87	WATER	10/17/08	1040	X		X	X	X	X	X	X	X	X
J17R88	WATER	10/17/08	1040		X								

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
	10/17/08 2055	Ref. C	10/17/08 2055
Ref. C	10/20/08	Kim Royal Kim Royal	10/20/08 1205
Kim Royal Kim Royal	10/20/08 1521	Fed EX	10/20/08 1521
	10/21/08 0940		10-21-08 0940

SPECIAL INSTRUCTIONS

(1) ICP Metals - 6010TR (Client List) {Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Titanium, Uranium, Vanadium, Zinc}; Mercury - 7470 - (CV)

(2) VOA - 8260A (TCL) {1,1,1-Trichloroethane, 1,1,2,2-Tetrachloroethane, 1,1,2-Trichloroethane, 1,1-Dichloroethane, 1,1-Dichloroethene, 1,2-Dichloroethane, 1,2-Dichloropropane, 2-Butanone, 2-Hexanone, 4-Methyl-2-Pentanone, Acetone, Benzene, Bromodichloromethane, Bromoform, Bromomethane, Carbon disulfide, Carbon tetrachloride, Chlorobenzene, Chloroethane, Chloroform, Chloromethane, cis-1,2-Dichloroethylene, cis-1,3-Dichloropropene, Dibromochloromethane, Ethylbenzene, Methylene chloride, Styrene, Tetrachloroethene, Toluene, trans-1,2-Dichloroethylene, trans-1,3-Dichloropropene, Trichloroethene, Vinyl chloride, Xylenes (total)}

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S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By		Title		Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method		Disposed By		Date/Time

WCH-EE-011

Washington Closure Hanford	**CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST**	RC-115-3	Page 1 of 1

Collector Kim Stufflebeam	Company Contact Joan Kessner	Telephone No. 375-4684	Project Coordinator WEISS, RL	Price Code 7K
Project Designation Columbia River Component of the RCBRA - Surface Water	Sampling Location WBT-15W		SAP No. RC-115	Data Turnaround 45 Days
Ice Chest No. WCH-08-010, 012, 014, 017	Field Logbook No. EL-1630	COA BESCRC6520	Method of Shipment FED EX	
Shipped To EBERLINE SERVICES (LIONVILLE)	Offsite Property No.		Bill of Lading/Air Bill No. 79 2173338820	

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

000025

0000000012

			Preservation	HNO3 to pH <2	Cool 4 C All filtered ~~HNO3 to pH <2~~	Cool 4C	Cool 4 C filtered	HNO3 or H2SO4 to pH <2	Cool 4C	Cool 4C	HCl or H2SO4 to pH <2 Cool	Cool 4C	HCl to pH <2 Cool 4C
			Type of Container	G/P	G/P	G/P	aG	G/P	aG	aG	aGs*	aG	aG
			No. of Container(s)	1	1	1	1	1	4	4	3	2	3
			Volume	500mL	500mL	250mL	125mL	250mL	1000mL	1000mL	40mL	1000mL	1000mL
SAMPLE ANALYSIS				See item (1) in Special Instructions	FILTERED ICP Metals - 6010TR; FILTERED Mercury - 7470	Alkalinity - 310.1	Dissolved Organic Carbon - 415.1	Hardness - 130.2	PCBs - 8082	Pesticides - 8081	See item (2) in Special Instructions	Semi-VOA - 8270A (TCL)	TPH-Diesel Range - WTPH-D +
Sample No.	Matrix *	Sample Date	Sample Time										
J17K50	WATER	10/17/08	1310	X		X	X	X	X	X	X	X	X
J17K57	WATER	10/17/08	1310		X								

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Kim Stufflebeam	10/17/08 2055	REF. B	10/17/08 2055
Ref. B	10/20/08 1007	Kim Boyd Kim Boyd	10/20/08 1007
Kim Boyd Kim Boyd	10/20/08 1321	Fed Ex	10/20/08 1321
	10/21/08 0925		10/21/08 0925

SPECIAL INSTRUCTIONS

(1) ICP Metals - 6010TR (Client List) {Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Titanium, Uranium, Vanadium, Zinc}; Mercury - 7470 - (CV)
(2) VOA - 8260A (TCL) {1,1,1-Trichloroethane, 1,1,2,2-Tetrachloroethane, 1,1,2-Trichloroethane, 1,1-Dichloroethane, 1,1-Dichloroethene, 1,2-Dichloroethane, 1,2-Dichloropropane, 2-Butanone, 2-Hexanone, 4-Methyl-2-Pentanone, Acetone, Benzene, Bromodichloromethane, Bromoform, Bromomethane, Carbon disulfide, Carbon tetrachloride, Chlorobenzene, Chloroethane, Chloroform, Chloromethane, cis-1,2-Dichloroethylene, cis-1,3-Dichloropropene, Dibromochloromethane, Ethylbenzene, Methylene chloride, Styrene, Tetrachloroethene, Toluene, trans-1,2-Dichloroethylene, trans-1,3-Dichloropropene, Trichloroethene, Vinyl chloride, Xylenes (total)}

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DS=Drum Solids
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T=Tissue
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L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Appendix 5

Data Validation Supporting Documentation

GC/MS ORGANIC DATA VALIDATION CHECKLIST

VALIDATION LEVEL:	A	B	[✓ C]	D	E

PROJECT: RCBRA		DATA PACKAGE: K1401	
VALIDATOR: ELR	LAB: LLI		DATE: 4/5/09
		SDG: K1401	

ANALYSES PERFORMED					
SW-846 8260		SW-846 8260 (TCLP)	[✓ SW-846 8270]	[✓ 8015B]	SW-846 8270 (TCLP)

SAMPLES/MATRIX

J17K51 J17K52 J17K67 J17K50

Water

1. DATA PACKAGE COMPLETENESS AND CASE NARRATIVE

Technical verification documentation present? Yes [✓ No] N/A

Comments:

2. INSTRUMENT TUNING AND CALIBRATION (Levels D and E)

GC/MS tuning/performance check acceptable? Yes No [✓ N/A]

Initial calibrations acceptable? Yes No [✓ N/A]

Continuing calibrations acceptable? Yes No [✓ N/A]

Standards traceable? Yes No [✓ N/A]

Standards expired? Yes No [✓ N/A]

Calculation check acceptable? Yes No [✓ N/A]

Comments:

GC/MS ORGANIC DATA VALIDATION CHECKLIST

3. BLANKS (Levels B, C, D, and E)

Calibration blanks analyzed? (Levels D, E) .... Yes No [✓ N/A]

Calibration blank results acceptable? (Levels D, E) .... Yes No [✓ N/A]

Laboratory blanks analyzed? .... [✓ Yes] No N/A

Laboratory blank results acceptable? .... [✓ Yes] No N/A

Field/trip blanks analyzed? (Levels C, D, E) .... Yes [✓ No] N/A

Field/trip blank results acceptable? (Levels C, D, E) .... Yes No [✓ N/A]

Transcription/calculation errors? (Levels D, E) .... Yes No [✓ N/A]

Comments: ____________________

4. ACCURACY (Levels C, D, and E)

Surrogates/system monitoring compounds analyzed? .... [✓ Yes] No N/A

Surrogate/system monitoring compound recoveries acceptable? .... Yes [✓ No] N/A

Surrogates traceable? (Levels D, E) .... Yes No [✓ N/A]

Surrogates expired? (Levels D, E) .... Yes No [✓ N/A]

MS/MSD samples analyzed? .... [✓ Yes] No N/A

MS/MSD results acceptable? .... Yes [✓ No] N/A

MS/MSD standards NIST traceable? (Levels D, E) .... Yes No [✓ N/A]

MS/MSD standards? (Levels D, E) .... Yes No [✓ N/A]

LCS/BSS samples analyzed? .... [✓ Yes] No N/A

LCS/BSS results acceptable? .... Yes [✓ No] N/A

Standards traceable? (Levels D, E) .... Yes No [✓ N/A]

Standards expired? (Levels D, E) .... Yes No [✓ N/A]

Transcription/calculation errors? (Levels D, E) .... Yes No [✓ N/A]

Performance audit sample(s) analyzed? .... Yes [✓ No] N/A

Performance audit sample results acceptable? .... Yes No [✓ N/A]

Comments: Surr - SO - 2-chlorophenol, 2,4-dichlorophenol, +
4-chloro-3 methyl phenol - J
MS/MSD - 4 out - J all - SV
LCS - all J (no recovery) - SV
Matrix all - no MS/MSD/LCS - J all

GC/MS ORGANIC DATA VALIDATION CHECKLIST

5. PRECISION (Levels C, D, and E)

MS/MSD samples analyzed?............ [✓ Yes] No N/A

MS/MSD RPD values acceptable?............ Yes [✓ No] N/A

MS/MSD standards NIST traceable? (Levels D, E)............ Yes No [✓ N/A]

MS/MSD standards expired? (Levels D, E)............ Yes No [✓ N/A]

Field duplicate RPD values acceptable?............ [✓ Yes] No N/A

Field split RPD values acceptable?............ Yes No [✓ N/A]

Transcription/calculation errors? (Levels D, E)............ Yes No [✓ N/A]

Comments: 2-nitrophenol (46%) 2,4-dichlorophenol (39%)
4-chloroaniline (185%) 3-nitroaniline (180%) 2,4-dinitrophenol (39%)
4-nitroaniline (81%) n-nitrosodiphenylamine (55%) 3,3-dichlorobenzidine (200%)
} J all
DRO - 31% - J all
2-nitroaniline (24%) 4-nitrophenol (23%) 4,6-dinitro-2-methylphenol (26%)
pentachlorophenol (26%) bis(2-ethylhexyl)phthalate (22%) dimethyl phthalate (22%) (see here

6. SYSTEM PERFORMANCE (Levels D and E)

Internal standards analyzed?............ Yes No [✓ N/A]

Internal standard areas acceptable?............ Yes No [✓ N/A]

Internal standard retention times acceptable?............ Yes No [✓ N/A]

Standards traceable?............ Yes No [✓ N/A]

Standards expired?............ Yes No [✓ N/A]

Transcription/calculation errors?............ Yes No [✓ N/A]

Comments:

7. HOLDING TIMES (all levels)

Samples properly preserved?............ [✓ Yes] No N/A

Sample holding times acceptable?............ [✓ Yes] No N/A

Comments:

RPD benzo(b)fluoranthene (20%), benzo(k)fluoranthene (21%), benzo(a)pyrene (22%)
+ dibenzo(a)anthracene (21%) - J all

GC/MS ORGANIC DATA VALIDATION CHECKLIST

8. COMPOUND IDENTIFICATION, QUANTITATION, AND DETECTION LIMITS (all levels)

Compound identification acceptable? (Levels D, E) .... Yes No [✓ N/A]
Compound quantitation acceptable? (Levels D, E) .... Yes No [✓ N/A]
Results reported for all requested analyses? .... [✓ Yes] No N/A
Results supported in the raw data? (Levels D, E) .... Yes No [✓ N/A]
Samples properly prepared? (Levels D, E) .... Yes No [✓ N/A]
Laboratory properly identified and coded all TIC? (Levels D, E) .... Yes No [✓ N/A]
Detection limits meet RDL? .... Yes [✓ No] N/A
Transcription/calculation errors? (Levels D, E) .... Yes No [✓ N/A]
Comments: [illegible] – [illegible] SV – 2 [illegible]

9. SAMPLE CLEANUP (Levels D and E)

GPC cleanup performed? .... Yes No [✓ N/A]
GPC check performed? .... Yes No [✓ N/A]
GPC check recoveries acceptable? .... Yes No [✓ N/A]
GPC calibration performed? .... Yes No [✓ N/A]
GPC calibration check performed? .... Yes No [✓ N/A]
GPC calibration check retention times acceptable? .... Yes No [✓ N/A]
Check/calibration materials traceable? .... Yes No [✓ N/A]
Check/calibration materials Expired? .... Yes No [✓ N/A]
Analytical batch QC given similar cleanup? .... Yes No [✓ N/A]
Transcription/Calculation Errors? .... Yes No [✓ N/A]
Comments:

Date: 13 April 2009
To: Washington Closure Hanford (technical representative)
From: ELR Consulting
Project: Columbia River Component of the RCBRA – Surface Water
Subject: Volatiles - Data Package No. K1401-LLI

INTRODUCTION

This memo presents the results of data validation on Summary Data Package No. K1401 prepared by Lionville Laboratory Inc. (LLI). A list of the samples validated along with the analyses reported and the method of analysis is provided in the following table.

Sample ID	Sample Date	Media	Validation	Date
J17K50	10/17/08	Water	C	See note 1
J17K51	10/17/08	Water	C	See note 1
J17K52	10/17/08	Water	C	See note 1
J17K87	10/17/08	Water	C	See note 1
J17K73	10/17/08	Water	C	See note 1

1 - Volatiles by 8260B.

Data validation was conducted in accordance with the Washington Closure Hanford (WCH) validation statement of work and the Remedial Investigation Work Plan for Hanford Site Releases to the Columbia River (DOE/RL-2008-11, Rev. 0, September 2008). Appendices 1 through 6 provide the following information as indicated below:

Appendix 1. Glossary of Data Reporting Qualifiers
Appendix 2. Summary of Data Qualification
Appendix 3. Annotated Laboratory Reports
Appendix 4. Laboratory Narrative and Chain-of-Custody Documentation
Appendix 5. Data Validation Supporting Documentation

DATA QUALITY OBJECTIVES

- Holding Times & Sample Preservation

Analytical holding times are assessed to ascertain whether the holding time requirements were met by the laboratory. Preserved water samples must be analyzed within: 14 days of the date of sample collection for preserved samples and 7 days for unpreserved samples.

If holding times are exceeded, but not by greater than twice the limit, all associated sample results are qualified as estimates and flagged "J" for detects and "UJ" for non-detects. If holding times are exceeded by greater than twice the limit, all associated detected sample results are qualified as estimates and flagged "J" and all non-detects are rejected and flagged "UR".

All holding times were acceptable.

- **Blanks**

Method blank analyses are conducted to determine the extent of laboratory contamination introduced through sampling, sample preparation and analysis. At least one acceptable method blank analysis must be conducted for every 20 samples. No contaminants should be present in the method blank. Analytical results for analytes present in any sample at less than five times the concentration of that analyte found in the associated blank are qualified as non-detects and flagged "U". Common laboratory contaminants present in samples at less than ten times the concentration of that analyte found in the associated blank are qualified as non-detects. If a sample result is less than the CRQL and is less than five times (or less than ten times for lab contaminants) the highest associated blank result, the sample result value is raised to the CRQL level and qualified as undetected "U".

Due to method blank contamination, all detected methylene chloride results were qualified as undetected, raised to the RQL and flagged "U".

All other method blank results were acceptable.

Field Blanks

One trip blank (J17K73) was submitted for analysis. All field blank results were acceptable.

- **Accuracy**

Matrix Spike/Matrix Spike Duplicate & Laboratory Control Sample

Matrix spike/matrix spike duplicate analyses are used to assess the analytical accuracy of the reported data and the effect of the matrix on the ability to accurately quantify sample concentrations. Matrix spike/matrix spike duplicate analyses are performed in duplicate using five compounds for which percent recoveries must be within a range of 50-150% or within laboratory control limits. If spike recoveries are outside control limits, detected sample results less than five times the spike concentration are qualified as estimates and flagged "J". Undetected sample results with spike recoveries below control limits are qualified as estimates and flagged "UJ". Undetected sample results are not qualified if the spike recovery is above control limits. Sample results greater than five times the spike concentration require no qualification.

All accuracy results were acceptable.

Surrogate Recovery

The analyses of surrogate compounds provide a measure of performance for individual samples. Matrix-specific surrogate compound recovery control windows have been established by the EPA CLP program. If two surrogates of the same class of compounds (base/neutral or acid) are out of control limits, all associated sample results greater than the contract required quantitation limit (CRQL) are qualified as estimates and flagged "J". Sample results less than the CRQL and below the lower control limit are qualified as estimates and flagged "UJ". Sample results less than the CRQL with recoveries above the upper control limit require no qualification. If a surrogate recovery is less than 10%, detects are qualified as estimates and flagged "J" and nondetects are rejected and flagged "UR".

All surrogate recovery results were acceptable.

- **Precision**

Matrix Spike/Matrix Spike Duplicate Samples

Matrix spike (MS)/matrix spike duplicate (MSD) results provide matrix-specific information on the precision of the method for specific target compound classes. Precision is expressed by the relative percent difference (RPD) between the recoveries of duplicate matrix spike analyses performed on a sample. Samples results must be within RPD limits of +/-20%. If RPD values are out of specification and the sample concentration is less than five times the spike concentration, all associated detected sample results are qualified as estimates and flagged "J". If RPD values are out of specification and the sample concentration is greater than five times the spike concentration, no qualification is required.

Due to RPDs outside QC limits, all acetone (33%), 2-butanone (40%), 4-methyl-2-pentanone (40%), 2-hexanone (40%) and 1,1,2,2-tetrachloroethane (22%) results were qualified as estimates and flagged "J".

All other precision results were acceptable.

Field Duplicate Samples

One set of field duplicates (J17K52/J17K67) were submitted for analysis. Laboratory duplicates are compared using the same criteria as for laboratory duplicates. All field duplicate results were acceptable.

- **Analytical Detection Levels**

Reported analytical detection levels are compared against the minimum detection limits (MDLs) to ensure that laboratory detection levels meet the required criteria. All results met the RQL. Under the WCH statement of work, no qualification is required.

- **Completeness**

Data package No. K1401 was submitted for validation and verified for completeness. Completeness is based on the percentage of data determined to be valid (i.e., not rejected). The completion percentage was 100%.

MAJOR DEFICIENCIES

None found.

MINOR DEFICIENCIES

The following minor deficiencies were noted:

- Due to method blank contamination, all detected methylene chloride results were qualified as undetected, raised to the RQL and flagged "U".
- Due to RPDs outside QC limits, all acetone (33%), 2-butanone (40%), 4-methyl-2-pentanone (40%), 2-hexanone (40%) and 1,1,2,2-tetrachloroethane (22%) results were qualified as estimates and flagged "J".

Data flagged "J" indicates that the associated concentration is an estimate, but under the WCH statement of work, the data may be usable for decision-making purposes. All other validated results are considered accurate within the standard error associated with the methods.

REFERENCES

Fluor Hanford Data Validation Contract #29776 (June 2006), *Validation Statement of Work*, through Washington Closure Hanford Work Order #WB6081.

DOE/RL-2008-11, Rev.0, *Remedial Investigation Work Plan for Hanford Site Releases to the Columbia River*, September 2008.

Appendix 1

Glossary of Data Reporting Qualifiers

Qualifiers which may be applied by data validator in compliance with the WCH validation SOW are as follows:

U - Indicates the compound or analyte was analyzed for and not detected in the sample. The value reported is the sample quantitation limit corrected for dilution and moisture content by the laboratory.

UJ - Indicates the compound or analyte was analyzed for and not detected in the sample. Due to a minor QC deficiency identified during the data validation, the associated quantitation limit is an estimate.

J - Indicates the compound or analyte was analyzed for and detected. Due to a minor QC deficiency identified during the data validation, the associated quantitation limit is an estimate.

R - Indicates the compound or analyte was analyzed for, detected, and due to an identified major QC deficiency, the data are unusable.

UR - Indicates the compound or analyte was analyzed for and not detected in the sample. Additionally, the data is unusable due to an identified major QC deficiency.

NJ - Indicates presumptive evidence of a compound at an estimated value. The data may not be valid for some specific applications (i.e., usable for decision-making purposes).

N - Indicates presumptive evidence of a compound. The data may not be valid for some specific applications (i.e., usable for decision-making purposes).

Appendix 2

Summary of Data Qualification

VOLATILE ORGANIC DATA QUALIFICATION SUMMARY*

SDG: K1401	**REVIEWER: ELR**	**Project: RCBRA**	**PAGE 1 OF 1**
COMPOUND	QUALIFIER	SAMPLES AFFECTED	REASON
Methylene chloride	J	All detected results	Method blank contamination
Acetone 2-butanone 4-methyl-2-pentanone 2-hexanone 1,1,2,2-tetrachloroethane	J	All	RPD

* - The Qualified Data Summary Table includes laboratory applied "U" qualifiers not specifically identified here. The laboratory applied "U" qualifiers are included to minimize misinterpretation of results contained in the table.

Appendix 3

Annotated Laboratory Reports

Volatiles by GC/MS, HSL List Report Date: 11/24/08 11:19

RFW Batch Number: 08101L109 Client: WC-HANFORD RC-115 K1401 Work Order: 60049001001 Page: 1a

000000087

	Cust ID:	J17K73		J17K51		J17K51		J17K51		J17K52		J17R67
Sample Information	RFW#:	001		002		002 MS		002 MSD		004		006
	Matrix:	WATER		WATER		WATER		WATER		WATER		WATER
	D.F.:	1.00		1.00		1.00		1.00		1.00		1.00
	Units:	ug/L		ug/L		ug/L		ug/L		ug/L		ug/L

	Toluene-d8	102	%	102	%	102	%	103	%	104	%	101	%
Surrogate	Bromofluorobenzene	113	%	115	%	106	%	111	%	110	%	110	%
Recovery	1,2-Dichloroethane-d4	111	%	117	%	100	%	111	%	98	%	114	%

		fl		fl		fl		fl		fl		fl
Chloromethane	10	U	10	U	88	%	86	%	10	U	10	U
Bromomethane	10	U	10	U	205	* %	184	* %	10	U	10	U
Vinyl Chloride	10	U	10	U	97	%	89	%	10	U	10	U
Chloroethane	10	U	10	U	286	* %	282	* %	10	U	10	U
Methylene Chloride	5 ~~2~~	~~JB~~ U	5 ~~2~~	~~JB~~ U	80	%	79	%	5 ~~2~~	~~JB~~ U	5 ~~5~~	~~U~~ U
Acetone	10	U J	10	U J	76	%	106	%	10	U J	10	U J
Carbon Disulfide	5	U	5	U	113	%	108	%	5	U	5	U
1,1-Dichloroethene	5	U	5	U	111	%	106	%	5	U	5	U
1,1-Dichloroethane	5	U	5	U	104	%	98	%	5	U	5	U
1,2-Dichloroethene (total)	5	U	5	U	102	%	97	%	5	U	5	U
Chloroform	5	U	5	U	109	%	104	%	5	U	5	U
1,2-Dichloroethane	5	U	5	U	107	%	108	%	5	U	5	U
2-Butanone	10	U J	10	U J	73	%	110	%	10	U J	10	U J
1,1,1-Trichloroethane	5	U	5	U	114	%	104	%	5	U	5	U
Carbon Tetrachloride	5	U	5	U	117	%	108	%	5	U	5	U
Bromodichloromethane	5	U	5	U	109	%	109	%	5	U	5	U
1,2-Dichloropropane	5	U	5	U	103	%	98	%	5	U	5	U
cis-1,3-Dichloropropene	5	U	5	U	95	%	96	%	5	U	5	U
Trichloroethene	5	U	5	U	109	%	104	%	5	U	5	U
Dibromochloromethane	5	U	5	U	101	%	107	%	5	U	5	U
1,1,2-Trichloroethane	5	U	5	U	96	%	102	%	5	U	5	U
Benzene	5	U	5	U	104	%	96	%	5	U	5	U
Trans-1,3-Dichloropropene	5	U	5	U	100	%	106	%	5	U	5	U
Bromoform	5	U	5	U	95	%	112	%	5	U	5	U
4-Methyl-2-pentanone	10	U J	10	U J	81	%	122	%	10	U J	10	U J
2-Hexanone	10	U J	10	U J	83	%	124	%	10	U J	10	U J
Tetrachloroethene	5	U	5	U	101	%	97	%	5	U	5	U
1,1,2,2-Tetrachloroethane	5	U J	5	U J	90	%	112	%	5	U J	5	U J
Toluene	5	U	5	U	102	%	99	%	5	U	5	U

*= Outside of EPA CLP QC limits.

4/11/09

Cust ID:	J17K73		J17K51		J17K51		J17K51					
RFW#:	001		002		002 MS		002 MSD		004		006	
Chlorobenzene	5	U	5	U	103	%	99	%	5	U	5	U
Ethylbenzene	5	U	5	U	103	%	100	%	5	U	5	U
Styrene	5	U	5	U	107	%	106	%	5	U	5	U
Xylenes (total)	5	U	5	U	105	%	103	%	5	U	5	U
cis-1,2-dichloroethene	5	U	5	U	101	%	96	%	5	U	5	U
trans-1,2-dichloroethene	5	U	5	U	104	%	98	%	5	U	5	U

*= Outside of EPA CLP QC limits.

4/11/09

Volatiles by GC/MS, HSL List Report Date: 11/24/08 11:19

RFW Batch Number: 0810L109 Client: WC-HANFORD RC-115 X1401 Work Order: 60049001001 Page: 2a

		Cust ID:	J17K50		VBLKIW		VBLKIW BS	
Sample Information		RFW#:	008		08LVG179-MB1		08LVG179-MB1	
		Matrix:	WATER		WATER		WATER	
		D.F.:	1.00		1.00		1.00	
		Units:	ug/L		ug/L		ug/L	
		Toluene-d8	103	%	100	%	101	%
Surrogate		Bromofluorobenzene	108	%	103	%	108	%
Recovery		1,2-Dichloroethane-d4	114	%	106	%	101	%
				fl		fl		fl
Chloromethane			10	U	10	U	103	%
Bromomethane			10	U	10	U	110	%
Vinyl Chloride			10	U	10	U	101	%
Chloroethane			10	U	10	U	118	%
Methylene Chloride			5	U	3	J	88	%
Acetone			10	U J	10	U	166	%
Carbon Disulfide			5	U	5	U	117	%
1,1-Dichloroethene			5	U	5	U	111	%
1,1-Dichloroethane			5	U	5	U	103	%
1,2-Dichloroethene (total)			5	U	5	U	101	%
Chloroform			5	U	5	U	104	%
1,2-Dichloroethane			5	U	5	U	102	%
2-Butanone			10	U J	10	U	118	%
1,1,1-Trichloroethane			5	U	5	U	102	%
Carbon Tetrachloride			5	U	5	U	103	%
Bromodichloromethane			5	U	5	U	105	%
1,2-Dichloropropane			5	U	5	U	102	%
cis-1,3-Dichloropropene			5	U	5	U	98	%
Trichloroethene			5	U	5	U	104	%
Dibromochloromethane			5	U	5	U	100	%
1,1,2-Trichloroethane			5	U	5	U	99	%
Benzene			5	U	5	U	101	%
Trans-1,3-Dichloropropene			5	U	5	U	102	%
Bromoform			5	U	5	U	99	%
4-Methyl-2-pentanone			10	U J	10	U	116	%
2-Hexanone			10	U J	10	U	138	%
Tetrachloroethene			5	U	5	U	97	%
1,1,2,2-Tetrachloroethane			5	U J	5	U	105	%
Toluene			5	U	5	U	99	%

*= Outside of EPA CLP QC limits.

4/11/09

Cust ID:	J17X50		VBLK1W		VBLK1W BS		
RFW#:	008		08LVG179-MB1		08LVG179-MB1		
Chlorobenzene	5	U	5	U	96	%	
Ethylbenzene	5	U	5	U	99	%	
Styrene	5	U	5	U	101	%	
Xylenes (total)	5	U	5	U	99	%	
cis-1,2-dichloroethene	5	U	5	U	100	%	
trans-1,2-dichloroethene	5	U	5	U	102	%	

*= Outside of EPA CLP QC limits.

4/11/09

Appendix 4

Laboratory Narrative and Chain-of-Custody Documentation

LvLI
LIONVILLE LABORATORY INC.

Case Narrative

Client: WC-HANFORD RC-115
LVL #: 0810L109
SDC/SAF # K1401/RC-115

W.O. #: 60049-001-001-0001-00
Date Received: 10-21-2008

GC/MS VOLATILE

Five (5) water samples were collected on 10-17-2008.

The samples and their associated QC samples were analyzed according to criteria set forth in Lionville Laboratory SOPs based on SW 846 Method 8260B for TCL Volatile target compounds on 10-25-2008.

The following is a summary of QC results accompanying the sample results. Lionville Laboratory (LvLI) certifies that all test results meet the requirements of NELAC except as noted below:

1. Samples were analyzed within required holding time.
2. Non-target compounds were not detected in these samples.
3. All surrogate recoveries were within acceptance criteria.
4. Four (4) of seventy (70) matrix spike recoveries were outside acceptance criteria.
5. All blank spike recoveries were within acceptance criteria.
6. The method blank contained the common laboratory contaminant Methylene Chloride at levels less than 1x the reporting limit
7. All internal standard area and retention time criteria were met.
8. Manual integrations are performed according to SOP QA-125 to produce quality data with utmost integrity. All manual integrations are required to be technically valid and properly documented. Appropriate technical flags are defined in the Glossary ("Technical Flags For Manual Integration").

13

Case Narrative

9. LvL is NELAP accredited by the State of Pennsylvania. For a complete listing of accrediting authorities and the corresponding analytes/methods, please contact your Project Manager

10. "I certify that this sample data package is in compliance with SOW requirements, both technically and for completeness, other than the conditions detailed above. Release of the data contained in this hard-copy data package has been authorized by the Laboratory Manager or a designee, as verified by the following signature."

Iain Daniels
Laboratory Manager
Lionville Laboratory

11/24/08
Date

Washington Closure Hanford

CHAIN OF CUSTODY

Collector: Jan Struppcoff	Company Contact: Joan Kessner	Telephone No.: 375-4688	Project Coordinator: WEISS, RL	Price Code: 7K
Project Designation: Columbia River Component of the RCBRA - Surface Water	Sampling Location: VOA trip blank		SAF No.: RC-113	Data Turnaround: 45 Days
Ice Chest No.: WC4-08-010, 012, 014, 017	Field Logbook No.: EL-1680	COA: BESCRO6520	Method of Shipment: FED EX	
Shipped To: EBERLINE SERVICES [✓ LIONVILLE]	Offsite Property No.		Bill of Lading/Air Bill No.: 79 2773338820	

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

Preservation	HCl or H2SO4 to pH <2 Cool
Type of Container	aGs*
No. of Container(s)	3
Volume	40mL
SAMPLE ANALYSIS	See item (1) in Special Instructions

410000

Sample No.	Matrix *	Sample Date	Sample Time	See item (1) in Special Instructions
J17K73	WATER	10/17/08	1030	X

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
	10/17/08 2055	Ref. B	10/17/08 2055
Ref. B	10/20/08 1240	Kim Boyd / Kim Boyd	10/20/08 1240
Kim Boyd / Kim Boyd	10/20/08 1521	Fed EX	10/20/08 1521
Fed Ex	10-21-08 0925		10-21-08 0925

SPECIAL INSTRUCTIONS

(1) VOA - 8260A (TCL) {1,1,1-Trichloroethane, 1,1,2,2-Tetrachloroethane, 1,1,2-Trichloroethane, 1,1-Dichloroethane, 1,1-Dichloroethene, 1,2-Dichloroethane, 1,2-Dichloropropane, 2-Butanone, 2-Hexanone, 4-Methyl-2-Pentanone, Acetone, Benzene, Bromodichloromethane, Bromoform, Bromomethane, Carbon disulfide, Carbon tetrachloride, Chlorobenzene, Chloroethane, Chloroform, Chloromethane, cis-1,2-Dichloroethylene, cis-1,3-Dichloropropene, Dibromochloromethane, Ethylbenzene, Methylene chloride, Styrene, Tetrachloroethene, Toluene, trans-1,2-Dichloroethylene, trans-1,3-Dichloropropene, Trichloroethene, Vinyl chloride, Xylenes (total)}

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab.

Matrix *

S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Washington Closure Hanford **CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST**

ollector Jim Spyskoff	Company Contact Joan Kessner	Telephone No. 373-4648	Project Coordinator WEISS, RL
roject Designation Columbia River Component of the RCBRA - Surface Water	Sampling Location WBW-1SW		SAF No. RC-115
e Chest No. WCH-08-010, 012, 014, 017	Field Logbook No. EL-1630	COA BESCRC6520	Method of Shipment FED EX
hipped To EBERLINE SERVICES (LIONVILLE)	Offsite Property No.		Bill of Lading/Air Bill No. 792773338820

Price Code 7K

Data Turnaround 45 Days

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

000018

Preservation	HNO3 to pH <2	Cool 4C All w/ HNO3 ~~HNO3 to pH <2~~	Cool 4C	Cool 4C Filtered ~~Filter + H2SO4 to pH <2 Cool~~	HNO3 or H2SO4 to pH	Cool 4C	Cool 4C	HCl or H2SO4 to pH <2 Cool	Cool 4C	HCl to pH <2 Cool 4C
Type of Container	G/P	G/P	G/P	aG	G/P	aG	aG	aGs*	aG	aG
No. of Container(s)	1	1	1	1	1	4	4	3	2	3
Volume	500mL	500mL	250mL	125mL	250mL	1000mL	1000mL	40mL	1000mL	1000mL
SAMPLE ANALYSIS	See item (1) in Special Instructions.	FILTERED ICP Metals - 6010TR; FILTERED Mercury - 7470	Alkalinity - 310.1	Dissolved Organic Carbon - 415.1M	Hardness - 130.2	PCBs - 8082	Pesticides - 8081	See item (2) in Special Instructions.	Semi-VOA - 8270A (TCL)	TPH-Diesel Range - WTPH-D +

Sample No.	Matrix *	Sample Date	Sample Time										
7K51	WATER	10/17/08	1320	X		X	X	X	X	X	X	X	X
7K58	WATER	10/17/08	1320		X								

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Jim Spyskoff	10/17/08 2055	REF. C	10/17/08 2055
REF. C	10/20/08 1037	Kim Royal Kim Royal	10/20/08 1037
Kim Royal Kim Royal	10/20/08 1321	Fed ex	10/20/08 1321
Fed Ex	10/21/08 0925		10-21-08 0925

SPECIAL INSTRUCTIONS

(1) ICP Metals - 6010TR (Clean List) (Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Titanium, Uranium, Vanadium, Zinc); Mercury - 7470 - (CV)

(2) VOA - 8260A (TCL) (1,1,1-Trichloroethane, 1,1,2,2-Tetrachloroethane, 1,1,2-Trichloroethane, 1,1-Dichloroethane, 1,1-Dichloroethene, 1,2-Dichloroethane, 1,2-Dichloropropane, 2-Butanone, 2-Hexanone, 4-Methyl-2-Pentanone, Acetone, Benzene, Bromodichloromethane, Bromoform, Bromomethane, Carbon disulfide, Carbon tetrachloride, Chlorobenzene, Chloroethane, Chloroform, Chloromethane, cis-1,2-Dichloroethylene, cis-1,3-Dichloropropene, Dibromochloromethane, Ethylbenzene, Methylenechloride, Styrene, Tetrachloroethene, Toluene, trans-1,2-Dichloroethylene, trans-1,3-Dichloropropene, Trichloroethene, Vinyl chloride, Xylenes (total))

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab.

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

ABORATORY SECTION	Received By	Title	Date/Time
INAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

CH-EE-011

Washington Closure Hanford CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

llector Ian Stupakoff	Company Contact Joan Kessner	Telephone No. 375-4688	Project Coordinator WEISS, T.J.	Price Code 7K
oject Designation Columbia River Component of the RCBRA - Surface Water	Sampling Location RO-1SW		SAF No. RC-115	Data Turnaround 45 Days
c Chest No. WCH-08-010, 012, 014, 017	Field Logbook No. EL-1630	COA 8ESCRC6320	Method of Shipment FED EX	
	Offsite Property No.		Bill of Lading/Air Bill No. 792773338820	

*10000088

ipped To
EBERLINE SERVICES (LIONVILLE)

OSSIBLE SAMPLE HAZARDS/REMARKS

pecial Handling and/or Storage

0000019

			Preservation	HNO3 to pH <2	Cool 4C all metal	Cool 4C	Cool 4C all metal	HNO3 or H2SO4 to pH	Cool 4C	Cool 4C	HCl or H2SO4 to pH <2 Cool	Cool 4C	HCl to pH <2 Cool 4C
			Type of Container	G/P	G/P	G/P	aG	G/P	aG	aG	aGs*	aG	aG
			No. of Container(s)	1	1	1	1	1	4	4	3 / [illegible]	2	3
			Volume	500mL	500mL	250mL	125mL	250mL	1000mL	1000mL	40mL	1000mL	1000mL
SAMPLE ANALYSIS				See item (1) in Special Instructions	FILTERED ICP Metals - 6010TR; FILTERED Mercury - 7470	Alkalinity - 310.1	Dissolved Organic Carbon - 415.1M	Hardness - 130.2	PCBs - 8082	Pesticides - 8081	See item (2) in Special Instructions	Semi-VOA - 8270A (TCL)	TPH-Diesel Range - WTPH-D +
Sample No.	Matrix *	Sample Date	Sample Time										
17K52	WATER	10/17/08	0952	X		X	X	X	X	X	X	X	X
17K59	WATER	10/17/08	0952		X								

CHAIN OF POSSESSION	Date/Time	Sign/Print Names Received By/Stored In	Date/Time
nquished By/Removed From	10/17/08 2055	REF. B	10/17/08 2055
nquished By/Removed From REF B	10/20/08 1130	Received By/Stored In Kim Pegel Kim Pegel	10/20/08 930
nquished By/Removed From Kim Pegel Kim Pegel	10/20/08 1321	Received By/Stored In Fed EX	10/20/08 1321
nquished By/Removed From Fed EX	10/21/08 0925	Received By/Stored In	10/21/08 0925
nquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
nquished By/Removed From	Date/Time	Received By/Stored In	Date/Time

SPECIAL INSTRUCTIONS

(1) ICP Metals - 6010TR (Client List) {Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Titanium, Uranium, Vanadium, Zinc}; Mercury - 7470 - (CV)
(2) VOA - 8260A (TCL) {1,1,1-Trichloroethane, 1,1,2,2-Tetrachloroethane, 1,1,2-Trichloroethane, 1,1-Dichloroethane, 1,1-Dichloroethene, 1,2-Dichloroethane, 1,2-Dichloropropane, 2-Butanone, 2-Hexanone, 4-Methyl-2-Pentanone, Acetone, Benzene, Bromodichloromethane, Bromoform, Bromomethane, Carbon disulfide, Carbon tetrachloride, Chlorobenzene, Chloroethane, Chloroform, Chloromethane, cis-1,2-Dichloroethylene, cis-1,3-Dichloropropene, Dibromochloromethane, Ethylbenzene, Methylene chloride, Styrene, Tetrachloroethene, Toluene, trans-1,2-Dichloroethylene, trans-1,3-Dichloropropene, Trichloroethene, Vinyl chloride, Xylenes (total)}

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab.

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

ABORATORY SECTION	Received By	Title	Date/Time
INAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

Washington Closure Hanford

Collector Jon Stupakoff	Company Contact Joan Kessner	Telephone No. 375-4688	Project Coordinator WEISS, RL
Project Designation Columbia River Component of the RCBRA - Surface Water	Sampling Location RG-1SW		SAF No. RC-115
Ice Chest No. WCH-08-010, 012, 014, 017	Field Logbook No. EL-1630	COA BESCRC6520	Method of Shipment FED EX
Shipped To EBERLINE SERVICES / LIONVILLE	Offsite Property No.		Bill of Lading/Air Bill No. 792773338820

Price Code 7K

Data Turnaround
45 Days

000000015

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

Preservation	HNO3 to pH <2	None	Cool 4C	Cool 4C	HNO3 or H2SO4 to pH <2	Cool 4C	Cool 4C	HCl or H2SO4 to pH <2 Cool 4C	Cool 4C	HCl to pH <2 Cool 4C
Type of Container	G/P	G/P	G/P	G	G/P	aG	aG	aGs*	aG	aG
No. of Container(s)	1	1	1	1	1	4	4	~~2~~ 1 18 [illegible]	2	3
Volume	500mL	500mL	250mL	125mL	250mL	1000mL	1000mL	40mL	1000mL	1000mL
SAMPLE ANALYSIS	See item (1) in Special Instructions	FILTERED ICP Metals - 6010TR; FILTERED Mercury - 7470	Alkalinity - 310.1	Dissolved Organic Carbon - 415.1M	Hardness - 130.2	PCBs - 8082	Pesticides - 8081	See item (2) in Special Instructions	Semi-VOA - 8270A (TCL)	TPH-Diesel Range - WTPH-D+

000020

Sample No.	Matrix *	Sample Date	Sample Time										
J17R67	WATER	10/17/08	1040	X		X	X	X	X	X	X	X	X
J17R68	WATER	10/17/08	1040		X								

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
[illegible] / Kaya	10/17/08 2055	Ref. C	10/17/08 2205
Ref. C	10/20/08	Kim Rogal Kim Rogal	10/20/08 1205
Kim Rogal Kim Rogal	10/20/08 1521	Fed EX	10/20/08 1521
	10/21/08 0940		10-21-08 0940

SPECIAL INSTRUCTIONS

(1) ICP Metals - 6010TR (Chem List) {Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Titanium, Uranium, Vanadium, Zinc}; Mercury - 7470 - (CV)

(2) VOA - 8260A (TCL) {1,1,1-Trichloroethane, 1,1,2,2-Tetrachloroethane, 1,1,2-Trichloroethane, 1,1-Dichloroethane, 1,1-Dichloroethene, 1,2-Dichloroethane, 1,2-Dichloropropane, 2-Butanone, 2-Hexanone, 4-Methyl-2-Pentanone, Acetone, Benzene, Bromodichloromethane, Bromoform, Bromomethane, Carbon disulfide, Carbon tetrachloride, Chlorobenzene, Chloroethane, Chloroform, Chloromethane, cis-1,2-Dichloroethylene, cis-1,3-Dichloropropene, Dibromochloromethane, Ethylbenzene, Methylene chloride, Styrene, Tetrachloroethene, Toluene, trans-1,2-Dichloroethylene, trans-1,3-Dichloropropene, Trichloroethene, Vinyl chloride, Xylenes (total)}

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab.

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

00000016

Collector Kai Stukoff	Company Contact Joan Kessner	Telephone No. 375-4688	Project Coordinator WEISS, RL	Price Code 7K	Data Turnaround 45 Days
Project Designation Columbia River Component of the RCBRA - Surface Water	Sampling Location WBT-1SW		SAF No. RC-115		
Ice Chest No. WCH-08-010, 012, 014, 017	Field Logbook No. EL-1630	COA BESCRC6510	Method of Shipment FED EX		
Shipped To EBERLINE SERVICES (LIONVILLE)	Offsite Property No.		Bill of Lading/Air Bill No. 792773338820		

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

1200021

Preservation	HNO3 to pH <2	Cool 4 C HNO3 ~~Filter/HNO3 to pH~~ <2	Cool 4C	Cool 4 C Filtered ~~H2SO4 or HCl to pH <2~~	HNO3 or H2SO4 to pH	Cool 4C	Cool 4C	HCl or NaHSO4 to pH <2 Cool	Cool 4C	HCl to pH <2 Cool 4C
Type of Container	G/P	G/P	G/P	aG	G/P	aG	aG	aGs*	aG	aG
No. of Container(s)	1	1	1	1	1	4	4	3	2	3
Volume	500mL	500mL	250mL	125mL	250mL	1000mL	1000mL	40mL	1000mL	1000mL
SAMPLE ANALYSIS	See item (1) in Special Instructions.	FILTERED ICP Metals - 6010TR; FILTERED Mercury - 7470	Alkalinity - 310.1	Dissolved Organic Carbon - 415.1M	Hardness - 130.2	PCBs - 8082	Pesticides - 8081	See item (2) in Special Instructions.	Semi-VOA - 8270A (TCL)	TPH Diesel Range - WTPH-D

Sample No.	Matrix *	Sample Date	Sample Time										
J17K50	WATER	10/17/08	1210	X		X	X	X	X	X	X	X	X
J17K57	WATER	10/17/08	1210		X								

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Kai Stukoff	10/17/08 2055	Ref. B	10/17/08 2055
Ref. B	10/20/08 1007	Kim Boyd Kim Boyd	10/20/08 1007
Kim Boyd Kim Boyd	10/20/08 1321	Fed Ex	10/20/08 1321
	10/21/08 0925		10/21/08 0925

SPECIAL INSTRUCTIONS

(1) ICP Metals - 6010TR (Clean List) {Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Titanium, Uranium, Vanadium, Zinc}; Mercury - 7470 - (CV)

(2) VOA - 8260A (TCL) {1,1,1-Trichloroethane, 1,1,2,2-Tetrachloroethane, 1,1,2-Trichloroethane, 1,1-Dichloroethane, 1,1-Dichloroethene, 1,2-Dichloroethane, 1,2-Dichloropropane, 2-Butanone, 2-Hexanone, 4-Methyl-2-Pentanone, Acetone, Benzene, Bromodichloromethane, Bromoform, Bromomethane, Carbon disulfide, Carbon tetrachloride, Chlorobenzene, Chloroethane, Chloroform, Chloromethane, cis-1,2-Dichloroethylene, cis-1,3-Dichloropropene, Dibromochloromethane, Ethylbenzene, Methylene chloride, Styrene, Tetrachloroethene, Toluene, trans-1,2-Dichloroethylene, trans-1,3-Dichloropropene, Trichloroethene, Vinyl chloride, Xylenes (total)}

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab.

Matrix *

S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Appendix 5

Data Validation Supporting Documentation

GC/MS ORGANIC DATA VALIDATION CHECKLIST

VALIDATION LEVEL:	A	B	[✓ C]	D	E
PROJECT:	RCBRA		DATA PACKAGE:	K1401	
VALIDATOR:	ELR	LAB: LLI		DATE:	4/5/09
			SDG:	K1401	
ANALYSES PERFORMED					
[✓ SW-846 8260]		SW-846 8260 (TCLP)	SW-846 8270		SW-846 8270 (TCLP)
SAMPLES/MATRIX					
J17K73	J17K51	J17K52	J17R67	J17K50	
					water

1. DATA PACKAGE COMPLETENESS AND CASE NARRATIVE

Technical verification documentation present? .... Yes [✓ No] N/A

Comments:

2. INSTRUMENT TUNING AND CALIBRATION (Levels D and E)

GC/MS tuning/performance check acceptable? .... Yes No [✓ N/A]

Initial calibrations acceptable? .... Yes No [✓ N/A]

Continuing calibrations acceptable? .... Yes No [✓ N/A]

Standards traceable? .... Yes No [✓ N/A]

Standards expired? .... Yes No [✓ N/A]

Calculation check acceptable? .... Yes No [✓ N/A]

Comments:

GC/MS ORGANIC DATA VALIDATION CHECKLIST

3. BLANKS (Levels B, C, D, and E)

Calibration blanks analyzed? (Levels D, E) .... Yes No [✓ N/A]
Calibration blank results acceptable? (Levels D, E) .... Yes No [✓ N/A]
Laboratory blanks analyzed? .... [✓ Yes] No N/A
Laboratory blank results acceptable? .... Yes [✓ No] N/A
Field/trip blanks analyzed? (Levels C, D, E) .... [✓ Yes] N/A
Field/trip blank results acceptable? (Levels C, D, E) .... [✓ Yes] No
Transcription/calculation errors? (Levels D, E) .... Yes No [✓ N/A]
Comments: Methylene chloride – U detects at BQL

4. ACCURACY (Levels C, D, and E)

Surrogates/system monitoring compounds analyzed? .... [✓ Yes] No N/A
Surrogate/system monitoring compound recoveries acceptable? .... [✓ Yes] No N/A
Surrogates traceable? (Levels D, E) .... Yes No [✓ N/A]
Surrogates expired? (Levels D, E) .... Yes No [✓ N/A]
MS/MSD samples analyzed? .... [✓ Yes] No N/A
MS/MSD results acceptable? .... [✓ Yes] No N/A
MS/MSD standards NIST traceable? (Levels D, E) .... Yes No [✓ N/A]
MS/MSD standards? (Levels D, E) .... Yes No [✓ N/A]
LCS/BSS samples analyzed? .... [✓ Yes] No N/A
LCS/BSS results acceptable? .... [✓ Yes] No N/A
Standards traceable? (Levels D, E) .... Yes No [✓ N/A]
Standards expired? (Levels D, E) .... Yes No [✓ N/A]
Transcription/calculation errors? (Levels D, E) .... Yes No [✓ N/A]
Performance audit sample(s) analyzed? .... Yes [✓ No] N/A
Performance audit sample results acceptable? .... Yes No [✓ N/A]
Comments: no PAS

GC/MS ORGANIC DATA VALIDATION CHECKLIST

5. PRECISION (Levels C, D, and E)

MS/MSD samples analyzed? .... [✓ Yes] No N/A
MS/MSD RPD values acceptable? .... Yes [✓ No] N/A
MS/MSD standards NIST traceable? (Levels D, E) .... Yes No [✓ N/A]
MS/MSD standards expired? (Levels D, E) .... Yes No [✓ N/A]
Field duplicate RPD values acceptable? .... [✓ Yes] No N/A
Field split RPD values acceptable? .... Yes No [✓ N/A]
Transcription/calculation errors? (Levels D, E) .... Yes No [✓ N/A]
Comments: acetone (33%) 2-butanone (40%) 4-methyl 2-pentanone (40%) 2-hexanone (40%) 1,1,2,2-tetrachloroethane (22%) → J all

6. SYSTEM PERFORMANCE (Levels D and E)

Internal standards analyzed? .... Yes No [✓ N/A]
Internal standard areas acceptable? .... Yes No [✓ N/A]
Internal standard retention times acceptable? .... Yes No [✓ N/A]
Standards traceable? .... Yes No [✓ N/A]
Standards expired? .... Yes No [✓ N/A]
Transcription/calculation errors? .... Yes No [✓ N/A]
Comments:

7. HOLDING TIMES (all levels)

Samples properly preserved? .... [✓ Yes] No N/A
Sample holding times acceptable? .... [✓ Yes] No N/A
Comments:

GC/MS ORGANIC DATA VALIDATION CHECKLIST

8. COMPOUND IDENTIFICATION, QUANTITATION, AND DETECTION LIMITS (all levels)

Compound identification acceptable? (Levels D, E) .... Yes No [✓ N/A]

Compound quantitation acceptable? (Levels D, E) .... Yes No [✓ N/A]

Results reported for all requested analyses? .... [✓ Yes] No N/A

Results supported in the raw data? (Levels D, E) .... Yes No [✓ N/A]

Samples properly prepared? (Levels D, E) .... Yes No [✓ N/A]

Laboratory properly identified and coded all TIC? (Levels D, E) .... Yes No [✓ N/A]

Detection limits meet RDL? .... [✓ Yes] No N/A

Transcription/calculation errors? (Levels D, E) .... Yes No [✓ N/A]

Comments:

9. SAMPLE CLEANUP (Levels D and E)

GPC cleanup performed? .... Yes No [✓ N/A]

GPC check performed? .... Yes No [✓ N/A]

GPC check recoveries acceptable? .... Yes No [✓ N/A]

GPC calibration performed? .... Yes No [✓ N/A]

GPC calibration check performed? .... Yes No [✓ N/A]

GPC calibration check retention times acceptable? .... Yes No [✓ N/A]

Check/calibration materials traceable? .... Yes No [✓ N/A]

Check/calibration materials Expired? .... Yes No [✓ N/A]

Analytical batch QC given similar cleanup? .... Yes No [✓ N/A]

Transcription/Calculation Errors? .... Yes No [✓ N/A]

Comments:

F.1.1.4 SDG K1421

SAF-RC-115
Columbia River Component of the RCBRA – Surface Water
FINAL VALIDATION PACKAGE

COMPLETE COPY OF VALIDATION PACKAGE TO:

Kathy Wendt H4-21

COMMENTS:

SDG K1421 **SAF-RC-115**

Sampling Location: **PRD/3SW**
PRD/4SW
RBLS-1SW

Date: 13 April 2009
To: Washington Closure Hanford Inc. (technical representative)
From: ELR Consulting
Project: Columbia River Component of the RCBRA - Surface Water
Subject: Radiochemistry - Data Package No. K1421-EB

INTRODUCTION

This memo presents the results of data validation on Data Package No. K1421 prepared by Eberline Services (EB). A list of samples validated along with the analyses reported and the method of analysis is provided in the following table.

Sample ID	Sample Date	Media	Validation	Data
J17RJ1	10/29/08	Water	C	See note 1
J17RJ2	10/29/08	Water	C	See note 1
J17RJ3	10/29/08	Water	C	See note 1

1 – Tritium, carbon-14, total strontium, technetium-99, alpha spectroscopy & gamma spectroscopy.

Data validation was conducted in accordance with the Washington Closure Hanford (WCH) validation statement of work and the Remedial Investigation Work Plan for Hanford Site Releases to the Columbia River (DOE/RL-2008-11, Rev. 0, September 2008). Appendices 1 through 6 provide the following information as indicated below:

Appendix 1. Glossary of Data Reporting Qualifiers
Appendix 2. Summary of Data Qualification
Appendix 3. Qualified Data Summary and Annotated Laboratory Reports
Appendix 4. Laboratory Narrative and Chain-of-Custody Documentation
Appendix 5. Data Validation Supporting Documentation
Appendix 6. Additional Data Requested by Client

DATA QUALITY PARAMETERS

- **Holding Times**

Holding times are calculated from Chain-of-Custody forms to determine the validity of the results. The maximum holding time for radiochemical analysis is 6 months. All holding times were acceptable.

- **Preparation (Method) Blanks**

Laboratory Blanks

Blank samples are analyzed to determine if positive results are due to laboratory reagent, sample container, or detector contamination. If blank analysis results indicate the presence of an analyte above the minimum detectable activity (MDA), the following qualifiers are applied: All positive sample results less than five times the highest blank concentration are qualified as estimates and flagged "J"; sample results below the MDA are qualified as undetected and flagged "U"; sample results above the MDA and greater than five times the highest blank concentration are not qualified.

All blank results were acceptable (although the MDA for tritium exceeded QC limits).

Field (Equipment) Blank

No field blanks were submitted for analysis.

- **Accuracy**

Accuracy is evaluated from laboratory control sample (LCS) or blank spike sample (BSS) batch samples and spiked samples from the analytical batch. Measured activities are compared to the known added amounts. The acceptable LCS or BSS and matrix spike (MS) recovery range is 70-130%. In addition, samples may be spiked with a radiochemical tracer to assist in isolating the radioisotope of interest with the yield of the tracer being used in calculating sample activity. The acceptable range for tracer recovery is 20% to 105%. Spike sample results outside the above ranges result in associated sample results being qualified as estimates, or not qualified, depending on the activity of the individual sample. Results are rejected for LCS/BSS recoveries of less than 30% and tracer recoveries of less than 20%, and tracer recoveries of greater than 115% for detected results.

Due to the lack of an LCS analysis, all thorium-228 and thorium-232 results were qualified as estimates and flagged "J".

Due to a tracer recovery outside QC limits (106%), the thorium-230 result in sample J17RJ1 was qualified as an estimate and flagged "J".

All other accuracy results were acceptable.

- **Laboratory Duplicates**

Analytical precision is expressed by the relative percent differences (RPD) between the recoveries of duplicate matrix spike analyses performed on a sample in the analytical batch. Precision may alternatively be assessed using unspiked duplicate analyses performed on a sample in the analytical batch. If both sample and replicate activities (concentrations) are greater than five times the contract required detection limit (CRDL) and the RPD is less than 20%, no qualification is required. If either activity (concentration) is less than five times the CRDL, the RPD control limit is less than or equal to two times the CRDL. If the RPD is outside the applicable control limit, associated results are qualified as estimated detects or estimated non-detects.

All duplicate results were acceptable.

Field Duplicates

No field duplicates were submitted for analysis.

- **Detection Levels**

Reported analytical detection levels for undetected analytes are compared against the project RQLs to ensure that laboratory detection levels meet the required criteria. All analytes met the RQL.

- **Completeness**

Data package No. K1421 was submitted for validation and verified for completeness. Completeness is based on the percentage of data determined to be valid (i.e., not rejected). The completion percentage was 100%.

MAJOR DEFICIENCIES

None found.

MINOR DEFICIENCIES

The following minor deficiencies were noted:

- Due to the lack of an LCS analysis, all thorium-228 and thorium-232 results were qualified as estimates and flagged "J".
- Due to a tracer recovery outside QC limits (108%), the thorium-230 result in sample J17RJ1 was qualified as an estimate and flagged "J".

Data flagged "J" indicates that the associated concentration is an estimate, but under the WCH statement of work, the data may be usable for decision-making purposes. All other validated results are considered accurate within the standard error associated with the methods.

REFERENCES

Fluor Hanford Data Validation Contract #29776 (June 2006), *Validation Statement of Work*, through Washington Closure Hanford Work Order #WB6081.

DOE/RL-2008-11, Rev.0, *Remedial Investigation Work Plan for Hanford Site Releases to the Columbia River*, September 2008.

Appendix 1

Glossary of Data Reporting Qualifiers

Qualifiers which may be applied by data validators in compliance with the WCH statement of work are as follows:

U - Indicates the compound or analyte was analyzed for and not detected above the minimum detectable activity (MDA) in the sample. The value reported is the sample result corrected for sample dilution and moisture content by the laboratory. The data is usable for decision making purposes.

UJ - Indicates the compound or analyte was analyzed for and not detected at concentrations above the minimum detectable activity (MDA) in the sample. Due to a minor QC deficiency identified during the data validation, the associated quantitation limit is an estimate, but is usable for decision making purposes.

J - Indicates the compound or analyte was analyzed for and detected. Due to a minor QC deficiency identified during the data validation, the associated concentration is an estimate, but the data are usable for decision-making purposes.

R - Indicates the compound or analyte was analyzed for, detected, and due to an identified major QC deficiency, the data are unusable.

UR - Indicates the compound or analyte was analyzed for and not detected in the sample. Additionally, the data is unusable due to an identified major QC deficiency.

Appendix 2

Summary of Data Qualification

RADIOCHEMISTRY DATA QUALIFICATION SUMMARY*

SDG: K1421	**REVIEWER: ELR**	**Project: RCBRA**	**PAGE 1 OF 1**
COMPOUND	QUALIFIER	SAMPLES AFFECTED	REASON
Thorium-228 Thorium-232	J	All	No MS analysis
Thorium-230	J	J17RJ1	Tracer recovery

* - The Qualified Data Summary Table includes laboratory applied "U" qualifiers not specifically identified here. The laboratory applied "U" qualifiers are included to minimize misinterpretation of results contained in the table.

Appendix 3

Qualified Data Summary and Annotated Laboratory Reports

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1421

7235-001　　　　J17BJ1

DATA SHEET

SDG	7235	Client/Case no	Hanford	SDG K1421
Contact	Melissa C. Mannion	Contract	No. 500W235A00	
Lab sample id	E811012-01	Client sample id	J17BJ1	
Dept sample id	7235-001	Location/Matrix	PRD 35W/PRD-45W	WATER
Received	10/31/08	Collected/Volume	10/29/08 13:40	6.25 L
		Custody/SAF No	RC-115-30	RC-115

ANALYTE	CAS NO	RESULT pCi/L	2σ ERR (COUNT)	MDA pCi/L	RDL pCi/L	QUALI-FIERS	TEST
Tritium	10028-17-8	38.2	90	150	400	U	H
Carbon 14	14762-75-5	-0.930	35	59.5	200	U	C
Total Strontium	SR-RAD	0.073	0.21	0.412	2.00	U	SR
Technetium 99	14133-76-7	1.41	1.6	4.04	15.0	U	TC
Thorium 228	14274-82-9	0	0.11	0.217		U J	TH
Thorium 230	14269-63-7	0.267	0.17	0.188	1.00	J	TH
Thorium 232	TH-232	0.028	0.084	0.156	1.00	U J	TH
Uranium 233/234	U-233/234	0.173	0.11	0.102	1.00		U
Uranium 235	15117-96-1	0.016	0.032	0.124	1.00	U	U
Uranium 238	U-238	0.280	0.13	0.102	1.00		U
Plutonium 238	13981-16-3	0.029	0.039	0.070	1.00	U	PU
Plutonium 239/240	PU-239/240	0	0.013	0.031	1.00	U	PU
Potassium 40	13966-00-2	U		91.0		U	GAM
Cobalt 60	10198-40-0	U		3.90	25.0	U	GAM
Cesium 137	10045-97-3	U		1.82	15.0	U	GAM
Radium 226	13982-63-3	U		7.53		U	GAM
Radium 228	15262-20-1	U		17.3		U	GAM
Europium 152	14683-23-9	U		8.62	50.0	U	GAM
Europium 154	15585-10-1	U		12.5	50.0	U	GAM
Europium 155	14391-16-3	U		8.39	50.0	U	GAM
Thorium 228	14274-82-9	U		5.56		U	GAM
Thorium 232	TH-232	U		17.3		U	GAM
Uranium 235	15117-96-1	U		12.1		U	GAM
Uranium 238	U-238	U		451		U	GAM
Americium 241	14596-10-2	U		4.48		U	GAM
Beryllium 7	13966-02-4	U		27.2		U	GAM
Ruthenium 106	13967-48-1	U		30.5		U	GAM
Antimony 125	14234-35-6	U		8.47		U	GAM

ColumbiaRiverComp.ofRCBRA-Surf.Water

4/11/09

Lab id	EBRLNE
Protocol	Hanford1
Version	Ver 1.0
Form	DVD-DS
Version	3.06
Report date	12/12/08

DATA SHEET, cont

SDG	7235	Client/Case no	Hanford SDG_K1421
Contact	Melissa C. Mannion	Contract	No. 500WX15A00
Lab sample id	8811012-01	Client sample id	J17RJ1
Dept sample id	7235-001	Location/Matrix	PRD-35W/PRD 45W WATER
Received	10/31/08	Collected/Volume	10/29/08 13:40 6.25 L
		Custody/SAF No	RC-115-30 RC-115

ANALYTE	CAS NO	RESULT pCi/L	2σ ERR (COUNT)	MDA pCi/L	RDL pCi/L	QUALI-FIERS	TEST
Cesium 134	13967-70-9	U		4.92		U	GAM

ColumbiaRiverComp.ofRCRA-Surf.Water

✓ 4/11/09

DATA SHEETS
Page 2
SUMMARY DATA SECTION
Page 19

Lab id	EBRLNE
Protocol	Hanford1
Version	Ver 1.0
Form	DVD-DS
Version	3.06
Report date	12/12/08

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP X1421

7235-002 J17RJ2

DATA SHEET

SDG 7235
Contact Melissa C. Mannion

Lab sample id R811012-02
Dept sample id 7235-002
Received 10/31/08

Client/Case no Hanford SDG X1421
Contract No. S00W235A00

Client sample id J17RJ2
Location/Matrix PRD-39W/PRD-49W WATER
Collected/Volume 10/29/08 15:55 6.75 L
Custody/SAF No RC-115-30 RC-115

ANALYTE	CAS NO	RESULT pCi/L	2σ ERR (COUNT)	MDA pCi/L	RDL pCi/L	QUALI-FIERS	TEST
Tritium	10028-17-8	43.2	90	150	400	U	H
Carbon 14	14762-75-5	-1.86	35	59.4	200	U	C
Total Strontium	SR-RAD	0.004	0.22	0.444	2.00	U	SR
Technetium 99	14133-76-7	1.10	2.0	3.85	15.0	U	TC
Thorium 228	14274-82-9	-0.016	0.062	0.149		U J	TH
Thorium 230	14269-63-7	0.047	0.093	0.119	1.00	U	TH
Thorium 232	TH-232	0	0.031	0.119	1.00	U J	TH
Uranium 233/234	U-233/234	0.208	0.17	0.151	1.00		U
Uranium 235	15117-96-1	0	0.059	0.164	1.00	U	U
Uranium 238	U-238	0.233	0.13	0.151	1.00		U
Plutonium 238	13981-16-3	0.004	0.030	0.065	1.00	U	PU
Plutonium 239/240	PU-239/240	0	0.023	0.051	1.00	U	PU
Potassium 40	13966-00-2	U		69.1		U	GAM
Cobalt 60	10198-40-0	U		3.43	25.0	U	GAM
Cesium 137	10045-97-3	U		1.58	15.0	U	GAM
Radium 226	13982-63-3	U		7.51		U	GAM
Radium 228	15262-20-1	U		15.7		U	GAM
Europium 152	14683-23-9	U		11.1	50.0	U	GAM
Europium 154	15585-10-1	U		9.42	50.0	U	GAM
Europium 155	14391-16-3	U		11.7	50.0	U	GAM
Thorium 228	14274-82-9	U		6.99		U	GAM
Thorium 232	TH-232	U		15.7		U	GAM
Uranium 235	15117-96-1	U		17.4		U	GAM
Uranium 238	U-238	U		394		U	GAM
Americium 241	14596-10-3	U		14.9		U	GAM
Beryllium 7	13966-02-4	U		30.4		U	GAM
Ruthenium 106	13967-48-1	U		30.7		U	GAM
Antimony 125	14234-35-6	U		8.64		U	GAM

ColumbiaRiverComp.ofRCBRA-Surf.Water

4/11/09

Lab id EBRLNE
Protocol Hanford1
Version Ver 1.0
Form DVD-DS
Version 3.06
Report date 12/12/08

DATA SHEET, cont

SDG 7235
Contact Melissa C. Mannion
Client/Case no Hanford SDG K1421
Contract No. 500W23LA00

Lab sample id R811012-02
Dept sample id 7235-002
Received 10/31/08
Client sample id J17RJ2
Location/Matrix PRD-3SW/PRD-4SW WATER
Collected/Volume 10/29/08 15:55 6.25 L
Custody/SAF No RC-115-30 RC-115

ANALYTE	CAS NO	RESULT pCi/L	2σ ERR (COUNT)	MDA pCi/L	RDL pCi/L	QUALI-FIERS	TEST
Cesium 134	13967-70-9	U		4.02		U	GAM

ColumbiaRiverComp.ofRCBRA-Surf.Water

V 4/11/09

Lab id EBRLNE
Protocol Hanford1
Version Ver 1.0
Form DVD DS
Version 3.06
Report date 12/12/08

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1421

7235-003 J17BJ3

DATA SHEET

SDG 7235		Client/Case no Hanford	SDG K1421
Contact Melissa C. Mannion		Contract No. 600W235A00	
Lab sample id R811012-03		Client sample id J17BJ3	
Dept sample id 7235-003		Location/Matrix B00G-15W	WATER
Received 10/31/08		Collected/Volume 10/28/08 11:35	6.25 L
		Custody/SAF No RC-115-30	RC-115

ANALYTE	CAS NO	RESULT pCi/L	2σ ERR (COUNT)	MDA pCi/L	RDL pCi/L	QUALI-FIERS	TEST
Tritium	10028-17-8	27.9	89	149	400	U	H
Carbon 14	14762-75-5	-10.3	35	60.0	200	U	C
Total Strontium	SR-RAD	0.206	0.23	0.415	2.00	U	SR
Technetium 99	14133-76-7	9.720	1.5	3.56	15.0	U	TC
Thorium 228	14274-82-9	0.030	0.090	0.201		U J	TH
Thorium 230	14269-63-7	0.104	0.090	0.114	1.00	U	TH
Thorium 232	TH-232	0	0.030	0.114	1.00	U J	TH
Uranium 233/234	U-233/234	0.123	0.082	0.104	1.00		U
Uranium 235	15117-96-1	0.017	0.033	0.126	1.00	U	U
Uranium 238	U-238	0.218	0.11	0.104	1.00		U
Plutonium 238	13981-16-3	0.019	0.058	0.101	1.00	U	PU
Plutonium 239/240	PU-239/240	-0.013	0.013	0.040	1.00	U	PU
Potassium 40	13966-00-2	U		53.0		U	GAM
Cobalt 60	10198-40-0	U		4.56	25.0	U	GAM
Cesium 137	10045-97-3	U		4.41	15.0	U	GAM
Radium 226	13982-63-3	U		8.12		U	GAM
Radium 228	15262-20-1	U		19.1		U	GAM
Europium 152	14683-23-9	U		11.2	50.0	U	GAM
Europium 154	15585-10-1	U		13.5	50.0	U	GAM
Europium 155	14391-16-3	U		8.25	50.0	U	GAM
Thorium 228	14274-82-9	U		6.63		U	GAM
Thorium 232	TH-232	U		19.3		U	GAM
Uranium 235	15117-96-1	U		15.1		U	GAM
Uranium 238	U-238	U		509		U	GAM
Americium 241	14596-10-2	U		4.80		U	GAM
Beryllium 7	13966-02-4	U		39.0		U	GAM
Ruthenium 106	13967-48-1	U		39.4		U	GAM
Antimony 125	14234-35-6	U		10.0		U	GAM

ColumbiaRiverComp.ofRCBRA-Surf.Water

K 4/11/09

Lab id EBRLNE
Protocol Hanford1
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Version 1.06
Report date 12/12/08

DATA SHEET, cont

SDG 7235
Contact Melissa C. Mannion
Client/Case no Hanford SDG K1421
Contract No. 500W235D00

Lab sample id E811012-03
Dept sample id 7235-003
Received 10/31/08
Client sample id J17RJ3
Location/Matrix RBLS-18W WATER
Collected/Volume 10/29/08 13:35 6.25 L
Custody/SAF No RC-115-30 RC-115

ANALYTE	CAS NO	RESULT pCi/L	2σ ERR (COUNT)	MDA pCi/L	RDL pCi/L	QUALI-FIERS	TEST
Cesium 134	13967-70 9	U		5.80		U	GAM

ColumbiaRiverComp.ofRCRA-Surf.Water

4/4/09

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Lab id EBRLNE
Protocol Hanford1
Version Ver 1.0
Form DVD-DS
Version 3.06
Report date 12/12/08

Appendix 4

Laboratory Narrative and Chain-of-Custody Documentation

1.0 GENERAL

Washington Closure Hanford (WCH) Sample Delivery Group K1421 was composed of three water samples designated under SAF No. RC-115 with a Project Designation of: Columbia River Component of the RCBRA – Surface Water.

The samples were received as stated on the Chain-of-Custody documents. Any discrepancies are noted on the Eberline Services Sample Receipt Checklist included in the original report. The results were sent to WCH via e-mail December 12, 2008.

2.0 ANALYSIS NOTES

2.1 Tritium Analysis

No problems were encountered during the course of the analyses.

2.2 Carbon-14 Analysis

No problems were encountered during the course of the analyses.

2.3 Strontium-90 Analysis

The strontium carrier yield for sample J17RJ1 was 106%, greater than the upper control limit of 105%. No other problems were encountered during the course of the analyses.

2.4 Technetium-99 Analysis

No problems were encountered during the course of the analyses.

2.5 Isotopic Thorium Analysis

No problems were encountered during the course of the analyses.

2.6 Isotopic Uranium Analysis

No problems were encountered during the course of the analyses.

2.7 Isotopic Plutonium Analysis

No problems were encountered during the course of the analyses.

2.8 Gamma Spectroscopy

No problems were encountered during the course of the analyses.

Washington Closure Hanford	**CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST**	RC-115-30	Page 2 of 2
Collector Ian Stupakoff	Company Contact Joan Kessner / Telephone No. 375-4688	Project Coordinator WEISS, RL	Price Code ~~JK~~ 7N / Data Turnaround 45 Days
Project Designation Columbia River Component of the RCBRA - Surface Water	Sampling Location PRD-3SW / PRD-45W K1421 (7255)	SAF No. RC-115	
Ice Chest No. WCH-08-049	Field Logbook No. EL-1630 / COA BESCRO6520	Method of Shipment FED EX	
Shipped To EBERLINE SERVICES LIONVILLE	Offsite Property No. N/A	Bill of Lading/Air Bill No. 7919 8142 2269	

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

Preservation	HNO3 to pH <2	None	None	HNO3 to pH <2	HNO3 to pH <2	HCl to pH <2	HNO3 to pH <2	HNO3 to pH <2	
Type of Container	P	G/P	P	P	P	P	G/P	G/P	
No. of Container(s)	1	1	1	2	2	1	1	1	
Volume	1000mL	125mL	125mL	1000mL	1000mL	250mL	1000mL	1000mL	
SAMPLE ANALYSIS	3 See item (1) in Special Instructions	Carbon-14	Tritium - H3	Strontium-89,90 -- Total Sr	Isotopic Uranium	Technetium-99	Isotopic Plutonium	Isotopic Thorium	

Sample No.	Matrix *	Sample Date	Sample Time									
J17RJ1	WATER	10/29/08	1340	X	X	X	X	X	X	X	X	
J17RJ2	WATER	10/29/08	1555	X	X	X	X	X	X	X	X	
J17RJ8	WATER											
J17RJ9	WATER											

CHAIN OF POSSESSION	Date/Time	Sign/Print Names	Date/Time
Relinquished By/Removed From	10/29/08 1818	Received By/Stored In	10/29/08 1818
Relinquished By/Removed From	10/30/08 0854	Received By/Stored In Dustin Gelberg	10/31/08 0844
Relinquished By/Removed From Dustin Gelberg	10/31/08 1300	Received By/Stored In Fed ex	10/31/08 1300
Relinquished By/Removed From Fed EX	Date/Time	Received By/Stored In	11/31/08 09:00
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time

SPECIAL INSTRUCTIONS

3 Add mass K

(1) Gamma Spec - (Full List) (Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106)

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-115-31

Page 1 of 1

Collector IAN STIEGHOFF

Company Contact Joan Kessner

Telephone No. 373-4685

Project Coordinator WEISS, RL

Price Code ~~7K~~ 7N

Data Turnaround 45 Days

Project Designation Columbia River Component of the RCBRA - Surface Water

Sampling Location RBLS-1SW K1421 (7235)

SAF No. RC-115

Ice Chest No. WCH-08-049

Field Logbook No. EL-1630

COA BESCRC6530

Method of Shipment FED EX

Shipped To (EBERLINE SERVICES) LIONVILLE

Offsite Property No. N/A

Bill of Lading/Air Bill No. 7919 8142 2269

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

Preservation	HNO3 to pH <2	None	None	HNO3 to pH <2	HNO3 to pH <2	HCl to pH <2	HNO3 to pH <2	HNO3 to pH <2
Type of Container	P	G/P	P	P	P	P	G/P	G/P
No. of Container(s)	1	1	1	2	2	1	1	1
Volume	1000mL	125mL	125mL	1000mL	1000mL	250mL	1000mL	1000mL
SAMPLE ANALYSIS	5 See item (1) in Special Instructions	Carbon-14	Tritium - H3	Strontium-89,90 -- Total Sr	Isotopic Uranium	Technetium-99	Isotopic Plutonium	Isotopic Thorium

Sample No.	Matrix *	Sample Date	Sample Time								
J17RJ3	WATER	10/29/08	1135	X	X	X	X	X	X	X	X
J17RK0	WATER										

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
[illegible]	10/29/08 1818	RCFA	10/29/08 1818
RCFA	10/30/08 0844	Dan Hellberg	10/30/08 0844
Dan Hellberg	10/30/08 1300	FedEx	10/30/08 1300
FED EX		[illegible]	10/31/08 09:00

SPECIAL INSTRUCTIONS

5 [illegible]
~~(1)~~ Gamma Spec - (Full List) (Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106)

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab.

Matrix *

S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

6100019

WCH-EE-011

Appendix 5

Data Validation Supporting Documentation

APPENDIX A

RADIOCHEMICAL DATA VALIDATION CHECKLIST

VALIDATION LEVEL:	A	B	[✓ C]	D	E

PROJECT: RCBRA
DATA PACKAGE: K1421
VALIDATOR: ELR
LAB: ED
DATE: 4/7/09
SDG: K1421

ANALYSES PERFORMED

☐ Gross Alpha/Beta	[✓ ☐ Strontium-90]	[✓ ☐ Technetium-99]	[✓ ☐ Alpha Spectroscopy]	[✓ ☐ Gamma Spectroscopy]
☐ Total Uranium	☐ Radium 22	[✓ ☐ Tritium]	[✓ C-14]	

SAMPLES/MATRIX

J17RJ1 J17RJ2 J17RJ3

Water

1. Completeness ☐ N/A

Technical verification forms present? Yes [✓ No] N/A

Comments:

2. Initial Calibration (Levels D, E) ☒ N/A

Instruments/detectors calibrated? Yes No N/A

Initial calibration acceptable? Yes No N/A

Standards NIST traceable? Yes No N/A

Standards Expired? Yes No N/A

Calculation check acceptable? Yes No N/A

Comments:

3. Continuing Calibration (Levels D, E) ☒ N/A

Calibration checked within required frequency? .... Yes No N/A

Calibration check acceptable? .... Yes No N/A

Calibration check standards traceable? .... Yes No N/A

Calibration check standards expired? .... Yes No N/A

Calculation check acceptable? .... Yes No N/A

Comments:

4. Background Counts (Levels D, E) .... ☒ N/A

Background Counts checked within required frequency? .... Yes No N/A

Background Counts acceptable? .... Yes No N/A

Calculation check acceptable? .... Yes No N/A

Comments:

5. Blanks (Levels B, C, D, E) ☐ N/A

Method blank analyzed within required frequency? [✓ Yes] No N/A

Method blank results acceptable? [✓ Yes] No N/A

Analytes detected in method blank? Yes [✓ No] N/A

Field blank(s) analyzed? Yes [✓ No] N/A

Field blank results acceptable? Yes No [✓ N/A]

Analytes detected in field blank(s)? Yes No [✓ N/A]

Transcription/Calculation Errors? (Levels D, E) Yes No [✓ N/A]

Comments: 3H - over RQL

6. Laboratory Control Samples or Blank Spike Samples (Levels C, D, E) ☐ N/A

LCS /BSS analyzed within required frequency? [✓ Yes] No N/A

LCS/BSS recoveries acceptable? [✓ Yes] No N/A

LCS/BSS traceable? (Levels D,E) Yes No [✓ N/A]

LCS/BSS expired? (Levels D,E) Yes No [✓ N/A]

LCS/BSS levels correct? (Levels D,E) Yes No [✓ N/A]

Transcription/Calculation Errors? (Levels D, E) Yes No [✓ N/A]

Comments: Th 229 + 232 - no LCS - J all

7. Chemical Carrier Recovery (Levels C, D, E) ☒ N/A

Chemical carrier added? Yes No N/A

Chemical recovery acceptable? Yes No N/A

Chemical carrier traceable? (Levels D, E) Yes No N/A

Chemical carrier expired? (Levels D, E) .... Yes No N/A

Transcription/Calculation errors? (Levels D, E) .... Yes No N/A

Comments:

8. Tracer Recovery (Levels C, D, E) .... ☐ N/A

Tracer added? .... [✓ Yes] No N/A

Tracer recovery acceptable? .... Yes [✓ No] N/A

Tracer traceable? (Levels D, E) .... Yes No [✓ N/A]

Tracer expired? (Levels D, E) .... Yes No [✓ N/A]

Transcription/Calculation errors? (Levels D, E) .... Yes No [✓ N/A]

Comments: thorium 230 (J1) - 108 - J

9. Matrix Spikes (Levels C, D, E) .... ☐ N/A

Matrix spike analyzed? .... [✓ Yes] No N/A

Spike recoveries acceptable? .... [✓ Yes] No N/A

Spike source traceable? (Levels D, E) .... Yes No [✓ N/A]

Spike source expired? Levels D, E) .... Yes No [✓ N/A]

Transcription/Calculation Errors? (Levels D, E) .... Yes No [✓ N/A]

Comments:

10. Duplicates (Levels C, D, E) .... ☐ N/A

Duplicates Analyzed at required frequency? .... [✓ Yes] No N/A

RPD Values Acceptable? .... [✓ Yes] No N/A

Transcription/Calculation Errors? (Levels D, E) .... Yes No [✓ N/A]

Comments:

11. Field QC Samples (Levels C, D E) .... ☐ N/A

Field duplicate sample(s) analyzed? .... Yes [✓ No] N/A

Field duplicate RPD values acceptable? .... Yes No [✓ N/A]

Field split sample(s) analyzed? .... Yes [✓ No] N/A

Field split RPD values acceptable? .... Yes No [✓ N/A]

Performance audit sample(s) analyzed? .... Yes [✓ No] N/A

Performance audit sample results acceptable? .... Yes No [✓ N/A]

Comments: No field QC

12. Holding Times (All levels)

Are sample holding times acceptable? .... [✓ Yes] No N/A

Comments:

13. Results and Detection Limits (All Levels).. ☐ N/A

Results reported for all required sample analyses?.. [✓ Yes] No N/A

Results supported in raw data?(Levels D, E)... Yes No [✓ N/A]

Results Acceptable? (Levels D, E) .... Yes No [✓ N/A]

Transcription/Calculation errors? (Levels D, E).. Yes No [✓ N/A]

MDA's meet required detection limits? .... [✓ Yes] No N/A

Transcription/calculation errors? (Levels D, E)... Yes No [✓ N/A]

Comments:____

Appendix 6

Additional Documentation Requested by Client

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1421

7235-005

Method Blank

METHOD BLANK

SDG	7235	Client/Case no	Hanford SDG K1421
Contact	Melissa C. Mannion	Contract	No. 500W235A00
Lab sample id	8811012-05	Client sample id	Method Blank
Dept sample id	7235-005	Material/Matrix	WATER
		SAF No	RC-115

ANALYTE	CAS NO	RESULT pCi/L	2σ ERR (COUNT)	MDA pCi/L	RDL pCi/L	QUALI-FIERS	TEST
Tritium	10028-17-8	25.2	880	1480	400	U	H
Carbon 14	14762-75-5	-9.54	36	61.0	200	U	C
Total Strontium	SR-RAD	-0.022	0.20	0.420	2.00	U	SR
Technetium 99	14133-76-7	-0.295	1.7	3.41	15.0	U	TC
Thorium 228	14274-82-9	0	0.069	0.166		U	TH
Thorium 230	14269-63-7	0.017	0.069	0.131	1.00	U	TH
Thorium 232	TH-232	0.017	0.034	0.131	1.00	U	TH
Uranium 233/234	U-233/234	-0.019	0.037	0.142	1.00	U	U
Uranium 235	15117-96-1	0.023	0.045	0.172	1.00	U	U
Uranium 238	U 238	0.019	0.037	0.142	1.00	U	U
Plutonium 238	13981-16-3	0.027	0.036	0.063	1.00	U	PU
Plutonium 239/240	PU 239/240	0	0.012	0.029	1.00	U	PU
Potassium 40	13966-00-2	U		94.1		U	GAM
Cobalt 60	10198-40-0	U		4.26	25.0	U	GAM
Cesium 137	10045-97-3	U		4.66	15.0	U	GAM
Radium 226	13982-63-3	U		9.76		U	GAM
Radium 228	15262-20-1	U		20.4		U	GAM
Europium 152	14683-23-9	U		13.1	50.0	U	GAM
Europium 154	15585-10-1	U		12.4	50.0	U	GAM
Europium 155	14391-16-3	U		15.1	50.0	U	GAM
Thorium 228	14274-82-9	U		9.28		U	GAM
Thorium 232	TH-232	U		20.4		U	GAM
Uranium 235	15117-96-1	U		23.2		U	GAM
Uranium 238	U-238	U		494		U	GAM
Americium 241	14596-10-2	U		18.2		U	GAM
Beryllium 7	13966-02-4	U		33.9		U	GAM
Ruthenium 106	13967-48-1	U		38.2		U	GAM
Antimony 125	14234-35-6	U		12.3		U	GAM
Cesium 134	13967-70-9	U		5.49		U	GAM

ColumbiaRiverComp.ofRCRA-Surf.Water

Lab id	EBERLINE
Protocol	Hanford1
Version	Ver 1.0
Form	DVD-DS
Version	1.06
Report date	12/12/00

EBERLINE SERVICES/RICHMOND
SAMPLE DELIVERY GROUP K1421

7235-004

Method Blank

BLANK, cont.

SDG 7235	Client/Case no Hanford		SDG K1421
Contact Melissa C. Mannion	Contract No. 000W235A00		
Lab sample id 8811012-05	Client sample id Method Blank		
Dept sample id 7235-005	Material/Matrix		WATER
	SAF No RC-115		

QC-BLANK #60044

METHOD BLANKS
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Lab id EBRLNE
Protocol Hanford1
Version Ver 1.0
Form DVD-DS
Version 3.06
Report date 12/12/08

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1421

7235-004

Lab Control Sample

LAB CONTROL SAMPLE

SDG 7235

Contact Melissa C. Mannion

Lab sample id K411012-04

Dept sample id 7235-004

Client/Case no Hanford SDG K1421

Contract No. 000W73-A00

Client sample id Lab Control Sample

Material/matrix WATER

SAF No EF-110

ANALYTE	RESULT pCi/L	2σ ERR (COUNT)	MDA pCi/L	RDL pCi/L	QUALI-FIERS	TEST	ADDED pCi/L	2σ ERR pCi/L	REC %	3σ LMTS (TOTAL)	PROTOCOL LIMITS
Tritium	24000	1400	1480	400		H	25700	1000	93	82-118	80-120
Carbon 14	8880	110	59.2	200		C	9570	380	93	85-115	80-120
Total strontium	22.0	1.2	0.458	2.00		SR	20.2	0.81	109	80-120	80-120
Technetium 99	1130	17	3.44	15.0		TC	1200	48	94	80-120	80-120
Thorium 230	22.3	0.84	0.091	1.00		TH	20.8	0.83	107	85-115	80-120
Uranium 233/234	19.5	1.5	0.669	1.00		U	19.3	0.77	101	85-118	80-120
Uranium 235	14.6	1.4	[illegible]	1.00		U	[illegible]	0.53	106	81-119	80-120
Uranium 238	20.6	1.6	0.635	1.00		U	21.0	0.84	98	83-117	80-120
Plutonium 238	24.7	0.74	0.085	1.00		PU	25.6	1.0	97	87-113	80-120
Plutonium 239/240	27.9	0.83	0.038	1.00		PU	29.0	1.2	96	86-114	80-120
Cobalt 60	458	34	26.4	25.0		GAM	474	19	96	84-116	80-120
Cesium 137	594	31	24.4	16.0		GAM	550	22	107	85-115	80-120

ColumbiaRiverComp.oIRCDRA-Surf.Water

QC-LCS #58041

LAB CONTROL SAMPLES

Page 1

SUMMARY DATA SECTION

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Lab id EBRLNE

Protocol Hanford

Version Ver 1.0

Form DVD-LCS

Version 3.06

Report date 11/12/98

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1421

7225-006

J17RJ1

DUPLICATE

SDG	7225			Client/Case no	Hanford SDG K1421
Contact	Melissa C. Mannion			Contract	No. [illegible]
	DUPLICATE		ORIGINAL		
Lab sample id	K611017-06	Lab sample id	K611017-01	Client sample id	J17RJ1
Dept sample id	7225-006	Dept sample id	7225-001	Location/Matrix	[illegible] WATER
		Received	10/31/08	Collected/Volume	10/29/08 11:40 4.25 L
				Custody/SAF No	KC-115-30 KC-115

ANALYTE	DUPLICATE pCi/L	2σ ERR (COUNT)	MDA pCi/L	RDL pCi/L	QUALIFIERS	TEST	ORIGINAL pCi/L	2σ ERR (COUNT)	MDA pCi/L	QUALIFIERS	RPD %	3σ TOT	[illegible] σ
Tritium	70.9	90	142	400	U	H	38.2	90	150	U	-		0.5
Carbon 14	1.40	35	59.6	200	U	C	-0.210	35	59.5	U	-		0.1
Total Strontium	-0.151	0.21	0.491	2.00	U	SR	0.073	0.23	0.452	U			1.4
Technetium 99	0.844	2.4	4.28	15.0	U	TC	1.41	1.6	4.04	U	-		0.4
Thorium 228	-0.008	0.024	0.058		U	TH	0	0.11	0.217	U	-		0.2
Thorium 230	0.400	0.079	0.057	1.00		TH	0.267	0.17	0.188		40	46	1.4
Thorium 232	0.003	0.012	0.033	1.00	U	TH	0.028	0.084	0.156	U	-		0.6
Uranium 233/234	0.245	0.18	0.149	1.00		U	0.173	0.13	0.109		49	173	1.2
Uranium 235	0.115	0.092	0.174	1.00	U	U	0.016	0.032	0.124	U	-		2.0
Uranium 238	0.321	0.15	0.140	1.00		U	0.240	0.13	0.102		14	100	0.8
Plutonium 238	0.001	0.048	0.090	1.00	U	PU	0.029	0.039	0.070	U	-		0.0
Plutonium 239/240	0.031	0.024	0.033	1.00	U	PU	0	0.011	0.031	U	-		1.5
Potassium 40	U		272		U	GAM	U		91.0	U			1.1
Cobalt 60	U		5.41	25.0	U	GAM	U		3.96	U	-		1.1
Cesium 137	U		5.18	15.0	U	GAM	U		3.42	U			1.1
Radium 226	U		21.6		U	GAM	U		7.51	U	-		1.2
Radium 228	U		42.8		U	GAM	U		17.7	U	-		1.1
Europium 152	U		25.0	50.0	U	GAM	U		6.42	U	-		1.2
Europium 154	U		28.1	50.0	U	GAM	U		12.5	U	-		1.0
Europium 155	U		74.9	60.0	U	GAM	U		8.35	U	-		1.3
Thorium 228	U		14.4		U	GAM	U		6.66	U	-		1.1
Thorium 232	U		43.8		U	GAM	U		17.3	U	-		1.1
Uranium 235	U		37.5		U	GAM	U		12.1	U	-		1.4
Uranium 238	U		7090		U	GAM	U		451	U	-		1.1
Americium 241	U		26.5		U	GAM	U		4.48	U	-		1.4
Beryllium 7	U		74.6		U	GAM	U		27.2	U	-		1.2
Ruthenium 106	U		74.0		U	GAM	U		30.5	U	-		1.1
Antimony 125	U		21.0		U	GAM	U		8.47	U	-		1.1

columbiaRiverComp.[illegible]-SOW[illegible].water

LDUPLICATES
Form 1
SUMMARY DATA SECTION
Page 11

Lab id	EBRLNE
Protocol	Hanford
Version	Ver 1.0
Form	DVD-DUP
Version	3.06
Report date	12/[illegible]/08

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1421

7215-004 [illegible]

DUPLICATE, cont.

SDG 7215		Client/Case no Hanford	SDG K1421
Contact Melissa C. Mannion		Contract [illegible]	
DUPLICATE	ORIGINAL		
Lab sample id [illegible]-04	Lab sample id [illegible]-01	Client sample id [illegible]	
Dept sample id 7215-004	Dept sample id 7215-001	Location/Matrix [illegible]	WATER
	Received 10/31/08	Collected/volume 10/29/08 11:40	[illegible]
		Custody/SAF No [illegible]	[illegible]

ANALYTE	DUPLICATE pCi/L	2σ ERR (COUNT)	MDA pCi/L	RDL pCi/L	QUALI-FIERS	TEST	ORIGINAL pCi/L	2σ ERR (COUNT)	MDA pCi/L	QUALI-FIERS	RPD %	3σ TOT	DER **
Cesium 134	U		11.7		U	GAM	U		4.92	U			1.1

Column(s)[illegible]of RCRA Surf.Water

QC-DUP#1 68045

DUPLICATES
Page 2
SUMMARY DATA SECTION
Page 12

Lab id EBERLINE
Protocol Hanford
Version Ver 1.0
Form DVD-DUP
Version 3.06
Report date 12/12/08

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP [illegible]

7235-007

[illegible]

MATRIX SPIKE

RFX 7235		Client/Case no Hanford	SDG [illegible]
Contact Melissa C. [illegible]		Contract NO [illegible]	
MATRIX SPIKE	ORIGINAL		
Lab sample id [illegible]	Lab sample id [illegible]	Client sample id [illegible]	
Dept sample id 7235-007	Dept sample id 7235-001	Location/Matrix [illegible]	WATER
	Received 10/21/08	Collected/Volume [illegible]	[illegible]
		Custody/SAF No [illegible]	[illegible]

ANALYTE	SPIKE pCi/L	2σ ERR (COUNT)	MDA pCi/L	TOT. pCi/L	QUALIFIERS	TEST	ADDED pCi/L	2σ ERR pCi/L	ORIGINAL pCi/L	2σ ERR (COUNT)	REC %	3σ LMTS (TOTAL)	PROTOCOL LIMITS
Tritium	[illegible]	360	149	400	X	H	25600	1000	[illegible]	[illegible]	[illegible]	84-116	60-140
Carbon 14	25300	280	90.5	900	[illegible]	C	24700	1100	-0.930	35	102	84-116	60-140

[illegible]

QC-MS#1 [illegible]

Matrix SPIKES
Page 1
SUMMARY DATA SECTION
Page 13

Lab id [illegible]
Protocol Hanford
Version Ver 1.0
Form DVD-MS
Version 3.06
Report date [illegible]

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1421

Test TH Matrix WATER
SDG 7235
Contact Melissa C. Mannion

LAB METHOD SUMMARY

THORIUM, ISOTOPIC IN WATER
ALPHA SPECTROSCOPY

Client Hanford
Contract No. 00W235A00
SDG K1421

RESULTS

LAB SAMPLE ID	RAW SUF-TEST FIX	PLANCHET	CLIENT SAMPLE ID	Thorium 230
Preparation batch 6173-005				
R811012-01		7235-001	J17RJ1	0.257
R811012-02		7235-002	J17RJ2	U
R811012-03		7235-003	J17RJ3	U
R811012-04		7235-004	Lab Control Sample	ok
R811012-05		7235-005	Method Blank	U
R811012-06		7235-006	Duplicate (R811012-01)	ok
Nominal values and limits from method			CRDL (pCi/L)	1.00

ColumbiaRiverComp.urTh230-Surf.water

METHOD PERFORMANCE

LAB SAMPLE ID	RAW SUF-TEST FIX	CLIENT SAMPLE ID	MAX MDA pCi/L	ALIQ L	PREP FAC	DILU-TION	YIELD %	EFF %	COUNT min	FWHM keV	DRIFT keV	DAYS HELD	PREPARED	ANAL-YZED	DETECTOR
Preparation batch 6173-005		2σ prep error 8.0 %	Reference Lab Notebook #6173, pg. 8												
R811012-01		J17RJ1	0.188	0.500			104		150			34	12/02/08	12/02	SS-016
R811012-02		J17RJ2	0.119	0.500			98		150			34	12/02/08	12/02	SS-017
R811012-03		J17RJ3	0.174	0.500			101		151			34	12/02/08	12/02	SS-018
R811012-04		Lab Control Sample	0.051	0.500			91		968				12/02/08	12/02	SS-027
R811012-05		Method Blank	0.131	0.500			105		160				12/02/08	12/04	SS-031
R811012-06		Duplicate (R811012-01)	0.057	0.500			100		969			34	12/02/08	12/03	SS-011
Nominal values and limits from method			1.00	0.500			30-110		150	100		180			

PROCEDURES	REFERENCE	THIAM_TH_PLATE_AEA
	SPP-063	Sample Aliquoting, rev 0
	SPP-040	Environmental Water Dissolution, rev 0
	CP-500	Thorium in Water and Dissolved Solid Samples by Extraction Chromatography, rev 1
	CP-401	Heavy Element Electroplating, rev 12

AVERAGES ± 2 SD MDA 0.120 ± 0.102
FOR 6 SAMPLES YIELD 100 ± 12

Lab id EBERLNE
Protocol Hanford1
Version Ver 1.0
Form DVD-LMS
Version 3.06
Report date 12/12/08

Date: 13 April 2009
To: Washington Closure Hanford (technical representative)
From: ELR Consulting
Project: Columbia River Component of the RCBRA – Surface Water
Subject: Volatiles - Data Package No. K1421-LLI

INTRODUCTION

This memo presents the results of data validation on Summary Data Package No. K1421 prepared by Lionville Laboratory Inc. (LLI). A list of the samples validated along with the analyses reported and the method of analysis is provided in the following table.

Sample ID	Sample Date	Media	Validation	[illegible]
J17RJ1	10/29/08	Water	C	See note 1
J17RJ2	10/29/08	Water	C	See note 1
J17RJ3	10/29/08	Water	C	See note 1
J17K75	10/29/08	Water	C	See note 1

1 - Volatiles by 8260B.

Data validation was conducted in accordance with the Washington Closure Hanford (WCH) validation statement of work and the Remedial Investigation Work Plan for Hanford Site Releases to the Columbia River (DOE/RL-2008-11, Rev. 0, September 2008). Appendices 1 through 6 provide the following information as indicated below:

Appendix 1. Glossary of Data Reporting Qualifiers
Appendix 2. Summary of Data Qualification
Appendix 3. Annotated Laboratory Reports
Appendix 4. Laboratory Narrative and Chain-of-Custody Documentation
Appendix 5. Data Validation Supporting Documentation

DATA QUALITY OBJECTIVES

- **Holding Times & Sample Preservation**

Analytical holding times are assessed to ascertain whether the holding time requirements were met by the laboratory. Preserved water samples must be analyzed within: 14 days of the date of sample collection for preserved samples and 7 days for unpreserved samples.

If holding times are exceeded, but not by greater than twice the limit, all associated sample results are qualified as estimates and flagged "J" for detects and "UJ" for non-detects. If holding times are exceeded by greater than twice the limit, all associated detected sample results are qualified as estimates and flagged "J" and all non-detects are rejected and flagged "UR".

All holding times were acceptable.

- **Blanks**

Method blank analyses are conducted to determine the extent of laboratory contamination introduced through sampling, sample preparation and analysis. At least one acceptable method blank analysis must be conducted for every 20 samples. No contaminants should be present in the method blank. Analytical results for analytes present in any sample at less than five times the concentration of that analyte found in the associated blank are qualified as non-detects and flagged "U". Common laboratory contaminants present in samples at less than ten times the concentration of that analyte found in the associated blank are qualified as non-detects. If a sample result is less than the CRQL and is less than five times (or less than ten times for lab contaminants) the highest associated blank result, the sample result value is raised to the CRQL level and qualified as undetected "U".

Due to method blank contamination, all methylene chloride results were qualified as undetected, raised to the RQL and flagged "U".

All other method blank results were acceptable.

Field Blanks

One trip blank (J17K75) was submitted for analysis. Toluene was detected in the field blank. Under the WCH statement of work, no qualification is required. All other field blank results were acceptable.

- **Accuracy**

Matrix Spike/Matrix Spike Duplicate & Laboratory Control Sample

Matrix spike/matrix spike duplicate analyses are used to assess the analytical accuracy of the reported data and the effect of the matrix on the ability to accurately quantify sample concentrations. Matrix spike/matrix spike duplicate analyses are performed in duplicate using five compounds for which percent recoveries must be within a range of 50-150% or within laboratory control limits. If spike recoveries are outside control limits, detected sample results less than five times the spike concentration are qualified as estimates and flagged "J". Undetected sample results with spike recoveries below control limits are qualified as estimates and flagged "UJ". Undetected sample results are not qualified if the spike recovery is above control limits. Sample results greater than five times the spike concentration require no qualification.

All accuracy results were acceptable.

Surrogate Recovery

The analyses of surrogate compounds provide a measure of performance for individual samples. Matrix-specific surrogate compound recovery control windows have been established by the EPA CLP program. If two surrogates of the same class of compounds (base/neutral or acid) are out of control limits, all associated sample results greater than the contract required quantitation limit (CRQL) are qualified as estimates and flagged "J". Sample results less than the CRQL and below the lower control limit are qualified as estimates and flagged "UJ". Sample results less than the CRQL with recoveries above the upper control limit require no qualification. If a surrogate recovery is less than 10%, detects are qualified as estimates and flagged "J" and nondetects are rejected and flagged "UR".

All surrogate recovery results were acceptable.

- **Precision**

Matrix Spike/Matrix Spike Duplicate Samples

Matrix spike (MS)/matrix spike duplicate (MSD) results provide matrix-specific information on the precision of the method for specific target compound classes. Precision is expressed by the relative percent difference (RPD) between the recoveries of duplicate matrix spike analyses performed on a sample. Samples results must be within RPD limits of +/-20%. If RPD values are out of specification and the sample concentration is less than five times the spike concentration, all associated detected sample results are qualified as estimates and flagged "J". If RPD values are out of specification and the sample concentration is greater than five times the spike concentration, no qualification is required.

Due to RPDs outside QC limits, all acetone (40%), 2-butanone (44%), bromoform (25%), 4-methyl-2-pentanone (41%), 2-hexanone (44%) and 1,1,2,2-tetrachloroethane (23%) results were qualified as estimates and flagged "J".

All other precision results were acceptable.

Field Duplicate Samples

No field duplicates were submitted for analysis.

- **Analytical Detection Levels**

Reported analytical detection levels are compared against the minimum detection limits (MDLs) to ensure that laboratory detection levels meet the required criteria. All results met the RQL.

- **Completeness**

Data package No K1421 was submitted for validation and verified for completeness. Completeness is based on the percentage of data determined to be valid (i.e., not rejected). The completion percentage was 100%.

MAJOR DEFICIENCIES

None found.

MINOR DEFICIENCIES

The following minor deficiencies were noted:

- Due to method blank contamination, all methylene chloride results were qualified as undetected, raised to the RQL and flagged "U".
- Due to RPDs outside QC limits, all acetone (40%), 2-butanone (44%), bromoform (25%), 4-methyl-2-pentanone (41%), 2-hexanone (44%) and 1,1,2,2-tetrachloroethane (23%) results were qualified as estimates and flagged "J".

Data flagged "J" indicates that the associated concentration is an estimate, but under the WCH statement of work, the data may be usable for decision-making purposes. All other validated results are considered accurate within the standard error associated with the methods.

REFERENCES

Fluor Hanford Data Validation Contract #29776 (June 2006), *Validation Statement of Work*, through Washington Closure Hanford Work Order #WB6081.

DOE/RL-2008-11, Rev.0, *Remedial Investigation Work Plan for Hanford Site Releases to the Columbia River*, September 2008.

Appendix 1

Glossary of Data Reporting Qualifiers

Qualifiers which may be applied by data validator in compliance with the WCH validation SOW are as follows:

U - Indicates the compound or analyte was analyzed for and not detected in the sample. The value reported is the sample quantitation limit corrected for dilution and moisture content by the laboratory.

UJ - Indicates the compound or analyte was analyzed for and not detected in the sample. Due to a minor QC deficiency identified during the data validation, the associated quantitation limit is an estimate.

J - Indicates the compound or analyte was analyzed for and detected. Due to a minor QC deficiency identified during the data validation, the associated quantitation limit is an estimate.

R - Indicates the compound or analyte was analyzed for, detected, and due to an identified major QC deficiency, the data are unusable.

UR - Indicates the compound or analyte was analyzed for and not detected in the sample. Additionally, the data is unusable due to an identified major QC deficiency.

NJ - Indicates presumptive evidence of a compound at an estimated value. The data may not be valid for some specific applications (i.e., usable for decision-making purposes).

N - Indicates presumptive evidence of a compound. The data may not be valid for some specific applications (i.e., usable for decision-making purposes).

Appendix 2

Summary of Data Qualification

VOLATILE ORGANIC DATA QUALIFICATION SUMMARY*

SDG: K1421	**REVIEWER: ELR**	**Project: RCBRA**	**PAGE 1 OF 1**
COMPOUND	QUALIFIER	SAMPLES AFFECTED	REASON
Methylene chloride	U at RQL	All detected results	Method blank contamination
Acetone 2-butanone Bromoform 4-methyl-2-pentanone 2-hexanone 1,1,2,2-tetrachloroethane	J	All	RPD

* - The Qualified Data Summary Table includes laboratory applied "U" qualifiers not specifically identified here. The laboratory applied "U" qualifiers are included to minimize misinterpretation of results contained in the table.

Appendix 3

Annotated Laboratory Reports

Volatiles by GC/MS, HSL List   Report Date: 12/05/08 13:01

RFW Batch Number: 0810L175   Client: WC-HANFORD RC-115 K1421   Work Order: 60049001001   Page: 1a

	Cust ID:	J17RJ1		J17RJ1		J17RJ1		J17RJ2		J17RJ3		J17K75
Sample Information	RFW#:	001		001 MS		001 MSD		002		005		007
	Matrix:	WATER		WATER		WATER		WATER		WATER		WATER
	D.F.:	1.00		1.00		1.00		1.00		1.00		1.00
	Units:	ug/L		ug/L		ug/L		ug/L		ug/L		ug/L
	Toluene-d8	97	%	99	%	100	%	101	%	97	%	96	%
Surrogate	Bromofluorobenzene	105	%	108	%	113	%	112	%	109	%	105	%
Recovery	1,2-Dichloroethane-d4	110	%	95	%	110	%	116	%	112	%	112	%
			fl		fl		fl		fl		fl		fl
Chloromethane		10	U	81	%	79	%	10	U	10	U	10	U
Bromomethane		10	U	104	%	110	%	10	U	10	U	10	U
Vinyl Chloride		10	U	89	%	83	%	10	U	10	U	10	U
Chloroethane		10	U	104	%	116	%	10	U	10	U	10	U
Methylene Chloride		20 ~~1~~	~~JB~~ UJ	85	%	91	%	20 ~~2~~	~~JB~~ UJ	20 ~~2~~	~~JB~~ UJ	20 ~~3~~	~~JB~~ UJ
Acetone		10	UJ	65	%	98	%	10	UJ	10	UJ	10	UJ
Carbon Disulfide		5	U	110	%	110	%	5	U	5	U	5	U
1,1-Dichloroethene		5	U	104	%	108	%	5	U	5	U	5	U
1,1-Dichloroethane		5	U	100	%	105	%	5	U	5	U	5	U
1,2-Dichloroethene (total)		5	U	100	%	106	%	5	U	5	U	5	U
Chloroform		5	U	110	%	114	%	5	U	5	U	5	U
1,2-Dichloroethane		5	U	103	%	119	%	5	U	5	U	5	U
2-Butanone		10	UJ	68	%	106	%	10	UJ	10	UJ	10	UJ
1,1,1-Trichloroethane		5	U	118	%	112	%	5	U	5	U	5	U
Carbon Tetrachloride		5	U	115	%	116	%	5	U	5	U	5	U
Bromodichloromethane		5	U	111	%	120	%	5	U	5	U	5	U
1,2-Dichloropropane		5	U	102	%	110	%	5	U	5	U	5	U
cis-1,3-Dichloropropene		5	U	94	%	105	%	5	U	5	U	5	U
Trichloroethene		5	U	115	%	115	%	5	U	5	U	5	U
Dibromochloromethane		5	U	98	%	114	%	5	U	5	U	5	U
1,1,2-Trichloroethane		5	U	92	%	109	%	5	U	5	U	5	U
Benzene		5	U	102	%	106	%	5	U	5	U	5	U
Trans-1,3-Dichloropropene		5	U	96	%	113	%	5	U	5	U	5	U
Bromoform		5	UJ	86	%	111	%	5	UJ	5	UJ	5	UJ
4-Methyl-2-pentanone		10	UJ	69	%	105	%	10	UJ	10	UJ	10	UJ
2-Hexanone		10	UJ	66	%	103	%	10	UJ	10	UJ	10	UJ
Tetrachloroethene		5	U	102	%	104	%	5	U	5	U	5	U
1,1,2,2-Tetrachloroethane		5	UJ	86	%	109	%	5	UJ	5	UJ	5	UJ
Toluene		5	U	101	%	105	%	5	U	5	U	4	J

*= Outside of EPA CLP QC limits.

4/11/09

Cust ID:	J17RJ1		J17RJ1		J17RJ1		J17RJ2		J17RJ3		J17X75	
RFW#:	001		001 MS		001 MSD		002		005		007	
Chlorobenzene	5	U	103	*	107	*	5	U	5	U	5	U
Ethylbenzene	5	U	105	*	106	*	5	U	5	U	5	U
Styrene	5	U	104	*	111	*	5	U	5	U	5	U
Xylenes (total)	5	U	105	*	107	*	5	U	5	U	5	U
cis-1,2-dichloroethene	5	U	101	*	106	*	5	U	5	U	5	U
trans-1,2-dichloroethene	5	U	99	*	106	*	5	U	5	U	5	U

*= Outside of EPA CLP QC limits.

4/1/09

	Cust ID:	VBLKJN		VBLKJN BS	
Sample Information	RFW#:	08LVG184-MB1		08LVG184-MB1	
	Matrix:	WATER		WATER	
	D.F.:	1.00		1.00	
	Units:	ug/L		ug/L	
	Toluene-d8	102	%	101	%
Surrogate	Bromofluorobenzene	108	%	106	%
Recovery	1,2-Dichloroethane-d4	102	%	98	%
Chloromethane		10	U	95	%
Bromomethane		10	U	115	%
Vinyl Chloride		10	U	106	%
Chloroethane		10	U	121	%
Methylene Chloride		2	J	95	%
Acetone		10	U	175	%
Carbon Disulfide		5	U	122	%
1,1-Dichloroethene		5	U	118	%
1,1-Dichloroethane		5	U	107	%
1,2-Dichloroethene (total)		5	U	108	%
Chloroform		5	U	110	%
1,2-Dichloroethane		5	U	109	%
2-Butanone		10	U	107	%
1,1,1-Trichloroethane		5	U	108	%
Carbon Tetrachloride		5	U	113	%
Bromodichloromethane		5	U	111	%
1,2-Dichloropropane		5	U	108	%
cis-1,3-Dichloropropene		5	U	105	%
Trichloroethene		5	U	112	%
Dibromochloromethane		5	U	110	%
1,1,2-Trichloroethane		5	U	106	%
Benzene		5	U	106	%
Trans-1,3-Dichloropropene		5	U	111	%
Bromoform		5	U	108	%
4-Methyl-2-pentanone		10	U	109	%
2-Hexanone		10	U	130	%
Tetrachloroethene		5	U	104	%
1,1,2,2-Tetrachloroethane		5	U	107	%
Toluene		5	U	103	%

*= Outside of EPA CLP QC limits.

4/11/09

Cust ID: VBLKJN VBLKJN BS

RFW#: 08LVG184-MB1 08LVG184-MB1

Chlorobenzene	5	U	104	%
Ethylbenzene	5	U	105	%
Styrene	5	U	108	%
Xylenes (total)	5	U	106	%
cis-1,2-dichloroethene	5	U	107	%
trans-1,2-dichloroethene	5	U	108	%

*= Outside of EPA CLP QC limits.

4/11/09

Appendix 4

Laboratory Narrative and Chain-of-Custody Documentation

LvLI
LIONVILLE LABORATORY INC.

Case Narrative

Client: WC-HANFORD RC-115
LVL #: 0810L175
SDG/SAF # K1421/ RC-115

W.O. #: 60049-001-001-0001-00
Date Received: 10-31-2008

GC/MS VOLATILE

Four (4) water samples were collected on 10-29-2008.

The samples and their associated QC samples were analyzed according to criteria set forth in Lionville Laboratory SOPs based on SW 846 Method 8260B for TCL Volatile target compounds on 11-03-2008.

The following is a summary of QC results accompanying the sample results. Lionville Laboratory (LvL) certifies that all test results meet the requirements of NELAC except as noted below:

1. Samples were analyzed within required holding time.
2. Non-target compounds were not detected in these samples.
3. All surrogate recoveries were within acceptance criteria.
4. All matrix spike recoveries were within acceptance criteria.
5. All blank spike recoveries were within acceptance criteria.
6. The method blank contained the common laboratory contaminant Methylene Chloride at a level less than 1x the reporting limit
7. All internal standard area and retention time criteria were met.
8. Manual integrations are performed according to SOP QA-125 to produce quality data with utmost integrity. All manual integrations are required to be technically valid and properly documented. Appropriate technical flags are defined in the Glossary ("Technical Flags For Manual Integration").

14

9. LvL is NELAP accredited by the State of Pennsylvania. For a complete listing of accrediting authorities and the corresponding analytes/methods, please contact your Project Manager

10. "I certify that this sample data package is in compliance with SOW requirements, both technically and for completeness, other than the conditions detailed above. Release of the data contained in this hard-copy data package has been authorized by the Laboratory Manager or a designee, as verified by the following signature."

Iain Daniels
Laboratory Manager
Lionville Laboratory

12/8/08
Date

Washington Closure Hanford

CHAIN OF CUSTOD

Sampler Jay Sivmcoff	Company Contact Joan Kessner	Telephone No. 375-4688	Project Coordinator WEISS, RL	Price Code 7K
oject Designation Columbia River Component of the RCBRA - Surface Water	Sampling Location PRD-35W / PRD-43W		SAF No. RC-135	Data Turnaround 45 Days
Chest No. WCH-08-008,006, 051	Field Logbook No. EL-1630	COA BESCRC6530	Method of Shipment FED EX	
ipped To EBERLINE SERVICES [✓ LIONVILLE]	Offsite Property No. N/A		Bill of Lading/Air Bill No. 790125290810	

OSSIBLE SAMPLE HAZARDS/REMARKS

pecial Handling and/or Storage

000017

Preservation	HNO3 to pH <2	None	Cool 4C	Cool 4C	HNO3 or H2SO4 to pH <2	Cool 4C	Cool 4C	HCl or H2SO4 to pH <2 Cool 4C	Cool 4C	None
Type of Container	P	P	P	G	P	aG	aG	aGs*	aG	-
No. of Container(s)	1	1	1	1	1	4	4	3	2	0
Volume	500mL	500mL	250mL	125mL	250mL	1000mL	1000mL	40mL	1000mL	1*
SAMPLE ANALYSIS	See item (1) in Special Instructions.	FILTERED ICP Metals - 6010TR; FILTERED Mercury - 7470	Alkalinity - 310.1	Dissolved Organic Carbon - 415.1M	Hardness - 130.2	PCBs - 8082	Pesticides - 8081	See item (2) in Special Instructions.	Semi VOA - 8270A (TCL)	-

Sample No.	Matrix *	Sample Date	Sample Time										
17RJ1	WATER	10/29/08	1340	X		X	X	X	X	X	X	X	
17RJ2	WATER	10/29/08	1555	X		X	X	X	X	X	X	X	
17RJ8	WATER	10/29/08	1340		X								
17RJ9	WATER	10/29/08	1555		X								

CHAIN OF POSSESSION

Sign/Print Names

linquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Sh	10/29/08 1818	Ref. B	10/29/08 1818
Ref. B	10/30/08 1030	Kim Rogel Kim Rogel	10/30/08 1030
Kim Rogel Kim Rogel	10/30/08 1253	FED EX	10/30/08 1253
Fed Ex	10-31-08 1005		10-31-08 1005

SPECIAL INSTRUCTIONS

(1) ICP Metals - 6010TR (Chem List) {Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Titanium, Uranium, Vanadium, Zinc}; Mercury - 7470 - (CV)

(2) VOA - 8260A (TCL) {1,1,1-Trichloroethane, 1,1,2,2-Tetrachloroethane, 1,1,2-Trichloroethane, 1,1-Dichloroethane, 1,1-Dichloroethene, 1,2-Dichloroethane, 1,2-Dichloropropane, 2-Butanone, 2-Hexanone, 4-Methyl-2-Pentanone, Acetone, Benzene, Bromodichloromethane, Bromoform, Bromomethane, Carbon disulfide, Carbon tetrachloride, Chlorobenzene, Chloroethane, Chloroform, Chloromethane, cis-1,2-Dichloroethylene, cis-1,3-Dichloropropene, Dibromochloromethane, Ethylbenzene, Methylene chloride, Styrene, Tetrachloroethene, Toluene, trans-1,2-Dichloroethylene, trans-1,3-Dichloropropene, Trichloroethene, Vinyl chloride, Xylenes (total)}

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab.

Matrix *

S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

ABORATORY SECTION	Received By	Title	Date/Time
INAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

CH-EE-011

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

llector Ian Sturakoff	Company Contact Joan Kessner	Telephone No. 375-4688	Project Coordinator WEISS, RL
ject Designation Columbia River Component of the RCBRA - Surface Water	Sampling Location RBLS-1SW		SAP No. RC-115
Chain No. WCH-08-009, 006, 051	Field Logbook No. EL-1630	COA BBSCRC6520	Method of Shipment FED EX
pped To EBERLINE SERVICES [✓ LIONVILLE]	Offsite Property No. N/A		Bill of Lading/Air Bill No. 790125290810

Price Code 7K

Data Turnaround 45 Days

OSSIBLE SAMPLE HAZARDS/REMARKS

ecial Handling and/or Storage

			Preservation	HNO3 to pH <2	None	Cool 4C	Cool 4C	HNO3 or H2SO4 to pH	Cool 4C	Cool 4C	HCl or H2SO4 to pH <2 Cool	Cool 4C	None
			Type of Container	P	P	P	G	P	aG	aG	aGs*	aG	-
			No. of Container(s)	1	1	1	1	1	4	4	3	2	0
			Volume	500mL	500mL	250mL	125mL	250mL	1000mL	1000mL	40mL	1000mL	1^
SAMPLE ANALYSIS				See item (1) in Special Instructions	FILTERED ICP Metals - 6010TR; FILTERED Mercury - 7470	Alkalinity - 310.1	Dissolved Organic Carbon - 415.1M	Hardness - 2340	PCBs - 8082	Pesticides - 8081	See item (2) in Special Instructions	Semi-VOA - 8270A (TCL)	-
Sample No.	Matrix *	Sample Date	Sample Time										
7RJ3	WATER	10/29/08	1135	X		X	X	X	X	X	X	X	
7RK0	WATER	10/29/08	1135		X								

CHAIN OF POSSESSION		Sign/Print Names	
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
	10/29/08 1418	RSF B	10/29/08 1418
C B	10/30/08 1030	Kim Boyd	10/30/08 1035
Kim Boyd	10/30/08 1253	FED EX	10/30/08 1253
Fed Ex	10-31-08 1005		10-31-08 1005

SPECIAL INSTRUCTIONS

(1) ICP Metals - 6010TR (Client List) {Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Titanium, Uranium, Vanadium, Zinc}; Mercury - 7470 - (CV)

(2) VOA - 8260A (TCL) {1,1,1-Trichloroethane, 1,1,2,2-Tetrachloroethane, 1,1,2-Trichloroethane, 1,1-Dichloroethane, 1,1-Dichloroethene, 1,2-Dichloroethane, 1,2-Dichloropropane, 2-Butanone, 2-Hexanone, 4-Methyl-2-Pentanone, Acetone, Benzene, Bromodichloromethane, Bromoform, Bromomethane, Carbon disulfide, Carbon tetrachloride, Chlorobenzene, Chloroethane, Chloroform, Chloromethane, cis-1,2-Dichloroethylene, cis-1,3-Dichloropropene, Dibromochloromethane, Ethylbenzene, Methylene chloride, Styrene, Tetrachloroethene, Toluene, trans-1,2-Dichloroethylene, trans-1,3-Dichloropropene, Trichloroethene, Vinyl chloride, Xylenes (total)}

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab.

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

ABORATORY SECTION	Received By	Title	Date/Time
NAL SAMPLE ISPOSITION	Disposal Method	Disposed By	Date/Time

-EE-011

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

0000000014

llector: Jon Scurfecoff

Company Contact: Joan Kessner — Telephone No. 375-4688

Project Coordinator: WEISS, RL

Price Code: 7K

Data Turnaround: 45 Days

oject Designation: Columbia River Component of the RCBRA - Surface Water

Sampling Location: VOA TRIP BLANK

SAF No.: RC-115

e Chest No.: WCH-08-009,006,051

Field Logbook No.: EL-1630

COA: BESCRC6520

Method of Shipment: FED EX

Bill of Lading/Air Bill No.: 790125290810

Offsite Property No.

hipped To: EBERLINE SERVICES [✓ LIONVILLE]

OSSIBLE SAMPLE HAZARDS/REMARKS

pecial Handling and/or Storage

0000019

Preservation	HCl or H2SO4 to pH <2 Cool
Type of Container	aG*
No. of Container(s)	3
Volume	40mL
SAMPLE ANALYSIS	See item (1) in Special Instructions

Sample No.	Matrix *	Sample Date	Sample Time	
7K75	WATER	10/29/08	1825	X

CHAIN OF POSSESSION — Sign/Print Names

linquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
	10/29/08 1826	Ref. B	10/29/08 1826
Ref. B	10/30/08 1030	Kim Boyd	10/30/08 1030
Kim Boyd	10/30/08 1253	FED EX	10/30/08 1253
Fed Ex	10-31-08 1005		10-31-08 1005

SPECIAL INSTRUCTIONS

(1) VOA - 8260A (TCL) {1,1,1-Trichloroethane, 1,1,2,2-Tetrachloroethane, 1,1,2-Trichloroethane, 1,1-Dichloroethane, 1,1-Dichloroethene, 1,2-Dichloroethane, 1,2-Dichloropropane, 2-Butanone, 2-Hexanone, 4-Methyl-2-Pentanone, Acetone, Benzene, Bromodichloromethane, Bromoform, Bromomethane, Carbon disulfide, Carbon tetrachloride, Chlorobenzene, Chloroethane, Chloroform, Chloromethane, cis-1,2-Dichloroethylene, cis-1,3-Dichloropropene, Dibromochloromethane, Ethylbenzene, Methylenechloride, Styrene, Tetrachloroethene, Toluene, trans-1,2-Dichloroethylene, trans-1,3-Dichloropropene, Trichloroethene, Vinyl chloride, Xylenes (total)}

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab.

Matrix *

S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

ABORATORY SECTION — Received By — Title — Date/Time

NAL SAMPLE DISPOSITION — Disposal Method — Disposed By — Date/Time

CH-EE-011

Appendix 5

Data Validation Supporting Documentation

GC/MS ORGANIC DATA VALIDATION CHECKLIST

VALIDATION LEVEL:	A	B	[✓ C]	D	E
PROJECT: RCBRA			DATA PACKAGE: K1421		
VALIDATOR: ELR		LAB: LLI		DATE: 4/7/09	
			SDG: K1421		
ANALYSES PERFORMED					
[✓ SW-846 8260]		SW-846 8260 (TCLP)	SW-846 8270		SW-846 8270 (TCLP)
SAMPLES/MATRIX					
J17RJ1	J17RJ2	J17RJ3	J17F75		
					water

1. DATA PACKAGE COMPLETENESS AND CASE NARRATIVE

Technical verification documentation present? .... Yes [✓ No] N/A

Comments:

2. INSTRUMENT TUNING AND CALIBRATION (Levels D and E)

GC/MS tuning/performance check acceptable? .... Yes No [✓ N/A]

Initial calibrations acceptable? .... Yes No [✓ N/A]

Continuing calibrations acceptable? .... Yes No [✓ N/A]

Standards traceable? .... Yes No [✓ N/A]

Standards expired? .... Yes No [✓ N/A]

Calculation check acceptable? .... Yes No [✓ N/A]

Comments:

GC/MS ORGANIC DATA VALIDATION CHECKLIST

3. BLANKS (Levels B, C, D, and E)

Calibration blanks analyzed? (Levels D, E) .... Yes No [✓ N/A]
Calibration blank results acceptable? (Levels D, E) .... Yes No [✓ N/A]
Laboratory blanks analyzed? .... [✓ Yes] No N/A
Laboratory blank results acceptable? .... Yes [✓ No] N/A
Field/trip blanks analyzed? (Levels C, D, E) .... [✓ Yes] [✓ No] ~~N/A~~ 1/7/05
Field/trip blank results acceptable? (Levels C, D, E) .... ~~Yes~~ [✓ No] [✓ N/A]
Transcription/calculation errors? (Levels D, E) .... Yes No [✓ N/A]
Comments: methylene chloride -- U at RQL - all

toluene in EB

4. ACCURACY (Levels C, D, and E)

Surrogates/system monitoring compounds analyzed? .... [✓ Yes] No N/A
Surrogate/system monitoring compound recoveries acceptable? .... [✓ Yes] No N/A
Surrogates traceable? (Levels D, E) .... Yes No [✓ N/A]
Surrogates expired? (Levels D, E) .... Yes No [✓ N/A]
MS/MSD samples analyzed? .... [✓ Yes] No N/A
MS/MSD results acceptable? .... [✓ Yes] No N/A
MS/MSD standards NIST traceable? (Levels D, E) .... Yes No [✓ N/A]
MS/MSD standards? (Levels D, E) .... Yes No [✓ N/A]
LCS/BSS samples analyzed? .... [✓ Yes] No N/A
LCS/BSS results acceptable? .... [✓ Yes] No N/A
Standards traceable? (Levels D, E) .... Yes No [✓ N/A]
Standards expired? (Levels D, E) .... Yes No [✓ N/A]
Transcription/calculation errors? (Levels D, E) .... Yes No [✓ N/A]
Performance audit sample(s) analyzed? .... Yes [✓ No] N/A
Performance audit sample results acceptable? .... Yes No [✓ N/A]
Comments: No PAS

GC/MS ORGANIC DATA VALIDATION CHECKLIST

5. PRECISION (Levels C, D, and E)

MS/MSD samples analyzed? .... [✓ Yes] No N/A

MS/MSD RPD values acceptable? .... Yes [✓ No] N/A

MS/MSD standards NIST traceable? (Levels D, E) .... Yes No [✓ N/A]

MS/MSD standards expired? (Levels D, E) .... Yes No [✓ N/A]

Field duplicate RPD values acceptable? .... Yes No [✓ N/A]

Field split RPD values acceptable? .... Yes No [✓ N/A]

Transcription/calculation errors? (Levels D, E) .... Yes No [✓ N/A]

Comments: acetone - 40% 2-butanone - 44%
bromoform - 25% 4-methyl-2-pentanone - 41% } Jal
2-hexanone - 44% 1,1,2,2-tetrachloroethane - 24%

6. SYSTEM PERFORMANCE (Levels D and E)

Internal standards analyzed? .... Yes No [✓ N/A]

Internal standard areas acceptable? .... Yes No [✓ N/A]

Internal standard retention times acceptable? .... Yes No [✓ N/A]

Standards traceable? .... Yes No [✓ N/A]

Standards expired? .... Yes No [✓ N/A]

Transcription/calculation errors? .... Yes No [✓ N/A]

Comments:

7. HOLDING TIMES (all levels)

Samples properly preserved? .... [✓ Yes] No N/A

Sample holding times acceptable? .... [✓ Yes] No N/A

Comments:

GC/MS ORGANIC DATA VALIDATION CHECKLIST

8. COMPOUND IDENTIFICATION, QUANTITATION, AND DETECTION LIMITS (all levels)

Compound identification acceptable? (Levels D, E) .... Yes No [✓ N/A]

Compound quantitation acceptable? (Levels D, E) .... Yes No [✓ N/A]

Results reported for all requested analytes? .... [✓ Yes] No N/A

Results supported in the raw data? (Levels D, E) .... Yes No [✓ N/A]

Samples properly prepared? (Levels D, E) .... Yes No [✓ N/A]

Laboratory properly identified and coded all TIC? (Levels D, E) .... Yes No [✓ N/A]

Detection limits meet RDL? .... [✓ Yes] No N/A

Transcription/calculation errors? (Levels D, E) .... Yes No [✓ N/A]

Comments:

9. SAMPLE CLEANUP (Levels D and E)

GPC cleanup performed? .... Yes No [✓ N/A]

GPC check performed? .... Yes No [✓ N/A]

GPC check recoveries acceptable? .... Yes No [✓ N/A]

GPC calibration performed? .... Yes No [✓ N/A]

GPC calibration check performed? .... Yes No [✓ N/A]

GPC calibration check retention times acceptable? .... Yes No [✓ N/A]

Check/calibration materials traceable? .... Yes No [✓ N/A]

Check/calibration materials Expired? .... Yes No [✓ N/A]

Analytical batch QC given similar cleanup? .... Yes No [✓ N/A]

Transcription/Calculation Errors? .... Yes No [✓ N/A]

Comments:

Date: 13 April 2009
To: Washington Closure Hanford (technical representative)
From: ELR Consulting
Project: Columbia River Component of the RCBRA – Surface Water
Subject: Inorganic - Data Package No. K1421-LLI

INTRODUCTION

This memo presents the results of data validation on Data Package No. K1421 prepared by Lionville Laboratory Inc. (LLI). A list of samples validated along with the analyses reported and the method of analysis is provided in the following table.

Sample ID	Sample Date	Media	Validation	[illegible] Data
J17RJ1	10/29/08	Water	C	See note 1
J17RJ2	10/29/08	Water	C	See note 1
J17RJ3	10/29/08	Water	C	See note 1
J17RJ8	10/29/08	Water	C	See note 1
J17RJ9	10/29/08	Water	C	See note 1
J17RK0	10/29/08	Water	C	See note 1

1 - ICP metals (6010B) and mercury (7471A).

Data validation was conducted in accordance with the Washington Closure Hanford (WCH) validation statement of work and the Remedial Investigation Work Plan for Hanford Site Releases to the Columbia River (DOE/RL-2008-11, Rev. 0, September 2008). Appendices 1 through 6 provide the following information as indicated below:

Appendix 1. Glossary of Data Reporting Qualifiers
Appendix 2. Summary of Data Qualification
Appendix 3. Qualified Data Summary and Annotated Laboratory Reports
Appendix 4. Laboratory Narrative and Chain-of-Custody Documentation
Appendix 5. Data Validation Supporting Documentation
Appendix 6. Additional Documentation Requested by Client

DATA QUALITY PARAMETERS

- **Holding Times**

Analytical holding times for metals are assessed to ascertain whether the holding time requirements were met by the laboratory. The holding time requirements are as follows: Samples must be analyzed within 6 months for ICP metals and 28 days for mercury.

All holding times were acceptable.

- **Preparation (Method) Blanks**

Preparation Blanks

At least one preparation blank, consisting of deionized distilled water processed through each sample preparation and analysis procedure, must be prepared and analyzed with every sample delivery group. In the case of positive blank results, samples with digestate concentrations less than five times the preparation blank value have had their associated values qualified as non-detected and flagged "U". Samples with concentrations of greater than five times the highest blank concentration do not require qualification.

In the case of negative blank results, if the absolute value exceeds the contract required detection limit (CRDL), all nondetects are rejected and flagged "UR" and all detects that are less than ten times the absolute value of the associated preparation blank result are qualified as estimates and flagged "J". If the absolute value of the negative preparation blank is greater than the instrument detection limit (IDL) and less than or equal to the CRDL, all nondetects are qualified as estimates and flagged "UJ" and all detects less than ten times the absolute value of the blank are qualified as estimates and flagged "J". If the sample results are greater than ten times the absolute value of the preparation blank, no qualification is necessary.

All preparation blank results were acceptable.

Field (Equipment) Blank

No field blanks were submitted for analysis.

- **Accuracy**

Matrix Spike and Laboratory Control Sample

Matrix spike (MS) and laboratory control sample (LCS) analyses are used to assess the analytical accuracy of the reported data. The matrix spike is used to assess the effect of the matrix on the ability to accurately quantify sample concentrations. Recoveries must fall within the range of 70% to 130%. Samples with a recovery of less than 30% and a sample result below the IDL are rejected and flagged "UR". Samples with a recovery of 30% to 69% and a sample result less than the IDL are qualified "UJ". Samples with a recovery of greater than 130% or less than 70% and a sample result greater than the IDL are qualified as estimates and flagged "J". Finally, for samples with a recovery greater than 130% and a sample result less than the IDL, no qualification is required.

All accuracy results were acceptable.

- **Precision**

Laboratory Duplicate Samples

Analytical precision is expressed by the relative percent differences (RPD) between the recoveries of matrix spike duplicate (MSD) analyses performed on a sample in the analytical batch. Precision may alternatively be assessed using unspiked duplicate analyses performed on a sample in the analytical batch. If both sample and replicate activities (concentrations) are greater than five times the CRDL and the RPD is less than 30%, no qualification is required. If either activity (concentration) is less than five times the CRDL, the RPD control limit is less than or equal to two times the CRDL. If the RPD is outside the applicable control limit, associated results are qualified as estimated detects or estimated non-detects.

All laboratory duplicate results were acceptable.

Field Duplicate

No field duplicates were submitted for analysis.

- **Analytical Detection Levels**

Reported analytical detection levels are compared against the 100 and 300 Area RQLs to ensure that laboratory detection levels meet the required criteria. All undetected aluminum, boron, barium, cobalt, copper, lithium, manganese, molybdenum, sodium,, and vanadium results exceeded the RQL. Under the WCH statement of work, no qualification is required. All other results met the RQL.

- **Completeness**

Data package No. K1421 was submitted for validation and verified for completeness. Completeness is based on the percentage of data determined to be valid (i.e., not rejected). The completion percentage was 100%.

MAJOR DEFICIENCIES

None found.

MINOR DEFICIENCIES

None found.

REFERENCES

Fluor Hanford Data Validation Contract #29776 (June 2006). *Validation Statement of Work*, through Washington Closure Hanford Work Order #WB6081.

DOE/RL-2008-11, Rev.0, *Remedial Investigation Work Plan for Hanford Site Releases to the Columbia River*, September 2008.

Appendix 1

Glossary of Data Reporting Qualifiers

Qualifiers which may be applied by data validators in compliance with WCH validation SOW are as follows:

U - Indicates the compound or analyte was analyzed for and not detected in the sample. The value reported is the sample quantitation limit corrected for sample dilution and moisture content by the laboratory.

UJ - Indicates the compound or analyte was analyzed for and not detected in the sample. Due to a minor QC deficiency identified during the data validation, the associated quantitation limit is an estimate.

J - Indicates the compound or analyte was analyzed for and detected. Due to a minor QC deficiency identified during the data validation, the associated concentration is an estimate, but the data are usable for decision-making purposes.

BJ - Applied to inorganic analyses only. Indicates the analyte concentration was greater than the IDL but less than the CRDL and is considered an estimated value

R - Indicates the compound or analyte was analyzed for, detected, and due to an identified major QC deficiency, the data are unusable.

UR - Indicates the compound or analyte was analyzed for and not detected in the sample. Additionally, the data is unusable due to an identified major QC deficiency.

NJ - Indicates presumptive evidence of a compound at an estimated value. The data may not be valid for some specific applications (i.e., usable for decision-making purposes).

N - Indicates presumptive evidence of a compound. The data may not be valid for some specific applications (i.e., usable for decision-making purposes).

Appendix 2

Summary of Data Qualification

METALS DATA QUALIFICATION SUMMARY*

SDG: K1421	**REVIEWER: ELR**	**Project: RCBRA**	**PAGE 1 OF 1**
COMMENTS: No qualifiers assigned			

* - The Qualified Data Summary Table includes laboratory applied "U" qualifiers not specifically identified here. The laboratory applied "U" qualifiers are included to minimize misinterpretation of results contained in the table.

Appendix 3

Qualified Data Summary and Annotated Laboratory Reports

Lionville Laboratory, Inc.

INORGANICS DATA SUMMARY REPORT 12/02/08

CLIENT: WC-HANFORD RC-112 #1471 LVL LOT #: 0810L175
WORK ORDER: 40049-001-001-0001-00

SAMPLE	SITE ID	ANALYTE	RESULT		UNITS	REPORTING LIMIT	DILUTION FACTOR
-001	J17RJ1	Silver, Total	5.0	u	UG/L	5.0	1.0
		Aluminum, Total	100	u	UG/L	100	1.0
		Arsenic, Total	5.0	u	UG/L	5.0	1.0
		Boron, Total	50.0	u	UG/L	50.0	1.0
		Barium, Total	100	u	UG/L	100	1.0
		Beryllium, Total	2.5	u	UG/L	2.5	1.0
		Bismuth, Total	50.0	u	UG/L	50.0	1.0
		Calcium, Total	18700		UG/L	2500	1.0
		Cadmium, Total	2.5	u	UG/L	2.5	1.0
		Cobalt, Total	25.0	u	UG/L	25.0	1.0
		Chromium, Total	5.0	u	UG/L	5.0	1.0
		Copper, Total	12.5	u	UG/L	12.5	1.0
		Iron, Total	50.0	u	UG/L	50.0	1.0
		Mercury, Total	0.20	u	UG/L	0.20	1.0
		Potassium, Total	2500	u	UG/L	2500	1.0
		Lithium, Total	50.0	u	UG/L	50.0	1.0
		Magnesium, Total	8470		UG/L	2500	1.0
		Manganese, Total	7.5	u	UG/L	7.5	1.0
		Molybdenum, Total	50.0	u	UG/L	50.0	1.0
		Sodium, Total	2500	u	UG/L	2500	1.0
		Nickel, Total	20.0	u	UG/L	20.0	1.0
		Phosphorus, Total	25.0	u	UG/L	25.0	1.0
		Lead, Total	1.5	u	UG/L	1.5	1.0
		Antimony, Total	5.0	u	UG/L	5.0	1.0
		Selenium, Total	2.5	u	UG/L	2.5	1.0
		Silicon, Total	2140		UG/L	50.0	1.0
		Tin, Total	50.0	u	UG/L	50.0	1.0
		Strontium, Total	101		UG/L	50.0	1.0
		Titanium, Total	50.0	u	UG/L	50.0	1.0
		Thallium, Total	5.0	u	UG/L	5.0	1.0
		Uranium, Total	100	u	UG/L	100	1.0
		Vanadium, Total	25.0	u	UG/L	25.0	1.0
		Zinc, Total	10.0	u	UG/L	10.0	1.0

4/11/09

Lionville Laboratory, Inc.

INORGANICS DATA SUMMARY REPORT 12/02/08

CLIENT: WC-HANFORD KG-118 [illegible] LVL LOT #: 0810L175

WORK ORDER: 60648-003-001-0001-00

SAMPLE	SITE ID	ANALYTE	RESULT		UNITS	REPORTING LIMIT	DILUTION FACTOR
-002	017832	Silver, Total	5.0	u	UG/L	5.0	1.0
		Aluminum, Total	100	u	UG/L	100	1.0
		Arsenic, Total	5.0	u	UG/L	5.0	1.0
		Boron, Total	50.0	u	UG/L	50.0	1.0
		Barium, Total	100	u	UG/L	100	1.0
		Beryllium, Total	2.5	u	UG/L	2.5	1.0
		Bismuth, Total	50.0	u	UG/L	50.0	1.0
		Calcium, Total	18700		UG/L	2500	1.0
		Cadmium, Total	2.5	u	UG/L	2.5	1.0
		Cobalt, Total	25.0	u	UG/L	25.0	1.0
		Chromium, Total	5.0	u	UG/L	5.0	1.0
		Copper, Total	12.5	u	UG/L	12.5	1.0
		Iron, Total	50.0	u	UG/L	50.0	1.0
		Mercury, Total	0.20	u	UG/L	0.20	1.0
		Potassium, Total	2500	u	UG/L	2500	1.0
		Lithium, Total	50.0	u	UG/L	50.0	1.0
		Magnesium, Total	4110		UG/L	2500	1.0
		Manganese, Total	7.5	u	UG/L	7.5	1.0
		Molybdenum, Total	50.0	u	UG/L	50.0	1.0
		Sodium, Total	2500	u	UG/L	2500	1.0
		Nickel, Total	20.0	u	UG/L	20.0	1.0
		Phosphorus, Total	25.0	u	UG/L	25.0	1.0
		Lead, Total	1.5	u	UG/L	1.5	1.0
		Antimony, Total	5.0	u	UG/L	5.0	1.0
		Selenium, Total	2.5	u	UG/L	2.5	1.0
		Silicon, Total	3710		UG/L	50.0	1.0
		Tin, Total	50.0	u	UG/L	50.0	1.0
		Strontium, Total	102		UG/L	50.0	1.0
		Titanium, Total	50.0	u	UG/L	50.0	1.0
		Thallium, Total	5.0	u	UG/L	5.0	1.0
		Uranium, Total	100	u	UG/L	100	1.0
		Vanadium, Total	25.0	u	UG/L	25.0	1.0
		Zinc, Total	10.0	u	UG/L	10.0	1.0

4/11/09

Lionville Laboratory, Inc.

INORGANICS DATA SUMMARY REPORT 12/02/08

CLIENT: WC-HANFORD RC-116 K1421 LVL LOT #: 0810L178

WORK ORDER: 60045-001-001-0001-00

SAMPLE	SITE ID	ANALYTE	RESULT		UNITS	REPORTING LIMIT	DILUTION FACTOR
-003	J17XJ8	Silver, Soluble	5.0	u	UG/L	5.0	1.0
		Aluminum, Soluble	100	u	UG/L	100	1.0
		Arsenic, Soluble	6.0	u	UG/L	6.0	1.0
		Boron, Soluble	50.0	u	UG/L	50.0	1.0
		Barium, Soluble	100	u	UG/L	100	1.0
		Beryllium, Soluble	2.5	u	UG/L	2.5	1.0
		Bismuth, Soluble	50.0	u	UG/L	50.0	1.0
		Calcium, Soluble	18500		UG/L	5000	1.0
		Cadmium, Soluble	2.5	u	UG/L	2.5	1.0
		Cobalt, Soluble	25.0	u	UG/L	25.0	1.0
		Chromium, Soluble	5.0	u	UG/L	5.0	1.0
		Copper, Soluble	12.5	u	UG/L	12.5	1.0
		Iron, Soluble	50.0	u	UG/L	50.0	1.0
		Mercury, Soluble	0.20	u	UG/L	0.20	1.0
		Potassium, Soluble	2500	u	UG/L	2500	1.0
		Lithium, Soluble	50.0	u	UG/L	50.0	1.0
		Magnesium, Soluble	4240		UG/L	2500	1.0
		Manganese, Soluble	7.5	u	UG/L	7.5	1.0
		Molybdenum, Soluble	50.0	u	UG/L	50.0	1.0
		Sodium, Soluble	2500	u	UG/L	2500	1.0
		Nickel, Soluble	20.0	u	UG/L	20.0	1.0
		Phosphorus, Soluble	25.0	u	UG/L	25.0	1.0
		Lead, Soluble	1.6		UG/L	1.5	1.0
		Antimony, Soluble	5.0	u	UG/L	5.0	1.0
		Selenium, Soluble	2.5	u	UG/L	2.5	1.0
		Silicon, Soluble	2050		UG/L	50.0	1.0
		Tin, Soluble	50.0	u	UG/L	50.0	1.0
		Strontium, Soluble	35.6		UG/L	50.0	1.0
		Titanium, Soluble	50.0	u	UG/L	50.0	1.0
		Thallium, Soluble	5.0	u	UG/L	5.0	1.0
		Uranium, Soluble	100	u	UG/L	100	1.0
		Vanadium, Soluble	25.0	u	UG/L	25.0	1.0
		Zinc, Soluble	10.0	u	UG/L	10.0	1.0

4/6/09

Lionville Laboratory, Inc.

INORGANICS DATA SUMMARY REPORT 12/02/04

CLIENT: WC-HANFORD WC-115 K1421

WORK ORDER: 60061-001-001-0001-00

LVL LOT #: 0410L175

SAMPLE	SITE ID	ANALYTE	RESULT		UNITS	REPORTING LIMIT	DILUTION FACTOR
-004	J17KX9	Silver, Soluble	5.0	u	UG/L	5.0	1.0
		Aluminum, Soluble	100	u	UG/L	100	1.0
		Arsenic, Soluble	4.0	u	UG/L	4.0	1.0
		Boron, Soluble	60.0	u	UG/L	60.0	1.0
		Barium, Soluble	100	u	UG/L	100	1.0
		Beryllium, Soluble	2.5	u	UG/L	2.5	1.0
		Bismuth, Soluble	50.0	u	UG/L	50.0	1.0
		Calcium, Soluble	14400		UG/L	1500	1.0
		Cadmium, Soluble	2.5	u	UG/L	2.5	1.0
		Cobalt, Soluble	25.0	u	UG/L	25.0	1.0
		Chromium, Soluble	5.0	u	UG/L	5.0	1.0
		Copper, Soluble	12.5	u	UG/L	12.5	1.0
		Iron, Soluble	50.0	u	UG/L	50.0	1.0
		Mercury, Soluble	0.20	u	UG/L	0.20	1.0
		Potassium, Soluble	2500	u	UG/L	2500	1.0
		Lithium, Soluble	10.0	u	UG/L	10.0	1.0
		Magnesium, Soluble	4440		UG/L	2500	1.0
		Manganese, Soluble	7.5	u	UG/L	7.5	1.0
		Molybdenum, Soluble	10.0	u	UG/L	10.0	1.0
		Sodium, Soluble	2500	u	UG/L	2500	1.0
		Nickel, Soluble	20.0	u	UG/L	20.0	1.0
		Phosphorus, Soluble	25.0	u	UG/L	25.0	1.0
		Lead, Soluble	1.5	u	UG/L	1.5	1.0
		Antimony, Soluble	5.0	u	UG/L	5.0	1.0
		Selenium, Soluble	2.5	u	UG/L	2.5	1.0
		Silicon, Soluble	7140		UG/L	50.0	1.0
		Tin, Soluble	50.0	u	UG/L	50.0	1.0
		Strontium, Soluble	303		UG/L	50.0	1.0
		Titanium, Soluble	50.0	u	UG/L	50.0	1.0
		Thallium, Soluble	5.0	u	UG/L	5.0	1.0
		Uranium, Soluble	100	u	UG/L	100	1.0
		Vanadium, Soluble	25.0	u	UG/L	25.0	1.0
		Zinc, Soluble	10.0	u	UG/L	10.0	1.0

4/4/09

Lionville Laboratory, Inc.

INORGANICS DATA SUMMARY REPORT 12/03/08

CLIENT: WC-HANFORD RC-118 K1493

WORK ORDER: 60049-002-001-0001-00

LVL LOT #: 0810L175

SAMPLE	SITE ID	ANALYTE	RESULT		UNITS	REPORTING LIMIT	DILUTION FACTOR
-005	J17KJ3	Silver, Total	5.0	u	UG/L	5.0	1.0
		Aluminum, Total	100	u	UG/L	100	1.0
		Arsenic, Total	5.0	u	UG/L	5.0	1.0
		Boron, Total	50.0	u	UG/L	50.0	1.0
		Barium, Total	100	u	UG/L	100	1.0
		Beryllium, Total	2.5	u	UG/L	2.5	1.0
		Bismuth, Total	40.0	u	UG/L	40.0	1.0
		Calcium, Total	14400		UG/L	2500	1.0
		Cadmium, Total	2.5	u	UG/L	2.5	1.0
		Cobalt, Total	25.0	u	UG/L	25.0	1.0
		Chromium, Total	5.0	u	UG/L	5.0	1.0
		Copper, Total	12.5	u	UG/L	12.5	1.0
		Iron, Total	50.0	u	UG/L	50.0	1.0
		Mercury, Total	0.20	u	UG/L	0.20	1.0
		Potassium, Total	2500	u	UG/L	2500	1.0
		Lithium, Total	50.0	u	UG/L	50.0	1.0
		Magnesium, Total	4410		UG/L	2500	1.0
		Manganese, Total	7.5	u	UG/L	7.5	1.0
		Molybdenum, Total	50.0	u	UG/L	50.0	1.0
		Sodium, Total	2500	u	UG/L	2500	1.0
		Nickel, Total	20.0	u	UG/L	20.0	1.0
		Phosphorus, Total	25.0	u	UG/L	25.0	1.0
		Lead, Total	1.5	u	UG/L	1.5	1.0
		Antimony, Total	5.0	u	UG/L	5.0	1.0
		Selenium, Total	2.5	u	UG/L	2.5	1.0
		Silicon, Total	2190		UG/L	50.0	1.0
		Tin, Total	10.0	u	UG/L	10.0	1.0
		Strontium, Total	102		UG/L	50.0	1.0
		Titanium, Total	50.0	u	UG/L	50.0	1.0
		Thallium, Total	5.0	u	UG/L	5.0	1.0
		Uranium, Total	100	u	UG/L	100	1.0
		Vanadium, Total	25.0	u	UG/L	25.0	1.0
		Zinc, Total	10.0	u	UG/L	10.0	1.0

4/6/09

Lionville Laboratory, Inc.

INORGANICS DATA SUMMARY REPORT 12/02/08

CLIENT: WC-HANFORD RC-336 X1491 LVL LOT #: 0810L178

WORK ORDER: 60047-001-001-0061-00

SAMPLE	SITE ID	ANALYTE	RESULT		UNITS	REPORTING LIMIT	DILUTION FACTOR
-004	J17XK0	Silver, Soluble	5.0	u	UG/L	5.0	1.0
		Aluminum, Soluble	100	u	UG/L	100	1.0
		Arsenic, Soluble	5.0	u	UG/L	5.0	1.0
		Boron, Soluble	50.0	u	UG/L	50.0	1.0
		Barium, Soluble	100	u	UG/L	100	1.0
		Beryllium, Soluble	2.5	u	UG/L	2.5	1.0
		Bismuth, Soluble	50.0	u	UG/L	50.0	1.0
		Calcium, Soluble	18300		UG/L	2500	1.0
		Cadmium, Soluble	2.5	u	UG/L	2.5	1.0
		Cobalt, Soluble	25.0	u	UG/L	25.0	1.0
		Chromium, Soluble	5.0	u	UG/L	5.0	1.0
		Copper, Soluble	12.5	u	UG/L	12.5	1.0
		Iron, Soluble	50.0	u	UG/L	50.0	1.0
		Mercury, Soluble	0.20	u	UG/L	0.20	1.0
		Potassium, Soluble	2500	u	UG/L	2500	1.0
		Lithium, Soluble	50.0	u	UG/L	50.0	1.0
		Magnesium, Soluble	4340		UG/L	2500	1.0
		Manganese, Soluble	7.5	u	UG/L	7.5	1.0
		Molybdenum, Soluble	50.0	u	UG/L	50.0	1.0
		Sodium, Soluble	2500	u	UG/L	2500	1.0
		Nickel, Soluble	20.0	u	UG/L	20.0	1.0
		Phosphorus, Soluble	25.0	u	UG/L	25.0	1.0
		Lead, Soluble	1.5	u	UG/L	1.5	1.0
		Antimony, Soluble	6.0	u	UG/L	6.0	1.0
		Selenium, Soluble	3.5		UG/L	2.5	1.0
		Silicon, Soluble	2060		UG/L	50.0	1.0
		Tin, Soluble	50.0	u	UG/L	50.0	1.0
		Strontium, Soluble	88.4		UG/L	50.0	1.0
		Titanium, Soluble	50.0	u	UG/L	50.0	1.0
		Thallium, Soluble	5.0	u	UG/L	5.0	1.0
		Uranium, Soluble	100	u	UG/L	100	1.0
		Vanadium, Soluble	25.0	u	UG/L	25.0	1.0
		Zinc, Soluble	10.0	u	UG/L	10.0	1.0

9/4/09

Appendix 4

Laboratory Narrative and Chain-of-Custody Documentation

LvLI
LIONVILLE LABORATORY INC.

Analytical Report

Client: WC-HANFORD RC-115
LVL#: 0810L175
SDG/SAF#: K1421/RC-115

W.O.#: 60049-001-001-0001-00
Date Received: 10-31-08

METALS CASE NARRATIVE

The following is a summary of the QC results accompanying the sample results. Lionville Laboratory (LvL) certifies that all test results meet the requirements of NELAC except as noted below.

1. This narrative covers the analyses of 6 water samples.

2. The samples were prepared and analyzed in accordance with <u>SW-846</u> protocol. All field samples for ICP analysis have been concentrated 2-fold during digestion so that the contract required detection limits (CRDL) for target analytes could be met. The resultant preconcentration factors were applied to the field sample concentrations, the preparation blank (MB), matrix spike (MS), duplicate, and laboratory control samples (LCS) only.

   The samples were run on a different instrument for Phosphorous.

3. All analyses were performed within the required holding times.

4. Please refer to the Sample Receipt Check List for sample discrepancies in LvLI's sample acceptance policy.

5. All Initial and Continuing Calibration Verifications (ICV/CCVs) were within the 90-110% control limits (80-120% for Mercury).

6. All Initial and Continuing Calibration Blanks (ICB/CCBs) were within control limits (less than the LOQ).

7. All preparation/method blanks (MB) were within method criteria (less than the Limit of Quantitation (3-10X the LOD), MB value less than 5% of the RCRA limit, or samples greater than 20X MB value). Refer to the Inorganics Method Blank Data Summary.

8. All ICP Interference Check Standards were within control limits.

9. All laboratory control samples (LCS) were within the 80-120% control limits. Refer to the Inorganics Laboratory Control Standards Report.

10. All matrix spike (MS) recoveries were within the 75-125% control limits. Refer to the Inorganics Accuracy Report.

11. All duplicate analyses were within the 20% Relative Percent Difference (RPD) control limits. Refer to the Inorganics Precision Report.

12. For the purposes of this report, the data has been reported to the Limit of Detection (LOD). Values between the LOD and the Limit of Quantitation (LOQ) are acquired in a region of less-certain quantification.

13. Soluble and total digestates were prepared within the same preparation batch and will be noted as such on the Inorganics Data Summary Report.

14. LvLI is NELAP accredited by the state of Pennsylvania. For a complete listing of accrediting authorities and the corresponding analytes/methods, please contact your Project Manager.

15. I certify that this sample data package is in compliance with SOW requirements, both technically and for completeness, other than the conditions detailed above. Release of the data contained in this hard-copy data package has been authorized by the Laboratory Manager or a designee, as verified by the following signature.

Iain Daniels
Laboratory Manager
Lionville Laboratory

12/3/08
Date

akm/m10-175

LvLI

Washington Closure Hanford | **CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST**

Collector Ian Stojakoff	Company Contact Joan Kessner	Telephone No. 375-4688	Project Coordinator WEISS, RL	Price Code 7K
Project Designation Columbia River Component of the RCBRA - Surface Water	Sampling Location PRD-3SW / PRD-4SW		SAF No. RC-115	Data Turnaround 45 Days
Ice Chest No. WCH-08-008, 006, 051	Field Logbook No. EL-1630	COA BBSCRC6520	Method of Shipment FED EX	
Shipped To EBERLINE SERVICES (LIONVILLE)	Offsite Property No. N/A		Bill of Lading/Air Bill No. 790125290810	

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

0000019

Preservation	HNO3 to pH <2	None	Cool 4C	Cool 4C	HNO3 or H2SO4 to pH <2	Cool 4C	Cool 4C	HCl or H2SO4 to pH <2 Cool	Cool 4C	None
Type of Container	P	P	P	G	P	aG	aG	aGs*	aG	*
No. of Container(s)	1	1	1	1	1	4	4	3	2	0
Volume	500mL	500mL	250mL	125mL	250mL	1000mL	1000mL	40mL	1000mL	1*
SAMPLE ANALYSIS	See item (1) in Special Instructions.	FILTERED ICP Metals - 6010TR; FILTERED Mercury - 7470	Alkalinity - 310.1	Dissolved Organic Carbon - 415.1M	Hardness - 130.2	PCBs - 8082	Pesticides - 8081	See item (2) in Special Instructions.	Semi-VOA - 8270A (TCL)	*

Sample No.	Matrix *	Sample Date	Sample Time										
J17RJ1	WATER	10/29/08	1340	X		X	X	X	X	X	X	X	
J17RJ2	WATER	10/29/08	1555	X		X	X	X	X	X	X	X	
J17RJ8	WATER	10/29/08	1340		X								
J17RJ9	WATER	10/29/08	1555		X								

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
	10/29/08 1715	Ref. B	10/29/08 1715
Ref. B	10/30/08 1030	Kim Engel / Kim Engel	10/30/08 1030
Kim Engel / Kim Engel	10/30/08 1253	FED EX	10/30/08 1253
	10-31-08 1005		10-31-08 1005

SPECIAL INSTRUCTIONS

(1) ICP Metals - 6010TR (Client List) {Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Titanium, Uranium, Vanadium, Zinc}; Mercury - 7470 - (CV)
(2) VOA - 8260A (TCL) {1,1,1-Trichloroethane, 1,1,2,2-Tetrachloroethane, 1,1,2-Trichloroethane, 1,1-Dichloroethane, 1,1-Dichloroethene, 1,2-Dichloroethane, 1,2-Dichloropropane, 2-Butanone, 2-Hexanone, 4-Methyl-2-Pentanone, Acetone, Benzene, Bromodichloromethane, Bromoform, Bromomethane, Carbon disulfide, Carbon tetrachloride, Chlorobenzene, Chloroethane, Chloroform, Chloromethane, cis-1,2-Dichloroethylene, cis-1,3-Dichloropropene, Dibromochloromethane, Ethylbenzene, Methylenechloride, Styrene, Tetrachloroethene, Toluene, trans-1,2-Dichloroethylene, trans-1,3-Dichloropropene, Trichloroethene, Vinyl chloride, Xylenes (total)}

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab.

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

620000000

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

Collector Ian Stuerkoff	Company Contact Joan Kessner	Telephone No. 375-4688	Project Coordinator WEISS, RL
Project Designation Columbia River Component of the RCBRA - Surface Water	Sampling Location RBLS-1SW		SAF No. RC-115
Ice Chest No. WCH-08-009, 006, 051	Field Logbook No. EL-1630	COA BESCRC6520	Method of Shipment FED EX
Shipped To EBERLINE SERVICES [✓ LIONVILLE]	Offsite Property No. N/A		Bill of Lading/Air Bill No. 790125 290 810

Price Code 7K

Data Turnaround 45 Days

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

			Preservation	HNO3 to pH <2	None	Cool 4C	Cool 4C	H3PO4 or H2SO4 to pH	Cool 4C	Cool 4C	HCl or H2SO4 to pH <2 Cool	Cool 4C	None
			Type of Container	P	P	P	G	P	aG	aG	aGs	aG	-
			No. of Container(s)	1	1	1	1	1	4	4	3	2	0
			Volume	500mL	500mL	250mL	125mL	250mL	1000mL	1000mL	40mL	1000mL	1*
SAMPLE ANALYSIS				See item (1) in Special Instructions.	FILTERED ICP Metals - 6010TR; FILTERED Mercury - 7470	Alkalinity - 310.1	Dissolved Organic Carbon - 415.1M	Hardness - 130.2	PCBs - 8082	Pesticides - 8081	See item (2) in Special Instructions.	Semi-VOA - 8270A (TCL)	-
Sample No.	Matrix *	Sample Date	Sample Time									
J17RJ3	WATER	10/29/08	1135	X		X	X	X	X	X	X	X	
J17RK0	WATER	10/29/08	1135		X								

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Ian Stuerkoff / Ian S	10/29/08 1818	RSF B	10/29/08 1818
RSF B	10/30/08 1030	Kim Boyd / Kim Boyd	10/30/08 1030
Kim Boyd / Kim Boyd	10/30/08 1253	FED EX	10/30/08 1253
Fed Ex	10-31-08 1005		10-31-08 1005

SPECIAL INSTRUCTIONS

(1) ICP Metals - 6010TR (Clean List) {Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Titanium, Uranium, Vanadium, Zinc}; Mercury - 7470 - (CV)
(2) VOA - 8260A (TCL) {1,1,1-Trichloroethane, 1,1,2,2-Tetrachloroethane, 1,1,2-Trichloroethane, 1,1-Dichloroethane, 1,1-Dichloroethene, 1,2-Dichloroethane, 1,2-Dichloropropane, 2-Butanone, 2-Hexanone, 4-Methyl-2-Pentanone, Acetone, Benzene, Bromodichloromethane, Bromoform, Bromomethane, Carbon disulfide, Carbon tetrachloride, Chlorobenzene, Chloroethane, Chloroform, Chloromethane, cis-1,2-Dichloroethylene, cis-1,3-Dichloropropene, Dibromochloromethane, Ethylbenzene, Methylene chloride, Styrene, Tetrachloroethene, Toluene, trans-1,2-Dichloroethylene, trans-1,3-Dichloropropene, Trichloroethene, Vinyl chloride, Xylenes (total)}

Sampler unavailable to remove samples
from controlled storage. Shipper removed
samples from storage location taking
custody of samples for shipment to lab.

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

0000020

Appendix 5

Data Validation Supporting Documentation

INORGANIC ANALYSIS DATA VALIDATION CHECKLIST

VALIDATION LEVEL:	A	B	[✓ C]	D	E
PROJECT:	RCBRA		DATA PACKAGE:	K1421	
VALIDATOR:	ELR	LAB: LLI		DATE:	4/7/09
			SDG:	K1421	

ANALYSES PERFORMED

[✓ SW-846/ICP]	SW-846/GFAA	[✓ SW-846/Hg]	SW-846 Cyanide		

SAMPLES/MATRIX

J17RJ1 J17RJ2 J17RJ3 J17RJ8

J17RJ9 J17RK0

Water

1. DATA PACKAGE COMPLETENESS AND CASE NARRATIVE

Technical verification documentation present? .... Yes [✓ No] N/A

Comments:

2. INSTRUMENT PERFORMANCE AND CALIBRATIONS (Levels D and E)

Initial calibrations performed on all instruments? .... Yes No [✓ N/A]

Initial calibrations acceptable? .... Yes No [✓ N/A]

ICP interference checks acceptable? .... Yes No [✓ N/A]

ICV and CCV checks performed on all instruments? .... Yes No [✓ N/A]

ICV and CCV checks acceptable? .... Yes No [✓ N/A]

Standards traceable? .... Yes No [✓ N/A]

Standards expired? .... Yes No [✓ N/A]

Calculation check acceptable? .... Yes No [✓ N/A]

Comments:

INORGANIC ANALYSIS DATA VALIDATION CHECKLIST

3. BLANKS (Levels B, C, D, and E)

ICB and CCB checks performed for all applicable analyses? (Levels D, E) .... Yes No [✓ N/A]

ICB and CCB results acceptable? (Levels D, E) .... Yes No [✓ N/A]

Laboratory blanks analyzed? .... [✓ Yes] No N/A

Laboratory blank results acceptable? .... [✓ Yes] ~~No~~ N/A

Field blanks analyzed? (Levels C, D, E) .... Yes [✓ No] N/A

Field blank results acceptable? (Levels C, D, E) .... Yes No [✓ N/A]

Transcription/calculation errors? (Levels D, E) .... Yes No [✓ N/A]

Comments: no FB

4. ACCURACY (Levels C, D, and E)

MS/MSD samples analyzed? .... [✓ Yes] No N/A

MS/MSD results acceptable? .... [✓ Yes] No N/A

MS/MSD standards NIST traceable? (Levels D, E) .... Yes No [✓ N/A]

MS/MSD standards expired? (Levels D, E) .... Yes No [✓ N/A]

LCS/BSS samples analyzed? .... [✓ Yes] No N/A

LCS/BSS results acceptable? .... [✓ Yes] No N/A

Standards traceable? (Levels D, E) .... Yes No [✓ N/A]

Standards expired? (Levels D, E) .... Yes No [✓ N/A]

Transcription/calculation errors? (Levels D, E) .... Yes No [✓ N/A]

Performance audit sample(s) analyzed? .... Yes [✓ No] N/A

Performance audit sample results acceptable? .... Yes No [✓ N/A]

Comments: no TAS

INORGANIC ANALYSIS DATA VALIDATION CHECKLIST

5. PRECISION (Levels C, D, and E)

Duplicate RPD values acceptable? .... [✓ Yes] No N/A

Duplicate results acceptable? .... [✓ Yes] No N/A

MS/MSD standards NIST traceable? (Levels D, E) .... Yes No [✓ N/A]

MS/MSD standards expired? (Levels D, E) .... Yes No [✓ N/A]

Field duplicate RPD values acceptable? .... Yes No [✓ N/A]

Field split RPD values acceptable? .... Yes No [✓ N/A]

Transcription/calculation errors? (Levels D, E) .... Yes No [✓ N/A]

Comments:

6. ICP QUALITY CONTROL (Levels D and E)

ICP serial dilution samples analyzed? .... Yes No [✓ N/A]

ICP serial dilution %D values acceptable? .... Yes No [✓ N/A]

ICP post digestion spike required? .... Yes No [✓ N/A]

ICP post digestion spike values acceptable? .... Yes No [✓ N/A]

Standards traceable? .... Yes No [✓ N/A]

Standards expired? .... Yes No [✓ N/A]

Transcription/calculation errors? .... Yes No [✓ N/A]

Comments:

INORGANIC ANALYSIS DATA VALIDATION CHECKLIST

7. FURNACE AA QUALITY CONTROL (Levels D and E)

Duplicate injections performed as required? .... Yes No [✓ N/A]

Duplicate injection %RSD values acceptable? .... Yes No [✓ N/A]

Analytical spikes performed as required? .... Yes No [✓ N/A]

Analytical spike recoveries acceptable? .... Yes No [✓ N/A]

Standards traceable? .... Yes No [✓ N/A]

Standards expired? .... Yes No [✓ N/A]

MSA performed as required? .... Yes No [✓ N/A]

MSA results acceptable? .... Yes No [✓ N/A]

Transcription/calculation errors? .... Yes No [✓ N/A]

Comments:

8. HOLDING TIMES (all levels)

Samples properly preserved? .... [✓ Yes] No N/A

Sample holding times acceptable? .... [✓ Yes] No N/A

Comments:

INORGANIC ANALYSIS DATA VALIDATION CHECKLIST

9. RESULT QUANTITATION AND DETECTION LIMITS (all levels)

Results reported for all requested analyses? .... [✓ Yes] No N/A

Results supported in the raw data? (Levels D, E) .... Yes No [✓ N/A]

Samples properly prepared? (Levels D, E) .... Yes No [✓ N/A]

Detection limits meet RDL? .... Yes [✓ No] N/A

Transcription/calculation errors? (Levels D, E) .... Yes No [✓ N/A]

Comments: cal, boron, barium, cobalt, copper, lithium, manganese, moly, na, vanadium, – all undets. [illegible]

Appendix 6

Additional Documentation Requested by Client

Lionville Laboratory, Inc.

INORGANICS METHOD BLANK DATA SUMMARY PAGE 12/03/98

LVL LOT #: 9810L475

CLIENT: WC-HANFORD RC-319 ?1493
WORK ORDER: 40049-001-001-0001-00

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
BLANK1	98L0437-MB1	Silver, Total	0.50 u	UG/L	0.50	1.0
		Aluminum, Total	54.6	UG/L	20.0	1.0
		Arsenic, Total	2.6 u	UG/L	2.6	1.0
		Boron, Total	2.4 u	UG/L	2.5	1.0
		Barium, Total	0.50 u	UG/L	0.50	1.0
		Beryllium, Total	0.25 u	UG/L	0.25	1.0
		Bismuth, Total	3.0 u	UG/L	3.0	1.0
		Calcium, Total	26.0 u	UG/L	26.0	1.0
		Cadmium, Total	0.28 u	UG/L	0.28	1.0
		Cobalt, Total	1.0 u	UG/L	1.0	1.0
		Chromium, Total	1.0 u	UG/L	1.0	1.0
		Copper, Total	1.0 u	UG/L	1.0	1.0
		Iron, Total	12.8 u	UG/L	12.8	1.0
		Potassium, Total	20.0 u	UG/L	20.0	1.0
		Lithium, Total	0.34	UG/L	0.20	1.0
		Magnesium, Total	12.8 u	UG/L	12.8	1.0
		Manganese, Total	0.20 u	UG/L	0.20	1.0
		Molybdenum, Total	1.5 u	UG/L	1.5	1.0
		Sodium, Total	18.9	UG/L	10.0	1.0
		Nickel, Total	1.0 u	UG/L	1.0	1.0
		Phosphorus, Total	28.0 u	UG/L	28.0	1.0
		Lead, Total	1.5 u	UG/L	1.5	1.0
		Antimony, Total	1.5 u	UG/L	1.5	1.0
		Selenium, Total	3.0 u	UG/L	3.0	1.0
		Silicon, Total	16.0 u	UG/L	20.0	1.0
		Tin, Total	3.9 u	UG/L	3.9	1.0
		Strontium, Total	0.15 u	UG/L	0.15	1.0
		Titanium, Total	0.50 u	UG/L	0.50	1.0
		Thallium, Total	3.0 u	UG/L	3.0	1.0
		Uranium, Total	10.0 u	UG/L	10.0	1.0
		Vanadium, Total	0.70 u	UG/L	0.70	1.0
		Zinc, Total	3.0 u	UG/L	3.0	1.0
BLANK1	98C0188-MB1	Mercury, Total	0.04 u	UG/L	0.04	1.0

Lionville Laboratory, Inc.

INORGANICS ACCURACY REPORT 11/03/04

CLIENT: WC-HANFORD BC-115 K1421

WORK ORDER: 40047-001-001-0001-00

LVL LOT #: 0910L179

SAMPLE	SITE ID	ANALYTE	SPIKED SAMPLE	INITIAL RESULT	SPIKED AMOUNT	%RECOV	DILUTION FACTOR (SPK)
-001	J17831	Silver, Total	26.2	5.0 u	25.0	104.8	1.0
		Aluminum, Total	1040	100 u	1000	104.3	1.0
		Arsenic, Total	1010	5.0 u	1000	100.7	1.0
		Boron, Total	506	50.0 u	500	101.1	1.0
		Barium, Total	1030	100 u	1000	103.1	1.0
		Beryllium, Total	25.4	2.0 u	25.0	101.4	1.0
		Bismuth, Total	2460	50.0 u	2500	98.5	1.0
		Calcium, Total	31800	18700	13100	102.2	1.0
		Cadmium, Total	24.5	2.0 u	25.0	98.0	1.0
		Cobalt, Total	248	11.0 u	250	99.2	1.0
		Chromium, Total	102	5.0 u	100	101.4	1.0
		Copper, Total	128	12.5 u	125	102.6	1.0
		Iron, Total	543	50.0 u	500	108.7	1.0
		Mercury, Total	1.1	0.200 u	1.0	105.1	1.0
		Potassium, Total	12600	5000 u	12500	101.1	1.0
		Lithium, Total	524	50.0 u	500	104.8	1.0
		Magnesium, Total	17200	4470	12500	103.0	1.0
		Manganese, Total	264	7.5 u	250	105.8	1.0
		Molybdenum, Total	507	50.0 u	500	101.3	1.0
		Sodium, Total	14100	5000 u	12500	112.4	1.0
		Nickel, Total	248	20.0 u	250	99.3	1.0
		Phosphorus, Total	2400	25.0 u	2500	96.0	1.0
		Lead, Total	247	1.5 u	250	98.8	1.0
		Antimony, Total	248	5.0 u	250	99.1	1.0
		Selenium, Total	972	2.5 u	1000	97.2	1.0
		Silicon, Total	2740	2180	500	112.1*	1.0
		Tin, Total	501	50.0 u	500	100.2	1.0
		Strontium, Total	507	101	400	101.5	1.0
		Titanium, Total	500	50.0 u	500	100	1.0
		Thallium, Total	1000	5.0 u	1000	100.1	1.0
		Uranium, Total	2680	100 u	2500	107.2	1.0
		Vanadium, Total	253	25.0 u	250	101.3	1.0
		Zinc, Total	251	10.0 u	250	100.4	1.0

Lionville Laboratory, Inc.

INORGANICS PRECISION REPORT 12/03/04

CLIENT: WC-HANFORD RC-118 K1421 LVL LOT #: 0410L174

WORK ORDER: 60049-001-001 0001 00

SAMPLE	SITE ID	ANALYTE	INITIAL RESULT	REPLICATE	RPD	DILUTION FACTOR (REP)
-001REP	J17RJ1	Silver, Total	5.0 u	5.0 u	NC	1.0
		Aluminum, Total	100 u	100 u	NC	1.0
		Arsenic, Total	4.0 u	3.0 u	NC	1.0
		Boron, Total	40.0 u	40.0 u	NC	1.0
		Barium, Total	100 u	100 u	NC	1.0
		Beryllium, Total	2.8 u	2.8 u	NC	1.0
		Bismuth, Total	40.0 u	50.0 u	NC	1.0
		Calcium, Total	18700	18700	0.13	1.0
		Cadmium, Total	2.8 u	1.8 u	NC	1.0
		Cobalt, Total	25.0 u	25.0 u	NC	1.0
		Chromium, Total	5.0 u	5.0 u	NC	1.0
		Copper, Total	12.8 u	12.8 u	NC	1.0
		Iron, Total	50.0 u	50.0 u	NC	1.0
		Mercury, Total	0.20u	0.20u	NC	1.0
		Potassium, Total	2500 u	2500 u	NC	1.0
		Lithium, Total	20.0 u	40.0 u	NC	1.0
		Magnesium, Total	4420	4430	0.081	1.0
		Manganese, Total	7.5 u	7.5 u	NC	1.0
		Molybdenum, Total	40.0 u	40.0 u	NC	1.0
		Sodium, Total	2500 u	2500 u	NC	1.0
		Nickel, Total	20.0 u	20.0 u	NC	1.0
		Phosphorus, Total	35.0 u	35.0 u	NC	1.0
		Lead, Total	1.8 u	1.8 u	NC	1.0
		Antimony, Total	5.0 u	5.0 u	NC	1.0
		Selenium, Total	3.5 u	3.5 u	NC	1.0
		Silicon, Total	3180	3190	0.64	1.0
		Tin, Total	50.0 u	50.0 u	NC	1.0
		Strontium, Total	101	102	0.70	1.0
		Titanium, Total	50.0 u	50.0 u	NC	1.0
		Thallium, Total	4.0 u	4.0 u	NC	1.0
		Uranium, Total	100 u	100 u	NC	1.0
		Vanadium, Total	35.0 u	35.0 u	NC	1.0
		Zinc, Total	10.0 u	10.0 u	NC	1.0

Date: 13 April 2009
To: Washington Closure Hanford (technical representative)
From: ELR Consulting
Project: Columbia River Component of the RCBRA – Surface Water
Subject: PCB/Pesticide - Data Package No. K1421-LLI

INTRODUCTION

This memo presents the results of data validation on Data Package No. K1421 prepared by Lionville Laboratory Inc. (LLI). A list of samples validated along with the analyses reported and the method of analysis is provided in the following table.

Sample ID	Sample Date	Media	Validation	Anaysis
J17RJ1	10/29/08	Water	C	See note 1
J17RJ2	10/29/08	Water	C	See note 1
J17RJ3	10/29/08	Water	C	See note 1

1 – Pesticides by 8081A and PCBs by 8082.

Data validation was conducted in accordance with the Washington Closure Hanford (WCH) validation statement of work and the Remedial Investigation Work Plan for Hanford Site Releases to the Columbia River (DOE/RL-2008-11, Rev. 0, September 2008). Appendices 1 through 6 provide the following information as indicated below:

Appendix 1. Glossary of Data Reporting Qualifiers
Appendix 2. Summary of Data Qualification
Appendix 3. Qualified Data Summary and Annotated Laboratory Reports
Appendix 4. Laboratory Narrative and Chain-of-Custody Documentation
Appendix 5. Data Validation Supporting Documentation

DATA QUALITY OBJECTIVES

- **Holding Times & Sample Preservation**

Sample data were assessed to ascertain whether the holding time requirements were met by the laboratory. The holding time requirements are as follows: Samples must be extracted within 7 days of the date of sample collection and analyzed within 40 days from the date of extraction.

If holding times are exceeded by less than or equal to twice times the limit, all associated sample results are qualified as estimates and flagged "J" for detects and "UJ" for non-detects. If holding times are exceeded by greater than two times the limit, all associated detected sample results are qualified as estimates and flagged "J" and all non-detects are rejected and flagged "UR".

All holding times were acceptable.

- **Method Blank**

Method blank analyses are performed to determine the extent of laboratory contamination introduced through sampling, sample preparation or analysis. At least one method blank analysis must be conducted for every 20 samples. Method blanks should not contain target compounds at a concentration greater than required quantitation limit (RQL). If target compounds are present, sample results less than five times the blank concentration are qualified as undetected and flagged "U". If the sample result is less than five times the blank concentration and less than RQL, the result is qualified as undetected and elevated to the RQL.

All method blank results were acceptable.

Field Blanks

No field blanks were submitted for analysis.

- **Accuracy**

Matrix Spike & Laboratory Control Sample

Matrix spike (MS) and laboratory control sample (LCS) analyses are used to assess the analytical accuracy of the reported data. The matrix spike is used to assess the effect of the matrix on the ability to accurately quantify sample concentrations. Recoveries must fall within the range of 70% to 130%. If spike recoveries are outside control limits, detected sample results less than five times the spike concentration are qualified as estimates and flagged "J". Non-detected sample results with spike recoveries outside control limits are qualified as estimates and flagged "UJ". Sample results greater than five times the spike concentration require no qualification.

Due to the lack of a matrix spike, matrix spike duplicate or LCS analysis, all toxaphene results were qualified as estimates and flagged "J".

Due to matrix spike results outside QC limits, all pesticide results were qualified as estimates and flagged "J".

All other accuracy results were acceptable.

Surrogate Recovery

The analysis of surrogate compounds provides a measure of performance for individual samples. Matrix-specific surrogate compound recovery control windows have been established by the laboratory. When a surrogate compound recovery is outside the control window, all positively identified target compounds associated with the unacceptable surrogate recoveries are qualified as estimates and flagged "J". Non-detected compounds with surrogate recoveries less than the lower control limit are qualified as having an estimated detection limit and flagged "UJ". Non-detected compounds with surrogate recoveries above the upper control limit require no qualification.

All surrogate results were acceptable.

- **Precision**

Matrix Spike/Matrix Spike Duplicate Samples

Matrix spike/matrix spike duplicate results provide matrix-specific information on the precision of the method for specific target compound classes. Precision is expressed as the relative percent difference (RPD) between the recoveries of duplicate matrix spike analyses performed on a sample. For soil samples, results must be within RPD limits of plus/minus 30%. If RPD values are out of specification and the sample concentration is less than five times the spike concentration, all associated detected sample results are qualified as estimates and flagged "J". If RPD values are out of specification and the sample concentration is greater than five times the spike concentration, no qualification is required.

Due to the lack of a matrix spike and matrix spike duplicate analysis, all toxaphene results were qualified as estimates and flagged "J".

Due to RPDs outside QC limits, all pesticide results were qualified as estimates and flagged "J".

All other precision results were acceptable.

Field Duplicate Samples

No field duplicates were submitted for analysis.

- **Analytical Detection Levels**

Reported analytical detection levels are compared against the project specific RQLs to ensure that laboratory detection levels meet the required criteria. All results met the RQL.

- **Completeness**

Data Package No. K1421 was submitted for validation and verified for completeness. Completeness is based on the percentage of data determined to be valid (i.e., not rejected). The completion percentage was 100%.

MAJOR DEFICIENCIES

None found.

MINOR DEFICIENCIES

The following minor deficiencies were noted:

- Due to the lack of a matrix spike, matrix spike duplicate or LCS analysis, all toxaphene results were qualified as estimates and flagged "J".
- Due to matrix spike results outside QC limits, all pesticide results were qualified as estimates and flagged "J".
- Due to RPDs outside QC limits, all pesticide results were qualified as estimates and flagged "J".

Data flagged "J" indicates that the associated concentration is an estimate, but under the WCH statement of work, the data may be usable for decision-making purposes. All other validated results are considered accurate within the standard error associated with the methods.

REFERENCES

Fluor Data Validation Contract #29776 (June 2006), *Validation Statement of Work*, through Washington Closure Hanford Work Order #WB6061.

DOE/RL-2008-11, Rev.0, *Remedial Investigation Work Plan for Hanford Site Releases to the Columbia River*, September 2008.

Appendix 1

Glossary of Data Reporting Qualifiers

Qualifiers which may be applied by data validators in compliance with the procedures herein are as follows:

U - Indicates the compound or analyte was analyzed for and not detected in the sample. The value reported is the sample quantitation limit corrected for sample dilution and moisture content by the laboratory.

UJ - Indicates the compound or analyte was analyzed for and not detected in the sample. Due to a minor QC deficiency identified during the data validation, the associated quantitation limit is an estimate.

J - Indicates the compound or analyte was analyzed for and detected. Due to a minor QC deficiency identified during the data validation, the associated quantitation limit is an estimate.

R - Indicates the compound or analyte was analyzed for, detected, and due to an identified major QC deficiency, the data are unusable.

UR - Indicates the compound or analyte was analyzed for and not detected in the sample. Additionally, the data is unusable due to an identified major QC deficiency.

NJ - Indicates presumptive evidence of a compound at an estimated value. The data may not be valid for some specific applications (i.e., usable for decision-making purposes).

N - Indicates presumptive evidence of a compound. The data may not be valid for some specific applications (i.e., usable for decision-making purposes).

Appendix 2

Summary of Data Qualification

PESTICIDE/PCB DATA QUALIFICATION SUMMARY*

SDG: K1421	**REVIEWER: ELR**	**Project: RCBRA**	**PAGE _1_ OF _1_**
COMPOUND	QUALIFIER	SAMPLES AFFECTED	REASON
Toxaphene	J	All	No MS, MSD or LCS analysis
All pesticides	J	All	MS recovery & RPD

* - The Qualified Data Summary Table includes laboratory applied "U" qualifiers not specifically identified here. The laboratory applied "U" qualifiers are included to minimize misinterpretation of results contained in the table.

Appendix 3

Qualified Data Summary and Annotated Laboratory Reports

PCBs by GC

Report Date: 11/11/08 14:19

RFW Batch Number: 0810L175 Client: WC-HANFORD RC-115 X1421 Work Order: 60049001001 Page: 1

Sample Information	Cust ID:	J17RJ1	J17RJ2	J17RJ3	J17RJ3	J17RJ3	PBLKWW
	RFW#:	001	002	005	005 MS	005 MSD	08LE0559-MB1
	Matrix:	WATER	WATER	WATER	WATER	WATER	WATER
	D.F.:	1.00	1.00	1.00	1.00	1.00	1.00
	Units:	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L
Surrogate:	Tetrachloro-m-xylene	81 %	90 %	84 %	87 %	86 %	82 %
	Decachlorobiphenyl	77 %	84 %	78 %	77 %	82 %	81 %
Aroclor-1016		0.40 U	0.40 U	0.40 U	80 %	78 %	0.40 U
Aroclor-1221		0.40 U	0.40 U	0.40 U	0.40 U	0.40 U	0.40 U
Aroclor-1232		0.40 U	0.40 U	0.40 U	0.40 U	0.40 U	0.40 U
Aroclor-1242		0.40 U	0.40 U	0.40 U	0.40 U	0.40 U	0.40 U
Aroclor-1248		0.40 U	0.40 U	0.40 U	0.40 U	0.40 U	0.40 U
Aroclor-1254		0.40 U	0.40 U	0.40 U	0.40 U	0.40 U	0.40 U
Aroclor-1260		0.40 U	0.40 U	0.40 U	88 %	90 %	0.40 U

Sample Information	Cust ID:	PBLKWW BS
	RFW#:	08LE0559-MB1
	Matrix:	WATER
	D.F.:	1.00
	Units:	UG/L
Surrogate:	Tetrachloro-m-xylene	95 %
	Decachlorobiphenyl	77 %
Aroclor-1016		88 %
Aroclor-1221		0.40 U
Aroclor-1232		0.40 U
Aroclor-1242		0.40 U
Aroclor-1248		0.40 U
Aroclor-1254		0.40 U
Aroclor-1260		101 %

4/11/09

U= Analyzed, not detected. J= Present below detection limit. B= Present in blank. NR= Not reported. NS= Not spiked. %= Percent recovery. D= Diluted out. I= Interference. NA= Not Applicable. *= Outside of EPA CLP QC

Pesticide/PCBs by GC, CLP List Report Date: 11/16/08 08:12

RFW Batch Number: 0810L175 Client: MC-HANFORD RC-115 X1421 Work Order: 60049001001 Page: 1

	Cust ID:	J17RJ1		J17RJ2		J17RJ3		J17RJ3		J17RJ3		PBLKWW	
Sample Information	RFW#:	001		002		005		005 MS		005 MSD		08LE0559-MB1	
	Matrix:	WATER		WATER		WATER		WATER		WATER		WATER	
	D.F.:	1.00		1.00		1.00		1.00		1.00		1.00	
	Units:	UG/L		UG/L		UG/L		UG/L		UG/L		UG/L	
Surrogate:	Tetrachloro-m-xylene	83	%	87	%	86	%	27	* %	91	%	89	%
	Decachlorobiphenyl	107	%	102	%	102	%	34	%	117	%	101	%
			fl		fl		fl		fl		fl		fl
Alpha-BHC		0.050	U	0.050	U	0.050	U	26	* %	109	%	0.050	U
gamma-BHC (Lindane)		0.050	U	0.050	U	0.050	U	28	* %	110	%	0.050	U
Beta-BHC		0.050	U	0.050	U	0.050	U	29	* %	105	%	0.050	U
Heptachlor		0.050	U	0.050	U	0.050	U	28	* %	108	%	0.050	U
Delta-BHC		0.050	U	0.050	U	0.050	U	15	* %	67	%	0.050	U
Aldrin		0.050	U	0.050	U	0.050	U	27	* %	109	%	0.050	U
Heptachlor epoxide		0.050	U	0.050	U	0.050	U	30	* %	112	%	0.050	U
gamma-Chlordane		0.050	U	0.050	U	0.050	U	29	* %	111	%	0.050	U
Endosulfan I		0.050	U	0.050	U	0.050	U	28	* %	107	%	0.050	U
alpha-Chlordane		0.050	U	0.050	U	0.050	U	30	* %	110	%	0.050	U
4,4'-DDE		0.050	U	0.050	U	0.050	U	29	* %	117	%	0.050	U
Dieldrin		0.050	U	0.050	U	0.050	U	28	* %	115	%	0.050	U
Endrin		0.050	U	0.050	U	0.050	U	29	* %	120	%	0.050	U
4,4'-DDD		0.050	U	0.050	U	0.050	U	30	* %	124	%	0.050	U
Endosulfan II		0.050	U	0.050	U	0.050	U	28	* %	112	%	0.050	U
4,4'-DDT		0.050	U	0.050	U	0.050	U	27	* %	109	%	0.050	U
Endrin aldehyde		0.050	U	0.050	U	0.050	U	28	* %	103	%	0.050	U
Endosulfan sulfate		0.050	U	0.050	U	0.050	U	25	* %	97	%	0.050	U
Methoxychlor		0.050	U	0.050	U	0.050	U	32	* %	120	%	0.050	U
Endrin ketone		0.050	U	0.050	U	0.050	U	30	* %	112	%	0.050	U
Toxaphene		0.50	U	0.50	U	0.50	U	NS		NS		0.50	U

U= Analyzed, not detected. J= Present below detection limit. B= Present in blank. NR= Not reported. NS= Not spiked. %= Percent recovery. D= Diluted out. I= Interference. NA= Not Applicable. *= Outside of EPA CLP QC

4/11/09

Pesticide/PCBs by GC, CLP List

Report Date: 11/16/08 08:12

RFW Batch Number: 0810L175 Client: WC-HANFORD RC-115 K1421 Work Order: 60049001001 Page: 2

Cust ID: PBLKWW B8

Sample Information

RFW#: 08LE0559-MB1
Matrix: WATER
D.F.: 1.00
Units: UG/L

Surrogate: Tetrachloro-m-xylene	102		%
Decachlorobiphenyl	124		%
Alpha-BHC	122		%
gamma-BHC (Lindane)	123		%
Beta-BHC	141	*	%
Heptachlor	120		%
Delta-BHC	75		%
Aldrin	122		%
Heptachlor epoxide	123		%
gamma-Chlordane	122		%
Endosulfan I	111		%
alpha-Chlordane	120		%
4,4'-DDE	129		%
Dieldrin	126		%
Endrin	129		%
4,4'-DDD	133		%
Endosulfan II	114		%
4,4'-DDT	119		%
Endrin aldehyde	112		%
Endosulfan sulfate	104		%
Methoxychlor	125		%
Endrin ketone	121		%
Toxaphene	NS		

✓ 4/11/09

U= Analyzed, not detected. J= Present below detection limit. B= Present in blank. NR= Not reported. NS= Not spiked. %= Percent recovery. D= Diluted out. I= Interference. NA= Not Applicable. *= Outside of EPA CLP QC

Appendix 4

Laboratory Narrative and Chain-of-Custody Documentation

LVLI
LIONVILLE LABORATORY INC.

Case Narrative

Client: WC-HANFORD RC-115
LVL #: 0810L175
SDG/SAF # K1421 / RC-115

W.O. #: 60049-001-001-0001-00
Date Received: 10-31-2008

PCB

Three (3) water samples were collected on 10-29-2008.

The samples and their associated QC samples were extracted on 11-05-2008 and analyzed according to Lionville Laboratory SOPs based on SW846, 3rd Edition procedures on 11-11-2008. The extraction procedure was based on method 3520C and the extracts were analyzed based on method 8082.

The following is a summary of the QC results accompanying the sample results. Lionville Laboratory (LVL) certifies that all test results meet the requirements of NELAC except as noted below:

1. Discrepancies from the Sample acceptance policy have been recorded on the Sample Receipt Checklist.
2. All samples were extracted and analyzed within hold time.
3. The sample and associated QC samples received Copper-Sulfur and Sulfuric Acid cleanups according to Lionville Laboratory SOPs based on SW846 methods 3660A and 3665A respectively.
4. The method blank was below the reporting limits for all target compounds.
5. All obtainable surrogate recoveries were within acceptance criteria.
6. All blank spike recoveries were within acceptance criteria.
7. All matrix spike recoveries were within acceptance criteria.
8. All initial calibrations associated with this data set were within acceptance criteria.
9. All continuing calibration standards analyzed prior to sample extracts were within acceptance criteria.

[illegible]

The results presented in this report relate only to the analytical testing and conditions of the samples at receipt and during storage. All pages of this report are integral parts of the analytical data. Therefore, this report should only be reproduced in its entirety of 11 pages.

10. LVL is NELAP accredited by the State of Pennsylvania. For a complete listing of accrediting authorities and the corresponding analytes/methods, please contact your Project Manager.

11. I certify that this sample data package is in compliance with SOW requirements, both technically and for completeness, other than the conditions detailed above. Release of the data contained in this hard-copy data package has been authorized by the laboratory manager or a designee, as verified by the following signature.

Iain Daniels
Laboratory Manager
Lionville Laboratory

11/14/08
Date

LVLI
LIONVILLE LABORATORY INC.

Case Narrative

Client: WC-HANFORD RC-115
LVL #: 0810L175
SDG/SAF # K1421 / RC-115

W.O. #: 60049-001-001-0001-00
Date Received: 10-31-2008

CHLORINATED PESTICIDES

Three (3) water samples were collected on 10-29-2008.

The samples and their associated QC samples were extracted on 11-05-2008 and analyzed according to Lionville Laboratory SOPs based on SW846, 3rd Edition procedures on 11-10,11-2008. The extraction procedure was based on method 3520C and the extracts were analyzed based on method 8081A.

The following is a summary of the QC results accompanying the sample results. Lionville Laboratory (LvL) certifies that all test results meet the requirements of NELAC except as noted below:

1. Discrepancies from the Sample Acceptance Policy have been recorded on the Sample Receipt checklist.
2. All required holding times for extraction and analysis have been met.
3. The method blank was below the reporting limits for all target compounds.
4. One (1) of fourteen (14) surrogate recoveries was outside acceptance criteria. However, the surrogate recovery acceptance criteria were met (i.e., no more than one outlier per sample).
5. One (1) of twenty (20) blank spike recoveries was outside acceptance criteria. A copy of the Sample Discrepancy Report (SDR# 08GC153) has been enclosed.
6. Twenty (20) of forty (40) matrix spike recoveries were outside acceptance criteria. A copy of the Sample Discrepancy Report (SDR# 08GC153) has been enclosed.
7. All initial calibrations associated with this data set were within acceptance criteria.
8. All continuing calibration standards analyzed prior to sample extracts were within acceptance criteria.

[illegible]0810-175cw2.pest.doc

The results presented in this report relate only to the analytical testing and conditions of the samples at receipt and during storage. All pages of this report are integral parts of the analytical data. Therefore, this report should only be reproduced in its entirety of 13 pages.

9. LvL is NELAP accredited by the State of Pennsylvania. For a complete listing of accrediting authorities and the corresponding analytes/methods, please contact your Project Manager.

10. I certify that this sample data package is in compliance with SOW requirements, both technically and for completeness, other than the conditions detailed above. Release of the data contained in this hard-copy data package has been authorized by the laboratory manager or a designee, as verified by the following signature.

Iain Daniels
Laboratory Manager
Lionville Laboratory

6/26/02
Date

LvLI
LIONVILLE LABORATORY INC.

Lionville Laboratory Sample Discrepancy Report (SDR)

SDR #: 08BC153

Initiator: CAC
Date: 11/16/08
Client: LOC-Hanford

Batch: 0810L175
Samples: 005M
Method: SW846/NCAWWGLP/

Parameter: Pest
Matrix: Water
Prep Batch: 08LE0559

1. Reason for SDR

a. COC Discrepancy
__ Tech Profile Error
__ Transcription Error
__ Client Request
__ Wrong Test Code
__ Sampler Error on C-O-C
__ Other ________

b. General Discrepancy
__ Missing Sample/Extract*
__ Hold Time Exceeded
__ Improper Bottle Type
__ Container Broken
__ Insufficient Sample*
__ Not Amenable to Analysis
__ Wrong Sample Pulled
__ Preservation Wrong
__ Label ID's Illegible
__ Received Past Hold

Note*: Verified by (Log-In) or (Prep Group) (circle)...signature/date: ________

c. Problem (include all relevant specific results; attach data if necessary)

all spike recoveries are low

BS/MSD are good

2. Known or Probable Causes(s)

Probable loss of extract during concentration as both surrogates and spikes are low.

3. Discussion and Proposed Action

Other Description:

__ Re-log
  __ Entire Batch
  __ Following Samples: ________
__ Re-leach
__ Re-extract
__ Re-digest
__ Revise EDD
__ Change Test Code to ________
__ Place On/Take Off Hold (circle)

Narrate
JD

4. Project Manager Instructions...signature/date: 12/1/08

✓ Concur with Proposed Action
__ Disagree with Proposed Action; See instruction
__ Include in Case Narrative
__ Client Contacted:
Date/Person ________
__ Add
__ Cancel

5. Final Action...signature/date: 11/4/08

Other Explanation:

Verified re-[log][leach][extract][digest][analysis] (circle)
✓ Included in Case Narrative
__ Hard Copy COC Revised
__ Electronic COC Revised
__ EDD Corrections Completed

When Final Action has been recorded, forward original to QA for diposition.

Route
__ Lab Manager: Daniels
__ Project Mgr (circle): Johnson / Stone
__ Sample Prep (circle): Ford
__ Log-In: King

Route
__ Metals: Welsh / ________
__ Inorganic: Parrone / ________
__ GC/LC: Carey / ________
__ MS VOA: Rubine / ________
__ MS BNA: Carden / ________
__ Other: ________

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

ector Ian Stuckeff	Company Contact Joan Kessner	Telephone No. 375-4688	Project Coordinator WEISS, RL	Price Code 7K
ter Designation olumbia River Component of the RCBRA - Surface Water	Sampling Location PRD-3SW / PRD-45W		SAF No. RC-135	Data Turnaround 45 Days
Chest No. WCH-08-008,006, 051	Field Logbook No. EL-1630	COA BESCRC6520	Method of Shipment FED EX	
ssed To BERLINE SERVICES [✓ LIONVILLE]	Offsite Property No. N/A		Bill of Lading/Air Bill No. 790125290810	

SSIBLE SAMPLE HAZARDS/REMARKS

ecial Handling and/or Storage

000019

Preservation	HNO3 to pH <2	None	Cool 4C	Cool 4C	HNO3 or H2SO4 to pH	Cool 4C	Cool 4C	HCl or H2SO4 to pH <2 Cool	Cool 4C	None
Type of Container	P	P	P	G	P	aG	aG	aGs	aG	P
No. of Container(s)	1	1	1	1	1	4	4	3	2	0
Volume	500mL	500mL	250mL	125mL	250mL	1000mL	1000mL	40mL	1000mL	1*
SAMPLE ANALYSIS	See item (1) in Special Instructions.	FILTERED ICP Metals - 6010TR, FILTERED Mercury - 7470	Alkalinity - 310.1	Dissolved Organic Carbon - 415.1M	Hardness - 130.2	PCBs - 8082	Pesticides - 8081	See item (2) in Special Instructions.	Semi-VOA - 8270A (TCL)	-

Sample No.	Matrix *	Sample Date	Sample Time										
RJ1	WATER	10/29/08	1340	X		X	X	X	X	X	X	X	
RJ2	WATER	10/29/08	1555	X		X	X	X	X	X	X	X	
RJ8	WATER	10/29/08	1340		X								
RJ9	WATER	10/29/08	1555		X								

CHAIN OF POSSESSION Sign/Print Names

quished By/Removed From	Date/Time	Received By/Stored In	Date/Time
S. L. [illegible]	10/29/08 1118	REF. S	10/29/08 1118
ef. B	10/30/08 1030	Ken Royal Ken Royal	10/30/08 1030
n Royal Ken Royal	10/30/08 1253	FED EX	10/30/08 1253
Fed Ex	10-31-08 1005		10-31-08 1005

SPECIAL INSTRUCTIONS

(1) ICP Metals - 6010TR (Clean List) (Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Titanium, Uranium, Vanadium, Zinc); Mercury - 7470 - (CV)

[2] VOA - 8260A (TCL) (1,1,1-Trichloroethane, 1,1,2,2-Tetrachloroethane, 1,1,2-Trichloroethane, 1,1-Dichloroethane, 1,1-Dichloroethene, 1,2-Dichloroethane, 1,2-Dichloropropane, 2-Butanone, 2-Hexanone, 4-Methyl-2-Pentanone, Acetone, Benzene, Bromodichloromethane, Bromoform, Bromomethane, Carbon disulfide, Carbon tetrachloride, Chlorobenzene, Chloroethane, Chloroform, Chloromethane, cis-1,2-Dichloroethylene, cis-1,3-Dichloropropene, Dibromochloromethane, Ethylbenzene, Methylene chloride, Styrene, Tetrachloroethene, Toluene, trans-1,2-Dichloroethylene, trans-1,3-Dichloropropene, Trichloroethene, Vinyl chloride, Xylenes (total))

Sampler unavailable to remove samples
from controlled storage. Shipper removed
samples from storage location taking
custody of samples for shipment to lab.

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

BORATORY SECTION	Received By	Title	Date/Time
AL SAMPLE SPOSITION	Disposal Method	Disposed By	Date/Time

H-EE-011

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

lector Ian Stvzakoff

ject Designation
Columbia River Component of the RCBRA - Surface Water

Chest No. WCH-08-008, 006, 051

pped To
EBERLINE SERVICES (LIONVILLE)

POSSIBLE SAMPLE HAZARDS/REMARKS

ecial Handling and/or Storage

Company Contact
Joan Kessner

Telephone No.
375-4688

Project Coordinator
WEISS, RL

Price Code 7K

Data Turnaround
45 Days

Sampling Location
RBLS-ISW

SAF No.
RC-115

Field Logbook No.
EL-1630

COA
BBSCRC6380

Method of Shipment
FED EX

Offsite Property No.
N/A

Bill of Lading/Air Bill No. 790125290810

Preservation	HNO3 to pH <2	None	Cool 4C	Cool 4C	HNO3 or H2SO4 to pH	Cool 4C	Cool 4C	HCl or H2SO4 to pH <2 Cool	Cool 4C	None
Type of Container	P	P	P	G	P	aG	aG	aGs*	aG	*
No. of Container(s)	1	1	1	1	1	4	4	3	2	0
Volume	500mL	500mL	250mL	125mL	250mL	1000mL	1000mL	40mL	1000mL	1*
SAMPLE ANALYSIS	See item (1) in Special Instructions	FILTERED ICP Metals - 6010TR; FILTERED Mercury - 7470	Alkalinity - 310.1	Dissolved Organic Carbon - 415.1M	Hardness - 130.2	PCBs - 8082	Pesticides - 8081	See item (2) in Special Instructions	Semi-VOA - 8270A (TCL)	-

Sample No.	Matrix *	Sample Date	Sample Time										
7RJ3	WATER	10/29/08	1135	X		X	X	X	X	X	X	X	
7RK0	WATER	10/29/08	1135		X								

CHAIN OF POSSESSION — Sign/Print Names

quished By/Removed From	Date/Time	Received By/Stored In	Date/Time
	10/29/08 1418	Raf B.	10/29/08 1818
S B	10/30/08 1030	Kim Boyd Kim Boyd	10/30/08 1030
Kim Boyd / Kim Boyd	10/30/08 1253	FED EX	10/30/08 1253
Fed Ex	10-31-08 1005		10-31-08 1005

SPECIAL INSTRUCTIONS

(1) ICP Metals - 6010TR (Client List) {Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Titanium, Uranium, Vanadium, Zinc}; Mercury - 7470 - (CV)
(2) VOA - 8260A (TCL) {1,1,1-Trichloroethane, 1,1,2,2-Tetrachloroethane, 1,1,2-Trichloroethane, 1,1-Dichloroethane, 1,1-Dichloroethene, 1,2-Dichloroethane, 1,2-Dichloropropane, 2-Butanone, 2-Hexanone, 4-Methyl-2-Pentanone, Acetone, Benzene, Bromodichloromethane, Bromoform, Bromomethane, Carbon disulfide, Carbon tetrachloride, Chlorobenzene, Chloroethane, Chloroform, Chloromethane, cis-1,2-Dichloroethylene, cis-1,3-Dichloropropene, Dibromochloromethane, Ethylbenzene, Methylene chloride, Styrene, Tetrachloroethene, Toluene, trans-1,2-Dichloroethylene, trans-1,3-Dichloropropene, Trichloroethene, Vinyl chloride, Xylenes (total)}

Sampler unavailable to remove samples
from controlled storage. Shipper removed
samples from storage location taking
custody of samples for shipment to lab.

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

ABORATORY SECTION — Received By | Title | Date/Time

NAL SAMPLE DISPOSITION — Disposal Method | Disposed By | Date/Time

Appendix 5

Data Validation Supporting Documentation

PCB DATA VALIDATION CHECKLIST

VALIDATION LEVEL:	A	B	[✓ C]	D	E
PROJECT:	RCBRA		DATA PACKAGE:	K1421	
VALIDATOR:		LAB: LLI		DATE: 4/7/09	
			SDG: K1421		
ANALYSES PERFORMED					
[✓ SW-846 8081]	SW-846 8081 (TCLP)	[✓ SW-846 8082]	SW-846 8081 (TCLP)		
SAMPLES/MATRIX					
J17RJ1	J17RJ2	J17RJ3			
				Water	

1. DATA PACKAGE COMPLETENESS AND CASE NARRATIVE

Technical verification documentation present? .... Yes [✓ No] N/A

Comments:

2. INSTRUMENT PERFORMANCE AND CALIBRATIONS (Levels D and E)

Initial calibrations acceptable? .... Yes No [✓ N/A]

Continuing calibrations acceptable? .... Yes No [✓ N/A]

Standards traceable? .... Yes No [✓ N/A]

Standards expired? .... Yes No [✓ N/A]

Calculation check acceptable? .... Yes No [✓ N/A]

DDT and endrin breakdowns acceptable? .... Yes No [✓ N/A]

Comments:

PCB DATA VALIDATION CHECKLIST

3. BLANKS (Levels B, C, D, and E)

Calibration blanks analyzed? (Levels D, E) .... Yes No [✓ N/A]

Calibration blank results acceptable? (Levels D, E) .... Yes No [✓ N/A]

Laboratory blanks analyzed? .... [✓ Yes] No N/A

Laboratory blank results acceptable? .... [✓ Yes] No N/A

Field/trip blanks analyzed? (Levels C, D, E) .... Yes [✓ No] N/A

Field/trip blank results acceptable? (Levels C, D, E) .... Yes No [✓ N/A]

Transcription/calculation errors? (Levels D, E) .... Yes No [✓ N/A]

Comments: no FB

4. ACCURACY (Levels C, D, and E)

Surrogates analyzed? .... [✓ Yes] No N/A

Surrogate recoveries acceptable? .... [✓ Yes] No N/A

Surrogates traceable? (Levels D, E) .... Yes No [✓ N/A]

Surrogates expired? (Levels D, E) .... Yes No [✓ N/A]

MS/MSD samples analyzed? .... [✓ Yes] No N/A

MS/MSD results acceptable? .... Yes [✓ No] N/A

MS/MSD standards NIST traceable? (Levels D, E) .... Yes No [✓ N/A]

MS/MSD standards expired? (Levels D, E) .... Yes No [✓ N/A]

LCS/BSS samples analyzed? .... [✓ Yes] No N/A

LCS/BSS results acceptable? .... [✓ Yes] No N/A

Standards traceable? (Levels D, E) .... Yes No [✓ N/A]

Standards expired? (Levels D, E) .... Yes No [✓ N/A]

Transcription/calculation errors? (Levels D, E) .... Yes No [✓ N/A]

Performance audit sample(s) analyzed? .... Yes [✓ No] N/A

Performance audit sample results acceptable? .... Yes No [✓ N/A]

Comments: pest - MS recov - J all no PEs

toxaphene - No MS/MSD or LCS - J all

PCB DATA VALIDATION CHECKLIST

5. PRECISION (Levels C, D, and E)

Duplicate RPD values acceptable? .... Yes [✓ No] N/A
Duplicate results acceptable? .... Yes [✓ No] N/A
MS/MSD standards NIST traceable? (Levels D, E) .... Yes No [✓ N/A]
MS/MSD standards expired? (Levels D, E) .... Yes No [✓ N/A]
Field duplicate RPD values acceptable? .... Yes No [✓ N/A]
Field split RPD values acceptable? .... Yes No [✓ N/A]
Transcription/calculation errors? (Levels D, E) .... Yes No [✓ N/A]
Comments: RPD - all pest. ND - Jalf

toxaph - no MS/MSD - Jalf

6. SYSTEM PERFORMANCE (Levels D and E)

Chromatographic performance acceptable? .... Yes No [✓ N/A]
Positive results resolved acceptably? .... Yes No [✓ N/A]
Comments:

7. HOLDING TIMES (all levels)

Samples properly preserved? .... [✓ Yes] No N/A
Sample holding times acceptable? .... [✓ Yes] No N/A
Comments:

PCB DATA VALIDATION CHECKLIST

8. COMPOUND IDENTIFICATION, QUANTITATION, AND DETECTION LIMITS (all levels)

Compound identification acceptable? (Levels D, E) .... Yes No [✓ N/A]

Compound quantitation acceptable? (Levels D, E) .... ~~Yes~~ No [✓ N/A]

Results reported for all requested analyses? .... [✓ Yes] No N/A

Results supported in the raw data? (Levels D, E) .... Yes No [✓ N/A]

Samples properly prepared? (Levels D, E) .... Yes No [✓ N/A]

Detection limits meet RDL? .... [✓ Yes] ~~No~~ N/A

Transcription/calculation errors? (Levels D, E) .... Yes No [✓ N/A]

Comments:

9. SAMPLE CLEANUP (Levels D and E)

Fluoricil ® (or other absorbent) cleanup performed? .... Yes No [✓ N/A]

Lot check performed? .... Yes No [✓ N/A]

Check recoveries acceptable? .... Yes No [✓ N/A]

GPC cleanup performed? .... Yes No [✓ N/A]

GPC check performed? .... Yes No [✓ N/A]

GPC check recoveries acceptable? .... Yes No [✓ N/A]

GPC calibration performed? .... Yes No [✓ N/A]

GPC calibration check performed? .... Yes No [✓ N/A]

GPC calibration check retention times acceptable? .... Yes No [✓ N/A]

Check/calibration materials traceable? .... Yes No [✓ N/A]

Check/calibration materials Expired? .... Yes No [✓ N/A]

Analytical batch QC given similar cleanup? .... Yes No [✓ N/A]

Transcription/Calculation Errors? .... Yes No [✓ N/A]

Comments:

Date: 13 April 2009
To: Washington Closure Hanford (technical representative)
From: ELR Consultants
Project: Columbia River Component of the RCBRA – Surface Water
Subject: Semivolatile - Data Package No. K1421-LLI

INTRODUCTION

This memo presents the results of data validation on Data Package No. K1421prepared by Lionville Laboratory Inc. (LLI). A list of samples validated along with the analyses reported and the method of analysis is provided in the following table.

Sample ID	Sample Date	Media	Validation	Data
J17RJ1	10/29/08	Water	C	See note 1
J17RJ2	10/29/08	Water	C	See note 1
J17RJ3	10/29/08	Water	C	See note 1

1 – Semivolatiles by 8270C.

Data validation was conducted in accordance with the Washington Closure Hanford (WCH) validation statement of work and the Remedial Investigation Work Plan for Hanford Site Releases to the Columbia River (DOE/RL-2008-11, Rev. 0, September 2008). Appendices 1 through 6 provide the following information as indicated below:

Appendix 1. Glossary of Data Reporting Qualifiers
Appendix 2. Summary of Data Qualification
Appendix 3. Qualified Data Summary and Annotated Laboratory Reports
Appendix 4. Laboratory Narrative and Chain-of-Custody Documentation
Appendix 5. Data Validation Supporting Documentation

DATA QUALITY OBJECTIVES

Holding Times & Sample Preservation

Analytical holding times were assessed to ascertain whether the holding time requirements were met by the laboratory. The holding time requirements are as follows: Samples must be extracted within 7 days of the date of sample collection and analyzed within 40 days from the date of extraction for semivolatile analytes.

If holding times are exceeded, but not by greater than two times the limit, all associated sample results are qualified as estimates and flagged "J" for detects and "UJ" for non-detects. If holding times are exceeded by greater than two times the limit, all associated detectable sample results are qualified as estimates and flagged "J" and all non-detects are rejected and flagged "UR".

All holding times were acceptable.

- **Method Blanks**

Method blank analyses are conducted to determine the extent of laboratory contamination introduced through sampling, sample preparation and analysis. At least one acceptable method blank analysis must be conducted for every 20 samples. No contaminants should be present in the method blank. Analytical results for analytes present in any sample at less than five times the concentration of that analyte found in the associated blank are qualified as non-detects and flagged "U". Common laboratory contaminants present in samples at less than ten times the concentration of that analyte found in the associated blank are qualified as non-detects. If a sample result is less than the CRQL and is less than five times (or less than ten times for lab contaminants) the highest associated blank result, the sample result value is raised to the CRQL level and qualified as undetected "U".

Due to method blank contamination, all detected di-n-butylphthalate and bis(2-ethylhexyl)phthalate results were qualified as undetected and flagged "U".

All other method blank results were acceptable.

<u>Field Blanks</u>

No field blanks were submitted for analysis.

- **Accuracy**

<u>Matrix Spike/Matrix Spike Duplicate & Blank Spike Recoveries</u>

Matrix spike/matrix spike duplicate analyses are used to assess the analytical accuracy of the reported data and the effect of the matrix on the ability to accurately quantify sample concentrations. Matrix spike/matrix spike duplicate analyses are performed in duplicate using five compounds for which percent recoveries must be within a range of 50-150% or within laboratory control limits. If spike recoveries are outside control limits, detected sample results less than five times the spike concentration are qualified as estimates and flagged "J". Undetected sample results with spike recoveries below control limits are qualified as estimates and flagged "UJ". Undetected sample results are not qualified if the spike recovery is above control limits. Sample results greater than five times the spike concentration require no qualification.

Due to matrix spike and/or matrix spike duplicate recoveries outside QC limits, all hexachloroethane (39%), bis(2-chloroethoxy)methane (8%), 4-chloroanaline (3%), 2-nitroanaline (37%), acenaphthylene (30%), 3-nitroanaline (5% & 0%), 4-nitroanaline (0%), n-nitrosodiphenylamine (16%), carbazole (17%) and 3,3'dochlorobenzidine (0% & 0%) results were qualified as estimates and flagged "J".

Due to LCS recoveries outside QC limits, all bis(2-chloroethoxy)methane (7%), 4-chloroanaline (0%), 2-nitroanaline (44%), 3-nitroanaline (0%), 4-nitroanaline (0%) and 3,3'-dichlorobenzidine (0%) results were qualified as estimates and flagged "J".

All other accuracy results were acceptable.

Surrogate Recovery

The analyses of surrogate compounds provide a measure of performance for individual samples. Matrix-specific surrogate compound recovery control windows have been established by the EPA CLP program. If two surrogates of the same class of compounds (base/neutral or acid) are out of control limits, all associated sample results greater than the contract required quantitation limit (CRQL) are qualified as estimates and flagged "J". Sample results less than the CRQL and below the lower control limit are qualified as estimates and flagged "UJ". Sample results less than the CRQL with recoveries above the upper control limit require no qualification. If a surrogate recovery is less than 10%, detects are qualified as estimates and flagged "J" and nondetects are rejected and flagged "UR".

All surrogate results were acceptable.

- **Precision**

Matrix Spike/Matrix Spike Duplicate Samples

Matrix spike (MS)/matrix spike duplicate (MSD) results provide matrix-specific information on the precision of the method for specific target compound classes. Precision is expressed by the relative percent difference (RPD) between the recoveries of duplicate matrix spike analyses performed on a sample. Samples results must be within RPD limits of +/-20%. If RPD values are out of specification and the sample concentration is less than five times the spike concentration, all associated detected sample results are qualified as estimates and flagged "J". If RPD values are out of specification and the sample concentration is greater than five times the spike concentration, no qualification is required.

Due to RPDs outside QC limits, all bis(2-chloroethoxy)methane (154%), 4-chloroanaline (150%), 2-nitroanaline (59%), acenaphthylene (69%), 3-nitroanaline (200%), 4-nitroanaline (200%), n-nitrosodiphenylamine (72%) and carbazole (108%) results were qualified as estimates and flagged "J".

All other precision results were acceptable.

Field Duplicate Samples

No field duplicates were submitted for analysis.

- **Analytical Detection Levels**

Reported analytical detection levels are compared against the required quantitation limits (RQL's) to ensure that laboratory detection levels meet the required criteria. Twenty-one analytes exceeded the RQL. Under the WCH statement of work, no qualification is required. All other analytes met the RQL.

- **Completeness**

Data package No. K1421 was submitted for validation and verified for completeness. Completeness is based on the percentage of data determined to be valid (i.e., not rejected). The completion percentage was 100%.

MAJOR DEFICIENCIES

None found.

MINOR DEFICIENCIES.

The following minor deficiencies were noted:

- Due to method blank contamination, all detected di-n-butylphthalate and bis(2-ethylhexyl)phthalate results were qualified as undetected and flagged "U".
- Due to matrix spike and/or matrix spike duplicate recoveries outside QC limits, all hexachloroethane (39%), bis(2-chloroethoxy)methane (8%), 4-chloroanaline (3%), 2-nitroanaline (37%), acenaphthylene (30%), 3-nitroanaline (5% & 0%), 4-nitroanaline (0%), n-nitrosodiphenylamine (16%), carbazole (17%) and 3,3'dochlorobenzidine (0% & 0%) results were qualified as estimates and flagged "J".
- Due to LCS recoveries outside QC limits, all bis(2-chloroethoxy)methane (7%), 4-chloroanaline (0%), 2-nitroanaline (44%), 3-nitroanaline (0%), 4-nitroanaline (0%) and 3,3'-dichlorobenzidine (0%) results were qualified as estimates and flagged "J".
- Due to RPDs outside QC limits, all bis(2-chloroethoxy)methane (154%), 4-chloroanaline (150%), 2-nitroanaline (59%), acenaphthylene (69%), 3-nitroanaline (200%), 4-nitroanaline (200%), n-nitrosodiphenylamine (72%) and carbazole (108%) results were qualified as estimates and flagged "J".

Data flagged "J" indicates that the associated concentration is an estimate, but under the WCH statement of work, the data may be usable for decision-making purposes. All other validated results are considered accurate within the standard error associated with the methods.

Twenty-one analytes exceeded the RQL. Under the WCH statement of work, no qualification is required.

REFERENCES

Fluor Hanford Data Validation Contract #29776 (June 2006), *Validation Statement of Work*, through Washington Closure Hanford Work Order #WB6081.

DOE/RL-2008-11, Rev.0, *Remedial Investigation Work Plan for Hanford Site Releases to the Columbia River*, September 2008.

Appendix 1

Glossary of Data Reporting Qualifiers

Qualifiers which may be applied by data validators in compliance with the WCH validation SOW are as follows:

U - Indicates the compound or analyte was analyzed for and not detected in the sample. The value reported is the same quantitation limit corrected for sample dilution and moisture content by the laboratory.

UJ - Indicates the compound or analyte was analyzed for and not detected in the sample. Due to a minor QC deficiency identified during the data validation, the associated quantitation limit is an estimate.

J - Indicates the compound or analyte was analyzed for and detected. Due to a minor QC deficiency identified during the data validation, the associated quantitation limit is an estimate.

R - Indicates the compound or analyte was analyzed for, detected, and due to an identified major QC deficiency, the data are unusable.

UR - Indicates the compound or analyte was analyzed for and not detected in the sample. Additionally, the data is unusable due to an identified major QC deficiency.

NJ - Indicates presumptive evidence of a compound at an estimated value. The data may not be valid for some specific applications (i.e., usable for decision-making purposes).

N - Indicates presumptive evidence of a compound. The data may not be valid for some specific applications usable for decision-making purposes).

Appendix 2

Summary of Data Qualification

SEMIVOLATILE ORGANIC CHEMISTRY DATA QUALIFICATION SUMMARY*

SDG: K1421	**REVIEWER: ELR**	**Project: RCBRA**	**PAGE 1 OF 1**
COMPOUND	QUALIFIER	SAMPLES AFFECTED	REASON
di-n-butylphthalate and bis(2-ethylhexyl)phthalate	U at RQL	All detects	Method blank contamination
Hexachloroethane bis(2-chloroethoxy)methane 4-chloroanaline 2-nitroanaline acenaphthylene 3-nitroanaline 4-nitroanaline n-nitrosodiphenylamine carbazole 3,3'dichlorobenzidine	J	All	MS/MSD recovery
bis(2-chloroethoxy)methane 4-chloroanaline 2-nitroanaline 3-nitroanaline 4-nitroanaline 3,3'-dichlorobenzidine	J	All	LCS recovery
bis(2-chloroethoxy)methane 4-chloroanaline 2-nitroanaline acenaphthylene 3-nitroanaline 4-nitroanaline n-nitrosodiphenylamine carbazole	J	All	RPD

* - The Qualified Data Summary Table includes laboratory applied "U" qualifiers not specifically identified here. The laboratory applied "U" qualifiers are included to minimize misinterpretation of results contained in the table.

Appendix 3

Qualified Data Summary and Annotated Laboratory Reports

Semivolatiles by GC/MS, HSL List Report Date:

RFW Batch Number: 0810L175 Client: WC-HANFORD RC-115 K1421 Work Order: 60049001001 Page: 1a

Sample Information												
Cust ID:	J17RJ1		J17RJ1		J17RJ1		J17RJ2		J17RJ3		SBLKZQ	
RFW#:	001		001 MS		001 MSD		002		005		08LE0555-MB1	
Matrix:	WATER		WATER		WATER		WATER		WATER		WATER	
D.F.:	1.00		1.00		1.00		1.00		1.00		1.00	
Units:	ug/L		ug/L		ug/L		ug/L		ug/L		ug/L	
Surrogate Recovery												
Nitrobenzene-d5	62	%	63	%	65	%	68	%	70	%	79	%
2-Fluorobiphenyl	60	%	64	%	62	%	64	%	64	%	76	%
Terphenyl-d14	67	%	71	%	72	%	73	%	84	%	79	%
Phenol-d5	60	%	62	%	34	%	46	%	60	%	80	%
2-Fluorophenol	65	%	64	%	63	%	70	%	71	%	79	%
2,4,6-Tribromophenol	62	%	71	%	69	%	66	%	87	%	74	%
		fl		fl		fl		fl		fl		fl
Phenol	10	U	70	%	68	%	10	U	10	U	10	U
bis(2-Chloroethyl)ether	10	U	68	%	69	%	10	U	10	U	10	U
2-Chlorophenol	10	U	62	%	64	%	10	U	10	U	10	U
1,3-Dichlorobenzene	10	U	48	%	44	%	10	U	10	U	10	U
1,4-Dichlorobenzene	10	U	49	%	45	%	10	U	10	U	10	U
1,2-Dichlorobenzene	10	U	53	%	49	%	10	U	10	U	10	U
2-Methylphenol	10	U	65	%	61	%	10	U	10	U	10	U
2,2'-oxybis(1-Chloropropane)	10	U	69	%	71	%	10	U	10	U	10	U
3/4 Methylphenol	10	U	66	%	63	%	10	U	10	U	10	U
N-Nitroso-di-n-propylamine	10	U	69	%	69	%	10	U	10	U	10	U
Hexachloroethane	10	U J	45	%	39 *	%	10	U J	10	U J	10	U J
Nitrobenzene	10	U	66	%	66	%	10	U	10	U	10	U
Isophorone	10	U	65	%	67	%	10	U	10	U	10	U
2-Nitrophenol	10	U	65	%	65	%	10	U	10	U	10	U
2,4-Dimethylphenol	10	U	72	%	60	%	10	U	10	U	10	U
bis(2-Chloroethoxy)methane	10	U J	61	%	8 *	%	10	U J	10	U J	10	U J
2,4-Dichlorophenol	10	U	65	%	65	%	10	U	10	U	10	U
1,2,4-Trichlorobenzene	10	U	51	%	49	%	10	U	10	U	10	U
Naphthalene	10	U	59	%	57	%	10	U	10	U	10	U
4-Chloroaniline	10	U J	3 *	%	21	%	10	U J	10	U J	10	U J
Hexachlorobutadiene	10	U	50	%	45	%	10	U	10	U	10	U
4-Chloro-3-methylphenol	10	U	70	%	66	%	10	U	10	U	10	U
2-Methylnaphthalene	10	U	62	%	60	%	10	U	10	U	10	U
Hexachlorocyclopentadiene	10	U	37	%	42	%	10	U	10	U	10	U
2,4,6-Trichlorophenol	10	U	71	%	68	%	10	U	10	U	10	U
2,4,5-Trichlorophenol	25	U	67	%	60	%	25	U	25	U	25	U

*= Outside of EPA CLP QC limits.

pr 4/11/09

Cust ID:	J17RJ1		J17RJ1		J17RJ1		[illegible]		[illegible]		[illegible]	
RFW#:	001		001 MS		001 MSD		002		005		08LB0555-MB1	
2-Chloronaphthalene	10	U	63	%	61	%	10	U	10	U	10	U
2-Nitroaniline	25	U J	68	%	37 *	%	25	U J	25	U J	25	U
Dimethylphthalate	10	U	71	%	68	%	10	U	10	U	10	U
Acenaphthylene	10	U J	62	%	30 *	%	10	U J	10	U J	10	U
2,6-Dinitrotoluene	10	U	68	%	64	%	10	U	10	U	10	U
3-Nitroaniline	25	U J	5 *	%	0 *	%	25	U J	25	U J	25	U
Acenaphthene	10	U	64	%	60	%	10	U	10	U	10	U
2,4-Dinitrophenol	25	U	120 *	%	110	%	25	U	25	U	25	U
4-Nitrophenol	25	U	70	%	67	%	25	U	25	U	25	U
Dibenzofuran	10	U	67	%	65	%	10	U	10	U	10	U
2,4-Dinitrotoluene	10	U	70	%	67	%	10	U	10	U	10	U
Diethylphthalate	10	U	74	%	68	%	10	U	10	U	10	U
4-Chlorophenyl-phenylether	10	U	69	%	66	%	10	U	10	U	10	U
Fluorene	10	U	67	%	64	%	10	U	10	U	10	U
4-Nitroaniline	25	U J	14	%	0 *	%	25	U J	25	U J	25	U
4,6-Dinitro-2-methylphenol	25	U	93	%	90	%	25	U	25	U	25	U
N-Nitrosodiphenylamine (1)	10	U J	34	%	16 *	%	10	U J	10	U J	10	U
4-Bromophenyl-phenylether	10	U	60	%	57	%	10	U	10	U	10	U
Hexachlorobenzene	10	U	64	%	61	%	10	U	10	U	10	U
Pentachlorophenol	25	U	88	%	98	%	25	U	25	U	25	U
Phenanthrene	10	U	67	%	65	%	10	U	10	U	10	U
Anthracene	10	U	65	%	63	%	10	U	10	U	10	U
Carbazole	10	U J	57	%	17 *	%	10	U J	10	U J	10	U
Di-n-butylphthalate	10 ~~0.5~~	~~JB~~ U	72	%	68	%	10	U	10 ~~0.8~~	~~JB~~ U	0.7	J
Fluoranthene	10	U	67	%	65	%	10	U	10	U	10	U
Pyrene	10	U	65	%	61	%	10	U	10	U	10	U
Butylbenzylphthalate	10	U	76	%	51	%	10	U	10	U	10	U
3,3'-Dichlorobenzidine	10	U J	0	%	0	%	10	U J	10	U J	10	U
Benzo(a)anthracene	10	U	63	%	62	%	10	U	10	U	10	U
Chrysene	10	U	65	%	63	%	10	U	10	U	10	U
bis(2-Ethylhexyl)phthalate	10	U	73	%	72	%	10	U	10 ~~0.6~~	~~JB~~ U	0.6	J
Di-n-octyl phthalate	10	U	74	%	74	%	10	U	10	U	10	U
Benzo(b)fluoranthene	10	U	65	%	66	%	10	U	10	U	10	U
Benzo(k)fluoranthene	10	U	71	%	71	%	10	U	10	U	10	U
Benzo(a)pyrene	10	U	62	%	54	%	10	U	10	U	10	U
Indeno(1,2,3-cd)pyrene	10	U	62	%	60	%	10	U	10	U	10	U
Dibenz(a,h)anthracene	10	U	63	%	65	%	10	U	10	U	10	U
Benzo(g,h,i)perylene	10	U	62	%	58	%	10	U	10	U	10	U

(1) - Cannot be separated from Diphenylamine. *= Outside of EPA CLP QC limits.

4/11/08

```
                                      Semivolatiles by GC/MS, HSL List           Report Date:
RFW Batch Number: 08101175        Client: WC-HANFORD RC-115 K1421    Work Order: 60049001001        Page:  2A

                      Cust ID: BBLX2Q 99

Sample                   RFW#: 08L10555-M01
Information            Matrix:    WATER
                         D.F.:      1.00
                        Units:     ug/L

-----------------------------------------------------------------------------------------------------------
                 Nitrobenzene-d5      72   %
Surrogate       2-Fluorobiphenyl      69   %
Recovery          Terphenyl-d14       82   %
                     Phenol-d5        49   %
                 2-Fluorophenol       70   %
             2,4,6-Tribromophenol     76   %
==============================================fl============fl============fl============fl============fl============fl
Phenol__________________________      73   %
bis(2-Chloroethyl)ether_________      72   %
2-Chlorophenol__________________      66   %
1,3-Dichlorobenzene_____________      51   %
1,4-Dichlorobenzene_____________      51   %
1,2-Dichlorobenzene_____________      54   %
2-Methylphenol__________________      66   %
2,2'-oxybis(1-Chloropropane)____      72   %
3/4 Methylphenol________________      67   %
N-Nitroso-di-n-propylamine______      71   %
Hexachloroethane________________      49   %
Nitrobenzene____________________      69   %
Isophorone______________________      69   %
2-Nitrophenol___________________      70   %
2,4-Dimethylphenol______________      72   %
bis(2-Chloroethoxy)methane______       7 * %
2,4-Dichlorophenol______________      69   %
1,2,4-Trichlorobenzene__________      56   %
Naphthalene_____________________      62   %
4-Chloroaniline_________________       0 * %
Hexachlorobutadiene_____________      53   %
4-Chloro-3-methylphenol_________      70   %
2-Methylnaphthalene_____________      65   %
Hexachlorocyclopentadiene_______      38   %
2,4,6-Trichlorophenol___________      74   %
2,4,5-Trichlorophenol___________      69   %
*= Outside of EPA CLP QC limits.
```

V 4/11/09

Cust ID: SBLKZQ 38

RFW#: 08LX0555-MB1

2-Chloronaphthalene	65		%
2-Nitroaniline	44	*	%
Dimethylphthalate	73		%
Acenaphthylene	63		%
2,6-Dinitrotoluene	68		%
3-Nitroaniline	0	*	%
Acenaphthene	66		%
2,4-Dinitrophenol	120	*	%
4-Nitrophenol	78		%
Dibenzofuran	70		%
2,4-Dinitrotoluene	72		%
Diethylphthalate	75		%
4-Chlorophenyl-phenylether	71		%
Fluorene	68		%
4-Nitroaniline	0	*	%
4,6-Dinitro-2-methylphenol	98		%
N-Nitrosodiphenylamine (1)	20		%
4-Bromophenyl-phenylether	62		%
Hexachlorobenzene	66		%
Pentachlorophenol	110	*	%
Phenanthrene	69		%
Anthracene	69		%
Carbazole	46		%
Di-n-butylphthalate	74		%
Fluoranthene	70		%
Pyrene	72		%
Butylbenzylphthalate	81		%
3,3'-Dichlorobenzidine	0		%
Benzo(a)anthracene	71		%
Chrysene	71		%
bis(2-Ethylhexyl)phthalate	75		%
Di-n-octyl phthalate	72		%
Benzo(b)fluoranthene	69		%
Benzo(k)fluoranthene	72		%
Benzo(a)pyrene	66		%
Indeno(1,2,3-cd)pyrene	67		%
Dibenz(a,h)anthracene	68		%
Benzo(g,h,i)perylene	68		%

(1) - Cannot be separated from Diphenylamine. *= Outside of EPA CLP QC limits.

9/4/09

Appendix 4

Laboratory Narrative and Chain-of-Custody Documentation

Case Narrative

Client: WC-HANFORD RC-115, K1421
LVL #: 0810L175

WO #: 60197-001-001-0001-00
Date Received: 10-31-2008

SEMIVOLATILE

Three (3) water samples were collected on 10-29-2008.

The samples and their associated QC samples were extracted according to Lionville Laboratory SOPs based on SW 846 method 3520C on 11-04-2008 and analyzed according to criteria set forth in Lionville Laboratory SOPs based on SW 846 Method 8270C for client specified Semivolatile target compounds on 11-07-2008.

The following is a summary of QC results accompanying the sample results. Lionville Laboratory (LVL) certifies that all test results meet the requirements of NELAC except as noted below:

1. Discrepancies from the sample acceptance policy have been recorded on the Sample Receipt Checklist.
2. Non-target compounds were detected in these samples.
3. All obtainable surrogate recoveries were within acceptance criteria.
4. Eleven (11) of one hundred twenty-eight (128) matrix spike recoveries were outside acceptance criteria. A copy of the Sample Discrepancy Report (SDR) #08MS258 is enclosed.
5. Seven (7) of sixty-four (64) blank spike recoveries were outside acceptance criteria. A copy of the Sample Discrepancy Report (SDR# 08MS258) has been enclosed.
6. The method blank contained the common laboratory contaminants Bis (2-Ethylhexy) phthalate and Di-n-butylphthalate at levels less than the CRQL.
7. All initial calibrations associated with this data set were within acceptance criteria.
8. All continuing calibration standards analyzed prior to sample extracts were within acceptance criteria.
9. Internal standard area and retention time criteria were met.
10. Manual integrations are performed according to SOP QA-125 to produce quality data with the utmost integrity. All manual integrations are required to be technically valid and properly documented. Appropriate technical flags are defined in the Glossary ("Technical Flags For Manual Integration").

11. LVL is NELAP accredited by the State of Pennsylvania. For a complete listing of accrediting authorities and the corresponding analytes/methods, please contact your Project Manager.

12. I certify, that this sample data package is in compliance with SOW requirements, both technically and for completeness, other than the conditions detailed above. Release of the data, contained in this hard-copy data package, has been authorized, by the Laboratory Manager or a designee, as verified by the following signature.

Judy Stone
Lois Daniels
Laboratory Manager
Lionville Laboratory

11/12/03
Date

Lionville Laboratory Sample Discrepancy Report (SDR) SDR #: 0fms 166

Initiator: Shamsylin
Date: 11-10-08
Client: Wellsford Rails 10194-1
Batch: 08I0L175
Samples: ms, msd, BS
Method: [✓ SW8270] MCAWW/CLP
Parameter: 8270
Matrix: Aqueous
Prep Batch: 08I1E801

1. Reason for SDR

a. COC Discrepancy
☐ Tech Profile Error
☐ Transcription Error
☐ Client Request
☐ Wrong Test Code
☐ Sampler Error on C-O-C
☐ Other ____

b. General Discrepancy
☐ Missing Sample/Extract*
☐ Hold Time Exceeded
☐ Improper Bottle Type
☐ Container Broken
☐ Insufficient Sample*
☐ Not Amenable to Analysis
☐ Wrong Sample Pulled
☐ Preservation Wrong
☐ Label ID's Illegible
☐ Received Past Hold

Note*: Verified by [Log-In] or [Prep Group] (circle)...signature/date: ____

c. Problem (Include all relevent specific results; attach data if necessary)

low or no spike recoveries ms, msd, BS

2. Known or Probable Causes(s) Nitroanilines, chloroanilines are subject to erratic chromatographic behavior especially if the GC system is contaminated with high boiling materials. Other spikes. All surrogates within acceptance criteria

3. Discussion and Proposed Action
☐ Re-log
  ☐ Entire Batch
  ☐ Following Samples: ____
☐ Re-leach
☐ Re-extract
☐ Re-digest
☐ Revise EDD
☐ Change Test Code to ____
☐ Place On/Take Off Hold (circle)

Other Description: none

11/10/08

4. Project Manager Instructions...signature/date: 11/19/08
☑ Concur with Proposed Action
☐ Disagree with Proposed Action; See Instruction
☐ Include in Case Narrative
☐ Client Contacted:
Date/Person ____ ____
☑ Add
☐ Cancel

5. Final Action...signature/date: ____
☑ Verified re-[log][leach][extract][digest][analysis] (circle)
☑ Included in Case Narrative
☐ Hard Copy COC Revised
☐ Electronic COC Revised
☐ EDD Corrections Completed

Other Explanation:

When Final Action has been recorded, forward original to QA for diposition.

Route
☐ Lab Manager: Daniels
☑ Project Mgr (circle): [✓ Johnson] / Stone
☐ Sample Prep (circle): Ford
☐ Log-in: King

Route
☐ Metals: Welsh / ____
☐ Inorganic: Perrone / ____
☐ GC/LC: Carey / ____
☐ MS VOA: Rubino / ____
☑ MS BNA: [✓ Carden] / ____
☐ Other: ____

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

ector Ian Stuhncoff	Company Contact Joan Kessner	Telephone No. 375-4688	Project Coordinator WEISS, RL
ject Designation Columbia River Component of the RCBRA - Surface Water	Sampling Location PRD-35W / PRD-43W		SAF No. RC-115
: Chest No. WCH-08-008, 006, 051	Field Logbook No. EL-1630	COA BESCRC6520	Method of Shipment FED EX
ipped To EBERLINE SERVICES [✓ LIONVILLE]	Offsite Property No. N/A		Bill of Lading/Air Bill No. 790125290810

Price Code 7K

Data Turnaround 45 Days

OSSIBLE SAMPLE HAZARDS/REMARKS

pecial Handling and/or Storage

Preservation	HNO3 to pH <2	None	Cool 4C	Cool 4C	HNO3 or H2SO4 to pH	Cool 4C	Cool 4C	HCl or H2SO4 to pH <2 Cool	Cool 4C	None
Type of Container	P	P	P	G	P	aG	aG	aGs*	aG	*
No. of Container(s)	1	1	1	1	1	4	4	3	1	0
Volume	500mL	500mL	250mL	125mL	250mL	1000mL	1000mL	40mL	1000mL	1*
SAMPLE ANALYSIS	See item (1) in Special Instructions.	FILTERED ICP Metals - 6010TR, FILTERED Mercury - 7470	Alkalinity - 310.1	Dissolved Organic Carbon - 415.1M	Nitrates - 353.2	PCBs - 8082	Pesticides - 8081	See item (2) in Special Instructions.	Semi-VOA - 8270A (TCL)	—

ample No.	Matrix *	Sample Date	Sample Time										
7RJ1	WATER	10/29/08	1340	X		X	X	X	X	X	X	X	
7RJ2	WATER	10/29/08	1555	X		X	X	X	X	X	X	X	
7RJ8	WATER	10/29/08	1340		X								
7RJ9	WATER	10/29/08	1555		X								

CHAIN OF POSSESSION — Sign/Print Names

nquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
	10/29/08 1815	Ref. B	10/29/08 1815
Ref. B	10/30/08 1030	Kim Engel / Kim Engel	10/30/08 1030
Kim Engel / Kim Engel	10/30/08 1253	FED EX	10/30/08 1253
Fed Ex	10-31-08 1005		10-31-08 1005

SPECIAL INSTRUCTIONS

(1) ICP Metals - 6010TR (Client List) [Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Titanium, Uranium, Vanadium, Zinc]; Mercury - 7470 - (CV)

(2) VOA - 8260A (TCL) [1,1,1-Trichloroethane, 1,1,2,2-Tetrachloroethane, 1,1,2-Trichloroethane, 1,1-Dichloroethane, 1,1-Dichloroethene, 1,2-Dichloroethane, 1,2-Dichloropropane, 2-Butanone, 2-Hexanone, 4-Methyl-2-Pentanone, Acetone, Benzene, Bromodichloromethane, Bromoform, Bromomethane, Carbon disulfide, Carbon tetrachloride, Chlorobenzene, Chloroethane, Chloroform, Chloromethane, cis-1,2-Dichloroethylene, cis-1,3-Dichloropropene, Dibromochloromethane, Ethylbenzene, Methylenechloride, Styrene, Tetrachloroethene, Toluene, trans-1,2-Dichloroethylene, trans-1,3-Dichloropropene, Trichloroethene, Vinyl chloride, Xylenes (total)]

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab.

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

ABORATORY SECTION	Received By	Title	Date/Time
INAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

CH-EE-011

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

lector Ian Sivenkoff	Company Contact Joan Kessner	Telephone No. 375-4688	Project Coordinator WEISS, RL	Price Code 7K
ject Designation Columbia River Component of the RCBRA - Surface Water	Sampling Location RBLS-ISW		SAF No. RC-115	Data Turnaround 45 Days
Chest No. WCH-08-009, 006, 051	Field Logbook No. BL-1630	COA BBSCRC6520	Method of Shipment FED EX	
ipped To EBERLINE SERVICES (LIONVILLE)	Offsite Property No. N/A		Bill of Lading/Air Bill No. 790125 290 810	

OSSIBLE SAMPLE HAZARDS/REMARKS

pecial Handling and/or Storage

Preservation	HNO3 to pH <2	None	Cool 4C	Cool 4C	HNO3 or H2SO4 to pH<2	Cool 4C	Cool 4C	HCl or H2SO4 to pH <2 Cool	Cool 4C	None
Type of Container	P	P	P	G	P	aG	aG	aGs*	aG	-
No. of Container(s)	1	1	1	1	1	4	4	3	2	0
Volume	500mL	500mL	250mL	125mL	250mL	1000mL	1000mL	40mL	1000mL	1*
SAMPLE ANALYSIS	See item (1) in Special Instructions.	FILTERED ICP Metals - 6010TR; FILTERED Mercury - 7470	Alkalinity - 310.1	Dissolved Organic Carbon - 415.1M	Nutrients - 353.2	PCBs - 8082	Pesticides - 8081	See item (2) in Special Instructions.	Semi-VOA - 8270A (TCL)	-

Sample No.	Matrix *	Sample Date	Sample Time										
7RJ3	WATER	10/29/08	1135	X		X	X	X	X	X	X	X	
7RK0	WATER	10/29/08	1135		X								

CHAIN OF POSSESSION

Sign/Print Names

linquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Sh U [illegible]	10/29/08 1818	Ref B	10/29/08 1818
linquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
S B	10/30/08 1030	Kim Boyd Kim Boyd	10/30/08 1030
linquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Kim Boyd Kim Boyd	10/30/08 1253	FED EX	10/30/08 1253
linquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Fed Ex	10/31/08 1005		10-31-08 1005
linquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
linquished By/Removed From	Date/Time	Received By/Stored In	Date/Time

SPECIAL INSTRUCTIONS

(1) ICP Metals - 6010TR (Client List) (Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Titanium, Uranium, Vanadium, Zinc); Mercury - 7470 - (CV)
(2) VOA - 8260A (TCL) (1,1,1-Trichloroethane, 1,1,2,2-Tetrachloroethane, 1,1,2-Trichloroethane, 1,1-Dichloroethane, 1,1-Dichloroethene, 1,2-Dichloroethane, 1,2-Dichloropropane, 2-Butanone, 2-Hexanone, 4-Methyl-2-Pentanone, Acetone, Benzene, Bromodichloromethane, Bromoform, Bromomethane, Carbon disulfide, Carbon tetrachloride, Chlorobenzene, Chloroethane, Chloroform, Chloromethane, cis-1,2-Dichloroethylene, cis-1,3-Dichloropropene, Dibromochloromethane, Ethylbenzene, Methylenechloride, Styrene, Tetrachloroethene, Toluene, trans-1,2-Dichloroethylene, trans-1,3-Dichloropropene, Trichloroethene, Vinyl chloride, Xylenes (total))

Sampler unavailable to remove samples
from controlled storage. Shipper removed
samples from storage location taking
custody of samples for shipment to lab.

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W = Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

ABORATORY SECTION	Received By	Title	Date/Time
INAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

CH-EE-011

Appendix 5

Data Validation Supporting Documentation

GC/MS ORGANIC DATA VALIDATION CHECKLIST

VALIDATION LEVEL:	A	B	[✓ C]	D	E
PROJECT:	RCBRA		DATA PACKAGE:	K1421	
VALIDATOR:	ELR	LAB:	LLI	DATE:	4/7/09
			SDG:	K1421	
ANALYSES PERFORMED					
SW-846 8260		SW-846 8260 (TCLP)	[✓ SW-846 8270]		SW-846 8270 (TCLP)
SAMPLES/MATRIX					
J17RJ1 J17RJ2 J17RJ3					
					Water

1. DATA PACKAGE COMPLETENESS AND CASE NARRATIVE

Technical verification documentation present? .... Yes [✓ No] N/A

Comments:

2. INSTRUMENT TUNING AND CALIBRATION (Levels D and E)

GC/MS tuning/performance check acceptable? .... Yes No [✓ N/A]

Initial calibrations acceptable? .... Yes No [✓ N/A]

Continuing calibrations acceptable? .... Yes No [✓ N/A]

Standards traceable? .... Yes No [✓ N/A]

Standards expired? .... Yes No [✓ N/A]

Calculation check acceptable? .... Yes No [✓ N/A]

Comments:

GC/MS ORGANIC DATA VALIDATION CHECKLIST

3. BLANKS (Levels B, C, D, and E)

Calibration blanks analyzed? (Levels D, E) .... Yes No [✓ N/A]

Calibration blank results acceptable? (Levels D, E) .... Yes No [✓ N/A]

Laboratory blanks analyzed? .... [✓ Yes] No N/A

Laboratory blank results acceptable? .... Yes [✓ No] N/A

Field/trip blanks analyzed? (Levels C, D, E) .... Yes [✓ No] N/A

Field/trip blank results acceptable? (Levels C, D, E) .... Yes No [✓ N/A]

Transcription/calculation errors? (Levels D, E) .... Yes No [✓ N/A]

Comments: bis(2-ethylhexyl)phthalate + di-n-butylphthalate – U at RQL – [illegible]

no FB

4. ACCURACY (Levels C, D, and E)

Surrogates/system monitoring compounds analyzed? .... [✓ Yes] No N/A

Surrogate/system monitoring compound recoveries acceptable? .... [✓ Yes] No N/A

Surrogates traceable? (Levels D, E) .... Yes No [✓ N/A]

Surrogates expired? (Levels D, E) .... Yes No [✓ N/A]

MS/MSD samples analyzed? .... [✓ Yes] No N/A

MS/MSD results acceptable? .... Yes [✓ No] N/A

MS/MSD standards NIST traceable? (Levels D, E) .... Yes No [✓ N/A]

MS/MSD standards? (Levels D, E) .... Yes No [✓ N/A]

LCS/BSS samples analyzed? .... [✓ Yes] No N/A

LCS/BSS results acceptable? .... Yes [✓ No] N/A

Standards traceable? (Levels D, E) .... Yes No [✓ N/A]

Standards expired? (Levels D, E) .... Yes No [✓ N/A]

Transcription/calculation errors? (Levels D, E) .... Yes No [✓ N/A]

Performance audit sample(s) analyzed? .... Yes [✓ No] N/A

Performance audit sample results acceptable? .... Yes No [✓ N/A]

Comments: MS/MSD – 10 out

LCS – 6 out

no PAS

GC/MS ORGANIC DATA VALIDATION CHECKLIST

5. PRECISION (Levels C, D, and E)

MS/MSD samples analyzed? .... [✓ Yes] No N/A

MS/MSD RPD values acceptable? .... Yes [✓ No] N/A

MS/MSD standards NIST traceable? (Levels D, E) .... Yes No [✓ N/A]

MS/MSD standards expired? (Levels D, E) .... Yes No [✓ N/A]

Field duplicate RPD values acceptable? .... Yes No [✓ N/A]

Field split RPD values acceptable? .... Yes No [✓ N/A]

Transcription/calculation errors? (Levels D, E) .... Yes No [✓ N/A]

Comments: bis (2-chloroethoxy) methane (133%) 4-nitroaniline (200%) 4-chloroaniline (150%) acenaphthylene (70%) acenaphthene (200%) N-nitrosodiphenylamine (72%) carbazole (108%) butylbenzylphthalate (31%) — J all

6. SYSTEM PERFORMANCE (Levels D and E)

Internal standards analyzed? .... Yes No [✓ N/A]

Internal standard areas acceptable? .... Yes No [✓ N/A]

Internal standard retention times acceptable? .... Yes No [✓ N/A]

Standards traceable? .... Yes No [✓ N/A]

Standards expired? .... Yes No [✓ N/A]

Transcription/calculation errors? .... Yes No [✓ N/A]

Comments:

7. HOLDING TIMES (all levels)

Samples properly preserved? .... [✓ Yes] No N/A

Sample holding times acceptable? .... [✓ Yes] No N/A

Comments:

GC/MS ORGANIC DATA VALIDATION CHECKLIST

8. COMPOUND IDENTIFICATION, QUANTITATION, AND DETECTION LIMITS (all levels)

Compound identification acceptable? (Levels D, E) .... Yes No [✓ N/A]

Compound quantitation acceptable? (Levels D, E) .... Yes No [✓ N/A]

Results reported for all requested analyses? .... [✓ Yes] No N/A

Results supported in the raw data? (Levels D, E) .... Yes No [✓ N/A]

Samples properly prepared? (Levels D, E) .... Yes No [✓ N/A]

Laboratory properly identified and coded all TIC? (Levels D, E) .... Yes No [✓ N/A]

Detection limits meet RDL? .... Yes [✓ No] N/A

Transcription/calculation errors? (Levels D, E) .... Yes No [✓ N/A]

Comments: 7\

9. SAMPLE CLEANUP (Levels D and E)

GPC cleanup performed? .... Yes No N/A

GPC check performed? .... Yes No N/A

GPC check recoveries acceptable? .... Yes No N/A

GPC calibration performed? .... Yes No N/A

GPC calibration check performed? .... Yes No N/A

GPC calibration check retention times acceptable? .... Yes No N/A

Check/calibration materials traceable? .... Yes No N/A

Check/calibration materials Expired? .... Yes No N/A

Analytical batch QC given similar cleanup? .... Yes No N/A

Transcription/Calculation Errors? .... Yes No N/A

Comments:

Date: 13 April 2009
To: Washington Closure Hanford (technical representative)
From: ELR Consulting
Project: Columbia River Component of the RCBRA – Surface Water
Subject: Wet Chemistry - Data Package No. K1421-LLI

INTRODUCTION

This memo presents the results of data validation on Data Package No. K1421 prepared by Lionville Laboratory Inc. (LLI). A list of samples validated along with the analyses reported and the method of analysis is provided in the following table.

Sample ID	Sample Date	Media	Validation	Data
J17RJ1	10/29/08	Water	C	See note 1
J17RJ2	10/29/08	Water	C	See note 1
J17RJ3	10/29/08	Water	C	See note 1

1 – Alkalinity by 310.1, hardness by 130.2 and soluble organic carbon by 415.1.
* - Sample temperature not validated per WCH.

Data validation was conducted in accordance with the Washington Closure Hanford (WCH) validation statement of work and the Remedial Investigation Work Plan for Hanford Site Releases to the Columbia River (DOE/RL-2008-11, Rev. 0, September 2008). Appendices 1 through 6 provide the following information as indicated below:

Appendix 1. Glossary of Data Reporting Qualifiers
Appendix 2. Summary of Data Qualification
Appendix 3. Qualified Data Summary and Annotated Laboratory Reports
Appendix 4. Laboratory Narrative and Chain-of-Custody Documentation
Appendix 5. Data Validation Supporting Documentation
Appendix 6. Additional Documentation Requested by Client

DATA QUALITY PARAMETERS

- **Holding Times & Sample Preservation**

Analytical holding times for metals are assessed to ascertain whether the holding time requirements were met by the laboratory. The holding time requirements are as follows: Samples must be analyzed within 6 months for hardness, 28 days for soluble organic carbon and 14 days for alkalinity.

If holding times are exceeded, but not by greater than two times the limit, all associated sample results are qualified as estimates and flagged "J" for detects and "UJ" for non-detects. If holding times are exceeded by greater than two times the limit, all associated detectable sample results are qualified as estimates and flagged "J" and all non-detects are rejected and flagged "UR".

All holding time and sample preservation results were acceptable.

- **Method Blanks**

Method Blanks

Method blank analyses are performed to determine the extent of laboratory contamination introduced through sampling, sample preparation and analysis. At least one acceptable method blank analysis must be conducted for every 20 samples. No contaminants should be present in the method blank. All blank results must fall below the contract required detection limit (CRQL) to be acceptable.

All method blank results were acceptable.

Field (Equipment) Blank

No field blanks were submitted for analysis.

- **Accuracy**

Matrix Spike and Laboratory Control Sample

Matrix spike (MS) and laboratory control sample (LCS) analyses are used to assess the analytical accuracy of the reported data. The matrix spike is used to assess the effect of the matrix on the ability to accurately quantify sample concentrations. Recoveries must fall within the range of 70% to 130%. Samples with a recovery of less than 30% and a sample result below the IDL are rejected and flagged "UR". Samples with a recovery of 30% to 69% and a sample result less than the IDL are qualified "UJ". Samples with a recovery of greater than 130% or less than 70% and a sample result greater than the IDL are qualified as estimates and flagged "J". Finally, for samples with a recovery greater than 130% and a sample result less than the IDL, no qualification is required.

Due to the lack of a matrix spike analysis, all alkalinity results were qualified as estimates and flagged "J".

All other accuracy results were acceptable.

- **Precision**

Laboratory Duplicate Samples

Analytical precision is expressed by the relative percent differences (RPD) between the recoveries of matrix spike duplicate (MSD) analyses performed on a sample in the analytical batch. Precision may alternatively be assessed using unspiked duplicate analyses performed on a sample in the analytical batch. If both sample and replicate activities (concentrations) are greater than five times the CRDL and the RPD is less than 20%, no qualification is required. If either activity (concentration) is less than five times the CRDL, the RPD control limit is less than or equal to two times the CRDL. If the RPD is outside the applicable control limit, associated results are qualified as estimated detects or estimated non-detects.

All laboratory duplicate results were acceptable.

Field Duplicate

No field duplicates were submitted for analysis.

- **Analytical Detection Levels**

Reported analytical detection levels are compared against the required quantitation limits (RQLs) to ensure that laboratory detection levels meet the required criteria. All analytes met the RQL.

- **Completeness**

Data package No. K1421 was submitted for validation and verified for completeness. Completeness is based on the percentage of data determined to be valid (i.e., not rejected). The completion percentage was 100%.

MAJOR DEFICIENCIES

None found.

MINOR DEFICIENCIES

The following minor deficiency was noted:

- Due to the lack of a matrix spike analysis, all alkalinity results were qualified as estimates and flagged "J".

Data flagged "J" indicates that the associated concentration is an estimate, but under the WCH statement of work, the data may be usable for decision-making purposes. All other validated results are considered accurate within the standard error associated with the methods.

REFERENCES

Washington Closure Hanford Contract #S00W307A00 (March 2008), *Data Validation Services*, March 2008.

DOE/RL-2008-11, Rev.0, *Remedial Investigation Work Plan for Hanford Site Releases to the Columbia River*, September 2008.

Appendix 1

Glossary of Data Reporting Qualifiers

Qualifiers which may be applied by data validators in compliance with WCH validation SOW are as follows:

U - Indicates the compound or analyte was analyzed for and not detected in the sample. The value reported is the sample quantitation limit corrected for sample dilution and moisture content by the laboratory.

UJ - Indicates the compound or analyte was analyzed for and not detected in the sample. Due to a minor QC deficiency identified during the data validation, the associated quantitation limit is an estimate.

J - Indicates the compound or analyte was analyzed for and detected. Due to a minor QC deficiency identified during the data validation, the associated concentration is an estimate, but the data are usable for decision-making purposes.

BJ - Applied to inorganic analyses only. Indicates the analyte concentration was greater than the IDL but less than the CRDL and is considered an estimated value.

R - Indicates the compound or analyte was analyzed for, detected, and due to an identified major QC deficiency, the data are unusable.

UR - Indicates the compound or analyte was analyzed for and not detected in the sample. Additionally, the data is unusable due to an identified major QC deficiency.

NJ - Indicates presumptive evidence of a compound at an estimated value. The data may not be valid for some specific applications (i.e., usable for decision-making purposes).

N - Indicates presumptive evidence of a compound. The data may not be valid for some specific applications (i.e., usable for decision-making purposes).

Appendix 2

Summary of Data Qualification

WET CHEMISTRY DATA QUALIFICATION SUMMARY*

SDG: K1421	**REVIEWER:** ELR	**Project:** RCBRA	**PAGE 1 OF 1**
COMPOUND	QUALIFIER	SAMPLES AFFECTED	REASON
Alkalinity	J	All	No MS analysis

* - The Qualified Data Summary Table includes laboratory applied "U" qualifiers not specifically identified here. The laboratory applied "U" qualifiers are included to minimize misinterpretation of results contained in the table.

Appendix 3

Qualified Data Summary and Annotated Laboratory Reports

Lionville Laboratory, Inc.

INORGANICS DATA SUMMARY REPORT 11/26/08

CLIENT: WC-HANFORD RC-116 X1a21 LVL LOT #: 0811L176
WORK ORDER: 40049-001-001-0001-00

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
-001	J17RJ1	Alkalinity	64.1 J	MG/L	2.0	1.0
		Hardness	74.2	MG/L	2.0	1.0
		Soluble Organic Carbon	1.6	MG/L	0.50	1.0
-002	J17RJ2	Alkalinity	88.7 J	MG/L	2.0	1.0
		Hardness	48.0	MG/L	2.0	1.0
		Soluble Organic Carbon	1.7	MG/L	0.50	1.0
-003	J17RJ3	Alkalinity	136 J	MG/L	2.0	1.0
		Hardness	70.6	MG/L	2.0	1.0
		Soluble Organic Carbon	1.7	MG/L	0.50	1.0

5/24/09

Appendix 4

Laboratory Narrative and Chain-of-Custody Documentation

LvLI
LIONVILLE LABORATORY INC.

Analytical Report

Client: WC-HANFORD RC-115 K1421
LVL#: 0810L175

W.O.#: 60049-001-001-0001-00
Date Received: 10-31-08

INORGANIC NARRATIVE

1. This narrative covers the analyses of 3 water samples.

2. The samples were prepared and analyzed in accordance with the methods checked on the attached glossary. On the Inorganic Data Summary Report, Soluble Organic Carbon represents the client requested Dissolved Organic Carbon (DOC).

   Lionville Lab (LvL) is NELAP accredited by the State of Pennsylvania. For a complete list of accrediting authorities and the corresponding analytes/methods, please contact your Project Manager. LvL certifies that all test results meet the requirements of NELAC with any exception noted in the following statements.

3. Sample holding times as required by the method and/or contract were met.

4. The results presented in this report are derived from samples that met LvL's sample acceptance policy with the exception of DOC as noted on the Sample Receipt Checklist.

5. The method blanks were within the method criteria with the exception of Hardness that was above the 0.50 mg/L reporting limit at 0.52 mg/L; the associated Hardness results are greater than 10 times the reporting limit.

6. The Laboratory Control Samples (LCS) were within the laboratory control limits. The duplicate LCS were within the 20% Relative Percent Difference (RPD) control limit.

7. The matrix spike recoveries were within the 75-125% control limits.

8. The replicate analyses were within the 20% RPD control limit.

9. I certify that this sample data package is in compliance with SOW requirements, both technically and for completeness, other than the conditions detailed above. Release of the data contained in this hard copy package has been authorized by the Laboratory Manager or a designee, as verified by the following signature.

Iain Daniels
Laboratory Manager
Lionville Laboratory

12/2/08
Date

ajp810-175

Washington Closure Hanford

CHAIN OF CUSTODY

llector	Ian Stupakoff
oject Designation	Columbia River Component of the RCBRA - Surface Water
e Chest No.	WCH-08-008, 006, 051
Company Contact	Joan Kessner
Telephone No.	375-4688
Sampling Location	PRD-3SW / PRD-4SW
Field Logbook No.	EL-1630
COA	B2SCRC6520
Offsite Property No.	N/A
Project Coordinator	WEISS, RL
SAF No.	RC-113
Method of Shipment	FED EX
Bill of Lading/Air Bill No.	790125290810
Price Code	7K
Data Turnaround	45 Days
ipped To	EBERLINE SERVICES [✓ LIONVILLE]

OSSIBLE SAMPLE HAZARDS/REMARKS

pecial Handling and/or Storage

000013

			Preservation	HNO3 to pH <2	None	Cool 4C	Cool 4C	HNO3 or H2SO4 to pH <2	Cool 4C	Cool 4C	HCl or H2SO4 to pH <2 Cool	Cool 4C	None
			Type of Container	P	P	P	G	P	aG	aG	aGs*	aG	*
			No. of Container(s)	1	1	1	1	1	4	4	3	1	0
			Volume	500mL	500mL	250mL	125mL	250mL	1000mL	1000mL	40mL	1000mL	1*
SAMPLE ANALYSIS				See item (1) in Special Instructions.	FILTERED ICP Metals - 6010TR; FILTERED Mercury - 7470	Alkalinity - 310.1	Dissolved Organic Carbon - 415.1M	Hardness - 130.2	PCBs - 8082	Pesticides - 8081	See item (2) in Special Instructions.	Semi-VOA - 8270A (TCL)	
Sample No.	Matrix *	Sample Date	Sample Time										
17RJ1	WATER	10/29/08	1340	X		X	X	X	X	X	X	X	
17RJ2	WATER	10/29/08	1555	X		X	X	X	X	X	X	X	
17RJ8	WATER	10/29/08	1340		X								
17RJ9	WATER	10/29/08	1555		X								

CHAIN OF POSSESSION

Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
	10/29/08 1518	Ref. B	10/29/08 1518
Ref. B	10/30/08 1030	Ken Rogel Ken Rogel	10/30/08 1030
Ken Rogel Ken Rogel	10/30/08 1253	FED EX	10/30/08 1253
Fed Ex	10-31-08 1005		10-31-08 1005

SPECIAL INSTRUCTIONS

(1) ICP Metals - 6010TR (Client List) {Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Titanium, Uranium, Vanadium, Zinc}; Mercury - 7470 - (CV)

(2) VOA - 8260A (TCL) {1,1,1-Trichloroethane, 1,1,2,2-Tetrachloroethane, 1,1,2-Trichloroethane, 1,1-Dichloroethane, 1,1-Dichloroethene, 1,2-Dichloroethane, 1,2-Dichloropropane, 2-Butanone, 2-Hexanone, 4-Methyl-2-Pentanone, Acetone, Benzene, Bromodichloromethane, Bromoform, Bromomethane, Carbon disulfide, Carbon tetrachloride, Chlorobenzene, Chloroethane, Chloroform, Chloromethane, cis-1,2-Dichloroethylene, cis-1,3-Dichloropropene, Dibromochloromethane, Ethylbenzene, Methylene chloride, Styrene, Tetrachloroethene, Toluene, trans-1,2-Dichloroethylene, trans-1,3-Dichloropropene, Trichloroethene, Vinyl chloride, Xylenes (total)}

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab.

Matrix *

S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By		Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method		Disposed By	Date/Time

/CH-EE-011

080700311

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

llector: Ian Stoeaxoff	Company Contact: Joan Kessner	Telephone No. 375-4688	Project Coordinator: WEISS, RL	Price Code: 7K
oject Designation: Columbia River Component of the RCBRA - Surface Water	Sampling Location: RBLS-1SW		SAF No. RC-115	Data Turnaround: 45 Days
: Chest No. WCH-08-008, 006, 051	Field Logbook No. BL-1630	COA: BESCRC6520	Method of Shipment: FED EX	
	Offsite Property No. N/A		Bill of Lading/Air Bill No. 790125 290 810	

ipped To
EBERLINE SERVICES [✓ LIONVILLE]

OSSIBLE SAMPLE HAZARDS/REMARKS

pecial Handling and/or Storage

Preservation	HNO3 to pH <2	None	Cool 4C	Cool 4C	HNO3 or H2SO4 to pH	Cool 4C	Cool 4C	HCl or H2SO4 to pH <2 Cool 4C	Cool 4C	None
Type of Container	P	P	P	G	P	aG	aG	aGs*	aG	-
No. of Container(s)	1	1	1	1	1	4	4	3	2	0
Volume	500mL	500mL	250mL	125mL	250mL	1000mL	1000mL	40mL	1000mL	1*
SAMPLE ANALYSIS	See item (1) in Special Instructions	FILTERED ICP Metals - 6010TR; FILTERED Mercury - 7470	Alkalinity - 310.1	Dissolved Organic Carbon - 415.1M	Nutrients - 353.2	PCBs - 8082	Pesticides - 8081	See item (2) in Special Instructions	Semi-VOA - 8270A (TCL)	-

Sample No.	Matrix *	Sample Date	Sample Time										
17RJ3	WATER	10/29/08	1135	X		X	X	X	X	X	X	X	
17RK0	WATER	10/29/08	1135		X								

CHAIN OF POSSESSION

Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Sh[illegible]	10/29/08 1418	Ref B	10/29/08 1818
Ref B	10/30/08 1030	Kim Bail	10/30/08 1030
Kim Bail	10/30/08 1253	FED EX	10/30/08 1253
FedEx	10-31-08 1005		10-31-08 1005

SPECIAL INSTRUCTIONS

(1) ICP Metals - 6010TR (Client List) {Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Titanium, Uranium, Vanadium, Zinc}; Mercury - 7470 - (CV)
(2) VOA - 8260A (TCL) {1,1,1-Trichloroethane, 1,1,2,2-Tetrachloroethane, 1,1,2-Trichloroethane, 1,1-Dichloroethane, 1,1-Dichloroethene, 1,2-Dichloroethane, 1,2-Dichloropropane, 2-Butanone, 2-Hexanone, 4-Methyl-2-Pentanone, Acetone, Benzene, Bromodichloromethane, Bromoform, Bromomethane, Carbon disulfide, Carbon tetrachloride, Chlorobenzene, Chloroethane, Chloroform, Chloromethane, cis-1,2-Dichloroethylene, cis-1,3-Dichloropropene, Dibromochloromethane, Ethylbenzene, Methylene chloride, Styrene, Tetrachloroethene, Toluene, trans-1,2-Dichloroethylene, trans-1,3-Dichloropropene, Trichloroethene, Vinyl chloride, Xylenes (total)}

Sampler unavailable to remove samples
from controlled storage. Shipper removed
samples from storage location taking
custody of samples for shipment to lab.

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Lionville Laboratory Incorporated

SAMPLE RECEIPT CHECKLIST (SRC)

CLIENT: WC HANFORD
Date: 10/31/08

Project/SAF/SOW/Release #: RC-115

LvLI Batch #: 0810L175
Sample Custodian:

NOTE: EXPLAIN ALL DISCREPANCIES

1. Samples Hand Delivered or [✓ Shipped]? Carrier Fed Ex Airbill # 7911 7785 0438 / 7901 2529 0821 / 7901 2529 0810

2. Custody Seals on coolers or shipping containers intact, signed & dated? ☑ Yes ☐ No ☐ No Seals

3. Outside of coolers or shipping containers are free from damage? ☑ Yes ☐ No Comments:

4. All expected paperwork received (coc & other client specific information) sealed in plastic bag and easily accessible? ☑ Yes ☐ No

5. Samples received cooled or ambient? Temp 4.1 / 3.7 / 4.5 °C Cooler # WCH-08-008 / WCH-08-071 / WCH-08-006

How was the temperature taken? ☑ IR ☐ Temp. Blank ☐ Other (Specify):

Is the Temp. Criteria met for these samples? (Hg in soils @ 4°C) ☑ Yes ☐ No

6. Custody seals on sample containers intact, signed and dated? ☐ Yes ☑ No ☐ No Seals #001 Part Rec'd Broken

7. COC (Client & LvLI) signed & dated? ☑ Yes ☐ No

8. Sample containers are intact? ☐ Yes ☑ No 10-31-08

9. All samples on COC received? ☐ Yes ☑ No
All samples received on COC? ☐ Yes ☑ No

10. All sample label information matches COC? ☐ Yes ☑ No I.D. ON SAMPLE #004 READS J17R [illegible] [illegible]. Client said do not use these [illegible] Bottles.

11. Samples properly preserved? (If #5 is no, then this is no.) ☑ Yes ☐ No

12. Samples received within hold times? ☑ Yes ☐ No
Short holds taken to wet lab? ☐ Yes ☐ No ☑ N/A

13. VOA, TOC, TOX free of headspace? TOC ☐ Yes ☑ No ☐ N/A Headspace

14. QC stickers placed on bottles designated by client? ☐ Yes ☐ No ☑ N/A

15. Shipment meets LvLI Sample Acceptance Policy? (Identify all bottles that do not meet the policy, which is on the reverse of this page.) ☐ Yes ☑ No

16. Project Manager contacted concerning any discrepancies? ☑ Yes ☐ No ☐ N/A
Person Contacted D. JOHNSON Date 10-31-08

LvLI

Appendix 5

Data Validation Supporting Documentation

GENERAL CHEMISTRY ANALYSIS DATA VALIDATION CHECKLIST

VALIDATION LEVEL:	A	B	[✓ C]	D	E
PROJECT: RCBRA			DATA PACKAGE: K1421		
VALIDATOR: ELR	LAB: LLI		DATE: 4/7/09		
			SDG: K1421		
ANALYSES PERFORMED					
Anions/IC	TOC	TOX	TPH-418.1	Oil and Grease	[✓ Alkalinity]
Ammonia	BOD/COD	Chloride	Chromium-VI	pH	NO_2/NO_3
Sulfate	TDS	TKN	Phosphate	[✓ TOC]	[✓ Hardness]
SAMPLES/MATRIX					
J17RJ1 J17RJ2 J17RJ3					
Location					

1. DATA PACKAGE COMPLETENESS AND CASE NARRATIVE

Technical verification documentation present? .... Yes [✓ No] N/A

Comments:

2. INSTRUMENT PERFORMANCE AND CALIBRATIONS (Levels D and E)

Initial calibrations performed on all instruments? .... Yes No [✓ N/A]

Initial calibrations acceptable? .... Yes No [✓ N/A]

ICV and CCV checks performed on all instruments? .... Yes No [✓ N/A]

ICV and CCV checks acceptable? .... Yes No [✓ N/A]

Standards traceable? .... Yes No [✓ N/A]

Standards expired? .... Yes No [✓ N/A]

Calculation check acceptable? .... Yes No [✓ N/A]

Comments:

GENERAL CHEMISTRY ANALYSIS DATA VALIDATION CHECKLIST

3. BLANKS (Levels B, C, D, and E)

ICB and CCB checks performed for all applicable analyses? (Levels D, E) .... Yes No [✓ N/A]
ICB and CCB results acceptable? (Levels D, E) .... Yes No [✓ N/A]
Laboratory blanks analyzed? .... [✓ Yes] No N/A
Laboratory blank results acceptable? .... [✓ Yes] No N/A
Field blanks analyzed? (Levels C, D, E) .... Yes [✓ No] N/A
Field blank results acceptable? (Levels C, D, E) .... Yes No [✓ N/A]
Transcription/calculation errors? (Levels D, E) .... Yes No [✓ N/A]
Comments: NO FB

4. ACCURACY (Levels C, D, and E)

Spike samples analyzed? .... [✓ Yes] No N/A
Spike recoveries acceptable? .... [✓ Yes] No N/A
Spike standards NIST traceable? (Levels D, E) .... Yes No [✓ N/A]
Spike standards expired? (Levels D, E) .... Yes No [✓ N/A]
LCS/BSS samples analyzed? .... [✓ Yes] No N/A
LCS/BSS results acceptable? .... [✓ Yes] No N/A
Standards traceable? (Levels D, E) .... Yes No [✓ N/A]
Standards expired? (Levels D, E) .... Yes No [✓ N/A]
Transcription/calculation errors? (Levels D, E) .... Yes No [✓ N/A]
Performance audit sample(s) analyzed? .... Yes [✓ No] N/A
Performance audit sample results acceptable? .... Yes No [✓ N/A]
Comments: NO alkalinity MS - Jaly

No PAS

GENERAL CHEMISTRY ANALYSIS DATA VALIDATION CHECKLIST

5. PRECISION (Levels C, D, and E)

Duplicate RPD values acceptable? .... [✓ Yes] No N/A
Duplicate results acceptable? .... [✓ Yes] No N/A
MS/MSD standards NIST traceable? (Levels D, E) .... Yes No [✓ N/A]
MS/MSD standards expired? (Levels D, E) .... Yes No [✓ N/A]
Field duplicate RPD values acceptable? .... Yes No [✓ N/A]
Field split RPD values acceptable? .... Yes No [✓ N/A]
Transcription/calculation errors? (Levels D, E) .... Yes No [✓ N/A]

Comments:

6. HOLDING TIMES (all levels)

Samples properly preserved? .... [✓ Yes] ~~No~~ N/A 5/22
Sample holding times acceptable? .... [✓ Yes] No N/A

Comments: ~~See headspace — Invalid~~ 5/22

GENERAL CHEMISTRY ANALYSIS DATA VALIDATION CHECKLIST

7. RESULT QUANTITATION AND DETECTION LIMITS (all levels)

Results reported for all requested analytes? .... [✓ Yes] No N/A

Results supported in the raw data? (Levels D, E) .... Yes No [✓ N/A]

Samples properly prepared? (Levels D, E) .... Yes No [✓ N/A]

Detection limits meet RDL? .... [✓ Yes] No N/A

Transcription/calculation errors? (Levels D, E) .... Yes No [✓ N/A]

Comments:

Appendix 6

Additional Documentation Requested by Client

Lionville Laboratory, Inc

INORGANICS METHOD BLANK DATA SUMMARY PAGE 11/26/00

CLIENT: WC-HANFORD RC-115 X1421 LVL LOT #: 0011L375
WORK ORDER: 40049-001-001-0001-00

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
BLANK10	00LAKA05-MB1	Alkalinity	0.50 u	MG/L	0.50	1.0
BLANK10	00LHD006-MB1	Hardness	0.53	MG/L	0.50	1.0
BLANK10	00LTC021-MB1	Soluble Organic Carbon	0.50 u	MG/L	0.50	1.0

Lionville Laboratory, Inc.

INORGANICS ACCURACY REPORT 11/26/08

CLIENT: WC-HANFORD RC-115 X1421 LVL LOT #: 0810L175

WORK ORDER: 60049-001-001-0001-00

SAMPLE	SITE ID	ANALYTE	SPIKED SAMPLE	INITIAL RESULT	SPIKED AMOUNT	%RECOV	DILUTION FACTOR(SPK)
-001	J17RJ1	Soluble Organic Carbon	6.5	1.6	5.0	100.2	1.0
-002	J17RJ2	Hardness	152	68.0	80.0	105.6	1.0
BLANK10	08LAK025-MB1	Alkalinity	97.8	0.600u	100	97.8	1.0
		Alkalinity MSD	98.8	0.600u	100	98.8	1.0
BLANK10	08LHD006-MB1	Hardness	41.3	0.00	40.0	103.2	1.0
		Hardness MSD	44.3	0.00	40.0	110.7	1.0
BLANK10	08L7C021-MB1	Soluble Organic Carbon	4.9	0.500u	5.0	97.7	1.0

Lionville Laboratory, Inc.

INORGANICS DUPLICATE SPIKE REPORT 11/24/08

CLIENT: WC-HANFORD RC-116 K1431 LVL LOT #: 0810L175

WORK ORDER: 40049-001-001-0001-00

SAMPLE	SITE ID	ANALYTE	SPIKE#1 %RECOV	SPIKE#2 %RECOV	%DIFF
BLANK10	08LAFA15-MB1	Alkalinity	97.6	98.6	1.1
BLANK10	08LKD005-MB1	Hardness	108.2	110.7	2.4

Lionville Laboratory, Inc.

INORGANICS PRECISION REPORT 11/26/08

CLIENT: WC-HANFORD WC-115 X3421

LVL LOT #: 0810L175

WORK ORDER: 60049-001-001-0001-00

SAMPLE	SITE ID	ANALYTE	INITIAL RESULT	REPLICATE	RPD	DILUTION FACTOR(REP)
-001REP	J17RJ1	Alkalinity	54.1	58.2	7.4	1.0
		Soluble Organic Carbon	1.6	1.7	6.0	1.0
-002REP	J17RJ2	Hardness	68.0	70.0	3.0	1.0

F.1.2 Sediment

F.1.2.1 SDG J00253

SAF-RC-116
Columbia River Component of the RCBRA – Sediment
FINAL VALIDATION PACKAGE

COMPLETE COPY OF VALIDATION PACKAGE TO:

Kathy Wendt H4-21

COMMENTS:

SDG J00253 **SAF-RC-116**

Date: 18 May 2009
To: Washington Closure Hanford Inc. (technical representative)
From: ELR Consulting
Project: Columbia River Component of the RCBRA – Sediment
Subject: Wet Chemistry - Data Package No. J00253-TAL

INTRODUCTION

This memo presents the results of data validation on Data Package No. J00253 prepared by TestAmerica Laboratory Inc. (TAL). A list of samples validated along with the analyses reported and the method of analysis is provided in the following table.

Sample ID	Sample Date	Media	Validation	Analyte
J17VR1	12/8/08	Solid	C	See note 1
J17YT9	12/8/08	Solid	C	See note 1
J18007	12/8/08	Solid	C	See note 1
J18008	12/8/08	Solid	C	See note 1
J18009	12/8/08	Solid	C	See note 1
J18010	12/8/08	Solid	C	See note 1
J18011	12/8/08	Solid	C	See note 1
J18025	12/8/08	Solid	C	See note 1
J18026	12/8/08	Solid	C	See note 1

1 – Chromium VI by 7196A.

Data validation was conducted in accordance with the Washington Closure Hanford (WCH) validation statement of work and the Remedial Investigation Work Plan for Hanford Site Releases to the Columbia River (DOE/RL-2008-11, Rev. 0, September 2008). Appendices 1 through 6 provide the following information as indicated below:

Appendix 1. Glossary of Data Reporting Qualifiers
Appendix 2. Summary of Data Qualification
Appendix 3. Annotated Laboratory Reports
Appendix 4. Laboratory Narrative and Chain-of-Custody Documentation
Appendix 5. Data Validation Supporting Documentation
Appendix 6. Additional Documentation Requested by Client

DATA QUALITY PARAMETERS

Holding Times

Analytical holding times for metals are assessed to ascertain whether the holding time requirements were met by the laboratory. The holding time requirements are as follows: Soil samples must be analyzed within 24 hours for chromium VI.

If holding times are exceeded, but not by greater than two times the limit, all associated sample results are qualified as estimates and flagged "J" for detects and "UJ" for non-detects. If holding times are exceeded by greater than two times the limit, all associated detectable sample results are qualified as estimates and flagged "J" and all non-detects are rejected and flagged "UR".

Due to the holding time being exceeded by less than twice the limit, all chromium VI results were qualified as estimates and flagged "J".

- **Method Blanks**

Method Blanks

Method blank analyses are performed to determine the extent of laboratory contamination introduced through sampling, sample preparation and analysis. At least one acceptable method blank analysis must be conducted for every 20 samples. No contaminants should be present in the method blank. All blank results must fall below the contract required detection limit (CRQL) to be acceptable.

All method blank results were acceptable.

Field (Equipment) Blank

No field blanks were submitted for analysis.

- **Accuracy**

Matrix Spike and Laboratory Control Sample

Matrix spike (MS) and laboratory control sample (LCS) analyses are used to assess the analytical accuracy of the reported data. The matrix spike is used to assess the effect of the matrix on the ability to accurately quantify sample concentrations. Recoveries must fall within the range of 70% to 130%. Samples with a recovery of less than 30% and a sample result below the IDL are rejected and flagged "UR". Samples with a recovery of 30% to 69% and a sample result less than the IDL are qualified "UJ". Samples with a recovery of greater than 130% or less than 70% and a sample result greater than the IDL are qualified as estimates and flagged "J". Finally, for samples with a recovery greater than 130% and a sample result less than the IDL, no qualification is required.

Due to a matrix spike recovery outside QC limits (63%), all chromium VI results were qualified as estimates and flagged "J".

All other accuracy results were acceptable.

- **Precision**

Laboratory Duplicate Samples

Analytical precision is expressed by the relative percent differences (RPD) between the recoveries of matrix spike duplicate (MSD) analyses performed on a sample in the analytical batch. Precision may alternatively be assessed using unspiked duplicate analyses performed on a sample in the analytical batch. If both sample and replicate activities (concentrations) are greater than five times the CRDL and the RPD is less than 30%, no qualification is required. If either activity (concentration) is less than five times the CRDL, the RPD control limit is less than or equal to two times the CRDL. If the RPD is outside the applicable control limit, associated results are qualified as estimated detects or estimated non-detects.

All laboratory duplicate results were acceptable.

Field Duplicate

One set of field duplicate samples (J17VR1/J18008) were submitted for analysis. Laboratory duplicates are compared using the same criteria as for laboratory duplicates. All field duplicate results were acceptable.

- **Analytical Detection Levels**

Reported analytical detection levels are compared against the required quantitation limits (RQLs) to ensure that laboratory detection levels meet the required criteria. All analytes met the RQL.

- **Completeness**

Data package J00253 was submitted for validation and verified for completeness. Completeness is based on the percentage of data determined to be valid (i.e., not rejected). The completion percentage was 100%.

MAJOR DEFICIENCIES

None found.

MINOR DEFICIENCIES

The following minor deficiencies were noted:

- Due to a matrix spike recovery outside QC limits (63%), all chromium VI results were qualified as estimates and flagged 'J'.

- Due to the holding time being exceeded by less than twice the limit, all chromium VI results were qualified as estimates and flagged "J".

Data flagged "J" indicates that the associated concentration is an estimate, but under the WCH statement of work, the data may be usable for decision-making purposes. All other validated results are considered accurate within the standard error associated with the methods.

REFERENCES

Washington Closure Hanford Contract #SOOW307A00 (March 2008), *Data Validation Services*.

DOE/RL-2008-11, Rev.0, *Remedial Investigation Work Plan for Hanford Site Releases to the Columbia River*, September 2008.

Appendix 1

Glossary of Data Reporting Qualifiers

Qualifiers which may be applied by data validators in compliance with WCH validation SOW are as follows:

U - Indicates the compound or analyte was analyzed for and not detected in the sample. The value reported is the sample quantitation limit corrected for sample dilution and moisture content by the laboratory.

UJ - Indicates the compound or analyte was analyzed for and not detected in the sample. Due to a minor QC deficiency identified during the data validation, the associated quantitation limit is an estimate.

J - Indicates the compound or analyte was analyzed for and detected. Due to a minor QC deficiency identified during the data validation, the associated concentration is an estimate, but the data are usable for decision-making purposes.

BJ - Applied to inorganic analyses only. Indicates the analyte concentration was greater than the IDL but less than the CRDL and is considered an estimated value.

R - Indicates the compound or analyte was analyzed for, detected, and due to an identified major QC deficiency, the data are unusable.

UR - Indicates the compound or analyte was analyzed for and not detected in the sample. Additionally, the data is unusable due to an identified major QC deficiency.

NJ - Indicates presumptive evidence of a compound at an estimated value. The data may not be valid for some specific applications (i.e., usable for decision-making purposes).

N - Indicates presumptive evidence of a compound. The data may not be valid for some specific applications (i.e., usable for decision-making purposes).

Appendix 2

Summary of Data Qualification

CHROMIUM VI DATA QUALIFICATION SUMMARY*

SDG: J00253	REVIEWER: ELR	Project: RCBRA	PAGE 1 OF 1
COMPOUND	QUALIFIER	SAMPLES AFFECTED	REASON
All	J	All	MS recovery
All	J	All	Hold time

* - The Qualified Data Summary Table includes laboratory applied "U" qualifiers not specifically identified here. The laboratory applied "U" qualifiers are included to minimize misinterpretation of results contained in the table.

Appendix 3

Annotated Laboratory Reports

Sample Results Summary

Date: 16-Jan-09

TestAmerica TARL

Ordered by Method, Batch No., Client Sample ID.

Report No. : 40622

SDG No: J00253

ch	Client Id Work Order	Parameter	Result +- Uncertainty (2s)	Qual	Units	Tracer Yield	MDC or MDA	CRDL	RPD
9MT4 7196_CR6									
J17VR1									
	K4A891AA	HEXCHROME	1.55E-01 +- 0.00E+00	U J	mg/kg	N/A	1.55E-01	~~3.50E-01~~ 1.55E-01	
J17YT9									
	K4A871AA	HEXCHROME	1.55E-01 +- 0.00E+00	U J	mg/kg	N/A	1.55E-01	~~3.50E-01~~	
	K4A871AE	HEXCHROME	1.55E-01 +- 0.00E+00	U	mg/kg	N/A	1.55E-01	~~3.50E-01~~	0.0
J18007									
	K4A9R1AA	HEXCHROME	1.55E-01 +- 0.00E+00	U J	mg/kg	N/A	1.55E-01	~~3.50E-01~~	
J18008									
	K4A941AA	HEXCHROME	1.55E-01 +- 0.00E+00	U J	mg/kg	N/A	1.55E-01	~~3.50E-01~~	
J18009									
	K4A9G1AA	HEXCHROME	1.55E-01 +- 0.00E+00	U J	mg/kg	N/A	1.55E-01	~~3.50E-01~~	
J18010									
	K4A961AA	HEXCHROME	1.55E-01 +- 0.00E+00	U J	mg/kg	N/A	1.55E-01	~~3.50E-01~~	
J18011									
	K4A951AA	HEXCHROME	1.55E-01 +- 0.00E+00	U J	mg/kg	N/A	1.55E-01	~~3.50E-01~~	
J18025									
	K4A9L1AA	HEXCHROME	1.55E-01 +- 0.00E+00	U J	mg/kg	N/A	1.55E-01	~~3.50E-01~~	
J18026									
	K4A901AA	HEXCHROME	1.55E-01 +- 0.00E+00	U J	mg/kg	N/A	1.55E-01	~~3.50E-01~~	

No. of Results: 10

SK 5/21/09

5/11/09

---

tAmerica

STLRchSaSum
ry2 V5.2.2
A02

RPD - Relative Percent Difference.

U Qual - Analyzed for but not detected above limiting criteria. Limit criteria is less than the Mdc/Mda or Total Uncertainty/not identified by gamma scan software.

QC Results Summary

Date: 16-Jan-09

TestAmerica TARL

Ordered by Method, Batch No, QC Type,.

Report No. : 40622

SDG No.: J00253

ch Work Order	Parameter	Result +- Uncertainty (2s)	Qual	Units	Tracer Yield	LCS Recovery	Bias	MDC|MDA
CR6								
5474 MATRIX SPIKE, J17YT9								
K4AB71AC	HEXCHROME	8.48E+00 +- 0.00E+00		mg/kg	N/A	63%	-0.4	1.55E-01
5474 LCS,								
K4FQT1AC	HEXCHROME	1.76E+01 +- 0.00E+00		mg/kg	N/A	88%	-0.1	1.55E-01
5474 BLANK QC,								
K4FQT1AA	HEXCHROME	1.55E-01 +- 0.00E+00	U	mg/kg	N/A			1.55E-01

o. of Results: 3

KW
5/17/07

America
TLRchQcSum
r V5.2.2 A2002

Bias = (Result/Expected)-1 as defined by ANSI N13.30.
U Qual - Analyzed for but not detected above limiting criteria. Limit criteria is less than the Mdc/Mda or Total Uncert or not identified by gamma scan software.

Appendix 4

Laboratory Narrative and Chain-of-Custody Documentation

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Certificate of Analysis

Washington Hanford Closure
2620 Fermi Avenue
Richland, WA 99354

January 22, 2009

Attention: Joan Kessner

SAF Number	:	RC-116
Date SDG Closed	:	December 9, 2008
Number of Samples	:	Nine (9)
Sample Type	:	Water
SDG Number	:	J00253
Data Deliverable	:	45-Day / Summary

CASE NARRATIVE

I. Introduction

On December 9, 2008 nine water samples were received at TestAmerica for chemistry analysis. Upon receipt, the samples were assigned the following laboratory ID number to correspond with the Washington Closure Hanford (WCH) specific ID:

WCH ID#	TARL ID#	MATRIX	DATE OF RECEIPT
J18010	K4A96	OTHER SOLID	12/09/08
J18011	K4A95	OTHER SOLID	12/09/08
J18008	K4A94	OTHER SOLID	12/09/08
J18026	K4A90	OTHER SOLID	12/09/08
J18007	K4A9R	OTHER SOLID	12/09/08
J18025	K4A9L	OTHER SOLID	12/09/08
J18009	K4A9G	OTHER SOLID	12/09/08
J17VR1	K4A89	OTHER SOLID	12/09/08
J17YT9	K4A87	OTHER SOLID	12/09/08

II. Sample Receipt

The samples were received in good condition and no anomalies were noted during check-in.

III. Analytical Results/Methodology

The analytical results for this report are presented by laboratory sample ID. Each set of data includes sample identification information, analytical results and the appropriate associated statistical errors. The requested analyses were:

Chemical Analysis
Hexavalent Chromium by EPA method 7196A

IV. Quality Control

The analytical results for each analysis performed includes a minimum of one laboratory control sample (LCS), one method (reagent) blank, and one duplicate sample analysis. Any exceptions have been noted in the "Comments" section.

QC and sample results are reported in the same units.

V. Comments

Chemical Analysis
Hexavalent Chromium by EPA method 7196A:
The matrix spike recovered slightly low at 62.55%. Consequent post digestive matrix spike recovered at 94.06% and the insoluble matrix spike recovered at 93.17%. This implies a possible amount of reducing capacity in the sample, but not enough to exhaust the more copious insoluble matrix spikes.

Except as noted, the LCS, batch blank, sample, sample duplicate (J17YT9), sample matrix spike (J17YT9) and sample matrix spike duplicate (J17YT9) results are within contractual requirements.

I certify that this Certificate of Analysis is in compliance with the SOW, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hard copy data package has been authorized by the Laboratory Manager, or a designee as verified by the following signature.

Reviewed and approved:

Sandra Seger

Sandra Seger
Project Manager

ouseau
ıconformance Memo

TestAmerica

NCM #: 10-13510
M Initiated By: Diana Petty
Date Opened: 12/18/2008
Date Closed:

Classification: Anomaly
Status: GLREVIEW
Production Area: Classical Chemistry
Tests: 7196A
Lot #'s (Sample #'s): J8L090148 (1,2,3,4,5,6,7,8,9), J8L100000 (474),
QC Batches: 8345474,

ıconformance: Other (describe in detail)
Subcategory: Other (explanation required)

Problem Description / Root Cause

e	Date	Description
a Petty	12/18/2008	The MS recovered low at 62.55%. Consequent PDMS recovered at 94.06% and the insoluble MS recovered at 93.17%. This implies a possible amount of reducing capacity in the sample, but not enough to exhaust the more copious insoluble MS.

Corrective Action

e	Date	Corrective Action
a Petty	12/18/2008	report data

Client Notification Summary

ıt	Project Manager	Notified	Response	How Notified	Note

Response	Response Note

Quality Assurance Verification

ied By	Due Date	Status	Notes
		This section not yet completed by QA.	

Approval History

Approved	Approved By	Position

ERICA

45 Days

Project Designation Columbia River Component of the RCBRA - Sediment	Sampling Location 314-4 SD		SAF No. RC-116
Ice Chest No.	Field Logbook No. EL-1015-1	COA BESCRC0535	Method of Shipment GROUND TRANSPORT
Shipped To TestAmerica Incorporated, Richland	Offsite Property No. N/A		Bill of Lading/Air Bill No. N/A

POSSIBLE SAMPLE HAZARDS/REMARKS

J8L090148
J00253

Special Handling and/or Storage

Due 01-23-09

Preservation	Cool 4C									
Type of Container	G/P									
No. of Container(s)	1									
Volume	15g									
SAMPLE ANALYSIS	Chromium Hex - Tria									

Sample No.	Matrix *	Sample Date	Sample Time							
J18010	OTHER SOLID	12/08/08	1450	X			K4896			

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
[illegible]	12-08-08 / 1630	Ref C	12-08-08 1630
Ref C	12/09/08 0520	Dale Holbery LSI	12/9/08 0610
Dale Holbery LSI	12/9/08 0805	[illegible] Clark	12/09/08 0805

SPECIAL INSTRUCTIONS

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

24

000016

45 Days

Project Designation Columbia River Component of the RCBRA - Sediment	Sampling Location B14-5 SD		SAF No. RC-116
Ice Chest No.	Field Logbook No. EL-1611-1	COA BESCRC0620	Method of Shipment GROUND TRANSPORT
Shipped To TestAmerica Incorporated, Richland	Offsite Property No. N/A		Bill of Lading/Air Bill No. N/A

POSSIBLE SAMPLE HAZARDS/REMARKS

J8L090148
J00253
Due 01/2309

Special Handling and/or Storage

Preservation	Cool 4C
Type of Container	GP
No. of Container(s)	1
Volume	15g

SAMPLE ANALYSIS

[illegible]

Sample No.	Matrix *	Sample Date	Sample Time		
J16011	OTHER SOLID	12/08/09	1505	X	K4895

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
	12/08/09 1630		12/08/09 1630
	12/9/09 0720		12/9/09 0720
	12/9/09 0905		12909 0905

SPECIAL INSTRUCTIONS

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

45 Days

Project Designation Columbia River Component of the RCBRA - Sediment	Sampling Location BS14 / SD		SAF No. RC-116
Ice Chest No.	Field Logbook No. EL-1634-1	COA RESRRC6520	Method of Shipment GROUND TRANSPORT
Shipped To TestAmerica Incorporated, Richland	Offsite Property No. N/A		Bill of Lading/Air Bill No. N/A

POSSIBLE SAMPLE HAZARDS/REMARKS

JBL090148
J00353
Due 01-23-09

Special Handling and/or Storage

			Preservation	Cool 4C										
			Type of Container	GP										
			No. of Container(s)	1										
			Volume	1kg										
SAMPLE ANALYSIS				Thorium Iso - Th										
Sample No.	Matrix *	Sample Date	Sample Time											
J1BC03	OTHER SOLID	12/08/08	1335	X				K449	4					

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time 12-08-08/1630	Received By/Stored In Rat C	Date/Time 12-8-08/1630
Relinquished By/Removed From Rat C	Date/Time 12/9/08 0720	Received By/Stored In Dan Heikelberg	Date/Time 12/9/08 0720
Relinquished By/Removed From Dan Heikelberg	Date/Time 12/9/08 ~~0720~~ 0905	Received By/Stored In S. Smith	Date/Time 12/9/08 0905
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time

SPECIAL INSTRUCTIONS

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

45 Days

Project Designation Columbia River Component of the RCBRA - Sediment	**Sampling Location** BIS - } SD		**SAF No.** RC-105
Ice Chest No.	**Field Logbook No.** EL-1631-1	**COA** BFSCRU6520	**Method of Shipment** GROUND TRANSPORT
Shipped To Test America Incorporated, Richland	**Offsite Property No.** N/A		**Bill of Lading/Air Bill No.** N/A

POSSIBLE SAMPLE HAZARDS/REMARKS

J8L090148
J00253
Due 6/23/09

Special Handling and/or Storage

Preservation	Cool 4C									
Type of Container	GP									
No. of Container(s)	1									
Volume	15g									
SAMPLE ANALYSIS	Chromium Hex - 7196									

Sample No.	Matrix *	Sample Date	Sample Time										
J18028	OTHER SOLID	12/8/08	1535	X				K9A9 0					

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Kim Berg	12/8/08 1700	Rob C	12/8/08 1700
Rob C	12/9/08 0820	Dante Velbers	12/9/08 0820
Dante Velbers	12/9/08 0905	SSn	12/9/08 0905

SPECIAL INSTRUCTIONS

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-C11

45 Days

Project Designation
Columbia River Component of the RCBRA - Sediment

Sampling Location
IS14- 1 SD

SAF No.
RC-116

Ice Chest No.

Field Logbook No.
EL-1531-3

COA
BESCRC6325

Method of Shipment
GROUND TRANSPORT

Shipped To
TestAmerica Incorporated, Richland

Offsite Property No.
N/A

Bill of Lading/Air Bill No.
N/A

POSSIBLE SAMPLE HAZARDS/REMARKS

J8L090148
J00253

Special Handling and/or Storage

Due 01-23-09

Preservation	Cool 4C									
Type of Container	G/P									
No. of Container(s)	1									
Volume	1Lg									
SAMPLE ANALYSIS	Chromium Hex - 7196									

Sample No.	Matrix *	Sample Date	Sample Time										
J15CC7	OTHER SOLID	12/08/08	1415	X				K4A9R					

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
	12/08/08 1430	Ref. C	12/08/08 1630
Ref. C	12/9/08 0520	Danelle Dalberg	12/9/08 0520
Danelle Dalberg	12/9/08 0905	Smith	12/09/08 0905

SPECIAL INSTRUCTIONS

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION — Received By — Title — Date/Time

FINAL SAMPLE DISPOSITION — Disposal Method — Disposed By — Date/Time

WCH-EE-01

45 Days

Project Designation Columbia River Component of the RCBRA - Sediment	**Sampling Location** B545- 2 SD		**SAF No.** RC-116
Ice Chest No.	**Field Logbook No.** EL-1631-1	**COA** BESCRC6530	**Method of Shipment** GROUND TRANSPORT
Shipped To TestAmerica Incorporated, Richland	**Offsite Property No.** N/A		**Bill of Lading/Air Bill No.** N/A

POSSIBLE SAMPLE HAZARDS/REMARKS

J8L090148
J00253
Due 01-23-09

Special Handling and/or Storage

Preservation	Cool 4C
Type of Container	G/P
No. of Container(s)	1
Volume	15g

SAMPLE ANALYSIS

Chromium Sr-? ??

Sample No.	Matrix *	Sample Date	Sample Time		
J15025	OTHER SOLID	12/8/08	1950	X	K4A9L

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
12/8/08	1700	Ref. C	12/8/08 1700
Ref. C	12/9/08 0920		12/9/08 0920
	12/9/08 0905		12/9/08 0905

SPECIAL INSTRUCTIONS

Matrix *

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Project Designation Columbia River Component of the RCBRA - Sediment	Sampling Location ISH- 3 SD		SAF No. RC-116	45 Days
Ice Chest No.	Field Logbook No. EL-1576-1	COA BESCRCN29	Method of Shipment GROUND TRANSPORT	
Shipped To TestAmerica Incorporated, Richland	Offsite Property No. N/A		Bill of Lading/Air Bill No. N/A	

POSSIBLE SAMPLE HAZARDS/REMARKS

TBL090149
J00253
Due 01-23-09

Special Handling and/or Storage

Preservation	Cool 4C								
Type of Container	GP								
No. of Container(s)	1								
Volume	15g								
SAMPLE ANALYSIS	Chromium Hex - 7196								

Sample No.	Matrix *	Sample Date	Sample Time						
J1 9009	OTHER SOLID	12/08/08	1440	X			K4B9G		

CHAIN OF POSSESSION	Date/Time	Sign/Print Names	Date/Time
Relinquished By/Removed From	12-08-08 / 1630	Received By/Stored In Pat C	12-08-08 1630
Relinquished By/Removed From Pat C	12/9/08 0820	Received By/Stored In Dale Sotberg	12/9/08 0820
Relinquished By/Removed From Dale Sotberg	12/9/08 0905	Received By/Stored In Heather Smith	12/9/08 0905
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time

SPECIAL INSTRUCTIONS

Matrix *

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

45 Days

Project Designation Columbia River Component of the RCBRA - Sediment	Sampling Location [illegible]	SAF No. BC-116
Ice Chest No.	Field Logbook No. EL-1630-4	COA BESCR0650
Method of Shipment FED EX		
Shipped To TestAmerica Incorporated, Richland	Offsite Property No. N/A	Bill of Lading/Air Bill No.

POSSIBLE SAMPLE HAZARDS/REMARKS

J8L090148
J00353
Due 012309

Special Handling and/or Storage

			Preservation	Cool 4C									
			Type of Container	G/P									
			No. of Container(s)	1									
			Volume	15g									
SAMPLE ANALYSIS				Dioxins/Fur - 1613									
Sample No.	Matrix *	Sample Date	Sample Time										
J17VR1	OTHER SOLID	12/03/08	1345	X				K4A89					

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
	12/08/08 1630	Ref C	12/08/08 16:30
Ref. C	12/9/08 0820		12/9/08 0820
	12/9/08 0905		12/9/08 0905

SPECIAL INSTRUCTIONS

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION — Received By — Title — Date/Time

FINAL SAMPLE DISPOSITION — Disposal Method — Disposed By — Date/Time

WCH-EE-011

45 Days

Project Designation Columbia River Component of the RCBRA - Sediment	Sampling Location HRSTD 2 SD	SAF No. RC-116
Ice Chest No.	Field Logbook No. EL 1621-1	COA BESCRC6520
		Method of Shipment GROUND TRANSPORT
Shipped To TestAmerica Incorporated, Richland	Offsite Property No. N/A	Bill of Lading/Air Bill No. N/A

POSSIBLE SAMPLE HAZARDS/REMARKS

J8L090148
J00253
Due 01/23/09

Special Handling and/or Storage

Preservation	Cool 4C
Type of Container	G/P
No. of Container(s)	1
Volume	15g
SAMPLE ANALYSIS	Organics [illegible]

Sample No.	Matrix *	Sample Date	Sample Time		
J17YT8	OTHER SOLID	12/8/08	1110	X	K9A87

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
12/8/08 1540			12/8/08 1540
	12/8/08 1400	Smith	12/8/08
	12/8/08 1458	Ref. C 12/8/08	1458
Ref. C 12/9/08	0820		12/9/08 0820
	12/9/08 0905		12/09/08 0905

SPECIAL INSTRUCTIONS

12/10/08 ACC

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION — Received By — Title — Date/Time

FINAL SAMPLE DISPOSITION — Disposal Method — Disposed By — Date/Time

WCH-EE-011

Appendix 5

Data Validation Supporting Documentation

GENERAL CHEMISTRY ANALYSIS DATA VALIDATION CHECKLIST

VALIDATION LEVEL:	A	B	[✓ C]	D	E
PROJECT:	RCBRA		DATA PACKAGE:	J00253	
VALIDATOR:	ELR	LAB: TAL		DATE:	5/17/01
			SDG:	J00253	
ANALYSES PERFORMED					
Anions/IC	TOC	TOX	TPH-418.1	Oil and Grease	Alkalinity
Ammonia	BOD/COD	Chloride	[✓ Chromium-VI]	pH	NO_3/NO_2
Sulfate	TDS	TKN	Phosphate		

SAMPLES/MATRIX
J17VR1 J174T9 J18007 J18008 J18009
J18010 J18011 J18025 J18021
solid

1. DATA PACKAGE COMPLETENESS AND CASE NARRATIVE

Technical verification documentation present? .... Yes [✓ No] N/A

Comments:

2. INSTRUMENT PERFORMANCE AND CALIBRATIONS (Levels D and E)

Initial calibrations performed on all instruments? .... Yes No [✓ N/A]

Initial calibrations acceptable? .... Yes No [✓ N/A]

ICV and CCV checks performed on all instruments? .... Yes No [✓ N/A]

ICV and CCV checks acceptable? .... Yes No [✓ N/A]

Standards traceable? .... Yes No [✓ N/A]

Standards expired? .... Yes No [✓ N/A]

Calculation check acceptable? .... Yes No [✓ N/A]

Comments:

GENERAL CHEMISTRY ANALYSIS DATA VALIDATION CHECKLIST

3. BLANKS (Levels B, C, D, and E)

ICB and CCB checks performed for all applicable analyses? (Levels D, E)........ Yes No [✓ N/A]

ICB and CCB results acceptable? (Levels D, E)........ Yes No [✓ N/A]

Laboratory blanks analyzed?........ [✓ Yes] No N/A

Laboratory blank results acceptable?........ [✓ Yes] No N/A

Field blanks analyzed? (Levels C, D, E)........ Yes [✓ No] N/A

Field blank results acceptable? (Levels C, D, E)........ Yes No [✓ N/A]

Transcription/calculation errors? (Levels D, E)........ Yes No [✓ N/A]

Comments: no FB.

4. ACCURACY (Levels C, D, and E)

Spike samples analyzed?........ [✓ Yes] No N/A

Spike recoveries acceptable?........ Yes [✓ No] N/A

Sike standards NIST traceable? (Levels D, E)........ Yes No [✓ N/A]

Spike standards expired? (Levels D, E)........ Yes No [✓ N/A]

LCS/BSS samples analyzed?........ [✓ Yes] No N/A

LCS/BSS results acceptable?........ [✓ Yes] No N/A

Standards traceable? (Levels D, E)........ Yes No [✓ N/A]

Standards expired? (Levels D, E)........ Yes No [✓ N/A]

Transcription/calculation errors? (Levels D, E)........ Yes No [✓ N/A]

Performance audit sample(s) analyzed?........ Yes [✓ No] N/A

Performance audit sample results acceptable?........ Yes No [✓ N/A]

Comments: MS 637 - I all no PA

GENERAL CHEMISTRY ANALYSIS DATA VALIDATION CHECKLIST

5. PRECISION (Levels C, D, and E)

Duplicate RPD values acceptable? .... [✓ Yes] No N/A

Duplicate results acceptable? .... [✓ Yes] No N/A

MS/MSD standards NIST traceable? (Levels D, E) .... Yes No [✓ N/A]

MS/MSD standards expired? (Levels D, E) .... Yes No [✓ N/A]

Field duplicate RPD values acceptable? .... [✓ Yes] No ~~[✓ N/A]~~

Field split RPD values acceptable? .... Yes No [✓ N/A]

Transcription/calculation errors? (Levels D, E) .... Yes No [✓ N/A]

Comments: ____________________

6. HOLDING TIMES (all levels)

Samples properly preserved? .... [✓ Yes] No N/A

Sample holding times acceptable? .... Yes [✓ No] N/A

Comments: <2x limit = J all

GENERAL CHEMISTRY ANALYSIS DATA VALIDATION CHECKLIST

7. RESULT QUANTITATION AND DETECTION LIMITS (all levels)

Results reported for all requested analyses? .... [✓ Yes] No N/A

Results supported in the raw data? (Levels D, E) .... Yes No [✓ N/A]

Samples properly prepared? (Levels D, E) .... Yes No [✓ N/A]

Detection limits meet RDL? .... [✓ Yes] No N/A

Transcription/calculation errors? (Levels D, E) .... Yes No [✓ N/A]

Comments:

Appendix 6

Additional Documentation Requested by Client

DUPLICATE RESULTS

Lab Name:	TestAmerica	**SDG:**	J00253	**Collection Date:**	12/8/2008 10:20:00 AM
Lot-Sample No.:	J8L090148-9	**Report No.:**	40622	**Received Date:**	12/9/2008 9:05:00 AM
Client Sample ID:	J17YT9	**COC No.:**	RC-116-509	**Matrix:**	OTHER SOLI OTHERSOLID

Parameter	Result, Orig Rst	Qual	Count Error (1 σ)	Total Uncert (1 σ)	MDC|MDA, Action Lev	Rpt Unit, CRDL	Yield	Tot/MDC, Rst/TotUcert	Analysis, Prep Date	Total Sa Size	Aliquot Size	Primary Detector
Batch: 8345474	7196_CR6			Work Order: K4A871AE		Report DB ID: K4A871ER			Orig Sa DB ID: 9K4A871C			
HEXCHROME	1.55E-01	U		0.0E+00	1.55E-01	mg/kg	N/A	[1.]	12/9/08		2.5	
	1.55E-01	U	RPD 0.0			~~3.50E-01~~		N/A			G	

1.55E-01
SKS 12/10/08

No. of Results: 1 Comments:

TestAmerica RPD - Relative Percent Difference.

rptSTLRchDupV5.2 MDC|MDA,Lc - Detection, Decision Level based on instrument background or blank, adjusted by the sample Efficiency, Yield, and Volume.

2.A2002 U Qual - Analyzed for but not detected above limiting criteria. Limit criteria is less than the Mdc/Mda or Total Uncert or not identified by gamma scan software.

BLANK RESULTS

Lab Name: TestAmerica
Matrix: OTHER SOLID

SDG: JK0253
Report No. : 40622

Parameter	Result	Qual	Count Error (1 s)	Total Uncert (2 s)	MDC MDA	Rpt Unit, CRDL	Yield	Res/MDC, Res/TotUcert	Analysis, Prep Date	Total Sa Size	Aliquot Size	Primary Detector
Batch: 8345474	1198_CR6			Work Order: K4FOT1AA		Report DB ID: K4FOT1AB						
HEXCHROME	1.55E-01	U		0.0E+00	1.55E-01	mg/kg	N/A	(-)	12/9/08		25	
						~~3.50E-01~~ 1.55E-01 SKS 1/21/09		N/A			G	

No. of Results: 1 Comments:

TestAmerica MDC|MDA,Lc - Detection, Decision Level based on Instrument background or blank, adjusted by the sample Efficiency, Yield, and Volume.

rptSTLRchBlank
V5.2.2 A2002

U Qual - Analyzed for but not detected above limiting criteria. Limit criteria is less than the Mdc/Mda or Total Uncert or not identified by gamma scan software.

LCS RESULTS

Lab Name: TestAmerica

Matrix: OTHER SOLID

SDG: J80253

Report No. : 40622

Parameter	Result	Qual	Count Error (2 σ)	Total Uncert (2 σ)	MDC|MDA	Report Unit	Yield	Expected	Expected Uncert	Recovery, Bias	Analysis, Prep Date	Aliquot Size	Primary Detector
Batch: 8345474	T196_CR6			Work Order: KAFQT1AC			Report DB ID: KAFQT1AS						
HEXCHROME	1.76E+01			0.0E+00	1.55E-01	mg/kg	N/A	2.00E+01		88%	12/9/08	25	
							Rec Limits:	80	120	-0.1		G	

No. of Results: 1 Comments:

TestAmerica Bias - (Result/Expected)-1 as defined by ANSI N13.30.

rptSTLRchLcs
V5.2.2 A2002

MATRIX SPIKE RESULTS

Lab Name: TestAmerica

SDG: J00253

Lot-Sample No.: J8L090148-9, J17YT9

Report No. : 40622

Matrix: OTHER SOLI OTHERSOLID

Parameter	Spike Result, Orig Re.	Qual	Count Error (2 σ)	Total Uncert (2 σ)	MDC | MDA	Rpt Unit, CRDL	Yield	Recovery	Expected, Uncert	Analysis, Prep Date	Aliquot Size	Anlys Method, Primary Detector
Batch: 8345474	Work Order: K4A8T1AC			Report DB ID: K4A8T1CW			Orig Sa DB ID:	BK4A8T10				
HEXCHROME	8.48E+00 1.55E-01			0.0E+00	1.55E-01	mg/kg	N/A	62.54%	1.35E+01	12/9/08	2.5 G	7196_CR6

Number of Results: 1

Comments:

TestAmerica RER - Replicate Error Ratio = |S-D|/[sqrt(sq(TPUs)+sq(TPUd))] as defined by ICPT BOA.

rptSTLRchMs Bias - (Result/Expected)-1 as defined by ANSI N13.30.

V5.2.3 A2002

F.1.2.2 SDG J00322

SAF-RC-116
Columbia River Component of the RCBRA – Sediment
FINAL VALIDATION PACKAGE

COMPLETE COPY OF VALIDATION PACKAGE TO:

Kathy Wendt H4-21

COMMENTS:

SDG J00322 **SAF-RC-116**

Date: 18 May 2009
To: Washington Closure Hanford Inc. (technical representative)
From: ELR Consulting
Project: Columbia River Component of the RCBRA – Sediment
Subject: Wet Chemistry - Data Package No. J00322-TAL

INTRODUCTION

This memo presents the results of data validation on Data Package No. J00322 prepared by TestAmerica Laboratory Inc. (TAL). A list of samples validated along with the analyses reported and the method of analysis is provided in the following table.

Sample ID	Sample Date	Media	Validation	Analyte
J17V97	2/3/09	Solid	C	See note 1
J17V98	2/3/09	Solid	C	See note 1
J17V99	2/3/09	Solid	C	See note 1
J17VB0	2/3/09	Solid	C	See note 1
J17VB1	2/3/09	Solid	C	See note 1
J17VB2	2/3/09	Solid	C	See note 1
J17VR2	2/3/09	Solid	C	See note 1
J17VR7	2/3/09	Solid	C	See note 1
J181B1	2/3/09	Solid	C	See note 1
J181B4	2/3/09	Solid	C	See note 1
J181B5	2/3/09	Solid	C	See note 1
J181B6	2/3/09	Solid	C	See note 1
J181B7	2/3/09	Solid	C	See note 1
J181B8	2/3/09	Solid	C	See note 1
J181B9	2/3/09	Solid	C	See note 1

1 – Chromium VI by 7196A.

Data validation was conducted in accordance with the Washington Closure Hanford (WCH) validation statement of work and the Remedial Investigation Work Plan for Hanford Site Releases to the Columbia River (DOE/RL-2008-11, Rev. 0, September 2008). Appendices 1 through 6 provide the following information as indicated below:

Appendix 1. Glossary of Data Reporting Qualifiers
Appendix 2. Summary of Data Qualification
Appendix 3. Annotated Laboratory Reports
Appendix 4. Laboratory Narrative and Chain-of-Custody Documentation
Appendix 5. Data Validation Supporting Documentation
Appendix 6. Additional Documentation Requested by Client

DATA QUALITY PARAMETERS

Holding Times

Analytical holding times for metals are assessed to ascertain whether the holding time requirements were met by the laboratory. The holding time requirements are as

follows: Soil samples must be analyzed within 24 hours for chromium VI.

If holding times are exceeded, but not by greater than two times the limit, all associated sample results are qualified as estimates and flagged "J" for detects and "UJ" for non-detects. If holding times are exceeded by greater than two times the limit, all associated detectable sample results are qualified as estimates and flagged "J" and all non-detects are rejected and flagged "UR".

Due to the holding time being exceeded by less than twice the limit, all chromium VI results were qualified as estimates and flagged "J".

- **Method Blanks**

Method Blanks

Method blank analyses are performed to determine the extent of laboratory contamination introduced through sampling, sample preparation and analysis. At least one acceptable method blank analysis must be conducted for every 20 samples. No contaminants should be present in the method blank. All blank results must fall below the contract required detection limit (CRQL) to be acceptable.

All method blank results were acceptable.

Field (Equipment) Blank

No field blanks were submitted for analysis.

- **Accuracy**

Matrix Spike and Laboratory Control Sample

Matrix spike (MS) and laboratory control sample (LCS) analyses are used to assess the analytical accuracy of the reported data. The matrix spike is used to assess the effect of the matrix on the ability to accurately quantify sample concentrations. Recoveries must fall within the range of 70% to 130%. Samples with a recovery of less than 30% and a sample result below the IDL are rejected and flagged "UR". Samples with a recovery of 30% to 69% and a sample result less than the IDL are qualified "UJ". Samples with a recovery of greater than 130% or less than 70% and a sample result greater than the IDL are qualified as estimates and flagged "J". Finally, for samples with a recovery greater than 130% and a sample result less than the IDL, no qualification is required.

Due to a matrix spike recovery outside QC limits (37%), all chromium VI results were qualified as estimates and flagged "J".

All other accuracy results were acceptable.

- **Precision**

Laboratory Duplicate Samples

Analytical precision is expressed by the relative percent differences (RPD) between the recoveries of matrix spike duplicate (MSD) analyses performed on a sample in the analytical batch. Precision may alternatively be assessed using unspiked duplicate analyses performed on a sample in the analytical batch. If both sample and replicate activities (concentrations) are greater than five times the CRDL and the RPD is less than 30%, no qualification is required. If either activity (concentration) is less than five times the CRDL, the RPD control limit is less than or equal to two times the CRDL. If the RPD is outside the applicable control limit, associated results are qualified as estimated detects or estimated non-detects.

All laboratory duplicate results were acceptable.

Field Duplicate

One set of field duplicate samples (J17VR2/J18181) were submitted for analysis. Laboratory duplicates are compared using the same criteria as for laboratory duplicates. All field duplicate results were acceptable.

- **Analytical Detection Levels**

Reported analytical detection levels are compared against the required quantitation limits (RQLs) to ensure that laboratory detection levels meet the required criteria. All analytes met the RQL.

- **Completeness**

Data package J00322 was submitted for validation and verified for completeness. Completeness is based on the percentage of data determined to be valid (i.e., not rejected). The completion percentage was 100%.

MAJOR DEFICIENCIES

None found.

MINOR DEFICIENCIES

The following minor deficiencies were noted:

- Due to a matrix spike recovery outside QC limits (37%), all chromium VI results were qualified as estimates and flagged "J".

- Due to the holding time being exceeded by less than twice the limit, all chromium VI results were qualified as estimates and flagged "J".

Data flagged "J" indicates that the associated concentration is an estimate, but under the WCH statement of work the data may be usable for decision-making purposes. All other validated results are considered accurate within the standard error associated with the methods.

REFERENCES

Washington Closure Hanford Contract #S00W307A00 (March 2008), *Data Validation Services.*

DOE/RL-2008-11, Rev.0, *Remedial Investigation Work Plan for Hanford Site Releases to the Columbia River*, September 2008.

Appendix 1

Glossary of Data Reporting Qualifiers

Qualifiers which may be applied by data validators in compliance with WCH validation SOW are as follows:

U - Indicates the compound or analyte was analyzed for and not detected in the sample. The value reported is the sample quantitation limit corrected for sample dilution and moisture content by the laboratory.

UJ - Indicates the compound or analyte was analyzed for and not detected in the sample. Due to a minor QC deficiency identified during the data validation, the associated quantitation limit is an estimate.

J - Indicates the compound or analyte was analyzed for and detected. Due to a minor QC deficiency identified during the data validation, the associated concentration is an estimate, but the data are usable for decision-making purposes.

BJ - Applied to inorganic analyses only. Indicates the analyte concentration was greater than the IDL but less than the CRDL and is considered an estimated value.

R - Indicates the compound or analyte was analyzed for, detected, and due to an identified major QC deficiency, the data are unusable.

UR - Indicates the compound or analyte was analyzed for and not detected in the sample. Additionally, the data is unusable due to an identified major QC deficiency.

NJ - Indicates presumptive evidence of a compound at an estimated value. The data may not be valid for some specific applications (i.e., usable for decision-making purposes).

N - Indicates presumptive evidence of a compound. The data may not be valid for some specific applications (i.e., usable for decision-making purposes).

Appendix 2

Summary of Data Qualification

CHROMIUM VI DATA QUALIFICATION SUMMARY*

SDG: J00322	**REVIEWER:** ELR	**Project: RCBRA**	**PAGE 1 OF 1**
COMPOUND	QUALIFIER	SAMPLES AFFECTED	REASON
All	J	All	MS recovery
All	J	All	Hold time

* - The Qualified Data Summary Table includes laboratory applied "U" qualifiers not specifically identified here. The laboratory applied "U" qualifiers are included to minimize misinterpretation of results contained in the table.

Appendix 3

Annotated Laboratory Reports

Sample Results Summary

TestAmerica TARL

Ordered by Method, Batch No., Client Sample ID.

Date: 23-Mar-09

Report No. : 41197

SDG No: J00322

Batch	Client Id Work Order	Parameter	Result +- Uncertainty (2s)	Qual	Units	Tracer Yield	MDC or MDA	CRDL	RPD
9035497 7196_CR6									
	J17V97								
	K6N561AA	HEXCHROME	1.55E-01 +- 0.00E+00	U J	mg/kg	N/A	1.55E-01	1.55E-01	
	J17V98								
	K6N581AA	HEXCHROME	1.55E-01 +- 0.00E+00	U J	mg/kg	N/A	1.55E-01	1.55E-01	
	J17V99								
	K6N6C1AA	HEXCHROME	1.55E-01 +- 0.00E+00	U J	mg/kg	N/A	1.55E-01	1.55E-01	
	J17VB0								
	K6N6E1AA	HEXCHROME	1.55E-01 +- 0.00E+00	U J	mg/kg	N/A	1.55E-01	1.55E-01	
	J17VB1								
	K6N591AA	HEXCHROME	1.55E-01 +- 0.00E+00	U J	mg/kg	N/A	1.55E-01	1.55E-01	
	J17VB2								
	K6N5X1AA	HEXCHROME	1.55E-01 +- 0.00E+00	U J	mg/kg	N/A	1.55E-01	1.55E-01	
	J17VR2								
	K6N6K1AA	HEXCHROME	1.55E-01 +- 0.00E+00	U J	mg/kg	N/A	1.55E-01	1.55E-01	
	J17VR7								
	K6N531AA	HEXCHROME	1.55E-01 +- 0.00E+00	U J	mg/kg	N/A	1.55E-01	1.55E-01	
	J181B1								
	K6N6G1AA	HEXCHROME	1.55E-01 +- 0.00E+00	U J	mg/kg	N/A	1.55E-01	1.55E-01	
	J181B4								
	K6N5V1AA	HEXCHROME	1.55E-01 +- 0.00E+00	U J	mg/kg	N/A	1.55E-01	1.55E-01	
	K6N5V1AB	HEXCHROME	1.55E-01 +- 0.00E+00	U	mg/kg	N/A	1.55E-01	1.55E-01 4rs 3/23/09	0.0
	J181B5								
	K6N6V1AA	HEXCHROME	1.55E-01 +- 0.00E+00	U J	mg/kg	N/A	1.55E-01	1.55E-01	
	J181B6								
	K6N611AA	HEXCHROME	1.55E-01 +- 0.00E+00	U J	mg/kg	N/A	1.55E-01	1.55E-01	
	J181B7								
	K6N6L1AA	HEXCHROME	1.55E-01 +- 0.00E+00	U J	mg/kg	N/A	1.55E-01	1.55E-01	
	J181B8								
	K6N6P1AA	HEXCHROME	1.55E-01 +- 0.00E+00	U J	mg/kg	N/A	1.55E-01	1.55E-01	
	J181B9								
	K6N6D1AA	HEXCHROME	1.55E-01 +- 0.00E+00	U J	mg/kg	N/A	1.55E-01	1.55E-01	

No. of Results: 15

K 5/12/09

TestAmerica

rptSTLRchSaSummary2 V5.2.2 A2002

RPD - Relative Percent Difference.

U Qual - Analyzed for but not detected above limiting criteria. Limit criteria is less than the Mdc/Mda or Total Uncert or not identified by gamma scan software.

QC Results Summary

Date: 23-Mar-09

TestAmerica TARL

Ordered by Method, Batch No., QC Type,.

Report No. : 41197

SDG No.: J00322

Batch Work Order	Parameter	Result +- Uncertainty (2s)	Qual	Units	Tracer Yield	LCS Recovery	Bias	MDC|MDA
7196_CR6								
9035497 BLANK QC,								
K6P931AA	HEXCHROME	1.55E-01 +- 0.00E+00	U	mg/kg	N/A			1.55E-01
9035497 LCS,								
K6P931AB	HEXCHROME	1.85E+01 +- 0.00E+00		mg/kg	N/A	92%	-0.1	1.55E-01
9035497 MATRIX SPIKE, J18184								
K6N5V1AC	HEXCHROME	7.16E+00 +- 0.00E+00		mg/kg	N/A	37%	-0.6	1.55E-01

No. of Results: 3

5/17/09

Bias - (Result/Expected)-1 as defined by ANSI N13.30.

U Qual - Analyzed for but not detected above limiting criteria. Limit criteria is less than the Mdc/Mda or Total Uncert or not identified by gamma scan software.

Appendix 4

Laboratory Narrative and Chain-of-Custody Documentation

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Certificate of Analysis

Washington Hanford Closure
2620 Fermi Avenue
Richland, WA 99354

March 23, 2009

Attention: Joan Kessner

SAF Number : RC-116
Date SDG Closed : February 4, 2009
Number of Samples : Fifteen (15)
Sample Type : Other Solid
SDG Number : J00322
Data Deliverable : 45-Day / Summary

CASE NARRATIVE

I. Introduction

On February 4, 2009 fifteen other solid samples were received at TestAmerica for chemistry analysis. Upon receipt, the samples were assigned the following laboratory ID number to correspond with the Washington Closure Hanford (WCH) specific ID:

WCH ID#	TARL ID#	MATRIX	DATE OF RECEIPT
J181B6	K6N6J	OTHER SOLID	2/04/09
J181B5	K6N6V	OTHER SOLID	2/04/09
J181B9	K6N6Q	OTHER SOLID	2/04/09
J181B8	K6N6P	OTHER SOLID	2/04/09
J181B7	K6N6L	OTHER SOLID	2/04/09
J17VR2	K6N6K	OTHER SOLID	2/04/09
J18181	K6N6G	OTHER SOLID	2/04/09
J17VB0	K6N6E	OTHER SOLID	2/04/09
J17V99	K6N6C	OTHER SOLID	2/04/09
J17VB1	K6N59	OTHER SOLID	2/04/09
J17V98	K6N58	OTHER SOLID	2/04/09
J17V97	K6N55	OTHER SOLID	2/04/09

J17VR7	K6N53	OTHER SOLID	2/04/09
J17VB2	K6N5X	OTHER SOLID	2/04/09
J181B4	K6N5V	OTHER SOLID	2/04/09

II. Sample Receipt

The sample was received in good condition and no anomalies were noted during check-in.

III. Analytical Results/Methodology

The analytical results for this report are presented by laboratory sample ID. Each set of data includes sample identification information, analytical results and the appropriate associated statistical errors. The requested analyses were:

Chemical Analysis
Hexavalent Chromium by EPA method 7196A

IV. Quality Control

The analytical results for each analysis performed includes a minimum of one laboratory control sample (LCS), one method (reagent) blank, and one duplicate sample analysis. Any exceptions have been noted in the "Comments" section.

QC and sample results are reported in the same units.

V. Comments

Chemical Analysis

Hexavalent Chromium by EPA method 7196A:
The matrix spike recovered low at 38.75%. The post digestive matrix spike recovered at 93.05% and the insoluble matrix spike recovered at 86.07%. This implies a possible amount of reducing capacity in the sample, but not enough to exhaust the more copious insoluble matrix spike. Except as noted, the LCS, batch blank, sample, sample duplicate (J181B4) and sample matrix spike (J181B4) results are within contractual requirements.

I certify that this Certificate of Analysis is in compliance with the SOW, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hard copy data package has been authorized by the Laboratory Manager, or a designee as verified by the following signature.

Reviewed and approved:

Sandra Seger
Project Manager

Clouseau
Nonconformance Memo

TestAmerica

NCM #:	10-13802		
NCM Initiated By:	LIEM DINH	Classification:	Anomaly
Date Opened:	02/05/2009	Status:	PMREVIEW
Date Closed:		Production Area:	Classical Chemistry
		Tests:	7196A
		Lot #s (Sample #'s)	J9B040000 (497), J9B040135 (1,10,11,12,13,14,15,2,3,4,5, 6,7,8,9),
		QC Batches:	9035497,
Nonconformance:	Other (describe in detail)		
Subcategory:	Other (explanation required)		

Problem Description / Root Cause

Name	Date	Description
LIEM DINH	02/05/2009	The MS recovered low at 38.75%. The PDMS recovered at 93.05% and the insoluble MS recovered at 86.07%. This implies a possible small amount of reducing capacity in the sample, but not enough to exhaust the more copious insoluble MS.
Liem Dinh	02/05/2009	The MS recovered low at 38.75%. The PDMS recovered at 93.05% and the insoluble MS recovered at 86.07%. This implies a possible small amount of reducing capacity in the sample, but not enough to exhaust the more copious insoluble MS.

Corrective Action

Name	Date	Corrective Action
LIEM DINH	02/05/2009	Report Data
Liem Dinh	02/05/2009	Report Data

Client Notification Summary

Client **Project Manager** **Notified** **Response** **How Notified** **Note**

Response **Response Note**

Quality Assurance Verification

Verified By	Due Date	Status	Notes
		This section not yet completed by QA.	

Approval History

Date Approved	Approved By	Position

Date Printed 2/5/2009

000015

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-116-764 Page 1 of 1

Collector: [illegible]

Company Contact: JOAN KESSNER

Telephone No.: 375-4688

Project Coordinator: WEISS, RL

Price Code: 9K

Data Turnaround: 45 Days

Project Designation: Columbia River Component of the RCBRA - Sediment

Sampling Location: MDBR-5 SD

SAF No.: RC-116

Ice Chest No.:

Field Logbook No.: EL-1651-1

COA: BESCRC6531

Method of Shipment: GROUND TRANSPORT

Shipped To: TestAmerica Incorporated, Richland

Offsite Property No.: N/A

Bill of Lading/Air Bill No.: N/A

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

J9B040135
J00322
Due 032009
3/23/09

SDS 2/4/09

SAMPLE ANALYSIS

Preservation	Cool 4C
Type of Container	GP
No. of Container(s)	1
Volume	15g
SAMPLE ANALYSIS	Gamma Spec

Sample No.	Matrix *	Sample Date	Sample Time		
J18136	OTHER SOLID	2/3/09	1410	X	KleN4-1

CHAIN OF POSSESSION

Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
[illegible]	2.5.09 /1630	[illegible]	2.5.09 /1630
[illegible]	2/4/09 0840	D. Hesselberg	2/4/09 0846
D. Hesselberg	2/4/09 0900	[illegible] Smith	020409 0900

SPECIAL INSTRUCTIONS

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION — Received By: Title: Date/Time:

FINAL SAMPLE DISPOSITION — Disposal Method: Disposed By: Date/Time:

WCH-EE-011

Collector L Sinderson	Company Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator WEISS, RL	Price Code 9K
Project Designation Columbia River Component of the RCBRA - Sediment	Sampling Location NOBR- Y SD		SAF No. RC-116	Data Turnaround 45 Days
Ice Chest No.	Field Logbook No. EL-1631-1	COA BESCRC6530	Method of Shipment GROUND TRANSPORT	
Shipped To TestAmerica Incorporated, Richland	Offsite Property No. N/A		Bill of Lading/Air Bill No. N/A	

POSSIBLE SAMPLE HAZARDS/REMARKS

J96040135
J00322

Special Handling and/or Storage

Due ~~032009~~
3/27/09

SKS 2/4/09

SAMPLE ANALYSIS

Preservation	Cool 4C
Type of Container	G/P
No. of Container(s)	1
Volume	15g
SAMPLE ANALYSIS	Chromium Hex - 7196

Sample No.	Matrix *	Sample Date	Sample Time	Chromium Hex - 7196				
J3165	OTHER SOLID	1/8/09	1340	X			KbMo✓	

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time 2-3-09 / 1630	Received By/Stored In R C	Date/Time 2-3-09 / 1630
Relinquished By/Removed From R C	Date/Time 2/4/09 0540	Received By/Stored In D Heidelberg	Date/Time 2/4/09 0540
Relinquished By/Removed From D Heidelberg	Date/Time 2/4/09 0920	Received By/Stored In A Smith	Date/Time 020409 0920
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time

SPECIAL INSTRUCTIONS

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

Collector L Stratton	Company Contact JOAN KESSNER	Telephone No. 375-4588	Project Coordinator WEISS, RL	Price Code 9K Data Turnaround 45 Days
Project Designation Columbia River Component of the RCBRA - Sediment	Sampling Location RDBR- J SD		SAF No. RC-116	
Ice Chest No.	Field Logbook No. EL-1631-1	COA BESCRC6530	Method of Shipment GROUND TRANSPORT	
Shipped To TestAmerica, Incorporated, Richland	Offsite Property No. N/A		Bill of Lading/Air Bill No. N/A	

POSSIBLE SAMPLE HAZARDS/REMARKS

J98040135
J00322
Due ~~032009~~
3/23/09

Special Handling and/or Storage

Preservation	Cool 4C
Type of Container	G/P
No. of Container(s)	1
Volume	25g

SYS 2/4/09

SAMPLE ANALYSIS

Gamma Rad - J196

Sample No.	Matrix *	Sample Date	Sample Time		
J17183	OTHER SOLID	2/4/09	1300	X	Kiehle G

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time 2-3-09 / 1630	Received By/Stored In Ref C	Date/Time 2-3-09 / 1630
Relinquished By/Removed From Ref C	Date/Time 2/4/09 0540	Received By/Stored In Dale Heitberg	Date/Time 2/4/09 0540
Relinquished By/Removed From Dale Heitberg	Date/Time 2/4/09 900	Received By/Stored In	Date/Time 020409 0900
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time

SPECIAL INSTRUCTIONS

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Collector L STRATTON	Company Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator WEISS, JL
Project Designation Columbia River Component of the RCBRA - Sediment	Sampling Location MDBR-1, SD		SAF No. RC-115
Ice Chest No.	Field Logbook No. EL-1631-3	COA BESCRC6520	Method of Shipment GROUND TRANSPORT
Shipped To TestAmerica Incorporated, Richland	Offsite Property No. N/A		Bill of Lading/Air Bill No. N/A

Price Code 9K

Data Turnaround 45 Days

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

J9B040135
J00322
Due 032009
3/23/09

SKS 4/4/09

Preservation	Cool 4C
Type of Container	GP
No. of Container(s)	1
Volume	[illegible]
SAMPLE ANALYSIS	[illegible]

Sample No.	Matrix *	Sample Date	Sample Time				
J181P8	OTHER SOLID	2/3/09	1151	X			RUMoP

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From [illegible]	Date/Time 2-3-09 / 1630	Received By/Stored In Ref C	Date/Time 2-3-09 / 1630
Relinquished By/Removed From Ref C	Date/Time 2/4/09 0840	Received By/Stored In D Hesselberg LST	Date/Time 2/4/09 0840
Relinquished By/Removed From D Hesselberg LST	Date/Time 2/4/09 0900	Received By/Stored In Smith	Date/Time 020409 0900
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time

SPECIAL INSTRUCTIONS

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Collector L [illegible]	**Company Contact** JOAN KESSNER	**Telephone No.** 373-4581	**Project Coordinator** WEISS, RL	**Price Code** 9K	**Data Turnaround** 45 Days
Project Designation Columbia River Component of the RCBRA - Sediment	**Sampling Location** MDBA- [illegible] SD		**SAF No.** RC-115		
Ice Chest No.	**Field Logbook No.** EL-1831-1	**COA** 2ESC9UC6520	**Method of Shipment** GROUND TRANSPORT		
Shipped To TestAmerica Incorporated, Richland	**Offsite Property No.** N/A		**Bill of Lading/Air Bill No.** N/A		

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

J9B040135
J00322
Due ~~032009~~
3/23/09

Preservation	Cool 4C
Type of Container	G/P
No. of Container(s)	1
Volume	15g

SS 4/1/09

SAMPLE ANALYSIS

Chromium Hex - [illegible]

Sample No.	Matrix *	Sample Date	Sample Time	Chromium Hex - [illegible]
J121B7	OTHER SOLID	2/3/09	1100	X

Kalle L

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
[illegible]	2-3-09/1630	Ref C	2-3-09/1630
Ref. C	2/4/09 0840	D. Hedelberg [illegible]	2/4/09 0840
D. Hedelberg [illegible]	2/4/09 0900	[illegible] SSmith	020409 0900

SPECIAL INSTRUCTIONS

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

ACH-EE-011

[illegible] | JOAN KESSNER | 375-4688 | WEISS, R.L. | Price Code 9K | Data Turnaround 45 Days

Project Designation
Columbia River Component of the RCBRA - Sediment

Sampling Location
[illegible]

SAF No.
RC-116

Ice Chest No.

Field Logbook No.
EL-1631-1

COA
BFSCRC652D

Method of Shipment
FEDEX

Shipped To
TestAmerica Incorporated, Richland

Offsite Property No.
N/A

Bill of Lading/Air Bill No.

POSSIBLE SAMPLE HAZARDS/REMARKS

J98040135
J00322
Due ~~0~~32009
3/23/09

Special Handling and/or Storage

Preservation	Cool 4C										
Type of Container	G/P										
No. of Container(s)	1										
Volume	15g										

SAMPLE ANALYSIS
[illegible]

Sample No.	Matrix *	Sample Date	Sample Time	[illegible]				[illegible]					
J17VR2	OTHER SOLID	2/2/09	1026	X				[illegible]					

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
[illegible]	2-3-09 / 1630	[illegible]	2-3-09 / 1630
[illegible] 2/4/09	0840	D. He[illegible]berg	2/4/09 0840
D. He[illegible]berg	2/4/09 0900	[illegible] 020409	0900

SPECIAL INSTRUCTIONS

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION | Received By | Title | Date/Time

FINAL SAMPLE DISPOSITION | Disposal Method | Disposed By | Date/Time

WCH-EE-011

LSTMPCA	JOAN KESSNER 375-4684	WEISS, RL	Price Code 5N 45 Days
Project Designation Columbia River Component of the RCBRA - Sediment	Sampling Location KBRA-9 SD	SAF No. RC-116	
Ice Chest No.	Field Logbook No. EL-1651-1	COA BESCRC6520	Method of Shipment GROUND TRANSPORT
Shipped To TestAmerica Incorporated, Richland	Offsite Property No. N/A		Bill of Lading/Air Bill No. N/A

POSSIBLE SAMPLE HAZARDS/REMARKS

J9B040135
J00322
Due ~~032009~~
2/23/09

Special Handling and/or Storage

Preservation	Cool 6C
Type of Container	G/P
No. of Container(s)	1
Volume	15g

Sfcu 2/4/09

SAMPLE ANALYSIS: Chromium Hex - 7196

Sample No	Matrix *	Sample Date	Sample Time					
J18181	OTHER SOLID	2/3/09	1015	X			KGNG01	

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time 2-3-09 / 1630	Received By/Stored In Del C	Date/Time 2-3-09 / 1630
Relinquished By/Removed From Del C	Date/Time 2/4/09 0540	Received By/Stored In D. Hedelberg	Date/Time 2/4/09 0540
Relinquished By/Removed From D. Hedelberg	Date/Time 2/4/09 0900	Received By/Stored In SSU	Date/Time 020409 0900
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time

SPECIAL INSTRUCTIONS

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

LS/T!

JOAN KESSNER 375-4688

WEISS, RL

45 Days

Project Designation
Columbia River Component of the RCBRA - Sediment

Sampling Location
WP-4SD

SAF No.
RC-116

Ice Chest No.

Field Logbook No.
EL-1432-1

COA
BESCR06520

Method of Shipment
GROUND TRANSPORT

Shipped To
TestAmerica Incorporated, Richland

Offsite Property No.
N/A

Bill of Lading/Air Bill No.

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

J9B040135
J00322
Due 032009
3/23/09

SCS 2/4/09

SAMPLE ANALYSIS

Preservation	Cool 4C
Type of Container	GP
No. of Container(s)	1
Volume	15g
SAMPLE ANALYSIS	Chromium Hex - 7196

Sample No.	Matrix *	Sample Date	Sample Time	Chromium Hex - 7196									
J1TV8C	OTHER SOLID	2/3/09	1200	X			RoNiE						

CHAIN OF POSSESSION Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
B. Myl Billy 2/3/09	1700	Fry C 2/3/09	1700
Fry C 2/4/09	0840	D Heidelberg LST	2/4/09 0840
D Heidelberg LST 2/4/09	0100	Ann. Ve Sam. Ve	020409 0904

SPECIAL INSTRUCTIONS

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION Received By Title Date/Time

FINAL SAMPLE DISPOSITION Disposal Method Disposed By Date/Time

WCH-EE-011

L5...

JOAN KESSNER 375-46[illegible]

WEISS, RL

45 Days

Project Designation
Columbia River Component of the RCBRA - Sediment

Sampling Location
WP-35D

SAF No.
RC-116

Ice Chest No.

Field Logbook No.
EL-1633-1

COA
BESCRC6529

Method of Shipment
GROUND TRANSPORT

Shipped To
TestAmerica Incorporated, Richland

Offsite Property No.
N/A

Bill of Lading/Air Bill No.

POSSIBLE SAMPLE HAZARDS/REMARKS

J9B040155

J00322

Special Handling and/or Storage

Due ~~032009~~ 3/23/09

sys 2/4/09

SAMPLE ANALYSIS

Preservation	Cool 4C									
Type of Container	G/P									
No. of Container(s)	1									
Volume	15g									
	[illegible]									

Sample No.	Matrix *	Sample Date	Sample Time											
J17V39	OTHER SOLID	2/3/09	1315	X				Klang	C					

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
[illegible] 2/3/09 1700		Fi... C	2/3/09 1700
Fr...C 2/4/09	0846	D.Heidelberg	2/4/09 0846
D.Heidelberg	2/4/09 0900	S Smith	020409 0900

SPECIAL INSTRUCTIONS

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION — Received By — Title — Date/Time

FINAL SAMPLE DISPOSITION — Disposal Method — Disposed By — Date/Time

1 SM	JOAN KESSNER 375-4688	WEISS, RJ	45 Days
Project Designation Columbia River Component of the RCBRA - Sediment	Sampling Location WP-55D	SAF No. RC-115	
Ice Chest No.	Field Logbook No. EL-1631-1	COA 8SSCR06521	Method of Shipment GROUND TRANSPORT
Shipped To TestAmerica Incorporated, Richland	Offsite Property No. N/A		Bill of Lading/Air Bill No.

POSSIBLE SAMPLE HAZARDS/REMARKS

J98040135
J00322
Due 032009
3/20/09
SKS2/4/09

Special Handling and/or Storage

S200006

Preservation				Cool 4C								
Type of Container				GP								
No. of Container(s)				1								
Volume				15g								
SAMPLE ANALYSIS				Chromium Hex - 7196								
Sample No	Matrix *	Sample Date	Sample Time									
J17VB1	OTHER SOLID	2/3/09	1400	X			KbN 59					

CHAIN OF POSSESSION		Sign/Print Names	
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Bryan Bellinger	2/3/09 1700	Frig C	2/3/09 1700
Relinquished By/Removed From Frig C	Date/Time 2/4/09 0840	Received By/Stored In D Hellberg LSt	Date/Time 2/4/09 0840
Relinquished By/Removed From D Hellberg LSt	Date/Time 2/4/09 0900	Received By/Stored In Ed Sm Va	Date/Time 020409 0900
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time

SPECIAL INSTRUCTIONS

Matrix *
[illegible]
[illegible]
[illegible]
[illegible]
W=Water
O=Oil
A=Air
[illegible]
[illegible]
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

Collector BSM	Company Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator WEISS, RL	Price Code 9K	Data Turnaround 45 Days
Project Designation Columbia River Component of the RCBRA - Sediment	Sampling Location WF-15D		SAF No. RC-175		
Ice Chest No.	Field Logbook No. EL-1631-1	COA BESCRC6520	Method of Shipment GROUND TRANSPORT		
Shipped To TestAmerica Incorporated, Richland	Offsite Property No. N/A		Bill of Lading/Air Bill No.		

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

J9B040135
J00322
Due ~~032009~~ 3/23/09
SS 2/4/09

Preservation	Cool 4C
Type of Container	GP
No. of Container(s)	1
Volume	15g
SAMPLE ANALYSIS	Chromium Hex - 7196

Sample No.	Matrix *	Sample Date	Sample Time										
J17V98	OTHER SOLID	2/3/09	1115	X			KUN58						

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
B M... BSM	2/6/09 1700	Eric C	2/6/09 1700
Eric C	2/9/09 0840	D Wiedeberg	2/9/09 0840
D Wiedeberg	2/9/09 0900	Martha Smith	020909 0900

SPECIAL INSTRUCTIONS

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

A-6004 EE-011

15/M

JOAN KESSNER 373-4681

WEISS, RL

Price Code 9K

Data Turnaround 45 Days

Project Designation
Columbia River Component of the RCBRA - Sediment

Sampling Location
WB-15D

SAF No.
RC-156

Ice Chest No.

Field Logbook No.
EL-1631-1

COA
BESCU06520

Method of Shipment
GROUND TRANSPORT

Shipped To
TestAmerica Incorporated, Richland

Offsite Property No.
N/A

Bill of Lading/Air Bill No.

POSSIBLE SAMPLE HAZARDS/REMARKS

J98040135

J00322

Special Handling and/or Storage

Due ~~03 20 09~~ 3/23/09

220000

SKS 2/4/09

SAMPLE ANALYSIS

Preservation	Cool 4C
Type of Container	G/P
No. of Container(s)	1
Volume	15g
SAMPLE ANALYSIS	Chromium Hex - 7196

Sample No.	Matrix *	Sample Date	Sample Time		
J17V97	OTHER SOLID	2/3/09	945	X	

CHAIN OF POSSESSION

Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Brian BAHL	2/3/09 1700	Eric C	2/3/09 1700
Eric C	2/4/09 0740	DHeikkila DST	2/4/09 0848
DHeikkila DST	2/4/09 0900	Sm:th	020409 0900

SPECIAL INSTRUCTIONS

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION | Received By | Title | Date/Time

FINAL SAMPLE DISPOSITION | Disposal Method | Disposed By | Date/Time

	JOAN KESSNER	375-4688	WEISS, RL	Price Code 9K	Data Turnaround 45 Days
Project Designation Columbia River Component of the RCBRA - Sediment	Sampling Location ~~[illegible]~~ WP-15D-1		SAF No. RC-116		
Ice Chest No.	Field Logbook No. EL-1631-1	COA BESCRC6525	Method of Shipment FED EX		
Shipped To TestAmerica Incorporated, Richland	Offsite Property No. N/A		Bill of Lading/Air Bill No.		

POSSIBLE SAMPLE HAZARDS/REMARKS

J48040135

Special Handling and/or Storage

J00322

Due ~~03-20-09~~ 3/23/09

SS 3/4/09

SAMPLE ANALYSIS

Preservation	Cool 4C
Type of Container	GP
No. of Container(s)	1
Volume	15g
SAMPLE ANALYSIS	Gamma Spec - 7:00

Sample No.	Matrix *	Sample Date	Sample Time										
J17VR7	OTHER SOLID	2/3/09	~~0945~~ 1025	X			K0N53						

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
2/3/09 1200		Ref. C 2/3/09	1200
Ref. C 2/4/09	0845		2/4/09 0845
2/4/09	0900	S Smith	020409 0900

SPECIAL INSTRUCTIONS

Matrix *

S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

15/A	JOAN KESSNER	375-4688	WEISS, R.L.	Price Code 9K 45 Days
Project Designation Columbia River Component of the RCBRA - Sediment	Sampling Location WP-6SD		SAF No. RC-115	
Ice Chest No.	Field Logbook No. EL-1631-1	COA BESCRC2630	Method of Shipment GROUND TRANSPORT	
Shipped To TestAmerica Incorporated, Richland	Offsite Property No. N/A		Bill of Lading/Air Bill No.	

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

J9B040135
J00322
Due ~~03-26-09~~
3/23/09

S/S 2/5/09

SAMPLE ANALYSIS

Preservation	Cool 4C				
Type of Container	G/P				
No. of Container(s)	1				
Volume	15g				
SAMPLE ANALYSIS	Dioxins Fur - 1613				

Sample No.	Matrix *	Sample Date	Sample Time				
J17V82	OTHER SOLID	2/3/09	1430	X			K6N5X

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
	2/3/09 1700	Ref. C 2/3/09	1700
Ref C 2/4/09	0840	D Heidelberg	2/4/09 0840
D Heidelberg	2/4/09 0900	Smith	020409 0900

SPECIAL INSTRUCTIONS

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

6000233

WCH-FE-011

[illegible]	JOAN KESSNER 375-4688		WEISS, RL	**Price Code** 9K **Data Turnaround** 45 Days
Project Designation Columbia River Component of the RCBRA - Sediment	**Sampling Location** HDBR- 6 5D		**SAP No.** RC-116	
Ice Chest No.	**Field Logbook No.** EL-1631-1	**COA** BESCRC65M	**Method of Shipment** GROUND TRANSPORT	
Shipped To TestAmerica Incorporated, Richland	**Offsite Property No.** N/A		**Bill of Lading/Air Bill No.** N/A	

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

000030

		Preservation		Cool 4C										
		Type of Container		G/P										
		No. of Container(s)		1										
		Volume		1kg										
SAMPLE ANALYSIS		J98040135 00127 ~~Due 03-20-09~~ BS 4/1/09 3/23/09		Chromium Hex - 7196										
Sample No.	**Matrix ***	**Sample Date**	**Sample Time**											
J13184	OTHER SOLID	2/3/09	1440	X		KLN5V								

CHAIN OF POSSESSION Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
	2-3-09 / 1610		2-3-09 / 1610
	2/4/09 0840	D Heidelberg	2/4/09 0840
D Heidelberg	2/4/09 0900	Smith	02/04/09 0900

SPECIAL INSTRUCTIONS

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Appendix 5

Data Validation Supporting Documentation

GENERAL CHEMISTRY ANALYSIS DATA VALIDATION CHECKLIST

VALIDATION LEVEL:	A	B	[✓ C]	D	E

PROJECT: RCBRA

DATA PACKAGE: J00322

VALIDATOR: ELR

LAB: TAL

DATE: 5/16/04

SDG: J00322

ANALYSES PERFORMED					
Anions/IC	TOC	TOX	TPH-418.1	Oil and Grease	Alkalinity
Ammonia	BOD/COD	Chloride	[✓ Chromium-VI]	pH	NO_3/NO_2
Sulfate	TDS	TKN	Phosphate		

SAMPLES/MATRIX

J17V97	J17V98	J17V99	J17VB0	J17VB1
J17VB2	J17VR2	J17VR7	J18191	J181B4
J181B5	J181B6	J181B7	J181B8	J181B9
				solid

1. DATA PACKAGE COMPLETENESS AND CASE NARRATIVE

Technical verification documentation present? .... Yes [✓ No] N/A

Comments:

2. INSTRUMENT PERFORMANCE AND CALIBRATIONS (Levels D and E)

Initial calibrations performed on all instruments? .... Yes No [✓ N/A]

Initial calibrations acceptable? .... Yes No [✓ N/A]

ICV and CCV checks performed on all instruments? .... Yes No [✓ N/A]

ICV and CCV checks acceptable? .... Yes No [✓ N/A]

Standards traceable? .... Yes No [✓ N/A]

Standards expired? .... Yes No [✓ N/A]

Calculation check acceptable? .... Yes No [✓ N/A]

Comments:

GENERAL CHEMISTRY ANALYSIS DATA VALIDATION CHECKLIST

3. BLANKS (Levels B, C, D, and E)

ICB and CCB checks performed for all applicable analyses? (Levels D, E) .... Yes No [✓ N/A]

ICB and CCB results acceptable? (Levels D, E) .... Yes No [✓ N/A]

Laboratory blanks analyzed? .... [✓ Yes] No N/A

Laboratory blank results acceptable? .... [✓ Yes] No N/A

Field blanks analyzed? (Levels C, D, E) .... Yes [✓ No] N/A

Field blank results acceptable? (Levels C, D, E) .... Yes No [✓ N/A]

Transcription/calculation errors? (Levels D, E) .... Yes No [✓ N/A]

Comments:

4. ACCURACY (Levels C, D, and E)

Spike samples analyzed? .... [✓ Yes] No N/A

Spike recoveries acceptable? .... Yes [✓ No] N/A

Sike standards NIST traceable? (Levels D, E) .... Yes No [✓ N/A]

Spike standards expired? (Levels D, E) .... Yes No [✓ N/A]

LCS/BSS samples analyzed? .... [✓ Yes] No N/A

LCS/BSS results acceptable? .... [✓ Yes] No N/A

Standards traceable? (Levels D, E) .... Yes No [✓ N/A]

Standards expired? (Levels D, E) .... Yes No [✓ N/A]

Transcription/calculation errors? (Levels D, E) .... Yes No [✓ N/A]

Performance audit sample(s) analyzed? .... Yes [✓ No] N/A

Performance audit sample results acceptable? .... Yes No [✓ N/A]

Comments: MS - 32% - J all no PAs

GENERAL CHEMISTRY ANALYSIS DATA VALIDATION CHECKLIST

5. PRECISION (Levels C, D, and E)

Duplicate RPD values acceptable? .... [✓ Yes] No N/A
Duplicate results acceptable? .... [✓ Yes] No N/A
MS/MSD standards NIST traceable? (Levels D, E) .... Yes No [✓ N/A]
MS/MSD standards expired? (Levels D, E) .... Yes No [✓ N/A]
Field duplicate RPD values acceptable? .... [✓ Yes] No ~~N/A~~
Field split RPD values acceptable? .... Yes No [✓ N/A]
Transcription/calculation errors? (Levels D, E) .... Yes No [✓ N/A]
Comments:

6. HOLDING TIMES (all levels)

Samples properly preserved? .... [✓ Yes] No N/A
Sample holding times acceptable? .... ~~Yes~~ [✓ No] N/A
Comments: <2x HT. – Jall

GENERAL CHEMISTRY ANALYSIS DATA VALIDATION CHECKLIST

7. RESULT QUANTITATION AND DETECTION LIMITS (all levels)

Results reported for all requested analyses? .... [✓ Yes] No N/A

Results supported in the raw data? (Levels D, E) .... Yes No [✓ N/A]

Samples properly prepared? (Levels D, E) .... Yes No [✓ N/A]

Detection limits meet RDL? .... [✓ Yes] No N/A

Transcription/calculation errors? (Levels D, E) .... Yes No [✓ N/A]

Comments:

Appendix 6

Additional Documentation Requested by Client

FORM II

Date: 23-Mar-09

DUPLICATE RESULTS

Lab Name:	TestAmerica	SDG:	J00322	Collection Date:	2/3/2009 2:40:00 PM
Lot-Sample No.:	J9B040135-1	Report No.:	41397	Received Date:	2/4/2009 9:00:00 AM
Client Sample ID:	J181B4	COC No.:	RC-116-762	Matrix:	OTHER OTHERSOLID

Batch: 9035457 7196_CR6 Work Order: K6N5V1A3 Report DB ID: K6N5V1ER Orig Sa DB ID: 9K6H5V10

Parameter	Result, Orig Rst	Qual	Count Error (2 σ)	Total Uncert (2 σ)	MDC|MDA, Action Lev	Rpt Unit, CRDL	Yield	Rst/MDC, Rst/TotUcert	Analysis, Prep Date	Total Sa Size	Aliquot Size	Primary Detector
HEXCHROME	1.55E-01	U		0.0E+00	1.55E-01	mg/kg	N/A	1.1	2/4/09		2.5	
	1.55E-01	U	RPD 0.0					N/A			G	

No. of Results: 1 Comments:

TestAmerica RPD - Relative Percent Difference.

rptSTLRchDup2.1 MDC|MDA,Lc - Detection, Decision Level based on instrument background or blank, adjusted by the sample efficiency, Yield, and Volume.

2.4292 U Qual - Analyzed for but not detected above limiting criteria. Limit criteria is less than the Mdc/Mda or Total Uncert or not identified by gamma scan software.

FORM II

BLANK RESULTS

Date: 23-Mar-09

Lab Name: TestAmerica

Matrix: OTHER

SDG: J90322

Report No.: 41197

Parameter	Result	Qual	Count Error (2 s)	Total Uncert (2 s)	MDC|MDA	Rpt Unit, CRDL	Yield	Ret/MDC, Rst/TotUcert	Analysis, Prep Date	Total Sa Size	Aliquot Size	Primary Detector
Batch: 9035497	7196_CR6			Work Order: K6P931AA		Report DB ID: K6P931AB						
HEXCHROME	1.55E-01	U		0.0E+00	1.55E-01	mg/kg	N/A	1.	2/4/09		2.5	
						1.55E-01		N/A			G	

No. of Results: 1 Comments:

TestAmerica

rptSTLRchBlank

5.2.5 A2002

MDC|MDA,Lc - Detection, Decision Level based on instrument background or blank, adjusted by the sample Efficiency, Yield, and Volume.

U Qual - Analyzed for but not detected above limiting criteria. Limit criteria is less than the Mdc/Mda or Total Uncert or not identified by gamma scan software.

FORM II

LCS RESULTS

Date: 23-Mar-09

Lab Name: TestAmerica

Matrix: OTHER

SDG: J09322

Report No.: 41197

Parameter	Result	Qual	Count Error (±s)	Total Uncert (±s)	MDC|MDA	Report Unit	Yield	Expected	Expected Uncert	Recovery, Bias	Analysis, Prep Date	Aliquot Size	Primary Detector
Batch: 9035457	7196_CR6			Work Order: K6P931AB			Report DB ID: K6P931AC						
HEXCHROME	1.85E+01			0.0E+00	1.55E-01	mg/kg	N/A	2.00E+01		92%	2/4/09	2.5	
							Rec Limits:			-0.1		G	

No. of Results: Comments:

TestAmerica Bias = (Result/Expected)-1 as defined by ANSI N13.30.

[illegible]

FORM II

MATRIX SPIKE RESULTS

Date: 23-Mar-09

Lab Name: TestAmerica

SDG: J90322

Lot-Sample No.: J9B040135-1, J18184

Report No.: 41197

Matrix: OTHER CD-GASOLID

Parameter	Spike Result, Orig Rst	Qual	Count Error (2 σ)	Total Uncert (2 σ)	MDC | MDA	Rpt Lmt, CRDL	Yield	Recovery	Expected, Uncert	Analysis, Prep Date	Aliquot Size	Anal Method, Primary Detector
Batch: 9035497	Work Order: K6N5V1AG			Report DB ID: K6N5V1EW			Orig Sa DB ID: 9K6N5V10					
HEXCHROME	7.16E+00 1.55E-01			0.0E+00	1.55E-01	mg/kg	N/A	36.85%	1.94E+01	2/4/09	2.5 G	7196_CRS

Number of Results: 1

Comments:

TestAmerica
9015 R.RchMs
V5.2.2 A2002

RER - Replicate Error Ratio = |S-D|/[sqrt(sq(TPUs)+sq(TPUd))] as defined by ICPT BOA.

Bias - (Result/Expected)-1 as defined by ANSI N13.30.

F.1.2.3 SDG J00337

SAF-RC-116
Columbia River Component of the RCBRA – Sediment
FINAL VALIDATION PACKAGE

COMPLETE COPY OF VALIDATION PACKAGE TO:

Kathy Wendt H4-21

COMMENTS:

SDG J00337 **SAF-RC-116**

Date: 11 May 2009
To: Washington Closure Hanford Inc. (technical representative)
From: ELR Consulting
Project: Columbia River Component of the RCBRA – Sediment
Subject: Wet Chemistry - Data Package No. J00337-TAL

INTRODUCTION

This memo presents the results of data validation on Data Package No. J00337 prepared by TestAmerica Laboratory Inc. (TAL). A list of samples validated along with the analyses reported and the method of analysis is provided in the following table.

Sample ID	Sample Date	Media	Validation	Analyte
J17X06	2/12/09	Solid	C	See note 1
J18626	2/12/09	Solid	C	See note 1
J187B4	2/12/09	Solid	C	See note 1
J187B5	2/12/09	Solid	C	See note 1
J187B6	2/12/09	Solid	C	See note 1
J187B7	2/12/09	Solid	C	See note 1
J187B8	2/12/09	Solid	C	See note 1
J187B9	2/12/09	Solid	C	See note 1
J187C0	2/12/09	Solid	C	See note 1
J187F2	2/12/09	Solid	C	See note 1
J187F4	2/12/09	Solid	C	See note 1
J187F5	2/12/09	Solid	C	See note 1
J187F8	2/12/09	Solid	C	See note 1
J187H0	2/12/09	Solid	C	See note 1
J187H1	2/12/09	Solid	C	See note 1

1 – Chromium VI by 7196A.

Data validation was conducted in accordance with the Washington Closure Hanford (WCH) validation statement of work and the Remedial Investigation Work Plan for Hanford Site Releases to the Columbia River (DOE/RL-2008-11, Rev. 0, September 2008). Appendices 1 through 6 provide the following information as indicated below:

Appendix 1. Glossary of Data Reporting Qualifiers
Appendix 2. Summary of Data Qualification
Appendix 3. Annotated Laboratory Reports
Appendix 4. Laboratory Narrative and Chain-of-Custody Documentation
Appendix 5. Data Validation Supporting Documentation
Appendix 6. Additional Documentation Requested by Client

DATA QUALITY PARAMETERS

Holding Times

Analytical holding times for metals are assessed to ascertain whether the holding time requirements were met by the laboratory. The holding time requirements are as

follows: Soil samples must be analyzed within 24 hours for chromium VI.

If holding times are exceeded, but not by greater than two times the limit, all associated sample results are qualified as estimates and flagged "J" for detects and "UJ" for non-detects. If holding times are exceeded by greater than two times the limit, all associated detectable sample results are qualified as estimates and flagged "J" and all non-detects are rejected and flagged "UR".

All holding times were acceptable.

- **Method Blanks**

Method Blanks

Method blank analyses are performed to determine the extent of laboratory contamination introduced through sampling, sample preparation and analysis. At least one acceptable method blank analysis must be conducted for every 20 samples. No contaminants should be present in the method blank. All blank results must fall below the contract required detection limit (CRQL) to be acceptable.

All method blank results were acceptable.

Field (Equipment) Blank

No field blanks were submitted for analysis.

- **Accuracy**

Matrix Spike and Laboratory Control Sample

Matrix spike (MS) and laboratory control sample (LCS) analyses are used to assess the analytical accuracy of the reported data. The matrix spike is used to assess the effect of the matrix on the ability to accurately quantify sample concentrations. Recoveries must fall within the range of 70% to 130%. Samples with a recovery of less than 30% and a sample result below the IDL are rejected and flagged "UR". Samples with a recovery of 30% to 69% and a sample result less than the IDL are qualified "UJ". Samples with a recovery of greater than 130% or less than 70% and a sample result greater than the IDL are qualified as estimates and flagged "J". Finally, for samples with a recovery greater than 130% and a sample result less than the IDL, no qualification is required.

Due to a matrix spike recovery outside QC limits (44%), all chromium VI results were qualified as estimates and flagged "J".

All other accuracy results were acceptable.

- **Precision**

Laboratory Duplicate Samples

Analytical precision is expressed by the relative percent differences (RPD) between the recoveries of matrix spike duplicate (MSD) analyses performed on a sample in the analytical batch. Precision may alternatively be assessed using unspiked duplicate analyses performed on a sample in the analytical batch. If both sample and replicate activities (concentrations) are greater than five times the CRDL and the RPD is less than 30%, no qualification is required. If either activity (concentration) is less than five times the CRDL, the RPD control limit is less than or equal to two times the CRDL. If the RPD is outside the applicable control limit, associated results are qualified as estimated detects or estimated non-detects.

All laboratory duplicate results were acceptable.

Field Duplicate

One set of field duplicates (J18626/J18785) were submitted for analysis. Field duplicates are compared using the same criteria as for laboratory duplicates. All field duplicate results were acceptable.

- **Analytical Detection Levels**

Reported analytical detection levels are compared against the required quantitation limits (RQLs) to ensure that laboratory detection levels meet the required criteria. All analytes met the RQL.

- **Completeness**

Data package J00337 was submitted for validation and verified for completeness. Completeness is based on the percentage of data determined to be valid (i.e., not rejected). The completion percentage was 100%.

MAJOR DEFICIENCIES

None found.

MINOR DEFICIENCIES

The following minor deficiencies were noted:

- Due to a matrix spike recovery outside QC limits (44%), all chromium VI results were qualified as estimates and flagged "J".

Data flagged "J" indicates that the associated concentration is an estimate, but under the WCH statement of work, the data may be usable for decision-making purposes. All other validated results are considered accurate within the standard error associated with the methods.

REFERENCES

Washington Closure Hanford Contract #S00W307A00 (March 2008), *Data Validation Services.*

DOE/RL-2008-11, Rev.0, *Remedial Investigation Work Plan for Hanford Site Releases to the Columbia River*, September 2008.

Appendix 1

Glossary of Data Reporting Qualifiers

Qualifiers which may be applied by data validators in compliance with WCH validation SOW are as follows:

U - Indicates the compound or analyte was analyzed for and not detected in the sample. The value reported is the sample quantitation limit corrected for sample dilution and moisture content by the laboratory.

UJ - Indicates the compound or analyte was analyzed for and not detected in the sample. Due to a minor QC deficiency identified during the data validation, the associated quantitation limit is an estimate.

J - Indicates the compound or analyte was analyzed for and detected. Due to a minor QC deficiency identified during the data validation, the associated concentration is an estimate, but the data are usable for decision-making purposes.

BJ - Applied to inorganic analyses only. Indicates the analyte concentration was greater than the IDL but less than the CRDL and is considered an estimated value.

R - Indicates the compound or analyte was analyzed for, detected, and due to an identified major QC deficiency, the data are unusable.

UR - Indicates the compound or analyte was analyzed for and not detected in the sample. Additionally, the data is unusable due to an identified major QC deficiency.

NJ - Indicates presumptive evidence of a compound at an estimated value. The data may not be valid for some specific applications (i.e., usable for decision-making purposes).

N - Indicates presumptive evidence of a compound. The data may not be valid for some specific applications (i.e., usable for decision-making purposes).

Appendix 2

Summary of Data Qualification

CHROMIUM VI DATA QUALIFICATION SUMMARY*

SDG: J00337	**REVIEWER:** ELR	**Project:** RCBRA	**PAGE 1 OF 1**
COMPOUND	QUALIFIER	SAMPLES AFFECTED	REASON
All	J	All	MS recovery

* - The Qualified Data Summary Table includes laboratory applied "U" qualifiers not specifically identified here. The laboratory applied "U" qualifiers are included to minimize misinterpretation of results contained in the table.

Appendix 3

Annotated Laboratory Reports

Sample Results Summary

Date: 30-Mar-09

TestAmerica TARL

Ordered by Method, Batch No., Client Sample ID.

Report No. : 41249

SDG No: J00337

Batch	Client Id Work Order	Parameter	Result +- Uncertainty (2s)	Qual	Units	Tracer Yield	MDC or MDA	CRDL	RPD
9045028-7196_CR6									
	J17X06								
	K65G31AA	HEXCHROME	1.55E-01 +- 0.00E+00	U J	mg/kg	N/A	1.55E-01	1.55E-01	
	J18626								
	K65HE1AA	HEXCHROME	1.55E-01 +- 0.00E+00	U J	mg/kg	N/A	1.55E-01	1.55E-01	
	J187B4								
	K65HC1AA	HEXCHROME	1.55E-01 +- 0.00E+00	U J	mg/kg	N/A	1.55E-01	1.55E-01	
	J187B5								
	K65HD1AA	HEXCHROME	1.55E-01 +- 0.00E+00	U J	mg/kg	N/A	1.55E-01	1.55E-01	
	J187B6								
	K65G71AA	HEXCHROME	1.55E-01 +- 0.00E+00	U J	mg/kg	N/A	1.55E-01	1.55E-01	
	J187B7								
	K65G21AA	HEXCHROME	1.55E-01 +- 0.00E+00	U J	mg/kg	N/A	1.55E-01	1.55E-01	
	J187B8								
	K65G91AA	HEXCHROME	1.55E-01 +- 0.00E+00	U J	mg/kg	N/A	1.55E-01	1.55E-01	
	J187B9								
	K65HA1AA	HEXCHROME	1.55E-01 +- 0.00E+00	U J	mg/kg	N/A	1.55E-01	1.55E-01	
	J187C0								
	K65HK1AA	HEXCHROME	1.55E-01 +- 0.00E+00	U J	mg/kg	N/A	1.55E-01	1.55E-01	
	J187F2								
	K65G11AA	HEXCHROME	1.55E-01 +- 0.00E+00	U J	mg/kg	N/A	1.55E-01	1.55E-01	
	J187F4								
	K65GX1AA	HEXCHROME	1.55E-01 +- 0.00E+00	U J	mg/kg	N/A	1.55E-01	1.55E-01	
	J187F5								
	K65GR1AA	HEXCHROME	1.55E-01 +- 0.00E+00	U J	mg/kg	N/A	1.55E-01	1.55E-01	
	J187F6								
	K65GF1AA	HEXCHROME	1.55E-01 +- 0.00E+00	U J	mg/kg	N/A	1.55E-01	1.55E-01	
	K65GP1AE	HEXCHROME	1.55E-01 +- 0.00E+00	U	mg/kg	N/A	1.55E-01	~~3.50E-01~~ 1.55E-01	0.0 [illegible]
	J187H0								
	K65G01AA	HEXCHROME	1.55E-01 +- 0.00E+00	U J	mg/kg	N/A	1.55E-01	1.55E-01	
	J187H1								
	K65GV1AA	HEXCHROME	1.55E-01 +- 0.00E+00	U J	mg/kg	N/A	1.55E-01	1.55E-01	

No. of Results: 16

5/8/09

TestAmerica

rptSTLRchSaSummary2 V5.2.2 A2002

RPD - Relative Percent Difference.

U Qual - Analyzed for but not detected above limiting criteria. Limit criteria is less than the MDC/MDA or Total Uncert or not identified by gamma scan software.

QC Results Summary

Date: 30-Mar-09

TestAmerica TARL

Ordered by Method, Batch No, QC Type,

Report No. : 41249

SDG No.: J00357

Batch Work Order	Parameter	Result +- Uncertainty (2s)	Qual	Units	Tracer Yield	LCS Recovery	Bias	MDC/MDA
7196_CR6								
9045026 BLANK QC,								
K67611AA	HEXCHROME	1.55E-01 +- 0.00E+00	U	mg/kg	N/A			1.55E-01
9045026 LCS,								
K67611AC	HEXCHROME	1.89E+01 +- 0.00E+00		mg/kg	N/A	95%	-0.1	1.55E-01
9045026 MATRIX SPIKE, J1B7FB								
K65GP1AC	HEXCHROME	4.36E+00 +- 0.00E+00		mg/kg	N/A	44%	-0.6	1.55E-01

No. of Results: 3

5/8/09

Bias - (Result/Expected)-1 as defined by ANSI N13.30.

U Qual - Analyzed for but not detected above limiting criteria. Limit criteria is less than the Mdc/Mda or Total Uncert, or not identified by gamma scan software.

Appendix 4

Laboratory Narrative and Chain-of-Custody Documentation

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Certificate of Analysis

Washington Hanford Closure
2620 Fermi Avenue
Richland, WA 99354

March 27, 2009

Attention: Joan Kessner

SAF Number	:	RC-116
Date SDG Closed	:	February 12, 2009
Number of Samples	:	Fifteen (15)
Sample Type	:	Other Solid
SDG Number	:	J00337
Data Deliverable	:	45-Day / Summary

CASE NARRATIVE

I. Introduction

On February 12, 2009 fifteen other solid samples were received at TestAmerica for chemistry analysis. Upon receipt, the samples were assigned the following laboratory ID number to correspond with the Washington Closure Hanford (WCH) specific ID:

WCH ID#	TARL ID#	MATRIX	DATE OF RECEIPT
J187C0	K65HK	OTHER SOLID	2/12/09
J18626	K65HE	OTHER SOLID	2/12/09
J187B5	K65HD	OTHER SOLID	2/12/09
J187B4	K65HC	OTHER SOLID	2/12/09
J187B9	K65HA	OTHER SOLID	2/12/09
J187B8	K65G9	OTHER SOLID	2/12/09
J187B6	K65G7	OTHER SOLID	2/12/09
J17X06	K65G3	OTHER SOLID	2/12/09
J187B7	K65G2	OTHER SOLID	2/12/09
J187F2	K65G1	OTHER SOLID	2/12/09
J187H0	K65G0	OTHER SOLID	2/12/09
J187F4	K65GX	OTHER SOLID	2/12/09

J187H1	K65GV	OTHER SOLID	2/12/09
J187F5	K65GR	OTHER SOLID	2/12/09
J187F8	K65GP	OTHER SOLID	2/12/09

II. Sample Receipt

The sample was received in good condition and no anomalies were noted during check-in.

III. Analytical Results/Methodology

The analytical results for this report are presented by laboratory sample ID. Each set of data includes sample identification information, analytical results and the appropriate associated statistical errors. The requested analyses were:

Chemical Analysis
Hexavalent Chromium by EPA method 7196A

IV. Quality Control

The analytical results for each analysis performed includes a minimum of one laboratory control sample (LCS), one method (reagent) blank, and one duplicate sample analysis. Any exceptions have been noted in the "Comments" section.

QC and sample results are reported in the same units.

V. Comments

Chemical Analysis
Hexavalent Chromium by EPA method 7196A:
The matrix spike recovered low at 44%. The post digestive matrix spike recovered at 91% and the insoluble matrix spike recovered at 79%. This implies a possible amount of reducing capacity in the sample, but not enough to exhaust the more copious insoluble matrix spike. Except as noted, the LCS, batch blank, sample, sample duplicate (J187F8) and sample matrix spike (J187F8) results are within contractual requirements.

I certify that this Certificate of Analysis is in compliance with the SOW, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hard copy data package has been authorized by the Laboratory Manager, or a designee as verified by the following signature.

Reviewed and approved:

Sandra Seger

Sandra Seger
Project Manager

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

Collector [illegible]	Company Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator WEISS, RL	Price Code 9K Data Turnaround 45 Days
Project Designation Columbia River Component of the RCBRA - Sediment	Sampling Location WBT- SSD		SAF No. RC-116	
Ice Chest No.	Field Logbook No. EL-1631-1	COA BESCR06S20	Method of Shipment GROUND TRANSPORT	
Shipped To TestAmerica Incorporated, Richland	Offsite Property No. N/A		Bill of Lading/Air Bill No. N/A	

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

Preservation	Cool 4C
Type of Container	G/P
No. of Container(s)	1
Volume	15g
SAMPLE ANALYSIS	Chromium Hex - 7196

Sample No.	Matrix *	Sample Date	Sample Time	Chromium Hex - 7196									
J187C1	OTHER SOLID	2/12/09	[illegible]	X			KG5HK						

CHAIN OF POSSESSION

Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
[illegible]	2/12/09 1130	D Heidelberg	2-12-09 1130
D Heidelberg	2/13/09 1345	[illegible]	02-13-09 1345

SPECIAL INSTRUCTIONS

J9B120274

J06337

Due 03-30-09

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH EE-C11

Collector [illegible]	Company Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator WEISS, RL
Project Designation Columbia River Component of the RCBRA - Sediment	Sampling Location [illegible] SSD DUPLICATE		SAF No. RC-116
Ice Chest No.	Field Logbook No. EL-1631-1	COA DESCRC0320	Method of Shipment GROUND TRANSPORT
Shipped To TestAmerica Incorporated, Richland	Offsite Property No. N/A		Bill of Lading/Air Bill No. N/A

Price Code 9K

Data Turnaround 45 Days

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

Preservation	Cool 4C
Type of Container	G/P
No. of Container(s)	1
Volume	1Lg

SAMPLE ANALYSIS

Chromium Hex - 7196

Sample No.	Matrix *	Sample Date	Sample Time		
18526	OTHER SOLID	2/12/09	1245	X	KL5HE

CHAIN OF POSSESSION

Sign/Print Names

Relinquished By/Removed From [illegible]	Date/Time 2-12-09/1300	Received By/Stored In [illegible]	Date/Time 2-12-09/1300
Relinquished By/Removed From D. Heidelberg	Date/Time 2/12/09 1345	Received By/Stored In [illegible]	Date/Time 02-12-09 1345
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time

SPECIAL INSTRUCTIONS

J9B120274

J00337

Due 03 30 09

Matrix *

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-019

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-116-594 Page 1 of 1

Collector [illegible]	Company Contact JOAN KESSNER	Telephone No. 375-4681	Project Coordinator WEISS, RL
Project Designation Columbia River Component of the RCBRA - Sediment	Sampling Location WBT- [illegible] SSD		SAF No. RC-116
Ice Chest No.	Field Logbook No. EL-1631-1	COA BESCRC5530	Method of Shipment GROUND TRANSPORT
Shipped To TestAmerica Incorporated, Richland	Offsite Property No. N/A		Bill of Lading/Air Bill No. N/A

Price Code 9K

Data Turnaround 45 Days

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

Preservation	Cool 4C
Type of Container	GP
No. of Container(s)	1
Volume	15g
SAMPLE ANALYSIS	Chromium Hex - 7196

Sample No.	Matrix *	Sample Date	Sample Time		
J19TD5	OTHER SOLID	[illegible]	[illegible]	X	K65HD

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
[illegible]	2-12-09 / [illegible]	D Heidelberg	2-12-09 / [illegible]
D Heidelberg	2/12/09 1345	[illegible]	02-12-09 1345

SPECIAL INSTRUCTIONS

J98120274
J00337
Due 03-30-09

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-116-593 | Page 1 of 1

Collector [illegible]	Company Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator WEISS, RL
Project Designation Columbia River Component of the RCBRA - Sediment	Sampling Location WBT- 6 SSD		SAF No. RC-116
Ice Chest No.	Field Logbook No. EL-1638-1	COA BESCRC0520	Method of Shipment GROUND TRANSPORT
Shipped To TestAmerica Incorporated, Richland	Offsite Property No. N/A		Bill of Lading/Air Bill No. N/A

Price Code 9K

Data Turnaround 45 Days

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

Preservation	Cool 4C
Type of Container	G/P
No. of Container(s)	1
Volume	15g
SAMPLE ANALYSIS	Chromium Hex - 7196

Sample No.	Matrix *	Sample Date	Sample Time										
J15TB4	OTHER SOLID	2/12/09	1125	X				KL5H	C				

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
L. Strand	2-12-09/[illegible]	D Hedelberg	[illegible] 1320
D Hedelberg	2/12/09 1345	[illegible]	02/12/09 1345

SPECIAL INSTRUCTIONS

J9B120274

J00337

Due 03-30-09

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION — Received By — Title — Date/Time

FINAL SAMPLE DISPOSITION — Disposal Method — Disposed By — Date/Time

A04-EE-015

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

Collector	**Company Contact** JOAN KESSNER	**Telephone No.** 375-4688	**Project Coordinator** WEISS, RL	**Price Code** 9K
Project Designation Columbia River Component of the RCBRA - Sediment	**Sampling Location** WBT- 4 SSD		**SAF No.** RC-136	**Data Turnaround** 45 Days
Ice Chest No.	**Field Logbook No.** EL-1631-1	**COA** DESCR06520	**Method of Shipment** GROUND TRANSPORT	
Shipped To TestAmerica Incorporated, Richland	**Offsite Property No.** N/A		**Bill of Lading/Air Bill No.** N/A	

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

Preservation	Cool 4C
Type of Container	G/P
No. of Container(s)	1
Volume	15g

SAMPLE ANALYSIS

Chromium Hex - 7196

Sample No.	Matrix *	Sample Date	Sample Time	Chromium Hex - 7196		
J18769	OTHER SOLID	2/12/09	1100	X		KLSHA

CHAIN OF POSSESSION	Date/Time	Sign/Print Names	Date/Time
Relinquished By/Removed From Steven [illegible]	2/12/09 1130	Received By/Stored In D. Heidelberg [illegible]	2/12/09 1130
Relinquished By/Removed From D. Heidelberg [illegible]	2/12/09 1345	Received By/Stored In [illegible]	021209 1345
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time

SPECIAL INSTRUCTIONS

J9B120274
J00337
Due 03-30-09

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST		RC-110-997
Collector [illegible]	Company Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator WEISS, RL
Project Designation Columbia River Component of the RCBRA - Sediment	Sampling Location WBT-3 SSD		SAF No. RC-115
Ice Chest No.	Field Logbook No. EL-1631-1	COA BESCRC6521	Method of Shipment GROUND TRANSPORT
Shipped To TestAmerica Incorporated, Richland	Offsite Property No. N/A		Bill of Lading/Air Bill No. N/A

Price Code 9K

Data Turnaround 45 Days

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

Preservation	Cool 4C									
Type of Container	G/P									
No. of Container(s)	1									
Volume	75g									
SAMPLE ANALYSIS	Chromium Hex - 7196									

Sample No.	Matrix *	Sample Date	Sample Time										
J187B8	OTHER SOLID	[illegible]	[illegible]	X				KL5G9					

CHAIN OF POSSESSION	Sign/Print Names		
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
[illegible]	[illegible]	[illegible]	[illegible]
Relinquished By/Removed From D. Heidelberg	Date/Time 2/12/09 1345	Received By/Stored In [illegible]	Date/Time 021209 1345
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time

SPECIAL INSTRUCTIONS

J9B120274
J00337
Due 03-30-09

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By		Title		Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method		Disposed By		Date/Time

WCH-EE-015

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-116-095

Collector	Company Contact JOAN KESSNER	Telephone No. 375-4658	Project Coordinator WEISS, RL	Price Code 9K
Project Designation Columbia River Component of the RCBRA - Sediment	Sampling Location WBT- ∫ SSD		SAF No. RC-116	Data Turnaround 45 Days
Ice Chest No.	Field Logbook No. EL-1531-1	COA BESCRC6520	Method of Shipment GROUND TRANSPORT	
Shipped To TestAmerica Incorporated, Richland	Offsite Property No. N/A		Bill of Lading/Air Bill No. N/A	

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

Preservation	Cool 4C
Type of Container	GP
No. of Container(s)	1
Volume	15g
SAMPLE ANALYSIS	Chromium Hex - 7196

Sample No	Matrix *	Sample Date	Sample Time	Chromium Hex - 7196				
17T52	OTHER SOLID	[illegible]	[illegible]	X			KLS 67	

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
[illegible]	2-4-09 [illegible]	D. Heidelberg	2-12-09 1045
D. Heidelberg	2/12/09 1345		02/12/09 1345

SPECIAL INSTRUCTIONS

J9B120274
J00337
Due 03-30-09

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION — Received By — Title — Date/Time

FINAL SAMPLE DISPOSITION — Disposal Method — Disposed By — Date/Time

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-116-[illegible]

Collector [illegible]	Company Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator WEISS, RL
Project Designation Columbia River Component of the RCBRA - Sediment	Sampling Location WBT- 13 SD		SAF No. RC-116
Ice Chest No.	Field Logbook No. EL-1631-1	COA BESCRC0520	Method of Shipment GROUND TRANSPORT
Shipped To TestAmerica Incorporated, Richland	Offsite Property No. N/A		Bill of Lading/Air Bill No. N/A

Price Code 9K

Data Turnaround 45 Days

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

			Preservation	Cool 4C											
			Type of Container	G/P											
			No. of Container(s)	1											
			Volume	25g											
SAMPLE ANALYSIS				Chemicals Hart - 7.96											
Sample No.	Matrix *	Sample Date	Sample Time												
J17X[illegible]	OTHER SOLID	2/12/09	0940	X				K65G3							

CHAIN OF POSSESSION

Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Steven [illegible]	2-12-09 /1100	D Hebelberg	2-12-09 /1100
D Hebelberg	2/12/09 1345	[illegible]	021209 1345

SPECIAL INSTRUCTIONS

J9B120274

J00337

Due 03 30 09

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

Collector: [illegible]

Company Contact: JOAN KESSNER
Telephone No.: 375-4686

Project Coordinator: WEISS, RL

Price Code: 9K

Data Turnaround: 45 Days

Project Designation: Columbia River Component of the RCBRA - Sediment

Sampling Location: WBT- 2 SSD

SAF No.: RC-116

Ice Chest No.:

Field Logbook No.: EL-1631-1

COA: TE50RC6520

Method of Shipment: GROUND TRANSPORT

Shipped To: TestAmerica Incorporated, Richland

Offsite Property No.: N/A

Bill of Lading/Air Bill No.: N/A

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

Preservation	Cool 4C
Type of Container	G/P
No. of Container(s)	1
Volume	15g

SAMPLE ANALYSIS: Chromium Hex - 7196

Sample No.	Matrix *	Sample Date	Sample Time	Chromium Hex - 7196									
J13787	OTHER SOLID	2/12/09	1210	X			K656	2					

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
L. Shafter	2-12-09 / 1500	D. Heidelberg	2-12-09 / 1500
D. Heidelberg	2/12/09 1845	[illegible]	02-12-09 1845

SPECIAL INSTRUCTIONS

J9B120274
J00337
Due 03 30 09

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION — Received By: — Title: — Date/Time:

FINAL SAMPLE DISPOSITION — Disposal Method: — Disposed By: — Date/Time:

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-116-1041

Collector BA	Company Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator WEISS, RL	Price Code 9K
Project Designation Columbia River Component of the RCBRA - Sediment	Sampling Location SUH- ⚲ SSD		SAF No. RC-116	Data Turnaround 45 Days
Ice Chest No.	Field Logbook No. EL-1593-1	COA 555CR06520	Method of Shipment GROUND TRANSPORT	
Shipped To TestAmerica Incorporated, Richland	Offsite Property No. N/A		Bill of Lading/Air Bill No. N/A	

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

Preservation	Cool 4C
Type of Container	G/P
No. of Container(s)	1
Volume	15g
SAMPLE ANALYSIS	Chromium Hex - 7196

Sample No.	Matrix *	Sample Date	Sample Time	Chromium Hex - 7196									
J197F2	OTHER SOLID	2/12/09	1015	X			KL5 G1						

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
BA [illegible]	2/12/09 1230	D. [illegible] Last	2/12/09 1230
D. [illegible] Last	2/12/09 1345	[illegible]	02-12-09 1345

SPECIAL INSTRUCTIONS

J9B120274
J00337
Due 03 30 09

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WC-EE-011

Collector BM	Company Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator WEISS, RL	Price Code 9K	Data Turnaround 45 Days
Project Designation Columbia River Component of the RCBRA - Sediment	Sampling Location RH- 2 SSD		SAF No. RC-238		
Ice Chest No.	Field Logbook No. EL-1631-1	COA BESCRC8320	Method of Shipment GROUND TRANSPORT		
Shipped To TestAmerica Incorporated, Richland	Offsite Property No. N/A		Bill of Lading/Air Bill No. N/A		

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

Preservation	Cool 4C
Type of Container	G/P
No. of Container(s)	1
Volume	15g

SAMPLE ANALYSIS

Sample No.	Matrix *	Sample Date	Sample Time	Chromium Hex - Tres									
J17PH0	OTHER SOLID	2/12/09	1120	X				KL5G0					

CHAIN OF POSSESSION

Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
B Mayhew	2/12/09 1230	D Heidelberg	2/12/09 1230
D Heidelberg	2/12/09 1345		02 12 09 1345

SPECIAL INSTRUCTIONS

J9B120274

J00337

Due 03 30 09

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

Collector B A	Company Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator WEISS, RL
Project Designation Columbia River Component of the RCBRA - Sediment	Sampling Location BP- 4 SSD		SAF No. RC-116
Ice Chest No.	Field Logbook No. EL-1630-1	COA RESCRC652M	Method of Shipment GROUND TRANSPORT
Shipped To TestAmerica Incorporated, Richland	Offsite Property No. N/A		Bill of Lading/Air Bill No. N/A

Price Code 9K

Data Turnaround
45 Days

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

Preservation	Cool 4C
Type of Container	G/P
No. of Container(s)	1
Volume	15g

SAMPLE ANALYSIS

Sample No.	Matrix *	Sample Date	Sample Time	Chromium Hex - 7196									
J187F4	OTHER SOLID	2/12/09	945	X			KL5GX						

CHAIN OF POSSESSION

Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
B Magley	2/12/09 1230	D Heidelberg	2/12/09 1230
D Heidelberg	2/12/09 1345	Nm Ch	021209 1345

SPECIAL INSTRUCTIONS

J9B120274
J00337
Due 03 30 09

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-010

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

Collector B M	Company Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator WEISS, RL
Project Designation Columbia River Component of the RCBRA - Sediment	Sampling Location RH- 6B SSD		SAF No. RC-115
Ice Chest No.	Field Logbook No. EL-1431-1	COA BESCRC5520	Method of Shipment GROUND TRANSPORT
Shipped To TestAmerica Incorporated, Richland	Offsite Property No. N/A		Bill of Lading/Air Bill No. N/A

Price Code 9K

Data Turnaround 45 Days

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

Preservation	Cool 4C
Type of Container	GP
No. of Container(s)	1
Volume	5½

SAMPLE ANALYSIS

Sample No.	Matrix *	Sample Date	Sample Time	Gamma Spec - Hng
J187H5	OTHER SOLID	2/12/09	1200	X

K65G ✓

CHAIN OF POSSESSION

Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
	2/12/09 1230		2/12/09 1230
	2/12/09 1345		021209 1345

SPECIAL INSTRUCTIONS

J98120274
J00337
Due 033009

Matrix *

S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

Collector BM	Company Contact JOAN KESSNER	Telephone No. 375-4689	Project Coordinator WEISS, RL	Price Code 9K Data Turnaround 45 Days
Project Designation Columbia River Component of the RCBRA - Sediment	Sampling Location RH- [illegible] 550		SAF No. RC-116	
Ice Chest No.	Field Logbook No. EL-1631-4	COA DESCRC4510	Method of Shipment GROUND TRANSPORT	
Shipped To TestAmerica Incorporated, Richland	Offsite Property No. N/A		Bill of Lading/Air Bill No. N/A	

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

		Preservation		Cool 4C									
		Type of Container		G/P									
		No. of Container(s)		1									
		Volume		15g									
SAMPLE ANALYSIS				Chemical Non-TPH									
Sample No.	Matrix *	Sample Date	Sample Time										
J137F5	OTHER SOLID	2/12/09	1032	X			K656 R						

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
B Mayhew BMH	2/12/09 1230	D Heidelberg DH	2/12/09 1230
D Heidelberg DH	2/12/09 1345		031209 1345

SPECIAL INSTRUCTIONS

J98120274

J00337

Due 033009

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

Collector B A 1	Company Contact JOHN KESSNER	Telephone No. 375-4680	Project Coordinator WEISS, RL	Price Code 9K
Project Designation Columbia River Component of the RCBRA - Sediment	Sampling Location RH-T SSD		SAF No. RC-116	Data Turnaround 45 Days
Ice Chest No.	Field Logbook No. EL-1601-1	COA RESCRCA520	Method of Shipment GROUND TRANSPORT	
Shipped To TestAmerica Incorporated, Richland	Offsite Property No. N/A		Bill of Lading/Air Bill No. N/A	

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

Preservation	Cool 4C
Type of Container	G/P
No. of Container(s)	1
Volume	15g

SAMPLE ANALYSIS

				Chromium Hex - 7196		
Sample No.	Matrix *	Sample Date	Sample Time			
J17F5	OTHER SOLID	2/12/09	1135	X		Kle5GP

CHAIN OF POSSESSION

Sign/Print Names

Relinquished By/Removed From	Date/Time 2/12/09 1230	Received By/Stored In D. Hesselberg	Date/Time 2/12/09 1230
Relinquished By/Removed From D. Hesselberg	Date/Time 2/12/09 1345	Received By/Stored In	Date/Time 021209 1345
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time

SPECIAL INSTRUCTIONS

J98120274
J00337
Due 033009

Matrix *

S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Appendix 5

Data Validation Supporting Documentation

GENERAL CHEMISTRY ANALYSIS DATA VALIDATION CHECKLIST

VALIDATION LEVEL:	A	B	[✓ C]	D	E
PROJECT:	RCBRA		DATA PACKAGE:	J00337	
VALIDATOR:	ELR	LAB: TAL		DATE: 5/7/09	
			SDG:	J00337	

ANALYSES PERFORMED					
Anions/IC	TOC	TOX	TPH-418.1	Oil and Grease	Alkalinity
Ammonia	BOD/COD	Chloride	[✓ Chromium-VI]	pH	NO_3/NO_2
Sulfate	TDS	TKN	Phosphate		

SAMPLES/MATRIX				
J17X06	J18626	J187B4	J187B5	J187B6
J187B7	J187B8	J187B9	J187C0	J187F2
J187F4	J187F5	J187F8	J187H0	J187H1
				Solid

1. DATA PACKAGE COMPLETENESS AND CASE NARRATIVE

Technical verification documentation present? .... Yes [✓ No] N/A

Comments: ____________________

2. INSTRUMENT PERFORMANCE AND CALIBRATIONS (Levels D and E)

Initial calibrations performed on all instruments? .... Yes No [✓ N/A]

Initial calibrations acceptable? .... Yes No [✓ N/A]

ICV and CCV checks performed on all instruments? .... Yes No [✓ N/A]

ICV and CCV checks acceptable? .... Yes No [✓ N/A]

Standards traceable? .... Yes No [✓ N/A]

Standards expired? .... Yes No [✓ N/A]

Calculation check acceptable? .... Yes No [✓ N/A]

Comments: ____________________

GENERAL CHEMISTRY ANALYSIS DATA VALIDATION CHECKLIST

3. BLANKS (Levels B, C, D, and E)

ICB and CCB checks performed for all applicable analyses? (Levels D, E) .... Yes No [✓ N/A]

ICB and CCB results acceptable? (Levels D, E) .... Yes No [✓ N/A]

Laboratory blanks analyzed? .... [✓ Yes] No N/A

Laboratory blank results acceptable? .... [✓ Yes] No N/A

Field blanks analyzed? (Levels C, D, E) .... Yes [✓ No] N/A

Field blank results acceptable? (Levels C, D, E) .... Yes No [✓ N/A]

Transcription/calculation errors? (Levels D, E) .... Yes No [✓ N/A]

Comments: No FB

4. ACCURACY (Levels C, D, and E)

Spike samples analyzed? .... [✓ Yes] No N/A

Spike recoveries acceptable? .... Yes [✓ No] N/A

Sike standards NIST traceable? (Levels D, E) .... Yes No [✓ N/A]

Spike standards expired? (Levels D, E) .... Yes No [✓ N/A]

LCS/BSS samples analyzed? .... [✓ Yes] No N/A

LCS/BSS results acceptable? .... [✓ Yes] No N/A

Standards traceable? (Levels D, E) .... Yes No [✓ N/A]

Standards expired? (Levels D, E) .... Yes No [✓ N/A]

Transcription/calculation errors? (Levels D, E) .... Yes No [✓ N/A]

Performance audit sample(s) analyzed? .... Yes [✓ No] N/A

Performance audit sample results acceptable? .... Yes No [✓ N/A]

Comments: No PAS

MS - 44% - J all

GENERAL CHEMISTRY ANALYSIS DATA VALIDATION CHECKLIST

5. PRECISION (Levels C, D, and E)

Duplicate RPD values acceptable? .... [✓ Yes] No N/A

Duplicate results acceptable? .... [✓ Yes] No N/A

MS/MSD standards NIST traceable? (Levels D, E) .... Yes No [✓ N/A]

MS/MSD standards expired? (Levels D, E) .... Yes No [✓ N/A]

Field duplicate RPD values acceptable? .... [✓ Yes] No N/A

Field split RPD values acceptable? .... Yes No [✓ N/A]

Transcription/calculation errors? (Levels D, E) .... Yes No [✓ N/A]

Comments:

F.D 6/26/05 —

6. HOLDING TIMES (all levels)

Samples properly preserved? .... [✓ Yes] No N/A

Sample holding times acceptable? .... [✓ Yes] No N/A

Comments:

GENERAL CHEMISTRY ANALYSIS DATA VALIDATION CHECKLIST

7. RESULT QUANTITATION AND DETECTION LIMITS (all levels)

Results reported for all requested analyses? .... [✓ Yes] No N/A

Results supported in the raw data? (Levels D, E) .... Yes No [✓ N/A]

Samples properly prepared? (Levels D, E) .... Yes No [✓ N/A]

Detection limits meet RDL? .... [✓ Yes] No N/A

Transcription/calculation errors? (Levels D, E) .... Yes No [✓ N/A]

Comments:

Appendix 6

Additional Documentation Requested by Client

FORM II

Date: 30-Mar-09

DUPLICATE RESULTS

Lab Name:	TestAmerica	SDG:	J90337	Collection Date:	2/12/2009 11:35:00 AM
Lot-Sample No.:	J9B120274-1	Report No. :	41249	Received Date:	2/12/2009 1:45:00 PM
Client Sample ID:	J187F8	COC No. :	RC-116-1027	Matrix:	OTHER OTHERSOLID

Parameter	Result, Orig Rst	Qual	Count Error (± #)	Total Uncert (± #)	MDC|MDA, Action Lev	Rpt Unit, CRDL	Yield	Rst/MDC, Rst/TotUcert	Analysis, Prep Date	Total Sa Size	Aliquot Size	Primary Detector
Batch: 9045025 7196_CR6				Work Order: K65GP1AE		Report DB ID: K65GP1ER			Orig Sa DB ID: 9K65GP10			
HEXCHROME	1.55E-01	U		0.0E+00	1.55E-01	mg/kg	N/A	1.	2/12/09		2.5	
	1.55E-01	U	RPD 0.0			~~3.56E+01~~ 1.55E-01 [illegible] 3/31/09		N/A			G	

No. of Results: 1 Comments:

TestAmerica RPD - Relative Percent Difference.

rpt57LRptDupV5.3 MDC|MDA,Lc - Detection Decision Level based on instrument background or blank, adjusted by the sample Efficiency, Yield, and Volume.

1-23072 U Qual - Analyzed for but not detected above limiting criteria. Limit criteria is less than the Mdc/Mda or Total Uncert or not identified by gamma scan software.

FORM II

BLANK RESULTS

Date: 30-Mar-09

Lab Name: TestAmerica

Matrix: OTHER

SDG: J00337

Report No. : 41249

Parameter	Result	Qual	Count Error (2 σ)	Total Uncert (2 σ)	MDC|MDA	Rpt Unit, CRDL	Yield	Res/MDC, Res/TotUncert	Analysis, Prep Date	Total Sa Size	Aliquot Size	Primary Detector
Batch: 9045026	7196_CRS			Work Order: K57811AA		Report DB ID: K57811AB						
HEXCHROME	1.55E-01	U		0.0E+00	1.55E-01	mg/kg 1.55E-01	N/A	1. N/A	2/12/09		2.5 G	

No. of Results: 1 Comments:

TestAmerica

MDC|MDA,Lc - Detection, Decision Level based on instrument background or blank, adjusted by the sample Efficiency, Yield, and Volume.

U Qual - Analyzed for but not detected above limiting criteria. Limit criteria is less than the Mdc/Mda or Tot Uncert or not identified by gamma scan software.

rptSTL RcvBlank
V5.2.2 A2002

FORM II

LCS RESULTS

Date: 30-Mar-09

Lab Name: TestAmerica

Matrix: OTHER

SDG: J0C0337

Report No.: 41249

Parameter	Result	Qual	Count Error (± s)	Total Uncert (± s)	MDC/MDA	Report Unit	Yield	Expected	Expected Uncert	Recovery, Bias	Analysis, Prep Date	Aliquot Size	Primary Detector
Batch: 9045025	7196_CR6			Work Order: K6T611AC			Report DB ID: K6T611AC						
HEXCHROME	1.89E+01			0.0E+00	1.55E-01	mg/kg	N/A	2.00E+01		95%	2/12/09	2.5	
							Rec Limits:	80	120	-0.1		G	

No. of Results: 1 Comments:

TestAmerica Bias - (Result/Expected)-1 as defined by ANSI N13.30.

LCS Results
[illegible]

FORM II

Date: 30-Mar-09

MATRIX SPIKE RESULTS

Lab Name:	TestAmerica	SDG:	J00337		
Lot-Sample No.:	J9B120274-1, J187F8	Report No. :	41249	Matrix:	OTHER OTHERSOLID

Parameter	Spike Result, Orig Rst	Qual	Count Error (2 σ)	Total Uncert (2 σ)	MDC|MDA	Rpt Unit, CRDL	Yield	Recovery	Expected, Uncert	Analysis, Prep Date	Aliquot Size	Anlst Method, Primary Detector
Batch: 9045026	Work Order:	K65GP1AC		Report DB ID:	K65GP1AW		Orig Sa DB ID:	9K65GP10				
HEXCHROME	4.35E+00 1.55E-01			0.0E+00	1.55E-01	mg/kg	N/A	44.17%	9.85E+00	2/12/09	2.5 G	7196_CR6

Number of Results: 1

Comments:

RER - Replicate Error Ratio = |S-D|/[sqrt(sq(TPUs)+sq(TPUd))] as defined by ICPT BOA.

Bias - (Result/Expected)-1 as defined by ANSI N13.30.

F.1.2.4 SDG J00350

SAF-RC-116
Columbia River Component of the RCBRA – Sediment
FINAL VALIDATION PACKAGE

COMPLETE COPY OF VALIDATION PACKAGE TO:

Kathy Wendt H4-21

COMMENTS:

SDG J00350 **SAF-RC-116**

Date: 11 May 2009
To: Washington Closure Hanford Inc. (technical representative)
From: ELR Consulting
Project: Columbia River Component of the RCBRA – Sediment
Subject: Wet Chemistry - Data Package No. J00350-TAL

INTRODUCTION

This memo presents the results of data validation on Data Package No. J00350 prepared by TestAmerica Laboratory Inc. (TAL). A list of samples validated along with the analyses reported and the method of analysis is provided in the following table.

Sample ID	Sample Date	Media	Validation	Analyte
J18995	2/19/09	Solid	C	See note 1
J18996	2/19/09	Solid	C	See note 1
J18997	2/19/09	Solid	C	See note 1
J18998	2/19/09	Solid	C	See note 1
J189B0	2/19/09	Solid	C	See note 1
J189B1	2/19/09	Solid	C	See note 1
J189B2	2/19/09	Solid	C	See note 1
J189C5	2/19/09	Solid	C	See note 1
J189C6	2/19/09	Solid	C	See note 1
J189D0	2/19/09	Solid	C	See note 1
J189D1	2/19/09	Solid	C	See note 1
J189D3	2/19/09	Solid	C	See note 1
J189D4	2/19/09	Solid	C	See note 1
J189F3	2/19/09	Solid	C	See note 1
J189F4	2/19/09	Solid	C	See note 1
J189F5	2/19/09	Solid	C	See note 1

1 – Chromium VI by 7196A

Data validation was conducted in accordance with the Washington Closure Hanford (WCH) validation statement of work and the Remedial Investigation Work Plan for Hanford Site Releases to the Columbia River (DOE/RL-2008-11, Rev. 0, September 2008). Appendices 1 through 6 provide the following information as indicated below:

Appendix 1. Glossary of Data Reporting Qualifiers
Appendix 2. Summary of Data Qualification
Appendix 3. Annotated Laboratory Reports
Appendix 4. Laboratory Narrative and Chain-of-Custody Documentation
Appendix 5. Data Validation Supporting Documentation
Appendix 6. Additional Documentation Requested by Client

DATA QUALITY PARAMETERS

- Holding Times

Analytical holding times for metals are assessed to ascertain whether the holding time requirements were met by the laboratory. The holding time requirements are as

follows; Soil samples must be analyzed within 24 hours for chromium VI

If holding times are exceeded, but not by greater than two times the limit, all associated sample results are qualified as estimates and flagged "J" for detects and "UJ" for non-detects. If holding times are exceeded by greater than two times the limit, all associated detectable sample results are qualified as estimates and flagged "J" and all non-detects are rejected and flagged "UR".

All holding times were acceptable.

- **Method Blanks**

Method Blanks

Method blank analyses are performed to determine the extent of laboratory contamination introduced through sampling, sample preparation and analysis. At least one acceptable method blank analysis must be conducted for every 20 samples. No contaminants should be present in the method blank. All blank results must fall below the contract required detection limit (CRQL) to be acceptable.

All method blank results were acceptable.

Field (Equipment) Blank

No field blanks were submitted for analysis.

- **Accuracy**

Matrix Spike and Laboratory Control Sample

Matrix spike (MS) and laboratory control sample (LCS) analyses are used to assess the analytical accuracy of the reported data. The matrix spike is used to assess the effect of the matrix on the ability to accurately quantify sample concentrations. Recoveries must fall within the range of 70% to 130%. Samples with a recovery of less than 30% and a sample result below the IDL are rejected and flagged "UR". Samples with a recovery of 30% to 69% and a sample result less than the IDL are qualified "UJ". Samples with a recovery of greater than 130% or less than 70% and a sample result greater than the IDL are qualified as estimates and flagged "J". Finally, for samples with a recovery greater than 130% and a sample result less than the IDL, no qualification is required.

Due to a matrix spike recovery outside QC limits (1%), all chromium VI results were qualified as rejected and flagged "R".

All other accuracy results were acceptable.

- **Precision**

Laboratory Duplicate Samples

Analytical precision is expressed by the relative percent differences (RPD) between the recoveries of matrix spike duplicate (MSD) analyses performed on a sample in the analytical batch. Precision may alternatively be assessed using unspiked duplicate analyses performed on a sample in the analytical batch. If both sample and replicate activities (concentrations) are greater than five times the CRDL and the RPD is less than 30%, no qualification is required. If either activity (concentration) is less than five times the CRDL, the RPD control limit is less than or equal to two times the CRDL. If the RPD is outside the applicable control limit, associated results are qualified as estimated detects or estimated non-detects.

All laboratory duplicate results were acceptable.

Field Duplicate

No field duplicates were submitted for analysis.

- **Analytical Detection Levels**

Reported analytical detection levels are compared against the required quantitation limits (RQLs) to ensure that laboratory detection levels meet the required criteria. All analytes met the RQL.

- **Completeness**

Data package J00350 was submitted for validation and verified for completeness. Completeness is based on the percentage of data determined to be valid (i.e., not rejected). The completion percentage was 0%.

MAJOR DEFICIENCIES

The following major deficiency was noted:

- Due to a matrix spike recovery outside QC limits (1%), all chromium VI results were qualified as rejected and flagged "R".

Rejected data is unusable and should not be reported.

MINOR DEFICIENCIES

None found.

REFERENCES

Washington Closure Hanford Contract #S00W307A00 (March 2008), *Data Validation Services*.

DOE/RL-2008-11, Rev.0, *Remedial Investigation Work Plan for Hanford Site Releases to the Columbia River*, September 2008.

Appendix 1

Glossary of Data Reporting Qualifiers

Qualifiers which may be applied by data validators in compliance with WCH validation SOW are as follows:

U - Indicates the compound or analyte was analyzed for and not detected in the sample. The value reported is the sample quantitation limit corrected for sample dilution and moisture content by the laboratory.

UJ - Indicates the compound or analyte was analyzed for and not detected in the sample. Due to a minor QC deficiency identified during the data validation, the associated quantitation limit is an estimate.

J - Indicates the compound or analyte was analyzed for and detected. Due to a minor QC deficiency identified during the data validation, the associated concentration is an estimate, but the data are usable for decision-making purposes.

BJ - Applied to inorganic analyses only. Indicates the analyte concentration was greater than the IDL but less than the CRDL and is considered an estimated value.

R - Indicates the compound or analyte was analyzed for, detected, and due to an identified major QC deficiency, the data are unusable.

UR - Indicates the compound or analyte was analyzed for and not detected in the sample. Additionally, the data is unusable due to an identified major QC deficiency.

NJ - Indicates presumptive evidence of a compound at an estimated value. The data may not be valid for some specific applications (i.e., usable for decision-making purposes).

N - Indicates presumptive evidence of a compound. The data may not be valid for some specific applications (i.e., usable for decision-making purposes).

Appendix 2

Summary of Data Qualification

CHROMIUM VI DATA QUALIFICATION SUMMARY*

SDG: J00350	**REVIEWER:** **ELR**	**Project:** **RCBRA**	**PAGE 1 OF 1**
COMPOUND	QUALIFIER	SAMPLES AFFECTED	REASON
All	R	All	MS recovery

* - The Qualified Data Summary Table includes laboratory applied "U" qualifiers not specifically identified here. The laboratory applied "U" qualifiers are included to minimize misinterpretation of results contained in the table.

Appendix 3

Annotated Laboratory Reports

Sample Results Summary

TestAmerica TARL

Ordered by Method, Batch No., Client Sample ID.

Date: 31-Mar-05

Report No. : 41277

SDG No: JD0350

Batch	Client Id Work Order	Parameter	Result +- Uncertainty (2s)	Qual	Units	Tracer Yield	MDC or MDA	CRDL	RPD
9055456 7196_CR6									
	J18995								
	K7F0A1AA	HEXCHROME	1.50E-01 +- 0.00E+00	U R	mg/kg	N/A	1.50E-01	1.55E-01	
	J18996								
	K7FX81AA	HEXCHROME	1.52E-01 +- 0.00E+00	U R	mg/kg	N/A	1.52E-01	1.55E-01	
	J18997								
	K7FX31AA	HEXCHROME	1.50E-01 +- 0.00E+00	U R	mg/kg	N/A	1.50E-01	1.55E-01	
	J18998								
	K7F0G1AA	HEXCHROME	1.51E-01 +- 0.00E+00	U R	mg/kg	N/A	1.51E-01	1.55E-01	
	J189B0								
	K7F1R1AA	HEXCHROME	1.49E-01 +- 0.00E+00	U R	mg/kg	N/A	1.49E-01	1.55E-01	
	J189B1								
	K7F051AA	HEXCHROME	1.51E-01 +- 0.00E+00	U R	mg/kg	N/A	1.51E-01	1.55E-01	
	J189B2								
	K7F1D1AA	HEXCHROME	1.54E-01 +- 0.00E+00	U R	mg/kg	N/A	1.54E-01	1.55E-01	
	J189C5								
	K7F0D1AA	HEXCHROME	1.57E-01 +- 0.00E+00	U R	mg/kg	N/A	1.57E-01	1.55E-01	
	J189C6								
	K7F0C1AA	HEXCHROME	1.52E-01 +- 0.00E+00	U R	mg/kg	N/A	1.52E-01	1.55E-01	
	J189D0								
	K7F2V1AA	HEXCHROME	1.48E-01 +- 0.00E+00	U R	mg/kg	N/A	1.48E-01	1.55E-01	
	J189D1								
	K7F171AA	HEXCHROME	1.56E-01 +- 0.00E+00	U R	mg/kg	N/A	1.56E-01	1.55E-01	
	J189D3								
	K7FX21AA	HEXCHROME	1.56E-01 +- 0.00E+00	U R	mg/kg	N/A	1.56E-01	1.55E-01	
	K7FX21AE	HEXCHROME	1.52E-01 +- 0.00E+00	U	mg/kg	N/A	1.52E-01	~~3.5E-01~~ 1.55	2.0
	J189D4								
	K7F2F1AA	HEXCHROME	1.53E-01 +- 0.00E+00	U R	mg/kg	N/A	1.53E-01	1.55E-01	
	J189F3								
	K7F0J1AA	HEXCHROME	1.47E-01 +- 0.00E+00	U R	mg/kg	N/A	1.47E-01	1.55E-01	
	J189F4								
	K7FX71AA	HEXCHROME	1.57E-01 +- 0.00E+00	U R	mg/kg	N/A	1.57E-01	1.55E-01	
	J189F5								
	K7F0T1AA	HEXCHROME	1.48E-01 +- 0.00E+00	U R	mg/kg	N/A	1.48E-01	1.55E-01	

No. of Results: 17

5/8/07

RPD - Relative Percent Difference.

U Qual - Analyzed for but not detected above limiting criteria. Limit criteria is less than the Mdc/Mda or Total Uncert or not identified by gamma scan software.

QC Results Summary

TestAmerica TARL

Ordered by Method, Batch No, QC Type,

Date: 31-Mar-09

Report No. : 41277

SDG No.: J00350

Batch Work Order	Parameter	Result +- Uncertainty (2s)	Qual	Units	Tracer Yield	LCS Recovery	Bias	MDC|MDA
7196_CR6								
9055458 BLANK QC,								
K7M371AA	HEXCHROME	1.55E-01 +- 0.00E+00	U	mg/kg	N/A			1.55E-01
9055458 LCS,								
K7M371AC	HEXCHROME	1.80E+01 +- 0.00E+00		mg/kg	N/A	94%	-0.1	1.55E-01
9055458 MATRIX SPIKE, J189D3								
K7FX21AC	HEXCHROME	1.59E-01 +- 0.00E+00	U	mg/kg	N/A	1%	-1.0	1.59E-01

No. of Results: 3

5/8/09

Bias - (Result/Expected)-1 as defined by ANSI N13.30.

U Qual - Analyzed for but not detected above limiting criteria. Limit criteria is less than the Mdc/Mda or Total Uncert or not identified by gamma scan software.

Appendix 4

Laboratory Narrative and Chain-of-Custody Documentation

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Certificate of Analysis

Washington Hanford Closure
2620 Fermi Avenue
Richland, WA 99354

March 31, 2009

Attention: Joan Kessner

SAF Number : RC-116
Date SDG Closed : February 19, 2009
Number of Samples : Sixteen (16)
Sample Type : Other
SDG Number : J00350
Data Deliverable : 45-Day / Summary

CASE NARRATIVE

I. Introduction

On February 19, 2009 sixteen other solid samples were received at TestAmerica for chemistry analysis. Upon receipt, the samples were assigned the following laboratory ID numbers to correspond with the Washington Closure Hanford (WCH) specific IDs:

WCH ID#	TARL ID#	MATRIX	DATE OF RECEIPT
J189D3	K7FX2	OTHER	2/19/09
J18997	K7FX3	OTHER	2/19/09
J189F4	K7FX7	OTHER	2/19/09
J18996	K7FX8	OTHER	2/19/09
J18995	K7F0A	OTHER	2/19/09
J189C6	K7F0C	OTHER	2/19/09
J189C5	K7F0D	OTHER	2/19/09
J18998	K7F0G	OTHER	2/19/09
J189F3	K7F0J	OTHER	2/19/09
J189F5	K7F0T	OTHER	2/19/09
J189B1	K7F05	OTHER	2/19/09
J189B2	K7F1D	OTHER	2/19/09
J189B0	K7F1R	OTHER	2/19/09

J189D1	K7F17	OTHER	2/19/09
J189D4	K7F2F	OTHER	2/19/09
J189D0	K7F2V	OTHER	2/19/09

II. Sample Receipt

The sample was received in good condition and no anomalies were noted during check-in.

III. Analytical Results/Methodology

The analytical results for this report are presented by laboratory sample ID. Each set of data includes sample identification information, analytical results and the appropriate associated statistical errors. The requested analyses were:

Chemical Analysis
Hexavalent Chromium by EPA method 7196A

IV. Quality Control

The analytical results for each analysis performed includes a minimum of one laboratory control sample (LCS), one method (reagent) blank, and one duplicate sample analysis. Any exceptions have been noted in the "Comments" section.

QC and sample results are reported in the same units.

V. Comments

Chemical Analysis
Hexavalent Chromium by EPA method 7196A:
The matrix spike recovered below the MDL. The post digestive matrix spike recovered at 68% and the insoluble matrix spike recovered at 89%. This implies a possible amount of reducing capacity in the sample, but not enough to exhaust the more copious insoluble matrix spike. Except as noted, the LCS, batch blank, sample, sample duplicate (J189D3) and sample matrix spike (J189D3) results are within contractual requirements.

I certify that this Certificate of Analysis is in compliance with the SOW, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hard copy data package has been authorized by the Laboratory Manager, or a designee as verified by the following signature.

Reviewed and approved:

Sandra Seger
for Project Manager

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-116-1368 Page 1 of 1

Collector LS	Company Contact JOAN KESSNER	Telephone No. 375-4685	Project Coordinator KESSNER, JE
Project Designation Columbia River Component of the RCBRA - Sediment	Sampling Location BL-5 SSD		SAF No. RC-116
Ice Chest No.	Field Logbook No. EL-1613-1	COA BES2C0650	Method of Shipment GROUND TRANSPORT
Shipped To TestAmerica Incorporated, Richland	Offsite Property No. N/A		Bill of Lading/Air Bill No. N/A

Price Code 9K

Data Turnaround 45 Days

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

Preservation	Cool 4C
Type of Container	G/P
No. of Container(s)	1
Volume	15g

SAMPLE ANALYSIS

Chromium Hex - 7196

Sample No.	Matrix *	Sample Date	Sample Time	Chromium Hex - 7196								
J19003	OTHER SOLID	2/19/09	1215	X				MFX2				

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
D. Hibbard	2/19/09 / 1230	D. Hibbard SST	2-19-09 / 1230
D. Hibbard SST	2/19/09 1315		02-19-09 1315
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time

SPECIAL INSTRUCTIONS

J9B190306
J00350
Due 04-09-09

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

A-6004-EE-013

Washington Closure Hanford	**CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST**	RC-116-1342	Page 1 of 1
Collector B	Company Contact JOAN KESSNER Telephone No. 375-4655	Project Coordinator KESSNER, JH	Price Code 9K Data Turnaround 45 Days
Project Designation Columbia River Component of the RCBRA - Sediment	Sampling Location BA- & SSD	SAF No. RC-116	
Ice Chest No.	Field Logbook No. EL-1631-1 COA BESCRC0535	Method of Shipment GROUND TRANSPORT	
Shipped To TestAmerica Incorporated, Richland	Offsite Property No. N/A	Bill of Lading/Air Bill No. N/A	

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

			Preservation	Cool 4C									
			Type of Container	G/P									
			No. of Container(s)	1									
			Volume	15g									
SAMPLE ANALYSIS				Chromium Hex - 7196									
Sample No.	Matrix *	Sample Date	Sample Time										
13937	OTHER SOLID	2/19/09	1030	X					KTFX5				

CHAIN OF POSSESSION	Date/Time	Sign/Print Names	Date/Time
Relinquished By/Removed From B Markus	2/19/09 1230	Received By/Stored In D Heikkinen	2/19/09 1230
Relinquished By/Removed From D Heikkinen	2/19/09 1315	Received By/Stored In	02/19/09 1315
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time

SPECIAL INSTRUCTIONS

J9B190306
J00350
Due 04-07-09
SES 2/20/09

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

Washington Closure Hanford | **CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST** | RC-116-1378 | Page 1 of 1

Collector BA	**Company Contact** JOAN KESSNER	**Telephone No.** 375-4688	**Project Coordinator** KESSNER, JH
Project Definition Columbia River Component of the RCBRA - Sediment	**Sampling Location** 300D- 4 SSD		**SAP No.** RC-116
Ice Chest No.	**Field Logbook No.** EL-1611-1	**COA** BESCRO0550	**Method of Shipment** GROUND TRANSPORT
Shipped To TestAmerica Incorporated, Richland	**Offsite Property No.** N/A		**Bill of Lading/Air Bill No.** N/A

Price Code 9K

Data Turnaround 45 Days

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

Preservation	Cool 4C
Type of Container	GP
No. of Container(s)	1
Volume	15g
SAMPLE ANALYSIS	Chromium Hex - 7196

Sample No.	Matrix *	Sample Date	Sample Time	Chromium Hex - 7196			
J19954	OTHER SOLID	2/14/09	1035	X			K7X7

CHAIN OF POSSESSION		**Sign/Print Names**	
Relinquished By/Removed From	Date/Time 2/19/09 1230	Received By/Stored In	Date/Time 1230
Relinquished By/Removed From	Date/Time 2/19/09 1305	Received By/Stored In	Date/Time 021909 1315
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time

SPECIAL INSTRUCTIONS

J98190306
J00350
Due 040709
do
sks 2/20/09

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Washington Closure Hanford	**CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST**	RC-116-1341	Page 1 of 1
Collector BK	Company Contact JOAN KESSNER	Telephone No. 375-4652	Project Coordinator KESSNER, JH
Project Designation Columbia River Component of the RCBRA - Sediment	Sampling Location HA-4 SSD		SAF No. RC-116
Ice Chest No.	Field Logbook No. EL-1631-1	COA RESCRC6520	Method of Shipment GROUND TRANSPORT
Shipped To TestAmerica Incorporated, Richland	Offsite Property No. N/A		Bill of Lading/Air Bill No. N/A

Price Code 9K

Data Turnaround 45 Days

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

Preservation	Cool 4C										
Type of Container	G/P										
No. of Container(s)	1										
Volume	15g										
SAMPLE ANALYSIS	Chromium Hex - 7196										

Sample No.	Matrix *	Sample Date	Sample Time										
J18096	OTHER SOLID	2/19/09	1010	X				K7EK8					

CHAIN OF POSSESSION Sign/Print Names

Relinquished By/Removed From B Mayin Boyd	Date/Time 2/19/09 1230	Received By/Stored In D Heidelberg	Date/Time 2/19/09 1230
Relinquished By/Removed From D Heidelberg	Date/Time 2/19/09 1315	Received By/Stored In	Date/Time 02-19-09 1315
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time

SPECIAL INSTRUCTIONS

J98190306
JC0350
Due 040709
tie
8582609

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-116-1240	Page 1 of 1

Collector BM	Company Contact JOAN KESSNER	Telephone No. 373-4588	Project Coordinator KESSNER, JH
Project Designation Columbia River Component of the RCBRA - Sediment	Sampling Location HA- 2 SSD		SAF No. RC-116
Ice Chest No.	Field Logbook No. EL-1631-1	COA BESCRC6522	Method of Shipment GROUND TRANSPORT
Shipped To TestAmerica Incorporated, Richland	Offsite Property No. N/A		Bill of Lading/Air Bill No. N/A

Price Code 9K

Data Turnaround 45 Days

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

Preservation	Cool 4C
Type of Container	G/P
No. of Container(s)	1
Volume	15g
SAMPLE ANALYSIS	[illegible] - TPH

Sample No.	Matrix *	Sample Date	Sample Time					
J19935	OTHER SOLID	2/19/09	921	X				K1F0A

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
B. [illegible]	2/19/09 1220	D. [illegible]	2/19/09 1220
D. [illegible]	2/19/09 1315	[illegible]	2/19/09 1315
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time

SPECIAL INSTRUCTIONS

J98190306
J00350
Due 042709
bb
8052122-59

Matrix *
[illegible]

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-110-1301

Collector BA	Company Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator KESSNER, JB	Price Code 9K
Project Designation Columbia River Component of the RCBRA - Sediment	Sampling Location BL-5 SSO		SAF No. RC-125	Data Turnaround 45 Days
Ice Chest No.	Field Logbook No. EL-1631-1	COA BESCRC0550	Method of Shipment GROUND TRANSPORT	
Shipped To TestAmerica Incorporated, Richland	Offsite Property No. N/A		Bill of Lading/Air Bill No. N/A	

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

Preservation	Cool 4C
Type of Container	G/P
No. of Container(s)	1
Volume	1kg
SAMPLE ANALYSIS	Chlorine Free-2 MS

Sample No.	Matrix*	Sample Date	Sample Time										
J18906	OTHER SOLID	2/18/09	1054	X						KJF0	C		

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
B Ah	2/18/09 1230	D Ashley	2/18/09 1230
D Heddlesby	2/19/09 1315	Mm. Uh	02/19/09 1315

SPECIAL INSTRUCTIONS

J9B190306
J00350
Due 040909
06
3/25/09

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

Collector TSM	Company Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator KESSNER, JH
Project Designation Columbia River Component of the RCBRA - Sediment	Sampling Location BL-3 SSD		SAF No. RC-116
Ice Chest No.	Field Logbook No. EL-1631-1	COA B2SCRC6320	Method of Shipment GROUND TRANSPORT
Shipped To TestAmerica Incorporated, Richland	Offsite Property No. N/A		Bill of Lading/Air Bill No. N/A

Price Code 9K

Data Turnaround
45 Days

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

Preservation	Cool 4C
Type of Container	G/P
No. of Container(s)	1
Volume	15g
SAMPLE ANALYSIS	Chromium Hex - 7196

Sample No.	Matrix *	Sample Date	Sample Time							
J18SC5	OTHER SOLID	2/19/09	1128	X					K7F0D	

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
D Hughes	2/19/09 0830	D Hildebrand	2/19/09 0830
D Hildebrand	2/19/09 1315	Ann Ch	02/19/09 1315

SPECIAL INSTRUCTIONS

J9B190306
J30350
Due 040709
DG
[illegible]/29/09.

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-110-1343

Collector B H	Company Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator KESSNER, JE
Project Designation Columbia River Component of the RCBRA - Sediment	Sampling Location HA- Y SSD		SAF No. RC-116
Ice Chest No.	Field Logbook No. EL-1101-1	COA BESCRC6520	Method of Shipment GROUND TRANSPORT
Shipped To TestAmerica, Incorporated, Richland	Offsite Property No. N/A		Bill of Lading/Air Bill No. N/A

Price Code 9K

Data Turnaround 45 Days

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

Preservation	Cool 4C
Type of Container	G/P
No. of Container(s)	1
Volume	15g
SAMPLE ANALYSIS	Gamma Spec - 7.16

Sample No.	Matrix *	Sample Date	Sample Time					
J15906	OTHER SOLID	2/16/09	1246	X				K1F0G

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time 2/16/09	Received By/Stored In	Date/Time 2/16/09 1230
Relinquished By/Removed From	Date/Time 2/19/09 1315	Received By/Stored In	Date/Time 021909 1315
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time

SPECIAL INSTRUCTIONS

~~J9B190358H~~
J9B190306
J00350
Due 040909
06

Matrix *

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

0000023

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

Collector L. Stratton	Company Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator KESSNER, JH	Price Code 9K Data Turnaround 45 Days
Project Designation Columbia River Component of the RCBRA - Sediment	Sampling Location 300D-3 SSD		SAF No. RC-125	
Ice Chest No.	Field Logbook No. EL-1651-1	COA BESCRC0125	Method of Shipment GROUND TRANSPORT	
Shipped To TestAmerica Incorporated, Richland	Offsite Property No. N/A		Bill of Lading/Air Bill No. N/A	

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

Preservation	Cool 4C
Type of Container	G/P
No. of Container(s)	1
Volume	15g

SAMPLE ANALYSIS

Sample No.	Matrix *	Sample Date	Sample Time	Chromium Hex - 7196									
J189F3	OTHER SOLID	2-19-09	0845	X				K7F07					

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From L. Stratton	Date/Time 2-19-09 / 1231	Received By/Stored In D. Hellelberg	Date/Time 2-19-09 / 1231
Relinquished By/Removed From D. Hellelberg	Date/Time 021909 1315	Received By/Stored In	Date/Time 021909 1315
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time

SPECIAL INSTRUCTIONS

J9B190306
J00350
Due 040709
DO

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-116-1379 Page 1 of 1

Collector: L. Stratton

Company Contact: JOAN KESSNER

Telephone No.: 375-4688

Project Coordinator: KESSNER, JH

Price Code: 9K

Data Turnaround: 45 Days

Project Designation: Columbia River Component of the RCBRA - Sediment

Sampling Location: 300D- 5 SSD

SAF No.: RC-116

Ice Chest No.:

Field Logbook No.: EL-1621-1

COA: BESCRCA520

Method of Shipment: GROUND TRANSPORT

Shipped To: TestAmerica Incorporated, Richland

Offsite Property No.: N/A

Bill of Lading/Air Bill No.: N/A

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

Preservation	Cool 4C
Type of Container	G/P
No. of Container(s)	1
Volume	15g

SAMPLE ANALYSIS: Chromium Hex - TRE

Sample No.	Matrix *	Sample Date	Sample Time									
J190F5	OTHER SOLID	2-19-09	[illegible]	X				K7F05				

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
	2-19-09/1230		2-19-09/1230
	2/19/09 1315		021909 1315

SPECIAL INSTRUCTIONS

J98190304
J00350
Due 040709

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION — Received By — Title — Date/Time

FINAL SAMPLE DISPOSITION — Disposal Method — Disposed By — Date/Time

WCH-EE-011

Washington Closure Hanford | CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

Collector L Stratton	Company Contact JOAN KESSNER	Telephone No. 372-4684	Project Coordinator KESSNER, JR
Project Designation Columbia River Component of the RCBRA - Sediment	Sampling Location HA- / SSD		SAF No. RC-116
Ice Chest No.	Field Logbook No. EL-1581-1	COA BESCHC8920	Method of Shipment GROUND TRANSPORT
Shipped To TestAmerica Incorporated, Richland	Offsite Property No. N/A		Bill of Lading/Air Bill No. N/A

Price Code 9K

Data Turnaround
45 Days

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

Preservation	Cool 4C
Type of Container	G/P
No. of Container(s)	1
Volume	15g
SAMPLE ANALYSIS	Chemistry Part - Trib

Sample No.	Matrix *	Sample Date	Sample Time											
16901	OTHER SOLID	2/19/09	0940	X					K7F05					

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
L Stratton	2/19/09/1240	D Heidelberg	2/19/09/1251
D Heidelberg	2/19/09 1315	A Smith	021909 1315

SPECIAL INSTRUCTIONS

J9B190306
J00350
Due 040709
06
3/25/2009

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-01

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-116-1347

Collector LS	Company Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator KESSNER, JH	Price Code 9K
Project Designation Columbia River Component of the RCBRA - Sediment	Sampling Location RA-3 SSD		SAF No. RC-116	Data Turnaround 45 Days
Ice Chest No.	Field Logbook No. EL-1631-1	COA BESCRC6520	Method of Shipment GROUND TRANSPORT	
Shipped To TestAmerica Incorporated, Richland	Offsite Property No. N/A		Bill of Lading/Air Bill No. N/A	

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

Preservation	Cool 4C
Type of Container	GP
No. of Container(s)	1
Volume	15g
SAMPLE ANALYSIS	Corrosion No. 1996

Sample No.	Matrix *	Sample Date	Sample Time					
J19BE2	OTHER SOLID	2/15/09	10:15	X				K7FID

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
	2-19-09/1330	Dressing	2-19-09/1330
	2/19/09 1315		02/19/09 1315

SPECIAL INSTRUCTIONS

J9B190306

J00350

Due 040709

on 03/23/09

Matrix *

S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION — Received By — Title — Date/Time

FINAL SAMPLE DISPOSITION — Disposal Method — Disposed By — Date/Time

WCH-EE-015

Washington Closure Hanford	**CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST**	RC-116-1345	
Collector LS	Company Contact JOAN KESSNER Telephone No. 375-4688	Project Coordinator KESSNER, JH	Price Code 9K Data Turnaround 45 Days
Project Designation Columbia River Component of the RCBRA - Sediment	Sampling Location HA & SSD	SAF No. RC-116	
Ice Chest No.	Field Logbook No. EL-1621-1 COA RESCRD6120	Method of Shipment GROUND TRANSPORT	
Shipped To TestAmerica Incorporated, Richland	Offsite Property No. N/A	Bill of Lading/Air Bill No. N/A	

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

Preservation	Cool 4C
Type of Container	G/P
No. of Container(s)	1
Volume	15g
SAMPLE ANALYSIS	Chromium Hex - 7196

Sample No.	Matrix *	Sample Date	Sample Time	Chromium Hex - 7196								
J18960	OTHER SOLID	2/19/09	1000	X					K7F1K			

CHAIN OF POSSESSION Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
	2-19-09 / 1150	LS ~~[illegible]~~ D Heidelberg	2-19-09 / 1150
D Heidelberg	2-19-09 1315		021909 1315

SPECIAL INSTRUCTIONS

J9B190306
J00350
Due 040909
db 03/20/09

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-ES-0

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-116-1366 Page 1 of 1

Collector LS	Company Contact JOAN KESSNER	Telephone No. 372-4628	Project Coordinator KESSNER, JH
Project Designation Columbia River Component of the RCBRA - Sediment	Sampling Location BL 1 SSD		SAF No. RC-116
Ice Chest No.	Field Logbook No. EL-1631-1	COA BESCRC8370	Method of Shipment GROUND TRANSPORT
Shipped To TestAmerica Incorporated, Richland	Offsite Property No. N/A		Bill of Lading/Air Bill No. N/A

Price Code 9K

Data Turnaround 45 Days

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

Preservation	Cool 4C
Type of Container	G/P
No. of Container(s)	1
Volume	1kg

SAMPLE ANALYSIS

Strontium Sr-90 - 7116

Sample No.	Matrix *	Sample Date	Sample Time	Strontium Sr-90 - 7116									
[illegible]	OTHER SOLID	2/19/09	1105	X				KTF19					

CHAIN OF POSSESSION

Sign/Print Names

Relinquished By/Removed From S. Hillman	Date/Time 2-19-09 / 1130	Received By/Stored In D. Heidelberg	Date/Time 2-19-09 1130
Relinquished By/Removed From D. Heidelberg	Date/Time 2-19-09 1315	Received By/Stored In	Date/Time 02-19-09 1315
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time

SPECIAL INSTRUCTIONS

J9B190306
J00350
Due 040709
OK
S.S. 2/20/09

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-017

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST		RC-116-1369	Page 1 of 1
Collector LS	Company Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator KESSNER, JH	Price Code 9K Data Turnaround 45 Days
Project Designation Columbia River Component of the RCBRA - Sediment	Sampling Location BL-4 SSD		SAF No. RC-116	
Ice Chest No.	Field Logbook No. EL-1616-1	COA SESCRC6520	Method of Shipment GROUND TRANSPORT	
Shipped To TestAmerica Incorporated, Richland	Offsite Property No. N/A		Bill of Lading/Air Bill No. N/A	

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

Preservation	Cool 4C
Type of Container	G/P
No. of Container(s)	1
Volume	15g
SAMPLE ANALYSIS	Gamma Spec - 7.56

Sample No.	Matrix *	Sample Date	Sample Time					
J15ED4	OTHER SOLID	2/14/09	1150	X			K7F3F	

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
	2-15-09 / 1220		2-15-09 1250
	2/15/09 1315		2/15/09 1315

SPECIAL INSTRUCTIONS

J9B190306
J00350
Due 040909
o/o
[illegible]

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-116-1305

Collector LS	Company Contact JOAN KESSNER	Telephone No. 375-4686	Project Coordinator KESSNER, JJ
Price Code 9K	Data Turnaround 45 Days		
Project Designation Columbia River Component of the RCBRA - Sediment	Sampling Location BL- 2- SSD		SAF No. RC-116
Ice Chest No.	Field Logbook No. EL-1651-1	COA BESCRC4521	Method of Shipment GROUND TRANSPORT
Shipped To TestAmerica Incorporated, Richland	Offsite Property No. N/A		Bill of Lading/Air Bill No. N/A

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

Preservation	Cool 4C
Type of Container	G/P
No. of Container(s)	1
Volume	15g
SAMPLE ANALYSIS	Chemical Bio - TiN

Sample No.	Matrix *	Sample Date	Sample Time			
218900	OTHER SOLID	2/19/09	1130	X		K7FDV

CHAIN OF POSSESSION

Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
	2·19·09 / [illegible]		2·19 09 / 1330
	2/19/09 1315	Nom [illegible]	0219 09 1315

SPECIAL INSTRUCTIONS

J9B190306
J00350
Due 040709
[illegible]

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Appendix 5

Data Validation Supporting Documentation

GENERAL CHEMISTRY ANALYSIS DATA VALIDATION CHECKLIST

VALIDATION LEVEL:	A	B	[✓ C]	D	E
PROJECT: RCBRA			DATA PACKAGE: J00350		
VALIDATOR: ELR	LAB: TAL			DATE: 5/7/09	
			SDG: J00350		
ANALYSES PERFORMED					
Anions/IC	TOC	TOX	TPH-418.1	Oil and Grease	Alkalinity
Ammonia	BOD/COD	Chloride	[✓ Chromium-VI]	pH	NO_3/NO_2
Sulfate	TDS	TKN	Phosphate		
SAMPLES/MATRIX					
J18995	J18996	J18997	J18998	J189B0	J189B1
J189B2	J189C5	J189C6	J189D0	J189D1	J189D2
J189D4	J189F3	J189F4	J189F5		
				soil	

1. DATA PACKAGE COMPLETENESS AND CASE NARRATIVE

Technical verification documentation present? .... Yes [✓ No] N/A

Comments:

2. INSTRUMENT PERFORMANCE AND CALIBRATIONS (Levels D and E)

Initial calibrations performed on all instruments? .... Yes No [✓ N/A]

Initial calibrations acceptable? .... Yes No [✓ N/A]

ICV and CCV checks performed on all instruments? .... Yes No [✓ N/A]

ICV and CCV checks acceptable? .... Yes No [✓ N/A]

Standards traceable? .... Yes No [✓ N/A]

Standards expired? .... Yes No [✓ N/A]

Calculation check acceptable? .... Yes No [✓ N/A]

Comments:

GENERAL CHEMISTRY ANALYSIS DATA VALIDATION CHECKLIST

3. BLANKS (Levels B, C, D, and E)

ICB and CCB checks performed for all applicable analyses? (Levels D, E) .... Yes No [✓ N/A]

ICB and CCB results acceptable? (Levels D, E) .... Yes No [✓ N/A]

Laboratory blanks analyzed? .... [✓ Yes] No N/A

Laboratory blank results acceptable? .... [✓ Yes] No N/A

Field blanks analyzed? (Levels C, D, E) .... Yes [✓ No] N/A

Field blank results acceptable? (Levels C, D, E) .... Yes No [✓ N/A]

Transcription/calculation errors? (Levels D, E) .... Yes No [✓ N/A]

Comments: no FB

4. ACCURACY (Levels C, D, and E)

Spike samples analyzed? .... [✓ Yes] No N/A

Spike recoveries acceptable? .... Yes [✓ No] N/A

Sike standards NIST traceable? (Levels D, E) .... Yes No [✓ N/A]

Spike standards expired? (Levels D, E) .... Yes No [✓ N/A]

LCS/BSS samples analyzed? .... [✓ Yes] No N/A

LCS/BSS results acceptable? .... [✓ Yes] No N/A

Standards traceable? (Levels D, E) .... Yes No [✓ N/A]

Standards expired? (Levels D, E) .... Yes No [✓ N/A]

Transcription/calculation errors? (Levels D, E) .... Yes No [✓ N/A]

Performance audit sample(s) analyzed? .... Yes [✓ No] N/A

Performance audit sample results acceptable? .... Yes No [✓ N/A]

Comments: No PAS

1% MS recovery – R all

GENERAL CHEMISTRY ANALYSIS DATA VALIDATION CHECKLIST

5. PRECISION (Levels C, D, and E)

Duplicate RPD values acceptable? .... [✓ Yes] No N/A

Duplicate results acceptable? .... [✓ Yes] No N/A

MS/MSD standards NIST traceable? (Levels D, E) .... Yes No [✓ N/A]

MS/MSD standards expired? (Levels D, E) .... Yes No [✓ N/A]

Field duplicate RPD values acceptable? .... Yes No [✓ N/A]

Field split RPD values acceptable? .... Yes No [✓ N/A]

Transcription/calculation errors? (Levels D, E) .... Yes No [✓ N/A]

Comments:

6. HOLDING TIMES (all levels)

Samples properly preserved? .... [✓ Yes] No N/A

Sample holding times acceptable? .... [✓ Yes] No N/A

Comments:

GENERAL CHEMISTRY ANALYSIS DATA VALIDATION CHECKLIST

7. RESULT QUANTITATION AND DETECTION LIMITS (all levels)

Results reported for all requested analyses? .... [✓ Yes] No N/A

Results supported in the raw data? (Levels D, E) .... Yes No [✓ N/A]

Samples properly prepared? (Levels D, E) .... Yes No [✓ N/A]

Detection limits meet RDL? .... [✓ Yes] No N/A

Transcription/calculation errors? (Levels D, E) .... Yes No [✓ N/A]

Comments:

Appendix 6

Additional Documentation Requested by Client

FORM II

Date: 31-Mar-09

DUPLICATE RESULTS

Lab Name:	TestAmerica	SDG:	J90350	Collection Date:	2/19/2009 12:15:00 PM
Lot-Sample No.:	J9B190306-1	Report No.:	41277	Received Date:	2/19/2009 1:15:00 PM
Client Sample ID:	J18903	COC No.:	RC-116-1368	Matrix:	OTHER OTHERSOLID

Parameter	Result, Orig Rst	Qual	Count Error (2 s)	Total Uncert (2 s)	MDC|MDA, Action Lev	Rpt Unit, CRDL	Yield	Rst/MDC, Rst/TotUcert	Analysis, Prep Date	Total Sa Size	Aliquot Size	Primary Detector
Batch: 9050455	7196_CR6			Work Order: K7FX21AE		Report DB ID: K7FX21SR			Orig Sa DB ID: SK7FX210			
HEXCHROME	1.52E-01	U		0.0E+00	1.52E-01	mg/kg	N/A	(*.)	2/19/09		2.56	
	1.56E-01	U	RPD 2.6			~~2.56E-01~~ 1.57		N/A			G	

No. of Results: 1 Comments:

TestAmerica RPD - Relative Percent Difference

rptSTLRchDupV5.2 MDC|MDA,Lc - Detection, Decision Level based on instrument background or blank, adjusted by the sample Efficiency, Yield, and Volume.

2/5/2007 U Qual - Analyzed for but not detected above limiting criteria. Limit criteria is less than the Mdc/Mda or Total Uncert or not identified by gamma scan software.

FORM II

Date: 31-Mar-09

BLANK RESULTS

Lab Name: TestAmerica

Matrix: OTHER

SDG: J00350

Report No.: 41277

Parameter	Result	Qual	Count Error (2 σ)	Total Uncert(2 σ)	MDC|MDA	Rpt Unit, CRDL	Yield	Res/MDC, Res/TotUncert	Analysis, Prep Date	Total Sa Size	Aliquot Size	Primary Detector
Batch: 8055458	7196_CR6			Work Order: K7M371AA		Report DB ID: K7M371AB						
HEXCHROME	1.55E-01	U		0.0E+00	1.55E-01	mg/kg 1.55E-01	N/A	1. N/A	2/12/09		2.5 G	

No. of Results: 1 Comments:

TestAmerica

rptSTLRchBlank V5.2.2 A2002

MDC|MDA,Lc - Detection, Decision Level based on instrument background or blank, adjusted by the sample Efficiency, Yield, and Volume.

U Qual - Analyzed for but not detected above limiting criteria. Limit criteria is less than the MDC/MDA or Total Uncert or not identified by gamma scan software.

FORM II

LCS RESULTS

Date: 31-Mar-09

Lab Name: TestAmerica

Matrix: OTHER

SDG: J00350

Report No. : 41277

Parameter	Result	Qual	Count Error (2 σ)	Total Uncert (2 σ)	MDC|MDA	Report Unit	Yield	Expected	Expected Uncert	Recovery, Bias	Analysis, Prep Date	Aliquot Size	Primary Detector
Batch: 9055455	7196_CR6			Work Order: K7M371AC			Report DB ID: K7M371AC						
HEXCHROME	1.88E+01			0.0E+00	1.55E-01	mg/kg	N/A	2.00E+01		94%	2/19/09	2.5	
							Rec Limits:	80	120	-0.1		G	

No. of Results: 1 Comments:

TestAmerica Bias - (Result/Expected)-1 as defined by ANSI N13.30.

rptSTLRcNLcs
V5.2.2 A2002

FORM II

Date: 31-Mar-09

MATRIX SPIKE RESULTS

Lab Name: TestAmerica　　SDG: J00350

Lot-Sample No.: J9B190306-1, J189D3　　Report No. : 41277　　Matrix: OTHER　　OTHERSOLID

Parameter	Spike Result, Orig Rst	Qual	Count Error (2 s)	Total Uncert (2 s)	MDC MDA	Rpt Unit, CRDL	Yield	Recovery	Expected, Uncert	Analysis, Prep Date	Aliquot Size	Analy Method, Primary Detector
Batch: 9055458	Work Order: K7PX21AC			Report DB ID: K7PX21AW		Orig Sa DB ID:						
HEXCHROME	1.59E-01 0.00E+00	U		0.0E+00	1.59E-01	mg/kg	N/A	1.19%	1.33E+01	2/19/09	2.43 G	7196_C96

Number of Results: 1

Comments:

TestAmerica　RER - Replicate Error Ratio = (S-D)/[sqrt(sq(TPUs)+sq(TPUd))] as defined by ICPT BOA.

rptSTLRchMs　Bias - (Result/Expected)-1 as defined by ANSI N13.30.

V5.2.2 A2002　U Qual - Analyzed for but not detected above limiting criteria. Limit criteria is less than the Mdc/Mda or Total Uncert or not identified by gamma scan software.

F.1.2.5 SDG K1489

SAF-RC-116
Columbia River Component of the RCBRA – Sediment
FINAL VALIDATION PACKAGE

COMPLETE COPY OF VALIDATION PACKAGE TO:

Kathy Wendt H4-21

COMMENTS:

SDG K1489 **SAF-RC-116**

Date: 18 November 2009
To: Washington Closure Hanford Inc. (technical representative)
From: ELR Consulting
Project: Columbia River Component of the RCBRA -- Sediment
Subject: Radiochemistry - Data Package No. K1489-EB

INTRODUCTION

This memo presents the results of data validation on Data Package No. K1489 prepared by Eberline Services (EB). A list of samples validated along with the analyses reported and the method of analysis is provided in the following table.

Sample ID	Sample Date	Media	Validation	Anaysis
J17VN9	12/8/08	Solid	C	See note 1
J17XK6	12/8/08	Solid	C	See note 1
J17XK7	12/8/08	Solid	C	See note 1
J17XK8	12/8/08	Solid	C	See note 1
J17YT4	12/8/08	Solid	C	See note 1
J17YT5	12/8/08	Solid	C	See note 1
J17YV8	12/8/08	Solid	C	See note 1
J17YV9	12/8/08	Solid	C	See note 1
J17YW0	12/8/08	Solid	C	See note 1
J17YW2	12/8/08	Solid	C	See note 1
J18002	12/8/08	Solid	C	See note 1
J18003	12/8/08	Solid	C	See note 1
J18004	12/8/08	Solid	C	See note 1
J18005	12/8/08	Solid	C	See note 1
J18006	12/8/08	Solid	C	See note 1
J18016	12/8/08	Solid	C	See note 1
J18017	12/8/08	Solid	C	See note 1

1 – Carbon-14, total strontium, technetium-99, alpha spectroscopy and gamma spectroscopy.

Data validation was conducted in accordance with the Washington Closure Hanford (WCH) validation statement of work and the Remedial Investigation Work Plan for Hanford Site Releases to the Columbia River (DOE/RL-2008-11, Rev. 0, September 2008). Appendices 1 through 6 provide the following information as indicated below:

Appendix 1. Glossary of Data Reporting Qualifiers
Appendix 2. Summary of Data Qualification
Appendix 3. Qualified Data Summary and Annotated Laboratory Reports
Appendix 4. Laboratory Narrative and Chain-of-Custody Documentation
Appendix 5. Data Validation Supporting Documentation
Appendix 6. Additional Data Requested by Client

DATA QUALITY PARAMETERS

- **Holding Times**

Holding times are calculated from Chain-of-Custody forms to determine the validity of the results. The maximum holding time for radiochemical analysis is 6 months.

All holding times were acceptable.

- **Preparation (Method) Blanks**

Laboratory Blanks

Blank samples are analyzed to determine if positive results are due to laboratory reagent, sample container, or detector contamination. If blank analysis results indicate the presence of an analyte above the minimum detectable activity (MDA), the following qualifiers are applied: All positive sample results less than five times the highest blank concentration are qualified as estimates and flagged "J"; sample results below the MDA are qualified as undetected and flagged "U"; sample results above the MDA and greater than five times the highest blank concentration are not qualified.

All blank results were acceptable.

Field (Equipment) Blank

No field blanks were submitted for analysis

- **Accuracy**

Accuracy is evaluated from laboratory control sample (LCS) or blank spike sample (BSS) batch samples and spiked samples from the analytical batch. Measured activities are compared to the known added amounts. The acceptable LCS or BSS and matrix spike (MS) recovery range is 70-130%. In addition, samples may be spiked with a radiochemical tracer to assist in isolating the radioisotope of interest with the yield of the tracer being used in calculating sample activity. The acceptable range for tracer recovery is 20% to 105%. Spike sample results outside the above ranges result in associated sample results being qualified as estimates, or not qualified, depending on the activity of the individual sample. Results are rejected for LCS/BSS recoveries of less than 30% and tracer recoveries of less than 20%, and tracer recoveries of greater than 115% for detected results.

Due to the lack of an LCS analysis, all thorium-228 (aspec) and thorium-232 (aspec) results were qualified as estimates and flagged "J".

Due to the lack of a matrix spike analysis, all carbon-14 results were qualified as estimates and flagged "J"

Due to a radiochemical yield outside QC limits (106%), the thorium-228 (aspec), thorium-230 (aspec) and thorium-232 (aspec) results in sample J17XK8 were qualified as estimates and flagged "J".

Due to a radiochemical yield outside QC limits (113%), the thorium-230 (aspec) and thorium-232 (aspec) results in sample J18016 were qualified as estimates and flagged "J".

All other accuracy results were acceptable.

- **Laboratory Duplicates**

Analytical precision is expressed by the relative percent differences (RPD) between the recoveries of duplicate matrix spike analyses performed on a sample in the analytical batch. Precision may alternatively be assessed using unspiked duplicate analyses performed on a sample in the analytical batch. If both sample and replicate activities (concentrations) are greater than five times the contract required detection limit (CRDL) and the RPD is less than 30%, no qualification is required. If either activity (concentration) is less than five times the CRDL, the RPD control limit is less than or equal to two times the CRDL. If the RPD is outside the applicable control limit, associated results are qualified as estimated detects or estimated non-detects.

All duplicate results were acceptable.

Field Duplicates

One set of field duplicates (J18003/J17VN9) were submitted for analysis. Field duplicates are compared using the same criteria as for laboratory duplicates. All field duplicates results were acceptable.

- **Detection Levels**

Reported analytical detection levels for undetected analytes are compared against the project RQLs to ensure that laboratory detection levels meet the required criteria. One analytes exceeded the RQL. Under the WCH statement of work, no qualification is required. All other analytes met the RQL.

Completeness

Data package No. K1489 was submitted for validation and verified for completeness. Completeness is based on the percentage of data determined to be valid (i.e., not rejected). The completion percentage was 100%.

MAJOR DEFICIENCIES

None found.

MINOR DEFICIENCIES

The following minor deficiency was noted:

- Due to the lack of an LCS analysis, all thorium-228 (aspec) and thorium-232 (aspec) results were qualified as estimates and flagged "J".
- Due to the lack of a matrix spike analysis, all carbon-14 results were qualified as estimates and flagged "J".
- Due to a radiochemical yield outside QC limits (106%), the thorium-228 (aspec), thorium-230 (aspec) and thorium-232 (aspec) results in sample J17XK8 were qualified as estimates and flagged "J".
- Due to a radiochemical yield outside QC limits (113%), the thorium-230 (aspec) and thorium-232 (aspec) results in sample J18016 were qualified as estimates and flagged "J".

Data flagged "J" indicates that the associated concentration is an estimate, but under the WCH statement of work, the data may be usable for decision-making purposes. All other validated results are considered accurate within the standard error associated with the methods.

One analytes exceeded the RQL. Under the WCH statement of work, no qualification is required.

REFERENCES

Washington Closure Hanford Contract #S00W307A00 (March 2008), *Data Validation Services*.

DOE/RL-2008-11, Rev.0, *Remedial Investigation Work Plan for Hanford Site Releases to the Columbia River*, September 2008.

Appendix 1

Glossary of Data Reporting Qualifiers

Qualifiers which may be applied by data validators in compliance with the WCH statement of work are as follows:

U - Indicates the compound or analyte was analyzed for and not detected above the minimum detectable activity (MDA) in the sample. The value reported is the sample result corrected for sample dilution and moisture content by the laboratory. The data is usable for decision making purposes.

UJ - Indicates the compound or analyte was analyzed for and not detected at concentrations above the minimum detectable activity (MDA) in the sample. Due to a minor QC deficiency identified during the data validation, the associated quantitation limit is an estimate, but is usable for decision making purposes.

J - Indicates the compound or analyte was analyzed for and detected. Due to a minor QC deficiency identified during the data validation, the associated concentration is an estimate, but the data are usable for decision-making purposes.

R - Indicates the compound or analyte was analyzed for, detected, and due to an identified major QC deficiency, the data are unusable.

UR - Indicates the compound or analyte was analyzed for and not detected in the sample. Additionally, the data is unusable due to an identified major QC deficiency.

Appendix 2

Summary of Data Qualification

RADIOCHEMISTRY DATA QUALIFICATION SUMMARY*

SDG: K1489	**REVIEWER: ELR**	**Project: RCBRA**	**QC Issue**
COMPOUND	QUALIFIER	SAMPLES AFFECTED	REASON
Thorium-228 Thorium-232	J	All	No LCS analysis
Carbon-14	J	All	No MS analysis
Thorium-228 Thorium-230 Thorium-232	J	J17XK8	Radiochemical yield
Thorium-230 Thorium-232	J	J18016	Radiochemical yield

* - The Qualified Data Summary Table includes laboratory applied "U" qualifiers not specifically identified here. The laboratory applied "U" qualifiers are included to minimize misinterpretation of results contained in the table.

Appendix 3

Qualified Data Summary and Annotated Laboratory Reports

EBERLINE ANALYTICAL/RICHMOND

SAMPLE DELIVERY GROUP K1489

7274-001 J17VN9

DATA SHEET

SDG	7274	Client/Case no	Hanford SDG K1489
Contact	Melissa C. Mannion	Contract	No. 500M235A00
Lab sample id	R812062 01	Client sample id	J17VN9
Dept sample id	7274-001	Location/Matrix	1S14-1SD SOLID
Received	12/10/08	Collected/Weight	12/08/08 13:45 2174 g
% solids	100.0	Custody/SAF No	RC-116-81 RC-116

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Carbon 14	14762-75-5	0.319	1.2	2.04	50.0	U J	C
Total Strontium	SR-RAD	-0.046	0.15	0.311	1.00	U	SR
Technetium 99	14133-76-7	-0.031	0.15	0.387	15.0	U	TC
Thorium 228	14274-82-9	0.253	0.11	0.137	1.00	J	TH
Thorium 230	14269-63-7	0.120	0.096	0.122	1.00	U	TH
Thorium 232	TH 232	0.300	0.097	0.080	1.00	J	TH
Uranium 233/234	U-233/234	0.258	0.19	0.247	1.00		U
Uranium 235	15117-96-1	0	0.078	0.249	1.00	U	U
Uranium 238	U-238	0.194	0.11	0.247	1.00	U	U
Plutonium 238	13981-16-3	-0.018	0.044	0.085	1.00	U	PU
Plutonium 239/240	PU 239/240	0.011	0.015	0.020	1.00	U	PU
Potassium 40	13966-00-2	14.2	0.36	0.146			GAM
Cobalt 60	10198-40-0	U		0.015	0.050	U	GAM
Cesium 137	10045-97-3	U		0.012	0.100	U	GAM
Radium 226	13982-63-3	0.232	0.024	0.023	0.100		GAM
Radium 228	15262-20-1	0.431	0.060	0.059	0.200		GAM
Europium 152	14683-23-9	U		0.030	0.100	U	GAM
Europium 154	15585-10-1	U		0.048	0.100	U	GAM
Europium 155	14391-16-3	U		0.042	0.100	U	GAM
Thorium 228	14274-82-9	0.376	0.016	0.015			GAM
Thorium 232	TH-232	0.431	0.060	0.059			GAM
Uranium 235	15117-96-1	U		0.051		U	GAM
Uranium 238	U-238	U		1.62		U	GAM
Americium 241	14596-10-2	U		0.022		U	GAM
Beryllium 7	13966-02-4	U		0.121		U	GAM
Ruthenium 106	13967-48-1	U		0.105		U	GAM
Antimony 125	14234-35-6	U		0.026		U	GAM
Cesium 134	13967-70-9	U		0.019		U	GAM

ColumbiaRiverComp.ofRCBRA-Sediment

11/12/09

Lab id	EBRLNE
Protocol	Hanford1
Version	Ver 1.0
Form	DVD-DS
Version	3.06
Report date	02/04/09

EBERLINE ANALYTICAL/RICHMOND

SAMPLE DELIVERY GROUP K1489

7274-002

DATA SHEET

J17XK6

SDG 7274
Contact Melissa C. Mannion
Client/Case no Hanford SDG K1489
Contract No. 500W235A00

Lab sample id R812062-02
Dept sample id 7274-002
Received 12/10/08
% solids 100.0

Client sample id J17XK6
Location/Matrix SI-35D SOLID
Collected/Weight 12/08/08 11:40 2219 g
Custody/SAF No RC-116-196 RC-116

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALIFIERS	TEST
Carbon 14	14762-75-5	1.14	1.2	2.02	50.0	U J	C
Total Strontium	SR-RAD	-0.044	0.14	0.271	1.00	U	SR
Technetium 99	14133-76-7	0.037	0.14	0.101	15.0	U	TC
Thorium 228	14274-82-9	0.714	0.14	0.100	1.00	J	TH
Thorium 230	14269-63-7	0.424	0.12	0.108	1.00		TH
Thorium 232	TH-232	0.595	0.12	0.045	1.00	J	TH
Uranium 233/234	U 233/234	0.673	0.35	0.429	1.00		U
Uranium 235	15117-96-1	0	0.14	0.519	1.00	U	U
Uranium 238	U 238	0.673	0.35	0.429	1.00		U
Plutonium 238	13981-16-3	0.011	0.030	0.060	1.00	U	PU
Plutonium 239/240	PU-239/240	0.015	0.027	0.041	1.00	U	PU
Potassium 40	13966-00-2	11.4	0.33	0.137			GAM
Cobalt 60	10198-40-0	U		0.012	0.050	U	GAM
Cesium 137	10045-97-3	0.032	0.016	0.019	0.100		GAM
Radium 226	13982-63-3	0.625	0.045	0.032	0.100		GAM
Radium 228	15262-20-1	1.04	0.072	0.064	0.200		GAM
Europium 152	14683-23-9	U		0.039	0.100	U	GAM
Europium 154	15585-10-1	U		0.044	0.100	U	GAM
Europium 155	14391-16-3	U		0.053	0.100	U	GAM
Thorium 228	14274-82-9	1.06	0.038	0.025			GAM
Thorium 232	TH-232	1.04	0.072	0.064			GAM
Uranium 235	15117-96-1	U		0.084		U	GAM
Uranium 238	U-238	U		2.06		U	GAM
Americium 241	14596-10-2	U		0.075		U	GAM
Beryllium 7	13966-02-4	U		0.149		U	GAM
Ruthenium 106	13967-48-1	U		0.122		U	GAM
Antimony 125	14234-35-6	U		0.033		U	GAM
Cesium 134	13967-70-9	U		0.021		U	GAM

ColumbiaRiverComp.ofRCBRA Sediment

11/17/09

Lab id EBRLNE
Protocol Hanford1
Version Ver 1.0
Form DVD-DS
Version 1.06
Report date 02/04/09

DATA SHEETS
Page 2
SUMMARY DATA SECTION
Page 17

EBERLINE ANALYTICAL/RICHMOND
SAMPLE DELIVERY GROUP K1489

J17XK7

7274-003

DATA SHEET

SDG	7274	Client/Case no	Hanford — SDG K1489
Contact	Melissa C. Mannion	Contract	No. 900W235A00
Lab sample id	8012062-03	Client sample id	J17XK7
Dept sample id	7274-003	Location/Matrix	91-4ED — SOLID
Received	12/10/08	Collected/Weight	12/08/08 12:16 — 2357 g
% solids	100.0	Custody/SAF No	RC-116-397, RC-116

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Carbon 14	14762-75-5	1.14	1.3	2.17	50.0	U J	C
Total Strontium	SR-RAD	0.005	0.14	0.274	1.00	U	SR
Technetium 99	14133-76-7	-0.023	0.15	0.407	15.0	U	TC
Thorium 228	14274-82-9	0.438	0.28	0.367	1.00	J	TH
Thorium 230	14269-63-7	0.381	0.27	0.261	1.00	J	TH
Thorium 232	TH-232	0.210	0.16	0.208	1.00		TH
Uranium 233/234	U-233/234	0.447	0.27	0.342	1.00		U
Uranium 235	15117-96-1	0	0.11	0.414	1.00	U	U
Uranium 238	U-238	0.268	0.18	0.347	1.00	U	U
Plutonium 238	13981-16-3	0.033	0.038	0.063	1.00	U	PU
Plutonium 239/240	PU-239/240	0.023	0.028	0.045	1.00	U	PU
Potassium 40	13966-00-2	11.3	0.56	0.182			GAM
Cobalt 60	10198-40-0	U		0.019	0.050	U	GAM
Cesium 137	10045-97-3	U		0.019	0.100	U	GAM
Radium 226	13982-63-3	0.467	0.045	0.039	0.100		GAM
Radium 228	15262-20-1	0.773	0.096	0.092	0.200		GAM
Europium 152	14683-23-9	U		0.047	0.100	U	GAM
Europium 154	15585-10-1	U		0.063	0.100	U	GAM
Europium 155	14391-16-3	U		0.094	0.100	U	GAM
Thorium 228	14274-82-9	0.738	0.029	0.027			GAM
Thorium 232	TH-232	0.773	0.096	0.092			GAM
Uranium 235	15117-96-1	U		0.087		U	GAM
Uranium 238	U-238	U		2.23		U	GAM
Americium 241	14596-10-2	U		0.075		U	GAM
Beryllium 7	13966-02-4	U		0.198		U	GAM
Ruthenium 106	13967-48-1	U		0.155		U	GAM
Antimony 125	14234-35-6	U		0.043		U	GAM
Cesium 134	13967-70-9	U		0.027		U	GAM

ColumbiaRiverComp.ofRCBRA-Sediment

11/17/09

Lab id	EBERLNK
Protocol	Hanford1
Version	Ver 1.0
Form	DVD-DS
Version	1.06
Report date	02/04/09

EBERLINE ANALYTICAL/RICHMOND

SAMPLE DELIVERY GROUP K1489

7274-004

DATA SHEET

J17XK8

SDG 7274
Contact Melissa C. Mannion
Client/Case no Hanford SDG K1489
Contract No. 500W235A09

Lab sample id K812962-04
Dept sample id 7274-004
Received 12/10/08
% solids 100.0

Client sample id J17XK8
Location/Matrix SI SSD SOLID
Collected/Weight 12/08/08 12:50 2334 g
Custody/SAF No RC-116-398 RC-116

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALIFIERS	TEST
Carbon 14	14762-75-5	1.14	1.3	2.15	50.0	U J	C
Total Strontium	SR-RAD	0.127	0.14	0.261	1.00	U	SR
Technetium 99	14133-76-7	-0.037	0.16	0.174	15.0	U	TC
Thorium 228	14274-82-9	0.518	0.12	0.089	1.00	J	TH
Thorium 230	14269-63-7	0.459	0.13	0.103	1.00	J	TH
Thorium 232	TH-232	0.587	0.12	0.044	1.00	J	TH
Uranium 233/234	U 233/234	0.464	0.29	0.273	1.00		U
Uranium 235	15117-96-1	0	0.086	0.330	1.00	U	U
Uranium 238	U 238	0.250	0.22	0.273	1.00	U	U
Plutonium 238	13981-16-3	-0.008	0.034	0.074	1.00	U	PU
Plutonium 239/240	PU-239/240	0.008	0.025	0.046	1.00	U	PU
Potassium 40	13966-00-2	11.2	0.51	0.268			GAM
Cobalt 60	10198-40-0	U		0.024	0.050	U	GAM
Cesium 137	10045-97-3	U		0.026	0.100	U	GAM
Radium 226	13982-63-3	0.580	0.047	0.041	0.100		GAM
Radium 228	15262-20-1	0.801	0.14	0.120	0.200		GAM
Europium 152	14683-23-9	U		0.062	0.100	U	GAM
Europium 154	15585-10-1	U		0.082	0.100	U	GAM
Europium 155	14391-16-3	U		0.084	0.100	U	GAM
Thorium 228	14274-82-9	0.758	0.036	0.034			GAM
Thorium 232	TH 232	0.803	0.14	0.128			GAM
Uranium 235	15117-96-1	U		0.101		U	GAM
Uranium 238	U-238	U		2.47		U	GAM
Americium 241	14596-10-2	U		0.201		U	GAM
Beryllium 7	13966-02-4	U		0.264		U	GAM
Ruthenium 106	13967-48-1	U		0.205		U	GAM
Antimony 125	14234-35-6	U		0.059		U	GAM
Cesium 134	13967-70-9	U		0.032		U	GAM

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11/17/09

Lab id EBERLINE
Protocol Hanford1
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EBERLINE ANALYTICAL/RICHMOND

SAMPLE DELIVERY GROUP K1489

7274-005

J17YT4

DATA SHEET

SDG	7274	Client/Case no	Hanford	SDG K1489
Contact	Melissa C. Mannion	Contract	No. 500W235A00	
Lab sample id	R812062 05	Client sample id	J17YT4	
Dept sample id	7274-005	Location/Matrix	HMSTD-29D	SOLID
Received	12/10/08	Collected/Weight	12/08/08 10:20	2179 g
% solids	100.0	Custody/SAP No	RC 116-504	RC-116

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Carbon 14	14762-75-5	0.756	1.3	2.23	50.0	UJ	C
Total Strontium	SR-RAD	0.103	0.16	0.293	1.00	U	SR
Technetium 99	14133-76-7	-0.011	0.13	0.375	15.0	U	TC
Thorium 228	14274-82-9	0.305	0.14	0.180	1.00	J	TH
Thorium 230	14269-63-7	0.377	0.11	0.117	1.00		TH
Thorium 232	TH-232	0.343	0.092	0.044	1.00	J	TH
Uranium 233/234	U-233/234	0.270	0.20	0.258	1.00		U
Uranium 235	15117-96-1	0.041	0.082	0.312	1.00	U	U
Uranium 238	U-238	0.472	0.27	0.258	1.00		U
Plutonium 238	13981-16-3	-0.007	0.035	0.068	1.00	U	PU
Plutonium 239/240	PU-239/240	0.021	0.078	0.044	1.00	U	PU
Potassium 40	13966-00-2	11.8	0.63	0.188			GAM
Cobalt 60	10198-40-0	U		0.021	0.050	U	GAM
Cesium 137	10045-97-3	0.045	0.019	0.020	0.100		GAM
Radium 226	13982-63-3	0.399	0.044	0.034	0.100		GAM
Radium 228	15262-20-1	0.741	0.10	0.090	0.200		GAM
Europium 152	14683-23-9	U		0.048	0.100	U	GAM
Europium 154	15585-10-1	U		0.064	0.100	U	GAM
Europium 155	14391-16-3	U		0.055	0.100	U	GAM
Thorium 228	14274-82-9	0.716	0.030	0.026			GAM
Thorium 232	TH 232	0.741	0.10	0.090			GAM
Uranium 235	15117-96-1	U		0.082		U	GAM
Uranium 238	U 238	U		2.33		U	GAM
Americium 241	14596-10-2	U		0.027		U	GAM
Beryllium 7	13966-02-4	U		0.207		U	GAM
Ruthenium 106	13967-48-1	U		0.155		U	GAM
Antimony 125	14234-35-6	U		0.045		U	GAM
Cesium 134	13967-70-9	U		0.026		U	GAM

ColumbiaRiverComp.otRCBRA-Sediment

Rk 11/11/09

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Protocol Hanford1
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EBERLINE ANALYTICAL/RICHMOND

SAMPLE DELIVERY GROUP K1489

7274-006 J17YT5

DATA SHEET

SDG	7274	Client/Case no	Hanford	SDG K1489
Contact	Melissa C. Mannion	Contract	No. 500W235A00	
Lab sample id	8012062-06	Client sample id	J17YT5	
Dept sample id	7274-006	Location/Matrix	HMSTD-1SD	SOLID
Received	12/10/08	Collected/Weight	12/08/08 09:30	2215 g
% solids	100.0	Custody/SAF No	RC-116-505	RC-116

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Carbon 14	14762-75-5	0.883	1.4	2.33	50.0	UJ	C
Total Strontium	SR-RAD	-0.040	0.25	0.456	1.00	U	SR
Technetium 99	14133-76-7	-0.106	0.12	0.374	15.0	U	TC
Thorium 228	14274-82-9	0.241	0.10	0.139	1.00	J	TH
Thorium 230	14269-63-7	0.391	0.12	0.114	1.00		TH
Thorium 232	TH-232	0.346	0.090	0.043	1.00	J	TH
Uranium 233/234	U-233/234	0.391	0.24	0.299	1.00		U
Uranium 235	15117-96-1	0	0.095	0.362	1.00	U	U
Uranium 238	U-238	0.352	0.24	0.299	1.00		U
Plutonium 238	13981-16-3	0.021	0.033	0.063	1.00	U	PU
Plutonium 239/240	PU-239/240	-0.004	0.017	0.046	1.00	U	PU
Potassium 40	13966-00-2	12.1	0.40	0.155			GAM
Cobalt 60	10198-40-0	U		0.017	0.050	U	GAM
Cesium 137	10045-97-3	0.020	0.010	0.014	0.100		GAM
Radium 226	13982-63-3	0.408	0.033	0.027	0.100		GAM
Radium 228	15262-20-1	0.637	0.075	0.071	0.200		GAM
Europium 152	14683-23-9	U		0.037	0.100	U	GAM
Europium 154	15585-10-1	U		0.061	0.100	U	GAM
Europium 155	14391-16-3	U		0.044	0.100	U	GAM
Thorium 228	14274-82-9	0.650	0.025	0.032			GAM
Thorium 232	TH-232	0.637	0.075	0.071			GAM
Uranium 235	15117-96-1	U		0.071		U	GAM
Uranium 238	U-238	U		2.14		U	GAM
Americium 241	14596-10-2	U		0.027		U	GAM
Beryllium 7	13966-02-4	U		0.172		U	GAM
Ruthenium 106	13967-48-1	U		0.128		U	GAM
Antimony 125	14234-35-6	U		0.034		U	GAM
Cesium 134	13967-70-9	U		0.022		U	GAM

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EBERLINE ANALYTICAL/RICHMOND

SAMPLE DELIVERY GROUP K1489

7274-007

J17YV8

DATA SHEET

SOW	7274	Client/Case no	Hanford SDG K1489
Contact	Melissa C. Mannion	Contract	No. S00W235A00
Lab sample id	E812062-07	Client sample id	J17YV8
Dept sample id	7274-007	Location/Matrix	IS13-3SD SOLID
Received	12/10/08	Collected/Weight	12/08/08 11:30 2435 g
% solids	100.0	Custody/SAF No	RC 116-518 RC 116

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Carbon 14	14762-75-5	0.503	1.2	2.03	50.0	U J	C
Total Strontium	SR-RAD	-0.057	0.15	0.300	1.00	U	SR
Technecium 99	14133-76-7	-0.084	0.15	0.399	15.0	U	TC
Thorium 228	14274-82-9	0.366	0.14	0.180	1.00	J	TH
Thorium 230	14269-63-7	0.482	0.12	0.107	1.00		TH
Thorium 232	TH-232	0.370	0.090	0.054	1.00	J	TH
Uranium 233/234	U-233/234	0.451	0.25	0.335	1.00		U
Uranium 235	15117-96-1	0.100	0.10	0.381	1.00	U	U
Uranium 238	U-238	0.206	0.17	0.315	1.00	U	U
Plutonium 238	13981-16-3	0.008	0.033	0.074	1.00	U	PU
Plutonium 239/240	PU-239/240	-0.004	0.017	0.046	1.00	U	PU
Potassium 40	13966-00-2	12.7	0.43	0.156			GAM
Cobalt 60	10198-40-0	U		0.015	0.050	U	GAM
Cesium 137	10045-97-3	0.030	0.017	0.018	0.100		GAM
Radium 226	13987-63-3	0.459	0.031	0.027	0.100		GAM
Radium 228	15262-20-1	0.693	0.067	0.065	0.200		GAM
Europium 152	14683-23-9	U		0.044	0.100	U	GAM
Europium 154	15585-10-1	U		0.052	0.100	U	GAM
Europium 155	14391-16-3	U		0.054	0.100	U	GAM
Thorium 228	14274-82-9	0.718	0.026	0.023			GAM
Thorium 232	TH-232	0.693	0.067	0.065			GAM
Uranium 235	15117-96-1	U		0.080		U	GAM
Uranium 238	U-238	U		2.17		U	GAM
Americium 241	14596-10-2	U		0.114		U	GAM
Beryllium 7	13966-02-4	U		0.161		U	GAM
Ruthenium 106	13967-48-1	U		0.126		U	GAM
Antimony 125	14234-35-6	U		0.038		U	GAM
Cerium 144	13967-70-7	U		0.027		U	GAM

ColumbiaRiverComp.ofRCBRA Sediment

11/17/09

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Protocol	Hanford
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EBERLINE ANALYTICAL/RICHMOND

SAMPLE DELIVERY GROUP K1489

7274-008

DATA SHEET

J17YV9

SDG	7274	Client/Case no	Hanford SDG K1489
Contact	Melissa C. Mannion	Contract	No. 600W235A00
Lab sample id	R812062-08	Client sample id	J17YV9
Dept sample id	7274-008	Location/Matrix	IS13-SED SOLID
Received	12/10/08	Collected/Weight	12/08/08 12:10 2090 g
% solids	100.0	Custody/SAF No	RC-116-519 RC-116

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Carbon 14	14762-75-5	0.858	1.2	1.99	50.0	U J	C
Total Strontium	SR-RAD	0.079	0.13	0.250	1.00	U	SR
Technecium 99	14133-76-7	-0.163	0.13	0.374	15.0	U	TC
Thorium 228	14274-82-9	0.290	0.13	0.198	1.00	J	TH
Thorium 230	14269-63-7	0.392	0.12	0.115	1.00		TH
Thorium 232	TH-232	0.473	0.097	0.058	1.00	J	TH
Uranium 233/234	U-233/234	0.395	0.30	0.378	1.00		U
Uranium 235	15117-96-1	0	0.12	0.458	1.00	U	U
Uranium 238	U-238	0.445	0.30	0.378	1.00		U
Plutonium 238	13981-16-3	0.021	0.026	0.033	1.00	U	PU
Plutonium 239/240	PU-239/240	0.009	0.009	0.033	1.00	U	PU
Potassium 40	13966-00-2	11.3	0.38	0.067			GAM
Cobalt 60	10198-40-0	U		0.007	0.050	U	GAM
Cesium 137	10045-97-3	0.022	0.005	0.006	0.100		GAM
Radium 226	13982-63-3	0.423	0.020	0.013	0.100		GAM
Radium 228	15262-20-1	0.454	0.038	0.033	0.200		GAM
Europium 152	14683-23-9	U		0.016	0.100	U	GAM
Europium 154	15585-10-1	U		0.024	0.100	U	GAM
Europium 155	14391-16-3	U		0.027	0.100	U	GAM
Thorium 228	14274-82-9	0.436	0.013	0.009			GAM
Thorium 232	TH-232	0.454	0.038	0.033			GAM
Uranium 235	15117-96-1	U		0.010		U	GAM
Uranium 238	U-238	U		0.825		U	GAM
Americium 241	14596-10-2	U		0.026		U	GAM
Beryllium 7	13966-02-4	U		0.071		U	GAM
Ruthenium 106	13967-48-1	U		0.054		U	GAM
Antimony 125	14234-35-6	U		0.015		U	GAM
Cesium 134	13967-70-9	U		0.010		U	GAM

ColumbiaRiverComp.ofRCUFA-Sediment

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SAMPLE DELIVERY GROUP K1489

7274-009

J17YW0

DATA SHEET

SDG	7274	Client/Case no	Hanford SDG K1489
Contact	Melissa C. Mannion	Contract	No. 000W215A00
Lab sample id	E812062-09	Client sample id	J17YW0
Dept sample id	7274-009	Location/Matrix	ISL3-1SD SOLID
Received	12/10/08	Collected/Weight	12/08/08 10:30 1720 g
% solids	100.0	Custody/SAF No	RC-116-520 RC-116

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Carbon 14	14762-75-5	0.909	1.2	1.93	50.0	U J	C
Total Strontium	SR RAD	-0.185	0.16	0.380	1.00	U	SR
Technetium 99	14133-76-7	0.006	0.13	0.383	15.0	U	TC
Thorium 228	14274-82-9	0.458	0.26	0.311	1.00	J	TH
Thorium 230	14269-63-7	0.520	0.11	0.249	1.00		TH
Thorium 232	TH-232	0.423	0.26	0.249	1.00	J	TH
Uranium 233/234	U-233/234	0.576	0.29	0.275	1.00		U
Uranium 235	15117-96-1	0.047	0.088	0.334	1.00	U	U
Uranium 238	U-238	0.792	0.37	0.275	1.00		U
Plutonium 238	13981-16-3	0.011	0.021	0.044	1.00	U	PU
Plutonium 239/240	PU-239/240	0.007	0.014	0.027	1.00	U	PU
Potassium 40	13966-00-2	8.62	0.22	0.116			GAM
Cobalt 60	10198-40-0	U		0.010	0.050	U	GAM
Cesium 137	10045-97-3	0.035	0.006	0.008	0.100		GAM
Radium 226	13982-63-3	0.467	0.021	0.020	0.100		GAM
Radium 228	15262-20-1	0.579	0.040	0.017	0.200		GAM
Europium 152	14683-23-9	U		0.025	0.100	U	GAM
Europium 154	15585-10-1	U		0.031	0.100	U	GAM
Europium 155	14391-16-3	U		0.039	0.100	U	GAM
Thorium 228	14274-82-9	0.606	0.015	0.013			GAM
Thorium 232	TH-232	0.579	0.040	0.037			GAM
Uranium 235	15117-96-1	U		0.041		U	GAM
Uranium 238	U-238	U		1.20		U	GAM
Americium 241	14596-10-2	U		0.080		U	GAM
Beryllium 7	13966-02-4	U		0.199		U	GAM
Ruthenium 106	13967-48-1	U		0.076		U	GAM
Antimony 125	14234-35-6	U		0.032		U	GAM
Cesium 134	13967-70-9	U		0.012		U	GAM

ColumbiaRiverComp.ofRCRA-Sediment

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SAMPLE DELIVERY GROUP K1489

7274-010

J17YW2

DATA SHEET

SDG	7274	Client/Case No	Hanford SDG K1489
Contact	Melissa C. Mannion	Contract	No. 600W235A00
Lab sample id	R812062-10	Client sample id	J17YW2
Dept sample id	7274-010	Location/Matrix	1813-2SD SOLID
Received	12/10/08	Collected/Weight	12/08/08 11:00 1947 g
% solids	100.0	Custody/SAF No	RC-116-522 RC-116

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Carbon 14	14762-75-5	0.241	0.99	1.68	50.0	U J	C
Total Strontium	SR-RAD	0.014	0.18	0.370	1.00	U	SR
Technetium 99	14133-76-7	-0.097	0.11	0.331	15.0	U	TC
Thorium 228	14274-82-9	0.547	0.28	0.262	1.00	J	TH
Thorium 230	14269-63-7	0.068	0.20	0.326	1.00	U	TH
Thorium 232	TH-232	0.511	0.28	0.261	1.00	J	TH
Uranium 233/234	U-233/234	0.551	0.28	0.264	1.00		U
Uranium 235	15117-96-1	0.042	0.083	0.319	1.00	U	U
Uranium 238	U-238	0.379	0.21	0.264	1.00		U
Plutonium 238	13981-16-3	0.041	0.033	0.046	1.00	U	PU
Plutonium 239/240	PU-239/240	0.039	0.035	0.040	1.00	U	PU
Potassium 40	13966-00-2	7.69	0.65	0.086			GAM
Cobalt 60	10198-40-0	U		0.010	0.050	U	GAM
Cesium 137	10045-97-3	0.049	0.010	0.011	0.100		GAM
Radium 226	13982-63-3	0.417	0.039	0.016	0.100		GAM
Radium 228	15262-20-1	0.616	0.049	0.035	0.200		GAM
Europium 152	14683-23-9	U		0.024	0.100	U	GAM
Europium 154	15585-10-1	U		0.030	0.100	U	GAM
Europium 155	14391-16-3	U		0.026	0.100	U	GAM
Thorium 228	14274-82-9	0.735	0.025	0.014			GAM
Thorium 232	TH-232	0.616	0.049	0.034			GAM
Uranium 235	15117-96-1	U		0.052		U	GAM
Uranium 238	U-238	U		1.56		U	GAM
Beryllium 7	13966-02-4	U		0.241		U	GAM
Ruthenium 106	13967-48-1	U		0.099		U	GAM
Antimony 125	14234-35-6	U		0.022		U	GAM
Cesium 134	13967-70-9	U		0.013		U	GAM

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EBERLINE ANALYTICAL/RICHMOND

SAMPLE DELIVERY GROUP K1489

J18002

7274-011

DATA SHEET

SDG	7274	Client/Case no	Hanford SDG K1489
Contact	Melissa C. Mannion	Contract	No. S00W235A00
Lab sample id	R812062-11	Client sample id	J18902
Dept sample id	7274-011	Location/Matrix	I314-25D SOLID
Received	12/10/08	Collected/Weight	12/08/08 14:15 2343 g
% solids	100.0	Custody/SAP No	RC-116-544 RC-116

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Carbon 14	14762-75-5	0.925	1.4	2.28	50.0	U J	C
Total Strontium	SR-RAD	0.046	0.18	0.369	1.00	U	SR
Technetium 99	14133-76-7	-0.108	0.12	0.351	15.0	U	TC
Thorium 228	14274-82-9	0.353	0.24	0.300	1.00	J	TH
Thorium 230	14269-63-7	0.157	0.24	0.300	1.00	U	TH
Thorium 232	TH-232	0.392	0.24	0.300	1.00	J	TH
Uranium 233/234	U 233/234	0.350	0.27	0.335	1.00		U
Uranium 235	15117-96-1	0	0.11	0.406	1.00	U	U
Uranium 238	U 238	0.088	0.088	0.335	1.00	U	U
Plutonium 238	13981-16-3	0.030	0.12	0.291	1.00	U	PU
Plutonium 239/240	PU-239/240	0	0.061	0.232	1.00	U	PU
Potassium 40	13966-00-2	13.1	0.18	0.065			GAM
Cobalt 60	10198-40-0	U		0.007	0.050	U	GAM
Cesium 137	10045-97-3	0.015	0.008	0.009	0.100		GAM
Radium 226	13982-63-3	0.306	0.017	0.013	0.100		GAM
Radium 228	15262-20-1	0.612	0.033	0.031	0.200		GAM
Europium 152	14683-23-9	U		0.016	0.100	U	GAM
Europium 154	15585-10-1	U		0.027	0.100	U	GAM
Europium 155	14391-16-3	U		0.029	0.100	U	GAM
Thorium 228	14274-82-9	0.634	0.017	0.009			GAM
Thorium 232	TH-232	0.612	0.033	0.031			GAM
Uranium 235	15117-96-1	U		0.054		U	GAM
Uranium 238	U-238	U		0.894		U	GAM
Americium 241	14596-10-2	U		0.011		U	GAM
Beryllium 7	13966-02-4	U		0.073		U	GAM
Ruthenium 106	13967-48-1	U		0.055		U	GAM
Antimony 125	14234-35-6	U		0.014		U	GAM
Cesium 134	13967-70-9	U		0.010		U	GAM

ColumbiaRiverComp.ofRCBRA-Sediment

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EBERLINE ANALYTICAL/RICHMOND

SAMPLE DELIVERY GROUP K1489

7274-012

J18003

DATA SHEET

SDG	7274	Client/Case no	Hanford SDG K1489
Contact	Melissa C. Mannion	Contract	No. 300W215A00
Lab sample id	R812062-12	Client sample id	J18003
Dept sample id	7274-012	Location/Matrix	1514-15D SOLID
Received	12/10/08	Collected/Weight	12/08/08 13:35 2352 g
% solids	100.0	Custody/SAF No	BC 116-545 BC-116

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Carbon 14	14762-75-5	0.114	1.3	2.18	50.0	U J	C
Total Strontium	SR-RAD	-0.001	0.15	0.312	1.00	U	SR
Technetium 99	14133-76-7	0.052	0.14	0.376	15.0	U	TC
Thorium 228	14274-82-9	0.424	0.12	0.126	1.00	J	TH
Thorium 230	14269-63-7	0.596	0.13	0.091	1.00		TH
Thorium 232	TH-232	0.322	0.085	0.040	1.00	J	TH
Uranium 233/234	U-233/234	0.252	0.17	0.321	1.00	U	U
Uranium 235	15117-96-1	0	0.10	0.388	1.00	U	U
Uranium 238	U-238	0.419	0.26	0.321	1.00		U
Plutonium 238	13981-16-3	0	0.057	0.217	1.00	U	PU
Plutonium 239/240	PU-239/240	0.028	0.057	0.217	1.00	U	PU
Potassium 40	13966-00-2	13.6	0.27	0.061			GAM
Cobalt 60	10198-40-0	U		0.006	0.050	U	GAM
Cesium 137	10045-97-3	U		0.008	0.100	U	GAM
Radium 226	13982-63-3	0.277	0.015	0.012	0.100		GAM
Radium 228	15262-20-1	0.477	0.028	0.025	0.200		GAM
Europium 152	14683-23-9	U		0.016	0.100	U	GAM
Europium 154	15585-10-1	U		0.021	0.100	U	GAM
Europium 155	14391-16-3	U		0.024	0.100	U	GAM
Thorium 228	14274-82-9	0.467	0.011	0.008			GAM
Thorium 232	TH-232	0.477	0.028	0.025			GAM
Uranium 235	15117-96-1	U		0.041		U	GAM
Uranium 238	U-238	U		0.699		U	GAM
Americium 241	14596-10-2	U		0.041		U	GAM
Beryllium 7	13966-02-4	U		0.061		U	GAM
Ruthenium 106	13967-48-1	U		0.048		U	GAM
Antimony 125	14234-35-6	U		0.014		U	GAM
Cesium 134	13967-70-9	U		0.008		U	GAM

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SAMPLE DELIVERY GROUP K1489

7274-013

DATA SHEET

J18004

SDG	7274	Client/Case no	Hanford SDG K1489
Contact	Melissa C. Mannion	Contract	No. 500W235A00
Lab sample id	K812062-13	Client sample id	J18004
Dept sample id	7274-013	Location/Matrix	IS14-38D SOLID
Received	12/10/08	Collected/Weight	12/08/08 14:40 2356 g
% solids	100.0	Custody/SAF No	RC-116-546 RC-116

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Carbon 14	14762-75-5	0.660	1.3	2.10	50.0	U J	C
Total Strontium	SR RAD	0.029	0.15	0.291	1.00	U	SR
Technetium 99	14133-76-7	0.007	0.16	0.407	15.0	U	TC
Thorium 228	14274-82-9	0.459	0.28	0.338	1.00	J	TH
Thorium 230	14269-63-7	0.176	0.21	0.269	1.00	U	TH
Thorium 232	TH-232	0.117	0.21	0.269	1.00	J	TH
Uranium 233/234	U-233/234	0.433	0.22	0.276	1.00		U
Uranium 235	15117-96-1	0	0.087	0.134	1.00	U	U
Uranium 238	U-238	0.361	0.22	0.276	1.00		U
Plutonium 238	13981-16-3	0.109	0.15	0.278	1.00	U	PU
Plutonium 239/240	PU-239/240	0.036	0.071	0.278	1.00	U	PU
Potassium 40	13966-00-2	13.6	0.36	0.161			GAM
Cobalt 60	10198-40-0	U		0.014	0.050	U	GAM
Cesium 137	10045-97-3	U		0.017	0.100	U	GAM
Radium 226	13982-63-3	0.417	0.028	0.025	0.100		GAM
Radium 228	15262-20-1	0.743	0.068	0.064	0.200		GAM
Europium 152	14683-23-9	U		0.033	0.100	U	GAM
Europium 154	15585-10-1	U		0.046	0.100	U	GAM
Europium 155	14391-16-3	U		0.063	0.100	U	GAM
Thorium 228	14274-82-9	0.661	0.030	0.017			GAM
Thorium 232	TH-232	0.741	0.068	0.063			GAM
Uranium 235	15117-96-1	U		0.081		U	GAM
Uranium 238	U-238	U		1.76		U	GAM
Americium 241	14596-10-2	U		0.025		U	GAM
Beryllium 7	13966-02-4	U		0.133		U	GAM
Ruthenium 106	13967-48-1	U		0.111		U	GAM
Antimony 125	14234-35-6	U		0.029		U	GAM
Cesium 134	13967-70-9	U		0.021		U	GAM

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EBERLINE ANALYTICAL/RICHMOND

SAMPLE DELIVERY GROUP K1489

7274-014

J18005

DATA SHEET

SDG 7274
Contact Melissa C. Mannion
Client/Case no Hanford
Contract No. 500W235A00
SDG K1489

Lab sample id R812062 14
Dept sample id 7274-014
Received 12/10/08
% solids 100.0

Client sample id J18005
Location/Matrix IS14-48D. SOLID
Collected/Weight 12/08/08 14:50 2096 g
Custody/SAF No RC-116-547 RC-116

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Carbon 14	14762 75-5	1.21	1.6	2.56	50.0	U J	C
Total Strontium	SR-RAD	0.094	0.17	0.331	1.00	U	SR
Technetium 99	14133-76-7	0.071	0.13	0.176	15.0	U	TC
Thorium 228	14274-82 9	0.541	0.27	0.259	1.00		TH
Thorium 230	14269 63 7	0.674	0.34	0.321	1.00	J	TH
Thorium 232	TH-232	0.405	0.20	0.258	1.00		TH
Uranium 233/234	U-233/234	0.248	0.21	0.270	1.00	J	U
Uranium 235	15117-96-1	0.128	0.17	0.328	1.00	U	U
Uranium 238	U-238	0.354	0.21	0.270	1.00	U	U
Plutonium 238	13981-16-3	0	0.070	0.268	1.00		U
Plutonium 239/240	PU-239/240	0	0.070	0.268	1.00	U	PU
Potassium 40	13966 00-7	11.6	0.42	0.110	1.00	U	PU
Cobalt 60	10198-40-0	U		0.011			GAM
Cesium 137	10045-97-3	U		0.013	0.050	U	GAM
Radium 226	13982-63-3	0.471	0.027	0.025	0.100	U	GAM
Radium 228	15262 20-1	0.859	0.059	0.051	0.100		GAM
Europium 152	14683-23-9	U		0.034	0.200		GAM
Europium 154	15585-10-1	U		0.041	0.100	U	GAM
Europium 155	14391-16-3	U		0.125	0.100	U	GAM
Thorium 228	14274-82 9	0.786	0.022	0.019	0.100	U	GAM
Thorium 232	TH-232	0.859	0.059	0.053			GAM
Uranium 235	15117-96-1	U		0.071			GAM
Uranium 238	U-238	U		1.39		U	GAM
Americium 241	14596-10 2	U		0.064		U	GAM
Beryllium 7	13966 02-4	U		0.139		U	GAM
Ruthenium 106	13967-48 1	U		0.108		U	GAM
Antimony 125	14234-35-6	U		0.028		U	GAM
Cesium 134	13967 70 9	U		0.019		U	GAM

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SAMPLE DELIVERY GROUP K1489

7274-015 J18006

DATA SHEET

SDG	7274	Client/Case no	Hanford SDG K1489
Contact	Melissa C. Mannion	Contract	No. 00002354A00
Lab sample id	R812062 15	Client sample id	J18006
Dept sample id	7274-015	Location/Matrix	1214-55D SOLID
Received	12/10/08	Collected/Weight	12/08/08 15:05 2466 g
% solids	100.0	Custody/SAF No	RC-116-549 RC-116

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Carbon 14	14762-75-5	0.143	1.3	2.19	50.0	U J	C
Total Strontium	SR-RAD	0.031	0.13	0.262	1.00	U	SR
Technetium 99	14133-76-7	-0.007	0.14	0.373	15.0	U	TC
Thorium 228	14274-82-9	0.298	0.22	0.284	1.00	J	TH
Thorium 230	14269-63-7	0.037	0.15	0.284	1.00	U	TH
Thorium 232	TH 232	0.260	0.22	0.284	1.00	U J	TH
Uranium 233/234	U-233/234	0.398	0.20	0.254	1.00		U
Uranium 235	15117-96-1	0.040	0.080	0.307	1.00	U	U
Uranium 238	U-238	0.265	0.20	0.254	1.00		U
Plutonium 238	13981-16-3	0.026	0.10	0.248	1.00	U	PU
Plutonium 239/240	PU-239/240	0	0.052	0.198	1.00	U	PU
Potassium 40	13966-00-2	12.7	0.53	0.186			GAM
Cobalt 60	10198-40-0	U		0.018	0.050	U	GAM
Cesium 137	10045-97-3	U		0.036	0.100	U	GAM
Radium 226	13982-63-3	0.418	0.039	0.036	0.100		GAM
Radium 228	15262-20-1	0.761	0.077	0.072	0.200		GAM
Europium 152	14683-23-9	U		0.041	0.100	U	GAM
Europium 154	15585-10-1	U		0.049	0.100	U	GAM
Europium 155	14391-16-3	U		0.083	0.100	U	GAM
Thorium 228	14274-82-9	0.734	0.026	0.024			GAM
Thorium 232	TH-232	0.761	0.077	0.072			GAM
Uranium 235	15117-96-1	U		0.079		U	GAM
Uranium 238	U-238	U		1.98		U	GAM
Americium 241	14596-10-2	U		0.105		U	GAM
Beryllium 7	13966-02-4	U		0.184		U	GAM
Ruthenium 106	13967-48-1	U		0.138		U	GAM
Antimony 125	14234-35-6	U		0.040		U	GAM
Cesium 134	13967-70-9	U		0.026		U	GAM

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E B E R L I N E   A N A L Y T I C A L / R I C H M O N D

SAMPLE DELIVERY GROUP K1489

7274-016 J18016

D A T A   S H E E T

SDG 7274 Client/Case no Hanford SDG K1489
Contact Melissa C. Mannion Contract No. 00W235A00
Lab sample id R812062-16 Client sample id J18016
Dept sample id 7274-016 Location/Matrix IS15-23D SOLID
Received 12/10/08 Collected/Weight 12/08/08 14.50 2296 g
% solids 100.0 Custody/SAF No RC-116-550 RC-116

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Carbon 14	14762-75-5	2.07	1.5	2.36	50.0	U J	C
Total Strontium	SR-RAD	-0.026	0.11	0.232	1.00	U	SR
Technetium 99	14133-76-7	0.060	0.13	0.375	15.0	U	TC
Thorium 228	14274-82-9	0.719	0.22	0.367	1.00	U J	TH
Thorium 230	14269-63-7	0.383	0.22	0.209	1.00	J	TH
Thorium 232	TH-232	0.603	0.28	0.209	1.00	J	TH
Uranium 233/234	U-233/234	0.761	0.37	0.343	1.00		U
Uranium 235	15117-96-1	0	0.11	0.415	1.00	U	U
Uranium 238	U-238	0.314	0.27	0.343	1.00	U	U
Plutonium 238	13981-16-3	0.034	0.14	0.260	1.00	U	PU
Plutonium 239/240	PU-239/240	0	0.068	0.260	1.00	U	PU
Potassium 40	13966-00-2	12.6	0.17	0.055			GAM
Cobalt 60	10198-40-0	U		0.005	0.050	U	GAM
Cesium 137	10045-97-3	0.027	0.004	0.005	0.100		GAM
Radium 226	13982-63-3	0.444	0.013	0.012	0.100		GAM
Radium 228	15262-20-1	0.670	0.023	0.019	0.200		GAM
Europium 152	14683-23-9	U		0.016	0.100	U	GAM
Europium 154	15585-10-1	U		0.020	0.100	U	GAM
Europium 155	14391-16-3	U		0.036	0.100	U	GAM
Thorium 228	14274-82-9	0.680	0.011	0.010			GAM
Thorium 232	TH-232	0.670	0.023	0.019			GAM
Uranium 235	15117-96-1	U		0.047		U	GAM
Uranium 238	U-238	U		0.957		U	GAM
Americium 241	14596-10-2	U		0.030		U	GAM
Beryllium 7	13966-02-4	U		0.063		U	GAM
Ruthenium 106	13967-48-1	U		0.049		U	GAM
Antimony 125	14234-35-6	U		0.013		U	GAM
Cesium 134	13967-70-9	U		0.009		U	GAM

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SAMPLE DELIVERY GROUP K1489

7274-017

DATA SHEET

J18017

SDG	7274	Client/Case no	Hanford SDG K1489
Contact	Melissa C. Mannion	Contract	No. 000W735A00
Lab sample id	R812062-17	Client sample id	J18017
Dept sample id	7274-017	Location/Matrix	1515 100 SOLID
Received	12/10/08	Collected/Weight	12/08/08 15:35 2221 g
% solids	100.0	Custody/SAF No	RC 116-559 RC-116

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Carbon 14	14762-75-5	0.500	1.3	2.25	50.0	U J	C
Total Strontium	SR RAD	0.014	0.19	0.378	1.00	U	SR
Technetium 99	14133-76-7	0.024	0.13	0.376	15.0	U	TC
Thorium 228	14274-82-9	0.371	0.25	0.296	1.00	J	TH
Thorium 230	14269-63-7	0.277	0.25	0.235	1.00		TH
Thorium 232	TH-232	0.505	0.25	0.235	1.00	J	TH
Uranium 233/234	U-233/234	0.269	0.27	0.515	1.00	U	U
Uranium 235	15117-96-1	0	0.16	0.623	1.00	U	U
Uranium 238	U-238	0.538	0.41	0.515	1.00		U
Plutonium 238	13981-16-3	0	0.32	0.722	1.00	U	PU
Plutonium 239/240	PU-239/240	0.054	0.22	0.417	1.00	U	PU
Potassium 40	13966-00-2	11.5	0.66	0.193			GAM
Cobalt 60	10198-40-0	U		0.020	0.050	U	GAM
Cesium 137	10045-97-3	0.044	0.020	0.022	0.100		GAM
Radium 226	13982-63-3	0.412	0.047	0.035	0.100		GAM
Radium 228	15262-20-1	0.670	0.084	0.081	0.200		GAM
Europium 152	14683-23-9	U		0.048	0.100	U	GAM
Europium 154	15585-10-1	U		0.066	0.100	U	GAM
Europium 155	14391-16-3	U		0.049	0.100	U	GAM
Thorium 228	14274-82-9	0.729	0.031	0.025			GAM
Thorium 232	TH-232	0.670	0.084	0.081			GAM
Uranium 235	15117-96-1	U		0.082		U	GAM
Uranium 238	U-238	U		2.35		U	GAM
Americium 241	14596-10-2	U		0.027		U	GAM
Beryllium 7	13966-02-4	U		0.208		U	GAM
Ruthenium 106	13967-48-1	U		0.157		U	GAM
Antimony 125	14234-35-6	U		0.045		U	GAM
Cesium 134	13967-70-9	U		0.026		U	GAM

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Appendix 4

Laboratory Narrative and Chain-of-Custody Documentation

1.0 GENERAL

Washington Closure Hanford (WCH) Sample Delivery Group K1489 was composed of seventeen solid (other solid) samples designated under SAF No. RC-116 with a Project Designation of: Columbia River Component of the RCBRA – Sediment.

The samples were received as stated on the Chain-of-Custody documents. Any discrepancies are noted on the Eberline Analytical Sample Receipt Checklist. The results were sent to WCH via e-mail February 4, 2009.

2.0 ANALYSIS NOTES

2.1 Carbon-14 Analysis

No problems were encountered during the course of the analyses.

2.2 Strontium-90 Analysis

No problems were encountered during the course of the analyses

2.3 Technetium-99 Analysis

No problems were encountered during the course of the analyses.

2.4 Isotopic Thorium Analysis

The Th-229 tracer yield for samples J17XK8 (106%) and J18016 (113%) were greater than the upper control limit of 105%; no other problems were encountered during the course of the analyses.

2.5 Isotopic Uranium Analysis

No problems were encountered during the course of the analyses.

2.6 Isotopic Plutonium Analysis

No problems were encountered during the course of the analyses.

2.7 Gamma Spectroscopy

No problems were encountered during the course of the analyses.

3.0 Case Narrative Certification Statement

"I certify that this data package is in compliance with the SOW, both technically and for completeness, for other than the conditions detailed above. Release of the data obtained in this hard copy data package has been authorized by the Laboratory Manager or a designee, as verified by the following signature."

Melissa C. Mannion
Melissa C. Mannion
Senior Program Manager

02/04/09
Date

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-116-81	Page 1 of 2

Collector J MOORE	Company Contact JOAN KESSNER · Telephone No. 373-4688	Project Coordinator WEISS, RL	Price Code 9K N · Data Turnaround 45 Days
Project Designation Columbia River Component of the RCBRA - Sediment	Sampling Location 1514-130 K1489 (7274)	SAP No. RC-116	
Ice Chest No. WCH-08-033	Field Logbook No. EL-1631/-1 · COA RESCRC6420	Method of Shipment FED EX	
Shipped To EBERLINE SERVICES RICHMOND	Offsite Property No. N/A	Bill of Lading/Air Bill No. 797167722719	

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

000029

Preservation	None	None	~~None~~	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C
Type of Container	G/P	G/P	~~G/P~~	G/P	G/P	G/P	aG	aG	aG	G
No. of Container(s)	1	1	~~1~~	1	1	1	1	1	1	1
Volume	1500g	100g	~~100g~~	10g	10g	250g	250g	120g	250g	250g
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	~~Tritium - H3~~	Technetium-99	See item (2) in Special Instructions	See item (3) in Special Instructions	PCBs - 8082	Pesticides - 8081	Semi-VOA - 8270A (TCL)	See item (4) in Special Instructions

Sample No	Matrix *	Sample Date	Sample Time										
J17VN9	OTHER SOLID	12/08/08	1345	X	X	~~X~~	X	X					

Samples unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab

CHAIN OF POSSESSION · Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
	12-08-08 / 1650	R.E.B.	12-08-08 1650
R.E. B	12/9/08 0900	D. Heidelberg	12/9/08 0900
D. Heidelberg	12/9/08 1130	Fed Ex	12/9/08 1130
FED EX			12/10/08 09:00

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) (Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238)
(2) Strontium-89/90 -- Total Sr, Isotopic Thorium (Thorium-232), Isotopic Uranium (Uranium-233/234, Uranium-235, Uranium-238); Isotopic Plutonium
(3) ICP Metals - 6010 (Full List) (Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc); Mercury - 7471 - (CV)
(4) VOA - 8260A (TCL) (1,1,1-Trichloroethane, 1,1,2,2-Tetrachloroethane, 1,1,2-Trichloroethane, 1,1-Dichloroethane, 1,1-Dichloroethene, 1,2-Dichloroethane, 1,2-Dichloropropane, 2-Butanone, 2-Hexanone, 4-Methyl-2-Pentanone, Acetone, Benzene, Bromodichloromethane, Bromoform, Bromomethane, Carbon disulfide, Carbon tetrachloride, Chlorobenzene, Chloroethane, Chloroform, Chloromethane, cis-1,2-Dichloroethylene, cis-1,3-Dichloropropene, Dibromochloromethane, Ethylbenzene, Methylene chloride, Styrene, Tetrachloroethene, Toluene, trans-1,2-Dichloroethylene

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-116-396

Page 1 of 1

Collector: SS

Company Contact: JOAN KESSNER

Telephone No.: 375-4688

Project Coordinator: WEISS, RL

Price Code: 9K N

Data Turnaround: 45 Days

Project Designation: Columbia River Component of the RCBRA - Sediment

Sampling Location: SL-3 SD K1789 (7274)

SAF No.: RC-116

Ice Chest No.: WCH-08-033

Field Logbook No.: EL-1631-1

COA: BESCRC6520

Method of Shipment: FED EX

Shipped To: EBERLINE SERVICES / LIONVILLE

Offsite Property No.: N/A

Bill of Lading/Air Bill No.: 797167722769

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

030[illegible]

			Preservation	None	None	None	None	Cool 4C	Cool 4C	None			
			Type of Container	G/P	G/P	G/P	G/P	G/P	aG	G/P			
			No. of Container(s)	1	1	1	2	1	1	1			
			Volume	1500g	100g	10g	10g	250g	125g	1000g			
SAMPLE ANALYSIS				See item (1) in Special Instructions.	Carbon-14	Technetium-99	See item (2) in Special Instructions.	See item (3) in Special Instructions.	TOC - 415.1	Particle Size (Dry Sieve) - D422			
Sample No.	Matrix *	Sample Date	Sample Time										
J17XK6	OTHER SOLID	12/8/08	1140	X	X	X	X						

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
	12/8/08 1700	Ray A	12/8/08 1700
R A	12/9/08 0800	Danielle Helberg	12/9/08 0800
Danielle Helberg	12/9/08 1130	Fed Ex	12/9/08 1130
Fed Ex			12/10/08 09:[illegible]

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) {Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238}
(2) Strontium-89,90 – Total Sr; Isotopic Thorium {Thorium-232}; Isotopic Uranium {Uranium-233/234, Uranium-235, Uranium-238}; Isotopic Plutonium
(3) ICP Metals - 6010 (Full List) {Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc}; Mercury - 7471 - (CV)

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION — Received By: Title: Date/Time:

FINAL SAMPLE DISPOSITION — Disposal Method: Disposed By: Date/Time:

WCH-EE-011

Washington Closure Hanford	**CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST**	RC-116-397	Page 1 of 1

Collector JS	Company Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator WEISS, RL
Project Designation Columbia River Component of the RCBRA - Sediment	Sampling Location SI-4 SD K1489 (7274)		SAF No. RC-116
Ice Chest No. WCH-08-~~025~~ 033	Field Logbook No. EL-1631-1	COA BESCRC6520	Method of Shipment FED EX
Shipped To EBERLINE SERVICES RICHMOND	Offsite Property No. N/A		Bill of Lading/Air Bill No. 797467722719

Price Code 9K N

Data Turnaround 45 Days

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

Preservation	None	None	None	None	Cool 4C	Cool 4C	None			
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	G/P			
No. of Container(s)	1	1	1	1	1	1	1			
Volume	1500g	100g	10g	10g	250g	125g	1000g			
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Technetium-99	See item (2) in Special Instructions	See item (3) in Special Instructions	TOC - 415.1	Particle Size (Dry Sieve) - D422			

Sample No.	Matrix *	Sample Date	Sample Time										
J17XK7	OTHER SOLID	12/8/08	1216	X	X	X	X						

CHAIN OF POSSESSION Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
[illegible]	12/8/08 1700	REF. A	12/8/08 1700
REF. A	12/9/08 0800	[illegible]	12/9/08 0800
[illegible]	12/9/08 1130	[illegible]	12/9/08 1130
FED EX		[illegible]	12/10/08 09..

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) (Americium-241, Antimony-125, Beryllium-7, Cerium-144, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238)
(2) Strontium-89,90 – Total Sr; Isotopic Thorium (Thorium-232); Isotopic Uranium (Uranium-233/234, Uranium-235, Uranium-238); Isotopic Plutonium
(3) ICP Metals - 6010 (Full List) (Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc), Mercury - 7471 - (CV)

Sampler unavailable to remove samples
from controlled storage. Shipper removed
samples from storage location taking custody
of samples for shipment to lab

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-116-398 Page 1 of 1

Collector JS	Company Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator WEISS, RL
Project Designation Columbia River Component of the RCBRA - Sediment	Sampling Location SL-5 SD K489 (7274)		SAF No. RC-116
Ice Chest No. WCH-08-033	Field Logbook No. EL-1631-1	COA BESCRC6530	Method of Shipment FED EX
Shipped To EBERLINE SERVICES LIONVILLE	Offsite Property No. N/A		Bill of Lading/Air Bill No. 797169722719

Price Code 9K N

Data Turnaround 45 Days

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

Preservation	None	None	None	None	Cool 4C	Cool 4C	None			
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	G/P			
No. of Container(s)	1	1	1	1	1	1	1			
Volume	1500g	100g	10g	10g	250g	125g	1000g			
SAMPLE ANALYSIS	See item (1) in Special Instructions	Chromium VI	Technetium-99	See item (2) in Special Instructions	See item (3) in Special Instructions	TOC - 415.1	Particle Size (Dry Sieve) - D422			

Sample No.	Matrix *	Sample Date	Sample Time										
J17XK8	OTHER SOLID	12/8/08	1250	X	X	X	X						

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Kim Coyol	12/8/08 1700	Ke. A	12/8/08 1700
Ke. A	12-9-08 0800	[illegible]	12/9/08 0800
[illegible]	12/9/08 1130	Fedex	12/9/08 1130
Fed EX		[illegible]	12/10/08 09:[illegible]

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) {Americium-241, Antimony-125, Beryllium-7, Cerium-144, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238}

(2) Strontium-89,90 - Total Sr; Isotopic Thorium {Thorium-232}; Isotopic Uranium {Uranium-233/234, Uranium-235, Uranium-238}; Isotopic Plutonium

(3) ICP Metals - 6010 (Full List) {Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc}; Mercury - 7471 - (CV)

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-116-504

Page 1 of 2

Collector: JS

Company Contact: JOAN KESSNER

Telephone No.: 375-4680

Project Coordinator: WEISS, RL

Price Code: 9K N

Data Turnaround: 45 Days

Project Designation: Columbia River Component of the RCBRA - Sediment

Sampling Location: RMSTD- ℄ SD K1489 (7274)

SAF No.: RC-116

Ice Chest No.: WCH-08-053

Field Logbook No.: EL-1631-1

COA: B45CRC6520

Method of Shipment: FED EX

Shipped To: ~~EBERLINE SERVICES~~/ LIONVILLE

Offsite Property No.: N/A

Bill of Lading/Air Bill No.: 797107722719

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

000033

Preservation	None	None	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	None
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	aG	aG	G	-
No. of Container(s)	1	1	1	1	1	1	1	1	1	1
Volume	1500g	100g	10g	40g	250g	250g	125g	250g	250g	--
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Technetium-99	See item (2) in Special Instructions	See item (3) in Special Instructions	PCBs - 8082	Pesticides - 8081	Semi-VOA - 8270A (TCL)	See item (4) in Special Instructions	-

Sample No.	Matrix *	Sample Date	Sample Time										
J17YT4	OTHER SOLID	12/8/08	1020	X	X	X	X						

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab.

CHAIN OF POSSESSION

Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Kim Royal	12/8/08 1700	Ref. A	12/8/08 1700
Ref. A	12/9/08 0900	Dhellenberg Ltd	12/9/08 0900
Dhellenberg Ltd	12/9/08 1130	FedEx	12/9/08 1130
FED EX			12/10/08 09:10

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) (Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238)
(2) Strontium-89,90 – Total Sr; Isotopic Thorium (Thorium-232); Isotopic Uranium (Uranium-233/234, Uranium-235, Uranium-238), Isotopic Plutonium
(3) ICP Metals - 6010 (Full List) (Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc), Mercury - 7471 - (CV)
(4) VOA - 8260A (TCL) (1,1,1-Trichloroethane, 1,1,2,2-Tetrachloroethane, 1,1,2-Trichloroethane, 1,1-Dichloroethane, 1,1-Dichloroethene, 1,2-Dichloroethane, 1,2-Dichloropropane, 2-Butanone, 2-Hexanone, 4-Methyl-2-Pentanone, Acetone, Benzene, Bromodichloromethane, Bromoform, Bromomethane, Carbon disulfide, Carbon tetrachloride, Chlorobenzene, Chloroethane, Chloroform, Chloromethane, cis-1,2-Dichloroethylene, cis-1,3-Dichloropropene, Dibromochloromethane, Ethylbenzene, Methylene chloride, Styrene, Tetrachloroethene, Toluene, trans-1,2-Dichloroeth

Matrix *
S = Soil
SE = Sediment
SO = Solid
SL = Sludge
W = Water
O = Oil
A = Air
DS = Drum Solids
DL = Drum Liquids
T = Tissue
WI = Wipe
L = Liquid
V = Vegetation
X = Other

LABORATORY SECTION
Received By
Title
Date/Time

FINAL SAMPLE DISPOSITION
Disposal Method
Disposed By
Date/Time

WCH-EE-011

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-116-505

Page 1 of 2

Collector: SS

Company Contact: JOAN KESSNER

Telephone No.: 375-4688

Project Coordinator: WEISS, RL

Price Code: ~~9K~~ N

Data Turnaround: 45 Days

Project Designation: Columbia River Component of the RCBRA - Sediment

Sampling Location: HMSTD- | SD K1489 (7274)

SAF No.: RC-116

Ice Chest No.: WCH-08-033

Field Logbook No.: EL-1631-1

COA: BESCRC6520

Method of Shipment: FED EX

Shipped To: EBERLINE SERVICES - LIONVILLE

Offsite Property No.: N/A

Bill of Lading/Air Bill No.: 797109722719

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

E30000

Preservation	None	None	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	None
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	aG	aG	G	-
No. of Container(s)	1	1	1	1	1	1	1	1	1	1
Volume	1500g	100g	20g	10g	250g	250g	125g	250g	250g	1
SAMPLE ANALYSIS	See note (1) in Special Instructions	Carbon-14	Technetium-99	See note (2) in Special Instructions	See note (3) in Special Instructions	PCBs - 8082	Pesticides - 8081	Semi-VOA 8270A (TCL)	See note (4) in Special Instructions	-

Sample No.	Matrix *	Sample Date	Sample Time										
J17YT5	OTHER SOLID	12/8/08	0930	X	X	X	X						

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab

CHAIN OF POSSESSION

Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Ken Rozel	12/8/08 1700	R. A	12/8/08 1700
R. A	12/9/08 0800	Dan Hedelberg	12/9/08 0800
Dan Hedelberg	12/9/08 1150	FedEx	12/9/08 1150
FEDEX			12/10/08 09:00

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) (Americium-241, Antimony-125, Beryllium-7, Cerium-144, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238)

(2) Strontium-89,90 – Total Sr, Isotopic Thorium (Thorium-232), Isotopic Uranium (Uranium-233/234, Uranium-235, Uranium-238), Isotopic Plutonium

(3) ICP Metals - 6010 (Full List) (Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc), Mercury - 7471 - (CV)

(4) VOA - 8260A (TCL) (1,1,1-Trichloroethane, 1,1,2,2-Tetrachloroethane, 1,1,2-Trichloroethane, 1,1-Dichloroethane, 1,1-Dichloroethene, 1,2-Dichloroethane, 1,2-Dichloropropane, 2-Butanone, 2-Hexanone, 4-Methyl-2-Pentanone, Acetone, Benzene, Bromodichloromethane, Bromoform, Bromomethane, Carbon disulfide, Carbon tetrachloride, Chlorobenzene, Chloroethane, Chloroform, Chloromethane, cis-1,2-Dichloroethylene, cis-1,3-Dichloropropene, Dibromochloromethane, [illegible]

Matrix *

S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST		RC-116-518	Page 1 of 2

Collector J MOORE

Company Contact JOAN KESSNER

Telephone No. 375-4688

Project Coordinator WEISS, RL

Price Code ~~9K~~ N

Data Turnaround 45 Days

Project Designation Columbia River Component of the RCBRA - Sediment

Sampling Location ISLI- 3 SD K1489 (2774)

SAF No. RC-116

Ice Chest No. 12CH-08-033

Field Logbook No. EL-1631/-1

COA BESCRC6520

Method of Shipment FED EX

Shipped To [✓ EBERLINE SERVICES] RICHMOND/ALBUQUERQUE/OAK RIDGE/LIONVILLE

Offsite Property No. N/A

Bill of Lading/Air Bill No. 797167772719

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

0000233

Preservation	None	None	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	None
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	aG	aG	G	*
No. of Container(s)	1	1	1	1	1	1	1	1	1	1
Volume	1500g	100g	10g	10g	250g	250g	125g	250g	250g	1"
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Technetium-99	See item (2) in Special Instructions	See item (3) in Special Instructions	PCBs - 8082	Pesticides - 8081	Semi-VOA - 8270A (TCL)	See item (4) in Special Instructions	

Sample No.	Matrix *	Sample Date	Sample Time										
J17YV8	OTHER SOLID	12/08/08	1130	X	X	X	X						

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab.

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
	12-08-08/1630		12-08-08/1630
Ref. B	12/9/08 0800	D. Heidelberg DH	12/9/08 0800
D Heidelberg DH	12/9/08 1130	Fedex	12/9/08 1130
Fed Ex			12/10/08 0950

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) {Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238}

(2) Strontium-89,90 — Total Sr; Isotopic Thorium {Thorium-232}; Isotopic Uranium {Uranium-233/234, Uranium-235, Uranium-238}; Isotopic Plutonium

(3) ICP Metals - 6010 (Full List) {Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc}; Mercury - 7471 - {CV}

(4) VOA - 8260A (TCL) {1,1,1-Trichloroethane, 1,1,2,2-Tetrachloroethane, 1,1,2-Trichloroethane, 1,1-Dichloroethane, 1,1-Dichloroethene, 1,2-Dichloroethane, 1,2-Dichloropropane, 2-Butanone, 2-Hexanone, 4-Methyl-2-Pentanone, Acetone, Benzene, Bromodichloromethane, Bromoform, Bromomethane, Carbon disulfide, Carbon tetrachloride, Chlorobenzene, Chloroethane, Chloroform, Chloromethane, cis-1,2-Dichloroethylene, cis-1,3-Dichloropropene, Dibromochloromethane, Ethylbenzene, Methylene chloride, Styrene, Tetrachloroethene, Toluene, trans-1,2-Dichloroethylene

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Washington Closure Hanford	**CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST**	RC-116-519	Page 1 of 2
Collector J Moore	Company Contact JOAN KESSNER Telephone No. 375-4688	Project Coordinator WEISS, RL	Price Code 9K N Data Turnaround 45 Days
Project Designation Columbia River Component of the RCBRA - Sediment	Sampling Location IS13-5 S0 K1489 (7274)	SAF No. RC-116	
Ice Chest No. WCH-08-033	Field Logbook No. EL-1631-1 COA BESCRC6320	Method of Shipment FED EX	
Shipped To EBERLINE SERVICES LIONVILLE	Offsite Property No. N/A	Bill of Lading/Air Bill No. 797167722719	

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

Preservation	None	None	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	None
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	aG	aG	G	-
No. of Container(s)	1	1	1	1	1	1	1	1	1	1
Volume	1500g	100g	10g	10g	250g	250g	125g	250g	250g	1*
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Technetium-99	See item (2) in Special Instructions	See item (3) in Special Instructions	PCBs - 8082	Pesticides - 8081	Semi-VOA 8270A (TCL)	See item (4) in Special Instructions	-

Sample No.	Matrix *	Sample Date	Sample Time										
J17YV9	OTHER SOLID	12/08/08	1210	X	X	X	X						

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location during custody of samples for shipment to lab.

CHAIN OF POSSESSION Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
	12 08 08/1630	Rep B	12/08/08/1630
Rep B	12/9/08 0900	D. Heidelberg	12/9/08 0900
D Heidelberg	12/9/08 1130	FedEx	12/9/08 1130
Fed Ex			12/10/08 09:00

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) (Americium-241, Antimony-125, Beryllium-7, Cerium-144, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238);

(2) Strontium-89,90 – Total Sr; Isotopic Thorium (Thorium-232); Isotopic Uranium (Uranium-233/234, Uranium-235, Uranium-238); Isotopic Plutonium

(3) ICP Metals - 6010 (Full List) (Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc); Mercury - 7471 - (CV)

(4) VOA - 8260A (TCL) (1,1,1-Trichloroethane, 1,1,2,2-Tetrachloroethane, 1,1,2-Trichloroethane, 1,1-Dichloroethane, 1,1-Dichloroethene, 1,2-Dichloroethane, 1,2-Dichloropropane, 2-Butanone, 2-Hexanone, 4-Methyl-2-Pentanone, Acetone, Benzene, Bromodichloromethane, Bromoform, Bromomethane, Carbon disulfide, Carbon tetrachloride, Chlorobenzene, Chloroethane, Chloroform, Chloromethane, cis-1,2-Dichloroethylene, cis-1,3-Dichloropropene, Dibromochloromethane, [illegible]

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-116-520

Page 1 of 1

Collector: J MOORE

Company Contact: JOAN KESSNER

Telephone No.: 375-4688

Project Coordinator: WEISS, RL

Price Code: 9K N

Data Turnaround: 45 Days

Project Designation: Columbia River Component of the RCBRA - Sediment

Sampling Location: 1513-1 SD K1489 (7274)

SAF No.: RC-116

Ice Chest No.: WCH-08-083

Field Logbook No.: EL-1631-4

COA: BESCRC6520

Method of Shipment: FED EX

Shipped To: EBERLINE SERVICES LIONVILLE

Offsite Property No.: N/A

Bill of Lading/Air Bill No.: 797167722719

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

000037

Preservation	None	None	None	None	Cool 4C	Cool 4C	None			
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	G/P			
No. of Container(s)	1	1	1	1	1	1	1			
Volume	1500g	100g	10g	10g	250g	125g	1000g			
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Technetium-99	See item (2) in Special Instructions	See item (3) in Special Instructions	TOC - 415.1	Particle Size (Dry Sieve) - D422			

Sample No	Matrix *	Sample Date	Sample Time										
J17YW0	OTHER SOLID	12/08/08	1030	X	X	X	X						

CHAIN OF POSSESSION	Date/Time	Sign/Print Names	Date/Time
Relinquished By/Removed From	12-08-08 / 1630	Received By/Stored In RB	12-08-08 / 1630
Relinquished By/Removed From RB	12/9/08 0900	Received By/Stored In	12-9-08 0900
Relinquished By/Removed From	12/9/08 1130	Received By/Stored In FedEx	12/9/08 1130
Relinquished By/Removed From FED EX		Received By/Stored In	12/10/08 09:50
Relinquished By/Removed From		Received By/Stored In	
Relinquished By/Removed From		Received By/Stored In	

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) {Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238}

(2) Strontium-89,90 - Total Sr; Isotopic Thorium {Thorium-232}; Isotopic Uranium {Uranium-233/234, Uranium-235, Uranium-238}; Isotopic Plutonium

(3) ICP Metals - 6010 (Full List) {Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc}; Mercury - 7471 - (CV)

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location using custody of samples for shipment to lab.

Matrix *

S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST			RC-116-522	Page 1 of 1
Collector J. MOORE	Company Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator WEISS, RL	Price Code ~~9K~~ N	Data Turnaround 45 Days
Project Designation Columbia River Component of the RCBRA - Sediment	Sampling Location ISI3- 2 SD K1489 (7274)		SAF No. RC-116		
Ice Chest No. WCH-08-033	Field Logbook No. EL-1630-1	COA BESCRC6520	Method of Shipment FED EX		
Shipped To EBERLINE SERVICES LIONVILLE	Offsite Property No. N/A		Bill of Lading/Air Bill No. 797167722719		

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

0000058

Preservation	None	None	None	None	Cool 4C	Cool 4C	None			
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	G/P			
No. of Container(s)	1	1	1	1	1	1	1			
Volume	1500g	300g	10g	10g	250g	125g	1000g			
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Technetium-99	See item (2) in Special Instructions	See item (3) in Special Instructions	TOC - 415.1	Percent Size (Dry Sieve) - D422			

Sample No.	Matrix *	Sample Date	Sample Time										
J17YW2	OTHER SOLID	12/08/08	1100	X	X	X	X						

CHAIN OF POSSESSION	Date/Time	Sign/Print Names	Date/Time
Relinquished By/Removed From	12-08-08 / 1630	Received By/Stored In Raf B	12-08-08 / 1630
Relinquished By/Removed From Raf B	12/9/08 0800	Received By/Stored In D Heidelberg	12/9/08 0800
Relinquished By/Removed From D Heidelberg	12/9/08 1150	Received By/Stored In FedEx	12/9/08 1150
Relinquished By/Removed From Fed EX	Date/Time	Received By/Stored In	12/10/08 09:03
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) {Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238}

(2) Strontium-89,90 – Total Sr; Isotopic Thorium {Thorium-232}; Isotopic Uranium {Uranium-233/234, Uranium 235, Uranium-238}; Isotopic Plutonium

(3) ICP Metals - 6010 (Full List) {Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc}; Mercury - 7471 - (CV)

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Washington Closure Hanford	**CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST**	RC-116-544	Page 1 of 2
Collector J MOORE	Company Contact JOAN KESSNER; Telephone No. 375-4688	Project Coordinator WEISS, RL	Price Code 9K N; Data Turnaround 45 Days
Project Designation Columbia River Component of the RCBRA - Sediment	Sampling Location IS14-2 SD K1489 (7274)	SAF No. RC-116	
Ice Chest No. WCH-08-033	Field Logbook No. EL-1631-1; COA BESCRC6520	Method of Shipment FED EX	
Shipped To EBERLINE SERVICES LIONVILLE	Offsite Property No. N/A	Bill of Lading/Air Bill No. 797167722719	

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

			Preservation	None	None	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	None
			Type of Container	G/P	G/P	G/P	G/P	G/P	aG	aG	aG	G	-
			No. of Container(s)	1	1	1	1	1	1	1	1	1	1
			Volume	1500g	100g	10g	10g	250g	250g	125g	250g	250g	--
SAMPLE ANALYSIS				See item (1) in Special Instructions	Carbon-14	Technetium-99	See item (2) in Special Instructions	See item (3) in Special Instructions	PCBs - 8082	Pesticides 8081	Semi-VOA - 8270A (TCL)	See item (4) in Special Instructions	-
Sample No.	Matrix *	Sample Date	Sample Time										
J18002	OTHER SOLID	12/08/08	1415	X	X	X	X	-					

Sample unavailable to remove samples from controlled storage. Shipper removed samples from storage location during custody of samples for shipment to lab

CHAIN OF POSSESSION	Date/Time	Sign/Print Names	Date/Time
Relinquished By/Removed From	12-09-08/1654	Received By/Stored In Rob B	12-09-08 1650
Relinquished By/Removed From Rob B	12/9/08 0800	Received By/Stored In D Hellberg	12/9/08 0800
Relinquished By/Removed From D Hellberg	12/9/08 1130	Received By/Stored In FedEx	12/9/08 1130
Relinquished By/Removed From Fed EX		Received By/Stored In	12/10/08 09:04
Relinquished By/Removed From		Received By/Stored In	
Relinquished By/Removed From		Received By/Stored In	

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) (Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238)

(2) Strontium-89,90 - Total Sr; Isotopic Thorium (Thorium-232); Isotopic Uranium (Uranium-233/234, Uranium-235, Uranium-238); Isotopic Plutonium

(3) ICP Metals - 6010 (Full List) (Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc); Mercury - 7471 - (CV)

(4) VOA - 8260A (TCL) (1,1,1-Trichloroethane, 1,1,2,2-Tetrachloroethane, 1,1,2-Trichloroethane, 1,1-Dichloroethane, 1,1-Dichloroethene, 1,2-Dichloroethane, 1,2-Dichloropropane, 2-Butanone, 2-Hexanone, 4-Methyl-2-Pentanone, Acetone, Benzene, Bromodichloromethane, Bromoform, Bromomethane, Carbon disulfide, Carbon tetrachloride, Chlorobenzene, Chloroethane, Chloroform, Chloromethane, cis-1,2-Dichloroethylene, cis-1,3-Dichloropropene, Dibromochloromethane, Ethylbenzene, Methylene chloride, Styrene, Tetrachloroethene, Toluene, trans-1,2-Dichloroethylene

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-116-545 | Page 1 of 1

Collector J Moore	Company Contact JOAN KESSNER Telephone No. 375-4688	Project Coordinator WEISS, RL	Price Code 9K N Data Turnaround 45 Days
Project Designation Columbia River Component of the RCBRA - Sediment	Sampling Location 1514-1 SD K1489 (7274)	SAF No. RC-116	
Ice Chest No. WCH-08-033	Field Logbook No. EL-1631-1 COA BESCRC6520	Method of Shipment FED EX	
Shipped To EBERLINE SERVICES LIONVILLE	Offsite Property No. N/A	Bill of Lading/Air Bill No. 797107722719	

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

0000040

		Preservation		None	None	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	None
		Type of Container		G/P	G/P	G/P	G/P	G/P	aG	aG	aG	G	-
		No. of Container(s)		1	1	1	1	1	1	1	1	1	1
		Volume		1500g	100g	10g	10g	250g	250g	125g	250g	250g	1?
SAMPLE ANALYSIS				See item (1) in Special Instructions	Carbon-14	Technetium-99	See item (2) in Special Instructions	See item (3) in Special Instructions	PCBs - 8082	Pesticides - 8081	Semi-VOA 8270A (TCL)	See item (4) in Special Instructions	-
Sample No.	Matrix *	Sample Date	Sample Time										
J18003	OTHER SOLID	12/08/08	1335	X	X	X	X						

Samples unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab.

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time 12/08/08 / 1630	Received By/Stored In Ref B	Date/Time 12/08/08 / 1630
Relinquished By/Removed From Ref B	Date/Time 12/9/08 0800	Received By/Stored In D. Hedelberg	Date/Time 12/9/08 0800
Relinquished By/Removed From D. Hedelberg	Date/Time 12/9/08 850	Received By/Stored In FedEx	Date/Time 12/9/08 1130
Relinquished By/Removed From FED EX	Date/Time	Received By/Stored In	Date/Time 12/10/08 01:00
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) {Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238};
(2) Strontium-89,90 - Total Sr; Isotopic Thorium {Thorium-232}; Isotopic Uranium {Uranium-233/234, Uranium-235, Uranium-238}; Isotopic Plutonium
(3) ICP Metals - 6010 (Full List) {Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc}; Mercury - 7471 - (CV)
(4) VOA - 8260A (TCL) {1,1,1-Trichloroethane, 1,1,2,2-Tetrachloroethane, 1,1,2-Trichloroethane, 1,1-Dichloroethane, 1,1-Dichloroethene, 1,2-Dichloroethane, 1,2-Dichloropropane, 2-Butanone, 2-Hexanone, 4-Methyl-2-Pentanone, Acetone, Benzene, Bromodichloromethane, Bromoform, Bromomethane, Carbon disulfide, Carbon tetrachloride, Chlorobenzene, Chloroethane, Chloroform, Chloromethane, cis-1,2-Dichloroethylene, cis-1,3-Dichloropropene, Dibromochloromethane, Ethylbenzene, Methylene chloride, Styrene, Tetrachloroethene, Toluene, trans-1,2-Dichloroethylene

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Washington Closure Hanford | **CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST** | RC-116-546 | Page 1 of 1

Collector: J Moore
Company Contact: JOAN KESSNER
Telephone No.: 375-4688
Project Coordinator: WEISS, RL
Price Code: 9K N
Data Turnaround: **45 Days**

Project Designation: Columbia River Component of the RCBRA - Sediment
Sampling Location: IS14-5 SD K1489 (7274)
SAF No.: RC-116

Ice Chest No.: WCH-08-033
Field Logbook No.: EL-1631-1
COA
Method of Shipment: FED EX

Shipped To: EBERLINE SERVICES / LIONVILLE
Offsite Property No.: N/A
Bill of Lading/Air Bill No.: 797167722719

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

000041

Preservation	None	None	None	None	Cool 4C	Cool 4C	None		
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	G/P		
No. of Container(s)	1	1	1	1	1	1	1		
Volume	1500g	500g	10g	10g	250g	125g	1000g		
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Technetium-99	See item (2) in Special Instructions	See item (3) in Special Instructions	TOC - 415.1	Particle Size (Dry Sieve) - D422		

Sample No.	Matrix *	Sample Date	Sample Time									
J18004	OTHER SOLID	12/08/08	1440	X	X	X	X					

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
	12 08 08 / 1630	Ref B	12 08 08 / 1630
Ref B	12/9/08 0800	D. Heidelberg	12/9/08 0800
D. Heidelberg	12/9/08 1130	Fedex	12/9/08 1130
FED EX			12/10/08 09:50

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) (Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238)
(2) Strontium-89,90 - Total Sr, Isotopic Thorium (Thorium-232), Isotopic Uranium (Uranium-233/234, Uranium-235, Uranium-238); Isotopic Plutonium
(3) ICP Metals - 6010 (Full List) (Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc); Mercury - 7471 - (CV)

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab.

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Washington Closure Hanford	**CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST**	RC-116-547	Page 1 of 1

Collector JM	**Company Contact** JOAN KESSNER	**Telephone No.** 375-4688	**Project Coordinator** WEISS, RL	**Price Code** 9K N
Project Designation Columbia River Component of the RCBRA - Sediment	**Sampling Location** IS14-4 SD K1489 (7274)		**SAF No.** RC-116	**Data Turnaround** 45 Days
Ice Chest No. WCH08-033	**Field Logbook No.** EL-1631-1	**COA** BESCRC6320	**Method of Shipment** FED EX	
Shipped To [✓ EBERLINE SERVICES] LIONVILLE	**Offsite Property No.** N/A		**Bill of Lading/Air Bill No.** 797167722719	

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

Preservation	None	None	None	None	Cool 4C	Cool 4C	None			
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	G/P			
No. of Container(s)	1	1	1	1	1	1	1			
Volume	1500g	100g	10g	10g	250g	125g	1000g			
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Technetium-99	See item (2) in Special Instructions	See item (3) in Special Instructions	TOC - 415.1	Particle Size (Dry Sieve) - D422			

Sample No.	Matrix *	Sample Date	Sample Time										
J18005	OTHER SOLID	12/5/08	1450	X	X	X	X						

CHAIN OF POSSESSION Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
	12-05-08 / 1630	Ref R	12-08-08 / 1620
Ref. R	12/9/08 0800	D Heidelberg	12/9/08 0800
D Heidelberg	12/9/08 1130	FedEx	12/9/08 1150
FedEx			12/10/08 09:15

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) {Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238}
(2) Strontium-89,90 – Total Sr; Isotopic Thorium {Thorium-232}; Isotopic Uranium {Uranium-233/234, Uranium-235, Uranium-238}; Isotopic Plutonium
(3) ICP Metals - 6010 (Full List) {Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc}; Mercury - 7471 - (CV)

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Washington Closure Hanford	**CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST**	**RC-116-548**	Page 1 of 1

Collector: J Moore	**Company Contact** JOAN KESSNER	**Telephone No.** 373-4684	**Project Coordinator** WEISS, RL	**Price Code** 9K N **Data Turnaround** 45 Days
Project Designation Columbia River Component of the RCBRA - Sediment	**Sampling Location** IS14-5 SD K1489 (7274)		**SAF No.** RC-116	
Ice Chest No. WCH-08-033	**Field Logbook No.** EL-1631-1	**COA** BESCRC6520	**Method of Shipment** FED EX	
Shipped To EBERLINE SERVICES/[illegible]IONVILLE	**Offsite Property No.** N/A		**Bill of Lading/Air Bill No.** 797187722719	

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

000043

Preservation	None	None	None	None	Cool 4C	Cool 4C	None			
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	G/P			
No. of Container(s)	1	1	1	1	1	1	1			
Volume	1500g	100g	10g	10g	250g	125g	1000g			
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Technetium-99	See item (2) in Special Instructions	See item (3) in Special Instructions	TOC - 415.1	Particle Size (Dry Sieve) - D422			

Sample No.	Matrix *	Sample Date	Sample Time										
J16006	OTHER SOLID	12/08/08	1506	X	X	X	X						

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
	12-08-08/1630	Ref B	12-08-08/1630
Ref B	12/9/08 0800	D Heidelberg LSD	12/9/08 0800
D Heidelberg LSD	12/9/08 1130	FedEx	12/9/08 1130
Fed Ex			12/10/08 0900

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) {Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238}
(2) Strontium-89,90 -- Total Sr; Isotopic Thorium {Thorium-232}; Isotopic Uranium {Uranium-233/234, Uranium-235, Uranium-238}; Isotopic Plutonium
(3) ICP Metals - 6010 (Full List) {Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc}; Mercury - 7471 - (CV)

Sample unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-116-558 Page 1 of 2

Collector: SS	Company Contact: JOAN KESSNER	Telephone No.: 375-4688	Project Coordinator: WEISS, RL
Project Designation: Columbia River Component of the RCBRA - Sediment	Sampling Location: 1S15 - 2 SD K1499 (7274)		SAF No.: RC-116
Ice Chest No.: WCH-08-033	Field Logbook No.: EL-1631-1	COA: BESCRC6530	Method of Shipment: FED EX
Shipped To: EBERLINE SERVICES LIONVILLE	Offsite Property No.: N/A		Bill of Lading/Air Bill No.: 797167722719

Price Code: 9K N

Data Turnaround: 45 Days

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

			Preservation	None	None	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	None
			Type of Container	G/P	G/P	G/P	G/P	G/P	aG	aG	aG	G	-
			No. of Container(s)	1	1	1	1	1	1	1	1	1	1
			Volume	1500g	500g	10g	10g	250g	250g	125g	250g	250g	1
SAMPLE ANALYSIS				See item (1) in Special Instructions	Carbon-14	Technetium-99	See item (2) in Special Instructions	See item (3) in Special Instructions	PCBs - 8082	Pesticides - 8081	Semi-VOA 8270A (TCL)	See item (4) in Special Instructions	-
Sample No.	Matrix *	Sample Date	Sample Time										
J18016	OTHER SOLID	12/8/08	1450	X	X	X	X						

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Kim Royal	12/8/08 1700	Ref. A	12/8/08 1700
Ref. A	12/9/08 0800		12/9/08 0800
	12/9/08 1150	Fedex	12/9/08 1150
FedEx			12/10/08 09:50

Sample custodian removed samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) {Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238}

(2) Strontium-89,90 -- Total Sr; Isotopic Thorium {Thorium-232}; Isotopic Uranium {Uranium-233/234, Uranium-235, Uranium-238}; Isotopic Plutonium

(3) ICP Metals - 6010 (TAL List) {Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc}; Mercury - 7471 - (CV)

(4) VOA - 8260A (TCL) {1,1,1-Trichloroethane, 1,1,2,2-Tetrachloroethane, 1,1,2-Trichloroethane, 1,1-Dichloroethane, 1,1-Dichloroethene, 1,2-Dichloroethane, 1,2-Dichloropropane, 2-Butanone, 2-Hexanone, 4-Methyl-2-Pentanone, Acetone, Benzene, Bromodichloromethane, Bromoform, Bromomethane, Carbon disulfide, Carbon tetrachloride, Chlorobenzene, Chloroethane, Chloroform, Chloromethane, cis-1,2-Dichloroethylene, cis-1,3-Dichloropropene, Dibromochloromethane, Ethylbenzene, Methylene chloride, Styrene, Tetrachloroethene, Toluene, trans-1,2-Dichloroethylene

Matrix *

S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-116-559

Page 1 of 1

Collector: JS	Company Contact: JOAN KESSNER	Telephone No.: 375-4688	Project Coordinator: WEISS, RL
Project Designation: Columbia River Component of the RCBRA - Sediment	Sampling Location: 1S15- SD K1489 (7274)		SAF No.: RC-116
Ice Chest No.: WCH-08-033	Field Logbook No.: EL-1631-1	COA: BESCRC6520	Method of Shipment: FED EX
Shipped To: EBERLINE SERVICES - LIONVILLE	Offsite Property No.: N/A		Bill of Lading/Air Bill No.: 797167722719

Price Code: 9K N

Data Turnaround: 45 Days

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

000045

			Preservation	None	None	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	None
			Type of Container	G/P	G/P	G/P	G/P	G/P	aG	aG	aG	G	-
			No. of Container(s)	1	1	1	1	1	1	1	1	1	1
			Volume	1500g	100g	10g	10g	150g	250g	125g	250g	250g	-
			SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Technetium-99	See item (2) in Special Instructions	See item (3) in Special Instructions	PCBs - 8082	Pesticides - 8081	Semi-VOA - 8270A (TCL)	See item (4) in Special Instructions	-
Sample No.	Matrix *	Sample Date	Sample Time										
J18017	OTHER SOLID	12/8/08	1535	X	X	X	X						

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Vern Boyd	12/8/08 1700	Ray A	12/8/08 1700
Ray A	12/9/08 0800	Danielle Helberg	12/9/08 0800
Danielle Helberg	12/9/08 1130	FedEx	12/9/08 1130
FedEx			12/10/08 09:00

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location using custody of samples for shipment to lab.

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) {Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238};

(2) Strontium-89,90 -- Total Sr, Isotopic Thorium {Thorium-232}, Isotopic Uranium {Uranium-233/234, Uranium-235, Uranium-238}, Isotopic Plutonium

(3) ICP Metals - 6010 (Full List) {Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc}; Mercury - 7471 - (CV)

(4) VOA - 8260A (TCL) {1,1,1-Trichloroethane, 1,1,2,2-Tetrachloroethane, 1,1,2-Trichloroethane, 1,1-Dichloroethane, 1,1-Dichloroethene, 1,2-Dichloroethane, 1,2-Dichloropropane, 2-Butanone, 2-Hexanone, 4-Methyl-2-Pentanone, Acetone, Benzene, Bromodichloromethane, Bromoform, Bromomethane, Carbon disulfide, Carbon tetrachloride, Chlorobenzene, Chloroethane, Chloroform, Chloromethane, cis-1,2-Dichloroethylene, cis-1,3-Dichloropropene, Dibromochloromethane, Ethylbenzene, Methylene chloride, Styrene, Tetrachloroethene, Toluene, trans-1,3-Dichloropropylene

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Appendix 5

Data Validation Supporting Documentation

APPENDIX A

RADIOCHEMICAL DATA VALIDATION CHECKLIST

VALIDATION LEVEL:	A	B	[✓ C]	D	E

PROJECT: RCBRA

VALIDATOR: ELR

LAB: LLI

DATA PACKAGE: K1487

DATE: 11/4/09

SDG: K1487

ANALYSES PERFORMED

☐ Gross Alpha/Beta ☐ Total Uranium	☒ Strontium-90 ☐ Radium 22[illegible]	☒ Technetium-99 ☐ Tritium	☒ Alpha Spectroscopy KC-14	☐ Gamma Spectroscopy	

SAMPLES/MATRIX

J17VN9	J17XK6	J17XK7	J17XK8	J17XT4	J17XT5
J17XV8	J17XV9	J17XW0	J17XW2	J18002	J18003
J18004	J18005	J18OCX	J18016	J18017	

Solid

1. Completeness ☐ N/A

Technical verification forms present? Yes [✓ No] N/A

Comments:

2. Initial Calibration (Levels D, E) ☒ N/A

Instruments/detectors calibrated? Yes No N/A

Initial calibration acceptable? Yes No N/A

Standards NIST traceable? Yes No N/A

Standards Expired? Yes No N/A

Calculation check acceptable? Yes No N/A

Comments:

3. Continuing Calibration (Levels D, E) ☒ N/A

Calibration checked within required frequency? .... Yes No N/A

Calibration check acceptable? .... Yes No N/A

Calibration check standards traceable? .... Yes No N/A

Calibration check standards expired? .... Yes No N/A

Calculation check acceptable? .... Yes No N/A

Comments:

4. Background Counts (Levels D, E) .... ☒ N/A

Background Counts checked within required frequency? .... Yes No N/A

Background Counts acceptable? .... Yes No N/A

Calculation check acceptable? .... Yes No N/A

Comments:

5. Blanks (Levels B, C, D, E) .... ☐ N/A

Method blank analyzed within required frequency? .... [✓ Yes] No N/A

Method blank results acceptable? .... [✓ Yes] No N/A

Analytes detected in method blank? .... Yes [✓ No] N/A

Field blank(s) analyzed? .... Yes [✓ No] N/A

Field blank results acceptable? .... Yes No [✓ N/A]

Analytes detected in field blank(s)? .... Yes No [✓ N/A]

Transcription/Calculation Errors? (Levels D, E) .... Yes No [✓ N/A]

Comments: no FB

6. Laboratory Control Samples or Blank Spike Samples (Levels C, D, E) .... ☐ N/A

LCS/BSS analyzed within required frequency? .... [✓ Yes] No N/A

LCS/BSS recoveries acceptable? .... [✓ Yes] No N/A

LCS/BSS traceable? (Levels D,E) .... Yes No [✓ N/A]

LCS/BSS expired? (Levels D,E) .... Yes No [✓ N/A]

LCS/BSS levels correct? (Levels D,E) .... Yes No [✓ N/A]

Transcription/Calculation Errors? (Levels D, E) .... Yes No [✓ N/A]

Comments: no th 229 or th 232 - LCS (cs/pro)

7. Chemical Carrier Recovery (Levels C, D, E) .... ☒ N/A

Chemical carrier added? .... Yes No N/A

Chemical recovery acceptable? .... Yes No N/A

Chemical carrier traceable? (Levels D, E) .... Yes No N/A

Chemical carrier expired? (Levels D, E) .... Yes No N/A

Transcription/Calculation errors? (Levels D, E)..................................... Yes No N/A

Comments:

8. Tracer Recovery (Levels C, D, E) .... ☐ N/A

Tracer added? .... [✓ Yes] No N/A

Tracer recovery acceptable? .... Yes [✓ No] N/A

Tracer traceable? (Levels D, E) .... Yes No [✓ N/A]

Tracer expired? (Levels D, E)... Yes No [✓ N/A]

Transcription/Calculation errors? (Levels D, E)....................................... Yes No [✓ N/A]

Comments: thorium (expire) K8 (106%) + B16 (117%) - J detects

9. Matrix Spikes (Levels C, D, E)... ☐ N/A

Matrix spike analyzed? .... Yes [✓ No] N/A

Spike recoveries acceptable? .... Yes No [✓ N/A]

Spike source traceable? (Levels D, E) .... Yes No [✓ N/A]

Spike source expired? Levels D, E)... Yes No [✓ N/A]

Transcription/Calculation Errors? (Levels D, E).. Yes No [✓ N/A]

Comments: NO C-14 MS - J calf

10. Duplicates (Levels C, D, E) ☐ N/A

Duplicates Analyzed at required frequency? [✓ Yes] No N/A

RPD Values Acceptable? [✓ Yes] No N/A

Transcription/Calculation Errors? (Levels D, E) Yes No [✓ N/A]

Comments:

11. Field QC Samples (Levels C, D E) ☐ N/A

Field duplicate sample(s) analyzed? [✓ Yes] No N/A

Field duplicate RPD values acceptable? [✓ Yes] No N/A

Field split sample(s) analyzed? Yes [✓ No] N/A

Field split RPD values acceptable? Yes No [✓ N/A]

Performance audit sample(s) analyzed? Yes [✓ No] N/A

Performance audit sample results acceptable? Yes No [✓ N/A]

Comments: no FS or PAS

FD - 03/N9

12. Holding Times (All levels)

Are sample holding times acceptable? [✓ Yes] No N/A

Comments:

13. Results and Detection Limits (All Levels) .... ☐ N/A

Results reported for all required sample analyses? .... [✓ Yes] No N/A

Results supported in raw data? (Levels D, E) .... Yes No [✓ N/A]

Results Acceptable? (Levels D, E) .... Yes No [✓ N/A]

Transcription/Calculation errors? (Levels D, E) .... Yes No [✓ N/A]

MDA's meet required detection limits? .... Yes [✓ No] N/A

Transcription/calculation errors? (Levels D, E) .... Yes No [✓ N/A]

Comments: one analyte out

Appendix 6

Additional Documentation Requested by Client

7274-019

Method Blank

METHOD BLANK

SDG	7274	Client/Case no	Hanford SDG_K1489
Contact	Melissa C. Mannion	Contract	No. 900W235A00
Lab sample id	X812062-19	Client sample id	Method Blank
Dept sample id	7274-019	Material/Matrix	SOLID
		SAF No	RC-116

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALIFIERS	TEST
Carbon 14	14762-75-5	0.135	1.5	2.58	50.0	U	C
Total Strontium	SR-RAD	-0.063	0.16	0.351	1.00	U	SR
Technetium 99	14133-76-7	0.001	0.16	0.409	15.0	U	TC
Thorium 228	14274-82-9	0.129	0.19	0.309	1.00	U	TH
Thorium 230	14269-63-7	0.193	0.26	0.308	1.00	U	TH
Thorium 232	TH-232	0	0.064	0.246	1.00	U	TH
Uranium 233/234	U-233/234	0.035	0.14	0.277	1.00	U	U
Uranium 235	15117-96-1	0.043	0.086	0.328	1.00	U	U
Uranium 238	U-238	0	0.071	0.272	1.00	U	U
Plutonium 238	13981-16-3	-0.025	0.10	0.242	1.00	U	PU
Plutonium 239/240	PU-239/240	0	0.051	0.194	1.00	U	PU
Potassium 40	13966-00-2	U		0.254		U	GAM
Cobalt 60	10198-40-0	U		0.009	0.050	U	GAM
Cesium 137	10045-97-3	U		0.011	0.100	U	GAM
Radium 226	13982-63-3	U		0.022	0.100	U	GAM
Radium 228	15262-20-1	U		0.044	0.200	U	GAM
Europium 152	14683-23-9	U		0.027	0.100	U	GAM
Europium 154	15585-10-1	U		0.029	0.100	U	GAM
Europium 155	14391-16-3	U		0.030	0.100	U	GAM
Thorium 228	14274-82-9	U		0.016		U	GAM
Thorium 232	TH-232	U		0.044		U	GAM
Uranium 235	15117-96-1	U		0.050		U	GAM
Uranium 238	U-238	U		1.10		U	GAM
Americium 241	14596-10-2	U		0.062		U	GAM
Beryllium 7	13966-02-4	U		0.070		U	GAM
Ruthenium 106	13967-48-1	U		0.078		U	GAM
Antimony 125	14234-35-6	U		0.025		U	GAM
Cesium 134	13967-70-9	U		0.012		U	GAM

ColumbiaRiverComp.ofRCBRA-Sediment

Lab id	EBRLNE
Protocol	Hanford1
Version	Ver 1.0
Form	DVD-DS
Version	3.06
Report date	02/04/00

EBERLINE ANALYTICAL/RICHMOND

SAMPLE DELIVERY GROUP 9274

9274 018

Lab Control Sample

LAB CONTROL SAMPLE

SDG 9274
Contact Melissa C. Mannion

Lab sample id [illegible]
Cmpl sample id 9274 018

Client/Case no Hanford SDG [illegible]
Contract No. [illegible]

Client sample id Lab Control Sample
Material/Matrix SOLID
SAF no RC-[illegible]

ANALYTE	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST	ADDED pCi/g	2σ ERR pCi/g	REC %	3σ LMTS (TOTAL)	PROTOCOL LIMITS
Carbon 14	1440	44	9.20	50.0		C	1500	44	96	85-115	80-120
Total Strontium	10.2	[illegible]	0.254	1.00		SR	9.18	0.47	111	79-121	80-120
Technetium 99	101	5.1	0.470	15.0		TC	109	4.4	94	80-120	80-120
Thorium 230	40.8	3.8	0.357	1.50		TH	37.8	1.5	107	74-126	80-120
Uranium 233/234	19.7	2.4	1.02	1.00		U	18.6	0.74	106	76-124	80-120
Uranium 235	14.8	1.7	0.[illegible]	1.00		U	15.2	0.60	98	77-121	80-120
Uranium 238	19.1	2.2	0.047	1.00		U	20.2	0.81	95	79-121	80-120
Plutonium 238	21.8	2.2	0.169	1.00		PU	23.2	0.93	94	81-119	80-120
Plutonium 239/240	27.4	2.6	0.210	1.00		PU	26.4	1.1	104	80-120	80-120
Cobalt 60	0.257	0.020	0.009	0.050		GAM	0.265	0.013	97	84-116	80-120
Cesium 137	0.119	0.019	0.011	0.100		GAM	0.108	0.012	110	84-116	80-120

[illegible] Comp. of RCRA Sediment

QC SDG [illegible]

LAB CONTROL SAMPLES
Page 1
SUMMARY DATA SECTION
Page 11

000055

Lab id EBERLINE
Protocol Hanford
Version Ver [illegible]
Form DVD LCS
Version [illegible]
Report date [illegible]

7274 026

EBERLINE ANALYTICAL/RICHMOND

SAMPLE DELIVERY GROUP R1487

DUPLICATE

[illegible]

SDG	7274			Client/Case no	Hanford SDG R1487
Contact	Melissa C. Mannion			Contract	No. [illegible]
	DUPLICATE		ORIGINAL		
Lab sample id	R8120[illegible] 20	Lab sample id	R8120[illegible] 10	Client sample id	[illegible]
Dept sample id	7274 020	Dept sample id	7274 010	Location/Matrix	[illegible] SOLID
		Received	12/10/98	Collected/Weight	12/08/98 11:02 1947 g
% solids	100.0	% solids	100.0	Custody/SAF no	BC-116-5[illegible] BC-116

ANALYTE	DUPLICATE pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALIFIER	TYPE	ORIGINAL pCi/g	2σ ERR (COUNT)	MDA pCi/g	QUALIFIER	RER %	3σ TOT	[illegible]
Carbon 14	1.52	1.4	2.47	50.0	U	C	0.241	0.95	1.68	U			1.5
Total Strontium	-0.051	0.17	0.262	1.00	U	SR	0.014	0.19	0.376	U			0.8
Technetium 99	0.104	0.14	0.191	15.0	U	TC	0.097	0.11	0.331	U			0.3
Thorium 228	0.552	0.26	0.306	1.00		TH	0.547	0.28	0.262		51	139	1.0
Thorium 230	0.510	0.12	0.244	1.00		TH	0.048	0.20	0.326	U	157	197	3.1
Thorium 232	0.287	0.19	0.244	1.00		TH	0.511	0.20	0.241		56	128	1.2
Uranium 233/234	0.391	0.30	0.176	1.00		U	0.551	0.28	0.264		11	132	0.8
Uranium 235	0	0.12	0.456	1.00	U	U	0.042	0.061	0.119	U			0.4
Uranium 238	0.687	0.40	0.376	1.00		U	0.479	0.21	0.266		58	220	1.4
Polonium 210	0.025	0.15	0.199	1.00	U	PO	0.041	0.033	0.046	U	.		0.9
Plutonium 239/240	0	0.055	0.192	1.00	U	PU	0.029	0.025	0.046	U			0.3
Potassium 40	8.44	0.25	0.131			GAM	7.69	0.65	0.082		3	20	1.4
Cobalt 60	0		0.011	0.050	U	GAM	0		0.010	U			0.1
Cesium 137	0.042	0.007	0.010	0.100		GAM	0.049	0.010	0.011		15	41	1.1
Radium 226	0.470	0.090	0.024	0.100		GAM	0.437	0.033	0.016		12	82	1.6
Radium 228	0.670	0.050	0.044	0.200		GAM	0.616	0.049	0.035		10	22	1.1
Europium 152	0		0.018	0.100	U	GAM	0		0.024	U			0.3
Europium 154	0		0.015	0.100	U	GAM	0		0.040	U			0.4
Europium 155	0		0.040	0.100	U	GAM	0		0.026	U	.		0.6
Thorium 228	0.482	0.017	0.015			GAM	0.415	0.025	0.014		7	16	1.4
Thorium 232	0.479	0.050	0.046			GAM	0.616	0.049	0.035		10	29	1.3
Uranium 235	0		0.081		U	GAM	0		0.050	U			0.6
Uranium 238	0		1.44		U	GAM	0		1.56	U	.		0.3
Americium 241	0		0.097		U	GAM	0				2	21	0
Beryllium 7	0		0.248		U	GAM	0		0.241	U	.		0
Ruthenium 106	0		0.092		U	GAM	0		0.079	U			0.2
Antimony 125	0		0.027		U	GAM	0		0.022	U	.		0.1
Cesium 134	0		0.015		U	GAM	0		0.014	U			0.2

ColumbiaRiverComp STRCHMA Sediment

DUPLICATES
Page 1
SUMMARY DATA SECTION
Page 14

Lab id EBERLINE
Protocol Hanford
Version Ver 1.0
Form DVD-DUP
Version 3.06
Report date 02/24/99

EBERLINE ANALYTICAL/RICHMOND

SAMPLE DELIVERY GROUP [illegible]

Type TH Matrix SOLID
SDG [illegible]
Contact Melissa C. Mannion

Client Hanford
Contract No. [illegible]
Contract [illegible]

LAB METHOD SUMMARY

THORIUM, ISOTOPIC IN SOLIDS

ALPHA SPECTROSCOPY

ETHOD PERFORMANCE

AB SAMPLE ID	RAW SUF TEST FIX	CLIENT SAMPLE ID	MAX MDA pCi/g	ALIQ g	PREP FAC	DILU-TION	YIELD %	EFF %	COUNT min	FWHM keV	DRIFT keV	DAYS HELD	PREPARED	ANAL-YZED	DETECTOR
reparation batch 6175-198		2σ prep error 8.0 %	Reference Lab Notebook 6175, pg. 198												
R812062-01		J17VR9	0.117	0.250			96		443			56	01/10/09	02/02	SS-039
R812062-02		J17XR6	0.108	0.250			104		996			51	01/10/09	01/30	SS-056
R812062-03		J17XR7	0.167	0.250			94		176			53	01/10/09	02/03	SS-027
R812062-04		J17XR8	0.103	0.250			106		976			51	01/10/09	01/30	SS-058
R812062-05		J17XT4	0.180	0.250			105		998			56	01/10/09	02/02	SS-015
R812062-06		J17XT5	0.139	0.250			98		995			51	01/10/09	01/30	SS-047
R812062-07		J17XV8	0.186	0.250			97		998			56	01/10/09	02/02	SS-016
R812062-08		J17XV9	0.198	0.250			95		998			56	01/10/09	02/02	SS-038
R812062-09		J17XW0	0.131	0.250			93		177			57	01/10/09	02/03	SS-038
R812062-10		J17XW2	0.126	0.250			103		141			54	01/10/09	01/31	SS-079
R812062-11		J18002	0.180	0.250			93		162			54	01/10/09	01/31	SS-042
R812062-12		J18003	0.196	0.250			96		998			56	01/10/09	02/02	SS-062
R812062-13		J18004	0.136	0.250			101		157			54	01/10/09	01/31	SS-056
R812062-14		J18005	0.131	0.250			102		157			54	01/10/09	01/31	SS-057
R812062-15		J18006	0.204	0.250			97		157			54	01/10/09	01/31	SS-058
R812062-16		J18016	0.167	0.250			111		157			54	01/10/09	01/31	SS-061
R812062-17		J18017	0.256	0.250			104		178			57	01/10/09	02/03	SS-071
R812062-18		Lab Control Sample	0.112	0.250			96		157				01/10/09	01/31	SS-061
R812062-19		Method Blank	0.139	0.250			96		158				01/10/09	01/31	SS-064
R812062-20		Duplicate (R812062-10)	0.106	0.250			100		158			54	01/10/09	01/31	SS-065
nominal values and limits from method			1.00	0.250			30-105		150			180			

PROCEDURES	REFERENCE	[illegible]
	SOP-011	Acid Dissolution, - 1.0g Aliquot, rev 5
	CP-966	Thorium in Water and Dissolved Solid Samples by Extraction Chromatography, rev 1
	CP-008	Heavy Element Electroplating, rev 12

AVERAGES ± 2 SD FOR 20 SAMPLES
MDA 0.151 ± 0.084
YIELD 100 ± 11

Date: 18 November 2009
To: Washington Closure Hanford (technical representative)
From: ELR Consultants
Project: Columbia River Component of the RCBRA - Sediment
Subject: Semivolatile/DRO - Data Package No. K1489-LLI

INTRODUCTION

This memo presents the results of data validation on Data Package No. K1489 prepared by Lionville Laboratory Inc. (LLI). A list of samples validated along with the analyses reported and the method of analysis is provided in the following table.

Sample ID	Sample Date	Media	Validation	Anaysis
J18002	12/8/08	Solid	C	See note 1
J18003	12/8/08	Solid	C	See note 1
J18016	12/8/08	Solid	C	See note 1
J18017	12/8/08	Solid	C	See note 1
J17VN9	12/8/08	Solid	C	See note 1
J17YT4	12/8/08	Solid	C	See note 1
J17YT5	12/8/08	Solid	C	See note 1
J17YV8	12/8/08	Solid	C	See note 1
J17YV9	12/8/08	Solid	C	See note 1

1 – Volatiles by 8260C & diesel range organics by 8015B

Data validation was conducted in accordance with the Washington Closure Hanford (WCH) validation statement of work and the Remedial Investigation Work Plan for Hanford Site Releases to the Columbia River (DOE/RL-2008-11, Rev. 0, September 2008). Appendices 1 through 6 provide the following information as indicated below:

Appendix 1 Glossary of Data Reporting Qualifiers
Appendix 2 Summary of Data Qualification
Appendix 3. Qualified Data Summary and Annotated Laboratory Reports
Appendix 4 Laboratory Narrative and Chain-of-Custody Documentation
Appendix 5. Data Validation Supporting Documentation
Appendix 6. Additional Data Requested by Client

DATA QUALITY OBJECTIVES

Holding Times & Sample Preservation

Analytical holding times were assessed to ascertain whether the holding time requirements were met by the laboratory. The holding time requirements are as follows: Samples must be extracted within 14 days of the date of sample collection and analyzed within 40 days from the date of extraction.

If holding times are exceeded, but not by greater than two times the limit, all associated sample results are qualified as estimates and flagged "J" for detects and "UJ" for non-detects. If holding times are exceeded by greater than two times the limit, all associated detectable sample results are qualified as estimates and flagged "J" and all non-detects are rejected and flagged "UR".

Due to the holding time being exceeded by less than twice the limit, all diesel range organic and motor oil results were qualified as estimates and flagged "J".

All other holding times were acceptable.

Method Blanks

Method blank analyses are conducted to determine the extent of laboratory contamination introduced through sampling, sample preparation and analysis. At least one acceptable method blank analysis must be conducted for every 20 samples. No contaminants should be present in the method blank. Analytical results for analytes present in any sample at less than five times the concentration of that analyte found in the associated blank are qualified as non-detects and flagged "U". Common laboratory contaminants present in samples at less than ten times the concentration of that analyte found in the associated blank are qualified as non-detects. If a sample result is less than the CRQL and is less than five times (or less than ten times for lab contaminants) the highest associated blank result, the sample result value is raised to the CRQL level and qualified as undetected "U".

Due to method blank contamination, all motor oil results were qualified as undetected and flagged "U".

All other method blank results were acceptable.

Field Blanks

No field blanks were submitted for analysis.

Accuracy

Matrix Spike/Matrix Spike Duplicate & Blank Spike Recoveries

Matrix spike/matrix spike duplicate analyses are used to assess the analytical accuracy of the reported data and the effect of the matrix on the ability to accurately quantify sample concentrations. Matrix spike/matrix spike duplicate analyses are performed in duplicate using five compounds for which percent recoveries must be within a range of 50-150% or within laboratory control limits. If spike recoveries are outside control limits, detected sample results less than five times the spike concentration are qualified as estimates and flagged "J" Undetected sample results with spike recoveries below control limits are qualified as estimates and flagged "UJ" Undetected sample results are not qualified if the spike recovery is above control limits. Sample results greater than five times the spike concentration require no qualification.

Due to the lack of a matrix spike, matrix spike duplicate and LCS analysis, all motor oil results were qualified as estimates and flagged "J".

Due to matrix spike results outside QC limits, all 2,4-dichlorophenol (49%), 1,2,4-trichlorobenzene (48%), 4-chloroanaline (12%), 4-chloro-3-methylphenol (49%), hexachlorocyclopentadiene (25%), 2,4,6-trichlorophenol (49%), 3 nitroanaline (31%), 4-nitroanaline (46%), pentachlorophenol (48%) and 3,3-dichlorobenzidine (0%) results were qualified as estimates and flagged "J".

Due to a matrix spike duplicate result outside QC limits, all 1,2,4-trichlorobenzene (49%), 4-chloroanaline (15%), 4-chloro-3-methylphenol (48%), hexachlorocyclopentadiene (10%), 2,4,6-trichlorophenol (46%), 3-nitroanaline (35%), pentachlorophenol (32%) and 3,3-dichlorobenzidine (0%) results were qualified as estimates and flagged "J".

Due to an LCS recovery outside QC limits, all 4-chloroanaline (30%), 3-nitroanaline (41%) and 3,3-dichlorobenzidene (44%) results were qualified as estimates and flagged "J".

All other accuracy results were acceptable.

Surrogate Recovery

The analyses of surrogate compounds provide a measure of performance for individual samples. Matrix-specific surrogate compound recovery control windows have been established by the EPA CLP program. If two surrogates of the same class of compounds (base/neutral or acid) are out of control limits, all associated sample results greater than the contract required quantitation limit (CRQL) are qualified as estimates and flagged "J". Sample results less than the CRQL and below the lower control limit are qualified as estimates and flagged "UJ". Sample results less than the CRQL with recoveries above the upper control limit require no qualification. If a surrogate recovery is less than 10%, detects are qualified as estimates and flagged "J" and nondetects are rejected and flagged "UR".

Due to a surrogate recovery outside QC limits, the motor oil result in samples J18002, J18003, J17VN9 and J17YT4 were qualified as estimates and flagged "J".

All other surrogate results were acceptable.

- **Precision**

Matrix Spike/Matrix Spike Duplicate Samples

Matrix spike (MS)/matrix spike duplicate (MSD) results provide matrix specific information on the precision of the method for specific target compound classes. Precision is expressed by the relative percent difference (RPD) between the recoveries of duplicate matrix spike analyses performed on a sample. Samples results must be within RPD limits of +/-30%. If RPD values are out of specification and the sample concentration is less than five times the spike concentration, all associated detected sample results are qualified as estimates and flagged "J". If RPD values are out of specification and the sample concentration is greater than five times the spike concentration, no qualification is required.

Due to the lack of a matrix spike and matrix spike duplicate analysis, all motor oil results were qualified as estimates and flagged "J".

Due to RPDs outside QC limits, all hexachlorcylcopentadiene (90%), 4-nitrophenol (33%), pentachlorophenol (39%) and 3,3-dichlorobenzidine (no RPD) were qualified as estimates and flagged "J".

All other precision results were acceptable.

Field Duplicate Samples

One set of field duplicates (J18003/J17VN9) were submitted for analysis. Field duplicates are compared using the same criteria as for laboratory duplicates. All field duplicates results were acceptable.

- **Analytical Detection Levels**

Reported analytical detection levels are compared against the required quantitation limits (RQL's) to ensure that laboratory detection levels meet the required criteria. Four-hundred seventy-two analytes exceeded the RQL. Under the WCH statement of work, no qualification is required. All other analytes exceeded the RQL.

- **Completeness**

Data package No. K1469 was submitted for validation and verified for completeness. Completeness is based on the percentage of data determined to be valid (i.e., not rejected). The completion percentage was 100%.

MAJOR DEFICIENCIES

None found.

MINOR DEFICIENCIES

The following minor deficiencies were noted:

- Due to the holding time being exceeded by less than twice the limit, all diesel range organic and motor oil results were qualified as estimates and flagged "J".
- Due to method blank contamination, all motor oil results were qualified as undetected and flagged "U".
- Due to the lack of a matrix spike, matrix spike duplicate and LCS analysis, all motor oil results were qualified as estimates and flagged "J".
- Due to matrix spike results outside QC limits, all 2,4-dichlorophenol (49%), 1,2,4-trichlorobenzene (48%), 4-chloroanaline (12%), 4-chloro-3-methylphenol (49%), hexachlorocyclopentadiene (25%), 2,4,6-trichlorophenol (49%), 3-nitroanaline (31%), 4-nitroanaline (46%), pentachlorophenol (48%) and 3,3-dichlorobenzidine (0%) results were qualified as estimates and flagged "J".
- Due to a matrix spike duplicate result outside QC limits, all 1,2,4-trichlorobenzene (49%), 4-chloroanaline (15%), 4-chloro-3-methylphenol (48%), hexachlorocyclopentadiene (10%), 2,4,6-trichlorophenol (46%), 3-nitroanaline (35%), pentachlorophenol (32%) and 3,3-dichlorobenzidine (0%) results were qualified as estimates and flagged "J".
- Due to an LCS recovery outside QC limits, all 4-chloroanaline (30%), 3-nitroanaline (41%) and 3,3-dichlorobenzidene (44%) results were qualified as estimates and flagged "J".
- Due to a surrogate recovery outside QC limits, the motor oil result in samples J18002, J18003, J17VN9 and J17YT4 were qualified as estimates and flagged "J".
- Due to RPDs outside QC limits, all hexachlorcylcopentadiene (90%), 4-nitrophenol (33%), pentachlorophenol (39%) and 3,3-dichlorobenzidine (no RPD) were qualified as estimates and flagged "J".

Data flagged "J" indicates that the associated concentration is an estimate, but under the WCH statement of work, the data may be usable for decision-making purposes. All other validated results are considered accurate within the standard error associated with the methods.

Four-hundred seventy-two analytes exceeded the RQL. Under the WCH statement of work, no qualification is required.

REFERENCES

Washington Closure Hanford Contract #S00W307A00 (March 2008), *Data Validation Services.*

DOE/RL-2008-11, Rev.0, *Remedial Investigation Work Plan for Hanford Site Releases to the Columbia River*, September 2008.

Appendix 1

Glossary of Data Reporting Qualifiers

Qualifiers which may be applied by data validators in compliance with the WCH validation SOW are as follows

U - Indicates the compound or analyte was analyzed for and not detected in the sample. The value reported is the same quantitation limit corrected for sample dilution and moisture content by the laboratory.

UJ - Indicates the compound or analyte was analyzed for and not detected in the sample Due to a minor QC deficiency identified during the data validation, the associated quantitation limit is an estimate.

J - Indicates the compound or analyte was analyzed for and detected. Due to a minor QC deficiency identified during the data validation, the associated quantitation limit is an estimate

R - Indicates the compound or analyte was analyzed for, detected, and due to an identified major QC deficiency, the data are unusable.

UR - Indicates the compound or analyte was analyzed for and not detected in the sample. Additionally, the data is unusable due to an identified major QC deficiency

NJ - Indicates presumptive evidence of a compound at an estimated value. The data may not be valid for some specific applications (i.e., usable for decision-making purposes)

N - Indicates presumptive evidence of a compound. The data may not be valid for some specific applications usable for decision-making purposes).

Appendix 2

Summary of Data Qualification

SEMIVOLATILE/DRO ORGANIC DATA QUALIFICATION SUMMARY*

SDG: K1489	**REVIEWER: ELR**	**Project: RCBRA**	**QC Issue**
COMPOUND	QUALIFIER	SAMPLES AFFECTED	REASON
Motor Oil	U	All	Method blank contamination
Diesel range organics Motor oil	J	All	Hold time
Motor Oil	J	All	No MS, MSD or LCS analysis
2,4-dichlorophenol 1,2,4-trichlorobenzene 4-chloroanaline 4-chloro-3-methylphenol hexachlorocyclopentadiene 2,4,6-trichlorophenol 3-nitroanaline 4-nitroanaline pentachlorophenol 3,3-dichlorobenzidine	J	All	MS recovery
1,2,4-trichlorobenzene 4-chloroanaline 4-chloro-3-methylphenol hexachlorocyclopentadiene 2,4,6-trichlorophenol 3-nitroanaline pentachlorophenol 3,3-dichlorobenzidine	J	All	MSD recovery
4-chloroanaline 3-nitroanaline 3,3-dichlorobenzidene	J	All	LCS recovery
Motor oil	J	J18002, J18003 J17VN9, J17YT4	Surrogate recovery
Hexachlorcylcopentadiene 4-nitrophenol pentachlorophenol 3,3-dichlorobenzidine	J	All	RPD

* - The Qualified Data Summary Table includes laboratory applied "U" qualifiers not specifically identified here. The laboratory applied "U" qualifiers are included to minimize misinterpretation of results contained in the table.

Appendix 3

Qualified Data Summary and Annotated Laboratory Reports

264 Welsh Pool Roa
Exton, PA 19341
Phone: 610-280-300
Fax: 610 280-3041

WC Hanford, Inc.	Project: RC-116	
2620 Fermi Avenue	Project Number: K1489	Reported:
Richland WA, 99354	Project Manager: Joan Kessner	03/09/2009 09:58

J18002

0812053-03 (Solid)

Lionville Laboratory

K 12/19/08

Semivolatile Organic Compounds by SW846 8270C

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Note
Phenol	ND	330	ug/kg wet	1	0901030	12/19/2008	01/25/2009	8270C	U
Bis(2-chloroethyl) ether	ND	330	"	"	"	"	"	"	U
2-Chlorophenol	ND	330	"	"	"	"	"	"	U
1,3-Dichlorobenzene	ND	330	"	"	"	"	"	"	U
1,4-Dichlorobenzene	ND	330	"	"	"	"	"	"	U
1,2-Dichlorobenzene	ND	330	"	"	"	"	"	"	U
2-Methylphenol	ND	330	"	"	"	"	"	"	U
Bis(2-chloroisopropyl) ether	ND	330	"	"	"	"	"	"	U
4-Methylphenol	ND	330	"	"	"	"	"	"	U
N-Nitrosodi-n-propylamine	ND	330	"	"	"	"	"	"	U
Hexachloroethane	ND	330	"	"	"	"	"	"	U
Nitrobenzene	ND	330	"	"	"	"	"	"	U
Isophorone	ND	330	"	"	"	"	"	"	U
2-Nitrophenol	ND	330	"	"	"	"	"	"	U
2,4-Dimethylphenol	ND	330	"	"	"	"	"	"	U
Bis(2-chloroethoxy) methane	ND	330	"	"	"	"	"	"	U
2,4-Dichlorophenol	ND J	330	"	"	"	"	"	"	U
1,2,4-Trichlorobenzene	ND J	330	"	"	"	"	"	"	U
Naphthalene	ND	330	"	"	"	"	"	"	U
4-Chloroaniline	ND J	330	"	"	"	"	"	"	U
Hexachlorobutadiene	ND	330	"	"	"	"	"	"	U
4-Chloro-3-methylphenol	ND J	330	"	"	"	"	"	"	U
2-Methylnaphthalene	ND	330	"	"	"	"	"	"	U
Hexachlorocyclopentadiene	ND J	330	"	"	"	"	"	"	U
2,4,6-Trichlorophenol	ND J	330	"	"	"	"	"	"	U
2,4,5-Trichlorophenol	ND	330	"	"	"	"	"	"	U
2-Chloronaphthalene	ND	330	"	"	"	"	"	"	U
2-Nitroaniline	ND	1650	"	"	"	"	"	"	U
Dimethyl Phthalate	ND	330	"	"	"	"	"	"	U
2,6-Dinitrotoluene	ND	330	"	"	"	"	"	"	U
Acenaphthylene	ND	330	"	"	"	"	"	"	U
3-Nitroaniline	ND J	1650	"	"	"	"	"	"	U
Acenaphthene	ND	330	"	"	"	"	"	"	U
2,4-Dinitrophenol	ND	1650	"	"	"	"	"	"	U
4-Nitrophenol	ND J	1650	"	"	"	"	"	"	U
Dibenzofuran	ND	330	"	"	"	"	"	"	U
2,4-Dinitrotoluene	ND	330	"	"	"	"	"	"	U
Diethyl Phthalate	ND	330	"	"	"	"	"	"	U
4-Chlorophenyl Phenyl Ether	ND	330	"	"	"	"	"	"	U

8

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

WC Hanford, Inc. 2620 Fermi Avenue Richland WA, 99354	Project: RC-116 Project Number: K1489 Project Manager: Joan Kessner	Reported: 03/09/2009 09:38

J18002
0812053-03 (Solid)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Lionville Laboratory									
Semivolatile Organic Compounds by SW846 8270C									
Fluorene	ND	330	ug/kg wet	1	1901010	12/19/2008	01/23/2009	8270C	U
4-Nitroaniline	ND J	1650	"	"	"	"	"	"	U
4,6-Dinitro-2-methylphenol	ND	330	"	"	"	"	"	"	U
N-Nitrosodiphenylamine	ND	330	"	"	"	"	"	"	U
4-Bromophenyl Phenyl Ether	ND	330	"	"	"	"	"	"	U
Hexachlorobenzene	ND	330	"	"	"	"	"	"	U
Pentachlorophenol	ND J	1650	"	"	"	"	"	"	U
Phenanthrene	ND	330	"	"	"	"	"	"	U
Anthracene	ND	330	"	"	"	"	"	"	U
Carbazole	ND	330	"	"	"	"	"	"	U
Di-n-butyl Phthalate	ND	330	"	"	"	"	"	"	U
Fluoranthene	ND	330	"	"	"	"	"	"	U
Pyrene	ND	330	"	"	"	"	"	"	U
Butyl Benzyl Phthalate	ND	300	"	"	"	"	"	"	U
Bis(2-ethylhexyl) phthalate	ND	330	"	"	"	"	"	"	U
3,3'-Dichlorobenzidine	ND J	660	"	"	"	"	"	"	U
Benz[a]anthracene	ND	330	"	"	"	"	"	"	U
Chrysene	ND	330	"	"	"	"	"	"	U
Di-n-octyl Phthalate	ND	330	"	"	"	"	"	"	U
Benzo[b] fluoranthene	ND	330	"	"	"	"	"	"	U
Benzo[k] fluoranthene	ND	330	"	"	"	"	"	"	U
Benzo[a] pyrene	ND	330	"	"	"	"	"	"	U
Indeno[1,2,3-cd]pyrene	ND	330	"	"	"	"	"	"	U
Dibenz[a,h]anthracene	ND	330	"	"	"	"	"	"	U
Benzo[g,h,i] perylene	ND	330	"	"	"	"	"	"	U
TIC: Unknown 5	**26400**		"	"	"	"	"	"	B J
TIC: Unknown 4	**900**		"	"	"	"	"	"	J, N
TIC: Unknown 3	**283**		"	"	"	"	"	"	J, N
TIC: Unknown 2	**367**		"	"	"	"	"	"	J, N
TIC: Unknown 1	**197**		"	"	"	"	"	"	J, N
Surrogate: 2-Fluorophenol		*47 %*	*25-121*		"	"	"	"	
Surrogate: Phenol-d5		*41 %*	*24-113*		"	"	"	"	
Surrogate: Nitrobenzene-d5		*50 %*	*23-120*		"	"	"	"	
Surrogate: 2-Fluorobiphenyl		*59 %*	*30-115*		"	"	"	"	
Surrogate: 2,4,6-Tribromophenol		*29 %*	*19-122*		"	"	"	"	
Surrogate: p-Terphenyl-d14		*67 %*	*18-137*		"	"	"	"	

V 11/18/09

OG
3/9/09

9

LVL

264 Welsh Pool Road
Exton, PA 1934
Phone: 610-280-3000
Fax: 610-280-3041

WC-Hanford, Inc.
2620 Fermi Avenue
Richland WA, 99354

Project: RC-116
Project Number: K1489
Project Manager: Joan Kessner

Reported:
03/09/2009 09:58

J18003

0812053-04 (Solid)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes

Lionville Laboratory

11/18/08

Semivolatile Organic Compounds by SW846 8270C

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Phenol	ND	330	ug/kg wet	1	8L01030	12/19/2008	01/24/2009	8270C	U
Bis(2-chloroethyl) ether	ND	330	"	"	"	"	"	"	U
2-Chlorophenol	ND	330	"	"	"	"	"	"	U
1,3-Dichlorobenzene	ND	330	"	"	"	"	"	"	U
1,4-Dichlorobenzene	ND	330	"	"	"	"	"	"	U
1,2-Dichlorobenzene	ND	330	"	"	"	"	"	"	U
2-Methylphenol	ND	330	"	"	"	"	"	"	U
Bis(2-chloroisopropyl) ether	ND	330	"	"	"	"	"	"	U
4-Methylphenol	ND	330	"	"	"	"	"	"	U
N-Nitrosodi-n-propylamine	ND	330	"	"	"	"	"	"	U
Hexachloroethane	ND	330	"	"	"	"	"	"	U
Nitrobenzene	ND	330	"	"	"	"	"	"	U
Isophorone	ND	330	"	"	"	"	"	"	U
2-Nitrophenol	ND	330	"	"	"	"	"	"	U
2,4-Dimethylphenol	ND	330	"	"	"	"	"	"	U
Bis(2-chloroethoxy) methane	ND	330	"	"	"	"	"	"	U
2,4-Dichlorophenol	ND J	330	"	"	"	"	"	"	U
1,2,4-Trichlorobenzene	ND J	330	"	"	"	"	"	"	U
Naphthalene	ND	330	"	"	"	"	"	"	U
4-Chloroaniline	ND J	330	"	"	"	"	"	"	U
Hexachlorobutadiene	ND	330	"	"	"	"	"	"	U
4-Chloro-3-methylphenol	ND J	330	"	"	"	"	"	"	U
2-Methylnaphthalene	ND	330	"	"	"	"	"	"	U
Hexachlorocyclopentadiene	ND J	330	"	"	"	"	"	"	U
2,4,6-Trichlorophenol	ND J	330	"	"	"	"	"	"	U
2,4,5-Trichlorophenol	ND	330	"	"	"	"	"	"	U
2-Chloronaphthalene	ND	330	"	"	"	"	"	"	U
2-Nitroaniline	ND	1650	"	"	"	"	"	"	U
Dimethyl Phthalate	ND	330	"	"	"	"	"	"	U
2,6-Dinitrotoluene	ND	330	"	"	"	"	"	"	U
Acenaphthylene	ND	330	"	"	"	"	"	"	U
3-Nitroaniline	ND J	1650	"	"	"	"	"	"	U
Acenaphthene	ND	330	"	"	"	"	"	"	U
2,4-Dinitrophenol	ND	1650	"	"	"	"	"	"	U
4-Nitrophenol	ND J	1650	"	"	"	"	"	"	U
Dibenzofuran	ND	330	"	"	"	"	"	"	U
2,4-Dinitrotoluene	ND	330	"	"	"	"	"	"	U
Diethyl Phthalate	ND	330	"	"	"	"	"	"	U
4-Chlorophenyl Phenyl Ether	ND	330	"	"	"	"	"	"	U

264 Welsh Pool Road
Exton, PA 19341
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WC-Hanford, Inc.	Project: RC-116	
2620 Fermi Avenue	Project Number: K1489	Reported:
Richland WA, 99354	Project Manager: Joan Kessner	03/09/2009 09:58

J1N003

0812053-04 (Solid)

Lionville Laboratory

Semivolatile Organic Compounds by SW846 8270C

Analyte	Result		Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Fluorene	ND		330	ug/kg wet	1	1901030	12/19/2008	01/24/2009	8270C	U
4-Nitroaniline	ND	J	1650	"	"	"	"	"	"	U
4,6-Dinitro-2-methylphenol	ND		330	"	"	"	"	"	"	U
N-Nitrosodiphenylamine	ND		330	"	"	"	"	"	"	U
4-Bromophenyl Phenyl Ether	ND		330	"	"	"	"	"	"	U
Hexachlorobenzene	ND		330	"	"	"	"	"	"	U
Pentachlorophenol	ND	J	1650	"	"	"	"	"	"	U
Phenanthrene	ND		330	"	"	"	"	"	"	U
Anthracene	ND		330	"	"	"	"	"	"	U
Carbazole	ND		330	"	"	"	"	"	"	U
Di-n-butyl Phthalate	ND		330	"	"	"	"	"	"	U
Fluoranthene	ND		330	"	"	"	"	"	"	U
Pyrene	ND		330	"	"	"	"	"	"	U
Butyl Benzyl Phthalate	ND		330	"	"	"	"	"	"	U
Bis(2-ethylhexyl) phthalate	ND		330	"	"	"	"	"	"	U
3,3'-Dichlorobenzidine	ND	J	660	"	"	"	"	"	"	U
Benz[a]anthracene	ND		330	"	"	"	"	"	"	U
Chrysene	ND		330	"	"	"	"	"	"	U
Di-n-octyl Phthalate	ND		330	"	"	"	"	"	"	U
Benzo[b] fluoranthene	ND		330	"	"	"	"	"	"	U
Benzo[k] fluoranthene	ND		330	"	"	"	"	"	"	U
Benzo[a] pyrene	ND		330	"	"	"	"	"	"	U
Indeno[1,2,3-cd]pyrene	ND		330	"	"	"	"	"	"	U
Dibenz[a,h]anthracene	ND		330	"	"	"	"	"	"	U
Benzo[g,h,i] perylene	ND		330	"	"	"	"	"	"	U
TIC: Unknown 3	1790			"	"	"	"	"	"	J,N
TIC: Unknown 2	391			"	"	"	"	"	"	J,N
TIC: Unknown 1	27300			"	"	"	"	"	"	J,N
TIC: Aldol Condensate 1	376			"	"	"	"	"	"	A3
TIC: Unknown 4	529			"	"	"	"	"	"	J,N
Surrogate: 2-Fluorophenol			76 %	*25-121*		"	"	"	"	
Surrogate: Phenol-d5			72 %	*24-113*		"	"	"	"	
Surrogate: Nitrobenzene-d5			72 %	*23-120*		"	"	"	"	
Surrogate: 2-Fluorobiphenyl			65 %	*30-115*		"	"	"	"	
Surrogate: 2,4,6-Tribromophenol			37 %	*19-122*		"	"	"	"	
Surrogate: p-Terphenyl-d14			85 %	*18-137*		"	"	"	"	

3/9/2009

LVL

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WC-Hanford, Inc. 2620 Fermi Avenue Richland WA, 99354	Project: WC-116 Project Number: K1489 Project Manager: Joan Kessner	Reported: 03/09/2009 09:58

J18016

0812053-05 (Solid)

Lionville Laboratory

1/15/09

Semivolatile Organic Compounds by SW846 8270C

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Phenol	ND	990	ug/kg wet	1	1901030	12/19/2008	01/25/2009	8270C	U
Bis(2-chloroethyl) ether	ND	990	"	"	"	"	"	"	U
2-Chlorophenol	ND	990	"	"	"	"	"	"	U
1,3-Dichlorobenzene	ND	990	"	"	"	"	"	"	U
1,4-Dichlorobenzene	ND	990	"	"	"	"	"	"	U
1,2-Dichlorobenzene	ND	990	"	"	"	"	"	"	U
2-Methylphenol	ND	990	"	"	"	"	"	"	U
Bis(2-chloroisopropyl) ether	ND	990	"	"	"	"	"	"	U
4-Methylphenol	ND	990	"	"	"	"	"	"	U
N-Nitrosodi-n-propylamine	ND	990	"	"	"	"	"	"	U
Hexachloroethane	ND	990	"	"	"	"	"	"	U
Nitrobenzene	ND	990	"	"	"	"	"	"	U
Isophorone	ND	990	"	"	"	"	"	"	U
2-Nitrophenol	ND	990	"	"	"	"	"	"	U
2,4-Dimethylphenol	ND	990	"	"	"	"	"	"	U
Bis(2-chloroethoxy) methane	ND	990	"	"	"	"	"	"	U
2,4-Dichlorophenol	ND J	990	"	"	"	"	"	"	U
1,2,4-Trichlorobenzene	ND J	990	"	"	"	"	"	"	U
Naphthalene	ND	990	"	"	"	"	"	"	U
4-Chloroaniline	ND J	990	"	"	"	"	"	"	U
Hexachlorobutadiene	ND	990	"	"	"	"	"	"	U
4-Chloro-3-methylphenol	ND J	990	"	"	"	"	"	"	U
2-Methylnaphthalene	ND	990	"	"	"	"	"	"	U
Hexachlorocyclopentadiene	ND J	990	"	"	"	"	"	"	U
2,4,6-Trichlorophenol	ND J	990	"	"	"	"	"	"	U
2,4,5-Trichlorophenol	ND	990	"	"	"	"	"	"	U
2-Chloronaphthalene	ND	990	"	"	"	"	"	"	U
2-Nitroaniline	ND	4950	"	"	"	"	"	"	U
Dimethyl Phthalate	ND	990	"	"	"	"	"	"	U
2,6-Dinitrotoluene	ND	990	"	"	"	"	"	"	U
Acenaphthylene	ND	990	"	"	"	"	"	"	U
3-Nitroaniline	ND J	4950	"	"	"	"	"	"	U
Acenaphthene	ND	990	"	"	"	"	"	"	U
2,4-Dinitrophenol	ND	4950	"	"	"	"	"	"	U
4-Nitrophenol	ND J	4950	"	"	"	"	"	"	U
Dibenzofuran	ND	990	"	"	"	"	"	"	U
2,4-Dinitrotoluene	ND	990	"	"	"	"	"	"	U
Diethyl Phthalate	ND	990	"	"	"	"	"	"	U
4-Chlorophenyl Phenyl Ether	ND	990	"	"	"	"	"	"	U

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264 Welsh Pool Road
Exton, PA 19341
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WC-Hanford, Inc 2620 Fermi Avenue Richland WA, 99354	Project: RC-116 Project Number: K1489 Project Manager: John Kessner	Reported: 01/04/2009 09:58

J18016
0812053-05 (Solid)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes

Lionville Laboratory

✓ 11/18/09

Semivolatile Organic Compounds by SW846 8270C

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Fluorene	ND	990	ug/kg wet	1	1901030	12/19/2008	01/25/2009	8270C	U
4-Nitroaniline	ND J	4950	"	"	"	"	"	"	U
4,6-Dinitro-2-methylphenol	ND	990	"	"	"	"	"	"	U
N-Nitrosodiphenylamine	ND	990	"	"	"	"	"	"	U
4-Bromophenyl Phenyl Ether	ND	990	"	"	"	"	"	"	U
Hexachlorobenzene	ND	990	"	"	"	"	"	"	U
Pentachlorophenol	ND J	4950	"	"	"	"	"	"	U
Phenanthrene	ND	990	"	"	"	"	"	"	U
Anthracene	ND	990	"	"	"	"	"	"	U
Carbazole	ND	990	"	"	"	"	"	"	U
Di-n-butyl Phthalate	ND	990	"	"	"	"	"	"	U
Fluoranthene	ND	990	"	"	"	"	"	"	U
Pyrene	ND	990	"	"	"	"	"	"	U
Butyl Benzyl Phthalate	ND	990	"	"	"	"	"	"	U
Bis(2-ethylhexyl) phthalate	ND	990	"	"	"	"	"	"	U
3,3'-Dichlorobenzidine	ND J	1980	"	"	"	"	"	"	U
Benz[a]anthracene	ND	990	"	"	"	"	"	"	U
Chrysene	ND	990	"	"	"	"	"	"	U
Di-n-octyl Phthalate	ND	990	"	"	"	"	"	"	U
Benzo[b] fluoranthene	ND	990	"	"	"	"	"	"	U
Benzo[k] fluoranthene	ND	990	"	"	"	"	"	"	U
Benzo[a] pyrene	ND	990	"	"	"	"	"	"	U
Indeno[1,2,3-cd]pyrene	ND	990	"	"	"	"	"	"	U
Dibenz[a,h]anthracene	ND	990	"	"	"	"	"	"	U
Benzo[g,h,i] perylene	ND	990	"	"	"	"	"	"	U
TIC: Unknown 3	799		"	"	"	"	"	"	J, ~~B~~, D
TIC: Unknown 2	1380		"	"	"	"	"	"	J, ~~B~~, D
TIC: Unknown 1	602		"	"	"	"	"	"	J, D, B
TIC: Ethane,1,1,2,2-tetrachloro-	980		"	"	"	"	"	"	N J, D
TIC: Unknown 4	23700		"	"	"	"	"	"	J, D, B
Surrogate: 2-Fluorophenol		*34 %*	*25-121*		"	"	"	"	
Surrogate: Phenol-d5		*35 %*	*24-113*		"	"	"	"	
Surrogate: Nitrobenzene-d5		*56 %*	*23-120*		"	"	"	"	
Surrogate: 2-Fluorobiphenyl		*73 %*	*30-115*		"	"	"	"	
Surrogate: 2,4,6-Tribromophenol		*24 %*	*19-122*		"	"	"	"	
Surrogate: p-Terphenyl-d14		*81 %*	*18-137*		"	"	"	"	

PL 3/9/09

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WC-Hanford, Inc. 2620 Fermi Avenue Richland WA, 99354	Project: RC-116 Project Number: K1489 Project Manager: Joan Kessner	Reported: 03/09/2009 09:38

J18017

0812053-06 (Solid)

Lionville Laboratory

11/14/09

Semivolatile Organic Compounds by SW846 8270C

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Phenol	ND	660	ug/kg wet	2	L901030	12/19/2008	01/23/2009	8270C	U
Bis(2-chloroethyl) ether	ND	660	"	"	"	"	"	"	U
2-Chlorophenol	ND	660	"	"	"	"	"	"	U
1,3-Dichlorobenzene	ND	660	"	"	"	"	"	"	U
1,4-Dichlorobenzene	ND	660	"	"	"	"	"	"	U
1,2-Dichlorobenzene	ND	660	"	"	"	"	"	"	U
2-Methylphenol	ND	660	"	"	"	"	"	"	U
Bis(2-chloroisopropyl) ether	ND	660	"	"	"	"	"	"	U
4-Methylphenol	ND	660	"	"	"	"	"	"	U
N-Nitrosodi-n-propylamine	ND	660	"	"	"	"	"	"	U
Hexachloroethane	ND	660	"	"	"	"	"	"	U
Nitrobenzene	ND	660	"	"	"	"	"	"	U
Isophorone	ND	660	"	"	"	"	"	"	U
2-Nitrophenol	ND	660	"	"	"	"	"	"	U
2,4-Dimethylphenol	ND	660	"	"	"	"	"	"	U
Bis(2-chloroethoxy) methane	ND	660	"	"	"	"	"	"	U
2,4-Dichlorophenol	ND J	660	"	"	"	"	"	"	U
1,2,4-Trichlorobenzene	ND J	660	"	"	"	"	"	"	U
Naphthalene	ND	660	"	"	"	"	"	"	U
4-Chloroaniline	ND J	660	"	"	"	"	"	"	U
Hexachlorobutadiene	ND	660	"	"	"	"	"	"	U
4-Chloro-3-methylphenol	ND J	660	"	"	"	"	"	"	U
2-Methylnaphthalene	ND	660	"	"	"	"	"	"	U
Hexachlorocyclopentadiene	ND J	660	"	"	"	"	"	"	U
2,4,6-Trichlorophenol	ND J	660	"	"	"	"	"	"	U
2,4,5-Trichlorophenol	ND	660	"	"	"	"	"	"	U
2-Chloronaphthalene	ND	660	"	"	"	"	"	"	U
2-Nitroaniline	ND	3300	"	"	"	"	"	"	U
Dimethyl Phthalate	ND	660	"	"	"	"	"	"	U
2,6-Dinitrotoluene	ND	660	"	"	"	"	"	"	U
Acenaphthylene	ND	660	"	"	"	"	"	"	U
3-Nitroaniline	ND J	3300	"	"	"	"	"	"	U
Acenaphthene	ND	660	"	"	"	"	"	"	U
2,4-Dinitrophenol	ND	3300	"	"	"	"	"	"	U
4-Nitrophenol	ND J	3300	"	"	"	"	"	"	U
Dibenzofuran	ND	660	"	"	"	"	"	"	U
2,4-Dinitrotoluene	ND	660	"	"	"	"	"	"	U
Diethyl Phthalate	ND	660	"	"	"	"	"	"	U
4-Chlorophenyl Phenyl Ether	ND	660	"	"	"	"	"	"	U

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WC-Hanford, Inc 2620 Fermi Avenue Richland WA 99354	Project: RC-116 Project Number: K1489 Project Manager: Joan Kessner	**Reported:** 03/09/2009 09:58

J18017

0812053-06 (Solid)

Lionville Laboratory

VW 11/18/09

Semivolatile Organic Compounds by SW846 8270C

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Fluorene	ND	660	ug/kg wet	2	1901030	12/19/2008	01/25/2009	8270C	U
4-Nitroaniline	ND J	3300	"	"	"	"	"	"	U
4,6-Dinitro-2-methylphenol	ND	660	"	"	"	"	"	"	U
N-Nitrosodiphenylamine	ND	660	"	"	"	"	"	"	U
4-Bromophenyl Phenyl Ether	ND	660	"	"	"	"	"	"	U
Hexachlorobenzene	ND	660	"	"	"	"	"	"	U
Pentachlorophenol	ND J	3300	"	"	"	"	"	"	U
Phenanthrene	ND	660	"	"	"	"	"	"	U
Anthracene	ND	660	"	"	"	"	"	"	U
Carbazole	ND	660	"	"	"	"	"	"	U
Di-n-butyl Phthalate	ND	660	"	"	"	"	"	"	U
Fluoranthene	ND	660	"	"	"	"	"	"	U
Pyrene	ND	660	"	"	"	"	"	"	U
Butyl Benzyl Phthalate	ND	660	"	"	"	"	"	"	U
Bis(2-ethylhexyl) phthalate	ND	660	"	"	"	"	"	"	U
3,3'-Dichlorobenzidine	ND J	1320	"	"	"	"	"	"	U
Benz[a]anthracene	ND	660	"	"	"	"	"	"	U
Chrysene	ND	660	"	"	"	"	"	"	U
Di-n-octyl Phthalate	ND	660	"	"	"	"	"	"	U
Benzo[b] fluoranthene	ND	660	"	"	"	"	"	"	U
Benzo[k] fluoranthene	ND	660	"	"	"	"	"	"	U
Benzo[a] pyrene	ND	660	"	"	"	"	"	"	U
Indeno[1,2,3-cd]pyrene	ND	660	"	"	"	"	"	"	U
Dibenz[a,h]anthracene	ND	660	"	"	"	"	"	"	U
Benzo[g,h,i] perylene	ND	660	"	"	"	"	"	"	U
TIC: Unknown 2	20700		"	"	"	"	"	"	J, B, D
TIC: Unknown 1	440		"	"	"	"	"	"	J, ~~B~~, D
Surrogate: 2-Fluorophenol		50 %	25-121		"	"	"	"	
Surrogate: Phenol-d5		45 %	24-113		"	"	"	"	
Surrogate: Nitrobenzene-d5		53 %	23-120		"	"	"	"	
Surrogate: 2-Fluorobiphenyl		61 %	30-115		"	"	"	"	
Surrogate: 2,4,6-Tribromophenol		45 %	19-122		"	"	"	"	
Surrogate: p-Terphenyl-d14		66 %	18-137		"	"	"	"	

BS 3/9/09

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LVL

264 Welsh Pool Roa
Exton, PA 1934
Phone: 610-280-300
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WC Hanford, Inc 2620 Fermi Avenue Richland WA, 99354	Project: RC-116 Project Number: K1489 Project Manager: Joan Kessner	Reported: 02/09/2009 09:58

J17VN9
0812053-07 (Solid)

Lionville Laboratory

Vk 11/19/09

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Semivolatile Organic Compounds by SW846 8270C									
Phenol	ND	660	ug/kg wet	2	8901030	12/19/2008	01/23/2009	8270C	U
Bis(2-chloroethyl) ether	ND	660	"	"	"	"	"	"	U
2-Chlorophenol	ND	660	"	"	"	"	"	"	U
1,3-Dichlorobenzene	ND	660	"	"	"	"	"	"	U
1,4-Dichlorobenzene	ND	660	"	"	"	"	"	"	U
1,2-Dichlorobenzene	ND	660	"	"	"	"	"	"	U
2-Methylphenol	ND	660	"	"	"	"	"	"	U
Bis(2-chloroisopropyl) ether	ND	660	"	"	"	"	"	"	U
4-Methylphenol	ND	660	"	"	"	"	"	"	U
N-Nitrosodi-n-propylamine	ND	660	"	"	"	"	"	"	U
Hexachloroethane	ND	660	"	"	"	"	"	"	U
Nitrobenzene	ND	660	"	"	"	"	"	"	U
Isophorone	ND	660	"	"	"	"	"	"	U
2-Nitrophenol	ND	660	"	"	"	"	"	"	U
2,4-Dimethylphenol	ND	660	"	"	"	"	"	"	U
Bis(2-chloroethoxy) methane	ND	660	"	"	"	"	"	"	U
2,4-Dichlorophenol	ND J	660	"	"	"	"	"	"	U
1,2,4-Trichlorobenzene	ND J	660	"	"	"	"	"	"	U
Naphthalene	ND	660	"	"	"	"	"	"	U
4-Chloroaniline	ND J	660	"	"	"	"	"	"	U
Hexachlorobutadiene	ND	660	"	"	"	"	"	"	U
4-Chloro-3-methylphenol	ND J	660	"	"	"	"	"	"	U
2-Methylnaphthalene	ND	660	"	"	"	"	"	"	U
Hexachlorocyclopentadiene	ND J	660	"	"	"	"	"	"	U
2,4,6-Trichlorophenol	ND J	660	"	"	"	"	"	"	U
2,4,5-Trichlorophenol	ND	660	"	"	"	"	"	"	U
2-Chloronaphthalene	ND	660	"	"	"	"	"	"	U
2-Nitroaniline	ND	3300	"	"	"	"	"	"	U
Dimethyl Phthalate	ND	660	"	"	"	"	"	"	U
2,6-Dinitrotoluene	ND	660	"	"	"	"	"	"	U
Acenaphthylene	ND	660	"	"	"	"	"	"	U
3-Nitroaniline	ND J	3300	"	"	"	"	"	"	U
Acenaphthene	ND	660	"	"	"	"	"	"	U
2,4-Dinitrophenol	ND	3300	"	"	"	"	"	"	U
4-Nitrophenol	ND J	3300	"	"	"	"	"	"	U
Dibenzofuran	ND	660	"	"	"	"	"	"	U
2,4-Dinitrotoluene	ND	660	"	"	"	"	"	"	U
Diethyl Phthalate	ND	660	"	"	"	"	"	"	U
4-Chlorophenyl Phenyl Ether	ND	660	"	"	"	"	"	"	U

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WC-Hanford, Inc.	Project: RC 116	
2620 Fermi Avenue	Project Number: K1489	Reported:
Richland WA, 99354	Project Manager: Joan Kessner	03/09/2009 09:58

J17VN9

0812053-07 (Solid)

Lionville Laboratory

Kc 1/6/09

Semivolatile Organic Compounds by SW846 8270C

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Fluorene	ND	660	ug/kg wet	2	1901010	12/19/2008	01/25/2009	8270C	U
4-Nitroaniline	ND J	3300	"	"	"	"	"	"	U
4,6-Dinitro-2-methylphenol	ND	660	"	"	"	"	"	"	U
N-Nitrosodiphenylamine	ND	660	"	"	"	"	"	"	U
4-Bromophenyl Phenyl Ether	ND	660	"	"	"	"	"	"	U
Hexachlorobenzene	ND	660	"	"	"	"	"	"	U
Pentachlorophenol	ND J	3300	"	"	"	"	"	"	U
Phenanthrene	ND	660	"	"	"	"	"	"	U
Anthracene	ND	660	"	"	"	"	"	"	U
Carbazole	ND	660	"	"	"	"	"	"	U
Di-n-butyl Phthalate	ND	660	"	"	"	"	"	"	U
Fluoranthene	ND	660	"	"	"	"	"	"	U
Pyrene	ND	660	"	"	"	"	"	"	U
Butyl Benzyl Phthalate	ND	660	"	"	"	"	"	"	U
Bis(2-ethylhexyl) phthalate	ND	660	"	"	"	"	"	"	U
3,3'-Dichlorobenzidine	ND J	1320	"	"	"	"	"	"	U
Benz[a]anthracene	ND	660	"	"	"	"	"	"	U
Chrysene	ND	660	"	"	"	"	"	"	U
Di-n-octyl Phthalate	ND	660	"	"	"	"	"	"	U
Benzo[b] fluoranthene	ND	660	"	"	"	"	"	"	U
Benzo[k] fluoranthene	ND	660	"	"	"	"	"	"	U
Benzo[a] pyrene	ND	660	"	"	"	"	"	"	U
Indeno[1,2,3-cd]pyrene	ND	660	"	"	"	"	"	"	U
Dibenz[a,h]anthracene	ND	660	"	"	"	"	"	"	U
Benzo[g,h,i] perylene	ND	660	"	"	"	"	"	"	U
TIC: Unknown 1	1030		"	"	"	"	"	"	J, ~~B~~, D
TIC: Unknown 2	19200		"	"	"	"	"	"	J, B, D
Surrogate: 2-Fluorophenol		*46 %*	*25-121*		"	"	"	"	
Surrogate: Phenol-d5		*49 %*	*24-113*		"	"	"	"	
Surrogate: Nitrobenzene-d5		*49 %*	*23-120*		"	"	"	"	
Surrogate: 2-Fluorobiphenyl		*69 %*	*30-115*		"	"	"	"	
Surrogate: 2,4,6-Tribromophenol		*29 %*	*19-122*		"	"	"	"	
Surrogate: p-Terphenyl-d14		*78 %*	*18-137*		"	"	"	"	

K 3/11/09

17

WCH-Hanford, Inc.	Project: RCC-116	
2620 Fermi Avenue	Project Number: K1489	Reported:
Richland WA, 99354	Project Manager: Joan Kessner	03/09/2009 09:58

J17YT4

0812053-08 (Solid)

Lionville Laboratory

V 11/19/09

Semivolatile Organic Compounds by SW846 8270C

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Phenol	ND	660	ug/kg wet	2	9A01030	12/19/2008	01/25/2009	8270C	U
Bis(2-chloroethyl) ether	ND	660	"	"	"	"	"	"	U
2-Chlorophenol	ND	660	"	"	"	"	"	"	U
1,3-Dichlorobenzene	ND	660	"	"	"	"	"	"	U
1,4-Dichlorobenzene	ND	660	"	"	"	"	"	"	U
1,2-Dichlorobenzene	ND	660	"	"	"	"	"	"	U
2-Methylphenol	ND	660	"	"	"	"	"	"	U
Bis(2-chloroisopropyl) ether	ND	660	"	"	"	"	"	"	U
4-Methylphenol	ND	660	"	"	"	"	"	"	U
N-Nitrosodi-n-propylamine	ND	660	"	"	"	"	"	"	U
Hexachloroethane	ND	660	"	"	"	"	"	"	U
Nitrobenzene	ND	660	"	"	"	"	"	"	U
Isophorone	ND	660	"	"	"	"	"	"	U
2-Nitrophenol	ND	660	"	"	"	"	"	"	U
2,4-Dimethylphenol	ND	660	"	"	"	"	"	"	U
Bis(2-chloroethoxy) methane	ND	660	"	"	"	"	"	"	U
2,4-Dichlorophenol	ND J	660	"	"	"	"	"	"	U
1,2,4-Trichlorobenzene	ND J	660	"	"	"	"	"	"	U
Naphthalene	ND	660	"	"	"	"	"	"	U
4-Chloroaniline	ND J	660	"	"	"	"	"	"	U
Hexachlorobutadiene	ND	660	"	"	"	"	"	"	U
4-Chloro-3-methylphenol	ND J	660	"	"	"	"	"	"	U
2-Methylnaphthalene	ND	660	"	"	"	"	"	"	U
Hexachlorocyclopentadiene	ND J	660	"	"	"	"	"	"	U
2,4,6-Trichlorophenol	ND J	660	"	"	"	"	"	"	U
2,4,5-Trichlorophenol	ND	660	"	"	"	"	"	"	U
2-Chloronaphthalene	ND	660	"	"	"	"	"	"	U
2-Nitroaniline	ND	3300	"	"	"	"	"	"	U
Dimethyl Phthalate	ND	660	"	"	"	"	"	"	U
2,6-Dinitrotoluene	ND	660	"	"	"	"	"	"	U
Acenaphthylene	ND	660	"	"	"	"	"	"	U
3-Nitroaniline	ND J	3300	"	"	"	"	"	"	U
Acenaphthene	ND	660	"	"	"	"	"	"	U
2,4-Dinitrophenol	ND	3300	"	"	"	"	"	"	U
4-Nitrophenol	ND J	3300	"	"	"	"	"	"	U
Dibenzofuran	ND	660	"	"	"	"	"	"	U
2,4-Dinitrotoluene	ND	660	"	"	"	"	"	"	U
Diethyl Phthalate	ND	660	"	"	"	"	"	"	U
4-Chlorophenyl Phenyl Ether	ND	660	"	"	"	"	"	"	U

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

WC-Hanford, Inc. 2020 Fermi Avenue Richland WA, 99354	Project: RC-116 Project Number: K1489 Project Manager: Joan Kessner	Reported: 03/09/2009 09 58

J17YT4

0812053-08 (Solid)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes

Lionville Laboratory

W 11/18/09

Semivolatile Organic Compounds by SW846 8270C

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Fluorene	ND	660	ug/kg wet	2	0901030	12/19/2008	01/23/2009	8270C	U
4-Nitroaniline	ND J	3300	"	"	"	"	"	"	U
4,6-Dinitro-2-methylphenol	ND	660	"	"	"	"	"	"	U
N-Nitrosodiphenylamine	ND	660	"	"	"	"	"	"	U
4-Bromophenyl Phenyl Ether	ND	660	"	"	"	"	"	"	U
Hexachlorobenzene	ND	660	"	"	"	"	"	"	U
Pentachlorophenol	ND J	3300	"	"	"	"	"	"	U
Phenanthrene	ND	660	"	"	"	"	"	"	U
Anthracene	ND	660	"	"	"	"	"	"	U
Carbazole	ND	660	"	"	"	"	"	"	U
Di-n-butyl Phthalate	ND	660	"	"	"	"	"	"	U
Fluoranthene	ND	660	"	"	"	"	"	"	U
Pyrene	ND	660	"	"	"	"	"	"	U
Butyl Benzyl Phthalate	ND	660	"	"	"	"	"	"	U
Bis(2-ethylhexyl) phthalate	ND	660	"	"	"	"	"	"	U
3,3'-Dichlorobenzidine	ND J	1320	"	"	"	"	"	"	U
Benz(a)anthracene	ND	660	"	"	"	"	"	"	U
Chrysene	ND	660	"	"	"	"	"	"	U
Di-n-octyl Phthalate	ND	660	"	"	"	"	"	"	U
Benzo(b) fluoranthene	ND	660	"	"	"	"	"	"	U
Benzo(k) fluoranthene	ND	660	"	"	"	"	"	"	U
Benzo(a) pyrene	ND	660	"	"	"	"	"	"	U
Indeno(1,2,3-cd)pyrene	ND	660	"	"	"	"	"	"	U
Dibenz(a,h)anthracene	ND	660	"	"	"	"	"	"	U
Benzo(g,h,i) perylene	ND	660	"	"	"	"	"	"	U
TIC: Unknown 2	34800		"	"	"	"	"	"	J, N, T
TIC: Unknown 1	737		"	"	"	"	"	"	J, N, T
Surrogate: 2-Fluorophenol		49 %	*25-121*		"	"	"	"	
Surrogate: Phenol-d5		46 %	*24-113*		"	"	"	"	
Surrogate: Nitrobenzene-d5		52 %	*23-120*		"	"	"	"	
Surrogate: 2-Fluorobiphenyl		68 %	*30-115*		"	"	"	"	
Surrogate: 2,4,6-Tribromophenol		39 %	*19-122*		"	"	"	"	
Surrogate: p-Terphenyl-d14		72 %	*18-137*		"	"	"	"	

KG 3/11/09

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

WC-Hanford, Inc 2620 Fermi Avenue Richland WA, 99354	Project: RC-116 Project Number: K1489 Project Manager: Joan Kessner	Reported: 03/09/2009 09:58

J17YT5

0812053-09 (Solid)

Lionville Laboratory

Semivolatile Organic Compounds by SW846 8270C

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Note
Phenol	ND	990	ug/kg wet	3	L901030	12/19/2008	01/24/2009	8270C	U
Bis(2-chloroethyl) ether	ND	990	"	"	"	"	"	"	U
2-Chlorophenol	ND	990	"	"	"	"	"	"	U
1,3-Dichlorobenzene	ND	990	"	"	"	"	"	"	U
1,4-Dichlorobenzene	ND	990	"	"	"	"	"	"	U
1,2-Dichlorobenzene	ND	990	"	"	"	"	"	"	U
2-Methylphenol	ND	990	"	"	"	"	"	"	U
Bis(2-chloroisopropyl) ether	ND	990	"	"	"	"	"	"	U
4-Methylphenol	ND	990	"	"	"	"	"	"	U
N-Nitrosodi-n-propylamine	ND	990	"	"	"	"	"	"	U
Hexachloroethane	ND	990	"	"	"	"	"	"	U
Nitrobenzene	ND	990	"	"	"	"	"	"	U
Isophorone	ND	990	"	"	"	"	"	"	U
2-Nitrophenol	ND	990	"	"	"	"	"	"	U
2,4-Dimethylphenol	ND	990	"	"	"	"	"	"	U
Bis(2-chloroethoxy) methane	ND	990	"	"	"	"	"	"	U
2,4-Dichlorophenol	ND J	990	"	"	"	"	"	"	U
1,2,4-Trichlorobenzene	ND J	990	"	"	"	"	"	"	U
Naphthalene	ND	990	"	"	"	"	"	"	U
4-Chloroaniline	ND J	990	"	"	"	"	"	"	U
Hexachlorobutadiene	ND	990	"	"	"	"	"	"	U
4-Chloro-3-methylphenol	ND J	990	"	"	"	"	"	"	U
2-Methylnaphthalene	ND	990	"	"	"	"	"	"	U
Hexachlorocyclopentadiene	ND J	990	"	"	"	"	"	"	U
2,4,6-Trichlorophenol	ND J	990	"	"	"	"	"	"	U
2,4,5-Trichlorophenol	ND	990	"	"	"	"	"	"	U
2-Chloronaphthalene	ND	990	"	"	"	"	"	"	U
2-Nitroaniline	ND	4950	"	"	"	"	"	"	U
Dimethyl Phthalate	ND	990	"	"	"	"	"	"	U
2,6-Dinitrotoluene	ND	990	"	"	"	"	"	"	U
Acenaphthylene	ND	990	"	"	"	"	"	"	U
3-Nitroaniline	ND J	4950	"	"	"	"	"	"	U
Acenaphthene	ND	990	"	"	"	"	"	"	U
2,4-Dinitrophenol	ND	4950	"	"	"	"	"	"	U
4-Nitrophenol	ND J	4950	"	"	"	"	"	"	U
Dibenzofuran	ND	990	"	"	"	"	"	"	U
2,4-Dinitrotoluene	ND	990	"	"	"	"	"	"	U
Diethyl Phthalate	ND	990	"	"	"	"	"	"	U
4-Chlorophenyl Phenyl Ether	ND	990	"	"	"	"	"	"	U

208 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

WC Hanford, Inc.
2620 Fermi Avenue
Richland WA 99354

Project: RC-116
Project Number: K1489
Project Manager: Joan Kessner

Reported:
03/09/2009 09:58

J17YT5
0812053-09 (Solid)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
			Lionville Laboratory						
Semivolatile Organic Compounds by SW846 8270C									
Fluorene	ND	990	ug/kg wet	5	L901030	12/19/2008	01/24/2009	8270C	U
4-Nitroaniline	ND J	4950	"	"	"	"	"	"	U
4,6-Dinitro-2-methylphenol	ND	990	"	"	"	"	"	"	U
N-Nitrosodiphenylamine	ND	990	"	"	"	"	"	"	U
4-Bromophenyl Phenyl Ether	ND	990	"	"	"	"	"	"	U
Hexachlorobenzene	ND	990	"	"	"	"	"	"	U
Pentachlorophenol	ND J	4950	"	"	"	"	"	"	U
Phenanthrene	ND	990	"	"	"	"	"	"	U
Anthracene	ND	990	"	"	"	"	"	"	U
Carbazole	ND	990	"	"	"	"	"	"	U
Di-n-butyl Phthalate	ND	990	"	"	"	"	"	"	U
Fluoranthene	ND	990	"	"	"	"	"	"	U
Pyrene	ND	990	"	"	"	"	"	"	U
Butyl Benzyl Phthalate	ND	990	"	"	"	"	"	"	U
Bis(2-ethylhexyl) phthalate	ND	990	"	"	"	"	"	"	U
3,3'-Dichlorobenzidine	ND J	1980	"	"	"	"	"	"	U
Benz[a]anthracene	ND	990	"	"	"	"	"	"	U
Chrysene	ND	990	"	"	"	"	"	"	U
Di-n-octyl Phthalate	ND	990	"	"	"	"	"	"	U
Benzo[b] fluoranthene	ND	990	"	"	"	"	"	"	U
Benzo[k] fluoranthene	ND	990	"	"	"	"	"	"	U
Benzo[a] pyrene	ND	990	"	"	"	"	"	"	U
Indeno[1,2,3-cd]pyrene	ND	990	"	"	"	"	"	"	U
Dibenz[a,h]anthracene	ND	990	"	"	"	"	"	"	U
Benzo[g,h,i] perylene	ND	990	"	"	"	"	"	"	U
TIC: Unknown 4	**1120**		"	"	"	"	"	"	J, D, ~~B~~
TIC: Unknown 2	**495**		"	"	"	"	"	"	J, ~~B~~, D
TIC: Unknown 1	**90000**		"	"	"	"	"	"	J, B, D
TIC: Unknown 3	**1540**		"	"	"	"	"	"	J, ~~B~~, D
Surrogate: 2-Fluorophenol		*100 %*	*25-121*		"	"	"	"	
Surrogate: Phenol-d5		*100 %*	*24-113*		"	"	"	"	
Surrogate: Nitrobenzene-d5		*93 %*	*23-120*		"	"	"	"	
Surrogate: 2-Fluorobiphenyl		*92 %*	*30-115*		"	"	"	"	
Surrogate: 2,4,6-Tribromophenol		*61 %*	*19-122*		"	"	"	"	
Surrogate: p-Terphenyl-d14		*117 %*	*18-137*		"	"	"	"	

11/19/09

03 3/9/09

WC-Hanford, Inc. 2620 Fermi Avenue Richland WA, 99354	Project: RC-116 Project Number: K1489 Project Manager: Joan Kessner	Reported: 03/09/2009 09:38

J17VV8

0812053-10 (Solid)

Lionville Laboratory

6/18/09

Semivolatile Organic Compounds by SW846 8270C

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Note
Phenol	ND	990	ug/kg wet	1	1901010	12/19/2008	01/25/2009	8270C	U
Bis(2-chloroethyl) ether	ND	990	-	-	-	-	-	-	U
2-Chlorophenol	ND	990	-	-	-	-	-	-	U
1,3-Dichlorobenzene	ND	990	-	-	-	-	-	-	U
1,4-Dichlorobenzene	ND	990	-	-	-	-	-	-	U
1,2-Dichlorobenzene	ND	990	-	-	-	-	-	-	U
2-Methylphenol	ND	990	-	-	-	-	-	-	U
Bis(2-chloroisopropyl) ether	ND	990	-	-	-	-	-	-	U
4-Methylphenol	ND	990	-	-	-	-	-	-	U
N-Nitrosodi-n-propylamine	ND	990	-	-	-	-	-	-	U
Hexachloroethane	ND	990	-	-	-	-	-	-	U
Nitrobenzene	ND	990	-	-	-	-	-	-	U
Isophorone	ND	990	-	-	-	-	-	-	U
2-Nitrophenol	ND	990	-	-	-	-	-	-	U
2,4-Dimethylphenol	ND	990	-	-	-	-	-	-	U
Bis(2-chloroethoxy) methane	ND	990	-	-	-	-	-	-	U
2,4-Dichlorophenol	ND I	990	-	-	-	-	-	-	U
1,2,4-Trichlorobenzene	ND I	990	-	-	-	-	-	-	U
Naphthalene	ND	990	-	-	-	-	-	-	U
4-Chloroaniline	ND I	990	-	-	-	-	-	-	U
Hexachlorobutadiene	ND	990	-	-	-	-	-	-	U
4-Chloro-3-methylphenol	ND I	990	-	-	-	-	-	-	U
2-Methylnaphthalene	ND	990	-	-	-	-	-	-	U
Hexachlorocyclopentadiene	ND I	990	-	-	-	-	-	-	U
2,4,6-Trichlorophenol	ND I	990	-	-	-	-	-	-	U
2,4,5-Trichlorophenol	ND	990	-	-	-	-	-	-	U
2-Chloronaphthalene	ND	990	-	-	-	-	-	-	U
2-Nitroaniline	ND	4950	-	-	-	-	-	-	U
Dimethyl Phthalate	ND	990	-	-	-	-	-	-	U
2,6-Dinitrotoluene	ND	990	-	-	-	-	-	-	U
Acenaphthylene	ND	990	-	-	-	-	-	-	U
3-Nitroaniline	ND I	4950	-	-	-	-	-	-	U
Acenaphthene	ND	990	-	-	-	-	-	-	U
2,4-Dinitrophenol	ND	4950	-	-	-	-	-	-	U
4-Nitrophenol	ND I	4950	-	-	-	-	-	-	U
Dibenzofuran	ND	990	-	-	-	-	-	-	U
2,4-Dinitrotoluene	ND	990	-	-	-	-	-	-	U
Diethyl Phthalate	ND	990	-	-	-	-	-	-	U
4-Chlorophenyl Phenyl Ether	ND	990	-	-	-	-	-	-	U

WC-Hanford, Inc. 2620 Fermi Avenue Richland WA 99354	Project: RC-116 Project Number: K1489 Project Manager: Joan Kessner	Reported: 01/09/2009 09:58

J17YV8

0812053-10 (Solid)

Lionville Laboratory

Semivolatile Organic Compounds by SW846 8270C

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Fluorene	ND	990	ug/kg wet	3	[illegible]	12/19/2008	01/23/2009	8270C	U
4-Nitroaniline	ND J	4950	"	"	"	"	"	"	U
4,6-Dinitro-2-methylphenol	ND	990	"	"	"	"	"	"	U
N-Nitrosodiphenylamine	ND	990	"	"	"	"	"	"	U
4-Bromophenyl Phenyl Ether	ND	990	"	"	"	"	"	"	U
Hexachlorobenzene	ND	990	"	"	"	"	"	"	U
Pentachlorophenol	ND J	4950	"	"	"	"	"	"	U
Phenanthrene	ND	990	"	"	"	"	"	"	U
Anthracene	ND	990	"	"	"	"	"	"	U
Carbazole	ND	990	"	"	"	"	"	"	U
Di-n-butyl Phthalate	ND	990	"	"	"	"	"	"	U
Fluoranthene	ND	990	"	"	"	"	"	"	U
Pyrene	ND	990	"	"	"	"	"	"	U
Butyl Benzyl Phthalate	ND	990	"	"	"	"	"	"	U
Bis(2-ethylhexyl) phthalate	ND J	990	"	"	"	"	"	"	U
3,3'-Dichlorobenzidine	ND	1980	"	"	"	"	"	"	U
Benz[a]anthracene	ND	990	"	"	"	"	"	"	U
Chrysene	ND	990	"	"	"	"	"	"	U
Di-n-octyl Phthalate	ND	990	"	"	"	"	"	"	U
Benzo[b] fluoranthene	ND	990	"	"	"	"	"	"	U
Benzo[k] fluoranthene	ND	990	"	"	"	"	"	"	U
Benzo[a] pyrene	ND	990	"	"	"	"	"	"	U
Indeno[1,2,3-cd]pyrene	ND	990	"	"	"	"	"	"	U
Dibenz[a,h]anthracene	ND	990	"	"	"	"	"	"	U
Benzo[g,h,i] perylene	ND	990	"	"	"	"	"	"	U
TIC: Unknown 2	35100		"	"	"	"	"	"	J, B, I
TIC: Unknown 3	927		"	"	"	"	"	"	J, B, I
Surrogate: 2-Fluorophenol		64 %	*25-121*		"	"	"	"	
Surrogate: Phenol-d5		68 %	*24-113*		"	"	"	"	
Surrogate: Nitrobenzene-d5		72 %	*23-120*		"	"	"	"	
Surrogate: 2-Fluorobiphenyl		90 %	*30-115*		"	"	"	"	
Surrogate: 2,4,6-Tribromophenol		48 %	*19-122*		"	"	"	"	
Surrogate: p-Terphenyl-d14		97 %	*18-137*		"	"	"	"	

KS 3/9/09

WCH-Hanford, Inc.	Project: BC-116	
2620 Fermi Avenue	Project Number: K1489	Reported:
Richland WA, 99354	Project Manager: Joan Kessner	03/09/2009 09:58

J17YY9
0812053-11 (Solid)

Lionville Laboratory

11/19/09

Semivolatile Organic Compounds by SW846 8270C

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Phenol	ND	660	ug/kg wet	2	L901030	12/19/2008	01/24/2009	8270C	U
Bis(2-chloroethyl) ether	ND	660	"	"	"	"	"	"	U
2-Chlorophenol	ND	660	"	"	"	"	"	"	U
1,3-Dichlorobenzene	ND	660	"	"	"	"	"	"	U
1,4-Dichlorobenzene	ND	660	"	"	"	"	"	"	U
1,2-Dichlorobenzene	ND	660	"	"	"	"	"	"	U
2-Methylphenol	ND	660	"	"	"	"	"	"	U
Bis(2-chloroisopropyl) ether	ND	660	"	"	"	"	"	"	U
4-Methylphenol	ND	660	"	"	"	"	"	"	U
N-Nitrosodi-n-propylamine	ND	660	"	"	"	"	"	"	U
Hexachloroethane	ND	660	"	"	"	"	"	"	U
Nitrobenzene	ND	660	"	"	"	"	"	"	U
Isophorone	ND	660	"	"	"	"	"	"	U
2-Nitrophenol	ND	660	"	"	"	"	"	"	U
2,4-Dimethylphenol	ND	660	"	"	"	"	"	"	U
Bis(2-chloroethoxy) methane	ND	660	"	"	"	"	"	"	U
2,4-Dichlorophenol	ND J	660	"	"	"	"	"	"	U
1,2,4-Trichlorobenzene	ND J	660	"	"	"	"	"	"	U
Naphthalene	ND	660	"	"	"	"	"	"	U
4-Chloroaniline	ND J	660	"	"	"	"	"	"	U
Hexachlorobutadiene	ND	660	"	"	"	"	"	"	U
4-Chloro-3-methylphenol	ND J	660	"	"	"	"	"	"	U
2-Methylnaphthalene	ND	660	"	"	"	"	"	"	U
Hexachlorocyclopentadiene	ND J	660	"	"	"	"	"	"	U
2,4,6-Trichlorophenol	ND J	660	"	"	"	"	"	"	U
2,4,5-Trichlorophenol	ND	660	"	"	"	"	"	"	U
2-Chloronaphthalene	ND	660	"	"	"	"	"	"	U
2-Nitroaniline	ND	1300	"	"	"	"	"	"	U
Dimethyl Phthalate	ND	660	"	"	"	"	"	"	U
2,6-Dinitrotoluene	ND	660	"	"	"	"	"	"	U
Acenaphthylene	ND	660	"	"	"	"	"	"	U
3-Nitroaniline	ND J	1300	"	"	"	"	"	"	U
Acenaphthene	ND	660	"	"	"	"	"	"	U
2,4-Dinitrophenol	ND	3300	"	"	"	"	"	"	U
4-Nitrophenol	ND J	3300	"	"	"	"	"	"	U
Dibenzofuran	ND	660	"	"	"	"	"	"	U
2,4-Dinitrotoluene	ND	660	"	"	"	"	"	"	U
Diethyl Phthalate	ND	660	"	"	"	"	"	"	U
4-Chlorophenyl Phenyl Ether	ND	660	"	"	"	"	"	"	U

LVL

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

WC-Hanford, Inc. 2620 Fermi Avenue Richland WA, 99354	Project: RC-116 Project Number: K1489 Project Manager: Joan Kessner	Reported: 03/09/2009 09:38

J17YV9
0812053-11 (Solid)

11/19/09

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Lionville Laboratory									
Semivolatile Organic Compounds by SW846 8270C									
Fluorene	ND	660	ug/kg wet	2	1901030	12/19/2008	01/24/2009	8270C	U
4-Nitroaniline	ND J	3300	"	"	"	"	"	"	U
4,6-Dinitro-2-methylphenol	ND	660	"	"	"	"	"	"	U
N-Nitrosodiphenylamine	ND	660	"	"	"	"	"	"	U
4-Bromophenyl Phenyl Ether	ND	660	"	"	"	"	"	"	U
Hexachlorobenzene	ND	660	"	"	"	"	"	"	U
Pentachlorophenol	ND J	3300	"	"	"	"	"	"	U
Phenanthrene	ND	660	"	"	"	"	"	"	U
Anthracene	ND	660	"	"	"	"	"	"	U
Carbazole	ND	660	"	"	"	"	"	"	U
Di-n-butyl Phthalate	ND	660	"	"	"	"	"	"	U
Fluoranthene	ND	660	"	"	"	"	"	"	U
Pyrene	ND	660	"	"	"	"	"	"	U
Butyl Benzyl Phthalate	ND	600	"	"	"	"	"	"	U
Bis(2-ethylhexyl) phthalate	ND	660	"	"	"	"	"	"	U
3,3'-Dichlorobenzidine	ND J	1320	"	"	"	"	"	"	U
Benz(a)anthracene	ND	660	"	"	"	"	"	"	U
Chrysene	ND	660	"	"	"	"	"	"	U
Di-n-octyl Phthalate	ND	660	"	"	"	"	"	"	U
Benzo[b] fluoranthene	ND	660	"	"	"	"	"	"	U
Benzo[k] fluoranthene	ND	660	"	"	"	"	"	"	U
Benzo[a] pyrene	ND	660	"	"	"	"	"	"	U
Indeno[1,2,3-cd]pyrene	ND	660	"	"	"	"	"	"	U
Dibenz[a,h]anthracene	ND	660	"	"	"	"	"	"	U
Benzo[g,h,i] perylene	ND	660	"	"	"	"	"	"	U
TIC: Unknown 4	368		"	"	"	"	"	"	J, D, B
TIC: Unknown 3	592		"	"	"	"	"	"	J, D, B
TIC: Unknown 1	49700		"	"	"	"	"	"	J, B, F
TIC: Unknown 2	522		"	"	"	"	"	"	J, T
TIC: Unknown 5	1550		"	"	"	"	"	"	J, T
Surrogate: 2-Fluorophenol		*84 %*	*25-121*		"	"	"	"	
Surrogate: Phenol-d5		*84 %*	*24-113*		"	"	"	"	
Surrogate: Nitrobenzene-d5		*77 %*	*23-120*		"	"	"	"	
Surrogate: 2-Fluorobiphenyl		*79 %*	*30-115*		"	"	"	"	
Surrogate: 2,4,6-Tribromophenol		*46 %*	*19-122*		"	"	"	"	
Surrogate: p-Terphenyl-d14		*100 %*	*18-137*		"	"	"	"	

3/9/09

35

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LIONVILLE LABORATORY

264 Welsh Pool Roa
Exton, PA 1934
Phone: 610-280-300
Fax: 610-280-3041

WC-Hanford, Inc.
2620 Fermi Avenue
Richland WA, 99354

Project: RC-116
Project Number: K1489
Project Manager: Joan Kessner

Reported:
04/03/2009 13:34

J18002
0812053-03 (Solid)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Lionville Laboratory									
Extractable Petroleum Hydrocarbons by SW846 8015									
Diesel Range Organics	ND J	3300	ug/kg wet	1	L902034	12/19/2009	02/11/2009	SW846 8015M	U
Motor Oil	9680 J	10000	"	"	"	"	"	"	
Surrogate: p-Terphenyl	★	*132 %*	*39-129*		"	"	"	"	[illegible]

11/17/09

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Phone: 610-280-3000
Fax: 610-280-3041

WCH Hanford, Inc 2620 Fermi Avenue Richland WA, 99354	Project: RC-116 Project Number: K1489 Project Manager: Joan Kessner	Reported: 04/03/2009 13 34

J18003

0812053-04 (Solid)

Analyte	Result		Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Lionville Laboratory										
Extractable Petroleum Hydrocarbons by SW846 8015										
Diesel Range Organics	ND	J	3300	ug/kg wet	1	L902054	12/19/2009	02/11/2009	SW846 8015M	U
Motor Oil	**9540**	J	10000	"	-	"	-	"	"	1
Surrogate: p-Terphenyl		#	*133 %*	*39 129*		"	-	"	"	

11/17/09

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WC-Hanford, Inc 2620 Fermi Avenue Richland WA, 99354	Project: RC-116 Project Number: K1489 Project Manager: Joan Kessner	Reported: 04/03/2009 13:34

J18016

0812053-05 (Solid)

Lionville Laboratory

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Extractable Petroleum Hydrocarbons by SW846 8015									
Diesel Range Organics	ND J	3300	ug/kg wet	1	1902054	12/19/2009	02/11/2009	SW846 8015M	U
Motor Oil	5710 J	10000	"	"	"	"	"	"	J
Surrogate: p-Terphenyl		*129 %*	*39-129*		"	"	"	"	

11/17/09

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WC-Hanford, Inc 2620 Fermi Avenue Richland WA, 99354	Project: RC-116 Project Number: K1489 Project Manager: Joan Kessner	**Reported:** 04/07/2009 13:34

J18017
0812053-06 (Solid)

Analyte	Result		Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
				Lionville Laboratory						
Extractable Petroleum Hydrocarbons by SW846 8015										
Diesel Range Organics	ND	J	3300	ug/kg wet	1	1902054	12/19/2009	02/11/2009	SW846 8015M	U
Motor Oil	**9720**	J	10000	"	"	"	"	"	"	J
Surrogate: p-Terphenyl			*126 %*	*39-129*		"	"	"	"	

K
11/17/09

LVL
LIONVILLE LABORATORY

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WC Hanford, Inc. 2620 Fermi Avenue Richland WA, 99354	Project: RC-116 Project Number: K1489 Project Manager: Joan Kessner	**Reported:** 04/03/2009 13:34

J17VN9

0812053-07 (Solid)

Lionville Laboratory

Extractable Petroleum Hydrocarbons by SW846 8015

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Diesel Range Organics	ND J	3300	ug/kg wet	1	L902054	12/19/2009	02/11/2009	SW846 8015M	U
Motor Oil	**10500** J	10000	"	"	"	"	"	"	
Surrogate: p-Terphenyl	*	*131 %*	*39-129*		"	"	"	"	

K
11/17/09

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Phone: 610-280-3000
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WC-Hanford, Inc. 2620 Fermi Avenue Richland WA, 99354	Project: RC-116 Project Number: K1489 Project Manager: Joan Kessner	Reported: 04/03/2009 13:34

J17YT4

0812053-08 (Solid)

Analyte	Result		Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Lionville Laboratory										
Extractable Petroleum Hydrocarbons by SW846 8015										
Diesel Range Organics	ND	J	3300	ug/kg wet	1	0902054	12/19/2008	02/11/2009	SW846 8015M	U
Motor Oil	**10600**	J	10000	"	"	"	"	"	"	
Surrogate: p-Terphenyl		★	*135 %*	*39-129*		"	"	"	"	

11/17/09

WC-Hanford, Inc	Project: RC-116	
2620 Fermi Avenue	Project Number: K1489	**Reported:**
Richland WA, 99354	Project Manager: Joan Kessner	04/03/2009 13:34

J17YT5

0812053-09 (Solid)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Lionville Laboratory									
Extractable Petroleum Hydrocarbons by SW846 8015									
Diesel Range Organics	ND J	3300	ug/kg wet	1	L902054	12/19/2009	02/11/2009	SW846 8015M	U
Motor Oil	**5740** J	10000	"	"	"	"	"	"	J
Surrogate: p-Terphenyl		*110 %*	*39-129*		"	"	"	"	

K
11/17/09

WC Hanford, Inc 2620 Fermi Avenue Richland WA, 99354	Project: RC-116 Project Number: K1489 Project Manager: Joan Kessner	**Reported:** 04/03/2009 13:34

J17YV8

0812053-10 (Solid)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
			Lionville Laboratory						
Extractable Petroleum Hydrocarbons by SW846 8015									
Diesel Range Organics	ND J	3300	ug/kg wet	1	L902034	12/19/2009	02/11/2009	SW846 8015M	U
Motor Oil	**14000** J	10000	"	"	"	"	"	"	
Surrogate: p-Terphenyl		*126 %*	*39-129*		"	"	"	"	

11/17/09

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Phone: 610-280-3000
Fax: 610-280-3041

WCH-Hanford, Inc	Project: RC-116	
2620 Fermi Avenue	Project Number: K1489	**Reported:**
Richland WA, 99354	Project Manager: Joan Kessner	04/03/2009 13:34

J17YV9

0812053-11 (Solid)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
			Lionville Laboratory						
Extractable Petroleum Hydrocarbons by SW846 8015									
Diesel Range Organics	ND J	3300	ug/kg wet	1	0902054	02/10/2009	02/11/2009	SW846 8015M	U
Motor Oil	9070 J	10000	"	"	"	"	"	"	J
Surrogate: p-Terphenyl		*122 %*	*39-129*		"	"	"	"	

11/17/09

Appendix 4

Laboratory Narrative and Chain-of-Custody Documentation

Case Narrative

Client: WC-HANFORD RC 116
LVL #: 0812053
SDG/SAF#: K1487/RC-116

W.O. #: 60049-001-001-0001-00
Date Received: 12-10-2008

SEMIVOLATILE

One (1) solid sample was collected on 12-08-2008

The sample and its associated QC samples were extracted according to Lionville Laboratory SOPs based on SW 846 method 3540C on 12-19-2008 and analyzed according to criteria set forth in Lionville Laboratory SOPs based on SW 846 Method 8270C for TCL Semivolatile target compounds on 01-24,25-2009.

All soil samples are reported on a dry weight basis unless requested by the client, required by the method, or noted otherwise. The following is a summary of QC results accompanying the sample results. Lionville Laboratory (LVL) certifies that all test results meet the requirements of NELAC except as noted below:

1. All results presented in this report are derived from samples that met LvL's sample acceptance policy.
2. The sample was extracted and analyzed within holding time.
3. Non-target compounds were detected in these samples.
4. Samples J18016, J18017, J17VN9, J17YT4 and J17YV9 required a 2-fold dilution and samples J17YT5 and J17YV8 required a 3-fold dilution. All dilutions were due to matrix (dark).
5. All obtainable surrogate recoveries were within acceptance criteria.
6. Nineteen (19) of one hundred twenty-eight (128) matrix spike recoveries were outside acceptance criteria. A copy of the Sample Discrepancy Report (SDR# 09MS025) has been enclosed.
7. All blank spike recoveries were within acceptance criteria.
8. The method blank contained the common laboratory contaminant bis (2-ethylhexyl) phthalate at a level less than the CRQL.
9. All initial calibrations associated with this data set were within acceptance criteria.
10. All continuing calibration standards analyzed prior to sample extracts were within acceptance criteria.
11. Internal standard area and retention time criteria were met.

[illegible]

The results presented in this report relate only to the analytical testing and condition of the samples at receipt and during storage. All pages of this report are integral parts of the analytical data. Therefore, this report should only be reproduced in its entirety of 776 pages.

12. Manual integrations are performed according to SOP QA-125 to produce quality data with the utmost integrity. All manual integrations are required to be technically valid and properly documented. Appropriate technical flags are defined in the Glossary ("Technical Flags For Manual Integration").

13. LVL is NELAP accredited by the State of Pennsylvania. For a complete listing of accrediting authorities and the corresponding analytes/methods, please contact your Project Manager.

14. I certify that this sample data package is in compliance with SOW requirements, both technically and for completeness, other than the conditions detailed above. Release of the data contained in this hard-copy data package has been authorized by the Laboratory Manager or a designee as verified by the following signature

for Judy Stone

Ian Daniels
Laboratory Manager
Lionville Laboratory

2/23/07
Date

Lionville Laboratory Sample Discrepancy Report (SDR)

SDR #: 09MS025

Initiator: Sharon Saylor
Date: 2-13-09
Client: WC Hanford [illegible]

Batch: 0E11053
Samples: ms, msd, BS
Method: [✓ SW846]/MCAWW/CLP

Parameter: 8270
Matrix: SOLID
Prep Batch: L901070

1. Reason for SDR

a. COC Discrepancy
__ Tech Profile Error
__ Transcription Error
Client Request
__ Wrong Test Code
Sampler Error on C-O-C
__ Other ______

b. General Discrepancy
__ Missing Sample/Extract*
__ Hold Time Exceeded
__ Improper Bottle Type
__ Container Broken
__ Insufficient Sample*
__ Not Amenable to Analysis
__ Wrong Sample Pulled
__ Preservation Wrong
__ Label ID's Illegible
__ Received Past Hold

Note*: Verified by [Log-In] or [Prep Group] (circle), signature/date: ______

c. Problem (Include all relevant specific results; attach data if necessary)

low or no spike recoveries in the BS, ms + msd

2. Known or Probable Causes(s) [illegible] phenols, nitroanilines, [illegible] subject to erratic chromatographic behavior especially if the GC system is contaminated with high boiling materials. 3,3'-dichlorobenzidine can be subject to oxidative losses during solvent concentration. Hexachlorocyclopentadiene is subject to thermal decomposition in the inlet of the gas chromatograph, chemical reaction in acetone solution, and photochemical decomposition. Other [illegible]. All surrogates within acceptance criteria, BS ok

3. Discussion and Proposed Action
__ Re-log
... Entire Batch
__ Following Samples: ______
__ Re-leach
__ Re-extract
__ Re-digest
__ Revise EDD
__ Change Test Code to ______
__ Place On/Take Off Hold (circle)

Other Description:

narrate

4. Project Manager Instructions signature/date 2/18/09
✓ Concur with Proposed Action
__ Disagree with Proposed Action; See Instruction
__ Include in Case Narrative
__ Client Contacted:
Date/Person ______
__ Add
__ Cancel

5. Final Action signature/date: 3/11/09
✓ Verified re-[log][leach][extract][digest][analysis] (circle)
✓ Included in Case Narrative
__ Hard Copy COC Revised
__ Electronic COC Revised
__ EDD Corrections Completed

Other Explanation:

When Final Action has been recorded, forward original to QA for diposition.

Route
__ Lab Manager: Daniels
✓ Project Mgr (circle): [✓ Johnson] / Stone
__ Sample Prep (circle): ~~Fera~~
__ Log-in: King

Route
__ Metals: Welsh / ______
__ Inorganic: Perrone / ______
__ GC/LC: Carey / ______
__ MS VOA: Rubino / ______
✓ MS BNA: [✓ Carden] / ______
__ Other ______

264 Welsh Pool Road
Exton, Pennsylvania 19341
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Case Narrative

Client: WC-HANFORD RC-116
LVL #: 0812L053
SDG/SAF # K1489 / RC-116

W.O. #: 60049-001-001-0001-00
Date Received: 12-10-2008

DIESEL RANGE ORGANICS

Nine (9) solid samples were collected on 12-08-2008.

The samples and their associated QC samples were extracted on 12-19-2008 and analyzed according to Lionville Laboratory SOPs based on SW846, 3rd Edition procedure on 02-10,11-2009. The extraction procedure was based on method 3540C and the extracts were analyzed based on method 8015B.

All solid samples are reported on a dry weight basis unless requested by the client, required by the method, or noted otherwise. The following is a summary of QC results accompanying the sample results. Lionville Laboratory Inc (LvL) certifies that all test results meet the requirements of NELAC except as noted below:

1. All required holding times for extraction have been met; however, samples were analyzed 14 days out of analysis hold.

2. The method blank was below the reporting limits for all target compounds.

3. Four (4) of thirteen (13) surrogate recoveries were outside acceptance criteria. A copy of the Sample Discrepancy Report (SDR# 09GC036) has been enclosed.

4. All blank spike recoveries were within acceptance criteria.

5. All matrix spike recoveries were within acceptance criteria.

6. All initial calibrations associated with this data set were within acceptance criteria.

7. All continuing calibration standards analyzed prior to sample extracts were within acceptance criteria.

8. LvL is NELAP accredited by the State of Pennsylvania. For a complete listing of accrediting authorities and the corresponding analytes/methods, please contact your Project Manager.

[illegible]

The results presented in this report relate only to the analytical testing and conditions of the samples at receipt and during storage. All pages of this report are integral parts of the analytical data. Therefore, this report should only be reproduced in its entirety of 20 pages

9. I certify that this sample data package is in compliance with SOW requirements, both technically and for completeness, other than the conditions detailed above. Release of the data contained in this hard copy data package has been authorized by the laboratory Manager or a designee, as verified by the following signature.

Iain Daniels
Laboratory Manager
Lionville Laboratory

4/6/09
Date

Lionville Laboratory Sample Discrepancy Report (SDR)

SDR #: 0900036

Initiator: CAC
Date: 04/01/09
Client: WC Hanford

Batch: 0812053
Samples: 003, 004, 007, 008
Method: SW846/MCAWW/CLP

Parameter: DRO
Matrix: Solid
Prep Batch: 9102054

1. Reason for SDR

a. COC Discrepancy
__ Tech Profile Error
__ Transcription Error
__ Client Request
__ Wrong Test Code
__ Sampler Error on C-O-C
__ Other ________

b. General Discrepancy
__ Missing Sample/Extract*
__ Hold Time Exceeded
__ Improper Bottle Type
__ Container Broken
__ Insufficient Sample*
__ Not Amenable to Analysis
__ Wrong Sample Pulled
__ Preservation Wrong
__ Label ID's Illegible
__ Received Past Hold

Note*. Verified by (Log-In) or (Prep Group) (circle)...signature/date: ________

c. Problem (Include all relevant specific results, attach data if necessary)

surrogate recoveries are high

All batch QC is good

2. Known or Probable Causes(s)

Matrix effect

3. Discussion and Proposed Action

__ Re-log
__ Entire Batch
__ Following Samples: ________
__ Re-leach
__ Re-extract
__ Re-digest
__ Revise EDD
__ Change Test Code to ________
__ Place On/Take Off Hold (circle)

Other Description:

Narrate

JD

4. Project Manager Instructions...signature/date: 4/6/09

✓ Concur with Proposed Action
__ Disagree with Proposed Action; See Instruction
__ Include in Case Narrative
__ Client Contacted:
Date/Person ________
__ Add
__ Cancel

5. Final Action...signature/date: 4/6/09

__ Verified re-[log][leach][extract][digest][analysis] (circle)
✓ Included in Case Narrative
__ Hard Copy COC Revised
__ Electronic COC Revised
__ EDD Corrections Completed

Other Explanation:

When Final Action has been recorded, forward original to QA for disposition.

Route
__ Lab Manager: Daniels
__ Project Mgr (circle): Johnson / Stone
__ Sample Prep (circle): Ford
__ Log-in: King

Route
__ Metals: Welsh / ________
__ Inorganic: Perrone / ________
__ GC/LC: Carey / ________
__ MS VOA: Rubino / ________
__ MS BNA: Carden / ________
__ Other: ________

QA-139-A-0208

Washington Closure Hanford **CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST**

llector JMoore	Company Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator WEISS, RL	Price Code 9K
ject Designation Columbia River Component of the RCBRA - Sediment	Sampling Location 1514-2-SD		SAF No. RC-116	Data Turnaround 45 Days
e Chest No. WCH-08-056, 012	Field Logbook No. EL-1631-1	COA BESCRC6520	Method of Shipment FED EX	
ipped To EBERLINE SERVICES [✓ LIONVILLE]	Offsite Property No. N/A		Bill of Lading/Air Bill No. 796171187234	

OSSIBLE SAMPLE HAZARDS/REMARKS

pecial Handling and/or Storage

Preservation	None	None	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	None
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	aG	aG	G	-
No. of Container(s)	1	1	1	1	1	1	1	1	1	1
Volume	1500g	100g	10g	10g	250g	250g	125g	250g	250g	1"
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Technetium-99	See item (2) in Special Instructions	See item (3) in Special Instructions	PCBs - 8082	Pesticides - 8081	Semi-VOA - 8270A (TCL)	See item (4) in Special Instructions	-

Sample No.	Matrix *	Sample Date	Sample Time										
18002	OTHER SOLID	12/08/08	1415					X	X	X	X	X	

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab.

CHAIN OF POSSESSION Sign/Print Names

quished By/Removed From	Date/Time 12-08-08 / 1650	Received By/Stored In	Date/Time 12-08-08 / 1650
quished By/Removed From Fridge B	Date/Time 12/9/08 0800	Received By/Stored In B Woodward	Date/Time 12/9/08 0800
quished By/Removed From B Woodward	Date/Time 12/9/08 1130	Received By/Stored In FedEx	Date/Time 12/9/08 1130
quished By/Removed From FedEx	Date/Time 0955	Received By/Stored In	Date/Time 0955
quished By/Removed From	Date/Time	Received By/Stored In	Date/Time
quished By/Removed From	Date/Time	Received By/Stored In	Date/Time

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) {Americium-241, Antimony-125, Beryllium-7, Cerium-144, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238}
(2) Strontium-89,90 - Total Sr, Isotopic Thorium {Thorium-232}, Isotopic Uranium {Uranium-233/234, Uranium-235, Uranium-238}, Isotopic Plutonium
(3) ICP Metals - 6010 (Full List) {Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc}; Mercury - 7471 - {CV}
(4) VOA - 8260A (TCL) {1,1,1-Trichloroethane, 1,1,2,2-Tetrachloroethane, 1,1,2-Trichloroethane, 1,1-Dichloroethane, 1,1-Dichloroethene, 1,2-Dichloroethane, 1,2-Dichloropropane, 2-Butanone, 2-Hexanone, 4-Methyl-2-Pentanone, Acetone, Benzene, Bromodichloromethane, Bromoform, Bromomethane, Carbon disulfide, Carbon tetrachloride, Chlorobenzene, Chloroethane, Chloroform, Chloromethane, cis-1,2-Dichloroethylene, cis-1,3-Dichloropropene, Dibromochloromethane, Ethylbenzene, Methylenechloride, Styrene, Tetrachloroethene, Toluene, trans-1,2-Dichloroethylene

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

VCH-EE-011

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

ector JMoore C

Company Contact JOAN KESSNER

Telephone No. 375-4688

Project Coordinator WEISS, RL

Price Code 9K

Data Turnaround 45 Days

ject Designation Columbia River Component of the RCBRA - Sediment

Sampling Location IS14- 2 SD

SAF No. RC-116

Chest No. WCH-08-056, 012

Field Logbook No. EL-1631-1

COA BESCRC6590

Method of Shipment FED EX

Bill of Lading/Air Bill No. 796171187284

ped To EBERLINE SERVICES (LIONVILLE)

Offsite Property No N/A

SSIBLE SAMPLE HAZARDS/REMARKS

pecial Handling and/or Storage

Preservation	Cool 4C	Cool 4C	None									
Type of Container	G	aG	G/P									
No. of Container(s)	1	1	1									
Volume	125mL	125g	1000g									
SAMPLE ANALYSIS	See item (5) in Special Instructions	TOC - 415.1	Particle Size (Dry Sieve) - D422									

Sample No	Matrix *	Sample Date	Sample Time											
8002	OTHER SOLID	12/08/08	1415	X	X	X								

CHAIN OF POSSESSION	Date/Time	Sign/Print Names Received By/Stored In	Date/Time
linquished By/Removed From	12-08-08 1150	Received By/Stored In	12-8-08 1650
linquished By/Removed From Eddie B.	12/9/08 0800	Received By/Stored In B Woodward	12/9/08 0800
linquished By/Removed From B Woodward	12/9/08 1130	Received By/Stored In Fed Ex	12/9/08 1130
linquished By/Removed From Fed Ex	12-10-08 0755	Received By/Stored In	12-10-08 0755
linquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
linquished By/Removed From	Date/Time	Received By/Stored In	Date/Time

SPECIAL INSTRUCTIONS

5 see/SAF

(5) TPH-Diesel Range - WTPH-D + (Total petroleum hydrocarbons - diesel range, Total petroleum hydrocarbons - motor oil (high boiling))

Samples unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W = Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION | Received By | Title | Date/Time

FINAL SAMPLE DISPOSITION | Disposal Method | Disposed By | Date/Time

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-116-545 Page 1 of 2

ollector: J Moore

Company Contact: JOAN KESSNER
Telephone No.: 375-4688
Project Coordinator: WEISS, RL
Price Code: 9K
Data Turnaround: 45 Days

roject Designation: Columbia River Component of the RCBRA - Sediment
Sampling Location: 1514- / SD
SAF No.: RC-116

e Chest No.: WCH-08-056.012
Field Logbook No.: EL-1631-1
COA: BESCRC6520
Method of Shipment: FED EX

hipped To: EBERLINE SERVICES/ LIONVILLE
Offsite Property No.: N/A
Bill of Lading/Air Bill No.: 796171187234

OSSIBLE SAMPLE HAZARDS/REMARKS

pecial Handling and/or Storage

0050000

Preservation	None	None	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	None
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	aG	aG	G	
No. of Container(s)	1	1	1	1	1	1	1	1	1	1
Volume	1500g	100g	10g	10g	250g	250g	125g	250g	250g	
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Technetium-99	See item (2) in Special Instructions	See item (3) in Special Instructions	PCBs - 8082	Pesticides 8081	Semi-VOA 8270A (TCL)	See item (4) in Special Instructions	

Sample No.	Matrix *	Sample Date	Sample Time										
B00J	OTHER SOLID	12/08/08	1335					X	X	X	X	X	

CHAIN OF POSSESSION Sign/Print Names

Relinquished By/Removed From	Date/Time 12-08-08/1630	Received By/Stored In	Date/Time 12-08-08/1630
Relinquished By/Removed From	Date/Time 12/9/08 0800	Received By/Stored In B Woodward	Date/Time 12/9/08 0800
Relinquished By/Removed From Woodward	Date/Time 12/9/08 1130	Received By/Stored In FedEx	Date/Time 12/9/08 1130
Relinquished By/Removed From	Date/Time 12-10-08 0955	Received By/Stored In	Date/Time 12-10-08 0955
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab.

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) (Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238)
(2) Strontium-89,90 - Total Sr, Isotopic Thorium (Thorium-232), Isotopic Uranium (Uranium-233/234, Uranium-235, Uranium-238); Isotopic Plutonium
(3) ICP Metals - 6010 (Full List) (Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc), Mercury - 7471 - (CV)
(4) VOA - 8260A (TCL) (1,1,1-Trichloroethane, 1,1,2,2-Tetrachloroethane, 1,1,2-Trichloroethane, 1,1-Dichloroethane, 1,1-Dichloroethene, 1,2-Dichloroethane, 1,2-Dichloropropane, 2-Butanone, 2-Hexanone, 4-Methyl-2-Pentanone, Acetone, Benzene, Bromodichloromethane, Bromoform, Bromomethane, Carbon disulfide, Carbon tetrachloride, Chlorobenzene, Chloroethane, Chloroform, Chloromethane, cis-1,2-Dichloroethylene, cis-1,3-Dichloropropene, Dibromochloromethane, Ethylbenzene, Methylene chloride, Styrene, Tetrachloroethene, Toluene, trans-1,2-Dichloroethylene

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION | Received By | Title | Date/Time

FINAL SAMPLE DISPOSITION | Disposal Method | Disposed By | Date/Time

A-EE-011

ollector J MOORE	Company Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator WEISS, RL	Price Code 9K
roject Designation Columbia River Component of the RCBRA - Sediment	Sampling Location 1514- / SD		SAF No. RC-116	Data Turnaround 45 Days
ce Chest No. WIH-08-056, 012	Field Logbook No. EL-1637-1	COA BESCAC6520	Method of Shipment FED EX	
hipped To EBERLINE SERVICES [✓ LIONVILLE]	Offsite Property No. N/A		Bill of Lading/Air Bill No. 796171187234	

4/15

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

000051

	Preservation	Cool 4C	Cool 4C	None
	Type of Container	G	aG	G/P
	No. of Container(s)	1	1	1
	Volume	125mL 5	125g	1000g
SAMPLE ANALYSIS		See item (1) in Special Instructions	TOC - 415.1	Particle Size (Dry Sieve) - Other

Sample No.	Matrix *	Sample Date	Sample Time			
18003	OTHER SOLID	12/08/08	1335	X	X	X

CHAIN OF POSSESSION Sign/Print Names

Relinquished By/Removed From	Date/Time 12-08-08 / 1630	Received By/Stored In	Date/Time 12-08-08 / 1630
Relinquished By/Removed From Ridge B	Date/Time 12/9/08 0800	Received By/Stored In B Woodward	Date/Time 12/9/08 0800
Relinquished By/Removed From B Woodward	Date/Time 12/9/08 1130	Received By/Stored In Fed Ex	Date/Time 12/9/08 1130
Relinquished By/Removed From Fed Ex	Date/Time 12-10-08 0935	Received By/Stored In	Date/Time 12-10-08 0935
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time

SPECIAL INSTRUCTIONS

5,4/2 3 0 Y

(1) TPH-Diesel Range - WTPH-D + {Total petroleum hydrocarbons - diesel range, Total petroleum hydrocarbons - motor oil (high boiling)}

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab.

Matrix *

S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

CH-EE-011

WASHINGTON CLOSURE HANFORD

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

Collector	Company Contact JOAN KESSNER	Telephone No. 373-4688	Project Coordinator WEISS, RL
Project Designation Columbia River Component of the RCBRA - Sediment	Sampling Location JS15- 2 SD		SAF No. RC-116
Ice Chest No. WCH 08-056,012	Field Logbook No. EL-1634-1	COA BESCRC6520	Method of Shipment FED EX
Shipped To EBERLINE SERVICES (LIONVILLE)	Offsite Property No. N/A		Bill of Lading/Air Bill No. 796171187234

Price Code 9K

Data Turnaround 45 Days

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

Preservation	None	None	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	None
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	aG	aG	G	*
No. of Container(s)	1	1	1	1	1	1	1	1	1	1
Volume	1500g	100g	10g	10g	250g	250g	125g	250g	250g	1*
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Technetium-99	See item (2) in Special Instructions	See item (3) in Special Instructions	PCBs - 8082	Pesticides - 8081	Semi-VOA - 8270A (TCL)	See item (4) in Special Instructions	-

250000

Sample No.	Matrix *	Sample Date	Sample Time										
B016	OTHER SOLID	12/8/08	1450					X	X	X	X	X	

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab.

CHAIN OF POSSESSION

Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
[illegible]	12/9/08 1700	Ref. A	12/9/08 1700
Fridge A	12/9/08 0800	B Woodward	12/9/08 0800
Woodward	12/9/08 1130	FedEx	12/9/08 1130
Fed Ex	[illegible] 1035	[illegible]	[illegible] 1035

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) {Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238}
(2) Strontium-89,90 – Total Sr; Isotopic Thorium {Thorium-232}; Isotopic Uranium {Uranium-233/234, Uranium-235, Uranium-238}; Isotopic Plutonium
(3) ICP Metals - 6010 (Full List) {Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc}; Mercury - 7471 - {CV}
(4) VOA - 8260A (TCL) {1,1,1-Trichloroethane, 1,1,2,2-Tetrachloroethane, 1,1,2-Trichloroethane, 1,2-Dichloroethane, 1,1-Dichloroethene, 1,2-Dichloroethane, 1,2-Dichloropropane, 2-Butanone, 2-Hexanone, 4-Methyl-2-Pentanone, Acetone, Benzene, Bromodichloromethane, Bromoform, Bromomethane, Carbon disulfide, Carbon tetrachloride, Chlorobenzene, Chloroethane, Chloroform, Chloromethane, cis-1,2-Dichloroethylene, cis-1,3-Dichloropropene, Dibromochloromethane, Ethylbenzene, Methylene chloride, Styrene, Tetrachloroethene, Toluene, trans-1,2-Dichloroethene

Matrix *

S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

Washington Closure Hanford

CHAIN OF CUSTODY

ector	Company Contact JOAN KESSNER	Telephone No. 375-4634	Project Coordinator WEISS, RL	Price Code 9K
ect Designation olumbia River Component of the RCBRA - Sediment	Sampling Location 1515 \ SD		SAF No. RC-336	Data Turnaround 45 Days
Chain No. WCH-08-~~033~~ 012, 05 Ge	Field Logbook No. EL-1631-1	COA BESCRC6520	Method of Shipment FED EX	
ped To EBERLINE SERVICES (LIONVILLE)	Offsite Property No. N/A		Bill of Lading/Air Bill No. 794711 87234	

OSSIBLE SAMPLE HAZARDS/REMARKS

pecial Handling and/or Storage

			Preservation	None	None	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	None
			Type of Container	G/P	G/P	G/P	G/P	G/P	aG	aG	aG	G	-
			No. of Container(s)	1	1	1	1	1	1	1	1	1	1
			Volume	1500g	100g	10g	10g	250g	250g	125g	250g	250g	1"
SAMPLE ANALYSIS				See item (1) in Special Instructions	Carbon-14	Technetium-99	See item (2) in Special Instructions	See item (3) in Special Instructions	PCBs - 8082	Pesticides - 8081	Semi-VOA - 8270A (TCL)	See item (4) in Special Instructions	-
Sample No.	Matrix *	Sample Date	Sample Time										
18017	OTHER SOLID	12/8/08	1535					X	X	X	X	X	

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab

CHAIN OF POSSESSION Sign/Print Names

Relinquished By/Removed From	Date/Time 12/9/08 1700	Received By/Stored In Bay A	Date/Time 12/9/08 1700
Relinquished By/Removed From Bay A	Date/Time 12/9/08 0800	Received By/Stored In D. Hellberg	Date/Time 12/9/08 0800
Relinquished By/Removed From D. Hellberg	Date/Time 12/9/08 1130	Received By/Stored In Fedex	Date/Time 12/9/08 1130
Relinquished By/Removed From	Date/Time 12/10/08 0955	Received By/Stored In	Date/Time 12/10/08 0955
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) {Americium-241, Antimony-125, Beryllium-7, Cerium-144, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238}
(2) Strontium-89,90 -- Total Sr; Isotopic Thorium {Thorium-232}; Isotopic Uranium {Uranium-233/234, Uranium-235, Uranium-238}; Isotopic Plutonium
(3) ICP Metals - 6010 (Full List) {Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc}; Mercury - 7471 - (CV)
(4) VOA - 8260A (TCL) {1,1,1-Trichloroethane, 1,1,2,2-Tetrachloroethane, 1,1,2-Trichloroethane, 1,1-Dichloroethane, 1,1-Dichloroethene, 1,2-Dichloroethane, 1,2-Dichloropropane, 2-Butanone, 2-Hexanone, 4-Methyl-2-Pentanone, Acetone, Benzene, Bromodichloromethane, Bromoform, Bromomethane, Carbon disulfide, Carbon tetrachloride, Chlorobenzene, Chloroethane, Chloroform, Chloromethane, cis-1,2-Dichloroethylene, cis-1,3-Dichloropropene, Dibromochloromethane, Ethylbenzene, Methylene chloride, Styrene, Tetrachloroethene, Toluene, trans-1,2-Dichloroethylene

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-013

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

Collector JS	Company Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator WEISS, RL	Price Code 9K
Project Designation Columbia River Component of the RCBRA - Sediment	Sampling Location JS15- SD		SAF No. RC-116	Data Turnaround 45 Days
Chest No. WHH-08-056, 012	Field Logbook No. EL-1631-4	COA BESCRC6520	Method of Shipment FED EX	
Shipped To EBERLINE SERVICES (LIONVILLE)	Offsite Property No. N/A		Bill of Lading/Air Bill No. 796171187234	

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

Preservation	Cool 4C	Cool 4C	None
Type of Container	G	aG	G/P
No. of Container(s)	1	1	1
Volume	125mL	125g	1000g
SAMPLE ANALYSIS	See item (5) in Special Instructions	TOC - 415.1	Particle Size (Dry Sieve) - D422

450000

Sample No.	Matrix *	Sample Date	Sample Time			
18017	OTHER SOLID	12/8/08	1535	X	X	X

CHAIN OF POSSESSION Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
[illegible]	12/8/08 1700	Rey A	12/8/08 1700
Fridge A	12/9/08 0800	W Woodward	12/9/08 0800
W Woodward	12/9/08 1130	Fed Ex	12/9/08 1130
Fed Ex	12/10/08 0955	[illegible]	12/10/08 0955

SPECIAL INSTRUCTIONS

5 [illegible] 12/5/08

(5) TPH-Diesel Range - WTPH-D + (Total petroleum hydrocarbons - diesel range, Total petroleum hydrocarbons - motor oil (high boiling))

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location (using custody) of samples for shipment to lab.

Matrix *

S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-015

Washington Closure Hanford — CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

lector J MOORE	Company Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator WEISS, RL
ject Designation Columbus River Component of the RCBRA - Sediment	Sampling Location 1514-150		SAF No. RC-116
Chest No. WCH-08-056, 002	Field Logbook No. EL-1631/-1	COA BESCRC6520	Method of Shipment FED EX
pped To BERLINE SERVICES [✓ LIONVILLE]	Offsite Property No. N/A		Bill of Lading/Air Bill No. 796171187234

Price Code 9K

Data Turnaround 45 Days

SSIBLE SAMPLE HAZARDS/REMARKS

ecial Handling and/or Storage

Preservation	None	None	None	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C
Type of Container	G/P	G/P	G/P	G/P	G/P	G/P	aG	aG	aG	G
No. of Container(s)	1	1	1	1	1	1	1	1	1	1
Volume	1500g	100g	100g	10g	10g	250g	250g	120g	250g	250g
SAMPLE ANALYSIS	See item (1) in Special Instructions.	Carbon-14	Tritium - H3	Technetium-99	See item (2) in Special Instructions	See item (3) in Special Instructions.	PCBs - 8082	Pesticides - 8081	Semi-VOA - 8270A (TCL)	See item (4) in Special Instructions.

Sample No.	Matrix *	Sample Date	Sample Time										
VN9	OTHER SOLID	12/05/08	1345						X	X	X	X	X

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab.

CHAIN OF POSSESSION — Sign/Print Names

quished By/Removed From	Date/Time 12-08-08 1630	Received By/Stored In	Date/Time 12-08-08 1650
quished By/Removed From Dodge B	Date/Time 12/9/08 0800	Received By/Stored In Blackwood	Date/Time 12/9/08 0800
quished By/Removed From Woodward	Date/Time 12/9/08 1130	Received By/Stored In FedEx	Date/Time 12/9/08 1132
quished By/Removed From	Date/Time 0955	Received By/Stored In	Date/Time 0955
quished By/Removed From	Date/Time	Received By/Stored In	Date/Time
quished By/Removed From	Date/Time	Received By/Stored In	Date/Time

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) {Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238}

(2) Strontium-89/90 – Total Sr; Isotopic Thorium {Thorium-232}; Isotopic Uranium {Uranium-233/234, Uranium-235, Uranium-238}; Isotopic Plutonium

(3) ICP Metals - 6010 (Full List) {Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc}; Mercury - 7471 - (CV)

(4) VOA - 8260A (TCL) {1,1,1-Trichloroethane, 1,1,2,2-Tetrachloroethane, 1,1,2-Trichloroethane, 1,1-Dichloroethane, 1,1-Dichloroethene, 1,2-Dichloroethane, 1,2-Dichloropropane, 2-Butanone, 2-Hexanone, 4-Methyl-2-Pentanone, Acetone, Benzene, Bromodichloromethane, Bromoform, Bromomethane, Carbon disulfide, Carbon tetrachloride, Chlorobenzene, Chloroethane, Chloroform, Chloromethane, cis-1,2-Dichloroethylene, cis-1,3-Dichloropropene, Dibromochloromethane,

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

BORATORY SECTION	Received By	Title	Date/Time
AL SAMPLE ISPOSITION	Disposal Method	Disposed By	Date/Time

H-EE-01

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

47K

llector J MOORE	Company Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator WEISS, RL	Price Code 9K
ject Designation Columbia River Component of the RCBRA - Sediment	Sampling Location 1574-T30		SAF No. RC-116	Data Turnaround 45 Days
Chest No. WCH-08-056,012	Field Logbook No. EL-1631/-1	COA BESCRC6520	Method of Shipment FED EX	
oned To EBERLINE SERVICES [✓ LIONVILLE]	Offsite Property No. N/A		Bill of Lading/Air Bill No. 796171187234	

OSSIBLE SAMPLE HAZARDS/REMARKS

pecial Handling and/or Storage

		Preservation	Cool 4C	Cool 4C	Cool 4C
		Type of Container	G	aG	G/P
		No. of Container(s)	1	1	1
		Volume	325g	125mL	1000g
SAMPLE ANALYSIS			5 See item (1) in Special Instructions	TOC - 415.1	Particle Size (Dry Sieve) - D421
Sample No.	Matrix *	Sample Date	Sample Time			
1TVN9	OTHER SOLID	12/08/08	1345	X	X	X

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
	12-08-08/1650		12-08-08 1650
Fidae B	12/9/08 0800	B Woodward	12/9/08 0800
B Woodward	12/9/08 1130	Fed Ex	12/9/08 1130
Fed Ex	12-10-08 0955		12-10-08 0955

SPECIAL INSTRUCTIONS

5 add as #1

(1) TPH-Diesel Range - WTPH-D+ (Total petroleum hydrocarbons - diesel range, Total petroleum hydrocarbons - motor oil (high boiling))

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab

Matrix *

S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

4/05

llector J.S.	Company Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator WEISS, RL	Price Code 9K
oject Designation Columbia River Component of the RCBRA - Sediment	Sampling Location HMSTD-2 SD		SAP No. RC-116	Data Turnaround 45 Days
e Chest No. WCH-08-056.012	Field Logbook No. EL-1631-1	COA BESCRC6520	Method of Shipment FED EX	
ipped To EBERLINE SERVICES/[✓ LIONVILLE]	Offsite Property No. N/A		Bill of Lading/Air Bill No. 796171187234	

OSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

Preservation	None	None	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	None
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	aG	aG	G	-
No. of Container(s)	1	1	1	1	1	1	1	1	1	1
Volume	1500g	100g	10g	10g	250g	250g	125g	250g	250g	1
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Technetium-99	See item (2) in Special Instructions	See item (3) in Special Instructions	PCBs - 8082	Pesticides - 8081	Semi-VOA - 8270A (TCL)	See item (4) in Special Instructions	-

Sample No.	Matrix *	Sample Date	Sample Time										
17YT4	OTHER SOLID	12/8/08	~~10/20/08~~ 1020	BD 12/9/08 1220					X	X	X	X	X

Sample unavailable to remove samples from controlled storage. Shipper removed samples from storage location using custody of samples for shipment to lab.

CHAIN OF POSSESSION

Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Kerri Boyd	12/3/08 1700	Rez. 4	12/3/08 1700
Rez. A	12/9/08 0800	D Heidelberg	12/9/08 0800
D Heidelberg	12/9/08 1130	FedEx	12/9/08 1130
FedEx	12/10/08 0955	[illegible]	12/10/08 0955

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) [Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238]
(2) Strontium-89,90 - Total Sr; Isotopic Thorium (Thorium-232); Isotopic Uranium (Uranium-233/234, Uranium-235, Uranium-238); Isotopic Plutonium
(3) ICP Metals - 6010 (Full List) [Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc]; Mercury - 7471 - (CV)
(4) VOA - 8260A (TCL) [1,1,1-Trichloroethane, 1,1,2,2-Tetrachloroethane, 1,1,2 Trichloroethane, 1,1-Dichloroethane, 1,1-Dichloroethene, 1,2-Dichloroethane, 1,2 Dichloropropane, 2-Butanone, 2-Hexanone, 4-Methyl-2-Pentanone, Acetone, Benzene, Bromodichloromethane, Bromoform, Bromomethane, Carbon disulfide, Carbon tetrachloride, Chlorobenzene, Chloroethane, Chloroform, Chloromethane, cis-1,2-Dichloroethylene, cis-1,3-Dichloropropene, Dibromochloromethane, Ethylbenzene, Methylene chloride, Styrene, Tetrachloroethene, Toluene, trans-1,2-Dichloroethylene

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-116-504

Collector SS	**Company Contact** JOAN KESSNER	**Telephone No.** 375-4688	**Project Coordinator** WEISS, RL
Project Designation Columbia River Component of the RCBRA - Sediment	**Sampling Location** HMSTD- 2 SD		**SAF No.** RC-116
Ice Chest No. WCH-08-056,02	**Field Logbook No.** EL-1630-1	**COA** DESCRC6520	**Method of Shipment** FED EX
Shipped To EBERLINE SERVICES / LIONVILLE	**Offsite Property No.** N/A		**Bill of Lading/Air Bill No.** 796171187234

Price Code 9K

Data Turnaround 45 Days

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

Preservation	Cool 4C	Cool 4C	None
Type of Container	G	aG	G/P
No. of Container(s)	1	1	1
Volume	125mL 5	125g	1000g
SAMPLE ANALYSIS	See item (1) in Special Instructions	TOC - 415.1	Particle Size (Dry Sieve) - D422

Sample No.	Matrix *	Sample Date	Sample Time			
J17YT4	OTHER SOLID	12/8/08	1030	X	X	X

CHAIN OF POSSESSION — **Sign/Print Names**

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Kim Pozgal	12/8/08 1700	Ref. 4	12/8/08 1700
Ref. 4	12/9/08 0800	D. Hedelberg	12/9/08 0800
D. Hedelberg	12/9/08 1130	Fedex	12/9/08 1130
	12/10/08 0955		12/10/08 0955

SPECIAL INSTRUCTIONS

SAA/ES01

(1) TPH-Diesel Range - WTPH-D + {Total petroleum hydrocarbons - diesel range, Total petroleum hydrocarbons - motor oil (high boiling)}

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab

Matrix *

S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Washington Closure Hanford CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

650000

5042

Collector: JJ	Company Contact: JOAN KESSNER	Telephone No.: 375-4688	Project Coordinator: WEISS, RL
Project Designation: Columbia River Component of the RCBRA - Sediment	Sampling Location: HMSTD-1 SD		SAF No.: RC-116
Ice Chest No.: WCH-08-056, 012	Field Logbook No.: EL-1631-1	COA: DESCRC6520	Method of Shipment: FED EX
Shipped To: EBERLINE SERVICES [✓ LIONVILLE]	Offsite Property No.: N/A		Bill of Lading/Air Bill No.: 796171187234

Price Code: 9K

Data Turnaround: 45 Days

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

			Preservation	None	None	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	None
			Type of Container	G/P	G/P	G/P	G/P	G/P	aG	aG	aG	G	-
			No. of Container(s)	1	1	1	1	1	1	1	1	1	1
			Volume	1500g	100g	10g	10g	250g	250g	125g	250g	250g	1*
SAMPLE ANALYSIS				See item (1) in Special Instructions	Carbon-14	Technetium-99	See item (2) in Special Instructions	See item (3) in Special Instructions	PCBs - 8082	Pesticides - 8081	Semi-VOA - 8270A (TCL)	See item (4) in Special Instructions	-
Sample No.	Matrix *	Sample Date	Sample Time										
J17YT5	OTHER SOLID	12/8/08	0930					X	X	X	X	X	

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab.

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Karen Boyd	12/8/08 1700	Fr. A	12/8/08 1700
Fridge A	12/9/08 0800	R Woodward	12/9/08 0800
R Woodward	12/9/08 1130	Fed Ex	12/9/08 1130
FedEx	[illegible] 0955	[illegible]	[illegible] 0955

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) [Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238]
(2) Strontium-89,90 -- Total Sr, Isotopic Thorium (Thorium-232); Isotopic Uranium (Uranium-233/234, Uranium-235, Uranium-238), Isotopic Plutonium
(3) ICP Metals - 6010 (Full List) [Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc]; Mercury - 7471 - (CV)
(4) VOA - 8260A (TCL) [1,1,1-Trichloroethane, 1,1,2,2-Tetrachloroethane, 1,1,2-Trichloroethane, 1,1-Dichloroethane, 1,1-Dichloroethene, 1,2-Dichloroethane, 1,2-Dichloropropane, 2-Butanone, 2-Hexanone, 4-Methyl-2-Pentanone, Acetone, Benzene, Bromodichloromethane, Bromoform, Bromomethane, Carbon disulfide, Carbon tetrachloride, Chlorobenzene, Chloroethane, Chloroform, Chloromethane, cis-1,2-Dichloroethylene, cis-1,3-Dichloropropene, Dibromochloromethane, Ethylbenzene, Methylene chloride, Styrene, Tetrachloroethene, Toluene, trans-1,2-Dichloroethylene

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Vashington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

ector: JS	Company Contact: JOAN KESSNER	Telephone No.: 375-4688	Project Coordinator: WEISS, RL	Price Code: 9K
ect Designation: olumbia River Component of the RCBRA - Sediment	Sampling Location: HMSTD-1 SD		SAF No.: RC-316	Data Turnaround: 45 Days
Chest No.: WCH-08-056,012	Field Logbook No.: EL-1631-1	COA: BESCRC6420	Method of Shipment: FED EX	
ped To: BERLINE SERVICES [✓ LIONVILLE]	Offsite Property No.: N/A		Bill of Lading/Air Bill No.: 796711517234	

SSIBLE SAMPLE HAZARDS/REMARKS

ecial Handling and/or Storage

Preservation	Cool 4C	Cool 4C	None
Type of Container	G	aG	GP
No. of Container(s)	1	1	1
Volume	125mL 5	125g	1000g
SAMPLE ANALYSIS	See item (5) in Special Instructions.	TOC - 415.1	Particle Size (Dry Sieve) D421

Sample No	Matrix *	Sample Date	Sample Time			
7YTS	OTHER SOLID	12/8/08	0930	X	X	X

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Kam Payal	12/8/08 1700	Rez. A	12/8/08 1700
Ref. A	12/9/08 0800	D. Heidelberg	12/9/08 0800
D. Heidelberg	12/9/08 1130	FedEx	12/9/08 1130
FedEx	12-10-08 0955	Atone	0955

SPECIAL INSTRUCTIONS

(5) 410/25 # ?

☒ TPH-Diesel Range - WTPH-D + (Total petroleum hydrocarbons - diesel range, Total petroleum hydrocarbons - motor oil (high boiling))

Sample unavailable to remove samples from controlled storage. (Suppose removed samples from storage location taking custody of samples for shipment to lab)

Matrix *

S = Soil
SE = Sediment
SO = Solid
SL = Sludge
W = Water
O = Oil
A = Air
DS = Drum Solids
DL = Drum Liquids
T = Tissue
WI = Wipe
L = Liquid
V = Vegetation
X = Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-116-518 Page 1 of 1

Collector J Moore

Company Contact JOAN KESSNER Telephone No. 375-4688

Project Coordinator WEISS, RL

Price Code 9K

Data Turnaround 45 Days

Project Designation Columbia River Component of the RCBRA - Sediment

Sampling Location JS13- 3 SD

SAF No. RC-116

Ice Chest No. WCH-08-056,012

Field Logbook No. EL-1631-1

COA BESCRC6520

Method of Shipment FED EX

Shipped To EBERLINE SERVICES LIONVILLE

Offsite Property No. N/A

Bill of Lading/Air Bill No. 796171187234

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

1900061

			Preservation	None	None	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	None
			Type of Container	G/P	G/P	G/P	G/P	G/P	aG	aG	aG	G	-
			No. of Container(s)	1	1	1	1	1	1	1	1	1	1
			Volume	1500g	100g	10g	10g	250g	250g	125g	250g	250g	1
SAMPLE ANALYSIS				See item (1) in Special Instructions	Carbon-14	Technetium-99	See item (2) in Special Instructions	See item (3) in Special Instructions	PCBs - 8082	Pesticides 8081	Semi-VOA 8270A (TCL)	See item (4) in Special Instructions	-
Sample No.	Matrix *	Sample Date	Sample Time										
J7YV8	OTHER SOLID	12/08/08	1130					X	X	X	X	X	

CHAIN OF POSSESSION

Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
	12/08/08 1630		12/08/08 1630
Madge B	12/9/08 0800	B Woodward	12/9/08 0800
B Woodward	12/9/08 1130	Fed Ex	12/9/08 1130
Fed Ex	12/10/08 0955		12-10-08 0955

SPECIAL INSTRUCTIONS

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab.

(1) Gamma Spec - (Full List) {Americium-241, An [illegible] Beryllium-7, Cerium-144, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238}

(2) Strontium-89,90 -- Total Sr; Isotopic Thorium {Thorium-232}; Isotopic Uranium {Uranium-233/234, Uranium-235, Uranium-238}; Isotopic Plutonium

(3) ICP Metals - 6010 (Full List) {Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc}; Mercury - 7471 - (CV)

(4) VOA - 8260A (TCL) {1,1,1-Trichloroethane, 1,1,2,2-Tetrachloroethane, 1,1,2-Trichloroethane, 1,1-Dichloroethane, 1,1-Dichloroethene, 1,2-Dichloroethane, 1,2-Dichloropropane, 2-Butanone, 2-Hexanone, 4-Methyl-2-Pentanone, Acetone, Benzene, Bromodichloromethane, Bromoform, Bromomethane, Carbon disulfide, Carbon tetrachloride, Chlorobenzene, Chloroethane, Chloroform, Chloromethane, cis-1,2-Dichloroethylene, cis-1,3-Dichloropropene, Dibromochloromethane, Ethylbenzene, Methylenechloride, Styrene, Tetrachloroethene, Toluene, trans-1,2-Dichloroeth

Matrix *

S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION Received By Title Date/Time

FINAL SAMPLE DISPOSITION Disposal Method Disposed By Date/Time

CH-EE-011

Collector J MOORE	Company Contact JOAN KESSNER	Telephone No. 375-4684	Project Coordinator WEISS, RL
Project Designation Columbia River Component of the RCBRA - Sediment	Sampling Location I5D-3 SD		SAF No. RC-116
Ice Chest No. WCH-08-056, 012	Field Logbook No. EL-1631-1	COA BESCRC632D	Method of Shipment FED EX
Shipped To EBERLINE SERVICES [✓ LIONVILLE]	Offsite Property No. N/A		Bill of Lading/Air Bill No. 796171187234

Price Code 9K

Data Turnaround 45 Days

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

Preservation	Cool 4C	Cool 4C	None
Type of Container	G	aG	G/P
No. of Container(s)	1	1	1
Volume	125mL 5	125g	1000g
SAMPLE ANALYSIS	See item (1) in Special Instructions	TOC - 4155	Particle Size (Dry Sieve) - D421

Sample No.	Matrix *	Sample Date	Sample Time			
17YV8	OTHER SOLID	12/08/08	1130	X	X	X

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time 12-8-08/1630	Received By/Stored In RJ B	Date/Time 12-08-08/1605
Relinquished By/Removed From Fridge B	Date/Time 12/9/08 0800	Received By/Stored In B Woodward	Date/Time 12/9/08 0800
Relinquished By/Removed From B Woodward	Date/Time 12/9/08 1430	Received By/Stored In FedEx	Date/Time 12/9/08 1430
Relinquished By/Removed From	Date/Time 12-10-08 0955	Received By/Stored In	Date/Time 12-10-08 0955
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time

SPECIAL INSTRUCTIONS

5 AD 12 3 0 F

(1) TPH-Diesel Range - WTPH-D - {Total petroleum hydrocarbons - diesel range, Total petroleum hydrocarbons - motor oil (high boiling)}

Sample unavailable to receive samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab.

Matrix *

S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title / Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By / Date/Time

CH-EE-011

Collector J NICORE	**Company Contact** JOAN KESSNER	**Telephone No.** 375-4688	**Project Coordinator** WEISS, RL
Project Designation Columbia River Component of the RCBRA - Sediment	**Sampling Location** 1513-5 SD		**SAF No.** RC-116
Ice Chest No. WCH-08-066 012	**Field Logbook No.** EL-1631-1	**COA** RESCRC6520	**Method of Shipment** FED EX
Shipped To EBERLINE SERVICES (LIONVILLE)	**Offsite Property No.** N/A		**Bill of Lading/Air Bill No.** 796171187234

Price Code 9K

Data Turnaround 45 Days

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

Preservation	None	None	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	None
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	aG	aG	G	-
No. of Container(s)	1	1	1	1	1	1	1	1	1	1
Volume	1500g	100g	10g	10g	250g	250g	125g	250g	250g	-
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Technetium-99	See item (2) in Special Instructions	See item (3) in Special Instructions	PCBs - 8082	Pesticides - 8081	Semi-VOA - 8270A (TCL)	See item (4) in Special Instructions	-

Sample No.	Matrix *	Sample Date	Sample Time										
J17YV9	OTHER SOLID	12/08/08	1210					X	X	X	X	X	

Samples unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab.

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From — Date/Time 12-08-08 1630	Received By/Stored In — Date/Time 12-08-08/1630
Relinquished By/Removed From Bridge B — Date/Time 12/9/08 0800	Received By/Stored In BWoodward — Date/Time 12/9/08 0800
Relinquished By/Removed From BWoodward — Date/Time 12/9/08 1130	Received By/Stored In FedEx — Date/Time 12/9/08 1130
Relinquished By/Removed From Fed Ex — Date/Time 12/10/08 0935	Received By/Stored In — Date/Time 12/10/08 0935
Relinquished By/Removed From — Date/Time	Received By/Stored In — Date/Time
Relinquished By/Removed From — Date/Time	Received By/Stored In — Date/Time

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) (Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238)
(2) Strontium-89,90 -- Total Sr, Isotopic Thorium (Thorium-232), Isotopic Uranium (Uranium-233/234, Uranium-235, Uranium-238), Isotopic Plutonium
(3) ICP Metals - 6010 (Full List) (Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc); Mercury - 7471 - (CV)
(4) VOA - 8260A (TCL) (1,1,1-Trichloroethane, 1,1,2,2-Tetrachloroethane, 1,1,2-Trichloroethane, 1,1-Dichloroethane, 1,1-Dichloroethene, 1,2-Dichloroethane, 1,2-Dichloropropane, 2-Butanone, 2-Hexanone, 4-Methyl-2-Pentanone, Acetone, Benzene, Bromodichloromethane, Bromoform, Bromomethane, Carbon disulfide, Carbon tetrachloride, Chlorobenzene, Chloroethane, Chloroform, Chloromethane, cis-1,2-Dichloroethylene, cis-1,3-Dichloropropene, Dibromochloromethane,

Matrix * [illegible]

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST RC-116-519

Collector J Moore	**Company Contact** JOAN KESSNER	**Telephone No.** 373-4684	**Project Coordinator** WEISS, RL	**Price Code** 9K **Data Turnaround** 45 Days
Project Designation Columbia River Component of the RCBRA - Sediment	**Sampling Location** IS13- 5 SD		**SAF No.** RC-116	
Ice Chest No. WCH-DR-056,012	**Field Logbook No.** EL-1631-1	**COA** DESCRC6520	**Method of Shipment** FED EX	
Shipped To EBERLINE SERVICES [✓ LIONVILLE]	**Offsite Property No.** N/A		**Bill of Lading/Air Bill No.** 796171187234	

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

Preservation	Cool 4C	Cool 4C	None
Type of Container	G	aG	G/P
No. of Container(s)	1	1	1
Volume	125mL 5T	125g	1000g
SAMPLE ANALYSIS	See item (2) in Special Instructions	TOC - 415 F	Particle Size (Dry Sieve) - D421

Sample No.	Matrix *	Sample Date	Sample Time			
J17YV9	OTHER SOLID	12/08/08	1210	X	X	X

CHAIN OF POSSESSION Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
	12/08/08 1630		12/08/08 1630
Fridge B	12/9/08 0800	B Woodward	12/9/08 0800
B Woodward	12/9/08 1130	FedEx	12/9/08 1130
FedEx	12/10/08 0955		12/10/08 0955

SPECIAL INSTRUCTIONS

5 gal/e s o t

(2) TPH-Diesel Range - WTPH D+ (Total petroleum hydrocarbons - diesel range, Total petroleum hydrocarbons - motor oil (high boiling))

Sample unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

ollector JS	Company Contact JOAN KESSNER	Telephone No. 375-4683	Project Coordinator WEISS, RL
oject Designation Columbia River Component of the RCBRA - Sediment	Sampling Location SE - 5 SD		SAF No. RC-116
e Chest No. WCH-08-056,012	Field Logbook No. EL-1631-1	COA BESCRC6320	Method of Shipment FED EX
hipped To EBERLINE SERVICES [✓ LIONVILLE]	Offsite Property No. N/A		Bill of Lading/Air Bill No. 796171187234

Price Code 9K

Data Turnaround 45 Days

OSSIBLE SAMPLE HAZARDS/REMARKS

pecial Handling and/or Storage

Preservation	None	None	None	None	Cool 4C	Cool 4C	None
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	G/P
No. of Container(s)	1	1	1	1	1	1	1
Volume	1500g	100g	10g	10g	250g	125g	1000g
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Technetium-99	See item (2) in Special Instructions	See item (3) in Special Instructions	TOC - 415.1	Particle Size (Dry Sieve) - D422

Sample No	Matrix *	Sample Date	Sample Time							
7XK8	OTHER SOLID	12/8/08	1146					X	X	X

CHAIN OF POSSESSION — Sign/Print Names

nquished By/Removed From	Date/Time 12/8/08 1700	Received By/Stored In	Date/Time 12/8/08 1700
nquished By/Removed From	Date/Time 12/9/08 0800	Received By/Stored In B Woodward	Date/Time 12/9/08 0800
nquished By/Removed From Woodward	Date/Time 12/9/08 1130	Received By/Stored In FedEx	Date/Time 12/9/08 1130
nquished By/Removed From	Date/Time 12-10-08 0955	Received By/Stored In	Date/Time 12-10-08 0955
nquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
nquished By/Removed From	Date/Time	Received By/Stored In	Date/Time

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) (Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238)

(2) Strontium-89,90 -- Total Sr; Isotopic Thorium (Thorium-232); Isotopic Uranium (Uranium-233/234, Uranium-235, Uranium-238); Isotopic Plutonium

(3) ICP Metals - 6010 (Full List) (Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc); Mercury - 7471 - (CV)

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab.

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

ORATORY SECTION	Received By	Title	Date/Time
AL SAMPLE ISPOSITION	Disposal Method	Disposed By	Date/Time

H-EE-011

Appendix 5

Data Validation Supporting Documentation

GC/MS ORGANIC DATA VALIDATION CHECKLIST

VALIDATION LEVEL:	A	B	[✓ C]	D	E
PROJECT:	RCBRA		DATA PACKAGE:	K1489	
VALIDATOR:	ELR	LAB: LLI		DATE: 11/8/01	
			SDG:	K1489	

ANALYSES PERFORMED

SW-846 8260		SW-846 8260 (TCLP)	[✓ SW-846 8270]	[✓ 8015D]	SW-846 8270 (TCLP)

SAMPLES/MATRIX

J18002 J18003 J18016 J18017 J17VN7 J17YT4

J17YT5 J17YV8 J17YV9

solid

1. DATA PACKAGE COMPLETENESS AND CASE NARRATIVE

Technical verification documentation present? .... Yes [✓ No] N/A

Comments

2. INSTRUMENT TUNING AND CALIBRATION (Levels D and E)

GC/MS tuning/performance check acceptable? .... Yes No [✓ N/A]

Initial calibrations acceptable? .... Yes No [✓ N/A]

Continuing calibrations acceptable? .... Yes No [✓ N/A]

Standards traceable? .... Yes No [✓ N/A]

Standards expired? .... Yes No [✓ N/A]

Calculation check acceptable? .... Yes No [✓ N/A]

Comments:

GC/MS ORGANIC DATA VALIDATION CHECKLIST

3. BLANKS (Levels B, C, D, and E)

Calibration blanks analyzed? (Levels D, E) .... Yes No [✓ N/A]

Calibration blank results acceptable? (Levels D, E) .... Yes No [✓ N/A]

Laboratory blanks analyzed? .... [✓ Yes] No N/A

Laboratory blank results acceptable? .... Yes [✓ No] N/A

Field/trip blanks analyzed? (Levels C, D, E) .... Yes [✓ No] N/A

Field/trip blank results acceptable? (Levels C, D, E) .... Yes No [✓ N/A]

Transcription/calculation errors? (Levels D, E) .... Yes No [✓ N/A]

Comments: MO & DRO - U all detects

4. ACCURACY (Levels C, D, and E)

Surrogates/system monitoring compounds analyzed? .... [✓ Yes] No N/A

Surrogate/system monitoring compound recoveries acceptable? .... Yes [✓ No] N/A

Surrogates traceable? (Levels D, E) .... Yes No [✓ N/A]

Surrogates expired? (Levels D, E) .... Yes No [✓ N/A]

MS/MSD samples analyzed? .... [✓ Yes] No N/A

MS/MSD results acceptable? .... Yes [✓ No] N/A

MS/MSD standards NIST traceable? (Levels D, E) .... Yes No [✓ N/A]

MS/MSD standards? (Levels D, E) .... Yes No [✓ N/A]

LCS/BSS samples analyzed? .... [✓ Yes] No N/A

LCS/BSS results acceptable? .... Yes [✓ No] N/A

Standards traceable? (Levels D, E) .... Yes No [✓ N/A]

Standards expired? (Levels D, E) .... Yes No [✓ N/A]

Transcription/calculation errors? (Levels D, E) .... Yes No [✓ N/A]

Performance audit sample(s) analyzed? .... Yes [✓ No] N/A

Performance audit sample results acceptable? .... Yes No [✓ N/A]

Comments: Surr - MO - 02, 03, N7, T4, - J

MO - No LCS, MS or MSD - J all

LCS - SV - 4 out SV-MS - 10 out SV-MSD - 5 out J all

GC/MS ORGANIC DATA VALIDATION CHECKLIST

5. PRECISION (Levels C, D, and E)

MS/MSD samples analyzed? .... [✓ Yes] ~~No~~ N/A
MS/MSD RPD values acceptable? .... NO ~~Yes No N/A~~
MS/MSD standards NIST traceable? (Levels D, E) .... Yes No [✓ N/A]
MS/MSD standards expired? (Levels D, E) .... Yes No [✓ N/A]
Field duplicate RPD values acceptable? .... [✓ Yes] No N/A
Field split RPD values acceptable? .... Yes No [✓ N/A]
Transcription/calculation errors? (Levels D, E) .... Yes No [✓ N/A]
Comments: ~~DRO = 40% – J all~~

SV – hexachlorocyclopentadiene – 90%
4-nitrophenol – 33%
pentachlorophenol – 39%
3,3-dichlorobenzidine – 64% [illegible] RPD
} J all

6. SYSTEM PERFORMANCE (Levels D and E)

Internal standards analyzed? .... Yes No [✓ N/A]
Internal standard areas acceptable? .... Yes No [✓ N/A]
Internal standard retention times acceptable? .... Yes No [✓ N/A]
Standards traceable? .... Yes No [✓ N/A]
Standards expired? .... Yes No [✓ N/A]
Transcription/calculation errors? .... Yes No [✓ N/A]
Comments:

7. HOLDING TIMES (all levels)

Samples properly preserved? .... [✓ Yes] No N/A
Sample holding times acceptable? .... Yes [✓ No] N/A
Comments: DRO/MO – <2X analysis time – J all

GC/MS ORGANIC DATA VALIDATION CHECKLIST

8. COMPOUND IDENTIFICATION, QUANTITATION, AND DETECTION LIMITS (all levels)

Compound identification acceptable? (Levels D, E) .... Yes No [✓ N/A]
Compound quantitation acceptable? (Levels D, E) .... Yes No [✓ N/A]
Results reported for all requested analyses? .... [✓ Yes] No N/A
Results supported in the raw data? (Levels D, E) .... Yes No [✓ N/A]
Samples properly prepared? (Levels D, E) .... Yes No [✓ N/A]
Laboratory properly identified and coded all TIC? (Levels D, E) .... Yes No [✓ N/A]
Detection limits meet RDL? .... Yes [✓ No] N/A
Transcription/calculation errors? (Levels D, E) .... Yes No [✓ N/A]
Comments: [illegible] su ord
47L

9. SAMPLE CLEANUP (Levels D and E)

GPC cleanup performed? .... Yes No [✓ N/A]
GPC check performed? .... Yes No [✓ N/A]
GPC check recoveries acceptable? .... Yes No [✓ N/A]
GPC calibration performed? .... Yes No [✓ N/A]
GPC calibration check performed? .... Yes No [✓ N/A]
GPC calibration check retention times acceptable? .... Yes No [✓ N/A]
Check/calibration materials traceable? .... Yes No [✓ N/A]
Check/calibration materials Expired? .... Yes No [✓ N/A]
Analytical batch QC given similar cleanup? .... Yes No [✓ N/A]
Transcription/Calculation Errors? .... Yes No [✓ N/A]
Comments:

Appendix 6

Additional Documentation Requested by Client

LVL
LIONVILLE LABORATORY

264 Welsh Pool Roa
Exton, PA 1934
Phone: 610-280-300
Fax: 610-280-304

WC-Hanford, Inc 2620 Fermi Avenue Richland WA, 99354	Project: RC-116 Project Number: K1489 Project Manager: Joan Kessner	Reported: 03/09/2009 09:58

Semivolatile Organic Compounds by SW846 8270C - Quality Control

Lionville Laboratory

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch L901030 - SW 3540C										
Blank (L901030-BLK1)				Prepared: 12/19/2008 Analyzed: 01/24/2009						
Phenol	ND	330	ug/kg wet							
Bis(2-chloroethyl) ether	ND	330	"							
2-Chlorophenol	ND	330	"							
1,3-Dichlorobenzene	ND	330	"							
1,4-Dichlorobenzene	ND	330	"							
1,2-Dichlorobenzene	ND	330	"							
2-Methylphenol	ND	330	"							
Bis(2-chloroisopropyl) ether	ND	330	"							
4-Methylphenol	ND	330	"							
N-Nitrosodi-n-propylamine	ND	330	"							
Hexachloroethane	ND	330	"							
Nitrobenzene	ND	330	"							
Isophorone	ND	330	"							
2-Nitrophenol	ND	330	"							
2,4-Dimethylphenol	ND	330	"							
Bis(2-chloroethoxy) methane	ND	330	"							
2,4-Dichlorophenol	ND	330	"							
1,2,4-Trichlorobenzene	ND	330	"							
Naphthalene	ND	330	"							
4-Chloroaniline	ND	330	"							
Hexachlorobutadiene	ND	330	"							
4-Chloro-3-methylphenol	ND	330	"							
2-Methylnaphthalene	ND	330	"							
Hexachlorocyclopentadiene	ND	330	"							
2,4,6-Trichlorophenol	ND	330	"							
2,4,5-Trichlorophenol	ND	330	"							
2-Chloronaphthalene	ND	330	"							
2-Nitroaniline	ND	1650	"							
Dimethyl Phthalate	ND	330	"							
2,6-Dinitrotoluene	ND	330	"							
Acenaphthylene	ND	330	"							
3-Nitroaniline	ND	1650	"							
Acenaphthene	ND	330	"							
2,4-Dinitrophenol	ND	1650	"							
4-Nitrophenol	ND	1650	"							
Dibenzofuran	ND	330	"							
2,4-Dinitrotoluene	ND	330	"							
Diethyl Phthalate	ND	330	"							
4-Chlorophenyl Phenyl Ether	ND	330	"							
Fluorene	ND	330	"							
4-Nitroaniline	ND	1650	"							
4,6-Dinitro-2-methylphenol	ND	330	"							
N-Nitrosodiphenylamine	ND	330	"							

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WC-Hanford, Inc. 2620 Fermi Avenue Richland WA, 99354	Project: RC-116 Project Number: K1489 Project Manager: Joan Kessner	**Reported:** 03/09/2009 09:58

Semivolatile Organic Compounds by SW846 8270C - Quality Control

Lionville Laboratory

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch L901030 - SW 3540C										
Blank (L901030-BLK1)				Prepared: 12/19/2008 Analyzed: 01/24/2009						
4-Bromophenyl Phenyl Ether	ND	330	ug/kg wet							
Hexachlorobenzene	ND	330	"							
Pentachlorophenol	ND	1650	"							
Phenanthrene	ND	330	"							
Anthracene	ND	330	"							
Carbazole	ND	330	"							
Di-n-butyl Phthalate	ND	330	"							
Fluoranthene	ND	330	"							
Pyrene	ND	330	"							
Butyl Benzyl Phthalate	ND	330	"							
Bis(2-ethylhexyl) phthalate	106	330	"							
3,3' Dichlorobenzidine	ND	660	"							
Benz[a]anthracene	ND	330	"							
Chrysene	ND	330	"							
Di-n-octyl Phthalate	ND	330	"							
Benzo[b] fluoranthene	ND	330	"							
Benzo[k] fluoranthene	ND	330	"							
Benzo[a] pyrene	ND	330	"							
Indeno[1,2,3-cd]pyrene	ND	330	"							
Dibenz[a,h]anthracene	ND	330	"							
Benzo[g,h,i] perylene	ND	330	"							
TIC: Unknown 4	78100		"							
TIC: Unknown 3	1320		"							
TIC: Unknown 2	871		"							
TIC: Unknown 1	519		"							
TIC: Phthalate	364		"							
Surrogate: 2-Fluorophenol	*1200*		"	*2500.0*		*48*	*25-121*			
Surrogate: Phenol-d5	*1250*		"	*2500.0*		*50*	*24-113*			
Surrogate: Nitrobenzene-d5	*968*		"	*1666.7*		*58*	*23-120*			
Surrogate: 2-Fluorobiphenyl	*1080*		"	*1666.7*		*65*	*30-115*			
Surrogate: 2,4,6-Tribromophenol	*1380*		"	*2500.0*		*55*	*19-122*			
Surrogate: p-Terphenyl-d14	*1180*		"	*1666.7*		*71*	*18-137*			

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264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

WC-Hanford, Inc. 2620 Fermi Avenue Richland WA 99354	Project: RC-116 Project Number: K1489 Project Manager: Joan Kessner	Reported: 03/09/2009 09:38

Semivolatile Organic Compounds by SW846 8270C - Quality Control
Lionville Laboratory

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch L901030 - SW 3540C										
LCS (L901030-BS1)				Prepared: 12/19/2008 Analyzed: 01/24/2009						
N-Nitrosodimethylamine	1180	330	ug/kg wet	2000.0		59	0-200			
Pyridine	851	330	"	2000.0		43	0-200			
Phenol	1700	330	"	2000.0		60	50-110			
Aniline	488	330	"	2000.0		24	0-200			
Bis(2-chloroethyl) ether	1310	330	"	2000.0		65	50-130			
2-Chlorophenol	1300	330	"	2000.0		65	50-130			
1,3-Dichlorobenzene	1330	330	"	2000.0		66	50-110			
1,4-Dichlorobenzene	1330	330	"	2000.0		66	50-120			
Benzyl alcohol	1320	330	"	2000.0		66	0-200			
1,2-Dichlorobenzene	1360	330	"	2000.0		68	50-110			
2-Methylphenol	1220	330	"	2000.0		61	60-120			
Bis(2-chloroisopropyl) ether	1240	330	"	2000.0		62	50-120			
4-Methylphenol	1280	330	"	2000.0		64	60-130			
N-Nitroso-di-n-propylamine	1370	330	"	2000.0		68	50-130			
Acetophenone	1240	330	"	2000.0		62	0-200			
Hexachloroethane	1270	330	"	2000.0		64	50-110			
Nitrobenzene	1220	330	"	2000.0		61	50-110			
Isophorone	1210	330	"	2000.0		61	60-120			
2-Nitrophenol	1400	330	"	2000.0		70	50-130			
2,4-Dimethylphenol	1380	330	"	2000.0		69	50-120			
Benzoic Acid	1650	1650	"	2000.0		83	0-200			
Bis(2-chloroethoxy) methane	1290	330	"	2000.0		65	40-140			
2,4-Dichlorophenol	1460	330	"	2000.0		73	45-110			
1,2,4-Trichlorobenzene	1340	330	"	2000.0		67	60-120			
Naphthalene	1330	330	"	2000.0		66	40-130			
4-Chloroaniline	593	330	"	2000.0		30	20-120			
Hexachlorobutadiene	1430	330	"	2000.0		72	40-130			
4-Chloro-3-methylphenol	1430	330	"	2000.0		71	60-130			
2-Methylnaphthalene	1310	330	"	2000.0		66	60-100			
1-Methylnaphthalene	1310		"	2000.0		65	0-200			
Hexachlorocyclopentadiene	1280	330	"	2000.0		64	20-100			
2,4,6-Trichlorophenol	1440	330	"	2000.0		72	50-110			
2,4,5-Trichlorophenol	1530	330	"	2000.0		77	50-110			
2-Chloronaphthalene	1400	330	"	2000.0		70	50-130			
2-Nitroaniline	1260	1650	"	2000.0		63	60-130			
1,4-Dinitrobenzene	1430	330	"	2000.0		71	0-200			
Dimethyl Phthalate	1460	330	"	2000.0		73	50-140			
2,6-Dinitrotoluene	1420	330	"	2000.0		71	50-140			
Acenaphthylene	1340	330	"	2000.0		67	60-110			
3-Nitroaniline	827	1650	"	2000.0		41	40-130			
1,3-Dinitrobenzene	1510	330	"	2000.0		76	0-200			
1,2-Dinitrobenzene	1410		"	2000.0		71	0-200			
Acenaphthene	1340	330	"	2000.0		67	60-130			

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WC-Hanford, Inc. 2620 Fermi Avenue Richland WA, 99354	Project: RC-116 Project Number: K1589 Project Manager: Joan Kessner	Reported: 03/09/2009 09:48

Semivolatile Organic Compounds by SW846 8270C - Quality Control
Lionville Laboratory

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch L901030 - SW 3540C										
LCS (L901030-BS1)				Prepared: 12/19/2008 Analyzed: 01/24/2009						
2,4-Dinitrophenol	1660	1650	ug/kg wet	2000.0		83	20-120			
4-Nitrophenol	1490	1650	"	2000.0		74	40-140			J
Dibenzofuran	1370	330	"	2000.0		68	60-130			
2,4-Dinitrotoluene	1390	330	"	2000.0		69	60-130			
2,3,5,6-Tetrachlorophenol	1330		"	2000.0		66	50-110			
2,3,4,6-Tetrachlorophenol	1220	330	"	2000.0		61	50-110			
Diethyl Phthalate	1450	330	"	2000.0		73	50-130			
4-Chlorophenyl Phenyl Ether	1430	330	"	2000.0		72	50-120			
Fluorene	1390	330	"	2000.0		69	60-130			
4-Nitroaniline	1170	1650	"	2000.0		58	50-120			J
4,6-Dinitro-2-methylphenol	1620	330	"	2000.0		81	40-140			
N-Nitrosodiphenylamine	1320	330	"	2000.0		66	50-130			
1,2-Diphenylhydrazine	1350	330	"	2000.0		68	0-200			
4-Bromophenyl Phenyl Ether	1190	330	"	2000.0		60	50-120			
Hexachlorobenzene	1420	330	"	2000.0		71	60-130			
Pentachlorophenol	1530	1650	"	2000.0		77	50-130			
Phenanthrene	1490	330	"	2000.0		75	60-130			
Anthracene	1420	330	"	2000.0		71	60-130			
Carbazole	1350	330	"	2000.0		67	60-120			
Di-n-butyl Phthalate	1500	330	"	2000.0		75	40-150			
Fluoranthene	1400	330	"	2000.0		70	50-130			
Benzidine	ND	1650	"	2000.0			0-200			L
Pyrene	1600	330	"	2000.0		80	50-140			
Butyl Benzyl Phthalate	1810	330	"	2000.0		90	50-150			
Bis(2-ethylhexyl) adipate	1460	330	"	2000.0		73	40-140			
Bis(2-ethylhexyl) phthalate	1790	330	"	2000.0		90	50-150			
3,3'-Dichlorobenzidine	870	660	"	2000.0		44	20-140			
Benz[a]anthracene	1520	330	"	2000.0		76	50-130			
Chrysene	1570	330	"	2000.0		78	50-130			
Di-n-octyl Phthalate	1570	330	"	2000.0		79	50-150			
Benzo[b] fluoranthene	1460	330	"	2000.0		73	50-140			
Benzo[k] fluoranthene	1360	330	"	2000.0		68	50-140			
Benzo[a] pyrene	1380	330	"	2000.0		69	50-140			
Indeno[1,2,3-cd]pyrene	1760	330	"	2000.0		88	60-140			
Dibenz[a,h]anthracene	1830	330	"	2000.0		91	50-140			
Benzo[g,h,i] perylene	1840	330	"	2000.0		92	50-140			
Surrogate: 2-Fluorophenol	*1640*		"	*2500.0*		*65*	*21-121*			
Surrogate: Phenol-d5	*1540*		"	*2500.0*		*62*	*24-113*			
Surrogate: Nitrobenzene-d5	*1170*		"	*1666.7*		*70*	*23-120*			
Surrogate: 2-Fluorobiphenyl	*1270*		"	*1666.7*		*76*	*30-115*			
Surrogate: 2,4,6-Tribromophenol	*2390*		"	*2500.0*		*96*	*19-122*			
Surrogate: p-Terphenyl-d14	*1300*		"	*1666.7*		*78*	*18-137*			

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Semivolatile Organic Compounds by SW846 8270C - Quality Control

Lionville Laboratory

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch L901030 - SW 3540C										
Matrix Spike (L901030-MS1)		Source: 0812053-04		Prepared: 12/19/2008 Analyzed: 01/24/2009						
N-Nitrosodimethylamine	1350	330	ug/kg wet	2000.0	ND	67	0-200			
Pyridine	628	330	"	2000.0	ND	31	0-200			
Phenol	1300	330	"	2000.0	ND	65	50-130			
Aniline	289	330	"	2000.0	ND	14	0-200			
Bis(2-chloroethyl) ether	1380	330	"	2000.0	ND	69	50-130			
2-Chlorophenol	1270	330	"	2000.0	ND	63	50-130			
1,3-Dichlorobenzene	1150	330	"	2000.0	ND	57	50-110			
1,4-Dichlorobenzene	1180	330	"	2000.0	ND	59	50-120			
Benzyl alcohol	ND	330	"	2000.0	ND		0-200			
1,2-Dichlorobenzene	1240	330	"	2000.0	ND	62	50-110			
2-Methylphenol	1150	330	"	2000.0	ND	58	60-120			
Bis(2-chloroisopropyl) ether	1520	330	"	2000.0	ND	76	40-120			
4-Methylphenol	1400	330	"	2000.0	ND	70	60-130			
N-Nitrosodi-n-propylamine	1510	330	"	2000.0	ND	75	50-130			
Acetophenone	1340	330	"	2000.0	ND	67	0-200			
Hexachloroethane	1170	330	"	2000.0	ND	59	50-110			
Nitrobenzene	1020	330	"	2000.0	ND	51	50-110			
Isophorone	1050	330	"	2000.0	ND	53	60-120			
2-Nitrophenol	1110	330	"	2000.0	ND	56	50-130			
2,4-Dimethylphenol	1050	330	"	2000.0	ND	52	50-120			
Benzoic Acid	1130	1650	"	2000.0	0.00	56	0-200			
Bis(2-chloroethoxy) methane	1180	330	"	2000.0	ND	59	40-140			
2,4-Dichlorophenol	986	330	"	2000.0	ND	49	45-110			
1,2,4-Trichlorobenzene	958	330	"	2000.0	ND	48	60-120			
Naphthalene	1070	330	"	2000.0	ND	54	40-130			
4-Chloroaniline	245	330	"	2000.0	ND	12	20-120			
Hexachlorobutadiene	1030	330	"	2000.0	ND	52	40-130			
4-Chloro-3-methylphenol	972	330	"	2000.0	ND	49	60-130			
2-Methylnaphthalene	1060	330	"	2000.0	ND	53	60-100			
1-Methylnaphthalene	1020		"	2000.0	0.00	51	0-200			
Hexachlorocyclopentadiene	502	330	"	2000.0	ND	25	20-100			
2,4,6-Trichlorophenol	970	330	"	2000.0	ND	49	50-110			
2,4,5-Trichlorophenol	1240	330	"	2000.0	ND	62	50-110			
2-Chloronaphthalene	1220	330	"	2000.0	ND	61	50-130			
2-Nitroaniline	1230	1650	"	2000.0	ND	62	60-130			
1,4-Dinitrobenzene	1210	330	"	2000.0	ND	61	0-200			
Dimethyl Phthalate	1340	330	"	2000.0	ND	67	50-140			
2,6-Dinitrotoluene	1230	330	"	2000.0	ND	62	50-140			
Acenaphthylene	1250	330	"	2000.0	ND	63	50-110			
3-Nitroaniline	620	1650	"	2000.0	ND	31	40-130			
1,3-Dinitrobenzene	1190	330	"	2000.0	ND	60	0-200			
1,2-Dinitrobenzene	1240		"	2000.0	0.00	62	0-200			
Acenaphthene	1250	330	"	2000.0	ND	62	60-130			

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WC-Hanford, Inc. 2620 Fermi Avenue Richland WA, 99354	Project: RC-116 Project Number: K1489 Project Manager: Joan Kessner	Reported: 03/09/2009 09:58

Semivolatile Organic Compounds by SW846 8270C - Quality Control
Lionville Laboratory

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch L901030 - SW 3540C										
Matrix Spike (L901030-MS1)		Source: 0812053-04		Prepared: 12/19/2008	Analyzed: 01/24/2009					
2,4-Dinitrophenol	1560	1650	ug/kg wet	2000.0	ND	78	20-120			J
4-Nitrophenol	1280	1650	"	2000.0	ND	64	40-140			J
Dibenzofuran	1230	330	"	2000.0	ND	62	60-130			
2,4-Dinitrotoluene	1290	330	"	2000.0	ND	64	60-130			
2,3,5,6-Tetrachlorophenol	913		"	2000.0	0.00	46	50-110			
2,3,4,6-Tetrachlorophenol	754	330	"	2000.0	ND	38	50-110			
Diethyl Phthalate	1390	330	"	2000.0	ND	69	50-130			
4-Chlorophenyl Phenyl Ether	1270	330	"	2000.0	ND	63	50-120			
Fluorene	1240	330	"	2000.0	ND	62	60-130			
4-Nitroaniline	917	1650	"	2000.0	ND	46	50-120			J
4,6-Dinitro-2-methylphenol	1600	330	"	2000.0	ND	80	40-140			
N-Nitrosodiphenylamine	1130	330	"	2000.0	ND	57	50-130			
1,2-Diphenylhydrazine	1320	330	"	2000.0	ND	66	0-200			
4-Bromophenyl Phenyl Ether	1160	330	"	2000.0	ND	58	50-120			
Hexachlorobenzene	1290	330	"	2000.0	ND	65	60-130			
Pentachlorophenol	950	1650	"	2000.0	ND	48	30-130			J
Phenanthrene	1350	330	"	2000.0	ND	68	60-130			
Anthracene	1350	330	"	2000.0	ND	68	60-130			
Carbazole	1270	330	"	2000.0	ND	63	60-120			
Di-n-butyl Phthalate	1590	330	"	2000.0	ND	80	40-150			
Fluoranthene	1370	330	"	2000.0	ND	69	50-130			
Benzidine	ND	1650	"	2000.0	ND		0-200			U
Pyrene	1410	330	"	2000.0	ND	71	50-140			
Butyl Benzyl Phthalate	1630	330	"	2000.0	ND	81	50-150			
Bis(2-ethylhexyl) adipate	1460	330	"	2000.0	ND	73	40-140			
Bis(2-ethylhexyl) phthalate	1610	330	"	2000.0	ND	81	50-150			
3,3'-Dichlorobenzidine	ND	660	"	2000.0	ND		20-140			U
Benz(a)anthracene	1300	330	"	2000.0	ND	65	50-130			
Chrysene	1340	330	"	2000.0	ND	67	50-130			
Di-n-octyl Phthalate	1540	330	"	2000.0	ND	77	50-150			
Benzo[b] fluoranthene	1290	330	"	2000.0	ND	64	60-130			
Benzo[k] fluoranthene	1360	330	"	2000.0	ND	68	50-130			
Benzo[a] pyrene	1250	330	"	2000.0	ND	63	50-130			
Indeno[1,2,3-cd]pyrene	1310	330	"	2000.0	ND	66	60-140			
Dibenz[a,h]anthracene	1340	330	"	2000.0	ND	67	50-140			
Benzo[g,h,i] perylene	1400	330	"	2000.0	ND	70	60-140			
Surrogate: 2-Fluorophenol	*1610*		"	*2500.0*		*65*	*25-121*			
Surrogate: Phenol-d5	*1580*		"	*2500.0*		*63*	*24-113*			
Surrogate: Nitrobenzene-d5	*879*		"	*1666.7*		*53*	*23-120*			
Surrogate: 2-Fluorobiphenyl	*1050*		"	*1666.7*		*63*	*30-115*			
Surrogate: 2,4,6-Tribromophenol	*1070*		"	*2500.0*		*43*	*19-122*			
Surrogate: p-Terphenyl-d14	*1180*		"	*1666.7*		*71*	*18-137*			

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Semivolatile Organic Compounds by SW846 8270C - Quality Control
Lionville Laboratory

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch L901030 - SW 3540C										
Matrix Spike Dup (L901030-MSD1)		Source: 0812053-04		Prepared: 12/19/2008 Analyzed: 01/24/2009						
Phenol	1370	330	ug/kg wet	2000.0	ND	69	50-130	5	40	
Bis(2-chloroethyl) ether	1350	330	"	2000.0	ND	67	50-130	2	40	
2-Chlorophenol	1340	330	"	2000.0	ND	67	50-130	5	40	
1,3-Dichlorobenzene	1140	330	"	2000.0	ND	57	50-110	1	40	
1,4-Dichlorobenzene	1160	330	"	2000.0	ND	58	50-120	2	40	
1,2-Dichlorobenzene	1200	330	"	2000.0	ND	60	50-110	3	40	
2-Methylphenol	1220	330	"	2000.0	ND	61	60-120	6	40	
Bis(2-chloroisopropyl) ether	1490	330	"	2000.0	ND	74	50-120	2	40	
4-Methylphenol	1370	330	"	2000.0	ND	69	60-130	2	40	
N-Nitroso-di-n-propylamine	1490	330	"	2000.0	ND	74	50-130	1	40	
Hexachloroethane	1110	330	"	2000.0	ND	56	50-110	5	40	
Nitrobenzene	1050	330	"	2000.0	ND	53	50-110	3	40	
Isophorone	1050	330	"	2000.0	ND	52	60-120	0.3	40	
2-Nitrophenol	1170	330	"	2000.0	ND	58	50-130	5	40	
2,4-Dimethylphenol	1140	330	"	2000.0	ND	57	50-120	8	40	
Bis(2-chloroethoxy) methane	1200	330	"	2000.0	ND	60	40-140	2	40	
2,4-Dichlorophenol	1080	330	"	2000.0	ND	54	45-110	9	40	
1,2,4-Trichlorobenzene	979	330	"	2000.0	ND	49	60-120	2	40	
Naphthalene	1090	330	"	2000.0	ND	54	40-130	2	40	
4-Chloroaniline	304	330	"	2000.0	ND	15	20-120	22	40	J
Hexachlorobutadiene	1030	330	"	2000.0	ND	52	40-130	0.2	40	
4-Chloro-3-methylphenol	958	330	"	2000.0	ND	48	60-130	1	40	
2-Methylnaphthalene	1080	330	"	2000.0	ND	54	60-100	2	40	
Hexachlorocyclopentadiene	191	330	"	2000.0	ND	10	20-100	90	40	J
2,4,6-Trichlorophenol	918	330	"	2000.0	ND	46	50-110	6	40	
2,4,5-Trichlorophenol	1330	330	"	2000.0	ND	66	50-110	7	40	
2-Chloronaphthalene	1320	330	"	2000.0	ND	66	50-130	8	40	
2-Nitroaniline	1350	1650	"	2000.0	ND	67	60-130	9	40	J
Dimethyl Phthalate	1450	330	"	2000.0	ND	72	50-140	8	40	
2,6-Dinitrotoluene	1410	330	"	2000.0	ND	70	50-140	13	40	
Acenaphthylene	1380	330	"	2000.0	ND	69	60-110	10	40	
3-Nitroaniline	696	1650	"	2000.0	ND	35	40-130	12	40	J
Acenaphthene	1320	330	"	2000.0	ND	66	60-130	6	40	
2,4-Dinitrophenol	1830	1650	"	2000.0	ND	92	20-120	16	40	
4-Nitrophenol	1780	1650	"	2000.0	ND	89	40-140	33	40	
Dibenzofuran	1390	330	"	2000.0	ND	69	60-130	12	40	
2,4-Dinitrotoluene	1460	330	"	2000.0	ND	73	60-130	12	40	
Diethyl Phthalate	1490	330	"	2000.0	ND	75	50-130	7	40	
4-Chlorophenyl Phenyl Ether	1420	330	"	2000.0	ND	71	50-120	12	40	
Fluorene	1390	330	"	2000.0	ND	69	60-130	11	40	
4-Nitroaniline	1080	1650	"	2000.0	ND	54	50-130	16	40	J
4,6-Dinitro-2-methylphenol	1760	330	"	2000.0	ND	88	40-140	9	40	
N-Nitrosodiphenylamine	1190	330	"	2000.0	ND	59	50-130	5	40	

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WCH-Hanford, Inc. 2620 Fermi Avenue Richland WA, 99354	Project: RC-116 Project Number: K1489 Project Manager: Joan Kessner	Reported: 03/09/2009 09:58

Semivolatile Organic Compounds by SW846 8270C - Quality Control
Lionville Laboratory

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch L901030 - SW 3540C										
Matrix Spike Dup (L901030-MSD1)		**Source: 0812053-04**		**Prepared: 12/19/2008 Analyzed: 01/24/2009**						
4-Bromophenyl Phenyl Ether	1240	330	ug/kg wet	2000.0	ND	62	50-120	7	40	
Hexachlorobenzene	1340	330	"	2000.0	ND	67	60-130	4	40	
Pentachlorophenol	638	1650	"	2000.0	ND	32	30-130	39	40	
Phenanthrene	1420	330	"	2000.0	ND	71	60-130	5	40	
Anthracene	1430	330	"	2000.0	ND	71	60-130	6	40	
Carbazole	1330	330	"	2000.0	ND	67	60-120	5	40	
Di-n-butyl Phthalate	1590	330	"	2000.0	ND	79	40-150	0.4	40	
Fluoranthene	1470	330	"	2000.0	ND	73	50-130	7	40	
Pyrene	1490	330	"	2000.0	ND	70	50-140	1	40	
Butyl Benzyl Phthalate	1620	330	"	2000.0	ND	81	50-150	0.3	40	
Bis(2-ethylhexyl) phthalate	1620	330	"	2000.0	ND	81	50-150	0.9	40	
3,3'-Dichlorobenzidine	ND	660	"	2000.0	ND		20-140		40	U
Benz[a]anthracene	1400	330	"	2000.0	ND	70	50-130	7	40	
Chrysene	1410	330	"	2000.0	ND	71	50-130	5	40	
Di-n-octyl Phthalate	1540	330	"	2000.0	ND	77	50-150	0.3	40	
Benzo[b] fluoranthene	1340	330	"	2000.0	ND	67	60-130	4	40	
Benzo[k] fluoranthene	1410	330	"	2000.0	ND	71	50-130	4	40	
Benzo[a] pyrene	1330	330	"	2000.0	ND	66	50-130	6	40	
Indeno(1,2,3-cd)pyrene	1380	330	"	2000.0	ND	69	60-140	5	40	
Dibenz[a,h]anthracene	1430	330	"	2000.0	ND	72	50-140	7	40	
Benzo[g,h,i] perylene	1380	330	"	2000.0	ND	69	60-140	1	40	
Surrogate: 2-Fluorophenol	*1630*		"	*2500.0*		*65*	*25-121*			
Surrogate: Phenol-d5	*1650*		"	*2500.0*		*66*	*24-113*			
Surrogate: Nitrobenzene-d5	*864*		"	*1666.7*		*52*	*23-120*			
Surrogate: 2-Fluorobiphenyl	*1140*		"	*1666.7*		*68*	*30-115*			
Surrogate: 2,4,6-Tribromophenol	*968*		"	*2500.0*		*39*	*19-122*			
Surrogate: p-Terphenyl-d14	*1200*		"	*1666.7*		*72*	*18-137*			

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Extractable Petroleum Hydrocarbons by SW846 8015 - Quality Control

Lionville Laboratory

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch L902054 - SW 3540C										
Blank (L902054-BLK1)				Prepared: 12/19/2009 Analyzed: 02/10/2009						
Diesel Range Organics	3230	3300	ug/kg wet							J
Motor Oil	5800	10000	"							J
Surrogate: p-Terphenyl	*1550*		"	*1666.7*		*93*	*39-129*			
LCS (L902054-BS1)				Prepared: 12/19/2009 Analyzed: 02/11/2009						
Diesel Range Organics	38300	3300	ug/kg wet	50000		77	34-104			
Surrogate: p-Terphenyl	*1690*		"	*1666.7*		*101*	*39-129*			
Matrix Spike (L902054-MS1)	**Source: 0812053-04**			Prepared: 12/19/2009 Analyzed: 02/11/2009						
Diesel Range Organics	40700	3300	ug/kg wet	50000	ND	81	34-104			
Surrogate: p-Terphenyl	*1810*		"	*1666.7*		*109*	*39-129*			
Matrix Spike Dup (L902054-MSD1)	**Source: 0812053-04**			Prepared: 12/19/2009 Analyzed: 02/11/2009						
Diesel Range Organics	41300	3300	ug/kg wet	50000	ND	83	34-104	1	40	
Surrogate: p-Terphenyl	*1780*		"	*1666.7*		*107*	*39-129*			

Date: 18 November 2009
To: Washington Closure Hanford (technical representative)
From: ELR Consultants
Project: Columbia River Component of the RCBRA - Sediment
Subject: PCB - Data Package No. K1489-LLI

INTRODUCTION

This memo presents the results of data validation on Data Package No. K1489 prepared by Lionville Laboratory Inc. (LLI). A list of samples validated along with the analyses reported and the method of analysis is provided in the following table.

Sample ID	Sample Date	Media	Validation	Anaysis
J18002	12/8/08	Solid	C	See note 1
J18003	12/8/08	Solid	C	See note 1
J18016	12/8/08	Solid	C	See note 1
J18017	12/8/08	Solid	C	See note 1
J17VN9	12/8/08	Solid	C	See note 1
J17YT4	12/8/08	Solid	C	See note 1
J17YT5	12/8/08	Solid	C	See note 1
J17YV8	12/8/08	Solid	C	See note 1
J17YV9	12/8/08	Solid	C	See note 1

1 – PCBs by 8082.

Data validation was conducted in accordance with the Washington Closure Hanford (WCH) validation statement of work and the Remedial Investigation Work Plan for Hanford Site Releases to the Columbia River (DOE/RL-2008-11, Rev. 0, September 2008). Appendices 1 through 6 provide the following information as indicated below;

Appendix 1. Glossary of Data Reporting Qualifiers
Appendix 2. Summary of Data Qualification
Appendix 3. Qualified Data Summary and Annotated Laboratory Reports
Appendix 4. Laboratory Narrative and Chain-of-Custody Documentation
Appendix 5. Data Validation Supporting Documentation
Appendix 6. Additional Data Requested by Client

DATA QUALITY OBJECTIVES

- **Holding Times & Sample Preservation**

There was no holding time specified for PCB analysis

- **Method Blank**

Method blank analyses are performed to determine the extent of laboratory contamination introduced through sampling, sample preparation or analysis. At least one method blank analysis must be conducted for every 20 samples. Method blanks should not contain target compounds at a concentration greater than required quantitation limit (RQL). If target compounds are present, sample results less than five times the blank concentration are qualified as undetected and flagged "U". If the sample result is less than five times the blank concentration and less than RQL, the result is qualified as undetected and elevated to the RQL.

All method blank results were acceptable.

Field Blanks

No field blanks were submitted for analysis.

- **Accuracy**

Matrix Spike & Laboratory Control Sample

Matrix spike (MS) and laboratory control sample (LCS) analyses are used to assess the analytical accuracy of the reported data. The matrix spike is used to assess the effect of the matrix on the ability to accurately quantify sample concentrations. Recoveries must fall within the range of 70% to 130%. If spike recoveries are outside control limits, detected sample results less than five times the spike concentration are qualified as estimates and flagged "J". Non-detected sample results with spike recoveries outside control limits are qualified as estimates and flagged "UJ". Sample results greater than five times the spike concentration require no qualification.

All accuracy results were acceptable.

Surrogate Recovery

The analysis of surrogate compounds provides a measure of performance for individual samples. Matrix-specific surrogate compound recovery control windows have been established by the laboratory. When a surrogate compound recovery is outside the control window, all positively identified target compounds associated with the unacceptable surrogate recoveries are qualified as estimates and flagged "J". Non-detected compounds with surrogate recoveries less than the lower control limit are qualified as having an estimated detection limit and flagged "UJ". Non-detected compounds with surrogate recoveries above the upper control limit require no qualification.

All surrogate results were acceptable.

- **Precision**

Matrix Spike/Matrix Spike Duplicate Samples

Matrix spike/matrix spike duplicate results provide matrix-specific information on the precision of the method for specific target compound classes. Precision is expressed as the relative percent difference (RPD) between the recoveries of duplicate matrix spike analyses performed on a sample. For soil samples, results must be within RPD limits of plus/minus 30%. If RPD values are out of specification and the sample concentration is less than five times the spike concentration, all associated detected sample results are qualified as estimates and flagged "J". If RPD values are out of specification and the sample concentration is greater than five times the spike concentration, no qualification is required.

Due to RPDs outside QC limits (34% & 40%), all PCB results were qualified as estimates and flagged "J".

All other precision results were acceptable.

Field Duplicate Samples

One set of field duplicates (J18003/J17VN9) were submitted for analysis. Field duplicates are compared using the same criteria as for laboratory duplicates. All field duplicates results were acceptable.

- **Analytical Detection Levels**

Reported analytical detection levels are compared against the project specific RQLs to ensure that laboratory detection levels meet the required criteria. All analytes exceeded the RQL. Under the WCH statement of work, no qualification is required.

- **Completeness**

Data Package No. K1489 was submitted for validation and verified for completeness. Completeness is based on the percentage of data determined to be valid (i.e., not rejected). The completion percentage was 100%.

MAJOR DEFICIENCIES

None found.

MINOR DEFICIENCIES

The following minor deficiencies were noted:

- Due to RPDs outside QC limits (34% & 40%), all PCB results were qualified as estimates and flagged "J".

Data flagged "J" indicates that the associated concentration is an estimate, but under the WCH statement of work, the data may be usable for decision-making purposes. All other validated results are considered accurate within the standard error associated with the methods.

All analytes exceeded the RQL. Under the WCH statement of work, no qualification is required.

REFERENCES

Washington Closure Hanford Contract #S00W307A00 (March 2008), *Data Validation Services*.

DOE/RL-2008-11, Rev.0, *Remedial Investigation Work Plan for Hanford Site Releases to the Columbia River*, September 2008.

Appendix 1

Glossary of Data Reporting Qualifiers

Qualifiers which may be applied by data validators in compliance with the procedures herein are as follows:

U - Indicates the compound or analyte was analyzed for and not detected in the sample. The value reported is the sample quantitation limit corrected for sample dilution and moisture content by the laboratory.

UJ - Indicates the compound or analyte was analyzed for and not detected in the sample. Due to a minor QC deficiency identified during the data validation, the associated quantitation limit is an estimate

J - Indicates the compound or analyte was analyzed for and detected. Due to a minor QC deficiency identified during the data validation, the associated quantitation limit is an estimate.

R - Indicates the compound or analyte was analyzed for, detected, and due to an identified major QC deficiency, the data are unusable.

UR - Indicates the compound or analyte was analyzed for and not detected in the sample. Additionally, the data is unusable due to an identified major QC deficiency.

NJ - Indicates presumptive evidence of a compound at an estimated value. The data may not be valid for some specific applications (i.e., usable for decision-making purposes).

N - Indicates presumptive evidence of a compound. The data may not be valid for some specific applications (i.e., usable for decision-making purposes).

Appendix 2

Summary of Data Qualification

PCB DATA QUALIFICATION SUMMARY*

SDG: K1489	**REVIEWER: ELR**	**Project: RCBRA**	**QC Issue**
COMPOUND	QUALIFIER	SAMPLES AFFECTED	REASON
All	J	All	RPD

* - The Qualified Data Summary Table includes laboratory applied "U" qualifiers not specifically identified here. The laboratory applied "U" qualifiers are included to minimize misinterpretation of results contained in the table.

Appendix 3

Qualified Data Summary and Annotated Laboratory Reports

264 Welsh Pool R
Exton, PA 19
Phone: 610-280-3
Fax: 610-280-3

WC-Hanford, Inc.
2620 Fermi Avenue
Richland WA, 99354

Project: RC-116
Project Number: K1489
Project Manager: Joan Kessner

Reported:
03/30/2009 11:30

J18002

0812053-03 (Solid)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	No
Lionville Laboratory									
Polychlorinated Biphenyls by SW846 8082									
Aroclor 1016	ND	13.3	ug/kg wet	1	1903172	03/15/2009	03/21/2009	SW846 8082	
Aroclor 1221	ND	13.3	"	"	"	"	"	"	
Aroclor 1232	ND	13.3	"	"	"	"	"	"	
Aroclor 1242	ND	13.3	"	"	"	"	"	"	
Aroclor 1248	ND	13.3	"	"	"	"	"	"	
Aroclor 1254	ND	13.3	"	"	"	"	"	"	
Aroclor 1260	ND	13.3	"	"	"	"	"	"	
Surrogate: Decachlorobiphenyl		*80 %*	*43-144*		"	"	"	"	
Surrogate: Tetrachloro-meta-xylene		*73 %*	*12-141*		"	"	"	"	

11/27/05

LVL

204 Welsh Pool Rd
Exton, PA 193
Phone: 610-280-30
Fax: 610-280-30

WC-Hanford, Inc.
2620 Fermi Avenue
Richland WA, 99354

Project: RC-116
Project Number: K1489
Project Manager: Joan Kessner

Reported:
03/30/2009 11:30

J18003

0812053-04 (Solid)

Lionville Laboratory

Polychlorinated Biphenyls by SW846 8082

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Aroclor 1016	ND J	13.3	ug/kg wet	1	LY01122	03/13/2009	03/21/2009	SW846 8082	
Aroclor 1221	ND	13.3	"	"	"	"	"	"	
Aroclor 1232	ND	13.3	"	"	"	"	"	"	
Aroclor 1242	ND	13.3	"	"	"	"	"	"	
Aroclor 1248	ND	13.3	"	"	"	"	"	"	
Aroclor 1254	ND	13.3	"	"	"	"	"	"	
Aroclor 1260	ND	13.3	"	"	"	"	"	"	
Surrogate: Decachlorobiphenyl		*79 %*	*43-144*		"	"	"	"	
Surrogate: Tetrachloro-meta-xylene		*76 %*	*52-141*		"	"	"	"	

V
11/27/09

264 Walsh Pool R
Exton, PA 19,
Phone: 610-280-3
Fax: 610-280-3

WC-Hanford, Inc.
2620 Fermi Avenue
Richland WA, 99354

Project: RC-116
Project Number: K1489
Project Manager: Joan Kessner

Reported:
03/30/2009 11:10

J18016
0812053-05 (Solid)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	No
Lionville Laboratory									
Polychlorinated Biphenyls by SW846 8082									
Aroclor 1016	ND J	13.3	ug/kg wet	1	L903122	03/13/2009	03/23/2009	SW846 8082	
Aroclor 1221	ND	13.3	"	"	"	"	"	"	
Aroclor 1232	ND	13.3	"	"	"	"	"	"	
Aroclor 1242	ND	13.3	"	"	"	"	"	"	
Aroclor 1248	ND	13.3	"	"	"	"	"	"	
Aroclor 1254	ND	13.3	"	"	"	"	"	"	
Aroclor 1260	ND	13.3	"	"	"	"	"	"	
Surrogate: Decachlorobiphenyl		*79 %*	*43-144*		"	"	"	"	
Surrogate: Tetrachloro-meta-xylene		*77 %*	*52-141*		"	"	"	"	

11/27/09

264 Welsh Pool R
Exton, PA 19
Phone: 610-280-3
Fax: 610-280-3

WC-Hanford, Inc
2620 Fermi Avenue
Richland WA, 99354

Project: RC-116
Project Number: K1489
Project Manager: Joan Kessner

Reported:
03/30/2009 11:30

J18017

0812053-06 (Solid)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
			Lionville Laboratory						
Polychlorinated Biphenyls by SW846 8082									
Aroclor 1016	ND	13.3	ug/kg wet	1	0903122	03/15/2009	03/23/2009	SW846 8082	
Aroclor 1221	ND	13.3	"	"	"	"	"	"	
Aroclor 1232	ND	13.3	"	"	"	"	"	"	
Aroclor 1242	ND	13.3	"	"	"	"	"	"	
Aroclor 1248	ND	13.3	"	"	"	"	"	"	
Aroclor 1254	ND	13.3	"	"	"	"	"	"	
Aroclor 1260	ND	13.3	"	"	"	"	"	"	
Surrogate: Decachlorobiphenyl		*75 %*	*41-143*		"	"	"	"	
Surrogate: Tetrachloro-meta-xylene		*72 %*	*52-141*		"	"	"	"	

11/27/09

WC Hanford, Inc.
2620 Fermi Avenue
Richland WA, 99354

Project: RC-116
Project Number: K1489
Project Manager: Joan Kessner

Reported:
03/30/2009 11:10

J17VN9

0812053-07 (Solid)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Lionville Laboratory									
Polychlorinated Biphenyls by SW846 8082									
Aroclor 1016	ND J	13.3	ug/Kg wet	1	L903122	03/15/2009	03/25/2009	SW846 8082	
Aroclor 1221	ND	13.3	"	"	"	"	"	"	
Aroclor 1232	ND	13.3	"	"	"	"	"	"	
Aroclor 1242	ND	13.3	"	"	"	"	"	"	
Aroclor 1248	ND	13.3	"	"	"	"	"	"	
Aroclor 1254	ND	13.3	"	"	"	"	"	"	
Aroclor 1260	ND	13.3	"	"	"	"	"	"	
Surrogate: Decachlorobiphenyl		84 %	*43-144*		"	"	"	"	
Surrogate: Tetrachloro-meta-xylene		79 %	*52-141*		"	"	"	"	

VP 11/27/09

264 Welsh Pool R
Exton, PA 19
Phone 610-280-3
Fax: 610-280-3

WC-Hanford, Inc.
2620 Fermi Avenue
Richland WA, 99354

Project: RC-116
Project Number: K1489
Project Manager: Joan Kessner

Reported:
03/30/2009 11:30

J17YT4

0812053-08 (Solid)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	No
Lionville Laboratory									
Polychlorinated Biphenyls by SW846 8082									
Aroclor 1016	ND	13.3	ug/kg wet	1	L903122	03/13/2009	03/23/2009	SW846 8082	
Aroclor 1221	ND	13.3	"	"	"	"	"	"	
Aroclor 1232	ND	13.3	"	"	"	"	"	"	
Aroclor 1242	ND	13.3	"	"	"	"	"	"	
Aroclor 1248	ND	13.3	"	"	"	"	"	"	
Aroclor 1254	ND	13.3	"	"	"	"	"	"	
Aroclor 1260	ND	13.3	"	"	"	"	"	"	
Surrogate: Decachlorobiphenyl		*94 %*	*43-144*		"	"	"	"	
Surrogate: Tetrachloro-meta-xylene		*81 %*	*52-141*		"	"	"	"	

✓ 11/27/09

264 Welsh Pool R
Exton, PA 19
Phone: 610-280-3
Fax: 610-280-3

WC Hanford, Inc. 2620 Fermi Avenue Richland WA, 99354	Project: RC-116 Project Number: K1489 Project Manager: Joan Kessner	**Reported:** 03/10/2009 11:30

J17VT5

0812053-09 (Solid)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	No
				Lionville Laboratory					
Polychlorinated Biphenyls by SW846 8082									
Aroclor 1016	ND	13.3	ug/kg wet	1	L903122	03/15/2009	03/25/2009	SW846 8082	
Aroclor 1221	ND	13.3	"	"	"	"	"	"	
Aroclor 1232	ND	13.3	"	"	"	"	"	"	
Aroclor 1242	ND	13.3	"	"	"	"	"	"	
Aroclor 1248	ND	13.3	"	"	"	"	"	"	
Aroclor 1254	ND	13.3	"	"	"	"	"	"	
Aroclor 1260	ND	13.3	"	"	"	"	"	"	
Surrogate: Decachlorobiphenyl		*88 %*	*43-144*		"	"	"	"	
Surrogate: Tetrachloro-meta-xylene		*80 %*	*32-141*		"	"	"	"	

11/27/09

LVL

264 Welsh Pool R
Exton, PA 193
Phone: 610-280-30
Fax: 610-280-30

WC-Hanford, Inc.
2620 Fermi Avenue
Richland WA, 99354

Project: RC-116
Project Number: K1489
Project Manager: Joan Kessner

Reported:
03/30/2009 11:10

J17YV8

0812053-10 (Solid)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Not
Lionville Laboratory									
Polychlorinated Biphenyls by SW846 8082									
Aroclor 1016	ND J	13.3	ug/kg wet	1	1903127	03/13/2009	03/25/2009	SW846 8082	
Aroclor 1221	ND	13.3	"	"	"	"	"	"	
Aroclor 1232	ND	13.3	"	"	"	"	"	"	
Aroclor 1242	ND	13.3	"	"	"	"	"	"	
Aroclor 1248	ND	13.3	"	"	"	"	"	"	
Aroclor 1254	ND	13.3	"	"	"	"	"	"	
Aroclor 1260	ND	13.3	"	"	"	"	"	"	
Surrogate: Decachlorobiphenyl		*85 %*	*43-144*		"	"	"	"	
Surrogate: Tetrachloro-meta-xylene		*80 %*	*32-141*		"	"	"	"	

11/27/09

264 Welsh Pool Rd
Exton, PA 193
Phone: 610-280-30
Fax: 610-280-30

WC-Hanford, Inc.
2620 Fermi Avenue
Richland WA, 99354

Project: RC-116
Project Number: K1489
Project Manager: Joan Kessner

Reported:
03/30/2009 11:30

J17YV9

0812053-11 (Solid)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Lionville Laboratory								
Polychlorinated Biphenyls by SW846 8082								
Aroclor 1016	ND U	13.3	ug/kg wet	1	1903122	03/13/2009	03/26/2009	SW846 8082
Aroclor 1221	ND	13.3	"	"	"	"	"	"
Aroclor 1232	ND	13.3	"	"	"	"	"	"
Aroclor 1242	ND	13.3	"	"	"	"	"	"
Aroclor 1248	ND	13.3	"	"	"	"	"	"
Aroclor 1254	ND	13.3	"	"	"	"	"	"
Aroclor 1260	ND	13.3	"	"	"	"	"	"
Surrogate: Decachlorobiphenyl		92 %	*43-144*		"	"	"	"
Surrogate: Tetrachloro-meta-xylene		89 %	*52-141*		"	"	"	"

W 11/27/09

Appendix 4

Laboratory Narrative and Chain-of-Custody Documentation

264 Welsh Pool Road
Exton, Pennsylvania 19341
Phone (610) 280-3000
Fax (610) 280-3041

Case Narrative

Client: WC-HANFORD RC-116
LVL #: 0812053
SDG/SAF # K1489 / RC-116

W.O. #: 60049-001-001-0001-00
Date Received: 12-10-2008

PCBs

Nine (9) solid samples were collected on 12-08-2008.

The samples and associated QC samples were extracted on 03-15-2009 and analyzed according to Lionville Laboratory SOPs based on SW846, 3rd Edition procedure on 03-23,25,26-2009. The extraction procedure was based on method 3540C and the extracts were analyzed based on method 8082.

All soil samples are reported on a dry weight basis unless requested by the client, required by the method, or noted otherwise. The following is a summary of the QC results accompanying the sample results. Lionville Laboratory (LvL) certifies that all test results meet the requirements of NELAC except as noted below:

1. The samples were extracted outside of recommended hold time.
2. The samples and their associated QC samples received Copper-Sulfur and Sulfuric Acid cleanups according to Lionville Laboratory SOPs based on SW846 methods 3660A and 3665A respectively.
3. The method blank was below the reporting limits for all target compounds.
4. All obtainable surrogate recoveries were within acceptance criteria.
5. All blank spike recoveries were within acceptance criteria.
6. All matrix spike recoveries were within acceptance criteria.
7. All initial calibrations associated with this data set were within acceptance criteria.
8. All continuing calibration standards analyzed prior to sample extracts were within acceptance criteria.

The results presented in this report relate only to the analytical testing and condition of the samples at receipt and during storage. All pages of this report are integral parts of the analytical data. Therefore, this report should only be reproduced in its entirety of 19 pages.

9. LvL is NELAP accredited by the State of Pennsylvania. For a complete listing of accrediting authorities and the corresponding analytes/methods, please contact your Project Manager.

10. I certify that this sample data package is in compliance with SOW requirements, both technically and for completeness, other than the conditions detailed above. Release of the data contained in this hard-copy data package has been authorized by the laboratory manager or a designee as verified by the following signature.

Iain Daniels
Laboratory Manager
Lionville Laboratory

4/1/02
Date

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

WC-Hanford, Inc
2620 Fermi Avenue
Richland WA, 99354

Project: RC-116
Project Number: K1489 PCB
Project Manager: Joan Kessner

Reported:
03/30/2009 11:10

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
J18002	0812053-03	Solid	12/08/2008 14:15	12/10/2008 09:55
J18003	0812053-04	Solid	12/08/2008 13:35	12/10/2008 09:55
J18016	0812053-05	Solid	12/08/2008 14:50	12/10/2008 09:55
J18017	0812053-06	Solid	12/08/2008 15:35	12/10/2008 09:55
J17VN9	0812053-07	Solid	12/08/2008 13:45	12/10/2008 09:55
J17Y14	0812053-08	Solid	12/08/2008 10:20	12/10/2008 09:55
J17Y15	0812053-09	Solid	12/08/2008 09:30	12/10/2008 09:55
J17YV8	0812053-10	Solid	12/08/2008 11:30	12/10/2008 09:55
J17YV9	0812053-11	Solid	12/08/2008 12:10	12/10/2008 09:55

Collector J Moore	Company Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator WEISS, RL
Project Designation Columbia River Component of the RCBRA - Sediment	Sampling Location JS14-2 SD		SAF No. RC-116
Ice Chest No. WCH-08-0E6, 012	Field Logbook No. EL-1631-4	COA BESCRC6320	Method of Shipment FED EX
Shipped To EBERLINE SERVICES LIONVILLE	Offsite Property No. N/A		Bill of Lading/Air Bill No. 796171187284

Price Code 9K

Data Turnaround 45 Days

25

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

0000023

Preservation	None	None	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	None
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	aG	aG	G	-
No. of Container(s)	1	1	1	1	1	1	1	1	1	1
Volume	1500g	100g	10g	10g	250g	250g	125g	250g	250g	1*
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Technetium-99	See item (2) in Special Instructions	See item (3) in Special Instructions	PCBs - 8082	Pesticides - 8081	Semi-VOA - 8270A (TCL)	See item (4) in Special Instructions	-

Sample No.	Matrix *	Sample Date	Sample Time										
J18002	OTHER SOLID	12/08/08	1415					X	X	X	X	X	

- Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab.

CHAIN OF POSSESSION Sign/Print Names

Relinquished By/Removed From	Date/Time 12-08-08 / 1630	Received By/Stored In	Date/Time 12-08-08 / 1630
Relinquished By/Removed From Bridge B	Date/Time 12/9/08 0800	Received By/Stored In B Woodward	Date/Time 12/9/08 0800
Relinquished By/Removed From B Woodward	Date/Time 12/9/08 1130	Received By/Stored In FedEx	Date/Time 12/9/08 1630
Relinquished By/Removed From FedEx	Date/Time 12-10-08 0955	Received By/Stored In	Date/Time 12-10-08 0955
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) {Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238}

(2) Strontium-89,90 -- Total Sr; Isotopic Thorium {Thorium-232}; Isotopic Uranium {Uranium-233/234, Uranium-235, Uranium-238}; Isotopic Plutonium

(3) ICP Metals - 6010 (Full List) {Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc}; Mercury - 7471 - (CV)

(4) VOA - 8260A (TCL) {1,1,1-Trichloroethane, 1,1,2,2-Tetrachloroethane, 1,1,2-Trichloroethane, 1,1-Dichloroethane, 1,1-Dichloroethene, 1,2-Dichloroethane, 1,2-Dichloropropane, 2-Butanone, 2-Hexanone, 4-Methyl-2-Pentanone, Acetone, Benzene, Bromodichloromethane, Bromoform, Bromomethane, Carbon disulfide, Carbon tetrachloride, Chlorobenzene, Chloroethane, Chloroform, Chloromethane, cis-1,2-Dichloroethylene, cis-1,3-Dichloropropene, Dibromochloromethane, Ethylbenzene, Methylene chloride, Styrene, Tetrachloroethene, Toluene, trans-1,2-Dichloroethylene

Matrix *

S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

RC-116-545 Page 1 of 1

Collector J Moore	Company Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator WEISS, RL
Project Designation Columbia River Component of the RCBRA - Sediment	Sampling Location 1514 / SD		SAF No. RC-116
Ice Chest No. WCH-08-056,012	Field Logbook No. EL-1631-1	COA BESCRC6520	Method of Shipment FED EX
Shipped To EBERLINE SERVICES / LIONVILLE	Offsite Property No. N/A		Bill of Lading/Air Bill No. 7961711 87234

Price Code 9K

Data Turnaround 45 Days

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

0000224

Preservation	None	None	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	None
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	aG	aG	G	-
No. of Container(s)	1	1	1	1	1	1	1	1	1	1
Volume	1500g	100g	10g	10g	250g	250g	125g	250g	250g	1*
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Technetium-99	See item (2) in Special Instructions	See item (3) in Special Instructions	PCBs - 8082	Pesticides - 8081	Semi-VOA - 8270A (TCL)	See item (4) in Special Instructions	-

Sample No.	Matrix *	Sample Date	Sample Time										
118003	OTHER SOLID	12/08/08	1385					X	X	X	X	X	

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab.

CHAIN OF POSSESSION

Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
	12-08-08 / 1630	Re B	12-08-08/1630
Edge B	12/9/08 0800	B Woodward	12/9/08 0800
B Woodward	12/9/08 1130	FedEx	12/9/08 1130
FedEx	12-10-08 0955		12-10-08 0955

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) {Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238}
(2) Strontium-89,90 -- Total Sr; Isotopic Thorium {Thorium-232}; Isotopic Uranium {Uranium-233/234, Uranium-235, Uranium-238}; Isotopic Plutonium
(3) ICP Metals - 6010 (Full List) {Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc}; Mercury - 7471 - (CV)
(4) VOA - 8260A (TCL) {1,1,1-Trichloroethane, 1,1,2,2-Tetrachloroethane, 1,1,2-Trichloroethane, 1,1-Dichloroethane, 1,1-Dichloroethene, 1,2-Dichloroethane, 1,2-Dichloropropane, 2-Butanone, 2-Hexanone, 4-Methyl-2-Pentanone, Acetone, Benzene, Bromodichloromethane, Bromoform, Bromomethane, Carbon disulfide, Carbon tetrachloride, Chlorobenzene, Chloroethane, Chloroform, Chloromethane, cis-1,2-Dichloroethylene, cis-1,3-Dichloropropene, Dibromochloromethane, Ethylbenzene, Methylene chloride, Styrene, Tetrachloroethene, Toluene, trans-1,2-Dichloroethylene

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION
Received By
Title
Date/Time

FINAL SAMPLE DISPOSITION
Disposal Method
Disposed By
Date/Time

CH-EE-011

ollector 𝒫	Company Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator WEISS, RL
roject Designation Columbia River Component of the RCBRA - Sediment	Sampling Location 1515- 4 SD		SAF No. RC-116
ce Chest No. WCH 08-056,012	Field Logbook No. EL-1630-1	COA BESCRC6520	Method of Shipment FED EX
hipped To EBERLINE SERVICES/ [✓ LIONVILLE]	Offsite Property No. N/A		Bill of Lading/Air Bill No. 796171187784

Price Code 9K

Data Turnaround 45 Days

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

Preservation	None	None	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	None
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	aG	aG	G	*
No. of Container(s)	1	1	1	1	1	1	1	1	1	1
Volume	1500g	100g	10g	10g	250g	250g	125g	250g	250g	1*
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Technetium-99	See item (2) in Special Instructions	See item (3) in Special Instructions	PCBs - 8082	Pesticides - 8081	Semi-VOA - 8270A (TCL)	See item (4) in Special Instructions	-

Sample No.	Matrix *	Sample Date	Sample Time										
18016	OTHER SOLID	12/8/08	1450					X	X	X	X	X	

Samples unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab.

CHAIN OF POSSESSION

Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Kevin Fergol	12/8/08 1700	Ref. A	12/8/08 1700
Fridge A	12/9/08 0800	BWoodward	12/9/08 0850
BWoodward	12/9/08 1130	FedEx	12/9/08 1130
Fed Ex	[illegible] 0855	[illegible]	[illegible] 0855

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) {Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238}

(2) Strontium-89,90 -- Total Sr; Isotopic Thorium {Thorium-232}; Isotopic Uranium {Uranium-233/234, Uranium-235, Uranium-238}; Isotopic Plutonium

(3) ICP Metals - 6010 (Full List) {Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc}; Mercury - 7471 - (CV)

(4) VOA - 8260A (TCL) {1,1,1-Trichloroethane, 1,1,2,2-Tetrachloroethane, 1,1,2-Trichloroethane, 1,1-Dichloroethane, 1,1-Dichloroethene, 1,2-Dichloroethane, 1,2-Dichloropropane, 2-Butanone, 2-Hexanone, 4-Methyl-2-Pentanone, Acetone, Benzene, Bromodichloromethane, Bromoform, Bromomethane, Carbon disulfide, Carbon tetrachloride, Chlorobenzene, Chloroethane, Chloroform, Chloromethane, cis-1,2-Dichloroethylene, cis-1,3-Dichloropropene, Dibromochloromethane, Ethylbenzene, Methylene chloride, Styrene, Tetrachloroethene, Toluene, trans-1,2-Dichloroethylene

Matrix *

S = Soil
SE = Sediment
SO = Solid
SL = Sludge
W = Water
O = Oil
A = Air
DS = Drum Solids
DL = Drum Liquids
T = Tissue
WI = Wipe
L = Liquid
V = Vegetation
X = Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

Washington Closure Hanford

4/4

llector 55	**Company Contact** JOAN KESSNER	**Telephone No.** 375-4688	**Project Coordinator** WEISS, RL	**Price Code** 9K	**Data Turnaround** 45 Days
oject Designation Columbia River Component of the RCBRA - Sediment	**Sampling Location** 1S15- 5D		**SAP No.** RC-136		
e Chest No. WCH-08-012, 053	**Field Logbook No.** EL-1631-1	**COA** BESCRO6520	**Method of Shipment** FED EX		
hipped To EBERLINE SERVICES (LIONVILLE)	**Offsite Property No.** N/A		**Bill of Lading/Air Bill No.** 7961 711 87234		

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

9201026

Preservation	None	None	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	None
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	aG	aG	G	-
No. of Container(s)	1	1	1	1	1	1	1	1	1	1
Volume	1500g	100g	10g	10g	250g	250g	125g	250g	250g	1?
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Technetium-99	See item (2) in Special Instructions.	See item (3) in Special Instructions	PCBs - 8082	Pesticides - 8081	Semi-VOA - 8270A (TCL)	See item (4) in Special Instructions	-

Sample No.	Matrix *	Sample Date	Sample Time										
J1BD17	OTHER SOLID	12/8/08	1535					X	X	X	X	X	

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab.

CHAIN OF POSSESSION Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
	12/8/08 1700		12/8/08 1700
	12/9/08 0800		12/9/08 0800
	12/9/08 1130	Fedex	12/9/08 1130
	12/10/08 0955		12/10/08 0955

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) (Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238)

(2) Strontium-89,90 – Total Sr, Isotopic Thorium (Thorium-232); Isotopic Uranium (Uranium-233/234, Uranium-235, Uranium-238); Isotopic Plutonium

(3) ICP Metals - 6010 (Full List) (Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc); Mercury - 7471 - (CV)

(4) VOA - 8260A (TCL) (1,1,1-Trichloroethane, 1,1,2,2-Tetrachloroethane, 1,1,2-Trichloroethane, 1,1-Dichloroethane, 1,1-Dichloroethene, 1,2-Dichloroethane, 1,2-Dichloropropane, 2-Butanone, 2-Hexanone, 4-Methyl-2-Pentanone, Acetone, Benzene, Bromodichloromethane, Bromoform, Bromomethane, Carbon disulfide, Carbon tetrachloride, Chlorobenzene, Chloroethane, Chloroform, Chloromethane, cis-1,2-Dichloroethylene, cis-1,3-Dichloropropene, Dibromochloromethane, [illegible]

Matrix *

S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Collector J MOORE	**Company Contact** JOAN KESSNER	**Telephone No.** 375-4688	**Project Coordinator** WEISS, RL	**Price Code** 9K **Data Turnaround** 45 Days
Project Designation Columbia River Component of the RCBRA - Sediment	**Sampling Location** LSU4-150		**SAF No.** RC-116	
Ice Chest No. WCH-08-056, 012	**Field Logbook No.** EL-1635/-1	**COA** BESCRC6520	**Method of Shipment** FED EX	
Shipped To EBERLINE SERVICES (LIONVILLE)	**Offsite Property No.** N/A		**Bill of Lading/Air Bill No.** 796171187284	

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

Preservation	None	None	None	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C
Type of Container	G/P	G/P	G/P	G/P	G/P	G/P	aG	aG	aG	G
No. of Container(s)	1	1	1	1	1	1	1	1	1	1
Volume	1500g	100g	100g	10g	10g	250g	250g	120g	250g	250g
SAMPLE ANALYSIS	See item (1) in Special Instructions.	Carbon-14	Tritium - H3	Technetium-99	See item (2) in Special Instructions.	See item (3) in Special Instructions.	PCBs - 8082	Pesticides - 8081	Semi-VOA - 8270A (TCL)	See item (4) in Special Instructions.

Sample No.	Matrix *	Sample Date	Sample Time										
17VN9	OTHER SOLID	12/08/08	1345						X	X	X	X	X

Samples unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab.

CHAIN OF POSSESSION Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
	12 08 08 / 1630		12 08 08 / 1650
Fridge B	12/9/08 0800	B Woodward	12/9/08 0800
B Woodward	12/9/08 1130	FedEx	12/9/08 1130
FedEx	12-10-08 0935		12-10-08 0935

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) (Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238)
(2) Strontium-89,90 – Total Sr, Isotopic Thorium (Thorium-232), Isotopic Uranium (Uranium-233/234, Uranium-235, Uranium-238); Isotopic Plutonium
(3) ICP Metals - 6010 (Full List) (Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc); Mercury - 7471 - (CV)
(4) VOA - 8260A (TCL) (1,1,1-Trichloroethane, 1,1,2,2-Tetrachloroethane, 1,1,2-Trichloroethane, 1,1-Dichloroethane, 1,1-Dichloroethene, 1,2-Dichloroethane, 1,2-Dichloropropane, 2-Butanone, 2-Hexanone, 4-Methyl-2-Pentanone, Acetone, Benzene, Bromodichloromethane, Bromoform, Bromomethane, Carbon disulfide, Carbon tetrachloride, Chlorobenzene, Chloroethane, Chloroform, Chloromethane, cis-1,2-Dichloroethylene, cis-1,3-Dichloropropene, Dibromochloromethane, Ethylbenzene, Methylene chloride, Styrene, Tetrachloroethene, Toluene, trans-1,2-Dichloroethylene

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

Washington Closure Hanford CHAIN OF CUSTODY

Collector: J.S.

Project Designation: Columbia River Component of the RCBRA - Sediment

Ice Chest No: WCH-08-056.012

Shipped To: EBERLINE SERVICES (LIONVILLE)

Company Contact: JOAN KESSNER

Telephone No.: 373-4681

Sampling Location: HMSTD-2 SD

Field Logbook No.: EL-1631/-1

COA: BESCRG6370

Offsite Property No.: N/A

Project Coordinator: WEISS, RL

SAP No.: RC-116

Price Code: 9K

Data Turnaround: 45 Days

Method of Shipment: FED EX

Bill of Lading/Air Bill No.: 796171187234

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

Preservation	None	None	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	None
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	aG	aG	G	-
No. of Container(s)	1	1	1	1	1	1	1	1	1	1
Volume	1500g	100g	10g	10g	250g	250g	125g	250g	250g	1*
SAMPLE ANALYSIS	See item (1) in Special Instructions.	Carbon-14	Technetium-99	See item (2) in Special Instructions	See item (3) in Special Instructions.	PCBs - 8082	Pesticides - 8081	Semi-VOA - 8270A (TCL)	See item (4) in Special Instructions.	-

3201028

Sample No.	Matrix *	Sample Date	Sample Time										
J17YT4	OTHER SOLID	12/8/08	~~10/20/08~~ 1020					X	X	X	X	X	

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab.

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
[illegible]	12/8/08 1700	[illegible]	12/8/08 1700
[illegible]	12/9/08 0800	D. Heidelberg	12/9/08 0800
D Heidelberg	12/9/08 1130	FedEx	12/9/08 1130
FedEx	12-10-08 0955	[illegible]	12/10/08 0955

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) [Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238]
(2) Strontium-89,90 -- Total Sr, Isotopic Thorium (Thorium-232), Isotopic Uranium (Uranium-233/234, Uranium-235, Uranium-238); Isotopic Plutonium
(3) ICP Metals - 6010 (Full List) [Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc]; Mercury - 7471 - (CV)
(4) VOA - 8260A (TCL) [1,1,1-Trichloroethane, 1,1,2,2-Tetrachloroethane, 1,1,2-Trichloroethane, 1,1-Dichloroethane, 1,1-Dichloroethene, 1,2-Dichloroethane, 1,2-Dichloropropane, 2-Butanone, 2-Hexanone, 4-Methyl-2-Pentanone, Acetone, Benzene, Bromodichloromethane, Bromoform, Bromomethane, Carbon disulfide, Carbon tetrachloride, Chlorobenzene, Chloroethane, Chloroform, Chloromethane, cis-1,2-Dichloroethylene, cis-1,3-Dichloropropene, Dibromochloromethane,

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By		Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method		Disposed By	Date/Time

WCH-EE-011

Washington Closure Hanford

Collector 55	Company Contact JOAN KESSNER	Telephone No 375-4688	Project Coordinator WEISS, RL
Project Designation Columbia River Component of the RCBRA - Sediment	Sampling Location HMSTD-1 SD		SAF No. RC-116
Ice Chest No. WCH-08-056, 012	Field Logbook No. EL-1631-1	COA BESCRC6520	Method of Shipment FED EX
Shipped To EBERLINE SERVICES [✓ LIONVILLE]	Offsite Property No. N/A		Bill of Lading/Air Bill No. 796171187234

Price Code 9K

Data Turnaround 45 Days

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

[illegible]0029

Preservation	None	None	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	None
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	aG	aG	G	^
No. of Container(s)	1	1	1	1	1	1	1	1	1	1
Volume	1500g	100g	10g	10g	250g	250g	125g	250g	250g	1"
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Technetium-99	See item (2) in Special Instructions	See item (3) in Special Instructions	PCBs - 8082	Pesticides - 8081	Semi-VOA - 8270A (TCL)	See item (4) in Special Instructions	-

Sample No	Matrix *	Sample Date	Sample Time										
J17YT5	OTHER SOLID	12/8/08	0930					X	X	X	X	X	

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location using control of samples for shipment to lab.

CHAIN OF POSSESSION Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
[illegible]	12/8/08 1700	Fr. 4	12/8/08 1700
Fridge A	12/9/08 0800	B. Woodward	12/9/08 0800
B. Woodward	12/9/08 1130	Fed Ex	12/9/08 1130
Fed Ex	[illegible] 0935	[illegible]	[illegible] 0935

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) [Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238];
(2) Strontium-89,90 - Total Sr; Isotopic Thorium [Thorium-232]; Isotopic Uranium [Uranium-233/234, Uranium-235, Uranium-238]; Isotopic Plutonium
(3) ICP Metals - 6010 (Full List) {Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc}; Mercury - 7471 - (CV)
(4) VOA - 8260A (TCL) {1,1,1-Trichloroethane, 1,1,2,2-Tetrachloroethane, 1,1,2-Trichloroethane, 1,1-Dichloroethane, 1,1-Dichloroethene, 1,2-Dichloroethane, 1,2-Dichloropropane, 2-Butanone, 2-Hexanone, 4-Methyl-2-Pentanone, Acetone, Benzene, Bromodichloromethane, Bromoform, Bromomethane, Carbon disulfide, Carbon tetrachloride, Chlorobenzene, Chloroethane, Chloroform, Chloromethane, cis-1,2-Dichloroethylene, cis-1,3-Dichloropropene, Dibromochloromethane,

Matrix *

S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Collector J Moore	Company Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator WEISS, RL
Project Designation Columbia River Component of the RCBRA - Sediment	Sampling Location 1511-3 SD		SAP No. RC-116
Ice Chest No. WCH-08-056,012	Field Logbook No. EL-1631-1	COA BESCRC6630	Method of Shipment FED EX
Shipped To EBERLINE SERVICES [✓ LIONVILLE]	Offsite Property No. N/A		Bill of Lading/Air Bill No. 796171187234

Price Code 9K

Data Turnaround 45 Days

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

0000030

Preservation	None	None	[illegible]	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	None
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	aG	aG	G	-
No. of Container(s)	1	1	1	1	1	1	1	1	1	1
Volume	1500g	100g	10g	10g	250g	250g	125g	250g	250g	[illegible]
SAMPLE ANALYSIS	See item (1) in Special Instructions.	Carbon-14	Technetium-99	See item (2) in Special Instructions	See item (3) in Special Instructions	PCBs - 8082	Pesticides - 8081	Semi-VOA - 8270A (TCL)	See item (4) in Special Instructions	-

Sample No.	Matrix *	Sample Date	Sample Time										
J17YV8	OTHER SOLID	12/08/08	1130					X	X	X	X	X	

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time 12-08-08 1630	Received By/Stored In Hof A	Date/Time 12-08-08 1630
Relinquished By/Removed From Endoe B	Date/Time 12/9/08 0800	Received By/Stored In B Woodward	Date/Time 12/9/08 0800
Relinquished By/Removed From B Woodward	Date/Time 12/9/08 1130	Received By/Stored In FedEx	Date/Time 12/9/08 1130
Relinquished By/Removed From	Date/Time 12-10-08 0955	Received By/Stored In	Date/Time 12-10-08 0955
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time

SPECIAL INSTRUCTIONS

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab.

(1) Gamma Spec - (Full List) {Americium-241, [illegible] Beryllium-7, Cerium-144, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238}
(2) Strontium-89,90 -- Total Sr; Isotopic Thorium {Thorium-232}; Isotopic Uranium {Uranium-233/234, Uranium-235, Uranium-238}; Isotopic Plutonium
(3) ICP Metals - 6010 (Full List) {Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc}; Mercury - 7471 - (CV)
(4) VOA - 8260A (TCL) {1,1,1-Trichloroethane, 1,1,2,2-Tetrachloroethane, 1,1,2-Trichloroethane, 1,1-Dichloroethane, 1,1-Dichloroethene, 1,2-Dichloroethane, 1,2-Dichloropropane, 2-Butanone, 2-Hexanone, 4-Methyl-2-Pentanone, Acetone, Benzene, Bromodichloromethane, Bromoform, Bromomethane, Carbon disulfide, Carbon tetrachloride, Chlorobenzene, Chloroethane, Chloroform, Chloromethane, cis-1,2-Dichloroethylene, cis-1,3-Dichloropropene, Dibromochloromethane, Ethylbenzene, Methylene chloride, Styrene, Tetrachloroethene, Toluene, trans-1,2-Dichloroethylene

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Collector J MOORE	Company Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator WEISS, RL
Project Designation Columbia River Component of the RCBRA - Sediment	Sampling Location ISU- 5 SD		SAF No. RC-118
Ice Chest No. WCH-08-MGb-012	Field Logbook No. EL-1631-1	COA BESCRC6530	Method of Shipment FED EX
Shipped To EBERLINE SERVICES (LIONVILLE)	Offsite Property No. N/A		Bill of Lading/Air Bill No. 796171187234

Price Code 9K

Data Turnaround 45 Days

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

0000031

Preservation	None	None	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	None
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	aG	aG	G	-
No. of Container(s)	1	1	1	1	1	1	1	1	1	1
Volume	1500g	100g	10g	10g	250g	250g	125g	250g	250g	1*
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Technetium-99	See item (2) in Special Instructions	See item (3) in Special Instructions	PCBs - 8082	Pesticides - 8081	Semi VOA - 8270A (TCL)	See item (4) in Special Instructions	-

Sample No.	Matrix *	Sample Date	Sample Time										
J17YV9	OTHER SOLID	12/08/08	1210					X	X	X	X	X	

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab.

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
J Moore	12-08-08/1630	Ref 8	12-08-08/1630
Bridge B	12/9/08 0800	B Woodward	12/9/08 0800
B Woodward	12/9/08 1130	FedEx	12/9/08 1136
Fed Ex	12/10/08 0955		12/10/08 0955

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) [Americium-241, Antimony-125, Beryllium-7, Cerium-144, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238]
(2) Strontium-89,90 -- Total Sr; Isotopic Thorium [Thorium-232]; Isotopic Uranium [Uranium-233/234, Uranium-235, Uranium-238]; Isotopic Plutonium
(3) ICP Metals - 6010 (Full List) {Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc}; Mercury - 7471 - (CV)
(4) VOA - 8260A (TCL) {1,1,1-Trichloroethane, 1,1,2,2-Tetrachloroethane, 1,1,2-Trichloroethane, 1,1-Dichloroethane, 1,1-Dichloroethene, 1,2-Dichloroethane, 1,2-Dichloropropane, 2-Butanone, 2-Hexanone, 4-Methyl-2-Pentanone, Acetone, Benzene, Bromodichloromethane, Bromoform, Bromomethane, Carbon disulfide, Carbon tetrachloride, Chlorobenzene, Chloroethane, Chloroform, Chloromethane, cis-1,2-Dichloroethylene, cis-1,3-Dichloropropene, Dibromochloromethane, Ethylbenzene, Methylene chloride, Styrene, Tetrachloroethene, Toluene, trans-1,2-Dichloroethylene

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Appendix 5

Data Validation Supporting Documentation

PCB DATA VALIDATION CHECKLIST

VALIDATION LEVEL:	A	B	[✓ C]	D	E
PROJECT:	RCBRA		DATA PACKAGE:	K1499	
VALIDATOR:	ELR	LAB: LLI		DATE: 11/9/01	
			SDG:	K1487	
ANALYSES PERFORMED					
SW-846 8081	SW-846 8081 (TCLP)	[✓ SW-846 8082]	SW-846 8081 (TCLP)		

SAMPLES/MATRIX

J18002 J18003 J18016 J18017 J17VN9

J17YT4 J17YT5 J17YV8 J17YV9

solid

1. DATA PACKAGE COMPLETENESS AND CASE NARRATIVE

Technical verification documentation present? .... Yes [✓ No] N/A

Comments:

2. INSTRUMENT PERFORMANCE AND CALIBRATIONS (Levels D and E)

Initial calibrations acceptable? .... Yes No [✓ N/A]

Continuing calibrations acceptable? .... Yes No [✓ N/A]

Standards traceable? .... Yes No [✓ N/A]

Standards expired? .... Yes No [✓ N/A]

Calculation check acceptable? .... Yes No [✓ N/A]

DDT and endrin breakdowns acceptable? .... Yes No [✓ N/A]

Comments:

PCB DATA VALIDATION CHECKLIST

3. BLANKS (Levels B, C, D, and E)

Calibration blanks analyzed? (Levels D, E) .... Yes No [✓ N/A]

Calibration blank results acceptable? (Levels D, E) .... Yes No [✓ N/A]

Laboratory blanks analyzed? .... [✓ Yes] No N/A

Laboratory blank results acceptable? .... [✓ Yes] No N/A

Field/trip blanks analyzed? (Levels C, D, E) .... Yes [✓ No] N/A

Field/trip blank results acceptable? (Levels C, D, E) .... Yes No [✓ N/A]

Transcription/calculation errors? (Levels D, E) .... Yes No [✓ N/A]

Comments: no TB

4. ACCURACY (Levels C, D, and E)

Surrogates analyzed? .... [✓ Yes] No N/A

Surrogate recoveries acceptable? .... [✓ Yes] No N/A

Surrogates traceable? (Levels D, E) .... Yes No [✓ N/A]

Surrogates expired? (Levels D, E) .... Yes No [✓ N/A]

MS/MSD samples analyzed? .... [✓ Yes] No N/A

MS/MSD results acceptable? .... [✓ Yes] No N/A

MS/MSD standards NIST traceable? (Levels D, E) .... Yes No [✓ N/A]

MS/MSD standards expired? (Levels D, E) .... Yes No [✓ N/A]

LCS/BSS samples analyzed? .... [✓ Yes] No N/A

LCS/BSS results acceptable? .... [✓ Yes] No N/A

Standards traceable? (Levels D, E) .... Yes No [✓ N/A]

Standards expired? (Levels D, E) .... Yes No [✓ N/A]

Transcription/calculation errors? (Levels D, E) .... Yes No [✓ N/A]

Performance audit sample(s) analyzed? .... Yes [✓ No] N/A

Performance audit sample results acceptable? .... Yes No [✓ N/A]

Comments: no PES

PCB DATA VALIDATION CHECKLIST

5. PRECISION (Levels C, D, and E)

Duplicate RPD values acceptable? .... Yes [✓ No] N/A
Duplicate results acceptable? .... Yes [✓ No] N/A
MS/MSD standards NIST traceable? (Levels D, E) .... Yes No [✓ N/A]
MS/MSD standards expired? (Levels D, E) .... Yes No [✓ N/A]
Field duplicate RPD values acceptable? .... [✓ Yes] No N/A
Field split RPD values acceptable? .... Yes No [✓ N/A]
Transcription/calculation errors? (Levels D, E) .... Yes No [✓ N/A]
Comments: RPD ~ 34% + 40% = J all

6. SYSTEM PERFORMANCE (Levels D and E)

Chromatographic performance acceptable? .... Yes No [✓ N/A]
Positive results resolved acceptably? .... Yes No [✓ N/A]
Comments:

7. HOLDING TIMES (all levels)

Samples properly preserved? .... [✓ Yes] ~~No~~ N/A
Sample holding times acceptable? .... [✓ Yes] ~~No~~ N/A
Comments: ~~HT > 2x exceeded~~ UR

23 + 31 + 28 + 15 ~

PCB DATA VALIDATION CHECKLIST

8. COMPOUND IDENTIFICATION, QUANTITATION, AND DETECTION LIMITS (all levels)

Compound identification acceptable? (Levels D, E) .... Yes No [✓ N/A]

Compound quantitation acceptable? (Levels D, E) .... Yes No [✓ N/A]

Results reported for all requested analyses? .... [✓ Yes] No N/A

Results supported in the raw data? (Levels D, E) .... Yes No [✓ N/A]

Samples properly prepared? (Levels D, E) .... Yes No [✓ N/A]

Detection limits meet RDL? .... Yes [✓ No] N/A

Transcription/calculation errors? (Levels D, E) .... Yes No [✓ N/A]

Comments: all [illegible]

9. SAMPLE CLEANUP (Levels D and E)

Fluoricil ® (or other absorbent) cleanup performed? .... Yes No [✓ N/A]

Lot check performed? .... Yes No [✓ N/A]

Check recoveries acceptable? .... Yes No [✓ N/A]

GPC cleanup performed? .... Yes No [✓ N/A]

GPC check performed? .... Yes No [✓ N/A]

GPC check recoveries acceptable? .... Yes No [✓ N/A]

GPC calibration performed? .... Yes No [✓ N/A]

GPC calibration check performed? .... Yes No [✓ N/A]

GPC calibration check retention times acceptable? .... Yes No [✓ N/A]

Check/calibration materials traceable? .... Yes No [✓ N/A]

Check/calibration materials Expired? .... Yes No [✓ N/A]

Analytical batch QC given similar cleanup? .... Yes No [✓ N/A]

Transcription/Calculation Errors? .... Yes No [✓ N/A]

Comments:

Appendix 5

Additional Documentation Requested by Client

LVL Lionville Laboratory

264 Welsh Pool R
Exton, PA 19
Phone: 610-280-3
Fax: 610-280-3

WC-Hanford, Inc.
2620 Fermi Avenue
Richland WA, 99354

Project: RC-116
Project Number: K1489
Project Manager: Joan Kessner

Reported:
03/30/2009 11:30

Polychlorinated Biphenyls by SW846 8082 - Quality Control
Lionville Laboratory

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch L903122 - SW 3540C										
Blank (L903122-BLK1)				Prepared: 03/15/2009 Analyzed: 03/23/2009						
Aroclor 1016	ND	13.3	ug/kg wet							
Aroclor 1221	ND	13.3	"							
Aroclor 1232	ND	13.3	"							
Aroclor 1242	ND	13.3	"							
Aroclor 1248	ND	13.3	"							
Aroclor 1254	ND	13.3	"							
Aroclor 1260	ND	13.3	"							
Surrogate: Decachlorobiphenyl	*27.8*		"	*33.333*		*83*	*41-144*			
Surrogate: Tetrachloro-meta-xylene	*29.1*		"	*33.337*		*87*	*32-141*			
LCS (L903122-BS1)				Prepared: 03/15/2009 Analyzed: 03/23/2009						
Aroclor 1016	117	13.3	ug/kg wet	166.67		70	50-138			
Aroclor 1260	120	13.3	"	166.67		72	50-148			
Surrogate: Decachlorobiphenyl	*27.2*		"	*33.333*		*82*	*43-144*			
Surrogate: Tetrachloro-meta-xylene	*28.6*		"	*33.337*		*86*	*32-141*			
Matrix Spike (L903122-MS2)		Source: 0812053-03		Prepared: 03/15/2009 Analyzed: 03/25/2009						
Aroclor 1016	174	13.3	ug/kg wet	166.67	ND	104	50-138			
Aroclor 1260	200	13.3	"	166.67	ND	120	50-148			
Surrogate: Decachlorobiphenyl	*47.3*		"	*33.333*		*142*	*43-144*			
Surrogate: Tetrachloro-meta-xylene	*44.1*		"	*33.337*		*133*	*32-141*			
Matrix Spike Dup (L903122-MSD2)		Source: 0812053-03		Prepared: 03/15/2009 Analyzed: 03/25/2009						
Aroclor 1016	123	13.3	ug/kg wet	166.67	ND	74	50-138	34	40	
Aroclor 1260	133	13.3	"	166.67	ND	80	50-148	40	40	
Surrogate: Decachlorobiphenyl	*31.3*		"	*33.333*		*94*	*43-144*			
Surrogate: Tetrachloro-meta-xylene	*28.4*		"	*33.337*		*85*	*32-141*			

Date: 18 November 2009
To: Washington Closure Hanford Inc. (technical representative)
From: ELR Consulting
Project: Columbia River Component of the RCBRA – Sediment
Subject: Metals - Data Package No. K1489-EB

INTRODUCTION

This memo presents the results of data validation on Data Package No. K1489 prepared by Eberline Services (EB). A list of samples validated along with the analyses reported and the method of analysis is provided in the following table.

Sample ID	Sample Date	Media	Validation	Analysis
J17VN9	12/8/08	Solid	C	See note 1
J17XK6	12/8/08	Solid	C	See note 1
J17XK7	12/8/08	Solid	C	See note 1
J17XK8	12/8/08	Solid	C	See note 1
J17YT4	12/8/08	Solid	C	See note 1
J17YT5	12/8/08	Solid	C	See note 1
J17YV8	12/8/08	Solid	C	See note 1
J17YV9	12/8/08	Solid	C	See note 1
J17YW2	12/8/08	Solid	C	See note 1
J18002	12/8/08	Solid	C	See note 1
J18003	12/8/08	Solid	C	See note 1
J18004	12/8/08	Solid	C	See note 1
J18005	12/8/08	Solid	C	See note 1
J18006	12/8/08	Solid	C	See note 1
J18016	12/8/08	Solid	C	See note 1
J18017	12/8/08	Solid	C	See note 1

1 – ICP metals by 6010B and mercury by 7471A

Data validation was conducted in accordance with the Washington Closure Hanford (WCH) validation statement of work and the Remedial Investigation Work Plan for Hanford Site Releases to the Columbia River (DOE/RL-2008-11, Rev. 0, September 2008). Appendices 1 through 6 provide the following information as indicated below:

Appendix 1. Glossary of Data Reporting Qualifiers
Appendix 2. Summary of Data Qualification
Appendix 3. Qualified Data Summary and Annotated Laboratory Reports
Appendix 4. Laboratory Narrative and Chain-of-Custody Documentation
Appendix 5. Data Validation Supporting Documentation
Appendix 6. Additional Documentation Requested by Client

DATA QUALITY PARAMETERS

- **Holding Times**

Analytical holding times for metals are assessed to ascertain whether the holding time requirements were met by the laboratory. The holding time requirements are as follows: Soil samples must be analyzed within 6 months for ICP metals and 28 days for mercury.

Due to the holding time being exceeded by less than twice the limit, all mercury results were qualified as estimates and flagged "J".

All other holding times were acceptable.

- **Preparation (Method) Blanks**

Preparation Blanks

At least one preparation blank, consisting of deionized distilled water processed through each sample preparation and analysis procedure, must be prepared and analyzed with every sample delivery group. In the case of positive blank results, samples with digestate concentrations less than five times the preparation blank value have had their associated values qualified as non-detected and flagged "U". Samples with concentrations of greater than five times the highest blank concentration do not require qualification.

In the case of negative blank results, if the absolute value exceeds the contract required detection limit (CRDL), all nondetects are rejected and flagged "UR" and all detects that are less than ten times the absolute value of the associated preparation blank result are qualified as estimates and flagged "J". If the absolute value of the negative preparation blank is greater than the instrument detection limit (IDL) and less than or equal to the CRDL, all nondetects are qualified as estimates and flagged "UJ" and all detects less than ten times the absolute value of the blank are qualified as estimates and flagged "J". If the sample results are greater than ten times the absolute value of the preparation blank, no qualification is necessary.

Due to method blank contamination, all detected mercury results were qualified as undetected and flagged "UJ".

All other preparation blank results were acceptable.

Field (Equipment) Blank

No field blanks were submitted for analysis.

- **Accuracy**

Matrix Spike and Laboratory Control Sample

Matrix spike (MS) and laboratory control sample (LCS) analyses are used to assess the analytical accuracy of the reported data The matrix spike is used to assess the effect of the matrix on the ability to accurately quantify sample concentrations. Recoveries must fall within the range of 70% to 130%. Samples with a recovery of less than 30% and a sample result below the IDL are rejected and flagged "UR". Samples with a recovery of 30% to 69% and a sample result less than the IDL are qualified "UJ". Samples with a recovery of greater than 130% or less than 70% and a sample result greater than the IDL are qualified as estimates and flagged "J". Finally, for samples with a recovery greater than 130% and a sample result less than the IDL, no qualification is required.

Due to matrix spike recoveries outside QC limits, all antimony (48%) and cadmium (65%) results were qualified as estimates and flagged "J".

Due to an LCS recovery outside QC limits, all arsenic (171%), iron (143%), vanadium (188%), lead (58%) and thallium (0%) results were qualified as estimates and flagged "J"

All other accuracy results were acceptable.

- **Precision**

Laboratory Duplicate Samples

Analytical precision is expressed by the relative percent differences (RPD) between the recoveries of matrix spike duplicate (MSD) analyses performed on a sample in the analytical batch. Precision may alternatively be assessed using unspiked duplicate analyses performed on a sample in the analytical batch. If both sample and replicate activities (concentrations) are greater than five times the CRDL and the RPD is less than 30%, no qualification is required. If either activity (concentration) is less than five times the CRDL, the RPD control limit is less than or equal to two times the CRDL. If the RPD is outside the applicable control limit, associated results are qualified as estimated detects or estimated non-detects.

All laboratory duplicate results were acceptable.

Field Duplicate

One set of field duplicates (J18003/J17VN9) were submitted for analysis. Field duplicates are compared using the same criteria as for laboratory duplicates. All field duplicates results were acceptable.

- **Analytical Detection Levels**

Reported analytical detection levels are compared against the project RQLs to ensure that laboratory detection levels meet the required criteria. All bismuth and tin results exceeded the RQL. Under the WCH statement of work, no qualification is required. All other results met the RQL.

- **Completeness**

Data package No. K1489 was submitted for validation and verified for completeness. Completeness is based on the percentage of data determined to be valid (i.e., not rejected). The completion percentage was 100%.

MAJOR DEFICIENCIES

None found.

MINOR DEFICIENCIES

The following minor deficiencies were noted:

- Due to the holding time being exceeded by less than twice the limit, all mercury results were qualified as estimates and flagged "J".
- Due to method blank contamination, all detected mercury results were qualified as undetected and flagged "UJ".
- Due to matrix spike recoveries outside QC limits, all antimony (48%) and cadmium (65%) results were qualified as estimates and flagged "J".
- Due to an LCS recovery outside QC limits, all arsenic (171%), iron (143%), vanadium (188%), lead (58%) and thallium (0%) results were qualified as estimates and flagged "J"

Data flagged "J" indicates that the associated concentration is an estimate, but under the WCH statement of work, the data may be usable for decision-making purposes. All other validated results are considered accurate within the standard error associated with the methods.

REFERENCES

Washington Closure Hanford Contract #S00W307A00 (March 2008), *Data Validation Services.*

DOE/RL-2008-11, Rev.0, *Remedial Investigation Work Plan for Hanford Site Releases to the Columbia River*, September 2008.

Appendix 1

Glossary of Data Reporting Qualifiers

Qualifiers which may be applied by data validators in compliance with WCH validation SOW are as follows:

U - Indicates the compound or analyte was analyzed for and not detected in the sample. The value reported is the sample quantitation limit corrected for sample dilution and moisture content by the laboratory.

UJ - Indicates the compound or analyte was analyzed for and not detected in the sample. Due to a minor QC deficiency identified during the data validation, the associated quantitation limit is an estimate.

J - Indicates the compound or analyte was analyzed for and detected. Due to a minor QC deficiency identified during the data validation, the associated concentration is an estimate, but the data are usable for decision-making purposes.

BJ - Applied to inorganic analyses only. Indicates the analyte concentration was greater than the IDL but less than the CRDL and is considered an estimated value

R - Indicates the compound or analyte was analyzed for, detected, and due to an identified major QC deficiency, the data are unusable.

UR - Indicates the compound or analyte was analyzed for and not detected in the sample. Additionally, the data is unusable due to an identified major QC deficiency.

NJ - Indicates presumptive evidence of a compound at an estimated value. The data may not be valid for some specific applications (i.e., usable for decision-making purposes).

N - Indicates presumptive evidence of a compound. The data may not be valid for some specific applications (i.e., usable for decision-making purposes).

Appendix 2

Summary of Data Qualification

METALS ORGANIC DATA QUALIFICATION SUMMARY*

SDG: K1489	**REVIEWER: ELR**	**Project: RCBRA**	**QC Issue**
COMPOUND	QUALIFIER	SAMPLES AFFECTED	REASON
Mercury	J	All	Hold time
Mercury	UJ	J18002, J17XK7 J18004, J18005 J18006,	Method blank contamination
Antimony Cadmium	J	All	MS recovery
Arsenic Iron Vanadium Lead Thallium	J	All	LCS

* - The Qualified Data Summary Table includes laboratory applied "U" qualifiers not specifically identified here. The laboratory applied "U" qualifiers are included to minimize misinterpretation of results contained in the table.

Appendix 3

Qualified Data Summary and Annotated Laboratory Reports

LVL
208 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

WC-Hanford, Inc
2620 Fermi Avenue
Richland WA, 99354

Project: RC 116
Project Number: K1489
Project Manager: Joan Kessner

Reported:
08/13/2009 12:56

J17VN9
0812053-07 (Other Solid)

Analyte	Result and Qualifier	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Lionville Laboratory								
Metals by SW846 6000/7000 series								
Mercury	0.0300 U J	0.0300	mg/kg wet	1	L901076	01/15/2009	01/16/2009	7471A
Aluminum	4760	6.94	mg/kg wet	1	L902113	02/18/2009	02/20/2009	6010B
Antimony	0.833 U J	0.833	mg/kg wet	1	L902113	02/18/2009	02/20/2009	6010B
Arsenic	1.70 J	1.39	mg/kg wet	1	L902113	02/18/2009	02/20/2009	6010B
Barium	30.3	0.694	mg/kg wet	1	L902113	02/18/2009	02/20/2009	6010B
Beryllium	0.167 B	0.278	mg/kg wet	1	L902113	02/18/2009	02/20/2009	6010B
Bismuth	13.9 U	13.9	mg/kg wet	1	L902113	02/18/2009	02/20/2009	6010B
Boron	0.524 B	2.78	mg/kg wet	1	L902113	02/18/2009	02/20/2009	6010B
Cadmium	0.278 U J	0.278	mg/kg wet	1	L902113	02/18/2009	02/20/2009	6010B
Calcium	1420	13.9	mg/kg wet	1	L902113	02/18/2009	02/20/2009	6010B
Chromium	8.12	0.278	mg/kg wet	1	L902113	02/18/2009	02/20/2009	6010B
Cobalt	2.79	2.78	mg/kg wet	1	L902113	02/18/2009	02/20/2009	6010B
Copper	3.81	1.39	mg/kg wet	1	L902113	02/18/2009	02/20/2009	6010B
Iron	7620 J	27.8	mg/kg wet	1	L902113	02/18/2009	02/20/2009	6010B
Lead	2.12 J	0.694	mg/kg wet	1	L902113	02/18/2009	02/20/2009	6010B
Lithium	6.74	3.47	mg/kg wet	1	L902113	02/18/2009	02/20/2009	6010B
Magnesium	2340	104	mg/kg wet	1	L902113	02/18/2009	02/20/2009	6010B
Manganese	112	6.94	mg/kg wet	1	L902113	02/18/2009	02/20/2009	6010B
Molybdenum	0.141 B	2.78	mg/kg wet	1	L902113	02/18/2009	02/20/2009	6010B
Nickel	6.56	5.56	mg/kg wet	1	L902113	02/18/2009	02/20/2009	6010B
Phosphorus	184	69.4	mg/kg wet	1	L902113	02/18/2009	02/20/2009	6010B
Potassium	659	556	mg/kg wet	1	L902113	02/18/2009	02/20/2009	6010B
Selenium	1.39 U	1.39	mg/kg wet	1	L902113	02/18/2009	02/20/2009	6010B
Silicon	590	2.78	mg/kg wet	1	L902113	02/18/2009	02/20/2009	6010B
Silver	0.278 U	0.278	mg/kg wet	1	L902113	02/18/2009	02/20/2009	6010B
Sodium	56.4 B	69.4	mg/kg wet	1	L902113	02/18/2009	02/20/2009	6010B
Strontium	10.2	1.39	mg/kg wet	1	L902113	02/18/2009	02/20/2009	6010B
Thallium	0.694 U J	0.694	mg/kg wet	1	L902113	02/18/2009	02/20/2009	6010B
Tin	13.9 U	13.9	mg/kg wet	1	L902113	02/18/2009	02/20/2009	6010B
Uranium	27.8 U	27.8	mg/kg wet	1	L902113	02/18/2009	02/20/2009	6010B
Vanadium	12.8 J	3.47	mg/kg wet	1	L902113	02/18/2009	02/20/2009	6010B
Zinc	22.4	13.9	mg/kg wet	1	L902113	02/18/2009	02/20/2009	6010B

11/20/09

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WC-Hanford, Inc. 2620 Fermi Avenue Richland WA, 99354	Project: RC-116 Project Number: K1489 Project Manager: Joan Kessner	Reported: 03/13/2009 12:56

J17XK6

0812054-12 (Other Solid)

Lionville Laboratory

Analyte	Result and Qualifier		Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Metals by SW846 6000/7000 series									
Mercury	0.0300	U J	0.0300	mg/kg wet	1	L901076	01/15/2009	01/16/2009	7471A
Aluminum	9540		7.69	mg/kg wet	1	L902113	02/18/2009	02/20/2009	6010B
Antimony	0.923	U J	0.923	mg/kg wet	1	L902113	02/18/2009	02/20/2009	6010B
Arsenic	2.37	J	1.54	mg/kg wet	1	L902113	02/18/2009	02/20/2009	6010B
Barium	58.2		0.769	mg/kg wet	1	L902113	02/18/2009	02/20/2009	6010B
Beryllium	0.372		0.308	mg/kg wet	1	L902113	02/18/2009	02/20/2009	6010B
Bismuth	15.4	U	15.4	mg/kg wet	1	L902113	02/18/2009	02/20/2009	6010B
Boron	1.24	B	3.08	mg/kg wet	1	L902113	02/18/2009	02/20/2009	6010B
Cadmium	0.140	~~B~~ J	0.308	mg/kg wet	1	L902113	02/18/2009	02/20/2009	6010B
Calcium	4430		1.54	mg/kg wet	1	L902113	02/18/2009	02/20/2009	6010B
Chromium	16.4		0.308	mg/kg wet	1	L902113	02/18/2009	02/20/2009	6010B
Cobalt	4.44		3.08	mg/kg wet	1	L902113	02/18/2009	02/20/2009	6010B
Copper	10.0		1.54	mg/kg wet	1	L902113	02/18/2009	02/20/2009	6010B
Iron	17400	J	30.8	mg/kg wet	1	L902113	02/18/2009	02/20/2009	6010B
Lead	4.09	J	0.769	mg/kg wet	1	L902113	02/18/2009	02/20/2009	6010B
Lithium	9.18		3.85	mg/kg wet	1	L902113	02/18/2009	02/20/2009	6010B
Magnesium	3810		15.4	mg/kg wet	1	L902113	02/18/2009	02/20/2009	6010B
Manganese	181		7.69	mg/kg wet	1	L902113	02/18/2009	02/20/2009	6010B
Molybdenum	0.225	B	3.08	mg/kg wet	1	L902113	02/18/2009	02/20/2009	6010B
Nickel	9.67		6.15	mg/kg wet	1	L902113	02/18/2009	02/20/2009	6010B
Phosphorus	392		76.9	mg/kg wet	1	L902113	02/18/2009	02/20/2009	6010B
Potassium	1050		61.5	mg/kg wet	1	L902113	02/18/2009	02/20/2009	6010B
Selenium	1.54	U	1.54	mg/kg wet	1	L902113	02/18/2009	02/20/2009	6010B
Silicon	919		3.08	mg/kg wet	1	L902113	02/18/2009	02/20/2009	6010B
Silver	0.308	U	0.308	mg/kg wet	1	L902113	02/18/2009	02/20/2009	6010B
Sodium	116		76.9	mg/kg wet	1	L902113	02/18/2009	02/20/2009	6010B
Strontium	22.5		1.54	mg/kg wet	1	L902113	02/18/2009	02/20/2009	6010B
Thallium	0.769	U J	0.769	mg/kg wet	1	L902113	02/18/2009	02/20/2009	6010B
Tin	15.4	U	15.4	mg/kg wet	1	L902113	02/18/2009	02/20/2009	6010B
Uranium	30.8	U	30.8	mg/kg wet	1	L902113	02/18/2009	02/20/2009	6010B
Vanadium	39.4	J	3.85	mg/kg wet	1	L902113	02/18/2009	02/20/2009	6010B
Zinc	45.7		15.4	mg/kg wet	1	L902113	02/18/2009	02/20/2009	6010B

11/28/09

LVL
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WC Hanford, Inc. 2620 Fermi Avenue Richland WA, 99354	Project: RC-116 Project Number: K1489 Project Manager: Joan Kessner	Reported: 03/13/2009 17:56

J17XK7

0812053-13 (Other Solid)

Analyte	Result and Qualifier	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Lionville Laboratory								
Metals by SW846 6000/7000 series								
Mercury	0.0236 UJ	0.0300	mg/kg wet	1	L901076	01/13/2009	01/14/2009	7471A
Aluminum	9640	7.25	mg/kg wet	1	L902113	02/18/2009	02/20/2009	6010B
Antimony	0.870 U J	0.870	mg/kg wet	1	L902113	02/18/2009	02/20/2009	6010B
Arsenic	3.42 J	1.45	mg/kg wet	1	L902113	02/18/2009	02/20/2009	6010B
Barium	55.7	0.725	mg/kg wet	1	L902113	02/18/2009	02/20/2009	6010B
Beryllium	0.369	0.290	mg/kg wet	1	L902113	02/18/2009	02/20/2009	6010B
Bismuth	14.5 U	14.5	mg/kg wet	1	L902113	02/18/2009	02/20/2009	6010B
Boron	1.24 B	2.90	mg/kg wet	1	L902113	02/18/2009	02/20/2009	6010B
Cadmium	0.140 J	0.290	mg/kg wet	1	L902113	02/18/2009	02/20/2009	6010B
Calcium	4530	145	mg/kg wet	1	L902113	02/18/2009	02/20/2009	6010B
Chromium	14.0	0.290	mg/kg wet	1	L902113	02/18/2009	02/20/2009	6010B
Cobalt	4.35	2.90	mg/kg wet	1	L902113	02/18/2009	02/20/2009	6010B
Copper	9.72	1.45	mg/kg wet	1	L902113	02/18/2009	02/20/2009	6010B
Iron	14100 J	29.0	mg/kg wet	1	L902113	02/18/2009	02/20/2009	6010B
Lead	4.19 J	0.725	mg/kg wet	1	L902113	02/18/2009	02/20/2009	6010B
Lithium	9.12	3.62	mg/kg wet	1	L902113	02/18/2009	02/20/2009	6010B
Magnesium	3850	109	mg/kg wet	1	L902113	02/18/2009	02/20/2009	6010B
Manganese	184	7.25	mg/kg wet	1	L902113	02/18/2009	02/20/2009	6010B
Molybdenum	0.218 B	2.90	mg/kg wet	1	L902113	02/18/2009	02/20/2009	6010B
Nickel	9.33	5.80	mg/kg wet	1	L902113	02/18/2009	02/20/2009	6010B
Phosphorus	371	72.5	mg/kg wet	1	L902113	02/18/2009	02/20/2009	6010B
Potassium	1060	580	mg/kg wet	1	L902113	02/18/2009	02/20/2009	6010B
Selenium	1.45 U	1.45	mg/kg wet	1	L902113	02/18/2009	02/20/2009	6010B
Silicon	906	2.90	mg/kg wet	1	L902113	02/18/2009	02/20/2009	6010B
Silver	0.290 U	0.290	mg/kg wet	1	L902113	02/18/2009	02/20/2009	6010B
Sodium	114	72.5	mg/kg wet	1	L902113	02/18/2009	02/20/2009	6010B
Strontium	24.3	1.45	mg/kg wet	1	L902113	02/18/2009	02/20/2009	6010B
Thallium	0.725 U J	0.725	mg/kg wet	1	L902113	02/18/2009	02/20/2009	6010B
Tin	14.5 U	14.5	mg/kg wet	1	L902113	02/18/2009	02/20/2009	6010B
Uranium	29.0 U	29.0	mg/kg wet	1	L902113	02/18/2009	02/20/2009	6010B
Vanadium	28.6 J	3.62	mg/kg wet	1	L902113	02/18/2009	02/20/2009	6010B
Zinc	42.6	14.5	mg/kg wet	1	L902113	02/18/2009	02/20/2009	6010B

11/24/09

LVL

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WC Hanford, Inc 2620 Fermi Avenue Richland WA, 99354	Project: RC Tie Project Number: K1489 Project Manager: Joan Kessner	**Reported:** 03/13/2009 12:36

J17XK8

0812053-14 (Other Solid)

Lionville Laboratory

Metals by SW846 6000/7000 series

Analyte	Result and Qualifier	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Mercury	0.0300 U J	0.0300	mg/kg wet	1	L901076	01/15/2009	01/16/2009	7471A
Aluminum	8650	7.58	mg/kg wet	1	L902113	02/18/2009	02/20/2009	6010B
Antimony	0.909 U J	0.909	mg/kg wet	1	L902113	02/18/2009	02/20/2009	6010B
Arsenic	3.66 J	1.52	mg/kg wet	1	L902113	02/18/2009	02/20/2009	6010B
Barium	56.5	0.758	mg/kg wet	1	L902113	02/18/2009	02/20/2009	6010B
Beryllium	0.299	0.303	mg/kg wet	1	L902113	02/18/2009	02/20/2009	6010B
Bismuth	15.2 U	15.2	mg/kg wet	1	L902113	02/18/2009	02/20/2009	6010B
Boron	1.32 B	3.03	mg/kg wet	1	L902113	02/18/2009	02/20/2009	6010B
Cadmium	0.276 J	0.303	mg/kg wet	1	L902113	02/18/2009	02/20/2009	6010B
Calcium	5150	152	mg/kg wet	1	L902113	02/18/2009	02/20/2009	6010B
Chromium	14.4	0.303	mg/kg wet	1	L902113	02/18/2009	02/20/2009	6010B
Cobalt	4.31	3.03	mg/kg wet	1	L902113	02/18/2009	02/20/2009	6010B
Copper	11.8	1.52	mg/kg wet	1	L902113	02/18/2009	02/20/2009	6010B
Iron	14300 J	30.3	mg/kg wet	1	L902113	02/18/2009	02/20/2009	6010B
Lead	8.38 J	0.758	mg/kg wet	1	L902113	02/18/2009	02/20/2009	6010B
Lithium	8.80	3.79	mg/kg wet	1	L902113	02/18/2009	02/20/2009	6010B
Magnesium	3890	114	mg/kg wet	1	L902113	02/18/2009	02/20/2009	6010B
Manganese	150	7.58	mg/kg wet	1	L902113	02/18/2009	02/20/2009	6010B
Molybdenum	0.372 B	3.03	mg/kg wet	1	L902113	02/18/2009	02/20/2009	6010B
Nickel	9.77	6.06	mg/kg wet	1	L902113	02/18/2009	02/20/2009	6010B
Phosphorus	403	75.8	mg/kg wet	1	L902113	02/18/2009	02/20/2009	6010B
Potassium	1040	606	mg/kg wet	1	L902113	02/18/2009	02/20/2009	6010B
Selenium	1.52 U	1.52	mg/kg wet	1	L902113	02/18/2009	02/20/2009	6010B
Silicon	980	3.03	mg/kg wet	1	L902113	02/18/2009	02/20/2009	6010B
Silver	0.303 U	0.303	mg/kg wet	1	L902113	02/18/2009	02/20/2009	6010B
Sodium	199	75.8	mg/kg wet	1	L902113	02/18/2009	02/20/2009	6010B
Strontium	25.5	1.52	mg/kg wet	1	L902113	02/18/2009	02/20/2009	6010B
Thallium	0.758 U J	0.758	mg/kg wet	1	L902113	02/18/2009	02/20/2009	6010B
Tin	15.2 U	15.2	mg/kg wet	1	L902113	02/18/2009	02/20/2009	6010B
Titanium	30.3 U	30.3	mg/kg wet	1	L902113	02/18/2009	02/20/2009	6010B
Vanadium	20.5 J	3.79	mg/kg wet	1	L902113	02/18/2009	02/20/2009	6010B
Zinc	79.5	15.2	mg/kg wet	1	L902113	02/18/2009	02/20/2009	6010B

11/27/09

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WC Hanford, Inc 2620 Fermi Avenue Richland WA, 99354	Project: RC-116 Project Number: K1489 Project Manager: Joan Kessner	Reported: 03/13/2009 17:56

J17YT4

0812053-08 (Other Solid)

Lionville Laboratory

Metals by SW846 6000/7000 series

Analyte	Result and Qualifier	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Mercury	0.0100 U J	0.0300	mg/kg wet	1	1901076	01/15/2009	01/16/2009	7471A
Aluminum	7200	6.49	mg/kg wet	1	1902113	02/18/2009	02/20/2009	6010B
Antimony	0.779 U J	0.779	mg/kg wet	1	1902113	02/18/2009	02/20/2009	6010B
Arsenic	1.54 J	1.30	mg/kg wet	1	1902113	02/18/2009	02/20/2009	6010B
Barium	45.3	0.649	mg/kg wet	1	1902113	02/18/2009	02/20/2009	6010B
Beryllium	0.263	0.260	mg/kg wet	1	1902113	02/18/2009	02/20/2009	6010B
Bismuth	13.0 U	13.0	mg/kg wet	1	1902113	02/18/2009	02/20/2009	6010B
Boron	0.995 B	2.60	mg/kg wet	1	1902113	02/18/2009	02/20/2009	6010B
Cadmium	0.138 B J	0.260	mg/kg wet	1	1902113	02/18/2009	02/20/2009	6010B
Calcium	3260	13.0	mg/kg wet	1	1902113	02/18/2009	02/20/2009	6010B
Chromium	13.5	0.260	mg/kg wet	1	1902113	02/18/2009	02/20/2009	6010B
Cobalt	3.97	2.60	mg/kg wet	1	1902113	02/18/2009	02/20/2009	6010B
Copper	11.8	1.30	mg/kg wet	1	1902113	02/18/2009	02/20/2009	6010B
Iron	14100 J	26.0	mg/kg wet	1	1902113	02/18/2009	02/20/2009	6010B
Lead	5.61 J	0.649	mg/kg wet	1	1902113	02/18/2009	02/20/2009	6010B
Lithium	7.40	3.25	mg/kg wet	1	1902113	02/18/2009	02/20/2009	6010B
Magnesium	3290	97.4	mg/kg wet	1	1902113	02/18/2009	02/20/2009	6010B
Manganese	200	6.49	mg/kg wet	1	1902113	02/18/2009	02/20/2009	6010B
Molybdenum	0.353 B	2.60	mg/kg wet	1	1902113	02/18/2009	02/20/2009	6010B
Nickel	9.31	5.19	mg/kg wet	1	1902113	02/18/2009	02/20/2009	6010B
Phosphorus	154	64.9	mg/kg wet	1	1902113	02/18/2009	02/20/2009	6010B
Potassium	848	519	mg/kg wet	1	1902113	02/18/2009	02/20/2009	6010B
Selenium	1.30 U	1.30	mg/kg wet	1	1902113	02/18/2009	02/20/2009	6010B
Silicon	716	2.60	mg/kg wet	1	1902113	02/18/2009	02/20/2009	6010B
Silver	0.260 U	0.260	mg/kg wet	1	1902113	02/18/2009	02/20/2009	6010B
Sodium	152	64.9	mg/kg wet	1	1902113	02/18/2009	02/20/2009	6010B
Strontium	18.5	1.30	mg/kg wet	1	1902113	02/18/2009	02/20/2009	6010B
Thallium	0.649 U J	0.649	mg/kg wet	1	1902113	02/18/2009	02/20/2009	6010B
Tin	13.0 U	13.0	mg/kg wet	1	1902113	02/18/2009	02/20/2009	6010B
Uranium	26.0 U	26.0	mg/kg wet	1	1902113	02/18/2009	02/20/2009	6010B
Vanadium	31.1 J	3.25	mg/kg wet	1	1902113	02/18/2009	02/20/2009	6010B
Zinc	55.7	13.0	mg/kg wet	1	1902113	02/18/2009	02/20/2009	6010B

11/29/09

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WCH Hanford, Inc.
2620 Fermi Avenue
Richland WA, 99354

Project: RC-116
Project Number: K1489
Project Manager: Joan Kessner

Reported:
08/13/2009 17:56

J17YT5

0812053-09 (Other Solid)

Analyte	Result and Qualifier	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Lionville Laboratory								
Metals by SW846 6000/7000 series								
Mercury	0.0300 U J	0.0300	mg/kg wet	1	L901076	01/15/2009	01/16/2009	7471A
Aluminum	8770	7.04	mg/kg wet	1	L902113	02/18/2009	02/20/2009	6010B
Antimony	0.845 U J	0.845	mg/kg wet	1	L902113	02/18/2009	02/20/2009	6010B
Arsenic	2.69 J	1.41	mg/kg wet	1	L902113	02/18/2009	02/20/2009	6010B
Barium	59.3	0.704	mg/kg wet	1	L902113	02/18/2009	02/20/2009	6010B
Beryllium	0.349	0.282	mg/kg wet	1	L902113	02/18/2009	02/20/2009	6010B
Bismuth	14.1 U	14.1	mg/kg wet	1	L902113	02/18/2009	02/20/2009	6010B
Boron	1.30 B J	2.82	mg/kg wet	1	L902113	02/18/2009	02/20/2009	6010B
Cadmium	0.146 ~~B~~ J	0.282	mg/kg wet	1	L902113	02/18/2009	02/20/2009	6010B
Calcium	3890	141	mg/kg wet	1	L902113	02/18/2009	02/20/2009	6010B
Chromium	12.3	0.282	mg/kg wet	1	L902113	02/18/2009	02/20/2009	6010B
Cobalt	4.10	2.82	mg/kg wet	1	L902113	02/18/2009	02/20/2009	6010B
Copper	10.8	1.41	mg/kg wet	1	L902113	02/18/2009	02/20/2009	6010B
Iron	13800 J	28.2	mg/kg wet	1	L902113	02/18/2009	02/20/2009	6010B
Lead	4.89 J	0.704	mg/kg wet	1	L902113	02/18/2009	02/20/2009	6010B
Lithium	8.58	3.52	mg/kg wet	1	L902113	02/18/2009	02/20/2009	6010B
Magnesium	3490	106	mg/kg wet	1	L902113	02/18/2009	02/20/2009	6010B
Manganese	218	7.04	mg/kg wet	1	L902113	02/18/2009	02/20/2009	6010B
Molybdenum	0.272 B	2.82	mg/kg wet	1	L902113	02/18/2009	02/20/2009	6010B
Nickel	8.61	5.63	mg/kg wet	1	L902113	02/18/2009	02/20/2009	6010B
Phosphorus	371	70.4	mg/kg wet	1	L902113	02/18/2009	02/20/2009	6010B
Potassium	978	563	mg/kg wet	1	L902113	02/18/2009	02/20/2009	6010B
Selenium	1.41 U	1.41	mg/kg wet	1	L902113	02/18/2009	02/20/2009	6010B
Silicon	856	2.82	mg/kg wet	1	L902113	02/18/2009	02/20/2009	6010B
Silver	0.282 U	0.282	mg/kg wet	1	L902113	02/18/2009	02/20/2009	6010B
Sodium	146	70.4	mg/kg wet	1	L902113	02/18/2009	02/20/2009	6010B
Strontium	22.9	1.41	mg/kg wet	1	L902113	02/18/2009	02/20/2009	6010B
Thallium	0.704 U J	0.704	mg/kg wet	1	L902113	02/18/2009	02/20/2009	6010B
Tin	14.1 U	14.1	mg/kg wet	1	L902113	02/18/2009	02/20/2009	6010B
Uranium	28.2 U	28.2	mg/kg wet	1	L902113	02/18/2009	02/20/2009	6010B
Vanadium	28.4 J	3.52	mg/kg wet	1	L902113	02/18/2009	02/20/2009	6010B
Zinc	49.5	14.1	mg/kg wet	1	L902113	02/18/2009	02/20/2009	6010B

JK 11/18/09

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WCH-Hanford, Inc.	Project: RC-116	
2620 Fermi Avenue	Project Number: K1489	Reported:
Richland WA, 99354	Project Manager: Joan Kessner	08/13/2009 12:56

J17YV8

0812053-10 (Other Solid)

Lionville Laboratory

Metals by SW846 6000/7000 series

Analyte	Result and Qualifier	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Mercury	0.0300 U J	0.0300	mg/kg wet	1	L901076	01/15/2009	01/16/2009	7471A
Aluminum	**7660**	6.85	mg/kg wet	1	L902113	02/18/2009	02/20/2009	6010B
Antimony	0.822 U J	0.822	mg/kg wet	1	L902113	02/18/2009	02/20/2009	6010B
Arsenic	**2.68** J	1.37	mg/kg wet	1	L902113	02/18/2009	02/20/2009	6010B
Barium	**50.1**	0.685	mg/kg wet	1	L902113	02/18/2009	02/20/2009	6010B
Beryllium	**0.294**	0.274	mg/kg wet	1	L902113	02/18/2009	02/20/2009	6010B
Bismuth	13.7 U	13.7	mg/kg wet	1	L902113	02/18/2009	02/20/2009	6010B
Boron	**1.08** B	2.74	mg/kg wet	1	L902113	02/18/2009	02/20/2009	6010B
Cadmium	**0.159** ~~B~~ J	0.274	mg/kg wet	1	L902113	02/18/2009	02/20/2009	6010B
Calcium	**3560**	137	mg/kg wet	1	L902113	02/18/2009	02/20/2009	6010B
Chromium	**11.8**	0.274	mg/kg wet	1	L902113	02/18/2009	02/20/2009	6010B
Cobalt	**3.91**	2.74	mg/kg wet	1	L902113	02/18/2009	02/20/2009	6010B
Copper	**10.0**	1.37	mg/kg wet	1	L902113	02/18/2009	02/20/2009	6010B
Iron	**16000** J	27.4	mg/kg wet	1	L902113	02/18/2009	02/20/2009	6010B
Lead	**4.39** J	0.685	mg/kg wet	1	L902113	02/18/2009	02/20/2009	6010B
Lithium	**7.77**	3.42	mg/kg wet	1	L902113	02/18/2009	02/20/2009	6010B
Magnesium	**3300**	103	mg/kg wet	1	L902113	02/18/2009	02/20/2009	6010B
Manganese	**208**	6.85	mg/kg wet	1	L902113	02/18/2009	02/20/2009	6010B
Molybdenum	**0.287** B	2.74	mg/kg wet	1	L902113	02/18/2009	02/20/2009	6010B
Nickel	**8.25**	5.48	mg/kg wet	1	L902113	02/18/2009	02/20/2009	6010B
Phosphorus	**393**	68.5	mg/kg wet	1	L902113	02/18/2009	02/20/2009	6010B
Potassium	**869**	548	mg/kg wet	1	L902113	02/18/2009	02/20/2009	6010B
Selenium	1.37 U	1.37	mg/kg wet	1	L902113	02/18/2009	02/20/2009	6010B
Silicon	**688**	2.74	mg/kg wet	1	L902113	02/18/2009	02/20/2009	6010B
Silver	0.274 U	0.274	mg/kg wet	1	L902113	02/18/2009	02/20/2009	6010B
Sodium	**131**	68.5	mg/kg wet	1	L902113	02/18/2009	02/20/2009	6010B
Strontium	**20.0**	1.37	mg/kg wet	1	L902113	02/18/2009	02/20/2009	6010B
Thallium	0.685 U J	0.685	mg/kg wet	1	L902113	02/18/2009	02/20/2009	6010B
Tin	13.7 U	13.7	mg/kg wet	1	L902113	02/18/2009	02/20/2009	6010B
Uranium	27.4 U	27.4	mg/kg wet	1	L902113	02/18/2009	02/20/2009	6010B
Vanadium	**30.9** J	3.42	mg/kg wet	1	L902113	02/18/2009	02/20/2009	6010B
Zinc	**47.1**	13.7	mg/kg wet	1	L902113	02/18/2009	02/20/2009	6010B

11/18/08

LVL
208 Welsh Pool Road
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WC-Hanford, Inc. 2620 Fermi Avenue Richland WA, 99354	Project: RCS-116 Project Number: K1489 Project Manager: Joan Kessner	Reported: 03/13/2009 12:56

J17YV9

0812053-11 (Other Solid)

Lionville Laboratory

Metals by SW846 6000/7000 series

Analyte	Result and Qualifier	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Mercury	0.0300 U J	0.0300	mg/kg wet	1	L901076	01/15/2009	01/16/2009	7471A
Aluminum	6630	6.25	mg/kg wet	1	L902113	02/18/2009	02/20/2009	6010B
Antimony	0.750 U J	0.750	mg/kg wet	1	L902113	02/18/2009	02/20/2009	6010B
Arsenic	2.62 J	1.25	mg/kg wet	1	L902113	02/18/2009	02/20/2009	6010B
Barium	39.6	0.625	mg/kg wet	1	L902113	02/18/2009	02/20/2009	6010B
Beryllium	0.230	0.250	mg/kg wet	1	L902113	02/18/2009	02/20/2009	6010B
Bismuth	12.5 U	12.5	mg/kg wet	1	L902113	02/18/2009	02/20/2009	6010B
Boron	0.905 B	2.50	mg/kg wet	1	L902113	02/18/2009	02/20/2009	6010B
Cadmium	0.106 ~~B~~ J	0.250	mg/kg wet	1	L902113	02/18/2009	02/20/2009	6010B
Calcium	2810	125	mg/kg wet	1	L902113	02/18/2009	02/20/2009	6010B
Chromium	11.5	0.250	mg/kg wet	1	L902113	02/18/2009	02/20/2009	6010B
Cobalt	3.34	2.50	mg/kg wet	1	L902113	02/18/2009	02/20/2009	6010B
Copper	8.76	1.25	mg/kg wet	1	L902113	02/18/2009	02/20/2009	6010B
Iron	11300 J	25.0	mg/kg wet	1	L902113	02/18/2009	02/20/2009	6010B
Lead	4.12 J	0.625	mg/kg wet	1	L902113	02/18/2009	02/20/2009	6010B
Lithium	7.12	3.12	mg/kg wet	1	L902113	02/18/2009	02/20/2009	6010B
Magnesium	2970	31.8	mg/kg wet	1	L902113	02/18/2009	02/20/2009	6010B
Manganese	188	6.25	mg/kg wet	1	L902113	02/18/2009	02/20/2009	6010B
Molybdenum	0.264 B	2.50	mg/kg wet	1	L902113	02/18/2009	02/20/2009	6010B
Nickel	8.19	5.00	mg/kg wet	1	L902113	02/18/2009	02/20/2009	6010B
Phosphorus	322	62.5	mg/kg wet	1	L902113	02/18/2009	02/20/2009	6010B
Potassium	764	500	mg/kg wet	1	L902113	02/18/2009	02/20/2009	6010B
Selenium	1.25 U	1.25	mg/kg wet	1	L902113	02/18/2009	02/20/2009	6010B
Silicon	620	7.50	mg/kg wet	1	L902113	02/18/2009	02/20/2009	6010B
Silver	0.250 U	0.250	mg/kg wet	1	L902113	02/18/2009	02/20/2009	6010B
Sodium	134	62.5	mg/kg wet	1	L902113	02/18/2009	02/20/2009	6010B
Strontium	18.6	1.25	mg/kg wet	1	L902113	02/18/2009	02/20/2009	6010B
Thallium	0.625 U J	0.625	mg/kg wet	1	L902113	02/18/2009	02/20/2009	6010B
Tin	12.5 U	12.5	mg/kg wet	1	L902113	02/18/2009	02/20/2009	6010B
Uranium	25.0 U	25.0	mg/kg wet	1	L902113	02/18/2009	02/20/2009	6010B
Vanadium	23.9 J	3.12	mg/kg wet	1	L902113	02/18/2009	02/20/2009	6010B
Zinc	44.1	1.25	mg/kg wet	1	L902113	02/18/2009	02/20/2009	6010B

11/24/05

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WC-Hanford, Inc. 2620 Fermi Avenue Richland WA, 99354	Project: RC 116 Project Number: K1489 Project Manager: Joan Kessner	Reported: 08/13/2009 12:56

J17YW2
0812053-15 (Other Solid)

Lionville Laboratory

Metals by SW846 6000/7000 series

Analyte	Result and Qualifier		Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Mercury	0.0300	U J	0.0300	mg/kg wet	1	L901076	01/15/2009	01/16/2009	7471A
Aluminum	8230		7.35	mg/kg wet	1	L902113	02/18/2009	02/20/2009	6010B
Antimony	0.882	U J	0.882	mg/kg wet	1	L902113	02/18/2009	02/20/2009	6010B
Arsenic	2.89	J	1.47	mg/kg wet	1	L902113	02/18/2009	02/20/2009	6010B
Barium	55.4		0.735	mg/kg wet	1	L902113	02/18/2009	02/20/2009	6010B
Beryllium	0.302		0.294	mg/kg wet	1	L902113	02/18/2009	02/20/2009	6010B
Bismuth	14.7	U	14.7	mg/kg wet	1	L902113	02/18/2009	02/20/2009	6010B
Boron	1.35	B	2.94	mg/kg wet	1	L902113	02/18/2009	02/20/2009	6010B
Cadmium	0.398	J	0.294	mg/kg wet	1	L902113	02/18/2009	02/20/2009	6010B
Calcium	3980		147	mg/kg wet	1	L902113	02/18/2009	02/20/2009	6010B
Chromium	14.8		0.294	mg/kg wet	1	L902113	02/18/2009	02/20/2009	6010B
Cobalt	4.00		2.94	mg/kg wet	1	L902113	02/18/2009	02/20/2009	6010B
Copper	11.2		1.47	mg/kg wet	1	L902113	02/18/2009	02/20/2009	6010B
Iron	13700	J	29.4	mg/kg wet	1	L902113	02/18/2009	02/20/2009	6010B
Lead	7.92	J	0.735	mg/kg wet	1	L902113	02/18/2009	02/20/2009	6010B
Lithium	8.05		3.68	mg/kg wet	1	L902113	02/18/2009	02/20/2009	6010B
Magnesium	3270		110	mg/kg wet	1	L902113	02/18/2009	02/20/2009	6010B
Manganese	311		7.35	mg/kg wet	1	L902113	02/18/2009	02/20/2009	6010B
Molybdenum	0.267	B	2.94	mg/kg wet	1	L902113	02/18/2009	02/20/2009	6010B
Nickel	10.1		5.88	mg/kg wet	1	L902113	02/18/2009	02/20/2009	6010B
Phosphorus	330		73.5	mg/kg wet	1	L902113	02/18/2009	02/20/2009	6010B
Potassium	942		588	mg/kg wet	1	L902113	02/18/2009	02/20/2009	6010B
Selenium	1.47	U	1.47	mg/kg wet	1	L902113	02/18/2009	02/20/2009	6010B
Silicon	822		2.94	mg/kg wet	1	L902113	02/18/2009	02/20/2009	6010B
Silver	0.294	U	0.294	mg/kg wet	1	L902113	02/18/2009	02/20/2009	6010B
Sodium	128		73.5	mg/kg wet	1	L902113	02/18/2009	02/20/2009	6010B
Strontium	21.6		1.47	mg/kg wet	1	L902113	02/18/2009	02/20/2009	6010B
Thallium	0.735	U J	0.735	mg/kg wet	1	L902113	02/18/2009	02/20/2009	6010B
Tin	14.7	U	14.7	mg/kg wet	1	L902113	02/18/2009	02/20/2009	6010B
Titanium	29.4	U	29.4	mg/kg wet	1	L902113	02/18/2009	02/20/2009	6010B
Vanadium	20.1	J	3.68	mg/kg wet	1	L902113	02/18/2009	02/20/2009	6010B
Zinc	85.4		14.7	mg/kg wet	1	L902113	02/18/2009	02/20/2009	6010B

11/25/09

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WCH-Hanford, Inc.
2620 Fermi Avenue
Richland WA, 99354

Project: RC-116
Project Number: K1489
Project Manager: Joan Kessler

Reported:
03/10/2009 12:56

J18002

0812053-03 (Other Solid)

Analyte	Result and Qualifier		Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Lionville Laboratory									
Metals by SW846 6000/7000 series									
Mercury	0.0167	~~B~~ J	0.0100	mg/kg wet	1	L901076	01/15/2009	01/16/2009	7471A
Aluminum	8970		6.17	mg/kg wet	1	L902113	02/18/2009	02/20/2009	6010B
Antimony	0.741	U J	0.741	mg/kg wet	1	L902113	02/18/2009	02/20/2009	6010B
Arsenic	2.75	J	1.23	mg/kg wet	1	L902113	02/18/2009	02/20/2009	6010B
Barium	62.7		0.617	mg/kg wet	1	L902113	02/18/2009	02/20/2009	6010B
Beryllium	0.371		0.247	mg/kg wet	1	L902113	02/18/2009	02/20/2009	6010B
Bismuth	12.3	U	12.3	mg/kg wet	1	L902113	02/18/2009	02/20/2009	6010B
Boron	1.00	B	2.47	mg/kg wet	1	L902113	02/18/2009	02/20/2009	6010B
Cadmium	0.105	~~B~~ J	0.247	mg/kg wet	1	L902113	02/18/2009	02/20/2009	6010B
Calcium	3130		123	mg/kg wet	1	L902113	02/18/2009	02/20/2009	6010B
Chromium	12.1		0.247	mg/kg wet	1	L902113	02/18/2009	02/20/2009	6010B
Cobalt	4.45		2.47	mg/kg wet	1	L902113	02/18/2009	02/20/2009	6010B
Copper	7.93		1.23	mg/kg wet	1	L902113	02/18/2009	02/20/2009	6010B
Iron	13600	J	24.7	mg/kg wet	1	L902113	02/18/2009	02/20/2009	6010B
Lead	4.40	J	0.617	mg/kg wet	1	L902113	02/18/2009	02/20/2009	6010B
Lithium	9.54		3.09	mg/kg wet	1	L902113	02/18/2009	02/20/2009	6010B
Magnesium	3710		92.6	mg/kg wet	1	L902113	02/18/2009	02/20/2009	6010B
Manganese	223		6.17	mg/kg wet	1	L902113	02/18/2009	02/20/2009	6010B
Molybdenum	0.579	B	2.47	mg/kg wet	1	L902113	02/18/2009	02/20/2009	6010B
Nickel	8.91		4.94	mg/kg wet	1	L902113	02/18/2009	02/20/2009	6010B
Phosphorus	285		61.7	mg/kg wet	1	L902113	02/18/2009	02/20/2009	6010B
Potassium	1750		494	mg/kg wet	1	L902113	02/18/2009	02/20/2009	6010B
Selenium	1.23	U	1.23	mg/kg wet	1	L902113	02/18/2009	02/20/2009	6010B
Silicon	710		2.47	mg/kg wet	1	L902113	02/18/2009	02/20/2009	6010B
Silver	0.247	U	0.247	mg/kg wet	1	L902113	02/18/2009	02/20/2009	6010B
Sodium	91.2		61.7	mg/kg wet	1	L902113	02/18/2009	02/20/2009	6010B
Strontium	23.6		1.23	mg/kg wet	1	L902113	02/18/2009	02/20/2009	6010B
Thallium	0.617	U J	0.617	mg/kg wet	1	L902113	02/18/2009	02/20/2009	6010B
Tin	12.3	U	12.3	mg/kg wet	1	L902113	02/18/2009	02/20/2009	6010B
Uranium	24.7	U	24.7	mg/kg wet	1	L902113	02/18/2009	02/20/2009	6010B
Vanadium	23.0	J	3.09	mg/kg wet	1	L902113	02/18/2009	02/20/2009	6010B
Zinc	39.1		12.3	mg/kg wet	1	L902113	02/18/2009	02/20/2009	6010B

11/29/09

204 Welsh Pool Road
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WC-Hanford, Inc 2620 Fermi Avenue Richland WA, 99354	Project: RC 116 Project Number: K1189 Project Manager: Joan Kessner	**Reported:** 03/13/2009 12:56

J18003
0812053 04 (Other Solid)

Lionville Laboratory

Metals by SW846 6000/7000 series

Analyte	Result and Qualifier	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Mercury	0.0300 U J	0.0300	mg/kg wet	1	1901076	01/15/2009	01/16/2009	7471A
Aluminum	**4740**	6.94	mg/kg wet	1	1902113	02/18/2009	02/20/2009	6010B
Antimony	0.833 U J	0.833	mg/kg wet	1	1902113	02/18/2009	02/20/2009	6010B
Arsenic	**1.67** J	1.39	mg/kg wet	1	1902113	02/18/2009	02/20/2009	6010B
Barium	**30.8**	0.694	mg/kg wet	1	1902113	02/18/2009	02/20/2009	6010B
Beryllium	0.157 B	0.278	mg/kg wet	1	1902113	02/18/2009	02/20/2009	6010B
Bismuth	13.9 U	13.9	mg/kg wet	1	1902113	02/18/2009	02/20/2009	6010B
Boron	0.569 B	2.78	mg/kg wet	1	1902113	02/18/2009	02/20/2009	6010B
Cadmium	0.278 U J	0.278	mg/kg wet	1	1902113	02/18/2009	02/20/2009	6010B
Calcium	**3530**	139	mg/kg wet	1	1902113	02/18/2009	02/20/2009	6010B
Chromium	**8.58**	0.278	mg/kg wet	1	1902113	02/18/2009	02/20/2009	6010B
Cobalt	3.76	2.78	mg/kg wet	1	1902113	02/18/2009	02/20/2009	6010B
Copper	**4.01**	1.39	mg/kg wet	1	1902113	02/18/2009	02/20/2009	6010B
Iron	**7790** J	27.8	mg/kg wet	1	1902113	02/18/2009	02/20/2009	6010B
Lead	**2.04** J	0.694	mg/kg wet	1	1902113	02/18/2009	02/20/2009	6010B
Lithium	**6.87**	3.47	mg/kg wet	1	1902113	02/18/2009	02/20/2009	6010B
Magnesium	**2320**	104	mg/kg wet	1	1902113	02/18/2009	02/20/2009	6010B
Manganese	**143**	6.94	mg/kg wet	1	1902113	02/18/2009	02/20/2009	6010B
Molybdenum	0.160 B	2.78	mg/kg wet	1	1902113	02/18/2009	02/20/2009	6010B
Nickel	**6.53**	5.56	mg/kg wet	1	1902113	02/18/2009	02/20/2009	6010B
Phosphorus	**204**	69.4	mg/kg wet	1	1902113	02/18/2009	02/20/2009	6010B
Potassium	**645**	556	mg/kg wet	1	1902113	02/18/2009	02/20/2009	6010B
Selenium	1.39 U	1.39	mg/kg wet	1	1902113	02/18/2009	02/20/2009	6010B
Silicon	**607**	2.78	mg/kg wet	1	1902113	02/18/2009	02/20/2009	6010B
Silver	0.278 U	0.278	mg/kg wet	1	1902113	02/18/2009	02/20/2009	6010B
Sodium	61.7 B	69.4	mg/kg wet	1	1902113	02/18/2009	02/20/2009	6010B
Strontium	**11.5**	1.39	mg/kg wet	1	1902113	02/18/2009	02/20/2009	6010B
Thallium	0.694 U J	0.694	mg/kg wet	1	1902113	02/18/2009	02/20/2009	6010B
Tin	13.9 U	13.9	mg/kg wet	1	1902113	02/18/2009	02/20/2009	6010B
Titanium	27.8 U	27.8	mg/kg wet	1	1902113	02/18/2009	02/20/2009	6010B
Vanadium	**13.4** J	3.47	mg/kg wet	1	1902113	02/18/2009	02/20/2009	6010B
Zinc	**22.1**	13.9	mg/kg wet	1	1902113	02/18/2009	02/20/2009	6010B

11/20/09

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WC Hanford, Inc.
2620 Fermi Avenue
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Project: RC-116
Project Number: 83489
Project Manager: Joan Kessner

Reported:
08/11/2009 12:56

J18004
0812053-16 (Other Solid)

Lionville Laboratory

Metals by SW846 6000/7000 series

Analyte	Result and Qualifier		Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Mercury	0.0123	~~B~~ UJ	0.0300	mg/kg wet	1	L901076	02/13/2009	02/16/2009	7471A
Aluminum	5390		7.25	mg/kg wet	1	L902113	02/18/2009	02/20/2009	6010B
Antimony	0.870	U J	0.870	mg/kg wet	1	L902113	02/18/2009	02/20/2009	6010B
Arsenic	1.90	J	1.45	mg/kg wet	1	L902113	02/18/2009	02/20/2009	6010B
Barium	38.4		0.725	mg/kg wet	1	L902113	02/18/2009	02/20/2009	6010B
Beryllium	0.185	B	0.290	mg/kg wet	1	L902113	02/18/2009	02/20/2009	6010B
Bismuth	14.5	U	14.5	mg/kg wet	1	L902113	02/18/2009	02/20/2009	6010B
Boron	0.694	B	2.90	mg/kg wet	1	L902113	02/18/2009	02/20/2009	6010B
Cadmium	0.290	U J	0.290	mg/kg wet	1	L902113	02/18/2009	02/20/2009	6010B
Calcium	2420		145	mg/kg wet	1	L902113	02/18/2009	02/20/2009	6010B
Chromium	9.04		0.290	mg/kg wet	1	L902113	02/18/2009	02/20/2009	6010B
Cobalt	3.08		2.90	mg/kg wet	1	L902113	02/18/2009	02/20/2009	6010B
Copper	4.88		1.45	mg/kg wet	1	L902113	02/18/2009	02/20/2009	6010B
Iron	7610	J	29.0	mg/kg wet	1	L902113	02/18/2009	02/20/2009	6010B
Lead	2.29	J	0.725	mg/kg wet	1	L902113	02/18/2009	02/20/2009	6010B
Lithium	6.91		1.62	mg/kg wet	1	L902113	02/18/2009	02/20/2009	6010B
Magnesium	2620		109	mg/kg wet	1	L902113	02/18/2009	02/20/2009	6010B
Manganese	158		7.25	mg/kg wet	1	L902113	02/18/2009	02/20/2009	6010B
Molybdenum	0.165	B	2.90	mg/kg wet	1	L902113	02/18/2009	02/20/2009	6010B
Nickel	6.68		5.80	mg/kg wet	1	L902113	02/18/2009	02/20/2009	6010B
Phosphorus	303		72.5	mg/kg wet	1	L902113	02/18/2009	02/20/2009	6010B
Potassium	698		580	mg/kg wet	1	L902113	02/18/2009	02/20/2009	6010B
Selenium	1.45	U	1.45	mg/kg wet	1	L902113	02/18/2009	02/20/2009	6010B
Silicon	659		2.90	mg/kg wet	1	L902113	02/18/2009	02/20/2009	6010B
Silver	0.290	U	0.290	mg/kg wet	1	L902113	02/18/2009	02/20/2009	6010B
Sodium	78.1		72.5	mg/kg wet	1	L902113	02/18/2009	02/20/2009	6010B
Strontium	15.1		1.45	mg/kg wet	1	L902113	02/18/2009	02/20/2009	6010B
Thallium	0.725	U J	0.725	mg/kg wet	1	L902113	02/18/2009	02/20/2009	6010B
Tin	14.5	U	14.5	mg/kg wet	1	L902113	02/18/2009	02/20/2009	6010B
Uranium	29.0	U	29.0	mg/kg wet	1	L902113	02/18/2009	02/20/2009	6010B
Vanadium	19.4	J	3.62	mg/kg wet	1	L902113	02/18/2009	02/20/2009	6010B
Zinc	25.6		14.5	mg/kg wet	1	L902113	02/18/2009	02/20/2009	6010B

K 11/28/05

364 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

WC Hanford, Inc 2620 Fermi Avenue Richland WA, 99354	Project: RC-210 Project Number: K1489 Project Manager: Joan Kessner	**Reported:** 03/13/2009 17:56

J18005

0812053-17 (Other Solid)

Lionville Laboratory

Metals by SW846 6000/7000 series

Analyte	Result and Qualifier	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Mercury	0.0115 B UJ	0.0300	mg/kg wet	1	L901076	01/15/2009	01/16/2009	7471A
Aluminum	8960	7.35	mg/kg wet	1	L902113	02/18/2009	02/20/2009	6010B
Antimony	0.882 U J	0.882	mg/kg wet	1	L902113	02/18/2009	02/20/2009	6010B
Arsenic	2.86	1.47	mg/kg wet	1	L902113	02/18/2009	02/20/2009	6010B
Barium	66.6	0.735	mg/kg wet	1	L902113	02/18/2009	02/20/2009	6010B
Beryllium	0.350	0.294	mg/kg wet	1	L902113	02/18/2009	02/20/2009	6010B
Bismuth	14.7 U	14.7	mg/kg wet	1	L902113	02/18/2009	02/20/2009	6010B
Boron	1.04 B	2.94	mg/kg wet	1	L902113	02/18/2009	02/20/2009	6010B
Cadmium	0.0999 B J	0.294	mg/kg wet	1	L902113	02/18/2009	02/20/2009	6010B
Calcium	3720	147	mg/kg wet	1	L902113	02/18/2009	02/20/2009	6010B
Chromium	13.6	0.294	mg/kg wet	1	L902113	02/18/2009	02/20/2009	6010B
Cobalt	4.57	2.94	mg/kg wet	1	L902113	02/18/2009	02/20/2009	6010B
Copper	8.48	1.47	mg/kg wet	1	L902113	02/18/2009	02/20/2009	6010B
Iron	13800 J	29.4	mg/kg wet	1	L902113	02/18/2009	02/20/2009	6010B
Lead	3.93 J	0.735	mg/kg wet	1	L902113	02/18/2009	02/20/2009	6010B
Lithium	9.69	3.68	mg/kg wet	1	L902113	02/18/2009	02/20/2009	6010B
Magnesium	3600	110	mg/kg wet	1	L902113	02/18/2009	02/20/2009	6010B
Manganese	228	7.35	mg/kg wet	1	L902113	02/18/2009	02/20/2009	6010B
Molybdenum	0.215 B	2.94	mg/kg wet	1	L902113	02/18/2009	02/20/2009	6010B
Nickel	9.40	5.88	mg/kg wet	1	L902113	02/18/2009	02/20/2009	6010B
Phosphorus	314	73.5	mg/kg wet	1	L902113	02/18/2009	02/20/2009	6010B
Potassium	1110	588	mg/kg wet	1	L902113	02/18/2009	02/20/2009	6010B
Selenium	1.47 U	1.47	mg/kg wet	1	L902113	02/18/2009	02/20/2009	6010B
Silicon	796	2.94	mg/kg wet	1	L902113	02/18/2009	02/20/2009	6010B
Silver	0.294 U	0.294	mg/kg wet	1	L902113	02/18/2009	02/20/2009	6010B
Sodium	97.7	73.5	mg/kg wet	1	L902113	02/18/2009	02/20/2009	6010B
Strontium	23.4	1.47	mg/kg wet	1	L902113	02/18/2009	02/20/2009	6010B
Thallium	0.735 U J	0.735	mg/kg wet	1	L902113	02/18/2009	02/20/2009	6010B
Tin	14.7 U	14.7	mg/kg wet	1	L902113	02/18/2009	02/20/2009	6010B
Titanium	29.4 U	29.4	mg/kg wet	1	L902113	02/18/2009	02/20/2009	6010B
Vanadium	26.9 J	3.68	mg/kg wet	1	L902113	02/18/2009	02/20/2009	6010B
Zinc	36.2	14.7	mg/kg wet	1	L902113	02/18/2009	02/20/2009	6010B

JK 11/25/09

264 Welsh Pool Road
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Phone: 610-280-3000
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WC Hanford, Inc	Project: RC-116	
2620 Fermi Avenue	Project Number: K1489	Reported:
Richland WA, 99354	Project Manager: Joan Kessner	08/13/2009 12:56

J18006
0812053-18 (Other Solid)

Analyte	Result and Qualifier	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
		Lionville Laboratory						
Metals by SW846 6000/7000 series								
Mercury	0.0120 ~~B~~ U	0.0300	mg/kg wet	1	1901076	01/15/2009	01/16/2009	7471A
Aluminum	6900	7.04	mg/kg wet	1	1902113	02/18/2009	02/20/2009	6010B
Antimony	0.845 U	0.845	mg/kg wet	1	1902113	02/18/2009	02/20/2009	6010B
Arsenic	2.24	1.41	mg/kg wet	1	1902113	02/18/2009	02/20/2009	6010B
Barium	44.6	0.704	mg/kg wet	1	1902113	02/18/2009	02/20/2009	6010B
Beryllium	0.238 B	0.282	mg/kg wet	1	1902113	02/18/2009	02/20/2009	6010B
Bismuth	14.1 U	14.1	mg/kg wet	1	1902113	02/18/2009	02/20/2009	6010B
Boron	0.758 B	2.82	mg/kg wet	1	1902113	02/18/2009	02/20/2009	6010B
Cadmium	0.282 U	0.282	mg/kg wet	1	1902113	02/18/2009	02/20/2009	6010B
Calcium	2650	141	mg/kg wet	1	1902113	02/18/2009	02/20/2009	6010B
Chromium	10.6	0.282	mg/kg wet	1	1902113	02/18/2009	02/20/2009	6010B
Cobalt	3.52	2.82	mg/kg wet	1	1902113	02/18/2009	02/20/2009	6010B
Copper	5.90	1.41	mg/kg wet	1	1902113	02/18/2009	02/20/2009	6010B
Iron	11300	28.2	mg/kg wet	1	1902113	02/18/2009	02/20/2009	6010B
Lead	2.64	0.704	mg/kg wet	1	1902113	02/18/2009	02/20/2009	6010B
Lithium	8.04	3.52	mg/kg wet	1	1902113	02/18/2009	02/20/2009	6010B
Magnesium	2910	106	mg/kg wet	1	1902113	02/18/2009	02/20/2009	6010B
Manganese	173	7.04	mg/kg wet	1	1902113	02/18/2009	02/20/2009	6010B
Molybdenum	0.179 B	2.82	mg/kg wet	1	1902113	02/18/2009	02/20/2009	6010B
Nickel	7.43	5.64	mg/kg wet	1	1902113	02/18/2009	02/20/2009	6010B
Phosphorus	309	70.4	mg/kg wet	1	1902113	02/18/2009	02/20/2009	6010B
Potassium	818	564	mg/kg wet	1	1902113	02/18/2009	02/20/2009	6010B
Selenium	1.41 U	1.41	mg/kg wet	1	1902113	02/18/2009	02/20/2009	6010B
Silicon	906	2.82	mg/kg wet	1	1902113	02/18/2009	02/20/2009	6010B
Silver	0.282 U	0.282	mg/kg wet	1	1902113	02/18/2009	02/20/2009	6010B
Sodium	85.0	70.4	mg/kg wet	1	1902113	02/18/2009	02/20/2009	6010B
Strontium	17.1	1.41	mg/kg wet	1	1902113	02/18/2009	02/20/2009	6010B
Thallium	0.704 U	0.704	mg/kg wet	1	1902113	02/18/2009	02/20/2009	6010B
Tin	14.1 U	14.1	mg/kg wet	1	1902113	02/18/2009	02/20/2009	6010B
Uranium	28.2 U	28.2	mg/kg wet	1	1902113	02/18/2009	02/20/2009	6010B
Vanadium	22.7	3.52	mg/kg wet	1	1902113	02/18/2009	02/20/2009	6010B
Zinc	28.7	14.1	mg/kg wet	1	1902113	02/18/2009	02/20/2009	6010B

11/29/05

LVL
LIONVILLE LABORATORY

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

WC-Hanford, Inc
2620 Fermi Avenue
Richland WA, 99354

Project: RC 116
Project Number: K1489
Project Manager: Joan Kessner

Reported:
03/13/2009 12:56

J18016
0812053-05 (Other Solid)

Lionville Laboratory

Metals by SW846 6000/7000 series

Analyte	Result and Qualifier	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Mercury	0.0380 U J	0.0380	mg/kg wet	1	L901076	02/15/2009	02/16/2009	7471A
Aluminum	9940	6.94	mg/kg wet	1	L902113	02/18/2009	02/20/2009	6010B
Antimony	0.833 U J	0.833	mg/kg wet	1	L902113	02/18/2009	02/20/2009	6010B
Arsenic	2.72 J	1.39	mg/kg wet	1	L902113	02/18/2009	02/20/2009	6010B
Barium	60.6	0.694	mg/kg wet	1	L902113	02/18/2009	02/20/2009	6010B
Beryllium	0.405	0.278	mg/kg wet	1	L902113	02/18/2009	02/20/2009	6010B
Bismuth	13.9 U	13.9	mg/kg wet	1	L902113	02/18/2009	02/20/2009	6010B
Boron	1.17 B	2.78	mg/kg wet	1	L902113	02/18/2009	02/20/2009	6010B
Cadmium	0.174 J	0.278	mg/kg wet	1	L902113	02/18/2009	02/20/2009	6010B
Calcium	4240	139	mg/kg wet	1	L902113	02/18/2009	02/20/2009	6010B
Chromium	13.0	0.278	mg/kg wet	1	L902113	02/18/2009	02/20/2009	6010B
Cobalt	4.54	2.78	mg/kg wet	1	L902113	02/18/2009	02/20/2009	6010B
Copper	9.78	1.39	mg/kg wet	1	L902113	02/18/2009	02/20/2009	6010B
Iron	14200 J	27.8	mg/kg wet	1	L902113	02/18/2009	02/20/2009	6010B
Lead	4.98 J	0.694	mg/kg wet	1	L902113	02/18/2009	02/20/2009	6010B
Lithium	9.64	3.47	mg/kg wet	1	L902113	02/18/2009	02/20/2009	6010B
Magnesium	3860	104	mg/kg wet	1	L902113	02/18/2009	02/20/2009	6010B
Manganese	214	6.94	mg/kg wet	1	L902113	02/18/2009	02/20/2009	6010B
Molybdenum	0.235 B	2.78	mg/kg wet	1	L902113	02/18/2009	02/20/2009	6010B
Nickel	9.66	5.56	mg/kg wet	1	L902113	02/18/2009	02/20/2009	6010B
Phosphorus	318	69.4	mg/kg wet	1	L902113	02/18/2009	02/20/2009	6010B
Potassium	1140	556	mg/kg wet	1	L902113	02/18/2009	02/20/2009	6010B
Selenium	1.39 U	1.39	mg/kg wet	1	L902113	02/18/2009	02/20/2009	6010B
Silicon	871	2.78	mg/kg wet	1	L902113	02/18/2009	02/20/2009	6010B
Silver	0.278 U	0.278	mg/kg wet	1	L902113	02/18/2009	02/20/2009	6010B
Sodium	142	69.4	mg/kg wet	1	L902113	02/18/2009	02/20/2009	6010B
Strontium	25.1	1.39	mg/kg wet	1	L902113	02/18/2009	02/20/2009	6010B
Thallium	0.694 U J	0.694	mg/kg wet	1	L902113	02/18/2009	02/20/2009	6010B
Tin	13.9 U	13.9	mg/kg wet	1	L902113	02/18/2009	02/20/2009	6010B
Titanium	27.8 U	27.8	mg/kg wet	1	L902113	02/18/2009	02/20/2009	6010B
Vanadium	27.6 J	3.47	mg/kg wet	1	L902113	02/18/2009	02/20/2009	6010B
Zinc	50.5	13.9	mg/kg wet	1	L902113	02/18/2009	02/20/2009	6010B

V 11/28/09

208 Welsh Pool Road
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WCH Hanford, Inc 2620 Fermi Avenue Richland WA, 99354	Project: RC-116 Project Number: K1409 Project Manager: Joan Kessner	Reported: 03/13/2009 12:56

J18017

0812053-06 (Other Solid)

Lionville Laboratory

Metals by SW846 6000/7000 series

Analyte	Result and Qualifier	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Mercury	0.0300 U J	0.0300	mg/kg wet	1	1901076	01/15/2009	01/16/2009	7471A
Aluminum	8290	7.25	mg/kg wet	1	1902113	02/18/2009	02/20/2009	6010B
Antimony	0.870 U J	0.870	mg/kg wet	1	1902113	02/18/2009	02/20/2009	6010B
Arsenic	2.46 J	1.45	mg/kg wet	1	1902113	02/18/2009	02/20/2009	6010B
Barium	52.6	0.725	mg/kg wet	1	1902113	02/18/2009	02/20/2009	6010B
Beryllium	0.321	0.290	mg/kg wet	1	1902113	02/18/2009	02/20/2009	6010B
Bismuth	14.5 U	14.5	mg/kg wet	1	1902113	02/18/2009	02/20/2009	6010B
Boron	1.05 B	2.90	mg/kg wet	1	1902113	02/18/2009	02/20/2009	6010B
Cadmium	0.178 ~~B~~ J	0.290	mg/kg wet	1	1902113	02/18/2009	02/20/2009	6010B
Calcium	3090	145	mg/kg wet	1	1902113	02/18/2009	02/20/2009	6010B
Chromium	13.6	0.290	mg/kg wet	1	1902113	02/18/2009	02/20/2009	6010B
Cobalt	4.14	2.90	mg/kg wet	1	1902113	02/18/2009	02/20/2009	6010B
Copper	9.94	1.45	mg/kg wet	1	1902113	02/18/2009	02/20/2009	6010B
Iron	14900 J	29.0	mg/kg wet	1	1902113	02/18/2009	02/20/2009	6010B
Lead	5.48 J	0.725	mg/kg wet	1	1902113	02/18/2009	02/20/2009	6010B
Lithium	8.38	3.62	mg/kg wet	1	1902113	02/18/2009	02/20/2009	6010B
Magnesium	3320	109	mg/kg wet	1	1902113	02/18/2009	02/20/2009	6010B
Manganese	149	7.25	mg/kg wet	1	1902113	02/18/2009	02/20/2009	6010B
Molybdenum	0.268 B	2.90	mg/kg wet	1	1902113	02/18/2009	02/20/2009	6010B
Nickel	8.86	5.80	mg/kg wet	1	1902113	02/18/2009	02/20/2009	6010B
Phosphorus	339	72.5	mg/kg wet	1	1902113	02/18/2009	02/20/2009	6010B
Potassium	944	580	mg/kg wet	1	1902113	02/18/2009	02/20/2009	6010B
Selenium	1.45 U	1.45	mg/kg wet	1	1902113	02/18/2009	02/20/2009	6010B
Silicon	838	2.90	mg/kg wet	1	1902113	02/18/2009	02/20/2009	6010B
Silver	0.290 U	0.290	mg/kg wet	1	1902113	02/18/2009	02/20/2009	6010B
Sodium	122	72.5	mg/kg wet	1	1902113	02/18/2009	02/20/2009	6010B
Strontium	20.4	1.45	mg/kg wet	1	1902113	02/18/2009	02/20/2009	6010B
Thallium	0.725 U J	0.725	mg/kg wet	1	1902113	02/18/2009	02/20/2009	6010B
Tin	14.5 U	14.5	mg/kg wet	1	1902113	02/18/2009	02/20/2009	6010B
Uranium	29.0 U	29.0	mg/kg wet	1	1902113	02/18/2009	02/20/2009	6010B
Vanadium	32.7 J	3.62	mg/kg wet	1	1902113	02/18/2009	02/20/2009	6010B
Zinc	56.2	14.5	mg/kg wet	1	1902113	02/18/2009	02/20/2009	6010B

11/28/09

Appendix 4

Laboratory Narrative and Chain-of-Custody Documentation

LVL
LIONVILLE LABORATORY

264 Welsh Pool Road
Exton, Pennsylvania 19341
Phone (610) 280-3000
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Case Narrative

Client: WC-HANFORD RC-116
LVL#: 0812053 K1489

W.O.#: 60049-001-001-0001-00
Date Received: 12-10-08

METALS

The following is a summary of the QC results accompanying the sample results. Lionville Laboratory (LvL) certifies that all test results meet the requirements of NELAC except as noted below.

All soil samples are reported on a dry weight basis unless requested by the client, required by the method, or noted otherwise.

1. This narrative covers the analyses of 16 solid samples.
2. The samples were prepared and analyzed in accordance with methods checked on the attached glossary. The samples are reported on a wet weight, 'as-received' basis.
3. All ICP analyses were performed within the required holding times. The Mercury analysis was performed outside the required holding times.
4. All Initial and Continuing Calibration Verifications (ICV/CCVs) were within the 90-110% control limits (80-120% for Mercury)
5. All Initial and Continuing Calibration Blanks (ICB/CCBs) were within control limits (less than the LOQ).
6. All preparation/method blanks were within method criteria.
7. All ICP Interference Check Standards were within control limits.
8. All Standard Reference Material (SRM) analytes were within the Prediction Interval control limits.
9. The matrix spike (MS) recoveries for 5 analytes were outside the 75-125% control limits.
10. For analytes where the ICP MS is out-of-control, a post-digestion MS (PDS) and serial dilution are performed. A PDS was prepared at meaningful concentration level for the following analytes

Sample ID	Element	PDS Concentration (ppb)	PDS % Recovery
J18002	Aluminum	22,000	83.1
	Antimony	100	107.2
	Cadmium	100	97.3
	Iron	22,000	99.5
	Silicon	2,600	121.1

11. All duplicate analyses were within the 20% Relative Percent Difference (RPD) control limits.

12. For the purposes of this report, the data has been reported to the Limit of Detection (LOD). Values between the LOD and the Limit of Quantitation (LOQ) are acquired in a region of less-certain quantification.

13. LvL is NELAP accredited by the State of Pennsylvania. For a complete listing of accrediting authorities and the corresponding analytes/methods, please contact your Project Manager.

14. I certify that this sample data package is in compliance with SOW requirements, both technically and for completeness, other than the conditions detailed above. Release of the data contained in this hard-copy data package has been authorized by the Laboratory Manager or a designee, as verified by the following signature.

Iain Daniels
Laboratory Manager
Lionville Laboratory

4/1/05
Date

06m12 053

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-116-544 Page 1 of 1

Collector JMonez	Company Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator WEISS, RL
Project Designation Columbia River Component of the RCBRA - Sediment	Sampling Location J5H4 Z SD		SAF No. RC-116
Ice Chest No. WCH-DR-056, NZ	Field Logbook No. EL-1631-1	COA BESCRC6310	Method of Shipment FED EX
Shipped To EBERLINE SERVICES (LIONVILLE)	Offsite Property No. N/A		Bill of Lading/Air Bill No. 796171187234

Price Code 9K

Data Turnaround 45 Days

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

Preservation	None	None	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	None
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	aG	aG	G	
No. of Container(s)	1	1	1	1	1	1	1	1	1	1
Volume	1500g	300g	10g	10g	250g	250g	125g	250g	250g	1
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Tritium-H3	See item (2) in Special Instructions	See item (3) in Special Instructions	PCBs - 8082	Pesticides - 8081	Semi-VOA - 8270 (TCL)	See item (4) in Special Instructions	

Sample No.	Matrix *	Sample Date	Sample Time										
J18602	OTHER SOLID	12/08/08	1415					X	X	X	X	X	

Samples available to remove samples from controlled storage. Shipper removing samples from storage location taking custody of samples for shipment to lab

CHAIN OF POSSESSION

Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
SJTrent	12-08-08 / 1630	KF X	12-08-08 / 1630
Bldg. 3	12/9/08 0800	BL Woodward	12/9/08 0800
SL Woodward	12/9/08 1130	FedEx	12/9/08 1130
FedEx	12-10-08 0955		12-10-08 0955

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) {Americium-241, Antimony-125, Beryllium-7, Cerium-144, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238}

(2) Strontium-89,90 - Total Sr; Isotopic Thorium {Thorium-232}; Isotopic Uranium {Uranium-233/234, Uranium-235, Uranium-238}; Isotopic Plutonium

(3) ICP Metals - 6010 (Full List) {Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc}; Mercury - 7471 - (CV)

(4) VOA - 8260A (TCL) {1,1,1-Trichloroethane, 1,1,2,2-Tetrachloroethane, 1,1,2-Trichloroethane, 1,1-Dichloroethane, 1,1-Dichloroethene, 1,2-Dichloroethane, 1,2-Dichloropropane, 2-Butanone, 2-Hexanone, 4-Methyl-2-Pentanone, Acetone, Benzene, Bromodichloromethane, Bromoform, Bromomethane, Carbon disulfide, Carbon tetrachloride, Chlorobenzene, Chloroethane, Chloroform, Chloromethane, cis-1,2-Dichloroethylene, cis-1,3-Dichloropropene, Dibromochloromethane,

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION Received By Title Date/Time

FINAL SAMPLE DISPOSITION Disposal Method Disposed By Date/Time

WCH-EC-011

0000130

000000015

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

Collector J Moore	Company Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator WEISS, RL	Price Code 9K Data Turnaround 45 Days
Project Designation Columbia River Component of the RCBRA - Sediment	Sampling Location 1S14 / SD		SAF No. RC-116	
Ice Chest No. WCH-08-056,012	Field Logbook No. EL-1634-4	COA BESCRC6520	Method of Shipment FED EX	
Shipped To EBERLINE SERVICES / DONVILLE	Offsite Property No. N/A		Bill of Lading/Air Bill No. 796171187234	

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

Preservation	None	None	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	None
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	aG	aG	G	-
No. of Container(s)	1	1	1	1	1	1	1	1	1	-
Volume	1500g	100g	40g	10g	250g	250g	125g	250g	250g	-
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Technetium-99	See item (2) in Special Instructions	See item (3) in Special Instructions	PCBs - 8082	Pesticides - 8081	Semi-VOA - 8270A (TCL)	See item (4) in Special Instructions	-

Sample No.	Matrix *	Sample Date	Sample Time										
J18003	OTHER SOLID	12/07/08	1335					X	X	X	X	X	

Samples unavailable to remove samples from controlled storage. Shipper removed samples from storage location using custody of samples for shipment to lab

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
J Moore	12-08-08 / 1630		12-08-08 / 1630
	12/9/08 0800	B Woodward	12/9/08 0800
B Woodward	12/9/08 1130	FedEx	12/9/08 1130
FedEx	12-10-08 0955		12-10-08 0955

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) (Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238)

(2) Strontium-89,90 - Total Sr; Isotopic Thorium (Thorium-232); Isotopic Uranium (Uranium-233/234, Uranium-235, Uranium-238); Isotopic Plutonium

(3) ICP Metals - 6010 (Full List) (Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc); Mercury - 7471 - (CV)

(4) VOA - 8260A (TCL) (1,1,1-Trichloroethane, 1,1,2,2-Tetrachloroethane, 1,1,2-Trichloroethane, 1,1-Dichloroethane, 1,1-Dichloroethene, 1,2-Dichloroethane, 1,2-Dichloropropane, 2-Butanone, 2-Hexanone, 4-Methyl-2-Pentanone, Acetone, Benzene, Bromodichloromethane, Bromoform, Bromomethane, Carbon disulfide, Carbon tetrachloride, Chlorobenzene, Chloroethane, Chloroform, Chloromethane, cis-1,2-Dichloroethylene, cis-1,3-Dichloropropene, Dibromochloromethane, Ethylbenzene, Methylene chloride, Styrene, Tetrachloroethene, Toluene, trans-1,2-Dichloroethylene

Matrix *

S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-116-556

Collector: KP

Company Contact: JOAN KESSNER
Telephone No.: 375-4658
Project Coordinator: WEISS, RL
Price Code: 9K
Data Turnaround: 45 Days

Project Designation: Columbia River Component of the RCBRA - Sediment
Sampling Location: ISIS-2-SD
SAF No.: RC-316

Ice Chest No.: WCH 08-056,012
Field Logbook No.: EL-1631-1
COA: BESCRC6520
Method of Shipment: FED EX

Shipped To: EBERLINE SERVICES (LIONVILLE)
Offsite Property No.: N/A
Bill of Lading/Air Bill No.: 796171187234

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

			Preservation	None	None	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	None
			Type of Container	G/P	G/P	G/P	G/P	G/P	aG	aG	aG	G	-
			No. of Container(s)	1	1	1	1	1	1	1	1	1	1
			Volume	1500g	120g	10g	10g	250g	250g	125g	250g	250g	1
SAMPLE ANALYSIS				See item (1) in Special Instructions	Carbon-14	Technetium-99	See item (2) in Special Instructions	See item (3) in Special Instructions	PCBs - 8082	Pesticides 8081	Semi-VOA 8270A (TCL)	See item (4) in Special Instructions	-
Sample No.	Matrix *	Sample Date	Sample Time										
J1B016	OTHER SOLID	12/8/08	1450					X	X	X	X	X	

Sampler unavailable to retrieve samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab.

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
K. Fergal	12/8/08 1700	Ref. A	12/8/08 1700
Fridge A	12/9/08 0800	B Woodward	12/9/08 0800
B Woodward	12/9/08 1130	FedEx	12/9/08 1130
Fed Ex	12/10/08 0935		0935

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full Lab) {Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238}
(2) Strontium-89,90 -- Total Sr; Isotopic Thorium {Thorium-232}, Isotopic Uranium {Uranium 233/234, Uranium-235, Uranium-238}, Isotopic Plutonium
(3) ICP Metals - 6020 (Full List) {Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc}, Mercury - 7471 - (CV)
(4) VOA - 8260A (TCL) {1,1,1-Trichloroethane, 1,1,2,2-Tetrachloroethane, 1,1,2-Trichloroethane, 1,1-Dichloroethane, 1,1-Dichloroethene, 1,2-Dichloroethane, 1,2-Dichloropropane, 2-Butanone, 2-Hexanone, 4-Methyl-2-Pentanone, Acetone, Benzene, Bromodichloromethane, Bromoform, Bromomethane, Carbon disulfide, Carbon tetrachloride, Chlorobenzene, Chloroethane, Chloroform, Chloromethane, cis-1,2-Dichloroethylene, cis-1,3-Dichloropropene, Dibromochloromethane, [illegible]

Matrix *

LABORATORY SECTION — Received By: Title: Date/Time:

FINAL SAMPLE DISPOSITION — Disposal Method: Disposed By: Date/Time:

WCH-EE-011

0032

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-116-559 Page 1 of 1

Collector JJ	**Company Contact** JOAN KESSNER	**Telephone No.** 375-4683	**Project Coordinator** WEISS, RL
Project Designation Columbia River Component of the RCBRA - Sediment	**Sampling Location** 1515- SD		**SAF No.** RC-116
Ice Chest No. WCH-08-~~033~~ 012,036 BW	**Field Logbook No.** FL-1531-1	**COA** HESCRC6520	**Method of Shipment** FED EX
Shipped To EBERLINE SERVICES [✓ LIONVILLE]	**Offsite Property No.** N/A		**Bill of Lading/Air Bill No.** 796711 87234

Price Code 9K **Data Turnaround** 45 Days

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

Preservation	None	None	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	None
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	aG	aG	G	-
No. of Container(s)	1	1	1	1	1	1	1	1	1	1
Volume	1500g	100g	10g	10g	250g	250g	125g	250g	250g	-
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Technetium-99	See item (2) in Special Instructions	See item (3) in Special Instructions	PCBs - 8082	Pesticides - 8081	Semi-VOA - 8270A (TCL)	See item (4) in Special Instructions	-

Sample No.	Matrix *	Sample Date	Sample Time										
J18D17	OTHER SOLID	12/8/08	1535					X	X	X	X	X	

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab

CHAIN OF POSSESSION

Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
	12/5/08 1700		12/5/08 1700
	12/9/08 0800		12/9/08 0800
	12/9/08 1130	Fedex	12/9/08 1130
	12/10/08 0955		12/10/08 0955

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) {Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-228, Radium-226, Ruthenium-106, Uranium-235, Uranium-238}
(2) Strontium-89,90 - Total Sr, Isotopic Thorium {Thorium-232}, Isotopic Uranium {Uranium-233/234, Uranium-235, Uranium-238}, Isotopic Plutonium
(3) ICP Metals - 6010 (Full List) {Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc}, Mercury - 7471 - (CV)
(4) VOA - 8260A (TCL) {1,1,1-Trichloroethane, 1,1,2,2-Tetrachloroethane, 1,1,2-Trichloroethane, 1,1-Dichloroethane, 1,1-Dichloroethene, 1,2-Dichloroethane, 1,2-Dichloropropane, 2-Butanone, 2-Hexanone, 4-Methyl-2-Pentanone, Acetone, Benzene, Bromodichloromethane, Bromoform, Bromomethane, Carbon disulfide, Carbon tetrachloride, Chlorobenzene, Chloroethane, Chloroform, Chloromethane, cis-1,2-Dichloroethylene, cis-1,3-Dichloropropene, Dibromochloromethane, [illegible]

Matrix *

S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Collector J MOORE	Company Contact JOAN KESSNER	Telephone No. 373-4688	Project Coordinator WEISS, RL
Project Designation Columbia River Component of the RCBRA - Sediment	Sampling Location LCR-150		SAF No. RC-116
Ice Chest No. WCH-08-056, 072	Field Logbook No. EL-1631-1	COA BESCRC6520	Method of Shipment FED EX
Shipped To EBERLINE SERVICES (LIONVILLE)	Offsite Property No. N/A		Bill of Lading/Air Bill No. 796171187234

Price Code 9K

Data Turnaround 45 Days

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

Preservation	None	None	None	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C
Type of Container	G/P	G/P	G/P	G/P	G/P	G/P	aG	aG	aG	G
No. of Container(s)	1	1	1	1	1	1	1	1	1	1
Volume	1500g	100g	100g	10g	10g	250g	250g	120g	250g	250g
SAMPLE ANALYSIS	See item (1) in Special Instructions.	Carbon-14	Tritium - H3	Technetium-99	See item (2) in Special Instructions	See item (3) in Special Instructions	PCBs - 8082	Pesticides - 8081	Semi-VOA 8270A (TCL)	See item (4) in Special Instructions

Sample No.	Matrix *	Sample Date	Sample Time										
J17VN9	OTHER SOLID	12/08/08	1345						X	X	X	X	X

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab

CHAIN OF POSSESSION

Sign/Print Names

Relinquished By/Removed From	Date/Time 12-08-08 1630	Received By/Stored In	Date/Time 12-08-08 1630
Relinquished By/Removed From Fridge B	Date/Time 12/9/08 0800	Received By/Stored In	Date/Time 12/9/08 0800
Relinquished By/Removed From	Date/Time 12/9/08 1130	Received By/Stored In FedEx	Date/Time 12/9/08 1132
Relinquished By/Removed From FedEx	Date/Time 12-10-08 0935	Received By/Stored In	Date/Time 12-10-08 0935
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) {Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238};
(2) Strontium-89,90 - Total Sr, Isotopic Thorium {Thorium-232}; Isotopic Uranium {Uranium-233/234, Uranium-235, Uranium-238}; Isotopic Plutonium
(3) ICP Metals - 6010 (Full List) {Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc}; Mercury - 7471 - (CV);
(4) VOA - 8260A (TCL) {1,1,1-Trichloroethane, 1,1,2,2-Tetrachloroethane, 1,1,2-Trichloroethane, 1,1-Dichloroethane, 1,1-Dichloroethene, 1,2-Dichloroethane, 1,2-Dichloropropane, 2-Butanone, 2-Hexanone, 4-Methyl-2-Pentanone, Acetone, Benzene, Bromodichloromethane, Bromoform, Bromomethane, Carbon disulfide, Carbon tetrachloride, Chlorobenzene, Chloroethane, Chloroform, Chloromethane, cis-1,2-Dichloroethylene, cis-1,3-Dichloropropene, Dibromochloromethane, Ethylbenzene, Methylene chloride, Styrene, Tetrachloroethene, Toluene, trans-1,2-Dichloroethylene

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

000000023

Washington Closure Hanford | CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

Collector J. S.	Company Contact JOAN KESSNER	Telephone No. 375-4653	Project Coordinator WEISS, RL
Project Designation Columbia River Component of the RCBRA - Sediment	Sampling Location HMSTD- 2 SD		SAF No. RC-016
Ice Chest No WCH-08-056.012	Field Logbook No. EL-1631-3	COA BESCRC6520	Method of Shipment FED EX
Shipped To FREELINE SERVICES-LIONVILLE	Offsite Property No. N/A		Bill of Lading/Air Bill No. 796171187234

Price Code 9K

Data Turnaround 45 Days

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

Preservation	None	None	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	None
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	aG	aG	G	-
No. of Container(s)	1	1	1	1	1	1	1	1	1	1
Volume	1500g	100g	10g	10g	150g	250g	125g	250g	125g	5*
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Technetium-99	See item (2) in Special Instructions	See item (3) in Special Instructions	PCBs - 8082	Pesticides - 8081	Semi-VOA - 8270A (TCL)	See item (4) in Special Instructions	-

Sample No.	Matrix *	Sample Date	Sample Time										
J17YT4	OTHER SOLID	12/8/08	~~10/20/08~~ 1020					X	X	X	X	X	

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location using custody of samples for shipment to lab.

CHAIN OF POSSESSION

Sign/Print Names

Relinquished By/Removed From Vern Bazzell	Date/Time 12/8/08 1700	Received By/Stored In Rev 4	Date/Time 12/8/08 1700
Relinquished By/Removed From Ref. A	Date/Time 12/9/08 0800	Received By/Stored In D Heidelberg	Date/Time 12/9/08 0800
Relinquished By/Removed From D Heidelberg	Date/Time 12/9/08 1130	Received By/Stored In FedEx	Date/Time 12/9/08 1130
Relinquished By/Removed From FedEx	Date/Time 12/10/08 0955	Received By/Stored In	Date/Time 12/10/08 0955
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) {Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238}
(2) Strontium-89,90 -- Total Sr, Isotopic Thorium {Thorium-232}, Isotopic Uranium {Uranium-233/234, Uranium-235, Uranium-238}, Isotopic Plutonium
(3) ICP Metals - 6010 (Full List) {Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc}, Mercury - 7471 - (CV)
(4) VOA - 8260A (TCL) {1,1,1-Trichloroethane, 1,1,2,2-Tetrachloroethane, 1,1,2-Trichloroethane, 1,1-Dichloroethane, 1,1-Dichloroethene, 1,2-Dichloroethane, 1,2-Dichloropropane, 2-Butanone, 2-Hexanone, 4-Methyl-2-Pentanone, Acetone, Benzene, Bromodichloromethane, Bromoform, Bromomethane, Carbon disulfide, Carbon tetrachloride, Chlorobenzene, Chloroethane, Chloroform, Chloromethane, cis-1,2-Dichloroethylene, cis-1,3-Dichloropropene, Dibromochloromethane, Ethylbenzene, Methylene chloride, Styrene, Tetrachloroethene, Toluene, trans-1,2-Dichloroethylene

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION | Received By | Title | Date/Time

FINAL SAMPLE DISPOSITION | Disposal Method | Disposed By | Date/Time

WCH-EE-011

Washington Closure Hanford — CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

Collector JJ	Company Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator WEISS, RL
Project Designation Columbia River Component of the RCBRA - Sediment	Sampling Location RMSTD-1 SD		SAF No. RC-116
Ice Chest No. WCH-08-056, 012	Field Logbook No. EL-1631-2	COA OESCRC6530	Method of Shipment FED EX
Shipped To EBERLINE SERVICES [✓ LIONVILLE]	Offsite Property No. N/A		Bill of Lading/Air Bill No. 796171187234

Price Code 9K

Data Turnaround 45 Days

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

			Preservation	None	None	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	None
			Type of Container	G/P	G/P	G/P	G/P	G/P	aG	aG	aG	G	-
			No. of Container(s)	1	1	1	1	1	1	1	1	1	1
			Volume	1500g	100g	10g	50g	250g	250g	125g	250g	250g	1
SAMPLE ANALYSIS				See item (1) in Special Instructions	Carbon-14	Technetium-99	See item (2) in Special Instructions	See item (3) in Special Instructions	PCBs - 8082	Pesticides - 8081	Semi-VOA 8270A (TCL)	See item (4) in Special Instructions	-
Sample No.	Matrix *	Sample Date	Sample Time										
J17YT5	OTHER SOLID	12/9/08	0950					X	X	X	X	X	

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Karen Ryal	12/9/08 1700	Fridge A	12/9/08 1700
Fridge A	12/9/08 0800	B. Woodward	12/9/08 0800
B. Woodward	12/9/08 1130	Fed Ex	12/9/08 1130
Fed Ex	12/10/08 0935		12/10/08 0935

Samples were unable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) (Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238)
(2) Strontium-89,90 -- Total Sr; Isotopic Thorium (Thorium-232); Isotopic Uranium (Uranium-233/234, Uranium-235, Uranium-238); Isotopic Plutonium
(3) ICP Metals - 6010 (Full List) (Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc); Mercury - 7471 - (CV)
(4) VOA - 8260A (TCL) (1,1,1-Trichloroethane, 1,1,2,2-Tetrachloroethane, 1,1,2-Trichloroethane, 1,1-Dichloroethane, 1,1-Dichloroethene, 1,2-Dichloroethane, 1,2-Dichloropropane, 2-Butanone, 2-Hexanone, 4-Methyl-2-Pentanone, Acetone, Benzene, Bromodichloromethane, Bromoform, Bromomethane, Carbon disulfide, Carbon tetrachloride, Chlorobenzene, Chloroethane, Chloroform, Chloromethane, cis-1,2-Dichloroethylene, cis-1,3-Dichloropropene, Dibromochloromethane,

Matrix *

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-116-538 Page 1 of 4

Collector J Moore	Company Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator WEISS, RJ.
Project Designation Columbia River Component of the RCBRA - Sediment	Sampling Location 151 - 3 SD		SAF No. RC-116
Ice Chest No. WCH-DR-056012	Field Logbook No. EL-1630-3	COA PESURC6320	Method of Shipment FED EX
Shipped To EBERLINE SERVICES (RICHMOND) [✓ OAKVILLE]	Offsite Property No. N/A		Bill of Lading/Air Bill No. 796171187234

Price Code 9K

Data Turnaround 45 Days

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

Preservation	None	None	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	None
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	aG	aG	G	-
No. of Container(s)	1	1	1	1	1	1	1	1	1	1
Volume	1500g	100g	10g	10g	250g	250g	125g	250g	250g	1
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Technetium-99	See item (2) in Special Instructions	See item (3) in Special Instructions	PCBs - 8082	Ammonia - [illegible]	SemiVOA - 8270A (TCL)	See item (4) in Special Instructions	-

Sample No.	Matrix *	Sample Date	Sample Time										
J17YV8	OTHER SOLID	12/08/08	1130										
								X	X	X	X	X	

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
J Moore	12/08/08 1130	Rob V	12/8/08 1130
Eddie B	12/9/08 0800	B Woodward	12/9/08 0800
B Woodward	12/9/08 1130	Fed Ex	12/9/08 1130
Fed Ex	12/10/08 0935		12/10/08 0935

SPECIAL INSTRUCTIONS

Samples unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab

(1) Gamma Spec - (Full List) {Americium-241, A[illegible] [illegible] Beryllium-7, Cerium-144, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238}
(2) Strontium-89,90 – Total Sr; Isotopic Thorium {Thorium-232}; Isotopic Uranium {Uranium-233/234, Uranium-235, Uranium-238}; Isotopic Plutonium
(3) ICP Metals - 6010 (Full List) {Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Titanium, Vanadium, Zinc}; Mercury - 7471 - (CV)
(4) VOA - 8260A (TCL) {1,1,1-Trichloroethane, 1,1,2,2-Tetrachloroethane, 1,1,2-Trichloroethane, 1,1-Dichloroethane, 1,1-Dichloroethene, 1,2-Dichloroethane, 1,2-Dichloropropane, 2-Butanone, 2-Hexanone, 4-Methyl-2-Pentanone, Acetone, Benzene, Bromodichloromethane, Bromoform, Bromomethane, Carbon disulfide, Carbon tetrachloride, Chlorobenzene, Chloroethane, Chloroform, Chloromethane, cis-1,2-Dichloroethylene, cis-1,3-Dichloropropene, Dibromochloromethane, Ethylbenzene, Methylenechloride, Styrene, Tetrachloroethene, Toluene, trans-1,2-Dichloroethylene

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

0000937

000000829

Collector J Ricore	**Company Contact** JOAN KESSNER	**Telephone No.** 375-4688	**Project Coordinator** WEISS, RL
Project Designation Columbia River Component of the RCBRA Sediment	**Sampling Location** IS13 - 5 SD		**SAF No.** RC-116
Ice Chest No. WCH-08-[illegible] 012	**Field Logbook No.** EL-1636-1	**COA** BESCRC0520	**Method of Shipment** FED EX
Shipped To EBERLINE SERVICES (LIONVILLE)	**Offsite Property No.** N/A		**Bill of Lading/Air Bill No.** 796171187234

Price Code 9K **Data Turnaround** 45 Days

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

Preservation	None	None	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	None
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	aG	aG	G	-
No. of Container(s)	1	1	1	1	1	1	1	1	1	1
Volume	1500g	100g	10g	10g	250g	250g	125g	250g	250g	1-
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Technetium-99	See item (2) in Special Instructions	See item (3) in Special Instructions	PCBs - 8082	Pesticides - 8081	Semi-VOA - 8270A (TCL)	See item (4) in Special Instructions	-

Sample No.	Matrix *	Sample Date	Sample Time										
J17YV9	OTHER SOLID	12/08/08	1210					X	X	X	X	X	

Sampler authorized to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab

CHAIN OF POSSESSION Sign/Print Names

Relinquished By/Removed From	Date/Time 12/05/08 1610	Received By/Stored In	Date/Time 12/8/08 1610
Relinquished By/Removed From Bridge B	Date/Time 12/9/08 0800	Received By/Stored In BWoodward	Date/Time 12/9/08 0800
Relinquished By/Removed From BWoodward	Date/Time 12/9/08 1120	Received By/Stored In FedEx	Date/Time 12/9/08 1134
Relinquished By/Removed From Fed Ex	Date/Time 12/10/08 0855	Received By/Stored In	Date/Time 12/10/08 0855
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) {Americium-241, Antimony-125, Beryllium-7, Cerium-144, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238}
(2) Strontium-89,90 - Total Sr; Isotopic Thorium {Thorium-232}; Isotopic Uranium {Uranium-233/234, Uranium-235, Uranium-238}; Isotopic Plutonium
(3) ICP Metals - 6010 (Full List) {Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc}; Mercury - 7471 - (CV)
(4) VOA - 8260A (TCL) {1,1,1-Trichloroethane, 1,1,2,2-Tetrachloroethane, 1,1,2-Trichloroethane, 1,1-Dichloroethane, 1,1-Dichloroethene, 1,2-Dichloroethane, 1,2-Dichloropropane, 2-Butanone, 2-Hexanone, 4-Methyl-2-Pentanone, Acetone, Benzene, Bromodichloromethane, Bromoform, Bromomethane, Carbon disulfide, Carbon tetrachloride, Chlorobenzene, Chloroethane, Chloroform, Chloromethane, cis-1,2-Dichloroethylene, cis-1,3-Dichloropropene, Dibromochloromethane,

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

JS

RC-116-396 Page 1 of 1

Project Designation
Columbia River Component of the RCBRA - Sediment

Company Contact
JOAN KESSNER

Telephone No.
375-4686

Project Coordinator
WEISS, RJ.

Price Code 9K

Data Turnaround
45 Days

Ice Chest No.
WCH-08-056.012

Sampling Location
SI-5 SD

SAF No.
RC-116

Field Logbook No.
EL-1631-1

COA
BESCRC6570

Method of Shipment
FED EX

Shipped To
EBERLINE SERVICES [✓ LIONVILLE]

Offsite Property No.
N/A

Bill of Lading/Air Bill No. 796171187234

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

Preservation				None	None	None	None	Cool 4C	Cool 4C	None			
Type of Container				G/P	G/P	G/P	G/P	G/P	aG	G/P			
No. of Container(s)				1	1	1	1	1	1	1			
Volume				1500g	500g	10g	10g	250g	125g	1000g			
SAMPLE ANALYSIS				See item (1) in Special Instructions	Carbon-14	Technetium-99	See item (2) in Special Instructions	See item (3) in Special Instructions	TOC - 415.1	Particle Size (dry Sieve) - D422			
Sample No.	Matrix *	Sample Date	Sample Time										
J17XK6	OTHER SOLID	12/8/08	1146					X	X	X			

CHAIN OF POSSESSION

Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Kevin Brook	12/8/08 1700	R. A	12/8/08 1700
Erdge A	12/9/08 0800	BWoodward	12/9/08 0800
B Woodward	12/9/08 1130	FedEx	12/9/08 1130
FedEx	12-10-08 0955		12-10-08 0955

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List (Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238)
(2) Strontium-89,90 – Total Sr, Isotopic Thorium (Thorium-232); Isotopic Uranium (Uranium-233/234, Uranium-235, Uranium-238), Isotopic Plutonium
(3) ICP Metals - 6010 (Full List) (Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc), Mercury - 7471 - (CV)

Samples available to remove surface from controlled storage. Shipper removal samples from storage location taking custody of samples for shipment to lab.

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION
Received By
Title
Date/Time

FINAL SAMPLE DISPOSITION
Disposal Method
Date/Time
Disposed By
Date/Time

WCH-EE-011

Collector JS	Company Contact JOAN KESSNER	Telephone No. 375-4448	
Project Designation Columbia River Component of the RCBRA - Sediment	Sampling Location SF-LL SD	Project Coordinator WEISS, RL	Price Code 9K
Ice Chest No. WCH-08-0516, 012	Field Logbook No. EL-1630-1	COA BESCKC6520	SAF No. RC-116
Shipped To EBERLINE SERVICES [✓ LIONVILLE]	Offsite Property No. N/A	Method of Shipment FED EX	Data Turnaround 45 Days
POSSIBLE SAMPLE HAZARDS/REMARKS		Bill of Lading/Air Bill No. 796171187234	

Special Handling and/or Storage

			Preservation	None	None	None	None	Cool 4C	Cool 4C	None		
			Type of Container	G/P	G/P	G/P	G/P	G/P	aG	G/P		
			No. of Container(s)	1	1	1	1	1	1	1		
			Volume	1500g	100g	10g	10g	750g	125g	1000g		
SAMPLE ANALYSIS				See item (1) in Special Instructions	Carbon-14	Technetium-99	See item (2) in Special Instructions	See item (3) in Special Instructions	TOC - 415.1	Particle Size (Dry Sieve) - D422		
Sample No.	Matrix *	Sample Date	Sample Time									
J17XK7	OTHER SOLID	12/2/08	1216					X	X	X		

CHAIN OF POSSESSION Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Kim	12/8/08 1700	Rc. 4	12/8/08 1700
Ref. A	12/9/08 0800	D Heidelberg	12/9/08 0800
D Heidelberg	12/9/08 1130	Fedex	12/9/08 1130
Fedex	12-10-08 0955		12-10-08 0955

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) (Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238)
(2) Strontium-89,90 – Total Sr, Isotopic Thorium (Thorium-232), Isotopic Uranium (Uranium-233/234, Uranium-235, Uranium-238); Isotopic Plutonium
(3) ICP Metals - 6010 (Full List) (Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc); Mercury - 7471 - (CV)

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Date/Time
	Disposed By	Date/Time

WCH-EE-011

Collector JS	Company Contact JOAN KESSNER	Telephone No. 375-4618	
Project Designation Columbia River Component of the RCBRA - Sediment	Sampling Location SL-5 SD		Project Coordinator WEISS, RL
Ice Chest No. WCH-08-056, D12	Field Logbook No. EL-1617-1	COA BESCRC6330	SAP No. RC-116
Shipped To EBERLINE SERVICES LIONVILLE	Offsite Property No. N/A		Method of Shipment FED EX
			Bill of Lading/Air Bill No. 796171187234

Price Code 9K

Data Turnaround 45 Days

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

000041

Preservation	None	None	None	None	Cool 4C	Cool 4C	None
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	G/P
No. of Container(s)	1	1	1	1	1	1	1
Volume	1500g	100g	10g	40g	250g	125g	1000g
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Technetium-99	See item (2) in Special Instructions	See item (3) in Special Instructions	TOC - 415.1	Particle Size (Dry Sieve) (443)

Sample No.	Matrix *	Sample Date	Sample Time							
J17XK8	OTHER SOLID	12/8/08	1250					X	X	X

CHAIN OF POSSESSION

Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
K[illegible]	12/8/08 1700	[illegible] A	12/8/08 1700
Fordge A	12/9/08 0800	B Westlund	12/9/08 0800
B Westlund	12/9/08 1130	FedEx	12/9/08 1130
FedEx	12-10-08 0955	[illegible]	12-10-08 0955

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) {Americium-241, Antimony-125, Beryllium-7, Cerium-144, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238}
(2) Strontium-89/90 - Total Sr, Isotopic Thorium {Thorium-232}, Isotopic Uranium {Uranium-233/234, Uranium-235, Uranium-238}, Isotopic Plutonium
(3) ICP Metals - 6010 (Full List) {Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc}; Mercury - 7471 - (CV)

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION | Received By | Title | Date/Time

FINAL SAMPLE DISPOSITION | Disposal Method | Disposed By | Date/Time

WCH-EE-011

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-116-522 | Page 1 of 1

Collector J MOORE	Company Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator WEISS, RL
Project Designation Columbia River Component of the RCBRA - Sediment	Sampling Location 1S15-2 SD		SAF No. RC-116
Ice Chest No. WCH-08-082, 012	Field Logbook No. EL-1631-1	COA DESCRC6530	Method of Shipment FED EX
Shipped To EBERLINE SERVICES LIONVILLE	Offsite Property No. N/A		Bill of Lading/Air Bill No. 796171187234

Price Code 9K

Data Turnaround 45 Days

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

Preservation	None	None	None	None	Cool 4C	Cool 4C	None
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	G/P
No. of Container(s)	1	1	1	1	1	1	1
Volume	1500g	100g	50g	10g	250g	125g	1000g
SAMPLE ANALYSIS	Sediment (1) - Special Instructions	Carbon-14	Technetium-99	Sediment (2) - Special Instructions	Sediment (3) - Special Instructions	TOC - 415.1	Particle Size (Dry Sieve - D422)

240042

Sample No.	Matrix *	Sample Date	Sample Time							
J17YW2	OTHER SOLID	12/08/08	1100					X	X	X

CHAIN OF POSSESSION

Sign/Print Names

Relinquished By/Removed From	Date/Time 12/08/08 1645	Received By/Stored In	Date/Time 12/8/08 1630
Relinquished By/Removed From Fadge B	Date/Time 12/9/08 0800	Received By/Stored In	Date/Time 12/9/08 0800
Relinquished By/Removed From	Date/Time 12/9/08 1130	Received By/Stored In Fed Ex	Date/Time 12/9/08 1130
Relinquished By/Removed From Fed Ex	Date/Time 12-10-08 0955	Received By/Stored In	Date/Time 12-10-08 0955
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) [Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238]

(2) Strontium-89,90 -- Total Sr, Isotopic Thorium (Thorium-232), Isotopic Uranium (Uranium-233/234, Uranium-235, Uranium-238), Isotopic Plutonium

(3) ICP Metals - 6010 (Full List) [Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc], Mercury - 7471 - (CV)

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab.

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-015

00000035

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-116-546 | Page 1 of 1

Collector J Morris	Company Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator WEISS, RJ
Project Designation Columbia River Component of the RCBRA - Sediment	Sampling Location Isl. 3 SD		SAF No. RC 116
Ice Chest No. WCH-08-056,012	Field Logbook No. EL-1633-1	COA	Method of Shipment FED EX
Shipped To EBERLINE SERVICES [✓ ONVILLE]	Offsite Property No. N/A		Bill of Lading/Air Bill No. 796171187234

Price Code 9K

Data Turnaround
45 Days

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

G00043

Preservation	None	None	None	None	Cool 4C	Cool 4C	None			
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	G/P			
No. of Container(s)	1	1	1	1	1	1	1			
Volume	1500g	100g	10g	20g	250g	125g	1000g			
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Technetium-99	See item (2) in Special Instructions	See item (3) in Special Instructions	TOC - 415.1	Particle Size (Dry Sieve) D422			

Sample No	Matrix *	Sample Date	Sample Time										
J18004	OTHER SOLID	12/01/08	1440					X	X	X			

CHAIN OF POSSESSION

Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
	12-05-08 1630	Ref B	12-05-08 1630
Erdac B	12/9/08 0800	B Woodward	12/9/08 0800
B Woodward	12/9/08 1130	FedEx	12/9/08 1130
FedEx	12-10-08 0955		12-10-08 0955

SPECIAL INSTRUCTIONS

(1) Gamma Spec - {Full List} {Americium-241, Antimony-125, Beryllium-7, Cerium-144, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238}
(2) Strontium-89,90 - Total Sr; Isotopic Thorium {Thorium-232}; Isotopic Uranium {Uranium-233/234, Uranium-235, Uranium-238}; Isotopic Plutonium
(3) ICP Metals - 6010 (Full List) {Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc}; Mercury - 7471 - (CV)

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab.

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION | Received By | Title | Date/Time

FINAL SAMPLE DISPOSITION | Disposal Method | Disposed By | Date/Time

WCH-EE-011

000000926

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-116-547 | Page 1 of 1

Collector J.H	Company Contact JOAN KESSNER	Telephone No. 375-4684	Project Coordinator WEISS, RL
Project Designation Columbia River Component of the RCBRA - Sediment	Sampling Location ISM-9 SO		SAF No. RC-116
Ice Chest No. WCH-08-056, 02	Field Logbook No. EL-1633-1	COA DESCRC6520	Method of Shipment FED EX
Shipped To EBERLINE SERVICES (OAKRIDGE)	Offsite Property No. N/A		Bill of Lading/Air Bill No. 796171187284

Price Code 9K

Data Turnaround 45 Days

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

Preservation	None	None	None	None	Cool 4C	Cool 4C	None
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	G/P
No. of Container(s)	1	1	1	1	1	1	1
Volume	1500g	100g	10g	10g	250g	125g	1000g
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Technetium-99	See item (2) in Special Instructions	See item (3) in Special Instructions	TOC - 415.1	Particle Size (Dry Sieve) D422

Sample No.	Matrix *	Sample Date	Sample Time							
J16505	OTHER SOLID	12/5/08	1450					X	X	X

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
	12-09-08/1630		12-09-08 / 1630
Fudge B	12/9/08 0800	B Woodward	12/9/08 0800
B Woodward	12/9/08 1130	FedEx	12/9/08 1130
FedEx	12-10-08 0955		12-10-08 0955
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) {Americium-241, Antimony-125, Beryllium-7, Cerium-144, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238}
(2) Strontium-89,90 - Total Sr, Isotopic Thorium {Thorium-232}, Isotopic Uranium {Uranium-233/234, Uranium-235, Uranium-238}, Isotopic Plutonium
(3) ICP Metals - 6010 (Full List) {Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc}, Mercury - 7471 - (CV)

Sampler unavailable to retrieve samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab.

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-110-548 | Page 1 of 1

Collector J Mobley	Company Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator WEISS, RL
Project Designation Columbia River Component of the RCBRA - Sediment	Sampling Location ISL4-5 SD		SAF No. RC-110
Ice Chest No. WCH-08-056,012	Field Logbook No. EL-1631-4	COA BESCRC6520	Method of Shipment FED EX
Shipped To EBERLINE SERVICES (LIONVILLE)	Offsite Property No. N/A		Bill of Lading/Air Bill No. 796171187234

Price Code 9K

Data Turnaround 45 Days

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

Preservation	None	None	None	None	Cool 4C	Cool 4C	None			
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	G/P			
No. of Container(s)	1	1	1	1	1	1	1			
Volume	1500g	100g	10g	10g	250g	125g	1000g			
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Technetium-99	See item (2) in Special Instructions	See item (3) in Special Instructions	TOC - 415.1	Particle Size (Dry Sieve) (MS)			

Sample No	Matrix *	Sample Date	Sample Time										
J18006	OTHER SOLID	12/08/08	1505					X	X	X			

CHAIN OF POSSESSION

Sign/Print Names

Relinquished By/Removed From	Date/Time 12-08-08 / 1630	Received By/Stored In	Date/Time 12-08-08 / 1630
Relinquished By/Removed From Eddie B	Date/Time 12/9/08 0800	Received By/Stored In B Woodward	Date/Time 12/9/08 0800
Relinquished By/Removed From B Woodward	Date/Time 12/9/08 1130	Received By/Stored In Fed Ex	Date/Time 12/9/08 1130
Relinquished By/Removed From Fed Ex	Date/Time 12-10-08 0955	Received By/Stored In	Date/Time 12-10-08 0955
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) (Americium-241, Antimony-125, Beryllium-7, Cerium-144, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238)

(2) Strontium-89,90 - Total Sr, Isotopic Thorium (Thorium-232), Isotopic Uranium (Uranium-233/234, Uranium-235, Uranium-238), Isotopic Plutonium

(3) ICP Metals - 6010 (Full List) (Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc); Mercury - 7471 - (CV)

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab.

Matrix *

S = Soil
SE = Sediment
SO = Solid
SL = Sludge
W = Water
O = Oil
A = Air
DS = Drum Solids
DL = Drum Liquids
T = Tissue
WI = Wipe
L = Liquid
V = Vegetation
X = Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Appendix 5

Data Validation Supporting Documentation

INORGANIC ANALYSIS DATA VALIDATION CHECKLIST

VALIDATION LEVEL	A	B	[✓ C]	D	E
PROJECT: RCBRA			DATA PACKAGE K1489		
VALIDATOR: ELR	LAB. LLI			DATE: 11/8/09	
			SDG: K1489		
ANALYSES PERFORMED					
[✓ SW-846/ICP]	SW-846/GFAA	[✓ SW-846/Hg]	SW-846 Cyanide		

SAMPLES/MATRIX

J18002 J18003 J18016 J18017 J17VA9 J17YF4
J17YF5 J17YV8 J17YV9 J17XE6 J17YE7 J17XE8
J17YW2 J18004 J18005 J18006

solid

1. DATA PACKAGE COMPLETENESS AND CASE NARRATIVE

Technical verification documentation present? .... Yes [✓ No] N/A

Comments:

2. INSTRUMENT PERFORMANCE AND CALIBRATIONS (Levels D and E)

Initial calibrations performed on all instruments? .... Yes No [✓ N/A]
Initial calibrations acceptable? .... Yes No [✓ N/A]
ICP interference checks acceptable? .... Yes No [✓ N/A]
ICV and CCV checks performed on all instruments? .... Yes No [✓ N/A]
ICV and CCV checks acceptable? .... Yes No [✓ N/A]
Standards traceable? .... Yes No [✓ N/A]
Standards expired? .... Yes No [✓ N/A]
Calculation check acceptable? .... Yes No [✓ N/A]

Comments:

INORGANIC ANALYSIS DATA VALIDATION CHECKLIST

3. BLANKS (Levels B, C, D, and E)

ICB and CCB checks performed for all applicable analyses? (Levels D, E) .... Yes No [✓ N/A]

ICB and CCB results acceptable? (Levels D, E) .... Yes No [✓ N/A]

Laboratory blanks analyzed? .... [✓ Yes] No N/A

Laboratory blank results acceptable? .... Yes [✓ No] N/A

Field blanks analyzed? (Levels C, D, E) .... Yes [✓ No] N/A

Field blank results acceptable? (Levels C, D, E) .... Yes No [✓ N/A]

Transcription/calculation errors? (Levels D, E) .... Yes No [✓ N/A]

Comments: HCs - 03 all detects no FB

4. ACCURACY (Levels C, D, and E)

MS/MSD samples analyzed? .... [✓ Yes] No N/A

MS/MSD results acceptable? .... Yes [✓ No] N/A

MS/MSD standards NIST traceable? (Levels D, E) .... Yes No [✓ N/A]

MS/MSD standards expired? (Levels D, E) .... Yes No [✓ N/A]

LCS/BSS samples analyzed? .... [✓ Yes] No N/A

LCS/BSS results acceptable? .... Yes [✓ No] N/A

Standards traceable? (Levels D, E) .... Yes No [✓ N/A]

Standards expired? (Levels D, E) .... Yes No [✓ N/A]

Transcription/calculation errors? (Levels D, E) .... Yes No [✓ N/A]

Performance audit sample(s) analyzed? .... Yes [✓ No] N/A

Performance audit sample results acceptable? .... Yes No [✓ N/A]

Comments: MS = antimony (48%) cadmium (65%) - J all

LCS = ~~antimony~~ (140%) arsenic (171%) iron (143%) lead (58%)
thallium (0%) vanadium (149%) - J all

No PAS

INORGANIC ANALYSIS DATA VALIDATION CHECKLIST

5. PRECISION (Levels C, D, and E)

Duplicate RPD values acceptable? .... [✓ Yes] No N/A

Duplicate results acceptable? .... [✓ Yes] No N/A

MS/MSD standards NIST traceable? (Levels D, E) .... Yes No [✓ N/A]

MS/MSD standards expired? (Levels D, E) .... ~~Yes~~ No [✓ N/A]

Field duplicate RPD values acceptable? .... [✓ Yes] No N/A

Field split RPD values acceptable? .... Yes No [✓ N/A]

Transcription/calculation errors? (Levels D, E) .... Yes No [✓ N/A]

Comments:

6. ICP QUALITY CONTROL (Levels D and E)

ICP serial dilution samples analyzed? .... Yes No [✓ N/A]

ICP serial dilution %D values acceptable? .... Yes No [✓ N/A]

ICP post digestion spike required? .... Yes No [✓ N/A]

ICP post digestion spike values acceptable? .... Yes No [✓ N/A]

Standards traceable? .... Yes No [✓ N/A]

Standards expired? .... Yes No [✓ N/A]

Transcription/calculation errors? .... Yes No [✓ N/A]

Comments:

INORGANIC ANALYSIS DATA VALIDATION CHECKLIST

7. FURNACE AA QUALITY CONTROL (Levels D and E)

Duplicate injections performed as required? .... Yes No [✓ N/A]

Duplicate injection %RSD values acceptable? .... Yes No [✓ N/A]

Analytical spikes performed as required? .... Yes No [✓ N/A]

Analytical spike recoveries acceptable? .... Yes No [✓ N/A]

Standards traceable? .... Yes No [✓ N/A]

Standards expired? .... Yes No [✓ N/A]

MSA performed as required? .... Yes No [✓ N/A]

MSA results acceptable? .... Yes No [✓ N/A]

Transcription/calculation errors? .... Yes No [✓ N/A]

Comments:

8. HOLDING TIMES (all levels)

Samples properly preserved? .... [✓ Yes] No N/A

Sample holding times acceptable? .... Yes [✓ No] N/A

Comments: HG - <2X HT - J all

INORGANIC ANALYSIS DATA VALIDATION CHECKLIST

9. RESULT QUANTITATION AND DETECTION LIMITS (all levels)

Results reported for all requested analyses? .... [✓ Yes] No N/A

Results supported in the raw data? (Levels D, E) .... Yes No [✓ N/A]

Samples properly prepared? (Levels D, E) .... Yes No [✓ N/A]

Detection limits meet RDL? .... Yes [✓ No] N/A

Transcription/calculation errors? (Levels D, E) .... Yes No [✓ N/A]

Comments: Bismuth tin - all over

Appendix 6

Additional Documentation Requested by Client

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

WC-Hanford, Inc. 2620 Fermi Avenue Richland WA, 99354	Project: RC 116 Project Number: K1489 Project Manager: Joan Kessner	**Reported:** 03/13/2009 12:56

Metals by SW846 6000/7000 series - Quality Control

Lionville Laboratory

Analyte	Result and Qualifiers	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch L901076 - SW 7471A Prep									
Blank (L901076-BLK1)			Prepared: 01/15/2009 Analyzed: 01/16/2009						
Mercury	0.0127 B,J	0.0300	mg/kg wet						
Duplicate (L901076-DUP1)	Source: 0812053-04		Prepared: 01/15/2009 Analyzed: 01/16/2009						
Mercury	0.0300 U	0.0300	mg/kg wet		0.0167				20
Matrix Spike (L901076-MS1)	Source: 0812053-03		Prepared: 01/15/2009 Analyzed: 01/16/2009						
Mercury	0.164	0.0300	mg/kg wet	0.15157	0.0167	97.0	75-125		
Reference (L901076-SRM1)			Prepared: 01/15/2009 Analyzed: 01/16/2009						
Mercury	4.75	0.192	mg/kg wet	4.7000		101	80-120		
Batch L902113 - SW 3050B									
Blank (L902113-BLK1)			Prepared: 02/18/2009 Analyzed: 02/20/2009						
Aluminum	9.80 U	9.80	mg/kg wet						
Antimony	1.18 U	1.18	mg/kg wet						
Arsenic	1.96 U	1.96	mg/kg wet						
Barium	0.980 U	0.980	mg/kg wet						
Beryllium	0.392 U	0.392	mg/kg wet						
Bismuth	19.6 U	19.6	mg/kg wet						
Boron	3.92 U	3.92	mg/kg wet						
Cadmium	0.392 U	0.392	mg/kg wet						
Calcium	196 U	196	mg/kg wet						
Chromium	0.392 U	0.392	mg/kg wet						
Cobalt	3.92 U	3.92	mg/kg wet						
Copper	1.96 U	1.96	mg/kg wet						
Iron	39.2 U	39.2	mg/kg wet						
Lead	0.980 U	0.980	mg/kg wet						
Lithium	4.90 U	4.90	mg/kg wet						
Magnesium	147 U	147	mg/kg wet						
Manganese	9.80 U	9.80	mg/kg wet						
Molybdenum	3.92 B,U	3.92	mg/kg wet						
Nickel	7.84 U	7.84	mg/kg wet						
Phosphorus	98.0 U	98.0	mg/kg wet						
Potassium	784 U	784	mg/kg wet						
Selenium	1.96 U	1.96	mg/kg wet						
Silicon	3.92 U	3.92	mg/kg wet						
Silver	0.392 U	0.392	mg/kg wet						
Sodium	98.0 U	98.0	mg/kg wet						

Metals by SW846 6000/7000 series - Quality Control

Lionville Laboratory

Analyte	Result and Qualifiers	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch L902113 - SW 3050B									
Blank (L902113-BLK1)			Prepared: 02/18/2009 Analyzed: 02/20/2009						
Strontium	1.96 U	1.96	mg/kg wet						
Thallium	0.980 U	0.980	mg/kg wet						
Tin	11.1 U	19.6	mg/kg wet						
Uranium	99.2 U	99.2	mg/kg wet						
Vanadium	4.90 U	4.90	mg/kg wet						
Zinc	19.6 U	19.6	mg/kg wet						
Duplicate (L902113-DUP1)	Source: 0812053-03		Prepared: 02/18/2009 Analyzed: 02/20/2009						
Aluminum	9070	6.02	mg/kg wet		8970			1	20
Antimony	0.723 U	0.723	mg/kg wet		0.741 U				20
Arsenic	2.86	1.20	mg/kg wet		2.75			4	20
Barium	62.0	0.602	mg/kg wet		62.7			1	20
Beryllium	0.359	0.241	mg/kg wet		0.375			4	20
Bismuth	12.0 U	12.0	mg/kg wet		12.3 U				20
Boron	0.968 B	2.41	mg/kg wet		1.00			3	20
Cadmium	0.0914 B	0.241	mg/kg wet		0.105			14	20
Calcium	3050	120	mg/kg wet		3130			2	20
Chromium	12.7	0.241	mg/kg wet		12.1			5	20
Cobalt	4.47	2.41	mg/kg wet		4.45			0.5	20
Copper	7.68	1.20	mg/kg wet		7.43			3	20
Iron	12700	24.1	mg/kg wet		12600			1	20
Lead	4.19	0.602	mg/kg wet		4.40			5	20
Lithium	9.69	3.01	mg/kg wet		9.54			2	20
Magnesium	3760	90.4	mg/kg wet		3710			1	20
Manganese	520	6.02	mg/kg wet		525			1	20
Molybdenum	0.177 B	2.41	mg/kg wet		0.179			0.9	20
Nickel	9.36	4.82	mg/kg wet		8.91			5	20
Phosphorus	277	60.2	mg/kg wet		285			3	20
Potassium	1170	482	mg/kg wet		1130			3	20
Selenium	1.20 U	1.20	mg/kg wet		1.23 U				20
Silicon	710	2.41	mg/kg wet		710			0.03	20
Silver	0.241 U	0.241	mg/kg wet		0.247 U				20
Sodium	92.8	60.2	mg/kg wet		91.2			2	20
Strontium	23.5	1.20	mg/kg wet		23.6			0.1	20
Thallium	0.602 U	0.602	mg/kg wet		0.617 U				20
Tin	12.0 U	12.0	mg/kg wet		12.3 U				20
Uranium	24.1 U	24.1	mg/kg wet		24.7 U				20

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

WC Hanford, Inc 2620 Fermi Avenue Richland WA, 99354	Project: RC5-116 Project Number: K1489 Project Manager: Joan Kessner	Reported: 03/13/2009 12:56

Metals by SW846 6000/7000 series - Quality Control

Lionville Laboratory

Analyte	Result and Qualifiers	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch L902113 - SW 3050B									
Duplicate (L902113-DUP1)		Source: 0812053-03	Prepared: 02/18/2009 Analyzed: 02/20/2009						
Vanadium	23.0	5.01	mg/kg wet		23.0			0.3	20
Zinc	99.5	12.0	mg/kg wet		99.1			0.4	20
Matrix Spike (L902113-MS1)		Source: 0812053-03	Prepared: 02/18/2009 Analyzed: 02/20/2009						
Aluminum	10800	5.75	mg/kg wet	114.94	8970	1590*	75-125		
Antimony	13.7	0.690	mg/kg wet	28.736	0.741 U	48*	75-125		
Arsenic	107	1.15	mg/kg wet	114.94	2.75	91	75-125		
Barium	178	0.575	mg/kg wet	114.94	62.7	100	75-125		
Beryllium	3.14	0.230	mg/kg wet	2.8736	0.373	96	75-125		
Bismuth	268	11.5	mg/kg wet	287.36	12.3 U	93	75-125		
Boron	51.4	2.30	mg/kg wet	57.471	1.00	88	75-125		
Cadmium	1.99	0.230	mg/kg wet	2.8736	0.105	65*	75-125		
Calcium	4480	115	mg/kg wet	1436.8	3130	94	75-125		
Chromium	24.3	0.230	mg/kg wet	11.494	12.1	106	75-125		
Cobalt	30.8	2.30	mg/kg wet	28.736	4.45	92	75-125		
Copper	20.3	1.15	mg/kg wet	14.368	7.93	86	75-125		
Iron	13000	23.0	mg/kg wet	57.471	12600	800*	75-125		
Lead	29.6	0.575	mg/kg wet	28.736	4.40	88	75-125		
Lithium	68.3	2.87	mg/kg wet	57.471	9.54	102	75-125		
Magnesium	5220	80.2	mg/kg wet	1436.8	3710	105	75-125		
Manganese	252	5.75	mg/kg wet	28.736	223	102	75-125		
Molybdenum	52.5	2.30	mg/kg wet	57.471	0.379	91	75-125		
Nickel	35.3	4.60	mg/kg wet	28.736	8.91	92	75-125		
Phosphorus	534	57.5	mg/kg wet	287.36	285	87	75-125		
Potassium	2590	160	mg/kg wet	1436.8	1130	101	75-125		
Selenium	103	1.15	mg/kg wet	114.94	1.23 U	90	75-125		
Silicon	880	2.30	mg/kg wet	57.471	710	296*	75-125		
Silver	2.34	0.230	mg/kg wet	2.8736	0.247 U	83	75-125		
Sodium	1560	57.5	mg/kg wet	1436.8	91.7	102	75-125		
Strontium	79.5	1.15	mg/kg wet	57.471	21.6	97	75-125		
Thallium	98.4	0.575	mg/kg wet	114.94	0.617 U	86	75-125		
Tin	51.2	11.5	mg/kg wet	57.471	12.1 U	89	75-125		
Uranium	271	23.0	mg/kg wet	287.36	24.3 U	94	75-125		
Vanadium	51.2	2.87	mg/kg wet	28.736	23.0	98	75-125		
Zinc	67.3	11.5	mg/kg wet	28.736	39.1	98	75-125		

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

WCHanford, Inc.
2620 Fermi Avenue
Richland WA, 99354

Project: RC-116
Project Number: K1489
Project Manager: Joan Kessner

Reported:
08/13/2009 12:56

Metals by SW846 6000/7000 series - Quality Control

Lionville Laboratory

Analyte	Result and Qualifiers	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch L902113 - SW 3050B									
Reference (L902113-SRM1)			Prepared: 02/18/2009 Analyzed: 02/20/2009						
Aluminum	3170	9.80	mg/kg wet	2725.2		116	30.8-169.3		
Antimony	9470	5.08	mg/kg wet	4954.8		190	0-264.8		
Arsenic	42.3	1.96	mg/kg wet	24.800		171	0-305.6		
Barium	586	0.980	mg/kg wet	586.40		100	83.9-116.1		
Cadmium	1.04	0.392	mg/kg wet	1.2000		86	0.083-183.1		
Calcium	6500	196	mg/kg wet	5426.5		120	70.1-129.9		
Chromium	13.0	0.392	mg/kg wet	10.700		122	0-205.6		
Cobalt	2.75 B	3.92	mg/kg wet	2.7000		102	0-1000		
Copper	4450	0.0135	mg/kg wet	4792.4		93	52.2-147.8		
Iron	9270	39.2	mg/kg wet	6481.4		143	15.8-184.5		
Lead	84300	215	mg/kg wet	144730		58	0-1000		
Magnesium	2450	147	mg/kg wet	2367.4		103	0-1000		
Manganese	191	0.980	mg/kg wet	174.20		109	63.1-136.6		
Nickel	12.3	7.84	mg/kg wet	12.600		98	63.8-136.2		
Potassium	1100	784	mg/kg wet	1005.8		109	62.1-137.8		
Silver	6.97	0.392	mg/kg wet	6.5000		107	36.9-169.2		
Sodium	327	0.0965	mg/kg wet	180.00		86	25-175		
Thallium	0.980 U	0.980	mg/kg wet	0.60000			0-1000		
Tin	154	19.6	mg/kg wet	104.10		116	0-1000		
Vanadium	16.3	4.90	mg/kg wet	8.7000		188	0-1000		
Zinc	538	19.6	mg/kg wet	546.40		99	64.6-135.4		

Date: 18 November 2009
To: Washington Closure Hanford Inc. (technical representative)
From: ELR Consulting
Project: Columbia River Component of the RCBRA – Sediment
Subject: Wet Chemistry - Data Package No. K1489-EB

INTRODUCTION

This memo presents the results of data validation on Data Package No. K1489 prepared by Eberline Services (EB). A list of samples validated along with the analyses reported and the method of analysis is provided in the following table.

Sample ID	Sample Date	Media	Validation	Anaysis
J17VN9	12/8/08	Solid	C	See note 1
J17XK6	12/8/08	Solid	C	See note 1
J17XK7	12/8/08	Solid	C	See note 1
J17XK8	12/8/08	Solid	C	See note 1
J17YT4	12/8/08	Solid	C	See note 1
J17YT5	12/8/08	Solid	C	See note 1
J17YV8	12/8/08	Solid	C	See note 1
J17YV9	12/8/08	Solid	C	See note 1
J17YW2	12/8/08	Solid	C	See note 1
J18002	12/8/08	Solid	C	See note 1
J18003	12/8/08	Solid	C	See note 1
J18004	12/8/08	Solid	C	See note 1
J18005	12/8/08	Solid	C	See note 1
J18006	12/8/08	Solid	C	See note 1
J18016	12/8/08	Solid	C	See note 1
J18017	12/8/08	Solid	C	See note 1

1 – Total organic carbon (TOC) by 415.1.

Appendix 1. Glossary of Data Reporting Qualifiers
Appendix 2. Summary of Data Qualification
Appendix 3. Qualified Data Summary and Annotated Laboratory Reports
Appendix 4. Laboratory Narrative and Chain-of-Custody Documentation
Appendix 5. Data Validation Supporting Documentation
Appendix 6. Additional Documentation Requested by Client

DATA QUALITY PARAMETERS

- **Holding Times**

Analytical holding times for metals are assessed to ascertain whether the holding time requirements were met by the laboratory. The holding time requirements are as follows: Soil samples must be analyzed within 28 days for total organic carbon.

If holding times are exceeded, but not by greater than two times the limit, all associated sample results are qualified as estimates and flagged "J" for detects and "UJ" for non-detects. If holding times are exceeded by greater than two times the limit, all associated detectable sample results are qualified as estimates and flagged "J" and all non-detects are rejected and flagged "UR".

Due to the holding time being exceeded by less than twice the limit, all TOC results were qualified as estimates and flagged "J".

- **Method Blanks**

Method Blanks

Method blank analyses are performed to determine the extent of laboratory contamination introduced through sampling, sample preparation and analysis. At least one acceptable method blank analysis must be conducted for every 20 samples. No contaminants should be present in the method blank. All blank results must fall below the contract required detection limit (CRQL) to be acceptable.

All method blank results were acceptable.

Field (Equipment) Blank

No field blanks were submitted for analysis.

- **Accuracy**

Matrix Spike and Laboratory Control Sample

Matrix spike (MS) and laboratory control sample (LCS) analyses are used to assess the analytical accuracy of the reported data. The matrix spike is used to assess the effect of the matrix on the ability to accurately quantify sample concentrations. Recoveries must fall within the range of 70% to 130%. Samples with a recovery of less than 30% and a sample result below the IDL are rejected and flagged "UR". Samples with a recovery of 30% to 69% and a sample result less than the IDL are qualified "UJ". Samples with a recovery of greater than 130% or less than 70% and a sample result greater than the IDL are qualified as estimates and flagged "J". Finally, for samples with a recovery greater than 130% and a sample result less than the IDL, no qualification is required.

All accuracy results were acceptable.

- **Precision**

Laboratory Duplicate Samples

Analytical precision is expressed by the relative percent differences (RPD) between the recoveries of matrix spike duplicate (MSD) analyses performed on a sample in the analytical batch. Precision may alternatively be assessed using unspiked duplicate analyses performed on a sample in the analytical batch. If both sample and replicate activities (concentrations) are greater than five times the CRDL and the RPD is less than 30%, no qualification is required. If either activity (concentration) is less than five times the CRDL, the RPD control limit is less than or equal to two times the CRDL. If the RPD is outside the applicable control limit, associated results are qualified as estimated detects or estimated non-detects.

All laboratory duplicate results were acceptable.

Field Duplicate

One set of field duplicates (J18003/J17VN9) were submitted for analysis. Field duplicates are compared using the same criteria as for laboratory duplicates. All field duplicates results were acceptable.

- **Analytical Detection Levels**

Reported analytical detection levels are compared against the required quantitation limits (RQLs) to ensure that laboratory detection levels meet the required criteria. All analytes met the RQL.

- **Completeness**

Data package No. K1489 was submitted for validation and verified for completeness. Completeness is based on the percentage of data determined to be valid (i.e., not rejected). The completion percentage was 100%.

MAJOR DEFICIENCIES

None found.

MINOR DEFICIENCIES

The following minor deficiency was noted:

- Due to the holding time being exceeded by less than twice the limit, all TOC results were qualified as estimates and flagged "J".

Data flagged "J" indicates that the associated concentration is an estimate, but under the WCH statement of work, the data may be usable for decision-making purposes. All other validated results are considered accurate within the standard error associated with the methods.

REFERENCES

Washington Closure Hanford Contract #S00W307A00 (March 2008), *Data Validation Services.*

DOE/RL-2008-11, Rev 0, *Remedial Investigation Work Plan for Hanford Site Releases to the Columbia River*, September 2008

Appendix 1

Glossary of Data Reporting Qualifiers

Qualifiers which may be applied by data validators in compliance with WCH validation SOW are as follows:

U - Indicates the compound or analyte was analyzed for and not detected in the sample. The value reported is the sample quantitation limit corrected for sample dilution and moisture content by the laboratory.

UJ - Indicates the compound or analyte was analyzed for and not detected in the sample. Due to a minor QC deficiency identified during the data validation, the associated quantitation limit is an estimate.

J - Indicates the compound or analyte was analyzed for and detected. Due to a minor QC deficiency identified during the data validation, the associated concentration is an estimate, but the data are usable for decision-making purposes.

BJ - Applied to inorganic analyses only. Indicates the analyte concentration was greater than the IDL but less than the CRDL and is considered an estimated value.

R - Indicates the compound or analyte was analyzed for, detected, and due to an identified major QC deficiency, the data are unusable.

UR - Indicates the compound or analyte was analyzed for and not detected in the sample. Additionally, the data is unusable due to an identified major QC deficiency.

NJ - Indicates presumptive evidence of a compound at an estimated value. The data may not be valid for some specific applications (i.e., usable for decision-making purposes).

N - Indicates presumptive evidence of a compound. The data may not be valid for some specific applications (i.e., usable for decision-making purposes).

Appendix 2

Summary of Data Qualification

WET CHEMISTRY DATA QUALIFICATION SUMMARY*

SDG: K1489	**REVIEWER: ELR**	**Project: RCBRA**	**QC Issue**
COMPOUND	QUALIFIER	SAMPLES AFFECTED	REASON
Total organic carbon	J	All	Hold time

* - The Qualified Data Summary Table includes laboratory applied "U" qualifiers not specifically identified here. The laboratory applied "U" qualifiers are included to minimize misinterpretation of results contained in the table.

Appendix 3

Qualified Data Summary and Annotated Laboratory Reports

Lionville Laboratory, Inc.

INORGANICS DATA SUMMARY REPORT 02/05/09

CLIENT: WC HANFORD WC-116　　　　LVL LOT #: [illegible]

WORK ORDER: [illegible] 001-001-0001 00

SAMPLE	SITE ID	ANALYTE	RESULT		UNITS	REPORTING LIMIT	DILUTION FACTOR
-003	J18003	Total Organic Carbon	740	J	MG/KG	20.0	1.0
-004	J18003	Total Organic Carbon	[illegible]	J	MG/KG	20.0	1.0
-005	J18016	Total Organic Carbon	[illegible]	J	MG/KG	20.0	1.0
-006	J18017	Total Organic Carbon	1390	J	MG/KG	20.0	1.0
-007	J17YW8	Total Organic Carbon	1280	J	MG/KG	20.0	1.0
-008	J17YT4	Total Organic Carbon	[illegible]	J	MG/KG	20.0	1.0
-009	J17YT5	Total Organic Carbon	[illegible]	J	MG/KG	20.0	1.0
-010	J17YV0	Total Organic Carbon	[illegible]	J	MG/KG	20.0	1.0
-011	J17YV1	Total Organic Carbon	[illegible]	J	MG/KG	20.0	1.0
-012	J17XK6	Total Organic Carbon	[illegible]	J	MG/KG	20.0	1.0

11/17/09

Lionville Laboratory, Inc.

INORGANICS DATA SUMMARY REPORT 01/04/09

CLIENT: WC-HANFORD RC-111
WORK ORDER: 40069.001-001-0001-00

LVL LOT #: 0812L085

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
011	J17XW7	Total Organic Carbon	1340 J	MG/KG	20.0	1.0
-012	J17XX0	Total Organic Carbon	1400 J	MG/KG	20.0	1.0
-013	J17XW3	Total Organic Carbon	5200 J	MG/KG	20.0	1.0
014	J18004	Total Organic Carbon	2400 J	MG/KG	20.0	1.0
015	J18005	Total Organic Carbon	391 J	MG/KG	20.0	1.0
016	J18006	Total Organic Carbon	476 J	MG/KG	20.0	1.0

11/17/09

Appendix 4

Laboratory Narrative and Chain-of-Custody Documentation

LIONVILLE LABORATORY

Case Narrative

Client: WC-HANFORD RC-116 K1/69
LVL#: 08121.053

W.O.#: 60049-001-003-0001-00
Date Received: 12-10-08

INORGANIC NARRATIVE

1. This narrative covers the analysis of 16 solid samples.

2. The samples were prepared and analyzed in accordance with the methods checked on the attached glossary.

   Lionville Lab (LvL) is NELAP accredited by the State of Pennsylvania. For a complete list of accrediting authorities and the corresponding analytes/methods, please contact your Project Manager. LvL certifies that all test results meet the requirements of NELAC with any exception noted in the following statements.

3. Sample holding times as required by the method and/or contract were met.

4. The results presented in this report are derived from samples that met LvL's sample acceptance policy.

5. The method blank was within the method criteria.

6. The Laboratory Control Sample (LCS) was within the laboratory control limits.

7. The matrix spike recovery was within the 75-125% control limits.

8. The replicate analysis was within the 20% Relative Percent Difference (RPD) control limit.

9. Total Organic Carbon samples are dried prior to analysis.

10. I certify that this sample data package is in compliance with SOW requirements, both technically and for completeness, other than the conditions detailed above. Release of the data contained in this hard copy package has been authorized by the Laboratory Manager or a designee, as verified by the following signature.

Iain Daniels
Laboratory Manager
Lionville Laboratory

3/9/09
Date

njp0812-053

Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
WC-HANFORD RC-116 K1489

DATE RECEIVED: 12/10/08

LVL LOT # :0812L053

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
J18002						
TOTAL ORGANIC CARBON	003	SO	09LTZ004	12/08/08	12/08/08	01/11/09
J18003						
TOTAL ORGANIC CARBON	004	SO	09LTZ004	12/08/08	12/08/08	01/11/09
J18016						
TOTAL ORGANIC CARBON	005	SO	09LTZ004	12/08/08	12/08/08	01/11/09
J18017						
TOTAL ORGANIC CARBON	006	SO	09LTZ004	12/08/08	12/08/08	01/11/09
J17VN9						
TOTAL ORGANIC CARBON	007	SO	09LTZ004	12/08/08	12/08/08	01/11/09
J17YT4						
TOTAL ORGANIC CARBON	008	SO	09LTZ004	12/08/08	12/08/08	01/11/09
J17YT5						
TOTAL ORGANIC CARBON	009	SO	09LTZ004	12/08/08	12/08/08	01/11/09
J17YV8						
TOTAL ORGANIC CARBON	010	SO	09LTZ004	12/08/08	12/08/08	01/11/09
J17YV9						
TOTAL ORGANIC CARBON	011	SO	09LTZ004	12/08/08	12/08/08	01/11/09
TOTAL ORGANIC CARBON	011 REP	SO	09LTZ004	12/08/08	12/08/08	01/11/09
TOTAL ORGANIC CARBON	011 MS	SO	09LTZ004	12/08/08	12/08/08	01/11/09

Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
WC-HANFORD RC-116

DATE RECEIVED: 12/10/08

LVL LOT # :0812L053

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
J17XK6						
TOTAL ORGANIC CARBON	012	SO	09LTZ004	12/08/08	12/08/08	01/11/09
J17XK7						
TOTAL ORGANIC CARBON	013	SO	09LTZ004	12/08/08	12/08/08	01/11/09
J17XK8						
TOTAL ORGANIC CARBON	014	SO	09LTZ004	12/08/08	12/08/08	01/11/09
J17YW2						
TOTAL ORGANIC CARBON	015	SO	09LTZ005	12/08/08	12/30/08	01/13/09
J18004						
TOTAL ORGANIC CARBON	016	SO	09LTZ005	12/08/08	12/30/08	01/13/09
J18005						
TOTAL ORGANIC CARBON	017	SO	09LTZ005	12/08/08	12/30/08	01/13/09
J18006						
TOTAL ORGANIC CARBON	018	SO	09LTZ005	12/08/08	12/30/08	01/13/09

LAB QC:

TOTAL ORGANIC CARBON	MB1	W	09LTZ004	N/A	12/08/08	01/11/09
TOTAL ORGANIC CARBON	MB1 BS	W	09LTZ004	N/A	12/08/08	01/11/09
TOTAL ORGANIC CARBON	MB1	W	09LTZ005	N/A	12/30/08	01/13/09
TOTAL ORGANIC CARBON	MB1 BS	W	09LTZ005	N/A	12/30/08	01/13/09

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-116-519

Collector: J Moore

Company Contact: JOAN KESSNER

Telephone No.: 375-4688

Project Coordinator: WEISS, RL

Price Code: 9K

Data Turnaround: 45 Days

Project Designation: Columbia River Component of the RCBRA - Sediment

Sampling Location: 1513-5 SD

SAF No.: RC-116

Ice Chest No.: WCH-OR-056,012

Field Logbook No.: EL-1633/-1

COA: HESCRC6520

Method of Shipment: FED EX

Shipped To: EBERLINE SERVICES LIONVILLE

Offsite Property No.: N/A

Bill of Lading/Air Bill No. 796171187234

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

000016

		Preservation	Cool 4C	Cool 4C	None
		Type of Container	G	aG	G/P
		No. of Container(s)	1	1	1
		Volume	125mL 5	125g	1000g
SAMPLE ANALYSIS			See item (1) in Special Instructions	TOC - 415.1	Particle Size (Dry Sieve) - D422

Sample No.	Matrix *	Sample Date	Sample Time			
17YV9	OTHER SOLID	12/08/08	1210	X	X	X

CHAIN OF POSSESSION

Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
	12-08-08 1630		12-08 1630
Ridge B	12/9/08 0800	B Woodward	12/9/08 0800
B Woodward	12/9/08 1130	Fed Ex	12/9/08 1130
Fed Ex	12-10-08 0955		12-10-08 0955

SPECIAL INSTRUCTIONS

5 µg/L 2 10T

(1) TPH-Diesel Range - WTPH-D + {Total petroleum hydrocarbons - diesel range, Total petroleum hydrocarbons - motor oil (high boiling)}

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION: Received By / Title / Date/Time

FINAL SAMPLE DISPOSITION: Disposal Method / Disposed By / Date/Time

CH-EE-011

000000031

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

llector TS	Company Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator WEISS, RL
oject Designation Columbia River Component of the RCBRA - Sediment	Sampling Location HMSTD-1 SD		SAF No. RC-116
e Chest No. WCH-08-056012	Field Logbook No. EL-1630-1	COA BESCRC6570	Method of Shipment FED EX
ipped To EBERLINE SERVICES [✓ LIONVILLE]	Offsite Property No. N/A		Bill of Lading/Air Bill No. 796171157234

Price Code 9K

Data Turnaround
45 Days

OSSIBLE SAMPLE HAZARDS/REMARKS

pecial Handling and/or Storage

0010017

Preservation	Cool 4C	Cool 4C	None
Type of Container	G	aG	G/P
No. of Container(s)	1	1	1
Volume	125mL 5	125g	1500g
SAMPLE ANALYSIS	See item (1) in Special Instructions	TOC - 415.1	Particle Size (Dry Sieve) - D422

Sample No.	Matrix *	Sample Date	Sample Time			
17YT5	OTHER SOLID	12/8/08	0930	X	X	X

CHAIN OF POSSESSION Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
[illegible]	12/8/08 1707	Ref. A	12/8/08 1700
Ref. A	12/9/08 0800	D. Heidelberg	12/9/08 0800
D Heidelberg	12/9/08 1130	FedEx	12/9/08 1130
FedEx	12-10-08 0955	[illegible]	12/10/08 0955

SPECIAL INSTRUCTIONS
5 [illegible]/23 #
(1) TPH-Diesel Range - WTPH-D + {Total petroleum hydrocarbons - diesel range, Total petroleum hydrocarbons - motor oil (high boiling)}

Sample user unable to remove samples from controlled storage. Shipped removed samples from storage location taking custody of samples for shipment to lab

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

000000823

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-116-504

Collector JS	Company Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator WEISS, RL
Project Designation Columbia River Component of the RCBRA - Sediment	Sampling Location HMSTD- 2 SD		SAF No. RC-116
Ice Chest No. WCH-08-056,92	Field Logbook No. EL-1631-1	COA BFSCRC6520	Method of Shipment FED EX
Shipped To EBERLINE SERVICES/ LIONVILLE	Offsite Property No. N/A		Bill of Lading/Air Bill No. 796171187234

Price Code 9K

Data Turnaround

45 Days

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

8100018

Preservation	Cool 4C	Cool 4C	None
Type of Container	G	aG	G/P
No. of Container(s)	1	1	1
Volume	125mL 5	125g	1000g
SAMPLE ANALYSIS	See item (1) in Special Instructions	TOC - 415.1	Particle Size (Dry Sieve) - [illegible]

Sample No	Matrix *	Sample Date	Sample Time			
J17YT4	OTHER SOLID	12/8/08	1030	X	X	X

CHAIN OF POSSESSION

Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
[illegible]	12/9/08 1700	[illegible] A	12/9/08 1700
[illegible] A	12-19/08 0800	D. Heidelberg	12/19/08 0800
D. Heidelberg	12-19/08 1130	Fedex	12/19/08 1130
[illegible]	12-20-08 0755	[illegible]	12-20-08 0755

SPECIAL INSTRUCTIONS

5/4/12 SO f

(1) TPH-Diesel Range - WTPH-D + (Total petroleum hydrocarbons - diesel range, Total petroleum hydrocarbons - motor oil (high boiling))

Samples unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab

Matrix *

S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

ollector J. Moore	Company Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator WEISS, RL
roject Designation Columbia River Component of the RCBRA - Sediment	Sampling Location 1514-130		SAP No. RC-116
e Chest No. WCH-08-056,012	Field Logbook No. EL-1631-1	COA BESCRC6520	Method of Shipment FED EX
hipped To EBERLINE SERVICES (LIONVILLE)	Offsite Property No. N/A		Bill of Lading/Air Bill No. 796171187234

Price Code 9K

Data Turnaround 45 Days

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

610019

Preservation	Cool 4C	Cool 4C	Cool 4C
Type of Container	G	aG	G/P
No. of Container(s)	1	1	2
Volume	125g 5	125mL	1000g
SAMPLE ANALYSIS	See item (1) in Special Instructions	TOC - 415.1	Particle Size (Dry Sieve) D422

Sample No.	Matrix *	Sample Date	Sample Time			
17VN9	OTHER SOLID	12/08/08	1345	X	X	X

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
J Moore	12-08-08/1650		12-8-08 1650
Fridge B	12/9/08 0800	B Woodward	12/9/08 0800
B Woodward	12/9/08 1130	Fed Ex	12/9/08 1130
Fed Ex	12-10-08 0955		12-10-08 0955

SPECIAL INSTRUCTIONS
5 [illegible]
#1 TPH-Diesel Range - WTPH-D+ (Total petroleum hydrocarbons - diesel range, Total petroleum hydrocarbons - motor oil (high boiling))

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab.

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

ABORATORY SECTION	Received By	Title	Date/Time
INAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-116-559 [illegible]

Collector: JS

Company Contact: JOAN KESSNER

Telephone No.: 371-4688

Project Coordinator: WEISS, RL

Price Code: 9K

Data Turnaround: 45 Days

Project Designation: Columbia River Component of the RCBRA - Sediment

Sampling Location: 1S15- SD

SAF No.: RC-116

Ice Chest No.: WH-08-056, 112

Field Logbook No.: EL-1633-1

COA: BESCRC6530

Method of Shipment: FED EX

Shipped To: EBERLINE SERVICES [✓ LIONVILLE]

Offsite Property No.: N/A

Bill of Lading/Air Bill No.: 796171187234

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

Preservation	Cool 4C	Cool 4C	None
Type of Container	G	aG	G/P
No. of Container(s)	1	1	1
Volume	125mL 5	125g	1000g
SAMPLE ANALYSIS	See item (1) in Special Instructions	TOC - 415.1	Particle Size (Dry Sieve Data)

Sample No	Matrix *	Sample Date	Sample Time			
J18D17	OTHER SOLID	12/8/08	1535	X	X	X

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Kim Pacold	12/8/08 1700	Reg. 4	12/8/08 1700
Fridge A	12/9/08 0800	B Woodward	12/9/08 0800
B Woodward	12/9/08 1130	Fed Ex	12/9/08 1130
Fed Ex	12-10-08 0935		12-10-08 0935

SPECIAL INSTRUCTIONS

5 [illegible] 12-8-08

(1) TPH-Diesel Range - WTPH D + (Total petroleum hydrocarbons - diesel range, Total petroleum hydrocarbons - motor oil (high boiling))

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION — Received By: Title: Date/Time:

FINAL SAMPLE DISPOSITION — Disposal Method: Disposed By: Date/Time:

WCH-EE-011

Washington Closure Hanford — **CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST**

Collector SS	Company Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator WEISS, RL
Price Code 9K	Data Turnaround 45 Days		
Project Designation Columbia River Component of the RCBRA - Sediment	Sampling Location IS15-2 SD		SAF No. RC-116
Ice Chest No. WCH-08-056, 012	Field Logbook No. EL-1631-1	COA BESCRC6520	Method of Shipment FED EX
Shipped To EBERLINE SERVICES (LIONVILLE)	Offsite Property No. N/A		Bill of Lading/Air Bill No. 796171187234

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

000021

Preservation	Cool 4C	Cool 4C	None							
Type of Container	G	aG	G/P							
No. of Container(s)	1	1	1							
Volume	125mL 5	125g	1000g							
SAMPLE ANALYSIS	Semivolatile (SV) or Special conversions	TOC - 415.1	Particle Size (Dry Sieve) - D422							

Sample No.	Matrix *	Sample Date	Sample Time											
J18016	OTHER SOLID	12/8/08	1450	X	X	X								

CHAIN OF POSSESSION		Sign/Print Names	
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Kam Borgh	12/8/08 1700	Ref. A	12/8/08 1700
Fridge A	12/9/08 0800	B Woodward	12/9/08 0800
B Woodward	12/9/08 1130	FedEx	12/9/08 1130
	12-10-08 0955		12-10-08 0955

SPECIAL INSTRUCTIONS
SV [illegible]
(1) TPH-Diesel Range - WTPH-D + {Total petroleum hydrocarbons - diesel range, Total petroleum hydrocarbons - motor oil (high boiling)}

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

0900000020

Washington Closure Hanford | CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

llector J Moore	Company Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator WEISS, RL	Price Code 9K
ject Description Columbia River Component of the RCBRA - Sediment	Sampling Location IS14- / SD		SAF No. RC-116	Data Turnaround 45 Days
Chest No. WCH-08-056, 012	Field Logbook No. EL-1631-1	COA BESCRC6520	Method of Shipment FED EX	
ipped To EBERLINE SERVICES (LIONVILLE)	Offsite Property No. N/A		Bill of Lading/Air Bill No. 796171187234	

000000818

OSSIBLE SAMPLE HAZARDS/REMARKS

pecial Handling and/or Storage

000022

			Preservation	Cool 4C	Cool 4C	None							
			Type of Container	G	aG	G/P							
			No. of Container(s)	1	1	1							
			Volume	125mL 5	125g	1000g							
SAMPLE ANALYSIS				See item (5) in Special Instructions	TOC - 415.1	Particle Size (Dry Sieve) - D422							
Sample No	Matrix *	Sample Date	Sample Time										
16C03	OTHER SOLID	12/08/08	1535	X	X	X							

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time 12-08-08 / 1130	Received By/Stored In	Date/Time 12-08-08 / 1630
Relinquished By/Removed From Tidge B	Date/Time 12/9/08 0800	Received By/Stored In B Woodward	Date/Time 12/9/08 0800
Relinquished By/Removed From Woodward	Date/Time 12/9/08 1130	Received By/Stored In Fed Ex	Date/Time 12/9/08 1130
Relinquished By/Removed From	Date/Time [illegible] 0955	Received By/Stored In	Date/Time [illegible] 0955
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time

SPECIAL INSTRUCTIONS

5 [illegible] 12 5 0 8

(5) TPH-Diesel Range - WTPH-D + (Total petroleum hydrocarbons - diesel range, Total petroleum hydrocarbons - motor oil (high boiling))

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab.

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

ABORATORY SECTION	Received By	Title	Date/Time
NAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

CH-EE-011

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-116-544 | Page 2 of 2

Collector: J Moore

Company Contact: JOAN KESSNER | Telephone No.: 375-4688

Project Coordinator: WEISS, RL

Price Code: 9K | Data Turnaround: 45 Days

Project Designation: Columbia River Component of the RCBRA - Sediment

Sampling Location: ISL4-2-SD

SAF No.: RC-116

Ice Chest No.: WCH-08-056, 012

Field Logbook No.: EL-1631-1

COA: BESCRC0520

Method of Shipment: FED EX

Shipped To: EBERLINE SERVICES [✓ LIONVILLE]

Offsite Property No.: N/A

Bill of Lading/Air Bill No.: 796171187234

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

Preservation	Cool 4C	Cool 4C	None
Type of Container	G	aG	G/P
No. of Container(s)	1	1	1
Volume	125mL	125g	1000g
SAMPLE ANALYSIS	See item (1) in Special Instructions	TOC - 415.1	Particle Size (Dry Sieve) [illegible]

Sample No.	Matrix *	Sample Date	Sample Time			
8002	OTHER SOLID	12/08/08	1415	X	X	X

CHAIN OF POSSESSION

Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
	12-08-08 1650	Kev B	12-8-08 1650
Kevin B	12/9/08 0800	B Woodward	12/9/08 0800
Woodward	12/9/08 1130	FedEx	12/9/08 1130
FedEx	12-10-08 0955		12-10-08 0955

SPECIAL INSTRUCTIONS

5 [illegible]

(1) TPH-Diesel Range - WTPH-D + {Total petroleum hydrocarbons - diesel range, Total petroleum hydrocarbons - motor oil (high boiling)}

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION | Received By | Title | Date/Time

FINAL SAMPLE DISPOSITION | Disposal Method | Disposed By | Date/Time

01-EE-011

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

llector J Mobr-?	Company Contact JOAN KESSNER	Telephone No. 375-4687	Project Coordinator WEISS, RJ.
oject Designation Columbia River Component of the RCBRA - Sediment	Sampling Location 1314-5 SD		SAF No. RC-116
e Chest No WCH-08-056, 012	Field Logbook No. EL-1631-1	COA 095CRC6330	Method of Shipment FED EX
ipped To EBERLINE SERVICES (LIONVILLE)	Offsite Property No. N/A		Bill of Lading/Air Bill No. 796171187234

Price Code 9K

Data Turnaround 45 Days

'OSSIBLE SAMPLE HAZARDS/REMARKS

ipecial Handling and/or Storage

0110024

000000078

Preservation	None	None	None	None	Cool 4C	Cool 4C	None
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	G/P
No. of Container(s)	1	1	1	1	1	1	1
Volume	1500g	100g	10g	10g	250g	125g	1000g
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Technetium-99	See item (2) in Special Instructions	See item (3) in Special Instructions	TOC - 415.1	Particle Size (Dry Sieve) - D422

Sample No	Matrix *	Sample Date	Sample Time							
18006	OTHER SOLID	12/08/08	1505					X	X	X

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time 12-08-08 / 1630	Received By/Stored In Ref B	Date/Time 12-08-08 / 1630
Relinquished By/Removed From Ridge B	Date/Time 12/9/08 0800	Received By/Stored In B Woodward	Date/Time 12/9/08 0800
Relinquished By/Removed From B Woodward	Date/Time 12/9/08 1130	Received By/Stored In Fed Ex	Date/Time 12/9/08 1130
Relinquished By/Removed From Fed Ex	Date/Time 12-10-08 0955	Received By/Stored In	Date/Time 12-10-08 0955
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) (Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238)
(2) Strontium-89,90 -- Total Sr, Isotopic Thorium (Thorium-232), Isotopic Uranium (Uranium 233/234, Uranium-235, Uranium-238), Isotopic Plutonium
(3) ICP Metals - 6010 (Full List) (Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc), Mercury - 7471 - (CV)

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-116-547	Page 1 of 1

ollector J. L	Company Contact JOAN KESSNER	Telephone No. 373-4681	Project Coordinator WEISS, RL
roject Designation Columbia River Component of the RCBRA - Sediment	Sampling Location IS34-9 SD		SAF No. RC-116
e Chest No. WCH-08-056,02	Field Logbook No. EL-1631-1	COA BESCRC6320	Method of Shipment FED EX
hipped To EBERLINE SERVICES/LIONVILLE	Offsite Property No. N/A		Bill of Lading/Air Bill No. 796171187234

Price Code 9K

Data Turnaround 45 Days

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

Preservation	None	None	None	None	Cool 4C	Cool 4C	None			
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	G/P			
No. of Container(s)	1	1	1	1	1	1	1			
Volume	1500g	100g	10g	10g	250g	125g	1000g			
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Technetium-99	See item (2) in Special Instructions	See item (3) in Special Instructions	TOC - [illegible]	Particle Size (Dry Sieve) [illegible]			

000025

Sample No.	Matrix *	Sample Date	Sample Time										
18005	OTHER SOLID	12/8/08	1450					X	X	X			

CHAIN OF POSSESSION

Sign/Print Names

elinquished By/Removed From J. L	Date/Time 12-09-08/1630	Received By/Stored In Ref B	Date/Time 12-08-08 / 1630
elinquished By/Removed From Fridge B	Date/Time 12/9/08 0800	Received By/Stored In B. Woodward	Date/Time 12/9/08 0800
elinquished By/Removed From B. Woodward	Date/Time 12/9/08 1130	Received By/Stored In Fed Ex	Date/Time 12/9/08 1130
elinquished By/Removed From Fed Ex	Date/Time 12-10-08 0955	Received By/Stored In	Date/Time 12-10-08 0955
elinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
elinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) (Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238)
(2) Strontium-89,90 -- Total Sr, Isotopic Thorium (Thorium-232), Isotopic Uranium (Uranium-233/234, Uranium-235, Uranium-238), Isotopic Plutonium
(3) ICP Metals - 6010 (Full List) (Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc); Mercury - 7471 - (CV)

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab

Matrix *

S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By		Title		Date/Time
INAL SAMPLE DISPOSITION	Disposal Method		Disposed By		Date/Time

CH-EE 011

00000003-J

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-116-546

ollector J Morris	Company Contact JOAN KESSNER	Telephone No. 373-4688	Project Coordinator WEISS, RL
roject Designation Columbia River Component of the RCBRA - Sediment	Sampling Location IS14-3 SD		SAF No. RC-116
e Chest No. WCH-08-056,012	Field Logbook No. EL-1631-1	COA	Method of Shipment FED EX
hipped To EBERLINE SERVICES - ONVILLE	Offsite Property No. N/A		Bill of Lading/Air Bill No. 796171187234

Price Code 9K

Data Turnaround 45 Days

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

0000026

Preservation		None	None	None	None	Cool 4C	Cool 4C	None		
Type of Container		G/P	G/P	G/P	G/P	G/P	aG	G/P		
No. of Container(s)		1	1	1	1	1	1	1		
Volume		1500g	100g	10g	10g	250g	125g	1000g		
SAMPLE ANALYSIS		See item (1) in Special Instructions	Carbon-14	Technetium-99	See item (2) in Special Instructions	See item (3) in Special Instructions	TOC - 415.1	Particle Size (Dry Sieve) D422		

Sample No.	Matrix *	Sample Date	Sample Time										
16004	OTHER SOLID	12/08/08	1440					X	X	X			

CHAIN OF POSSESSION Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
	12-09-08 1130	Ref B	12-09-08 1130
Fridge B	12/9/08 0800	BWoodward	12/9/08 0800
BWoodward	12/9/08 1130	FedEx	12/9/08 1130
FedEx	12-10-08 0955		12-10-08 0955

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) [Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238)

(2) Strontium-89,90 – Total Sr, Isotopic Thorium (Thorium-232), Isotopic Uranium (Uranium-233/234, Uranium-235, Uranium-238), Isotopic Plutonium

(3) ICP Metals - 6010 (Full List) (Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc), Mercury - 7471 - (CV)

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab.

Matrix *

S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

000000042

ACH-EE-011

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

llector J.MOORE	Company Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator WEISS, RL	Price Code 9K
oject Designation Columbia River Component of the RCBRA - Sediment	Sampling Location ISB-2 SD		SAF No. RC-116	Data Turnaround 45 Days
e Chest No. WCH-08-056, 012	Field Logbook No. EL-1638-3	COA BESCRC6510	Method of Shipment FED EX	
ipped To EBERLINE SERVICES LIONVILLE	Offsite Property No. N/A		Bill of Lading/Air Bill No. 796171187234	

OSSIBLE SAMPLE HAZARDS/REMARKS

pecial Handling and/or Storage

42010027

Preservation				None	None	None	None	Cool 4C	Cool 4C	None
Type of Container				G/P	G/P	G/P	G/P	G/P	aG	G/P
No. of Container(s)				1	1	1	1	1	1	1
Volume				1500g	100g	10g	10g	250g	125g	1000g
SAMPLE ANALYSIS				See item (1) in Special Instructions	Carbon-14	Technetium-99	See item (2) in Special Instructions	See item (3) in Special Instructions	TOC - 415.1	Particle Size (Dry Sieve) - (Sat)
Sample No.	Matrix *	Sample Date	Sample Time							
17YW2	OTHER SOLID	12/08/08	1100					X	X	X

CHAIN OF POSSESSION	Date/Time	Sign/Print Names Received By/Stored In	Date/Time
Relinquished By/Removed From	12/08/08 1150	Received By/Stored In	12/08/08 1630
Relinquished By/Removed From Endge B	12/9/08 0800	Received By/Stored In Burockwund	12/9/08 0800
Relinquished By/Removed From Burockwund	12/9/08 1130	Received By/Stored In Fed Ex	12/9/08 1130
Relinquished By/Removed From	12-10-08 0955	Received By/Stored In	12-10-08 0955
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) (Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238)
(2) Strontium-89,90 -- Total Sr; Isotopic Thorium (Thorium-232), Isotopic Uranium (Uranium-233/234, Uranium-235, Uranium-238); Isotopic Plutonium
(3) ICP Metals - 6010 (Full List) (Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc), Mercury - 7471 - (CV)

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab

Matrix *

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

0080035

ollector 55	Company Contact JOAN KESSNER	Telephone No. 373-4688	Project Coordinator WEISS, RL	Price Code 9K	Date Turnaround 45 Days
oject Designation Columbia River Component of the RCBRA - Sediment	Sampling Location SL-5 SD		SAF No. RC-116		
e Chest No. WCH-08-056, D12	Field Logbook No. EL-1631-1	COA BESCRC6520	Method of Shipment FED EX		
hipped To EBERLINE SERVICES [✓ LIONVILLE]	Offsite Property No. N/A		Bill of Lading/Air Bill No. 796171187234		

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

Preservation	[illegible]	[illegible]	None	None	Cool 4C	Cool 4C	None			
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	G/P			
No. of Container(s)	1	1	1	1	1	1	1			
Volume	1500g	100g	10g	10g	250g	125g	1000g			
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Technetium-99	See item (2) in Special Instructions	See item (3) in Special Instructions	TOC - 415.1	Particle Size (Dry Sieve) - [illegible]			

Sample No.	Matrix *	Sample Date	Sample Time										
17XK8	OTHER SOLID	12/8/08	1250					X	X	X			

CHAIN OF POSSESSION

Sign/Print Names

linquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
[illegible]	12/8/08 1700	[illegible] A	12/8/08 1700
linquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Fridge A	12/9/08 0800	B Woodlund	12/9/08 0800
linquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
S Woodlund	12/9/08 1130	FedEx	12/9/08 1130
linquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Fed Ex	12-10-08 0955	[illegible]	12-10-08 0955
linquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
linquished By/Removed From	Date/Time	Received By/Stored In	Date/Time

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) (Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238)

(2) Strontium-89,90 – Total Sr; Isotopic Thorium (Thorium-232); Isotopic Uranium (Uranium-233/234, Uranium-235, Uranium-238); Isotopic Plutonium

(3) ICP Metals - 6010 (Full List) (Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc); Mercury - 7471 - (CV)

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab

Matrix *

S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received by	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

CH-EE-011

ollector JS

Company Contact
JOAN KESSNER

Telephone No.
375-4688

Project Coordinator
WEISS, RL

Price Code 9K

Data Turnaround
45 Days

roject Designation
Columbia River Component of the RCBRA - Sediment

Sampling Location
SI-4 SD

SAF No.
RC-116

e Chest No. WCH-08-066, 012

Field Logbook No.
EL-1611-1

COA
BESCRC6370

Method of Shipment
FED EX

hipped To
EBERLINE SERVICES [✓ LIONVILLE]

Offsite Property No.
N/A

Bill of Lading/Air Bill No. 796171187234

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

000029

Preservation	None	None	None	None	Cool 4C	Cool 4C	None			
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	G/P			
No. of Container(s)	1	1	1	1	1	1	1			
Volume	1500g	100g	10g	10g	250g	125g	1000g			
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Technetium-99	See item (2) in Special Instructions	See item (3) in Special Instructions	TOC - 415.1	Particle Size (Dry Sieve) D422			

Sample No.	Matrix *	Sample Date	Sample Time										
7XK7	OTHER SOLID	12/2/08	1216					X	X	X			

CHAIN OF POSSESSION Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
	12/8/09 1700	Re. A	12/8/08 1700
Re. A	12/9/08 0800	D Heidelberg LSF	12/9/08 0800
Heidelberg LSF	12/9/08 1130	Fedex	12/9/08 1130
	12-10-08 0955		12-10-08 0955

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) (Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238)
(2) Strontium-89,90 - Total Sr; Isotopic Thorium (Thorium-232); Isotopic Uranium (Uranium-233/234, Uranium-235, Uranium-238); Isotopic Plutonium
(3) ICP Metals - 6010 (Full List) (Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc); Mercury - 7471 - (CV)

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab.

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

BORATORY SECTION | Received By | Title | Date/Time

AL SAMPLE SPOSITION | Disposal Method | Disposed By | Date/Time

-EE-011

00000033

llector JS	Company Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator WEISS, RL	Price Code 9K / Data Turnaround 45 Days
oject Designation Columbia River Component of the RCBRA - Sediment	Sampling Location SJ- 5 SD		SAF No. RC-116	
Chain No. WCH-08-056,012	Field Logbook No. EL-1638/-1	COA HESCRC6530	Method of Shipment FED EX	
ipped To EBERLINE SERVICES (LIONVILLE)	Offsite Property No. N/A		Bill of Lading/Air Bill No. 79611118 7234	

0000032

OSSIBLE SAMPLE HAZARDS/REMARKS

pecial Handling and/or Storage

050000

Preservation	None	None	None	None	Cool 4C	Cool 4C	None			
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	G/P			
No. of Container(s)	1	1	1	1	1	1	1			
Volume	1500g	100g	10g	10g	250g	125g	1000g			
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Technetium-99	See item (2) in Special Instructions	See item (3) in Special Instructions	TOC - 415.1	Particle Size (Dry Sieve) - D422			

Sample No	Matrix *	Sample Date	Sample Time										
17XK8	OTHER SOLID	12/8/08	1146					X	X	X			

CHAIN OF POSSESSION

Sign/Print Names

inquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
12/8/08	1700	C. A 12/8/08	1700
ndge A 12/9/08	0800	B Woodward 12/9/08	0800
S Woodward 12/9/08	1120	Fed Ex 12/9/08	1130
Fed Ex 12-10-08	0855	12-10-08	0855

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) (Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238)
(2) Strontium-89,90 – Total Sr, Isotopic Thorium (Thorium-232), Isotopic Uranium (Uranium-233/234, Uranium-235, Uranium-238); Isotopic Plutonium
(3) ICP Metals - 6010 (Full List) (Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc), Mercury - 7471 - (CV)

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab

Matrix *

S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

ABORATORY SECTION	Received By	Title	Date/Time
INAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

CN-EE-01

Appendix 5

Data Validation Supporting Documentation

GENERAL CHEMISTRY ANALYSIS DATA VALIDATION CHECKLIST

VALIDATION LEVEL:	A	B	[✓ C]	D	E
PROJECT: RCBRA			DATA PACKAGE: K1487		
VALIDATOR: ELR		LAB: LLI		DATE: 11/8/09	
			SDG: K1487		
ANALYSES PERFORMED					
Anions/IC	[✓ TOC]	TOX	TPH-418.1	Oil and Grease	Alkalinity
Ammonia	BOD/COD	Chloride	Chromium-VI	pH	NO_3/NO_2
Sulfate	TDS	TKN	Phosphate		
SAMPLES/MATRIX					
J18002	J18003	J18014	J18017	J18VN9	
J17YT4	J17YT5	J17YV8	J17YV9	J17XK6	
J17X157	J17X158	J17YW2	J18004	J18005	
J18006					
				Solid	

1. DATA PACKAGE COMPLETENESS AND CASE NARRATIVE

Technical verification documentation present? .... Yes [✓ No] N/A

Comments:

2. INSTRUMENT PERFORMANCE AND CALIBRATIONS (Levels D and E)

Initial calibrations performed on all instruments? .... Yes No [✓ N/A]

Initial calibrations acceptable? .... Yes No [✓ N/A]

ICV and CCV checks performed on all instruments? .... Yes No [✓ N/A]

ICV and CCV checks acceptable? .... Yes No [✓ N/A]

Standards traceable? .... Yes No [✓ N/A]

Standards expired? .... Yes No [✓ N/A]

Calculation check acceptable? .... Yes No [✓ N/A]

Comments:

GENERAL CHEMISTRY ANALYSIS DATA VALIDATION CHECKLIST

3. BLANKS (Levels B, C, D, and E)

ICB and CCB checks performed for all applicable analyses? (Levels D, E) .... Yes No [✓ N/A]

ICB and CCB results acceptable? (Levels D, E) .... Yes No [✓ N/A]

Laboratory blanks analyzed? .... [✓ Yes] No N/A

Laboratory blank results acceptable? .... [✓ Yes] No N/A

Field blanks analyzed? (Levels C, D, E) .... Yes [✓ No] N/A

Field blank results acceptable? (Levels C, D, E) .... Yes No [✓ N/A]

Transcription/calculation errors? (Levels D, E) .... Yes No [✓ N/A]

Comments: no FBs

4. ACCURACY (Levels C, D, and E)

Spike samples analyzed? .... [✓ Yes] No N/A

Spike recoveries acceptable? .... [✓ Yes] No N/A

Sike standards NIST traceable? (Levels D, E) .... Yes No [✓ N/A]

Spike standards expired? (Levels D, E) .... Yes No [✓ N/A]

LCS/BSS samples analyzed? .... [✓ Yes] No N/A

LCS/BSS results acceptable? .... [✓ Yes] No N/A

Standards traceable? (Levels D, E) .... Yes No [✓ N/A]

Standards expired? (Levels D, E) .... Yes No [✓ N/A]

Transcription/calculation errors? (Levels D, E) .... Yes No [✓ N/A]

Performance audit sample(s) analyzed? .... Yes [✓ No] N/A

Performance audit sample results acceptable? .... Yes No [✓ N/A]

Comments: no PAS

GENERAL CHEMISTRY ANALYSIS DATA VALIDATION CHECKLIST

5. PRECISION (Levels C, D, and E)

Duplicate RPD values acceptable? .... [✓ Yes] No N/A

Duplicate results acceptable? .... [✓ Yes] No N/A

MS/MSD standards NIST traceable? (Levels D, E) .... Yes No [✓ N/A]

MS/MSD standards expired? (Levels D, E) .... Yes No [✓ N/A]

Field duplicate RPD values acceptable? .... [✓ Yes] No N/A

Field split RPD values acceptable? .... Yes No [✓ N/A]

Transcription/calculation errors? (Levels D, E) .... Yes No [✓ N/A]

Comments:

FD N9/003

6. HOLDING TIMES (all levels)

Samples properly preserved? .... [✓ Yes] No N/A

Sample holding times acceptable? .... Yes [✓ No] N/A

Comments: all are <2x - J alf

GENERAL CHEMISTRY ANALYSIS DATA VALIDATION CHECKLIST

7. RESULT QUANTITATION AND DETECTION LIMITS (all levels)

Results reported for all requested analyses? .... [✓ Yes] No N/A

Results supported in the raw data? (Levels D, E) .... Yes No [✓ N/A]

Samples properly prepared? (Levels D, E) .... Yes No [✓ N/A]

Detection limits meet RDL? .... [✓ Yes] No N/A

Transcription/calculation errors? (Levels D, E) .... Yes No [✓ N/A]

Comments:

Appendix 6

Additional Documentation Requested by Client

Lionville Laboratory, Inc.

INORGANICS METHOD BLANK DATA SUMMARY PAGE 02/05/96

CLIENT: WC-HANFORD RC-116 LVL LOT #: 9611L083
WORK ORDER: A0045-001-001-0001-00

SAMPLE	SITE ID	ANALYTE	RESULT		UNITS	REPORTING LIMIT	DILUTION FACTOR
-------	-------------------	----------------------	--------		------	----------	--------
BLANK10	96LTC004-MB1	Total Organic Carbon	20.0	u	MG/KG	20.0	1.0
BLANK10	96LTC005-MB1	Total Organic Carbon	20.0	u	MG/KG	20.0	[illegible]

Lionville Laboratory, Inc

INORGANICS ACCURACY REPORT 02/05/99

CLIENT: WC HANFORD WC-116 LVL LOT #: 9812L093

WORK ORDER: 40049 001 001 0001-90

SAMPLE	SITE ID	ANALYTE	SPIKED SAMPLE	INITIAL RESULT	SPIKED AMOUNT	%RECOV	DILUTION FACTOR (SPK)
------	-------------------	----------------------	-------	-------	------	-------	----------
01L	J17YV9	Total Organic Carbon	5269	623	4260	108.4	.
BLANK10	9812TE004-MB1	Total Organic Carbon	388	20.0 u	400	97.0	1.0
BLANK10	9812TE003-MB1	Total Organic Carbon	376	20.0 u	400	94.0	1.0

```
                                        Lionville Laboratory, Inc.

                                   INORGANICS PRECISION REPORT  02/05/09


CLIENT: WC HANFORD WC 116                                      LVL LOT #: 0812L053
WORK ORDER: 60049-001-001-0001-00
                                              INITIAL                                      DILUTION
SAMPLE    SITE ID            ANALYTE          RESULT    REPLICATE RPD                      FACTOR(REP)
-------   ------------------ ---------------- --------  --------- -------                  -----------
 011REP   B1TTV9             Total Organic Carbon  623    663         6.4                          1.0
```

Date: 18 November 2009
To: Washington Closure Hanford (technical representative)
From: ELR Consultants
Project: Columbia River Component of the RCBRA - Sediment
Subject: Volatile - Data Package No. K1489-LLI

INTRODUCTION

This memo presents the results of data validation on Data Package No. K1489 prepared by Lionville Laboratory Inc. (LLI). A list of samples validated along with the analyses reported and the method of analysis is provided in the following table.

Sample ID	Sample Date	Media	Validation	Analysis
J17YV5	12/8/08	Solid	C	See note 1
J17YV6	12/8/08	Solid	C	See note 1
J18002	12/8/08	Solid	C	See note 1
J18003	12/8/08	Solid	C	See note 1
J18016	12/8/08	Solid	C	See note 1
J18017	12/8/08	Solid	C	See note 1
J17VN9	12/8/08	Solid	C	See note 1
J17YT4	12/8/08	Solid	C	See note 1
J17YT5	12/8/08	Solid	C	See note 1
J17YV8	12/8/08	Solid	C	See note 1
J17YV9	12/8/08	Solid	C	See note 1

1 Volatiles by 8260C.

Data validation was conducted in accordance with the Washington Closure Hanford (WCH) validation statement of work and the Remedial Investigation Work Plan for Hanford Site Releases to the Columbia River (DOE/RL-2008-11, Rev. 0, September 2008). Appendices 1 through 6 provide the following information as indicated below:

Appendix 1. Glossary of Data Reporting Qualifiers
Appendix 2. Summary of Data Qualification
Appendix 3. Qualified Data Summary and Annotated Laboratory Reports
Appendix 4. Laboratory Narrative and Chain-of-Custody Documentation
Appendix 5. Data Validation Supporting Documentation
Appendix 6 Additional Date Requested by Client

DATA QUALITY OBJECTIVES

Holding Times & Sample Preservation

Analytical holding times were assessed to ascertain whether the holding time requirements were met by the laboratory. The holding time requirements are as follows. Samples must be extracted and analyzed within 14 days of the date of sample collection

If holding times are exceeded, but not by greater than two times the limit, all associated sample results are qualified as estimates and flagged "J" for detects and "UJ" for non-detects. If holding times are exceeded by greater than two times the limit, all associated detectable sample results are qualified as estimates and flagged "J" and all non-detects are rejected and flagged "UR".

All holding times were acceptable.

Method Blanks

Method blank analyses are conducted to determine the extent of laboratory contamination introduced through sampling, sample preparation and analysis. At least one acceptable method blank analysis must be conducted for every 20 samples. No contaminants should be present in the method blank. Analytical results for analytes present in any sample at less than five times the concentration of that analyte found in the associated blank are qualified as non-detects and flagged "U". Common laboratory contaminants present in samples at less than ten times the concentration of that analyte found in the associated blank are qualified as non-detects. If a sample result is less than the CRQL and is less than five times (or less than ten times for lab contaminants) the highest associated blank result, the sample result value is raised to the CRQL level and qualified as undetected "U".

Due to method blank contamination, all detected methylene chloride were raised to the RQL, qualified as undetected and flagged "U".

All other method blank results were acceptable.

Field Blanks

One field (trip) blank (J17VY5) was submitted for analysis. No analytes were detected in the field blank.

Accuracy

Matrix Spike/Matrix Spike Duplicate & Blank Spike Recoveries

Matrix spike/matrix spike duplicate analyses are used to assess the analytical accuracy of the reported data and the effect of the matrix on the ability to accurately quantify sample concentrations. Matrix spike/matrix spike duplicate analyses are performed in duplicate using five compounds for which percent recoveries must be within a range of 50-150% or within laboratory control limits. If spike recoveries are outside control limits, detected sample results less than five times the spike concentration are qualified as estimates and flagged "J". Undetected sample results with spike recoveries below control limits are qualified as estimates and flagged "UJ" Undetected sample results are not qualified if the spike recovery is above control limits. Sample results greater than five times the spike concentration require no qualification.

All accuracy results were acceptable.

Surrogate Recovery

The analyses of surrogate compounds provide a measure of performance for individual samples. Matrix-specific surrogate compound recovery control windows have been established by the EPA CLP program. If two surrogates of the same class of compounds (base/neutral or acid) are out of control limits, all associated sample results greater than the contract required quantitation limit (CRQL) are qualified as estimates and flagged "J". Sample results less than the CRQL and below the lower control limit are qualified as estimates and flagged "UJ". Sample results less than the CRQL with recoveries above the upper control limit require no qualification. If a surrogate recovery is less than 10%, detects are qualified as estimates and flagged "J" and nondetects are rejected and flagged "UR"

All surrogate results were acceptable.

- **Precision**

Matrix Spike/Matrix Spike Duplicate Samples

Matrix spike (MS)/matrix spike duplicate (MSD) results provide matrix-specific information on the precision of the method for specific target compound classes. Precision is expressed by the relative percent difference (RPD) between the recoveries of duplicate matrix spike analyses performed on a sample. Samples results must be within RPD limits of +/-30%. If RPD values are out of specification and the sample concentration is less than five times the spike concentration, all associated detected sample results are qualified as estimates and flagged "J". If RPD values are out of specification and the sample concentration is greater than five times the spike concentration, no qualification is required.

All precision results were acceptable.

Field Duplicate Samples

One set of field duplicates (J18003/J17VN9) were submitted for analysis. Field duplicates are compared using the same criteria as for laboratory duplicates. All field duplicates results were acceptable.

- **Analytical Detection Levels**

Reported analytical detection levels are compared against the required quantitation limits (RQL's) to ensure that laboratory detection levels meet the required criteria. All 1,1,1-trichloroethane results exceeded the RQL. Under the WCH statement of work, no qualification is required. All other analyes (with an RQL) met the RQL.

- **Completeness**

Data package No. K1489 was submitted for validation and verified for completeness. Completeness is based on the percentage of data determined to be valid (i.e., not rejected). The completion percentage was 100%.

MAJOR DEFICIENCIES

None found.

MINOR DEFICIENCIES

The following minor deficiencies were noted:

- Due to method blank contamination, all detected methylene chloride results were raised to the RQL, qualified as undetected and flagged "U".

All 1,1,1-trichloroethane results exceeded the RQL. Under the WCH statement of work, no qualification is required.

REFERENCES

Washington Closure Hanford Contract #S00W307A00 (March 2008), *Data Validation Services.*

DOE/RL-2008-11, Rev.0, *Remedial Investigation Work Plan for Hanford Site Releases to the Columbia River*, September 2008

Appendix 1

Glossary of Data Reporting Qualifiers

Qualifiers which may be applied by data validators in compliance with the WCH validation SOW are as follows:

U - Indicates the compound or analyte was analyzed for and not detected in the sample. The value reported is the same quantitation limit corrected for sample dilution and moisture content by the laboratory.

UJ Indicates the compound or analyte was analyzed for and not detected in the sample. Due to a minor QC deficiency identified during the data validation, the associated quantitation limit is an estimate.

J - Indicates the compound or analyte was analyzed for and detected. Due to a minor QC deficiency identified during the data validation, the associated quantitation limit is an estimate.

R - Indicates the compound or analyte was analyzed for, detected, and due to an identified major QC deficiency, the data are unusable.

UR - Indicates the compound or analyte was analyzed for and not detected in the sample. Additionally, the data is unusable due to an identified major QC deficiency.

NJ - Indicates presumptive evidence of a compound at an estimated value. The data may not be valid for some specific applications (i.e., usable for decision-making purposes).

N - Indicates presumptive evidence of a compound. The data may not be valid for some specific applications usable for decision-making purposes).

Appendix 2

Summary of Data Qualification

VOLATILE ORGANIC DATA QUALIFICATION SUMMARY*

SDG: K1489	**REVIEWER: ELR**	**Project: RCBRA**	**QC Issue**
COMPOUND	QUALIFIER	SAMPLES AFFECTED	REASON
Methylene Chloride	U at RQL	All detected analytes	Method blank contamination

* - The Qualified Data Summary Table includes laboratory applied "U" qualifiers not specifically identified here. The laboratory applied "U" qualifiers are included to minimize misinterpretation of results contained in the table.

Appendix 3

Qualified Data Summary and Annotated Laboratory Reports

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

J17VY5

Lab Name: LIONVILLE LABORATORY Contract: 60049 001-001 0001-00

Lab Code: LVL Case No.: SAS No.: SDG No.: 12L053

Matrix: (soil/water) SOIL Lab Sample ID: 0812L053-001

Sample wt/vol: 5.6 (g/mL) G Lab File ID: K121909

Level: (low/med) LOW Date Received: 12/10/08

% Moisture: not dec. ________ Date Analyzed: 12/19/08

Column: (pack/cap) CAP Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	9	U
75-01-4	Vinyl Chloride	9	U
74-83-9	Bromomethane	9	U
75-00-3	Chloroethane	9	U
75-35-4	1,1 Dichloroethene	4	U
75-09-2	Methylene Chloride	5 [illegible]	U [illegible]
67-64-1	Acetone	9	U
156-60-5	trans-1,2-Dichloroethene	4	U
75-34-3	1,1-Dichloroethane	4	U
156-59-2	cis-1,2-Dichloroethene	4	U
78-93-3	2-Butanone	9	U
67-66-3	Chloroform	4	U
71-55-6	1,1,1 Trichloroethane	4	U
56-23-5	Carbon Tetrachloride	4	U
71-43-2	Benzene	4	U
107-06-2	1,2-Dichloroethane	4	U
79-01-6	Trichloroethene	4	U
78-87-5	1,2-Dichloropropane	4	U
75-27-4	Bromodichloromethane	4	U
10061-01-5	cis-1,3-Dichloropropene	4	U
108-10-1	4-Methyl-2-Pentanone	9	U
108-88-3	Toluene	4	U
10061-02-6	trans-1,3-Dichloropropene	4	U
79-00-5	1,1,2-Trichloroethane	4	U
127-18-4	Tetrachloroethene	4	U
591-78-6	2-Hexanone	9	U
124-48-1	Dibromochloromethane	4	U
108-90-7	Chlorobenzene	4	U
100-41-4	Ethylbenzene	4	U
1330-20-7	Xylenes (Total)	4	U
100-42-5	Styrene	4	U
75-25-2	Bromoform	4	U
79-34-5	1,1,2,2-Tetrachloroethane	4	U
108-38-3	m & p-Xylene	4	U

[illegible]

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

J17VY5

Lab Name: LIONVILLE LABORATORY Contract: 60049-001-001-0001-00

Lab Code: LVL Case No.: SAS No.: SDG No.: 12L053

Matrix: (soil/water) SOIL Lab Sample ID: 0812L053-001

Sample wt/vol: 5.6 (g/mL) G Lab File ID: K121909

Level: (low/med) LOW Date Received: 12/10/08

% Moisture: not dec. ________ Date Analyzed: 12/19/08

Column: (pack/cap) CAP Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
95-47-6	o-Xylene	4	U
75-15-0	Carbon Disulfide	4	U
540-59-0	1,2 Dichloroethene (Total)	4	U

11/17/09

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

J17VY5

Lab Name: LIONVILLE LABORATORY Contract: 60049-001-001-0001 00

Lab Code: LVL Case No.: SAS No.: SDG No.: 12L053

Matrix: (soil/water) SOIL Lab Sample ID: 0812L053-001

Sample wt/vol: 5.6 (g/mL) G Lab File ID: K121909

Level (low/med) LOW Date Received: 12/10/08

% Moisture: not dec. ________ Date Analyzed: 12/19/08

Column: (pack/cap) CAP Dilution Factor: 1.0

Number TICs found: 3

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	Unknown	22.859	5	J
2.	Unknown	23.851	7	J
3.	Unknown	25.381	5	J
4.				
5.				
6.				
7.				
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11/17/09

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1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

J17VY6

Lab Name: LIONVILLE LABORATORY Contract: 60049-001-001-0001-00

Lab Code: LVL Case No.: SAS No.: SDG No.: 12L053

Matrix: (soil/water) SOIL Lab Sample ID: 0812L053-002

Sample wt/vol: 5.4 (g/mL) G Lab File ID: K121910

Level: (low/med) LOW Date Received: 12/10/08

% Moisture: not dec. ____ ___ Date Analyzed: 12/19/08

Column: (pack/cap) CAP Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	9	U
75-01-4	Vinyl Chloride	9	U
74-83-9	Bromomethane	9	U
75-00-3	Chloroethane	9	U
75-35-4	1,1-Dichloroethene	5	U
75-09-2	Methylene Chloride	5	U
67-64-1	Acetone	9	U
156-60-5	trans-1,2-Dichloroethene	5	U
75-34-3	1,1-Dichloroethane	5	U
156-59-2	cis-1,2-Dichloroethene	5	U
78-93-3	2-Butanone	9	U
67-66-3	Chloroform	5	U
71-55-6	1,1,1-Trichloroethane	5	U
56-23-5	Carbon Tetrachloride	5	U
71-43-2	Benzene	5	U
107-06-2	1,2-Dichloroethane	5	U
79-01-6	Trichloroethene	5	U
78-87-5	1,2-Dichloropropane	5	U
75-27-4	Bromodichloromethane	5	U
10061-01-5	cis-1,3-Dichloropropene	5	U
108-10-1	4-Methyl-2-Pentanone	9	U
108-88-3	Toluene	5	U
10061-02-6	trans-1,3-Dichloropropene	5	U
79-00-5	1,1,2-Trichloroethane	5	U
127-18-4	Tetrachloroethene	5	U
591-78-6	2-Hexanone	9	U
124-48-1	Dibromochloromethane	5	U
108-90-7	Chlorobenzene	5	U
100-41-4	Ethylbenzene	5	U
1330-20-7	Xylenes (Total)	5	U
100-42-5	Styrene	5	U
75-25-2	Bromoform	5	U
79-34-5	1,1,2,2-Tetrachloroethane	5	U
108-38-3	m & p-Xylene	5	U

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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO

J17VY6

Lab Name: LIONVILLE LABORATORY Contract: 60049-001-001-0001-00

Lab Code: LVL Case No.: SAS No.: SDG No.: 12L053

Matrix: (soil/water) SOIL Lab Sample ID: 0812L053-002

Sample wt/vol: 5.4 (g/mL) G Lab File ID: K121910

Level: (low/med) LOW Date Received: 12/10/08

% Moisture: not dec. ________ Date Analyzed: 12/19/08

Column: (pack/cap) CAP Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
95-47-6	o-Xylene	5	U
75-15-0	Carbon Disulfide	5	U
540-59-0	1,2-Dichloroethene (Total)	5	U

11/17/09

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

J17VY6

Lab Name: LIONVILLE LABORATORY Contract: 60049-001-001-0003-00

Lab Code: LVL Case No.: SAS No.: SDG No.: 12L053

Matrix: (soil/water) SOIL Lab Sample ID: 0812L053-002

Sample wt/vol: 5.4 (g/mL) G Lab File ID: K121910

Level: (low/med) LOW Date Received: 12/10/08

% Moisture: not dec. ________ Date Analyzed: 12/19/08

Column: (pack/cap) CAP Dilution Factor: 1.0

Number TICs found: 2

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	Unknown	22.852	5	J
2.	Unknown	23.843	6	J
3.				
4.				
5.				
6.				
7.				
8.				
9.				
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1/17/09

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1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

J18002

Lab Name: LIONVILLE LABORATORY   Contract: 60049-001 001-0001-00

Lab Code: LVL   Case No.:   SAS No.:   SDG No.: 12L053

Matrix: (soil/water) SOIL   Lab Sample ID: 0812L053-003

Sample wt/vol: 5.0 (g/mL) G   Lab File ID: K121911

Level: (low/med) LOW   Date Received: 12/10/08

% Moisture: not dec. ______   Date Analyzed: 12/19/08

Column: (pack/cap) CAP   Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	9	U
75-01-4	Vinyl Chloride	9	U
74-83-9	Bromomethane	9	U
75-00-3	Chloroethane	9	U
75-35-4	1,1-Dichloroethene	5	U
75-09-2	Methylene Chloride	5	U
67-64-1	Acetone	5	U
156-60-5	trans-1,2-Dichloroethene	9	U
75-34-3	1,1-Dichloroethane	5	U
156-59-2	cis-1,2-Dichloroethene	5	U
78-93-3	2-Butanone	5	U
67-66-3	Chloroform	9	U
71-55-6	1,1,1-Trichloroethane	5	U
56-23-5	Carbon Tetrachloride	5	U
71-43-2	Benzene	5	U
107-06-2	1,2-Dichloroethane	5	U
79-01-6	Trichloroethene	5	U
78-87-5	1,2-Dichloropropane	5	U
75-27-4	Bromodichloromethane	5	U
10061-01-5	cis-1,3-Dichloropropene	5	U
108-10-1	4-Methyl-2-Pentanone	5	U
108-88-3	Toluene	9	U
10061-02-6	trans-1,3-Dichloropropene	5	U
79-00-5	1,1,2-Trichloroethane	5	U
127-18-4	Tetrachloroethene	5	U
591-78-6	2-Hexanone	5	U
124-48-1	Dibromochloromethane	9	U
108-90-7	Chlorobenzene	5	U
100-41-4	Ethylbenzene	5	U
1330-20-7	Xylenes (Total)	5	U
100-42-5	Styrene	5	U
75-25-2	Bromoform	5	U
79-34-5	1,1,2,2-Tetrachloroethane	5	U
108-38-3	m & p-Xylene	5	U

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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO

J18002

Lab Name: LIONVILLE LABORATORY Contract: 60049 001 001 0001-00

Lab Code: LVL Case No.: SAS No.: SDG No.: 12L053

Matrix: (soil/water) SOIL Lab Sample ID: 0812L053-003

Sample wt/vol: 5.3 (g/mL) G Lab File ID: K121911

Level: (low/med) LOW Date Received: 12/10/08

% Moisture: not dec. ________ Date Analyzed: 12/19/08

Column: (pack/cap) CAP Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
95-47-6	o-Xylene	5	U
75-15-0	Carbon Disulfide	5	U
540-59-0	1,2-Dichloroethene (Total)	5	U

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VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

J18002

Lab Name: LIONVILLE LABORATORY Contract: 68049-001-001-0001 00

Lab Code: LVL Case No.: SAS No.: SDG No.: 12L053

Matrix: (soil/water) SOIL Lab Sample ID: 0812L053-003

Sample wt/vol: 5.3 (g/mL) G Lab File ID: X121911

Level: (low/med) LOW Date Received: 12/10/08

% Moisture: not dec. ________ Date Analyzed: 12/19/08

Column: (pack/cap) CAP Dilution Factor: 1.0

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

J18003

Lab Name: LIONVILLE LABORATORY Contract: 60049 001-001-0001-00

Lab Code: LVL Case No.: SAS No.: SDG No.: 12L053

Matrix: (soil/water) SOIL Lab Sample ID: 0812L053-004

Sample wt/vol. 5.8 (g/mL) G Lab File ID: K121912

Level: (low/med) LOW Date Received: 12/10/08

% Moisture: not dec. ______ Date Analyzed: 12/19/08

Column: (pack/cap) CAP Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	9	U
75-01-4	Vinyl Chloride	9	U
74-83-9	Bromomethane	9	U
75-00-3	Chloroethane	9	U
75-35-4	1,1-Dichloroethene	4	U
75-09-2	Methylene Chloride	5 ~~7~~	~~JB~~
67-64-1	Acetone	9	U
156-60-5	trans-1,2-Dichloroethene	4	U
75-34-3	1,1-Dichloroethane	4	U
156-59-2	cis-1,2-Dichloroethene	4	U
78-93-3	2-Butanone	9	U
67-66-3	Chloroform	4	U
71-55-6	1,1,1-Trichloroethane	4	U
56-23-5	Carbon Tetrachloride	4	U
71-43-2	Benzene	4	U
107-06-2	1,2-Dichloroethane	4	U
79-01-6	Trichloroethene	4	U
78-87-5	1,2-Dichloropropane	4	U
75-27-4	Bromodichloromethane	4	U
10061-01-5	cis-1,3-Dichloropropene	4	U
108-10-1	4-Methyl-2-Pentanone	9	U
108-88-3	Toluene	4	U
10061-02-6	trans-1,3-Dichloropropene	4	U
79-00-5	1,1,2-Trichloroethane	4	U
127-18-4	Tetrachloroethene	4	U
591-78-6	2-Hexanone	9	U
124-48-1	Dibromochloromethane	4	U
108-90-7	Chlorobenzene	4	U
100-41-4	Ethylbenzene	4	U
1330-20-7	Xylenes (Total)	4	U
100-42-5	Styrene	4	U
75-25-2	Bromoform	4	U
79-34-5	1,1,2,2-Tetrachloroethane	4	U
108-38-3	m & p-Xylene	4	U

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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

J18001

Lab Name: LIONVILLE LABORATORY Contract: 00049-001-001-0001-00

Lab Code: LVL Case No.: SAS No.: SDG No.: 12L053

Matrix: (soil/water) SOIL Lab Sample ID: 0812L053-004

Sample wt/vol: 5.8 (g/mL) G Lab File ID: K121912

Level: (low/med) LOW Date Received: 12/10/08

% Moisture: not dec. ________ Date Analyzed: 12/19/08

Column: (pack/cap) CAP Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
95-47-6	o-Xylene	4	U
75-15-0	Carbon Disulfide	4	U
540-59-0	1,2-Dichloroethene (Total)	4	U

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VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

J1N003

Lab Name: LIONVILLE LABORATORY Contract: 60049-001-001-9001-00

Lab Code: LVL Case No.: SAS No.: SDG No.: 12L053

Matrix: (soil/water) SOIL Lab Sample ID: 0812L053-004

Sample wt/vol: 5.0 (g/mL) G Lab File ID: K121912

Level: (low/med) LOW Date Received: 12/10/08

% Moisture: not dec. ______ Date Analyzed: 12/19/08

Column: (pack/cap) CAP Dilution Factor: 1.0

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

J18015

Lab Name: LIONVILLE LABORATORY Contract: 60049-001-001-0001-00

Lab Code: LVL Case No.: SAS No.: SDG No.: 121053

Matrix: (soil/water) SOIL Lab Sample ID: 08121053-005

Sample wt/vol: 6.5 (g/mL) G Lab File ID: K121913

Level: (low/med) LOW Date Received: 12/10/08

% Moisture: not dec. ______ Date Analyzed: 12/19/08

Column: (pack/cap) CAP Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	8	U
75-01-4	Vinyl Chloride	8	U
74-83-9	Bromomethane	8	U
75-00-3	Chloroethane	8	U
75-35-4	1,1-Dichloroethene	4	U
75-09-2	Methylene Chloride	5 ~~[illegible]~~	U ~~[illegible]~~
67-64-1	Acetone	8	U
156-60-5	trans-1,2-Dichloroethene	4	U
75-34-3	1,1-Dichloroethane	4	U
156-59-2	cis-1,2-Dichloroethene	4	U
78-93-3	2-Butanone	8	U
67-66-3	Chloroform	4	U
71-55-6	1,1,1-Trichloroethane	4	U
56-23-5	Carbon Tetrachloride	4	U
71-43-2	Benzene	4	U
107-06-2	1,2-Dichloroethane	4	U
79-01-6	Trichloroethene	4	U
78-87-5	1,2-Dichloropropane	4	U
75-27-4	Bromodichloromethane	4	U
10061-01-5	cis-1,3-Dichloropropene	4	U
108-10-1	4-Methyl-2-Pentanone	8	U
108-88-3	Toluene	4	U
10061-02-6	trans-1,3-Dichloropropene	4	U
79-00-5	1,1,2-Trichloroethane	4	U
127-18-4	Tetrachloroethene	4	U
591-78-6	2-Hexanone	8	U
124-48-1	Dibromochloromethane	4	U
108-90-7	Chlorobenzene	4	U
100-41-4	Ethylbenzene	4	U
1330-20-7	Xylenes (Total)	4	U
100-42-5	Styrene	4	U
75-25-2	Bromoform	4	U
79-34-5	1,1,2,2-Tetrachloroethane	4	U
108-38-3	m & p-Xylene	4	U

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EPA SAMPLE NO.

J18016

Lab Name: LIONVILLE LABORATORY   Contract: 60040-001 001-0001-00

Lab Code: LVL   Case No.:   SAS No.:   SDG No.: 12L053

Matrix: (soil/water) SOIL   Lab Sample ID: 0812L053-005

Sample wt/vol: 6.5 (g/mL) G   Lab File ID: K121913

Level: (low/med) LOW   Date Received: 12/10/08

% Moisture: not dec. ________   Date Analyzed: 12/19/08

Column: (pack/cap) CAP   Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
95-47-6	o-Xylene	4	U
75-15-0	Carbon Disulfide	4	U
540-59-0	1,2-Dichloroethene (Total)	4	U

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VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

J18016

Lab Name: LIONVILLE LABORATORY Contract: 60049-001 001 0001-00

Lab Code: LVL Case No.: SAS No.: SDG No.: 12L053

Matrix: (soil/water) SOIL Lab Sample ID: 0812L053-005

Sample wt/vol: 6.5 (g/mL) G Lab File ID: K121913

Level: (low/med) LOW Date Received: 12/10/08

% Moisture: not dec. ______ Date Analyzed: 12/19/08

Column: (pack/cap) CAP Dilution Factor: 1.0

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
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EPA SAMPLE NO.

J18017

Lab Name: LIONVILLE LABORATORY Contract: 60049-001-001-0001-00

Lab Code: LVL Case No.: SAS No.: SDG No.: 12L053

Matrix: (soil/water) SOIL Lab Sample ID: 0812L053-006

Sample wt/vol: 5.3 (g/mL) G Lab File ID: K121014

Level: (low/med) LOW Date Received: 12/10/08

% Moisture: not dec. Date Analyzed: 12/19/08

Column: (pack/cap) CAP Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	9	U
75-01-4	Vinyl Chloride	9	U
74-83-9	Bromomethane	9	U
75-00-3	Chloroethane	9	U
75-35-4	1,1-Dichloroethene	5	U
75-09-2	Methylene Chloride	5 ~~2~~	U ~~B~~
67-64-1	Acetone	9	U
156-60-5	trans 1,2-Dichloroethene	5	U
75-34-3	1,1-Dichloroethane	5	U
156-59-2	cis-1,2-Dichloroethene	5	U
78-93-3	2-Butanone	9	U
67-66-3	Chloroform	5	U
71-55-6	1,1,1-Trichloroethane	5	U
56-23-5	Carbon Tetrachloride	5	U
71-43-2	Benzene	5	U
107-06-2	1,2-Dichloroethane	5	U
79-01-6	Trichloroethene	5	U
78-87-5	1,2-Dichloropropane	5	U
75-27-4	Bromodichloromethane	5	U
10061-01-5	cis-1,3-Dichloropropene	5	U
108-10-1	4-Methyl-2-Pentanone	9	U
108-88-3	Toluene	5	U
10061-02-6	trans-1,3-Dichloropropene	5	U
79-00-5	1,1,2-Trichloroethane	5	U
127-18-4	Tetrachloroethene	5	U
591-78-6	2-Hexanone	9	U
124-48-1	Dibromochloromethane	5	U
108-90-7	Chlorobenzene	5	U
100-41-4	Ethylbenzene	5	U
1330-20-7	Xylenes (Total)	5	U
100-42-5	Styrene	5	U
75-25-2	Bromoform	5	U
79-34-5	1,1,2,2-Tetrachloroethane	5	U
108-38-3	m & p-Xylene	5	U

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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO

J18017

Lab Name: LIONVILLE LABORATORY

Contract: 60019 001 001-0001-00

Lab Code: LVL

Case No.:

SAS No.:

SDG No.: 12L053

Matrix: (soil/water) SOIL

Lab Sample ID: 0812L053-006

Sample wt/vol: 5.3 (g/mL) G

Lab File ID: K121914

Level: (low/med) LOW

Date Received: 12/10/08

% Moisture: not dec. ________

Date Analyzed: 12/19/08

Column: (pack/cap) CAP

Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
95-47-6	o-Xylene	5	U
75-15-0	Carbon Disulfide	5	U
540-59-0	1,2-Dichloroethene (Total)	5	U

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VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

J18017

Lab Name: LIONVILLE LABORATORY   Contract: 60049-001-001-0001-00

Lab Code: LVL   Case No.:   SAS No.:   SDG No.: 12L053

Matrix: (soil/water) SOIL   Lab Sample ID: 0812L053 006

Sample wt/vol: 5.1 (g/mL) G   Lab File ID: K121914

Level: (low/med) LOW   Date Received: 12/10/08

% Moisture: not dec. ______   Date Analyzed: 12/19/08

Column: (pack/cap) CAP   Dilution Factor: 1.0

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO

J17VN9

Lab Name: LIONVILLE LABORATORY   Contract: 60049-001-001-0001-00

Lab Code: LVL   Case No.:   SAS No.:   SDG No.: 12L053

Matrix: (soil/water) SOIL   Lab Sample ID: 0812L053-007

Sample wt/vol: 5.2 (g/mL) G   Lab File ID: K121915

Level: (low/med) LOW   Date Received: 12/10/08

% Moisture: not dec. ________   Date Analyzed: 12/19/08

Column: (pack/cap) CAP   Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	10	U
75-01-4	Vinyl Chloride	10	U
74-83-9	Bromomethane	10	U
75-00-3	Chloroethane	10	U
75-35-4	1,1-Dichloroethene	5	U
75-09-2	Methylene Chloride	5 ~~2~~	U ~~J~~
67-64-1	Acetone	10	U
156-60-5	trans-1,2-Dichloroethene	5	U
75-34-3	1,1-Dichloroethane	5	U
156-59-2	cis-1,2-Dichloroethene	5	U
78-93-3	2-Butanone	10	U
67-66-3	Chloroform	5	U
71-55-6	1,1,1-Trichloroethane	5	U
56-23-5	Carbon Tetrachloride	5	U
71-43-2	Benzene	5	U
107-06-2	1,2-Dichloroethane	5	U
79-01-6	Trichloroethene	5	U
78-87-5	1,2-Dichloropropane	5	U
75-27-4	Bromodichloromethane	5	U
10061-01-5	cis-1,3-Dichloropropene	5	U
108-10-1	4-Methyl-2-Pentanone	10	U
108-88-3	Toluene	5	U
10061-02-6	trans-1,3-Dichloropropene	5	U
79-00-5	1,1,2-Trichloroethane	5	U
127-18-4	Tetrachloroethene	5	U
591-78-6	2-Hexanone	10	U
124-48-1	Dibromochloromethane	5	U
108-90-7	Chlorobenzene	5	U
100-41-4	Ethylbenzene	5	U
1330-20-7	Xylenes (Total)	5	U
100-42-5	Styrene	5	U
75-25-2	Bromoform	5	U
79-34-5	1,1,2,2-Tetrachloroethane	5	U
108-38-3	m & p-Xylene	5	U

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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

J17VN9

Lab Name: LIONVILLE LABORATORY Contract: 40949 001-001-0001 00

Lab Code: LVL Case No.: SAS No.: SDG No.: 12L053

Matrix: (soil/water) SOIL Lab Sample ID: 0812L053 007

Sample wt/vol: 5.2 (g/mL) G Lab File ID: K121915

Level: (low/med) LOW Date Received: 12/10/08

% Moisture: not dec. ________ Date Analyzed: 12/19/08

Column: (pack/cap) CAP Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
95-47-6	o-Xylene	5	U
75-15-0	Carbon Disulfide	5	U
540-59-0	1,2 Dichloroethene (Total)	5	U

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VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

J17VN9

Lab Name: LIONVILLE LABORATORY Contract: 60049 001-001-0001-00

Lab Code: LVL Case No.: SAS No.: SDG No.: 12L053

Matrix: (soil/water) SOIL Lab Sample ID: 0812L053 007

Sample wt/vol: 5.2 (g/mL) G Lab File ID: X121915

Level: (low/med) LOW Date Received: 12/10/08

% Moisture: not dec. ________ Date Analyzed: 12/19/08

Column: (pack/cap) CAP Dilution Factor: 1.0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

Number TICs found: 0

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

J17YT4

Lab Name: LIONVILLE LABORATORY Contract: 60049-001-001 0001 00

Lab Code: LVL Case No.: SAS No.: SDG No.: 12L053

Matrix: (soil/water) SOIL Lab Sample ID: 0812L053-008

Sample wt/vol: 5.7 (g/mL) G Lab File ID: K121916

Level: (low/med) LOW Date Received: 12/10/08

% Moisture: not dec. ________ Date Analyzed: 12/19/08

Column: (pack/cap) CAP Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	9	U
75-01-4	Vinyl Chloride	9	U
74-83-9	Bromomethane	9	U
75-00-3	Chloroethane	9	U
75-35-4	1,1-Dichloroethene	4	U
75-09-2	Methylene Chloride	4	U
67-64-1	Acetone	9	U
156-60-5	trans-1,2-Dichloroethene	4	U
75-34-3	1,1-Dichloroethane	4	U
156-59-2	cis-1,2-Dichloroethene	4	U
78-93-3	2-Butanone	9	U
67-66-3	Chloroform	4	U
71-55-6	1,1,1-Trichloroethane	4	U
56-23-5	Carbon Tetrachloride	4	U
71-43-2	Benzene	4	U
107-06-2	1,2-Dichloroethane	4	U
79-01-6	Trichloroethene	4	U
78-87-5	1,2-Dichloropropane	4	U
75-27-4	Bromodichloromethane	4	U
10061-01-5	cis-1,3-Dichloropropene	4	U
108-10-1	4-Methyl-2-Pentanone	9	U
108-88-3	Toluene	4	U
10061-02-6	trans-1,3-Dichloropropene	4	U
79-00-5	1,1,2-Trichloroethane	4	U
127-18-4	Tetrachloroethene	4	U
591-78-6	2-Hexanone	9	U
124-48-1	Dibromochloromethane	4	U
108-90-7	Chlorobenzene	4	U
100-41-4	Ethylbenzene	4	U
1330-20-7	Xylenes (Total)	4	U
100-42-5	Styrene	4	U
75-25-2	Bromoform	4	U
79-34-5	1,1,2,2-Tetrachloroethane	4	U
108-38-3	m & p-Xylene	4	U

11/17/09

FORM I VOA 1/87 Rev.

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.
J17YT4

Lab Name: LIONVILLE LABORATORY　　Contract: 40049-001-001-0001-00

Lab Code: LVL　　Case No.:　　SAS No.:　　SDG No.: 12L053

Matrix: (soil/water) SOIL　　Lab Sample ID: 0812L053-008

Sample wt/vol: 5.7 (g/mL) G　　Lab File ID: K121916

Level: (low/med) LOW　　Date Received: 12/10/08

% Moisture: not dec. ________　　Date Analyzed: 12/19/08

Column: (pack/cap) CAP　　Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
95-47-6	o-Xylene	4	U
75-15-0	Carbon Disulfide	4	U
540-59-0	1,2-Dichloroethene (Total)	4	U

11/7/9

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO

J17YT4

Lab Name: LIONVILLE LABORATORY Contract: 60049-001-001 0001-00

Lab Code: LVL Case No.: SAS No.: SDG No.: 12L053

Matrix: (soil/water) SOIL Lab Sample ID: 0812L053-008

Sample wt/vol: 5.7 (g/mL) G Lab File ID: K121916

Level: (low/med) LOW Date Received: 12/10/08

% Moisture: not dec. ________ Date Analyzed: 12/19/08

Column: (pack/cap) CAP Dilution Factor: 1.0

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
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1/7/09

FORM I VOA-TIC 1/87 Rev.

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

J17YT5

Lab Name: LIONVILLE LABORATORY   Contract: 60049-001-001 0001-00

Lab Code: LVL   Case No.:   SAS No.:   SDG No.: 12L053

Matrix: (soil/water) SOIL   Lab Sample ID: 0812L053-009

Sample wt/vol: 4.9 (g/mL) G   Lab File ID: K121917

Level: (low/med) LOW   Date Received: 12/10/08

% Moisture: not dec. ________   Date Analyzed: 12/17/08

Column: (pack/cap) CAP   Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	10	U
75-01-4	Vinyl Chloride	10	U
74-83-9	Bromomethane	10	U
75-00-3	Chloroethane	10	U
75-35-4	1,1-Dichloroethene	5	U
75-09-2	Methylene Chloride	5 [illegible]	U [illegible]
67-64-1	Acetone	10	U
156-60-5	trans-1,2-Dichloroethene	5	U
75-34-3	1,1-Dichloroethane	5	U
156-59-2	cis-1,2-Dichloroethene	5	U
78-93-3	2-Butanone	10	U
67-66-3	Chloroform	5	U
71-55-6	1,1,1-Trichloroethane	5	U
56-23-5	Carbon Tetrachloride	5	U
71-43-2	Benzene	5	U
107-06-2	1,2-Dichloroethane	5	U
79-01-6	Trichloroethene	5	U
78-87-5	1,2-Dichloropropane	5	U
75-27-4	Bromodichloromethane	5	U
10061-01-5	cis-1,3-Dichloropropene	5	U
108-10-1	4-Methyl-2-Pentanone	10	U
108-88-3	Toluene	5	U
10061-02-6	trans-1,3-Dichloropropene	5	U
79-00-5	1,1,2-Trichloroethane	5	U
127-18-4	Tetrachloroethene	5	U
591-78-6	2-Hexanone	10	U
124-48-1	Dibromochloromethane	5	U
108-90-7	Chlorobenzene	5	U
100-41-4	Ethylbenzene	5	U
1330-20-7	Xylenes (Total)	5	U
100-42-5	Styrene	5	U
75-25-2	Bromoform	5	U
79-34-5	1,1,2,2-Tetrachloroethane	5	U
108-38-3	m & p-Xylene	5	U

12/17/08

FORM I VOA   1/87 Rev.

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

J17YT5

Lab Name: LIONVILLE LABORATORY Contract: 60049 001-001-0001-06

Lab Code: LVL Case No.: SAS No.: SDG No.: 12L053

Matrix: (soil/water) SOIL Lab Sample ID: 0812L053 009

Sample wt/vol: 4.9 (g/mL) G Lab File ID: K121917

Level: (low/med) LOW Date Received: 12/10/08

% Moisture: not dec. ______ Date Analyzed: 12/19/08

Column: (pack/cap) CAP Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
95-47-6	o-Xylene	5	U
75-15-0	Carbon Disulfide	5	U
540-59-0	1,2-Dichloroethene (Total)	5	U

11/17/09

FORM I VOA 1/87 Rev.

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

J17YT8

Lab Name: LIONVILLE LABORATORY   Contract: 60049-001-001-0001-00

Lab Code: LVL   Case No.:   SAS No.:   SDG No.: 12L053

Matrix: (soil/water) SOIL   Lab Sample ID: 0812L053-009

Sample wt/vol: 4.9 (g/mL) G   Lab File ID: K121917

Level: (low/med) LOW   Date Received: 12/10/08

% Moisture: not dec. ________   Date Analyzed: 12/19/08

Column: (pack/cap) CAP   Dilution Factor: 1.0

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
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11/17/9

FORM I VOA-TIC   3/87 Rev.

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

J17YV6

Lab Name: LIONVILLE LABORATORY Contract. 60049-001-001-0001-00

Lab Code: LVL Case No.: SAS No.: SDG No.: 12L053

Matrix: (soil/water) SOIL Lab Sample ID: 0812L053-010

Sample wt/vol: 6.6 (g/mL) G Lab File ID: K121918

Level: (low/med) LOW Date Received: 12/10/08

% Moisture: not dec. ________ Date Analyzed: 12/19/08

Column: (pack/cap) CAP Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	8	U
75-01-4	Vinyl Chloride	8	U
74-83-9	Bromomethane	8	U
75-00-3	Chloroethane	8	U
75-35-4	1,1-Dichloroethene	4	U
75-09-2	Methylene Chloride	5 ~~2~~	U ~~[illegible]~~
67-64-1	Acetone	8	U
156-60-5	trans-1,2-Dichloroethene	4	U
75-34-3	1,1-Dichloroethane	4	U
156-59-2	cis-1,2-Dichloroethene	4	U
78-93-3	2-Butanone	8	U
67-66-3	Chloroform	4	U
71-55-6	1,1,1-Trichloroethane	4	U
56-23-5	Carbon Tetrachloride	4	U
71-43-2	Benzene	4	U
107-06-2	1,2-Dichloroethane	4	U
79-01-6	Trichloroethene	4	U
78-87-5	1,2-Dichloropropane	4	U
75-27-4	Bromodichloromethane	4	U
10061-01-5	cis-1,3-Dichloropropene	4	U
108-10-1	4-Methyl-2-Pentanone	8	U
108-88-3	Toluene	4	U
10061-02-6	trans-1,3-Dichloropropene	4	U
79-00-5	1,1,2-Trichloroethane	4	U
127-18-4	Tetrachloroethene	4	U
591-78-6	2-Hexanone	8	U
124-48-1	Dibromochloromethane	4	U
108-90-7	Chlorobenzene	4	U
100-41-4	Ethylbenzene	4	U
1330-20-7	Xylenes (Total)	4	U
100-42-5	Styrene	4	U
75-25-2	Bromoform	4	U
79-34-5	1,1,2,2-Tetrachloroethane	4	U
108-38-3	m & p-Xylene	4	U

FORM I VOA 1/87 Rev.

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

J17YV8

Lab Name: LIONVILLE LABORATORY Contract: 68049-001-001-0001-00

Lab Code: LVL Case No.: SAS No.: SDG No.: 12L053

Matrix: (soil/water) SOIL Lab Sample ID: 0812L053-010

Sample wt/vol: 6.6 (g/mL) G Lab File ID: K121918

Level: (low/med) LOW Date Received: 12/10/08

% Moisture: not dec. ______ Date Analyzed: 12/19/08

Column: (pack/cap) CAP Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
95-47-6	o-Xylene	4	U
75-15-0	Carbon Disulfide	4	U
540-59-0	1,2-Dichloroethene (Total)	4	U

FORM I VOA 1/87 Rev.

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO

J17YV8

Lab Name: LIONVILLE LABORATORY Contract: 60049-001-001 0001 00

Lab Code: LVL Case No.: SAS No.: SDG No.: 12L053

Matrix: (soil/water) SOIL Lab Sample ID: 0812L053-010

Sample wt/vol: 6.6 (g/mL) G Lab File ID: K121918

Level: (low/med) LOW Date Received: 12/10/08

% Moisture: not dec. ________ Date Analyzed: 12/19/08

Column: (pack/cap) CAP Dilution Factor: 1.0

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
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1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

J17YV9

Lab Name: LIONVILLE LABORATORY   Contract: A0049-001-001-0001-00

Lab Code: LVL   Case No.:   SAS No.:   SDG No.: 12L053

Matrix: (soil/water) SOIL   Lab Sample ID: 0812L053-011

Sample wt/vol: 5.4 (g/mL) G   Lab File ID: X121919

Level: (low/med) LOW   Date Received: 12/10/08

% Moisture: not dec. ________   Date Analyzed: 12/19/08

Column: (pack/cap) CAP   Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	9	U
75-01-4	Vinyl Chloride	9	U
74-83-9	Bromomethane	9	U
75-00-3	Chloroethane	9	U
75-35-4	1,1-Dichloroethene	5	U
75-09-2	Methylene Chloride	5 ~~5~~	U ~~B~~
67-64-1	Acetone	9	U
156-60-5	trans-1,2-Dichloroethene	5	U
75-34-3	1,1-Dichloroethane	5	U
156-59-2	cis-1,2-Dichloroethene	5	U
78-93-3	2-Butanone	9	U
67-66-3	Chloroform	5	U
71-55-6	1,1,1-Trichloroethane	5	U
56-23-5	Carbon Tetrachloride	5	U
71-43-2	Benzene	5	U
107-06-2	1,2-Dichloroethane	5	U
79-01-6	Trichloroethene	5	U
78-87-5	1,2-Dichloropropane	5	U
75-27-4	Bromodichloromethane	5	U
10061-01-5	cis-1,3-Dichloropropene	5	U
108-10-1	4-Methyl-2-Pentanone	9	U
108-88-3	Toluene	5	U
10061-02-6	trans-1,3-Dichloropropene	5	U
79-00-5	1,1,2-Trichloroethane	5	U
127-18-4	Tetrachloroethene	5	U
591-78-6	2-Hexanone	9	U
124-48-1	Dibromochloromethane	5	U
108-90-7	Chlorobenzene	5	U
100-41-4	Ethylbenzene	5	U
1330-20-7	Xylenes (Total)	5	U
100-42-5	Styrene	5	U
75-25-2	Bromoform	5	U
79-34-5	1,1,2,2-Tetrachloroethane	5	U
108-38-3	m & p-Xylene	5	U

1/11/09

FORM I VOA   1/87 Rev.

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

J17YV9

Lab Name: LIONVILLE LABORATORY Contract: 60049-001 001-0001-00

Lab Code: LVL Case No.: SAS No.: SDG No.: 12L651

Matrix: (soil/water) SOIL Lab Sample ID: 0812L053-011

Sample wt/vol: 5.4 (g/mL) G Lab File ID: K121919

Level: (low/med) LOW Date Received: 12/16/08

% Moisture: not dec. ________ Date Analyzed: 12/19/08

Column: (pack/cap) CAP Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
95-47-6	o-Xylene	5	U
75-15-0	Carbon Disulfide	5	U
540-59-0	1,2-Dichloroethene (Total)	5	U

11/12/09

FORM I VOA 1/87 Rev.

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

J17YV9

Lab Name: LIONVILLE LABORATORY Contract: 60049-001-001-0001-00

Lab Code: LVL Case No.: SAS No.: SDG No.: 12L053

Matrix: (soil/water) SOIL Lab Sample ID: 0812L053-011

Sample wt/vol: 5.4 (g/mL) G Lab File ID: K121919

Level: (low/med) LOW Date Received: 12/10/08

% Moisture: not dec. ______ Date Analyzed: 12/19/08

Column: (pack/cap) CAP Dilution Factor: 1.0

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
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11/12/09

FORM I VOA-TIC 1/87 Rev.

Appendix 4

Laboratory Narrative and Chain-of-Custody Documentation

264 Welsh Pool Road
Exton, Pennsylvania 19341
Phone (610) 280-3000
Fax (610) 280-3041

Case Narrative

Client: WC-HANFORD RC-116
LVL #: 08121053
SDG/SAF # RC-116 /K1489

W.O. #: 60049-001-001-0001-00
Date Received: 12-10-2008

GC/MS VOLATILE

Eleven (11) solid samples were collected on 12-08-2008.

The samples and associated QC samples were analyzed according to criteria set forth in Lionville Laboratory SOPs based on SW 846 Method 8260B for TCL Volatile target compounds on 12-19,20-2008.

The following is a summary of QC results accompanying the sample results. Lionville Laboratory (LvL) certifies that all test results meet the requirements of NELAC except as noted below:

1. Samples were analyzed within hold time.
2. Samples reported on an "as received" basis.
3. Non-target compounds were detected in these samples.
4. All surrogate recoveries were within acceptance criteria.
5. Four (4) of seventy-four matrix spike recoveries were outside acceptance criteria.
6. One (1) of seventy-four (74) blank spike recoveries was outside acceptance criteria.
7. The method blanks contained the common laboratory contaminant Methylene Chloride at a level less than the CRQL.
8. All internal standard area and retention time criteria were met.
9. Manual integrations are performed according to SOP QA-125 to produce quality data with utmost integrity. All manual integrations are required to be technically valid and properly documented. Appropriate technical flags are defined in the Glossary ("Technical Flags For Manual Integration")

10. LvL is NELAP accredited by the State of Pennsylvania. For a complete listing of accrediting authorities and the corresponding analytes/methods, please contact your Project Manager

11. "I certify that this sample data package is in compliance with SOW requirements, both technically and for completeness, other than the conditions detailed above. Release of the data contained in this hard-copy data package has been authorized by the Laboratory Manager or a designee, as verified by the following signature."

Gary Daniels
Laboratory Manager
Lionville Laboratory

05/13/07
Date

Washington Closure Hanford | CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST | RC-116-107 | Page 1 of 1

Collector JS	Company Contact JOAN KESSNER	Telephone No. 375-4638	Project Coordinator WEISS, RL
Project Designation Columbia River Component of the RCBRA - Sediment	Sampling Location TRIP BLANK		SAF No. RC 116
Ice Chest No. WCH-08-056, 012	Field Logbook No. EL-1631-4	COA RESCRC6330	Method of Shipment FED EX
Shipped To EBERLINE SERVICES (LIONVILLE)	Offsite Property No. N/A		Bill of Lading/Air Bill No. 796711 87234

Price Code 9K

Data Turnaround
45 Days

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

Preservation	Cool 4C
Type of Container	G
No. of Container(s)	1
Volume	120g
SAMPLE ANALYSIS	See item (1) in Special Instructions

Sample No.	Matrix *	Sample Date	Sample Time	
J17VY5	OTHER SOLID	12/9/08	0950	X

CHAIN OF POSSESSION

Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
	12/9/08 1700		12/9/08 1700
	12/9/08 0800	B Woodward	12/9/08 0800
B Woodward	12/9/08 1130	FedEx	12/9/08 1130
Fed Ex	[illegible] [illegible]		[illegible] 0955

SPECIAL INSTRUCTIONS

(1) VOA - 8260A (TCL) {1,1,1-Trichloroethane, 1,1,2,2-Tetrachloroethane, 1,1,2-Trichloroethane, 1,1-Dichloroethane, 1,1-Dichloroethene, 1,2-Dichloroethane, 1,2-Dichloropropane, 2-Butanone, 2-Hexanone, 4-Methyl-2-Pentanone, Acetone, Benzene, Bromodichloromethane, Bromoform, Bromomethane, Carbon disulfide, Carbon tetrachloride, Chlorobenzene, Chloroethane, Chloroform, Chloromethane, cis-1,2-Dichloroethylene, cis-1,3-Dichloropropene, Dibromochloromethane, Ethylbenzene, Methylene chloride, Styrene, Tetrachloroethene, Toluene, trans-1,2-Dichloroethylene, trans-1,3-Dichloropropene, Trichloroethene, Vinyl chloride, Xylenes (total)}

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab.

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

000046

AA0000013

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

Collector J MOORE	Company Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator WEISS, RL	Price Code 9K
Project Designation Columbia River Component of the RCBRA - Sediment	Sampling Location TRIP BLANK		SAF No. RC-136	Data Turnaround 45 Days
Ice Chest No. WCH-08-056,012	Field Logbook No. EL-1633-1	COA DESCRC6520	Method of Shipment FED EX	
Shipped To EBERLINE SERVICES [✓ LIONVILLE]	Offsite Property No. N/A		Bill of Lading/Air Bill No. 796171187234	

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

Preservation	Cool 4C
Type of Container	G
No. of Container(s)	1
Volume	250g
SAMPLE ANALYSIS	See item (1) in Special Instructions

Sample No.	Matrix *	Sample Date	Sample Time	
J17VY6	OTHER SOLID	12/08/08	1130	X

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From J Moore	Date/Time 12-08-08 / 1630	Received By/Stored In RC 1	Date/Time 12-08-08/1630
Relinquished By/Removed From Fridge B	Date/Time 12/9/08 0800	Received By/Stored In B Woodward	Date/Time 12/9/08 0800
Relinquished By/Removed From B Woodward	Date/Time 12/9/08 1130	Received By/Stored In FedEx	Date/Time 12/9/08 1130
Relinquished By/Removed From FedEx	Date/Time 12-10-08 0955	Received By/Stored In	Date/Time 12-10-08 0955
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time

SPECIAL INSTRUCTIONS

(1) VOA - 8260A (TCL) {1,1,1-Trichloroethane, 1,1,2,2-Tetrachloroethane, 1,1,2-Trichloroethane, 1,1-Dichloroethane, 1,1-Dichloroethene, 1,2-Dichloroethane, 1,2-Dichloropropane, 2-Butanone, 2-Hexanone, 4-Methyl-2-Pentanone, Acetone, Benzene, Bromodichloromethane, Bromoform, Bromomethane, Carbon disulfide, Carbon tetrachloride, Chlorobenzene, Chloroethane, Chloroform, Chloromethane, cis-1,2-Dichloroethylene, cis-1,3-Dichloropropene, Dibromochloromethane, Ethylbenzene, Methylene chloride, Styrene, Tetrachloroethene, Toluene, trans-1,2-Dichloroethylene, trans-1,3-Dichloropropene, Trichloroethene, Vinyl chloride, Xylenes (total)}

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location using custody of samples for shipment to lab.

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Collector J Morse	Company Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator WEISS, RL
Project Designation Columbia River Component of the RCBRA - Sediment	Sampling Location 1514- 2 SD		SAF No. RC-116
Ice Chest No. WCH-08-056, 012	Field Logbook No. EL-1634-1	COA BRSCRC6520	Method of Shipment FED EX
Shipped To EBERLINE SERVICES (RICHMOND)	Offsite Property No. N/A		Bill of Lading/Air Bill No. 796171187234

Price Code 9K

Data Turnaround 45 Days

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

000048

Preservation	None	None	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	None
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	aG	aG	G	*
No. of Container(s)	1	1	1	1	1	1	1	1	1	1
Volume	1500g	100g	10g	10g	250g	250g	125g	250g	250g	1*
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Technetium-99	See item (2) in Special Instructions	See item (3) in Special Instructions	PCBs - 8082	Pesticides - 8081	Semi-VOA - 8270A (TCL)	See item (4) in Special Instructions	-

Sample No.	Matrix *	Sample Date	Sample Time										
J18002	OTHER SOLID	12/08/08	1415					X	X	X	X	X	

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab.

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
	12-08-08 / 1650		12-08-08 / 1650
Fridge B	12/9/08 0800	Bluwood	12/9/08 0800
Bluwood	12/9/08 1130	FedEx	12/9/08 1130
FedEx	12-10-08 0955		12-10-08 0955

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) (Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238)
(2) Strontium-89,90 -- Total Sr; Isotopic Thorium (Thorium-232); Isotopic Uranium (Uranium-233/234, Uranium-235, Uranium-238); Isotopic Plutonium
(3) ICP Metals - 6010 (Full List) (Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc); Mercury - 7471 - (CV)
(4) VOA - 8260A (TCL) (1,1,1-Trichloroethane, 1,1,2,2-Tetrachloroethane, 1,1,2-Trichloroethane, 1,1-Dichloroethane, 1,1-Dichloroethene, 1,2-Dichloroethane, 1,2-Dichloropropane, 2-Butanone, 2-Hexanone, 4-Methyl-2-Pentanone, Acetone, Benzene, Bromodichloromethane, Bromoform, Bromomethane, Carbon disulfide, Carbon tetrachloride, Chlorobenzene, Chloroethane, Chloroform, Chloromethane, cis-1,2-Dichloroethylene, cis-1,3-Dichloropropene, Dibromochloromethane,
[illegible]

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

RC-116-545

Collector J Moore	Company Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator WEISS, RL
Project Designation Columbia River Component of the RCBRA - Sediment	Sampling Location BS14 / SD		SAF No. RC-116
Ice Chest No. WCH-08-056,012	Field Logbook No. EL-1631/-1	COA BESCRC6320	Method of Shipment FED EX
Shipped To EBERLINE SERVICES / LIONVILLE	Offsite Property No. N/A		Bill of Lading/Air Bill No. 7961 7118 7234

Price Code **9K**

Data Turnaround **45 Days**

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

SAMPLE ANALYSIS

Preservation	None	None	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	None
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	aG	aG	G	-
No. of Container(s)	1	1	1	1	1	1	1	1	1	1
Volume	1500g	100g	10g	10g	250g	250g	125g	250g	250g	1*
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Technetium-99	See item (2) in Special Instructions	See item (3) in Special Instructions	PCBs - 8082	Pesticides - 8081	Semi-VOA - 8270A (TCL)	See item (4) in Special Instructions	-

Sample No.	Matrix *	Sample Date	Sample Time										
48003	OTHER SOLID	12/08/08	1335					X	X	X	X	X	

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab.

CHAIN OF POSSESSION

Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
12-08-08 / 1630		Ridge B	12-8-08 / 1630
Relinquished By/Removed From Ridge B	Date/Time 12/9/08 0800	Received By/Stored In Bwoodward	Date/Time 12/9/08 0800
Relinquished By/Removed From Bwoodward	Date/Time 12/9/08 1130	Received By/Stored In FedEx	Date/Time 12/9/08 1130
Relinquished By/Removed From Fed Ex	Date/Time 12-10-08 0955	Received By/Stored In	Date/Time 12-10-08 0955
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) (Americium-241, Antimony-125, Beryllium-7, Cerium-144, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238)
(2) Strontium-89,90 - - Total Sr; Isotopic Thorium (Thorium-232); Isotopic Uranium (Uranium-233/234, Uranium-235, Uranium-238); Isotopic Plutonium
(3) ICP Metals - 6010 (Full List) (Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc); Mercury - 7471 - (CV)
(4) VOA - 8260A (TCL) (1,1,1-Trichloroethane, 1,1,2,2-Tetrachloroethane, 1,1,2-Trichloroethane, 1,1-Dichloroethane, 1,1-Dichloroethene, 1,2-Dichloroethane, 1,2-Dichloropropane, 2-Butanone, 2-Hexanone, 4-Methyl-2-Pentanone, Acetone, Benzene, Bromodichloromethane, Bromoform, Bromomethane, Carbon disulfide, Carbon tetrachloride, Chlorobenzene, Chloroethane, Chloroform, Chloromethane, cis-1,2-Dichloroethylene, cis-1,3-Dichloropropene, Dibromochloromethane,

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION — Received By | Title | Date/Time

FINAL SAMPLE DISPOSITION — Disposal Method | Disposed By | Date/Time

ollector	[illegible]
roject Designation	Columbia River Component of the RCBRA - Sediment
ce Chest No.	WCH 08-056,012
hipped To	EDERLINE SERVICES / [RICHLAND ✓ LIONVILLE]
Company Contact	JOAN KESSNER
Telephone No.	375-4688
Project Coordinator	WEISS, RL
Price Code	9K
Data Turnaround	45 Days
Sampling Location	1515- 2 SO
SAF No.	RC-116
Field Logbook No.	EL-1631-1
COA	BESCRC6520
Method of Shipment	FED EX
Offsite Property No.	N/A
Bill of Lading/Air Bill No.	796171187234

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

0500000

		Preservation	None	None	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	None
		Type of Container	G/P	G/P	G/P	G/P	G/P	aG	aG	aG	G	-
		No. of Container(s)	1	1	1	1	1	1	1	1	1	1
		Volume	1500g	150g	10g	10g	250g	250g	125g	250g	250g	1
SAMPLE ANALYSIS			See item (1) in Special Instructions	Carbon-14	Technetium-99	See item (2) in Special Instructions	See item (3) in Special Instructions	PCBs - 8082	Pesticides - 8081	Semi-VOA - 8270A (TCL)	See item (4) in Special Instructions	-
Sample No	**Matrix ***	**Sample Date**	**Sample Time**									
18016	OTHER SOLID	12/8/08	1450				X	X	X	X	X	

CHAIN OF POSSESSION

Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
[illegible]	12/8/08 1700	Ref. A	12/8/08 1700
Fridge A	12/9/08 0800	B Woodward	12/9/08 0800
Woodward	12/9/08 1130	FedEx	12/9/08 1130
Fed Ex	12/10/08 0955	[illegible]	12/10/08 0955

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab.

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) (Americium-241, Antimony-125, Beryllium-7, Cerium-144, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238)
(2) Strontium-89,90 -- Total Sr; Isotopic Thorium (Thorium-232); Isotopic Uranium (Uranium-233/234, Uranium-235, Uranium-238); Isotopic Plutonium
(3) ICP Metals - 6010 (Full List) (Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc); Mercury - 7471 - (CV)
(4) VOA - 8260A (TCL) (1,1,1-Trichloroethane, 1,1,2,2-Tetrachloroethane, 1,1,2-Trichloroethane, 1,1-Dichloroethane, 1,1-Dichloroethene, 1,2-Dichloroethane, 1,2-Dichloropropane, 2-Butanone, 2-Hexanone, 4-Methyl-2-Pentanone, Acetone, Benzene, Bromodichloromethane, Bromoform, Bromomethane, Carbon disulfide, Carbon tetrachloride, Chlorobenzene, Chloroethane, Chloroform, Chloromethane, cis-1,2-Dichloroethylene, cis-1,3-Dichloropropene, Dibromochloromethane, Ethylbenzene, Methylene chloride, Styrene, Tetrachloroethene, Toluene, trans-1,2-Dichloroethylene

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Washington Closure Hanford

Sector 73	Company Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator WEISS, RL
Project Designation Columbia River Component of the RCBRA - Sediment	Sampling Location 1515 \ SD		SAF No. RC-116
Ice Chest No. WCH-08-~~035~~ 012, 056	Field Logbook No. EL-1631-1	COA BESCRC6520	Method of Shipment FED EX
Shipped To EBERLINE SERVICES: LIONVILLE	Offsite Property No. N/A		Bill of Lading/Air Bill No. 7966 711 87234

Price Code 9K

Data Turnaround 45 Days

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

E500000

Preservation	None	None	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	None
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	aG	aG	G	-
No. of Container(s)	1	1	1	1	1	1	1	1	1	1
Volume	1500g	100g	10g	10g	250g	750g	125g	250g	250g	1
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Technetium-99	See item (2) in Special Instructions	See item (3) in Special Instructions	PCBs - 8082	Pesticides - 8081	Semi-VOA - 8270A (TCL)	See item (4) in Special Instructions	

Sample No.	Matrix *	Sample Date	Sample Time										
118017	OTHER SOLID	12/8/08	1535					X	X	X	X	X	

Shipper unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab

CHAIN OF POSSESSION

Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
	12/8/08 1700	A	12/8/08 1700
A	12/9/08 0800		12/9/08 0800
	12/9/08 1130	Fedex	12/9/08 1130
	12/10/08 0955		12/10/08 0955

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) (Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238)
(2) Strontium-89,90 -- Total Sr, Isotopic Thorium (Thorium-232); Isotopic Uranium (Uranium-233/234, Uranium-235, Uranium-238); Isotopic Plutonium
(3) ICP Metals - 6010 (Full List) (Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc); Mercury - 7471 - (CV)
(4) VOA - 8260A (TCL) (1,1,1-Trichloroethane, 1,1,2,2-Tetrachloroethane, 1,1,2-Trichloroethane, 1,1-Dichloroethane, 1,1-Dichloroethene, 1,2-Dichloroethane, 1,2-Dichloropropane, 2-Butanone, 2-Hexanone, 4-Methyl-2-Pentanone, Acetone, Benzene, Bromodichloromethane, Bromoform, Bromomethane, Carbon disulfide, Carbon tetrachloride, Chlorobenzene, Chloroethane, Chloroform, Chloromethane, cis-1,2-Dichloroethylene, cis-1,3-Dichloropropene, Dibromochloromethane,

Matrix *

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

ollector J MOORE	Company Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator WEISS, RL
roject Designation Columbia River Component of the RCBRA - Sediment	Sampling Location 1514-150		SAF No. RC-116
e Chest No. WCH-08-056, 012	Field Logbook No. EL-1633/-1	COA BESCRC6520	Method of Shipment FED EX
hipped To EBERLINE SERVICES [✓ LIONVILLE]	Offsite Property No. N/A		Bill of Lading/Air Bill No. 796171187234

Price Code 9K

Data Turnaround 45 Days

'OSSIBLE SAMPLE HAZARDS/REMARKS

pecial Handling and/or Storage

Preservation	None	None	None	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C
Type of Container	G/P	G/P	G/P	G/P	G/P	G/P	aG	aG	aG	G
No. of Container(s)	1	1	1	1	1	1	1	1	1	1
Volume	1500g	100g	100g	10g	10g	250g	250g	120g	250g	250g
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Tritium - H3	Technetium-99	See item (2) in Special Instructions	See item (3) in Special Instructions	PCBs - 8082	Pesticides - 8081	Semi-VOA - 8270A (TCL)	See item (4) in Special Instructions

Sample No.	Media *	Sample Date	Sample Time										
17VN9	OTHER SOLID	12/08/08	1345						X	X	X	X	X

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab

CHAIN OF POSSESSION Sign/Print Names

Relinquished By/Removed From	Date/Time 12-08-08 1650	Received By/Stored In	Date/Time 12-08-08 1650
Relinquished By/Removed From	Date/Time 12/9/08 0800	Received By/Stored In B Woodward	Date/Time 12/9/08 0800
Relinquished By/Removed From B Woodward	Date/Time 12/9/08 1120	Received By/Stored In FedEx	Date/Time 12/9/08 1132
Relinquished By/Removed From	Date/Time 12-10-08 0955	Received By/Stored In	Date/Time 12-10-08 0955
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) [Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238]
(2) Strontium-89,90 – Total Sr; Isotopic Thorium (Thorium-232); Isotopic Uranium (Uranium-233/234, Uranium-235, Uranium-238); Isotopic Plutonium
(3) ICP Metals - 6010 (Full List) [Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc]; Mercury - 7471 - (CV)
(4) VOA - 8260A (TCL) [1,1,1-Trichloroethane, 1,1,2,2-Tetrachloroethane, 1,1,2-Trichloroethane, 1,1-Dichloroethane, 1,1-Dichloroethene, 1,2-Dichloroethane, 1,2-Dichloropropane, 2-Butanone, 2-Hexanone, 4-Methyl-2-Pentanone, Acetone, Benzene, Bromodichloromethane, Bromoform, Bromomethane, Carbon disulfide, Carbon tetrachloride, Chlorobenzene, Chloroethane, Chloroform, Chloromethane, cis-1,2-Dichloroethylene, cis-1,3-Dichloropropene, Dibromochloromethane, Ethylbenzene, Methylene chloride, Styrene, Tetrachloroethylene, Toluene, trans-1,2-Dichloroethylene

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

ABORATORY SECTION	Received By	Title	Date/Time
INAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

CHEE-011

Washington Closure Hanford

CHAIN OF CUSTODY

ollector J.S.	Company Contact JOAN KESSNER	Telephone No. 375 4688	Project Coordinator WEISS, RL
roject Designation Columbia River Component of the RCBRA - Sediment	Sampling Location HMSTO- 2 SD		SAF No. RC-116
e Chest No. WCH-08-056.012	Field Logbook No. EL-1634-1	COA BESCRC0510	Method of Shipment FED EX
hipped To EBERLINE SERVICES [✓ LIONVILLE]	Offsite Property No. N/A		Bill of Lading/Air Bill No. 796171187234

Price Code 9K

Data Turnaround 45 Days

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

			Preservation	None	None	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	None
			Type of Container	G/P	G/P	G/P	G/P	G/P	aG	aG	aG	G	-
			No. of Container(s)	1	1	1	1	1	1	1	1	1	1
			Volume	1500g	100g	10g	10g	250g	250g	125g	250g	250g	1
SAMPLE ANALYSIS				See item (1) in Special Instructions	Carbon-14	Technetium-99	See item (2) in Special Instructions	See item (3) in Special Instructions	PCBs - 8082	Pesticides - 8081	Semi-VOA 8270A (TCL)	See item (4) in Special Instructions	-
Sample No	Matrix *	Sample Date	Sample Time										
J17YT4	OTHER SOLID	12/9/08	~~10/29/08~~ BD 12/9/08 1020					X	X	X	X	X	

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab

CHAIN OF POSSESSION Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Vern Rogel	12/8/08 1700	Rec 4	12/8/08 1700
Ref. A	12/9/08 0800	D. Heidelberg	12/9/08 0800
D. Heidelberg	12/9/08 1130	FedEx	12/9/08 1130
Fed Ex	12/10/08 0955		12/10/08 0955

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) {Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238}
(2) Strontium-89,90 - Total Sr; Isotopic Thorium {Thorium-232}, Isotopic Uranium {Uranium-233/234, Uranium-235, Uranium-238}; Isotopic Plutonium
(3) ICP Metals - 6010 (Full List) {Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc}, Mercury - 7471 - (CV)
(4) VOA - 8260A (TCL) {1,1,1-Trichloroethane, 1,1,2,2-Tetrachloroethane, 1,1,2-Trichloroethane, 1,1-Dichloroethane, 1,1-Dichloroethene, 1,2-Dichloroethane, 1,2-Dichloropropane, 2-Butanone, 2-Hexanone, 4-Methyl-2-Pentanone, Acetone, Benzene, Bromodichloromethane, Bromoform, Bromomethane, Carbon disulfide, Carbon tetrachloride, Chlorobenzene, Chloroethane, Chloroform, Chloromethane, cis-1,2-Dichloroethylene, cis-1,3-Dichloropropene, Dibromochloromethane,

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Washington Closure Hanford

Collector 57	Company Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator WEISS, RL
Price Code 9K	Data Turnaround 45 Days		
Project Designation Columbia River Component of the RCBRA - Sediment	Sampling Location EMSTD- | SD		SAF No. RC-116
Ice Chest No. WCH-08-056, 012	Field Logbook No. EL-1631-1	COA BESCRC6520	Method of Shipment FED EX
Shipped To EBERLINE SERVICES [✓ LIONVILLE]	Offsite Property No. N/A		Bill of Lading/Air Bill No. 796171187234

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

Preservation	None	None	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	None
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	aG	aG	G	-
No. of Container(s)	1	1	1	1	1	1	1	1	1	1
Volume	1500g	100g	10g	10g	250g	250g	125g	250g	150g	1*
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Technetium-99	See item (2) in Special Instructions	See item (3) in Special Instructions	PCBs - 8082	Pesticides 8081	Semi-VOA - 8270A (TCL)	See item (4) in Special Instructions	-

Sample No.	Matrix *	Sample Date	Sample Time										
J17YT5	OTHER SOLID	12/9/08	0930					X	X	X	X	X	

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab.

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
[illegible]	12/5/08 1700	[illegible] A	12/5/08 1700
Fridge A	12/9/08 0800	B Woodward	12/9/08 0800
B Woodward	12/9/08 1130	Fed Ex	12/9/08 1130
Fed Ex	12-10-08 0935	[illegible]	12-10-08 0935

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) (Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238)
(2) Strontium-89,90 – Total Sr; Isotopic Thorium (Thorium-232), Isotopic Uranium (Uranium-233/234, Uranium-235, Uranium-238), Isotopic Plutonium
(3) ICP Metals - 6010 (Full List) (Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc); Mercury - 7471 - (CV)
(4) VOA - 8260A (TCL) (1,1,1-Trichloroethane, 1,1,2,2-Tetrachloroethane, 1,1,2-Trichloroethane, 1,1-Dichloroethane, 1,1-Dichloroethene, 1,2-Dichloroethane, 1,2-Dichloropropane, 2-Butanone, 2-Hexanone, 4-Methyl-2-Pentanone, Acetone, Benzene, Bromodichloromethane, Bromoform, Bromomethane, Carbon disulfide, Carbon tetrachloride, Chlorobenzene, Chloroethane, Chloroform, Chloromethane, cis-1,2-Dichloroethylene, cis-1,3-Dichloropropene, Dibromochloromethane, Ethylbenzene, Methylene chloride, Styrene, Tetrachloroethene, Toluene, trans-1,2-Dichloroethylene

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Collector J Moore	Company Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator WEISS, RL
Project Designation Columbia River Component of the RCBRA - Sediment	Sampling Location 1813-3 SD		SAF No. RC-116
Ice Chest No. WCH-08-056,012	Field Logbook No. EL-1631-1	COA BESCRC6520	Method of Shipment FED EX
Shipped To EBERLINE SERVICES [✓ LIONVILLE]	Offsite Property No. N/A		Bill of Lading/Air Bill No. 796171187234

Price Code 9K

Data Turnaround 45 Days

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POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

S50000

Preservation	None	None	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	None
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	aG	aG	G	-
No. of Container(s)	1	1	1	1	1	1	1	1	1	1
Volume	1500g	100g	10g	10g	250g	250g	125g	250g	250g	1"
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Technetium-99	See item (2) in Special Instructions	See item (3) in Special Instructions	PCBs - 8082	Pesticides - 8081	Semi-VOA - 8270A (TCL)	See item (4) in Special Instructions	-

Sample No.	Matrix *	Sample Date	Sample Time										
J17YV8	OTHER SOLID	12/08/08	1130					X	X	X	X	X	

CHAIN OF POSSESSION

Sign/Print Names

Relinquished By/Removed From	Date/Time 12-08-08 1630	Received By/Stored In	Date/Time 12-08-08 1630
Relinquished By/Removed From Endge B	Date/Time 12/9/08 0800	Received By/Stored In BWoodward	Date/Time 12/9/08 0800
Relinquished By/Removed From BWoodward	Date/Time 12/9/08 1130	Received By/Stored In FedEx	Date/Time 12/9/08 1130
Relinquished By/Removed From FedEx	Date/Time 12-10-08 0955	Received By/Stored In	Date/Time 12-10-08 0955
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time

Sampler unavailable to remove sample(s) from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) {Americium-241, A… Cerium-144, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238}
(2) Strontium-89,90 -- Total Sr; Isotopic Thorium {Thorium-232}, Isotopic Uranium {Uranium-233/234, Uranium-235, Uranium-238}; Isotopic Plutonium
(3) ICP Metals - 6010 (Full List) {Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc}; Mercury - 7471 - (CV)
(4) VOA - 8260A (TCL) {1,1,1-Trichloroethane, 1,1,2,2-Tetrachloroethane, 1,1,2-Trichloroethane, 1,1-Dichloroethane, 1,1-Dichloroethene, 1,2-Dichloroethane, 1,2-Dichloropropane, 2-Butanone, 2-Hexanone, 4-Methyl-2-Pentanone, Acetone, Benzene, Bromodichloromethane, Bromoform, Bromomethane, Carbon disulfide, Carbon tetrachloride, Chlorobenzene, Chloroethane, Chloroform, Chloromethane, cis-1,2-Dichloroethylene, cis-1,3-Dichloropropene, Dibromochloromethane, Ethylbenzene, Methylene chloride, Styrene, Tetrachloroethene, Toluene, trans-1,2-Dichloroethylene

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Collector J Moore	Company Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator WEISS, RL	Price Code 9K
Project Designation Columbia River Component of the RCBRA - Sediment	Sampling Location IS13-5 SD		SAP No. RC-116	Data Turnaround 45 Days
Ice Chest No. WCH-08-066, 012	Field Logbook No. EL-1631-1	COA BE50RC6510	Method of Shipment FED EX	
Shipped To EBERLINE SERVICES (LIONVILLE)	Offsite Property No. N/A		Bill of Lading/Air Bill No. 796171187234	

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

9500000

Preservation	None	None	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	None
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	aG	aG	G	-
No. of Container(s)	1	1	1	1	1	1	1	1	1	1
Volume	1500g	100g	10g	10g	250g	250g	125g	250g	250g	10
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Technetium-99	See item (2) in Special Instructions	See item (3) in Special Instructions	PCBs - 8082	Pesticides - 8081	Semi-VOA - 8270A (TCL)	See item (4) in Special Instructions	-

Sample No.	Matrix *	Sample Date	Sample Time										
J17YV9	OTHER SOLID	12/08/08	1210					X	X	X	X	X	

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab.

CHAIN OF POSSESSION

Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
	12-08-08 /1650		12-08-08 /1650
Bridge B	12/9/08 0800	B Woodward	12/9/08 0800
B Woodward	12/9/08 1130	FedEx	12/9/08 1130
FedEx	12/10/08 0935		12/10/08 0935

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) {Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238}

(2) Strontium-89,90 – Total Sr; Isotopic Thorium {Thorium-232}; Isotopic Uranium {Uranium-233/234, Uranium-235, Uranium-238}; Isotopic Plutonium

(3) ICP Metals - 6010 (Full List) {Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc}; Mercury - 7471 - (CV)

(4) VOA - 8260A (TCL) {1,1,1-Trichloroethane, 1,1,2,2-Tetrachloroethane, 1,1,2-Trichloroethane, 1,1-Dichloroethane, 1,1-Dichloroethene, 1,2-Dichloroethane, 1,2-Dichloropropane, 2-Butanone, 2-Hexanone, 4-Methyl-2-Pentanone, Acetone, Benzene, Bromodichloromethane, Bromoform, Bromomethane, Carbon disulfide, Carbon tetrachloride, Chlorobenzene, Chloroethane, Chloroform, Chloromethane, cis-1,2-Dichloroethylene, cis-1,3-Dichloropropene, Dibromochloromethane,

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Appendix 5

Data Validation Supporting Documentation

GC/MS ORGANIC DATA VALIDATION CHECKLIST

VALIDATION LEVEL:	A	B	[✓ C]	D	E

PROJECT:	RCBRA	DATA PACKAGE:	K1489

VALIDATOR:	ELR	LAB:	LLI	DATE:	11/8/09
				SDG:	K1499

ANALYSES PERFORMED					
[✓ SW-846 8260]		SW-846 8260 (TCLP)	SW-846 8270		SW-846 8270 (TCLP)

SAMPLES/MATRIX					
J17VY5	J17VY6	J18002	J18003	J18016	J18017
J17VN9	J17VT4	J17VT5	J17VV8	J17VV9	
					solid

1. DATA PACKAGE COMPLETENESS AND CASE NARRATIVE

Technical verification documentation present? .... Yes [✓ No] N/A

Comments:

2. INSTRUMENT TUNING AND CALIBRATION (Levels D and E)

GC/MS tuning/performance check acceptable? .... Yes No [✓ N/A]

Initial calibrations acceptable? .... Yes No [✓ N/A]

Continuing calibrations acceptable? .... Yes No [✓ N/A]

Standards traceable? .... Yes No [✓ N/A]

Standards expired? .... Yes No [✓ N/A]

Calculation check acceptable? .... Yes No [✓ N/A]

Comments:

GC/MS ORGANIC DATA VALIDATION CHECKLIST

3. BLANKS (Levels B, C, D, and E)

Calibration blanks analyzed? (Levels D, E) .... Yes No [✓ N/A]

Calibration blank results acceptable? (Levels D, E) .... Yes No [✓ N/A]

Laboratory blanks analyzed? .... [✓ Yes] No N/A

Laboratory blank results acceptable? .... Yes [✓ No] N/A

Field/trip blanks analyzed? (Levels C, D, E) .... [✓ Yes] No N/A

Field/trip blank results acceptable? (Levels C, D, E) .... [✓ Yes] No N/A

Transcription/calculation errors? (Levels D, E) .... Yes No [✓ N/A]

Comments: MC = U all detects and RQL

4. ACCURACY (Levels C, D, and E)

Surrogates/system monitoring compounds analyzed? .... [✓ Yes] No N/A

Surrogate/system monitoring compound recoveries acceptable? .... [✓ Yes] No N/A

Surrogates traceable? (Levels D, E) .... Yes No [✓ N/A]

Surrogates expired? (Levels D, E) .... Yes No [✓ N/A]

MS/MSD samples analyzed? .... [✓ Yes] No N/A

MS/MSD results acceptable? .... [✓ Yes] No N/A

MS/MSD standards NIST traceable? (Levels D, E) .... Yes No [✓ N/A]

MS/MSD standards? (Levels D, E) .... Yes No [✓ N/A]

LCS/BSS samples analyzed? .... [✓ Yes] No N/A

LCS/BSS results acceptable? .... [✓ Yes] No N/A

Standards traceable? (Levels D, E) .... Yes No [✓ N/A]

Standards expired? (Levels D, E) .... Yes No [✓ N/A]

Transcription/calculation errors? (Levels D, E) .... Yes No [✓ N/A]

Performance audit sample(s) analyzed? .... Yes [✓ No] N/A

Performance audit sample results acceptable? .... Yes No [✓ N/A]

Comments: No PAT

GC/MS ORGANIC DATA VALIDATION CHECKLIST

5. PRECISION (Levels C, D, and E)

MS/MSD samples analyzed? .... [✓ Yes] No N/A

MS/MSD RPD values acceptable? .... [✓ Yes] No N/A

MS/MSD standards NIST traceable? (Levels D, E) .... Yes No [✓ N/A]

MS/MSD standards expired? (Levels D, E) .... Yes No [✓ N/A]

Field duplicate RPD values acceptable? .... [✓ Yes] No N/A

Field split RPD values acceptable? .... Yes No [✓ N/A]

Transcription/calculation errors? (Levels D, E) .... Yes No [✓ N/A]

Comments:

6. SYSTEM PERFORMANCE (Levels D and E)

Internal standards analyzed? .... Yes No [✓ N/A]

Internal standard areas acceptable? .... Yes No [✓ N/A]

Internal standard retention times acceptable? .... Yes No [✓ N/A]

Standards traceable? .... Yes No [✓ N/A]

Standards expired? .... Yes No [✓ N/A]

Transcription/calculation errors? .... Yes No [✓ N/A]

Comments:

7. HOLDING TIMES (all levels)

Samples properly preserved? .... [✓ Yes] No N/A

Sample holding times acceptable? .... [✓ Yes] No N/A

Comments:

GC/MS ORGANIC DATA VALIDATION CHECKLIST

8. COMPOUND IDENTIFICATION, QUANTITATION, AND DETECTION LIMITS (all levels)

Compound identification acceptable? (Levels D, E) .... Yes No [✓ N/A]

Compound quantitation acceptable? (Levels D, E) .... Yes No [✓ N/A]

Results reported for all requested analyses? .... [✓ Yes] No N/A

Results supported in the raw data? (Levels D, E) .... Yes No [✓ N/A]

Samples properly prepared? (Levels D, E) .... Yes No [✓ N/A]

Laboratory properly identified and coded all TIC? (Levels D, E) .... Yes No [✓ N/A]

Detection limits meet RDL? .... ~~Yes~~ [✓ No] N/A

Transcription/calculation errors? (Levels D, E) .... Yes No [✓ N/A]

Comments: 1,1,1-trichloroethane - all on

9. SAMPLE CLEANUP (Levels D and E)

GPC cleanup performed? .... Yes No [✓ N/A]

GPC check performed? .... Yes No [✓ N/A]

GPC check recoveries acceptable? .... Yes No [✓ N/A]

GPC calibration performed? .... Yes No [✓ N/A]

GPC calibration check performed? .... Yes No [✓ N/A]

GPC calibration check retention times acceptable? .... Yes No [✓ N/A]

Check/calibration materials traceable? .... Yes No [✓ N/A]

Check/calibration materials Expired? .... Yes No [✓ N/A]

Analytical batch QC given similar cleanup? .... Yes No [✓ N/A]

Transcription/Calculation Errors? .... Yes No [✓ N/A]

Comments:

Appendix 8

Additional Documentation Requested by Client

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

08LVK246-MB1

Lab Name: LIONVILLE LABORATORY Contract: 69049-001-001-0001-00

Lab Code: LVL Case No.: SAS No.: SDG No.: 12L053

Matrix: (soil/water) SOIL Lab Sample ID: 08LVK246-MB1

Sample wt/vol: 5.0 (g/mL) G Lab File ID: K121906

Level: (low/med) LOW Date Received: 12/19/08

% Moisture: not dec. ________ Date Analyzed: 12/19/08

Column: (pack/cap) CAP Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	10	U
75-01-4	Vinyl Chloride	10	U
74-83-9	Bromomethane	10	U
75-00-3	Chloroethane	10	U
75-35-4	1,1-Dichloroethene	5	U
75-09-2	Methylene Chloride	3	J
67-64-1	Acetone	10	U
156-60-5	trans-1,2-Dichloroethene	5	U
75-34-3	1,1-Dichloroethane	5	U
156-59-2	cis-1,2 Dichloroethene	5	U
78-93-3	2-Butanone	10	U
67-66-3	Chloroform	5	U
71-55-6	1,1,1-Trichloroethane	5	U
56-23-5	Carbon Tetrachloride	5	U
71-43-2	Benzene	5	U
107-06-2	1,2-Dichloroethane	5	U
79-01-6	Trichloroethene	5	U
78-87-5	1,2-Dichloropropane	5	U
75-27-4	Bromodichloromethane	5	U
10061-01-5	cis-1,3-Dichloropropene	5	U
108-10-1	4-Methyl-2-Pentanone	10	U
108-88-3	Toluene	5	U
10061-02-6	trans-1,3-Dichloropropene	5	U
79-00-5	1,1,2-Trichloroethane	5	U
127-18-4	Tetrachloroethene	5	U
591-78-6	2-Hexanone	10	U
124-48-1	Dibromochloromethane	5	U
108-90-7	Chlorobenzene	5	U
100-41-4	Ethylbenzene	5	U
1330-20-7	Xylenes (Total)	5	U
100-42-5	Styrene	5	U
75-25-2	Bromoform	5	U
79-34-5	1,1,2,2-Tetrachloroethane	5	U
108-38-3	m & p-Xylene	5	U

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1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

08LVK246-MB1

Lab Name: LIONVILLE LABORATORY Contract: 60049-001-001-0001 00

Lab Code: LVL Case No.: SAS No.: SDG No.: 12L053

Matrix: (soil/water) SOIL Lab Sample ID: 08LVK246-MB1

Sample wt/vol: 5.0 (g/mL) G Lab File ID: K121906

Level: (low/med) LOW Date Received: 12/19/08

% Moisture: not dec. ________ Date Analyzed: 12/19/08

Column: (pack/cap) CAP Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
95-47-6	o-Xylene	5	U
75-15-0	Carbon Disulfide	5	U
540-59-0	1,2-Dichloroethene (Total)	5	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

08LVK246-MB1

Lab Name: LIONVILLE LABORATORY Contract: 60049-001-001-0001 00

Lab Code: LVL Case No.: SAS No.: SDG No.: 12L053

Matrix: (soil/water) SOIL Lab Sample ID: 08LVK246-MB1

Sample wt/vol: 5.0 (g/mL) G Lab File ID: K121906

Level: (low/med) LOW Date Received: 12/19/08

% Moisture: not dec. ________ Date Analyzed: 12/19/08

Column: (pack/cap) CAP Dilution Factor: 1.0

CONCENTRATION UNITS:
Number TICs found: 0 (ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.				
2.				
3.				
4.				
5.				
6.				
7.				
8.				
9.				
10.				
11.				
12.				
13.				
14.				
15.				
16.				
17.				
18.				
19.				
20.				
21.				
22.				
23.				
24.				
25.				
26.				
27.				
28.				
29.				
30.				

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

08LVK246-MB1S

Lab Name: LIONVILLE LABORATORY Contract: 60049-001-001-0001 00

Lab Code: LVL Case No.: SAS No.: SDG No.: 12L053

Matrix: (soil/water) SOIL Lab Sample ID: 08LVK246-MB1S

Sample wt/vol: 5.0 (g/mL) G Lab File ID: K121904

Level: (low/med) LOW Date Received: 12/19/08

% Moisture: not dec. ________ Date Analyzed: 12/19/08

Column: (pack/cap) CAP Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	39	
75-01-4	Vinyl Chloride	49	
74-83-9	Bromomethane	50	
75-00-3	Chloroethane	51	
75-35-4	1,1-Dichloroethene	62	
75-09-2	Methylene Chloride	51	B
67-64-1	Acetone	140	
156-60-5	trans-1,2-Dichloroethene	59	
75-34-3	1,1-Dichloroethane	60	
156-59-2	cis-1,2-Dichloroethene	55	
78-93-3	2-Butanone	130	
67-66-3	Chloroform	58	
71-55-6	1,1,1-Trichloroethane	58	
56-23-5	Carbon Tetrachloride	58	
71-43-2	Benzene	57	
107-06-2	1,2-Dichloroethane	61	
79-01-6	Trichloroethene	57	
78-87-5	1,2-Dichloropropane	59	
75-27-4	Bromodichloromethane	60	
10061-01-5	cis-1,3-Dichloropropene	54	
108-10-1	4-Methyl-2-Pentanone	67	
108-88-3	Toluene	54	
10061-02-6	trans-1,3-Dichloropropene	57	
79-00-5	1,1,2-Trichloroethane	56	
127-18-4	Tetrachloroethene	51	
591-78-6	2-Hexanone	98	
124-48-1	Dibromochloromethane	58	
108-90-7	Chlorobenzene	55	
100-41-4	Ethylbenzene	53	
1330-20-7	Xylenes (Total)	160	
100-42-5	Styrene	55	
75-25-2	Bromoform	58	
79-34-5	1,1,2,2-Tetrachloroethane	65	
108-38-3	m & p-Xylene	110	

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1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

08LVK246-MS1S

Lab Name: LIONVILLE LABORATORY Contract: 60049-001-001-0001-00

Lab Code: LVL Case No.: SAS No.: SDG No.: 12L053

Matrix (soil/water) SOIL Lab Sample ID: 08LVK246-MS1S

Sample wt/vol: 5.0 (g/mL) G Lab File ID: X121904

Level: (low/med) LOW Date Received: 12/19/08

% Moisture: not dec. ___ ____ Date Analyzed: 12/19/08

Column: (pack/cap) CAP Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
95-47-6	o-Xylene	54	
75-15-0	Carbon Disulfide	56	
540-59-0	1,2-Dichloroethene (Total)	110	

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1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

08LVK247-MB1

Lab Name: LIONVILLE LABORATORY Contract: 60049-001-001-0001-00

Lab Code: LVL Case No.: SAS No.: SDG No.: 12L053

Matrix: (soil/water) SOIL Lab Sample ID: 08LVK247-MB1

Sample wt/vol: 5.0 (g/mL) G Lab File ID: K121923

Level: (low/med) LOW Date Received: 12/20/08

% Moisture: not dec. ___ Date Analyzed: 12/20/08

Column: (pack/cap) CAP Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	10	U
75-01-4	Vinyl chloride	10	U
74-83-9	Bromomethane	10	U
75-00-3	Chloroethane	10	U
75-35-4	1,1-Dichloroethene	5	U
75-09-2	Methylene Chloride	2	J
67-64-1	Acetone	10	U
156-60-5	trans-1,2-Dichloroethene	5	U
75-34-3	1,1-Dichloroethane	5	U
156-59-2	cis-1,2-Dichloroethene	5	U
78-93-3	2-Butanone	10	U
67-66-3	Chloroform	5	U
71-55-6	1,1,1-Trichloroethane	5	U
56-23-5	Carbon Tetrachloride	5	U
71-43-2	Benzene	5	U
107-06-2	1,2-Dichloroethane	5	U
79-01-6	Trichloroethene	5	U
78-87-5	1,2-Dichloropropane	5	U
75-27-4	Bromodichloromethane	5	U
10061-01-5	cis-1,3-Dichloropropene	5	U
108-10-1	4-Methyl-2-Pentanone	10	U
108-88-3	Toluene	5	U
10061-02-6	trans-1,3-Dichloropropene	5	U
79-00-5	1,1,2-Trichloroethane	5	U
127-18-4	Tetrachloroethene	5	U
591-78-6	2-Hexanone	10	U
124-48-1	Dibromochloromethane	5	U
108-90-7	Chlorobenzene	5	U
100-41-4	Ethylbenzene	5	U
1330-20-7	Xylenes (Total)	5	U
100-42-5	Styrene	5	U
75-25-2	Bromoform	5	U
79-34-5	1,1,2,2-Tetrachloroethane	5	U
108-38-3	m & p-Xylene	5	U

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO

08LVK247-MB1

Lab Name: LIONVILLE LABORATORY Contract: 60049 001 001 0001-00

Lab Code: LVL Case No.: SAS No.: SDG No.: 12L053

Matrix: (soil/water) SOIL Lab Sample ID: 08LVK247-MB1

Sample wt/vol: 5.0 (g/mL) G Lab File ID: K121923

Level: (low/med) LOW Date Received: 12/20/08

% Moisture: not dec. ________ Date Analyzed: 12/20/08

Column: (pack/cap) CAP Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
95-47-6	o-Xylene	5	U
75-15-0	Carbon Disulfide	5	U
540-59-0	1,2-Dichloroethene (Total)	5	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

08LVK247-MB1

Lab Name: LIONVILLE LABORATORY Contract: 60049-001-001-0001-00

Lab Code: LVL Case No.: SAS No.: SDG No.: 12L054

Matrix: (soil/water) SOIL Lab Sample ID: 08LVK247-MB1

Sample wt/vol. 5.0 (g/mL) G Lab File ID: K131923

Level: (low/med) LOW Date Received: 12/20/08

% Moisture: not dec. ________ Date Analyzed: 12/20/08

Column: (pack/cap) CAP Dilution Factor: 1.0

CONCENTRATION UNITS:

Number TICs found: 0 (ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.				
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30.				

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1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

08LVK247-MB1S

Lab Name: LIONVILLE LABORATORY Contract: 60049-001-001-0001 00

Lab Code: LVL Case No.: SAS No.: SDG No.: 12L053

Matrix: (soil/water) SOIL Lab Sample ID: 08LVK247-MB1S

Sample wt/vol: 5.0 (g/mL) G Lab File ID: K121922

Level: (low/med) LOW Date Received: 12/19/08

% Moisture: not dec. ________ Date Analyzed: 12/19/08

Column: (pack/cap) CAP Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	38	
75-01-4	Vinyl Chloride	45	
74-83-9	Bromomethane	48	
75-00-3	Chloroethane	47	
75-35-4	1,1-Dichloroethene	56	
75-09-2	Methylene Chloride	46	B
67-64-1	Acetone	86	
156-60-5	trans-1,2-Dichloroethene	53	
75-34-3	1,1-Dichloroethane	56	
156-59-2	cis-1,2-Dichloroethene	50	
78-93-3	2-Butanone	74	
67-66-3	Chloroform	54	
71-55-6	1,1,1-Trichloroethane	55	
56-23-5	Carbon Tetrachloride	53	
71-43-2	Benzene	52	
107-06-2	1,2-Dichloroethane	50	
79-01-6	Trichloroethene	51	
78-87-5	1,2-Dichloropropane	51	
75-27-4	Bromodichloromethane	52	
10061-01-5	cis-1,3-Dichloropropene	48	
108-10-1	4-Methyl-2-Pentanone	49	
108-88-3	Toluene	51	
10061-02-6	trans-1,3-Dichloropropene	47	
79-00-5	1,1,2-Trichloroethane	46	
127-18-4	Tetrachloroethene	51	
591-78-6	2-Hexanone	64	
124-48-1	Dibromochloromethane	49	
108-90-7	Chlorobenzene	49	
100-41-4	Ethylbenzene	49	
1330-20-7	Xylenes (Total)	150	
100-42-5	Styrene	49	
75-25-2	Bromoform	42	
79-34-5	1,1,2,2-Tetrachloroethane	46	
108-38-3	m & p-Xylene	98	

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

08LVK247-MB15

Lab Name: LIONVILLE LABORATORY Contract: 60049-001-001-0001-00

Lab Code: LVL Case No.: SAS No.: SDG No.: 121051

Matrix: (soil/water) SOIL Lab Sample ID: 08LVK247-MB15

Sample wt/vol: 5.0 (g/mL) G Lab File ID: K121922

Level: (low/med) LOW Date Received: 12/19/08

% Moisture: not dec. ________ Date Analyzed: 12/19/08

Column: (pack/cap) CAP Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
95-47-6	o-Xylene	48	
75-15-0	Carbon Disulfide	52	
540-59-0	1,2-Dichloroethene (Total)	100	

2B

SOIL VOLATILE SURROGATE RECOVERY

Lab Name: LIONVILLE LABORATORY Contract: 60049-001-001 0001-00

Lab Code: LVL Case No.: SAS No.: SDG No.: 12L053

Level: (low/med) LOW

B 2/19/09

	EPA SAMPLE NO.	S1 (DCE) #	S2 (TOL) #	S3 (BFB) #	OTHER	TOT OUT
01	08LVK246-MB1S	106	93	99		0
02	08LVK246-MB1	111	101	112		0
03	J17VY5	106	94	102		0
04	J17VY6	106	93	103		0
05	J18002	107	96	106		0
06	J18003	103	95	103		0
07	J18016	105	96	106		0
08	J18017	104	94	106		0
09	J17VN9	108	79	103		0
10	J17YT4	104	95	105		0
11	J17YT5	101	95	104		0
12	J17YV8	106	96	105		0
13	J17YV9	102	98	110		0
14	08LVK247-MB1S	95	98	100		0
15	08LVK247-MB1	99	97	105		0
16	J18002MS	112	96	101		0
17	J18002MSD	110	97	101		0
18						
19						
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29						
30						

	QC LIMITS
S1 (DCE) = 1,2-Dichloroethane-d4	(63-151)
S2 (TOL) = Toluene-d8	(68-140)
S3 (BFB) = Bromofluorobenzene	(66-122)

Column to be used to flag recovery values

* Values outside of contract required QC limits

D Surrogates diluted out

3B

SOIL VOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: LIONVILLE LABORATORY Contract: 60049-001-001-0001-00

Lab Code: LVL Case No.: SAS No.: SDG No.: 12L053

Matrix Spike - EPA Sample No.: J18002 Level:(low/med) LOW

COMPOUND	SPIKE ADDED (UG/KG)	SAMPLE CONCENTRATION (UG/KG)	MS CONCENTRATION (UG/KG)	MS % REC #	QC. LIMITS REC.
Chloromethane	48.077	0.0000	34.326	71	50-180
Vinyl Chloride	48.077	0.0000	43.516	90	50-180
Bromomethane	48.077	0.0000	46.607	97	50-180
Chloroethane	48.077	0.0000	46.014	96	50-180
1,1-Dichloroethene	48.077	0.0000	56.316	117	61-145
Methylene Chloride	48.077	2.118	46.825	93	50-180
Acetone	48.077	0.0000	155.13	323*	0-300
trans-1,2-Dichloroethen	48.077	0.0000	54.012	112	60-140
1,1-Dichloroethane	48.077	0.0000	53.699	112	60-140
cis-1,2-Dichloroethene	48.077	0.0000	49.782	104	60-140
2-Butanone	48.077	0.0000	144.49	300*	20-200
Chloroform	48.077	0.0000	54.009	112	60-140
1,1,1-Trichloroethane	48.077	0.0000	54.549	113	60-140
Carbon Tetrachloride	48.077	0.0000	53.247	111	60-140
Benzene	48.077	0.0000	52.327	109	76-127
1,2-Dichloroethane	48.077	0.0000	56.300	117	60-140
Trichloroethene	48.077	0.0000	52.141	108	71-120
1,2-Dichloropropane	48.077	0.0000	53.138	110	70-130
Bromodichloromethane	48.077	0.0000	55.022	114	60-140
cis-1,3-Dichloropropene	48.077	0.0000	48.799	102	70-130
4-Methyl-2-Pentanone	48.077	0.0000	72.249	150	50-150
Toluene	48.077	0.0000	48.604	101	76-125
trans-1,3-Dichloroprope	48.077	0.0000	51.791	108	70-130
1,1,2 Trichloroethane	48.077	0.0000	52.606	109	70-130
Tetrachloroethene	48.077	0.0000	47.005	98	60-140
2 Hexanone	48.077	0.0000	101.05	210*	20-200
Dibromochloromethane	48.077	0.0000	53.447	111	70-130
Chlorobenzene	48.077	0.0000	47.708	99	75-130

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

COMMENTS: ____

3B

SOIL VOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: LIONVILLE LABORATORY Contract: 60049-001 001 0001-00

Lab Code: LVL Case No.: SAS No.: SDG No.: 12L053

Matrix Spike - EPA Sample No.: J18002 Level:(low/med) LOW

COMPOUND	SPIKE ADDED (UG/KG)	SAMPLE CONCENTRATION (UG/KG)	MS CONCENTRATION (UG/KG)	MS % REC #	QC. LIMITS REC.
Ethylbenzene	48.077	0.0000	46.940	98	70-130
Xylenes (Total)	144.23	0.0000	142.69	99	70-130
Styrene	48.077	0.0000	48.140	100	70-130
Bromoform	48.077	0.0000	56.048	116	60-140
1,1,2,2-Tetrachloroetha	48.077	0.0000	62.711	130	70-130
m & p-Xylene	96.154	0.0000	95.346	99	70-130
o-Xylene	48.077	0.0000	47.346	98	70-130
Carbon Disulfide	48.077	0.0000	50.977	106	60-140
1,2-Dichloroethene (Tot	96.154	0.0000	101.79	108	60-140

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

COMMENTS: ______________________________

3B

SOIL VOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: LIONVILLE LABORATORY Contract: 60049-001-001-0001-00

Lab Code: LVL Case No.: SAS No.: SDG No.: 12L053

Matrix Spike - EPA Sample No.: J18002 Level:(low/med) LOW

COMPOUND	SPIKE ADDED (UG/KG)	MSD CONCENTRATION (UG/KG)	MSD % REC #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
Chloromethane	41.667	34.154	82	14	25	50-180
Vinyl Chloride	41.667	36.052	86	4	25	50-180
Bromomethane	41.667	40.526	97	0	25	50-180
Chloroethane	41.667	39.576	95	1	25	50-180
1,1-Dichloroethene	41.667	46.996	113	3	25	61-145
Methylene Chloride	41.667	40.473	92	1	25	50-180
Acetone	41.667	113.02	271	18	25	0-300
trans-1,2-Dichloroethen	41.667	45.556	109	3	25	60-140
1,1-Dichloroethane	41.667	46.091	111	1	25	60-140
cis-1,2-Dichloroethene	41.667	43.694	105	1	25	60-140
2-Butanone	41.667	106.32	255*	16	25	20-200
Chloroform	41.667	46.500	112	0	25	60-140
1,1,1-Trichloroethane	41.667	46.939	113	0	25	60-140
Carbon Tetrachloride	41.667	46.938	113	2	25	60-140
Benzene	41.667	46.044	110	1	25	76-127
1,2-Dichloroethane	41.667	48.260	116	1	25	60-140
Trichloroethene	41.667	44.128	106	2	25	71-120
1,2-Dichloropropane	41.667	46.408	111	1	25	70-130
Bromodichloromethane	41.667	47.366	114	0	25	60-140
cis-1,3-Dichloropropene	41.667	43.336	104	2	25	70-130
4-Methyl-2-Pentanone	41.667	57.586	138	8	25	50-150
Toluene	41.667	42.410	102	1	25	76-125
trans-1,3-Dichloroprope	41.667	43.911	105	3	25	70-130
1,1,2-Trichloroethane	41.667	45.452	109	0	25	70-130
Tetrachloroethene	41.667	41.983	101	3	25	60-140
2-Hexanone	41.667	80.547	193	8	25	20-200
Dibromochloromethane	41.667	46.436	111	0	25	70-130
Chlorobenzene	41.667	42.168	101	2	25	75-130

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

COMMENTS: ______________________________

3B

SOIL VOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: LIONVILLE LABORATORY   Contract: 60049-001-001-0001-00

Lab Code: LVL   Case No.:   SAS No.:   SDG No.: 12605

Matrix Spike - EPA Sample No.: J18002   Level:(low/med) LOW

COMPOUND	SPIKE ADDED (UG/KG)	MSD CONCENTRATION (UG/KG)	MSD % REC #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
Ethylbenzene	41.667	42.710	102	4	25	70-130
Xylenes (Total)	125.00	125.63	100	1	25	70-130
Styrene	41.667	42.720	102	2	25	70-130
Bromoform	41.667	45.792	110	5	25	60-140
1,1,2,2-Tetrachloroetha	41.667	49.426	119	9	25	70-130
m & p-Xylene	83.333	83.050	100	1	25	70-130
o-Xylene	41.667	42.585	102	4	25	70-130
Carbon Disulfide	41.667	42.951	103	3	25	60-140
1,2-Dichloroethene (Tot	83.333	89.250	107	1	25	60-140

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 0 out of 37 outside limits
Spike Recovery: 4 out of 74 outside limits

COMMENTS: ____

Report Date: 09 Jan-2009 16:27

Lionville Laboratory Inc.

RECOVERY REPORT

Client Name:
Sample Matrix: SOLID
Lab Smp Id: 08LVK246-MB1S
Level: LOW
Data Type: MS DATA
SpikeList File: fulllist(w).spk
Sublist File: 0624HG.sub
Method File: \\LILAN04\D\chem\MSVOA\5970K.i\K121908.b\5035alt.m
Misc Info: DIL,1,5035 VBLK SPIKE,5.0G

Client SDG: 12L053
Fraction: VOA
Client Smp ID: 08LVK246-MB1S
Operator: KBW
SampleType: BS
Quant Type: ISTD

SPIKE COMPOUND	CONC ADDED UG/KG	CONC RECOVERED UG/KG	% RECOVERED	LIMITS
117 Chlorodifluoromet	50.000	0.0000	*	50-15
7 Dichlorodifluorome	50.000	34.307	68.61	30-15
8 Chloromethane	50.000	38.993	77.99	50-18
9 Vinyl Chloride	50.000	48.663	97.33	50-18
10 Bromomethane	50.000	49.834	99.67	50-18
11 Chloroethane	50.000	51.451	102.90	50-18
12 Trichlorofluoromet	50.000	46.833	93.66	60-14
13 1,1-Dichloroethene	50.000	61.517	123.03	61-14
14 Carbon Disulfide	50.000	56.028	112.06	60-14
15 Acetone	50.000	136.16	272.32	0-30
16 Methylene Chloride	50.000	51.434	102.87	50-18
M 88 1,2-Dichloroethene	100.00	113.95	113.95	60-14
17 trans-1,2-Dichloro	50.000	59.124	118.25	60-14
18 Methyl-T-Butylethe	50.000	54.437	108.87	70-13
19 1,1-Dichloroethane	50.000	60.204	120.41	60-14
20 2,2-Dichloropropa	50.000	0.0000	*	70-13
21 cis-1,2-Dichloroet	50.000	54.826	109.65	60-14
22 2-Butanone	50.000	128.13	256.26*	20-20
23 Bromochloromethane	50.000	0.0000	*	65-13
24 Chloroform	50.000	58.569	117.14	60-14
25 1,1,1-Trichloroeth	50.000	58.212	116.42	60-14
26 Carbon Tetrachlori	50.000	57.827	115.65	60-14
27 1,1-Dichloroprope	50.000	0.0000	*	75-13
28 Benzene	50.000	57.419	114.84	76-12
29 1,2-Dichloroethane	50.000	60.732	121.46	60-14
30 Trichloroethene	50.000	56.619	113.24	71-12
106 Methylcyclohexane	50.000	51.336	102.67	50-15
31 1,2-Dichloropropan	50.000	59.030	118.06	70-13
32 Dibromomethane	50.000	0.0000	*	75-12
33 Bromodichlorometha	50.000	59.816	119.63	60-14
34 cis-1,3-Dichloropr	50.000	54.416	108.83	70-13
35 4-Methyl-2-Pentano	50.000	67.270	134.54	50-15
36 Toluene	50.000	54.076	108.15	76-12

SPIKE COMPOUND			CONC ADDED UG/KG	CONC RECOVERED UG/KG	% RECOVERED	LIMITS
	37	trans-1,3-Dichloro	50.000	56.833	113.67	70-130
	38	1,1,2-Trichloroeth	50.000	56.441	112.88	70-130
	39	Tetrachloroethene	50.000	52.950	105.90	60-140
	40	1,3-Dichloropropa	50.000	0.0000	*	75-125
	41	2-Hexanone	50.000	97.608	195.22	20-200
	42	Dibromochlorometha	50.000	57.763	115.53	70-130
	43	1,2-Dibromoethane	50.000	57.419	114.84	80-120
	44	Chlorobenzene	50.000	54.912	109.82	75-130
	45	1,1,1,2-Tetrachlo	50.000	0.0000	*	80-130
	46	Ethylbenzene	50.000	53.347	106.69	70-130
	47	m & p-Xylene	100.00	106.25	106.25	70-130
	48	o-Xylene	50.000	53.669	107.34	70-130
	49	Styrene	50.000	55.020	110.04	70-13
M	50	Xylenes (Total)	150.00	159.92	106.61	70-13
	51	Bromoform	50.000	58.470	116.94	60-14
	52	Isopropylbenzene	50.000	48.741	97.48	75-12
	53	1,1,2,2-Tetrachlor	50.000	65.313	NT 130.63*	70-13
	54	Bromobenzene	50.000	0.0000	rs 2/19/09 *	75-12
	55	1,2,3-Trichloropr	50.000	0.0000	*	75-12
	56	N-Propylbenzene	50.000	0.0000	*	70-13
	57	2-Chlorotoluene	50.000	0.0000	*	75-12
	58	1,3,5-Trimethylbe	50.000	0.0000	*	75-13
	59	4-Chlorotoluene	50.000	0.0000	*	75-13
	60	Tert-Butylbenzene	50.000	0.0000	*	70-13
	61	1,2,4-Trimethylbe	50.000	0.0000	*	75-13
	62	Sec-Butylbenzene	50.000	0.0000	*	70-12
	63	1,3-Dichlorobenzen	50.000	55.663	111.33	75-12
	64	4-Isopropyltoluene	50.000	0.0000	*	75-13
	65	1,4-Dichlorobenzen	50.000	57.673	115.35	75-12
	66	N-Butylbenzene	50.000	0.0000	*	70-13
	67	1,2-Dichlorobenzen	50.000	57.659	115.32	70-12
	68	1,2-Dibromo-3-chlo	50.000	72.186	NT 144.37*	50-13
	69	1,2,4-Trichloroben	50.000	57.046	114.09	65-13
	70	Hexachlorobutadie	50.000	0.0000	rs 2/19/09 *	50-14
	71	Naphthalene	50.000	0.0000	*	55-14
	72	1,2,3-Trichlorobe	50.000	0.0000	*	55-14
	73	Freon-113	50.000	53.784	107.57	50-15
	74	Iodomethane	50.000	0.0000	*	50-15
	92	Ethyl Acetate	50.000	0.0000	*	50-15
	93	Isobutyl alcohol	250.00	0.0000	*	50-15
	94	Methacrylonitrile	50.000	0.0000	*	50-15
	95	Propionitrile	250.00	0.0000	*	50-15
	86	Vinyl Acetate	50.000	0.0000	*	50-15
	87	Acrylonitrile	50.000	0.0000	*	50-15
	89	2-Chloro-1,3-buta	50.000	0.0000	*	50-15
	90	3-Chloropropene	50.000	0.0000	*	50-15
	91	trans-1,4-dichlor	50.000	0.0000	*	50-15

SPIKE COMPOUND	CONC ADDED UG/KG	CONC RECOVERED UG/KG	% RECOVERED	LIMITS
96 Acetonitrile	100.00	0.0000	*	50-150
97 Acrolein	50.000	0.0000	*	50-150
98 Cyclohexane	50.000	55.128	110.26	50-150
99 Methyl acetate	50.000	48.280	96.56	50-150
100 Methyl methacryla	50.000	0.0000	*	50-150
101 2-chloroethylviny	100.00	0.0000	*	50-150
102 Hexane	50.000	0.0000	*	50-150
103 1,2-Diethylbenzene	50.000	0.0000	*	50-150
104 Ethyl methacrylate	50.000	0.0000	*	50-150
105 Cyclohexanone	250.00	0.0000	*	50-150
109 n-Butanol	500.00	0.0000	*	50-150
111 2-Nitropropane	50.000	0.0000	*	50-150
112 Diethyl ether	50.000	0.0000	*	50-150
113 Pentachloroethane	50.000	0.0000	*	50-150
115 Freon-114	50.000	0.0000	*	50-150
116 1,4-Dioxane	50.000	0.0000	*	50-150

SURROGATE COMPOUND	CONC ADDED UG/KG	CONC RECOVERED UG/KG	% RECOVERED	LIMITS
$ 4 1,2-Dichloroethane	50.000	52.926	105.85	63-151
$ 5 Toluene-d8	50.000	46.682	93.36	68-14
$ 6 Bromofluorobenzene	50.000	49.478	98.96	66-12

Report Date: 13-Jan-2009 12:34

Lionville Laboratory Inc.

RECOVERY REPORT

Client Name:
Sample Matrix: SOLID
Lab Smp Id: 08LVK247-MB1S
Level: LOW
Data Type: MS DATA
SpikeList File: fulllist(w).spk
Sublist File: 0624MG.sub
Method File: \\LILAN04\D\chem\MSVOA\5970K.i\K121908p.b\5035alt.m
Misc Info: DIL,1,5035 BS,5g

Client SDG: 12L058
Fraction: VOA
Client Smp ID: 08LVK247-MB1S
Operator: JVG
SampleType: BS
Quant Type: ISTD

SPIKE COMPOUND	CONC ADDED UG/KG	CONC RECOVERED UG/KG	% RECOVERED	LIMITS
117 Chlorodifluoromet	50.000	0.0000	*	50-15
7 Dichlorodifluorome	50.000	31.896	63.79	30-15
8 Chloromethane	50.000	38.326	76.65	50-18
9 Vinyl Chloride	50.000	45.488	90.98	50-18
10 Bromomethane	50.000	48.114	96.23	50-18
11 Chloroethane	50.000	46.981	93.96	50-18
12 Trichlorofluoromet	50.000	44.338	88.68	60-14
13 1,1-Dichloroethene	50.000	56.012	112.02	61-14
14 Carbon Disulfide	50.000	52.192	104.38	60-14
15 Acetone	50.000	86.275	172.55	0-30
16 Methylene Chloride	50.000	46.204	92.41	50-18
M 88 1,2-Dichloroethene	100.00	103.03	103.03	60-14
17 trans-1,2-Dichloro	50.000	53.218	106.44	60-14
18 Methyl-T-Butylethe	50.000	41.301	82.60	70-13
19 1,1-Dichloroethane	50.000	55.978	111.96	60-14
20 2,2-Dichloropropa	50.000	0.0000	*	70-13
21 cis-1,2-Dichloroet	50.000	49.810	99.62	60-14
22 2-Butanone	50.000	73.579	147.16	20-20
23 Bromochloromethane	50.000	0.0000	*	65-13
24 Chloroform	50.000	54.154	108.31	60-14
25 1,1,1-Trichloroeth	50.000	54.985	109.97	60-14
26 Carbon Tetrachlori	50.000	52.748	105.50	60-14
27 1,1-Dichloroprope	50.000	0.0000	*	75-13
28 Benzene	50.000	52.466	104.93	76-12
29 1,2-Dichloroethane	50.000	49.911	99.82	60-14
30 Trichloroethene	50.000	51.282	102.56	71-12
106 Methylcyclohexane	50.000	48.207	96.41	50-15
31 1,2-Dichloropropan	50.000	51.470	102.94	70-13
32 Dibromomethane	50.000	0.0000	*	75-12
33 Bromodichlorometha	50.000	52.172	104.34	60-14
34 cis-1,3-Dichloropr	50.000	48.311	96.62	70-13
35 4-Methyl-2-Pentano	50.000	49.127	98.25	50-15
36 Toluene	50.000	50.728	101.46	76-12

SPIKE	COMPOUND	CONC ADDED UG/KG	CONC RECOVERED UG/KG	% RECOVERED	LIMIT
	37 trans-1,3-Dichloro	50.000	46.764	93.53	70-13
	38 1,1,2-Trichloroeth	50.000	45.790	91.58	70-13
	39 Tetrachloroethene	50.000	50.877	101.75	60-14
	40 1,3-Dichloropropa	50.000	0.0000	*	75-12
	41 2-Hexanone	50.000	64.078	128.16	20-20
	42 Dibromochlorometha	50.000	48.966	97.93	70-13
	43 1,2-Dibromoethane	50.000	44.877	89.75	80-12
	44 Chlorobenzene	50.000	49.372	98.74	75-13
	45 1,1,1,2-Tetrachlo	50.000	0.0000	*	80-13
	46 Ethylbenzene	50.000	49.200	98.40	70-13
	47 m & p-Xylene	100.00	98.498	98.50	70-13
	48 o-Xylene	50.000	48.004	96.01	70-13
	49 Styrene	50.000	49.328	98.66	70-13
M	50 Xylenes (Total)	150.00	146.50	97.67	70-13
	51 Bromoform	50.000	42.581	85.16	60-14
	52 Isopropylbenzene	50.000	44.465	88.93	75-12
	53 1,1,2,2-Tetrachlor	50.000	46.457	92.91	70-13
	54 Bromobenzene	50.000	0.0000	*	75-12
	55 1,2,3-Trichloropr	50.000	0.0000	*	75-12
	56 N-Propylbenzene	50.000	0.0000	*	70-13
	57 2-Chlorotoluene	50.000	0.0000	*	75-12
	58 1,3,5-Trimethylbe	50.000	0.0000	*	75-13
	59 4-Chlorotoluene	50.000	0.0000	*	75-13
	60 Tert-Butylbenzene	50.000	0.0000	*	70-13
	61 1,2,4-Trimethylbe	50.000	0.0000	*	75-13
	62 Sec-Butylbenzene	50.000	0.0000	*	70-12
	63 1,3-Dichlorobenzen	50.000	49.797	99.59	75-12
	64 4-Isopropyltoluene	50.000	0.0000	*	75-13
	65 1,4-Dichlorobenzen	50.000	51.841	103.68	75-12
	66 N-Butylbenzene	50.000	0.0000	*	70-13
	67 1,2-Dichlorobenzen	50.000	48.824	97.65	70-12
	68 1,2-Dibromo-3-chlo	50.000	43.344	86.69	50-13
	69 1,2,4-Trichloroben	50.000	45.857	91.71	65-13
	70 Hexachlorobutadien	50.000	1.291	2.58*	50-14
	71 Naphthalene	50.000	8.560	NT 17.12*	55-14
	72 1,2,3-Trichloroben	50.000	5.284	10.57*	55-14
	73 Freon-113	50.000	49.206	98.41	50-15
	74 Iodomethane	50.000	0.0000	*	50-15
	92 Ethyl Acetate	50.000	0.0000	*	50-15
	93 Isobutyl alcohol	250.00	0.0000	*	50-15
	94 Methacrylonitrile	50.000	0.0000	*	50-15
	95 Propionitrile	250.00	0.0000	*	50-15
	86 Vinyl Acetate	50.000	0.0000	*	50-15
	87 Acrylonitrile	50.000	0.0000	*	50-15
	89 2-Chloro-1,3-buta	50.000	0.0000	*	50-15
	90 3-Chloropropene	50.000	0.0000	*	50-15
	91 trans-1,4-dichlor	50.000	0.0000	*	50-15

R 2/9/09

SPIKE COMPOUND	CONC ADDED UG/KG	CONC RECOVERED UG/KG	% RECOVERED	LIMITS
96 Acetonitrile	100.00	0.0000	*	50-150
97 Acrolein	50.000	0.0000	*	50-150
98 Cyclohexane	50.000	51.410	102.82	50-150
99 Methyl acetate	50.000	33.172	66.34	50-150
100 Methyl methacryla	50.000	0.0000	*	50-150
101 2-chloroethylvinyl	100.00	1.571	NT 1.57*	50-150
102 Hexane	50.000	0.0000	*	50-150
103 1,2-Diethylbenzene	50.000	0.0000	*	50-150
104 Ethyl methacrylate	50.000	0.0000	rh 2/4/09 *	50-150
105 Cyclohexanone	250.00	0.0000	*	50-150
109 n-Butanol	500.00	0.0000	*	50-150
111 2-Nitropropane	50.000	0.0000	*	50-150
112 Diethyl ether	50.000	3.411	NT 6.82*	50-150
113 Pentachloroethane	50.000	0.0000	*	50-150
115 Freon-114	50.000	0.0000	*	50-150
116 1,4-Dioxane	50.000	0.0000	*	50-150

SURROGATE COMPOUND	CONC ADDED UG/KG	CONC RECOVERED UG/KG	% RECOVERED	LIMITS
$ 4 1,2-Dichloroethane	50.000	47.377	94.75	63-151
$ 5 Toluene-d8	50.000	48.888	97.78	68-140
$ 6 Bromofluorobenzene	50.000	49.932	99.86	66-122

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

J18002MS

Lab Name: LIONVILLE LABORATORY Contract: 60049 001 001 0001-00

Lab Code: LVL Case No.: SAS No.: SDG No.: 12L053

Matrix: (soil/water) SOIL Lab Sample ID: 0812L053-003S

Sample wt/vol: 5.2 (g/mL) G Lab File ID: K121924

Level: (low/med) LOW Date Received: 12/10/08

% Moisture: not dec. _____ Date Analyzed: 12/20/08

Column: (pack/cap) CAP Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	34	
75-01-4	Vinyl Chloride	44	
74-83-9	Bromomethane	47	
75-00-3	Chloroethane	46	
75-35-4	1,1-Dichloroethene	56	
75-09-2	Methylene Chloride	47	B
67-64-1	Acetone	160	
156-60-5	trans-1,2-Dichloroethene	54	
75-34-3	1,1-Dichloroethane	54	
156-59-2	cis-1,2-Dichloroethene	50	
78-93-3	2-Butanone	140	
67-66-3	Chloroform	54	
71-55-6	1,1,1-Trichloroethane	54	
56-23-5	Carbon Tetrachloride	53	
71-43-2	Benzene	52	
107-06-2	1,2 Dichloroethane	56	
79-01-6	Trichloroethene	57	
78-87-5	1,2-Dichloropropane	53	
75-27-4	Bromodichloromethane	55	
10061-01-5	cis-1,3-Dichloropropene	49	
108-10-1	4-Methyl-2-Pentanone	72	
108-88-3	Toluene	49	
10061-02-6	trans-1,3-Dichloropropene	52	
79-00-5	1,1,2-Trichloroethane	53	
127-18-4	Tetrachloroethene	47	
591-78-6	2-Hexanone	100	
124-48-1	Dibromochloromethane	53	
108-90-7	Chlorobenzene	48	
100-41-4	Ethylbenzene	47	
1330-20-7	Xylenes (Total)	140	
100-42-5	Styrene	48	
75-25-2	Bromoform	56	
79-34-5	1,1,2,2-Tetrachloroethane	63	
108-38-3	m & p-Xylene	95	

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

J18002MS

Lab Name: LIONVILLE LABORATORY　　Contract: 60049-001-001-0001.00

Lab Code: LVL　　Case No.:　　SAS No.:　　SDG No.: 12L053

Matrix: (soil/water) SOIL　　Lab Sample ID: 0812L053-003S

Sample wt/vol: 5.2 (g/mL) G　　Lab File ID: K121924

Level: (low/med) LOW　　Date Received: 12/10/08

% Moisture: not dec. ________　　Date Analyzed: 12/20/08

Column: (pack/cap) CAP　　Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
95-47-6	o-Xylene	47	
75-15-0	Carbon Disulfide	53	
540-59-0	1,2 Dichloroethene (Total)	100	

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

J18002MSD

Lab Name: LIONVILLE LABORATORY Contract: 60049-001-001-0001-00

Lab Code: LVL Case No.: SAS No.: SDG No.: 12L053

Matrix: (soil/water) SOIL Lab Sample ID: 0812L053-003T

Sample wt/vol: 6.0 (g/mL) G Lab File ID: K121925

Level: (low/med) LOW Date Received: 12/10/08

% Moisture: not dec. ________ Date Analyzed: 12/20/08

Column: (pack/cap) CAP Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	34	
75-01-4	Vinyl Chloride	36	
74-83-9	Bromomethane	40	
75-00-3	Chloroethane	40	
75-35-4	1,1-Dichloroethene	47	
75-09-2	Methylene Chloride	40	B
67-64-1	Acetone	110	
156-60-5	trans-1,2-Dichloroethene	46	
75-34-3	1,1-Dichloroethane	46	
156-59-2	cis-1,2-Dichloroethene	44	
78-93-3	2-Butanone	110	
67-66-3	Chloroform	46	
71-55-6	1,1,1-Trichloroethane	47	
56-23-5	Carbon Tetrachloride	47	
71-43-2	Benzene	46	
107-06-2	1,2-Dichloroethane	48	
79-01-6	Trichloroethene	44	
78-87-5	1,2-Dichloropropane	46	
75-27-4	Bromodichloromethane	47	
10061-01-5	cis-1,3-Dichloropropene	43	
108-10-1	4-Methyl-2 Pentanone	58	
108-88-3	Toluene	42	
10061-02-6	trans-1,3-Dichloropropene	44	
79-00-5	1,1,2-Trichloroethane	45	
127-18-4	Tetrachloroethene	42	
591-78-6	2-Hexanone	80	
124-48-1	Dibromochloromethane	46	
108-90-7	Chlorobenzene	42	
100-41-4	Ethylbenzene	43	
1330-20-7	Xylenes (Total)	120	
100-42-5	Styrene	43	
75-25-2	Bromoform	46	
79-34-5	1,1,2,2-Tetrachloroethane	47	
108-38-3	m & p Xylene	83	

FORM I VOA 1/87 Rev.

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

J18002MSD

Lab Name: LIONVILLE LABORATORY Contract: 60049-001-001-0001-00

Lab Code: LVL Case No.: SAS No.: SDG No.: 12L053

Matrix: (soil/water) SOIL Lab Sample ID: 0812L053-001T

Sample wt/vol: 6.0 (g/mL) G Lab File ID: K121925

Level: (low/med) LOW Date Received: 12/10/08

% Moisture: not dec. ________ Date Analyzed: 12/20/08

Column: (pack/cap) CAP Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
95-47-6	o-Xylene	43	
75-15-0	Carbon Disulfide	43	
540-59-0	1,2-Dichloroethene (Total)	89	

FORM I VOA 1/87 Rev.

F.1.2.6 SDG K1525

SAF-RC-116
Columbia River Component of the RCBRA – Sediment
FINAL VALIDATION PACKAGE

COMPLETE COPY OF VALIDATION PACKAGE TO:

Kathy Wendt H4-21

COMMENTS:

SDG K1525 **SAF-RC-116**

Date	8 December 2009
To:	Washington Closure Hanford Inc. (technical representative)
From:	ELR Consulting
Project:	Columbia River Component of the RCBRA – Sediment
Subject:	Metals - Data Package No. K1525-LLI

INTRODUCTION

This memo presents the results of data validation on Data Package No. K1525 prepared by Lionville Laboratories Inc. (LLI). A list of samples validated along with the analyses reported and the method of analysis is provided in the following table.

Sample ID	Sample Date	Media	Validation	Anaysis
J18157-A	2/2/09	Solid	C	See note 1
J18158-A	2/2/09	Solid	C	See note 1
J18159-A	2/2/09	Solid	C	See note 1
J18160-A	2/2/09	Solid	C	See note 1
J18177	2/3/09	Solid	C	See note 1
J18198	2/3/09	Solid	C	See note 1
J18199	2/3/09	Solid	C	See note 1
J181B0	2/3/09	Solid	C	See note 1
J181B1	2/3/09	Solid	C	See note 1
J181B2	2/3/09	Solid	C	See note 1
J181B3	2/3/09	Solid	C	See note 1
J17V87	2/3/09	Solid	C	See note 1
J17V88	2/3/09	Solid	C	See note 1
J17V89	2/3/09	Solid	C	See note 1
J17V90	2/3/09	Solid	C	See note 1
J17V91	2/3/09	Solid	C	See note 1
J17V92	2/3/09	Solid	C	See note 1
J17VP0	2/3/09	Solid	C	See note 1
J17VP5	2/3/09	Solid	C	See note 1
J180W8-A	2/2/09	Solid	C	See note 1
J180W9-A	2/2/09	Solid	C	See note 1

1 - ICP metals by 6010B and mercury by 7471A.

Data validation was conducted in accordance with the Washington Closure Hanford (WCH) validation statement of work and the Remedial Investigation Work Plan for Hanford Site Releases to the Columbia River (DOE/RL-2008-11, Rev. 0, September 2008). Appendices 1 through 6 provide the following information as indicated below:

Appendix 1. Glossary of Data Reporting Qualifiers
Appendix 2. Summary of Data Qualification
Appendix 3. Qualified Data Summary and Annotated Laboratory Reports
Appendix 4. Laboratory Narrative and Chain-of-Custody Documentation
Appendix 5. Data Validation Supporting Documentation
Appendix 6. Additional Documentation Requested by Client

DATA QUALITY PARAMETERS

- **Holding Times**

Analytical holding times for metals are assessed to ascertain whether the holding time requirements were met by the laboratory. The holding time requirements are as follows: Soil samples must be analyzed within 6 months for ICP metals and 28 days for mercury

All holding times were acceptable.

- **Preparation (Method) Blanks**

Preparation Blanks

At least one preparation blank, consisting of deionized distilled water processed through each sample preparation and analysis procedure, must be prepared and analyzed with every sample delivery group. In the case of positive blank results, samples with digestate concentrations less than five times the preparation blank value have had their associated values qualified as non-detected and flagged "U". Samples with concentrations of greater than five times the highest blank concentration do not require qualification.

In the case of negative blank results, if the absolute value exceeds the contract required detection limit (CRDL), all nondetects are rejected and flagged "UR" and all detects that are less than ten times the absolute value of the associated preparation blank result are qualified as estimates and flagged "J". If the absolute value of the negative preparation blank is greater than the instrument detection limit (IDL) and less than or equal to the CRDL, all nondetects are qualified as estimates and flagged "UJ" and all detects less than ten times the absolute value of the blank are qualified as estimates and flagged "J". If the sample results are greater than ten times the absolute value of the preparation blank, no qualification is necessary.

Due to method blank contamination, all molybdenum results (except J180W9-A) were qualified as undetected and flagged "UJ"

Due to method blank contamination, the tin result in samples J17V87, J17V88 and J17V89 were qualified as estimates and flagged "UJ".

All other preparation blank results were acceptable.

Field (Equipment) Blank

No field blanks were submitted for analysis.

/

- **Accuracy**

Matrix Spike and Laboratory Control Sample

Matrix spike (MS) and laboratory control sample (LCS) analyses are used to assess the analytical accuracy of the reported data. The matrix spike is used to assess the effect of the matrix on the ability to accurately quantify sample concentrations. Recoveries must fall within the range of 70% to 130%. Samples with a recovery of less than 30% and a sample result below the IDL are rejected and flagged "UR". Samples with a recovery of 30% to 69% and a sample result less than the IDL are qualified "UJ". Samples with a recovery of greater than 130% or less than 70% and a sample result greater than the IDL are qualified as estimates and flagged "J". Finally, for samples with a recovery greater than 130% and a sample result less than the IDL, no qualification is required.

Due to the lack of a matrix spike analysis, all metal results in sample J180W9-A were qualified as estimates and flagged "J".

Due to matrix spike recoveries outside QC limits, all antimony (28%) results (except J180W9-A) were qualified as estimates and flagged "J".

Due to an LCS recovery outside QC limits, all arsenic (201%), iron (137%), vanadium (197%) and thallium (0%) results (except J180W9-A) were qualified as estimates and flagged "J".

Due to an LCS recovery outside QC limits, all arsenic (215%), iron (144%), vanadium (170%) and thallium (0%) results in sample J180W9-A were qualified as estimates and flagged "J".

All other accuracy results were acceptable.

- **Precision**

Laboratory Duplicate Samples

Analytical precision is expressed by the relative percent differences (RPD) between the recoveries of matrix spike duplicate (MSD) analyses performed on a sample in the analytical batch. Precision may alternatively be assessed using unspiked duplicate analyses performed on a sample in the analytical batch. If both sample and replicate activities (concentrations) are greater than five times the CRDL and the RPD is less than 30%, no qualification is required. If either activity (concentration) is less than five times the CRDL, the RPD control limit is less than or equal to two times the CRDL. If the RPD is outside the applicable control limit, associated results are qualified as estimated detects or estimated non-detects.

Due to the lack of a duplicate analysis, all metal results in sample J180W9-A were qualified as estimates and flagged "J".

All other laboratory duplicate results were acceptable.

Field Duplicate

Two sets of field duplicates (J18177/J17VP0 & J17V87/J17VP5) were submitted for analysis. Field duplicates are compared using the same criteria as for laboratory duplicates. All field duplicates results were acceptable.

Analytical Detection Levels

Reported analytical detection levels are compared against the project RQLs to ensure that laboratory detection levels meet the required criteria. All results met the RQL.

- **Completeness**

Data package No K1525 was submitted for validation and verified for completeness. Completeness is based on the percentage of data determined to be valid (i.e . not rejected). The completion percentage was 100%.

MAJOR DEFICIENCIES

None found.

MINOR DEFICIENCIES

The following minor deficiencies were noted:

- Due to method blank contamination, all molybdenum results (except J180W9-A) were qualified as undetected and flagged "UJ".
- Due to method blank contamination, the tin result in samples J17V87, J17V88 and J17V89 were qualified as estimates and flagged "UJ".
- Due to the lack of a matrix spike analysis, all metal results in sample J180W9-A were qualified as estimates and flagged "J".
- Due to matrix spike recoveries outside QC limits, all antimony (28%) results (except J180W9-A) were qualified as estimates and flagged "J".
- Due to an LCS recovery outside QC limits, all arsenic (201%), iron (137%), vanadium (197%) and thallium (0%) results (except J180W9-A) were qualified as estimates and flagged "J".
- Due to an LCS recovery outside QC limits, all arsenic (215%), iron (144%), vanadium

(170%) and thallium (0%) results in sample J180W9-A were qualified as estimates and flagged "J".

- Due to the lack of a duplicate analysis, all metal results in sample J180W9-A were qualified as estimates and flagged "J"

Data flagged "J" indicates that the associated concentration is an estimate, but under the WCH statement of work, the data may be usable for decision-making purposes. All other validated results are considered accurate within the standard error associated with the methods.

REFERENCES

Washington Closure Hanford Contract #S00W307A00 (March 2008), *Data Validation Services*.

DOE/RL-2008-11, Rev.0, *Remedial Investigation Work Plan for Hanford Site Releases to the Columbia River*, September 2008.

Appendix 1

Glossary of Data Reporting Qualifiers

Qualifiers which may be applied by data validators in compliance with WCH validation SOW are as follows:

U - Indicates the compound or analyte was analyzed for and not detected in the sample. The value reported is the sample quantitation limit corrected for sample dilution and moisture content by the laboratory.

UJ - Indicates the compound or analyte was analyzed for and not detected in the sample. Due to a minor QC deficiency identified during the data validation, the associated quantitation limit is an estimate.

J - Indicates the compound or analyte was analyzed for and detected. Due to a minor QC deficiency identified during the data validation, the associated concentration is an estimate, but the data are usable for decision-making purposes.

BJ - Applied to inorganic analyses only. Indicates the analyte concentration was greater than the IDL but less than the CRDL and is considered an estimated value.

R - Indicates the compound or analyte was analyzed for, detected, and due to an identified major QC deficiency, the data are unusable.

UR - Indicates the compound or analyte was analyzed for and not detected in the sample. Additionally, the data is unusable due to an identified major QC deficiency.

NJ - Indicates presumptive evidence of a compound at an estimated value. The data may not be valid for some specific applications (i.e., usable for decision-making purposes).

N - Indicates presumptive evidence of a compound. The data may not be valid for some specific applications (i.e., usable for decision-making purposes).

Appendix 2

Summary of Data Qualification

METALS ORGANIC DATA QUALIFICATION SUMMARY*

SDG: K1525	**REVIEWER: ELR**	**Project: RCBRA**	**QC Issue**
COMPOUND	QUALIFIER	SAMPLES AFFECTED	REASON
Molybdenum	UJ	All (except J180W9-A)	Method blank contamination
Tin	UJ	J17V87, J17V88, J17V89	Method blank contamination
All	J	J180W9-A	No MS or duplicate analysis
Antimony	J	All (except J180W9-A)	MS recovery
Arsenic Iron Vanadium Thallium	J	All	LCS recovery

* - The Qualified Data Summary Table includes laboratory applied "U" qualifiers not specifically identified here. The laboratory applied "U" qualifiers are included to minimize misinterpretation of results contained in the table.

Appendix 3

Qualified Data Summary and Annotated Laboratory Reports

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

WC-Hanford, Inc	Project: RC-116	
2620 Fermi Avenue	Project Number: K1525	Reported:
Richland WA, 99354	Project Manager: Joan Kessner	10/10/2009 12:49

J18157-A

0902012-01 (Solid)

Analyte	Result and Qualifier		Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Lionville Laboratory									
Metals by SW846 6000/7000 series									
Aluminum	7890		3.25	mg/kg	1	L903184	03/23/2009	03/26/2009	6010B
Antimony	0.390	U J	0.390	mg/kg	1	L903184	03/23/2009	03/26/2009	6010B
Arsenic	2.75	J	0.649	mg/kg	1	L903184	03/23/2009	03/26/2009	6010B
Barium	60.3		0.325	mg/kg	1	L903184	03/23/2009	03/26/2009	6010B
Beryllium	0.267		0.130	mg/kg	1	L903184	03/23/2009	03/26/2009	6010B
Bismuth	6.49	U	6.49	mg/kg	1	L903184	03/23/2009	03/26/2009	6010B
Boron	1.20	B	1.30	mg/kg	1	L903184	03/23/2009	03/26/2009	6010B
Cadmium	0.155		0.130	mg/kg	1	L903184	03/23/2009	03/26/2009	6010B
Calcium	2380		64.9	mg/kg	1	L903184	03/23/2009	03/26/2009	6010B
Chromium	8.78		0.130	mg/kg	1	L903184	03/23/2009	03/26/2009	6010B
Cobalt	4.14		1.30	mg/kg	1	L903184	03/23/2009	03/26/2009	6010B
Copper	7.94		0.649	mg/kg	1	L903184	03/23/2009	03/26/2009	6010B
Iron	14300	J	13.0	mg/kg	1	L903184	03/23/2009	03/26/2009	6010B
Lead	3.42		0.325	mg/kg	1	L903184	03/23/2009	03/26/2009	6010B
Lithium	6.33		1.62	mg/kg	1	L903184	03/23/2009	03/26/2009	6010B
Magnesium	2240		48.7	mg/kg	1	L903184	03/23/2009	03/26/2009	6010B
Manganese	271		1.25	mg/kg	1	L903184	03/23/2009	03/26/2009	6010B
Molybdenum	0.204	~~B~~ UJ	1.30	mg/kg	1	L903184	03/23/2009	03/26/2009	6010B
Nickel	6.29		2.60	mg/kg	1	L903184	03/23/2009	03/26/2009	6010B
Phosphorus	407		32.5	mg/kg	1	L903184	03/23/2009	03/26/2009	6010B
Potassium	1130		260	mg/kg	1	L903184	03/23/2009	03/26/2009	6010B
Selenium	0.649	U	0.649	mg/kg	1	L903184	03/23/2009	03/26/2009	6010B
Silicon	923		1.30	mg/kg	1	L903184	03/23/2009	03/26/2009	6010B
Silver	0.130	U	0.130	mg/kg	1	L903184	03/23/2009	03/26/2009	6010B
Sodium	179		32.5	mg/kg	1	L903184	03/23/2009	03/26/2009	6010B
Strontium	17.7		0.649	mg/kg	1	L903184	03/23/2009	03/26/2009	6010B
Thallium	0.325	U J	0.325	mg/kg	1	L903184	03/23/2009	03/26/2009	6010B
Tin	6.49	U	6.49	mg/kg	1	L903184	03/23/2009	03/26/2009	6010B
Uranium	13.0	U	13.0	mg/kg	1	L903184	03/23/2009	03/26/2009	6010B
Vanadium	37.9	J	1.62	mg/kg	1	L903184	03/23/2009	03/26/2009	6010B
Zinc	34.0		6.49	mg/kg	1	L903184	03/23/2009	03/26/2009	6010B
Mercury	0.0265	U	0.0265	mg/kg	1	L902180	02/25/2009	02/26/2009	7471A

11/20/09

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WC-Hanford, Inc. 2620 Fermi Avenue Richland WA, 99354	Project: RC-116 Project Number: K1525 Project Manager: Joan Kessner	Reported: 10/10/2009 12:49

J18158-A
0902012-02 (Solid)

Lionville Laboratory

Metals by SW846 6000/7000 series

Analyte	Result and Qualifier	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Aluminum	**7320**	3.52	mg/kg	1	1903184	03/23/2009	03/26/2009	6010B
Antimony	0.423 U J	0.423	mg/kg	1	1903184	03/23/2009	03/26/2009	6010B
Arsenic	**2.75** J	0.704	mg/kg	1	1903184	03/23/2009	03/26/2009	6010B
Barium	**71.6**	0.352	mg/kg	1	1903184	03/23/2009	03/26/2009	6010B
Beryllium	**0.251**	0.141	mg/kg	1	1903184	03/23/2009	03/26/2009	6010B
Bismuth	7.04 U	7.04	mg/kg	1	1903184	03/23/2009	03/26/2009	6010B
Boron	**1.31** B	1.41	mg/kg	1	1903184	03/23/2009	03/26/2009	6010B
Cadmium	**0.147**	0.141	mg/kg	1	1903184	03/23/2009	03/26/2009	6010B
Calcium	**3500**	70.4	mg/kg	1	1903184	03/23/2009	03/26/2009	6010B
Chromium	**10.2**	0.141	mg/kg	1	1903184	03/23/2009	03/26/2009	6010B
Cobalt	**4.23**	1.41	mg/kg	1	1903184	03/23/2009	03/26/2009	6010B
Copper	**7.35**	0.704	mg/kg	1	1903184	03/23/2009	03/26/2009	6010B
Iron	**14100** J	14.1	mg/kg	1	1903184	03/23/2009	03/26/2009	6010B
Lead	**3.39**	0.352	mg/kg	1	1903184	03/23/2009	03/26/2009	6010B
Lithium	**6.28**	1.76	mg/kg	1	1903184	03/23/2009	03/26/2009	6010B
Magnesium	**2400**	52.8	mg/kg	1	1903184	03/23/2009	03/26/2009	6010B
Manganese	**247**	3.52	mg/kg	1	1903184	03/23/2009	03/26/2009	6010B
Molybdenum	**0.252** ~~B~~ UJ	1.41	mg/kg	1	1903184	03/23/2009	03/26/2009	6010B
Nickel	**7.11**	2.82	mg/kg	1	1903184	03/23/2009	03/26/2009	6010B
Phosphorus	**434**	35.2	mg/kg	1	1903184	03/23/2009	03/26/2009	6010B
Potassium	**1150**	282	mg/kg	1	1903184	03/23/2009	03/26/2009	6010B
Selenium	0.704 U	0.704	mg/kg	1	1903184	03/23/2009	03/26/2009	6010B
Silicon	**944**	1.41	mg/kg	1	1903184	03/23/2009	03/26/2009	6010B
Silver	0.141 U	0.141	mg/kg	1	1903184	03/23/2009	03/26/2009	6010B
Sodium	**197**	35.2	mg/kg	1	1903184	03/23/2009	03/26/2009	6010B
Strontium	**19.2**	0.704	mg/kg	1	1903184	03/23/2009	03/26/2009	6010B
Thallium	0.352 U J	0.352	mg/kg	1	1903184	03/23/2009	03/26/2009	6010B
Tin	7.04 U	7.04	mg/kg	1	1903184	03/23/2009	03/26/2009	6010B
Uranium	14.1 U	14.1	mg/kg	1	1903184	03/23/2009	03/26/2009	6010B
Vanadium	**38.1** J	1.76	mg/kg	1	1903184	03/23/2009	03/26/2009	6010B
Zinc	**34.0**	7.04	mg/kg	1	1903184	03/23/2009	03/26/2009	6010B
Mercury	0.0243 U	0.0243	mg/kg	1	1902180	02/25/2009	02/26/2009	7471A

11/20/09

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264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

WCH Hanford, Inc. 2620 Fermi Avenue Richland WA, 99354	Project: RC-116 Project Number: K1525 Project Manager: Joan Kessner	Reported: 10/10/2009 12:49

J18159-A

0902012-03 (Solid)

Analyte	Result and Qualifier		Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Lionville Laboratory									
Metals by SW846 6000/7000 series									
Aluminum	7510		3.38	mg/kg	1	1903184	03/23/2009	03/26/2009	6010B
Antimony	0.405	U J	0.405	mg/kg	1	1903184	03/23/2009	03/26/2009	6010B
Arsenic	2.54	J	0.676	mg/kg	1	1903184	03/23/2009	03/26/2009	6010B
Barium	76.5		0.338	mg/kg	1	1903184	03/23/2009	03/26/2009	6010B
Beryllium	0.225		0.135	mg/kg	1	1903184	03/23/2009	03/26/2009	6010B
Bismuth	6.76	U	6.76	mg/kg	1	1903184	03/23/2009	03/26/2009	6010B
Boron	1.01	B	1.35	mg/kg	1	1903184	03/23/2009	03/26/2009	6010B
Cadmium	0.147		0.135	mg/kg	1	1903184	03/23/2009	03/26/2009	6010B
Calcium	3140		67.6	mg/kg	1	1903184	03/23/2009	03/26/2009	6010B
Chromium	8.59		0.135	mg/kg	1	1903184	03/23/2009	03/26/2009	6010B
Cobalt	5.94		1.35	mg/kg	1	1903184	03/23/2009	03/26/2009	6010B
Copper	7.09		0.676	mg/kg	1	1903184	03/23/2009	03/26/2009	6010B
Iron	19300	J	13.5	mg/kg	1	1903184	03/23/2009	03/26/2009	6010B
Lead	3.97		0.338	mg/kg	1	1903184	03/23/2009	03/26/2009	6010B
Lithium	5.33		1.69	mg/kg	1	1903184	03/23/2009	03/26/2009	6010B
Magnesium	2210		50.7	mg/kg	1	1903184	03/23/2009	03/26/2009	6010B
Manganese	311		3.38	mg/kg	1	1903184	03/23/2009	03/26/2009	6010B
Molybdenum	0.276	~~B~~ UJ	1.35	mg/kg	1	1903184	03/23/2009	03/26/2009	6010B
Nickel	5.84		2.70	mg/kg	1	1903184	03/23/2009	03/26/2009	6010B
Phosphorus	570		33.8	mg/kg	1	1903184	03/23/2009	03/26/2009	6010B
Potassium	974		270	mg/kg	1	1903184	03/23/2009	03/26/2009	6010B
Selenium	0.676	U	0.676	mg/kg	1	1903184	03/23/2009	03/26/2009	6010B
Silicon	936		1.35	mg/kg	1	1903184	03/23/2009	03/26/2009	6010B
Silver	0.135	U	0.135	mg/kg	1	1903184	03/23/2009	03/26/2009	6010B
Sodium	242		33.8	mg/kg	1	1903184	03/23/2009	03/26/2009	6010B
Strontium	20.7		0.676	mg/kg	1	1903184	03/23/2009	03/26/2009	6010B
Thallium	0.338	U J	0.338	mg/kg	1	1903184	03/23/2009	03/26/2009	6010B
Tin	6.76	U	6.76	mg/kg	1	1903184	03/23/2009	03/26/2009	6010B
Uranium	13.5	U	13.5	mg/kg	1	1903184	03/23/2009	03/26/2009	6010B
Vanadium	67.9	J	1.69	mg/kg	1	1903184	03/23/2009	03/26/2009	6010B
Zinc	40.0		6.76	mg/kg	1	1903184	03/23/2009	03/26/2009	6010B
Mercury	0.0290	U	0.0290	mg/kg	1	1902180	02/25/2009	02/26/2009	7471A

11/20/09

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WC-Hanford, Inc	Project: RC-116	
2620 Fermi Avenue	Project Number: K1525	Reported:
Richland WA, 99354	Project Manager: Joan Kessner	10/10/2009 12:49

J18160-A

0902012-04 (Solid)

Lionville Laboratory

Metals by SW846 6000/7000 series

Analyte	Result and Qualifier	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Aluminum	8110	3.38	mg/kg	1	L903184	03/23/2009	03/26/2009	6010B
Antimony	0.405 U J	0.405	mg/kg	1	L903184	03/23/2009	03/26/2009	6010B
Arsenic	2.00 J	0.676	mg/kg	1	L903184	03/23/2009	03/26/2009	6010B
Barium	63.5	0.338	mg/kg	1	L903184	03/23/2009	03/26/2009	6010B
Beryllium	0.265	0.135	mg/kg	1	L903184	03/23/2009	03/26/2009	6010B
Bismuth	6.76 U	6.76	mg/kg	1	L903184	03/23/2009	03/26/2009	6010B
Boron	1.30 B	1.35	mg/kg	1	L903184	03/23/2009	03/26/2009	6010B
Cadmium	0.126 B	0.135	mg/kg	1	L903184	03/23/2009	03/26/2009	6010B
Calcium	2690	67.6	mg/kg	1	L903184	03/23/2009	03/26/2009	6010B
Chromium	8.53	0.135	mg/kg	1	L903184	03/23/2009	03/26/2009	6010B
Cobalt	4.78	1.35	mg/kg	1	L903184	03/23/2009	03/26/2009	6010B
Copper	8.53	0.676	mg/kg	1	L903184	03/23/2009	03/26/2009	6010B
Iron	15700 J	13.5	mg/kg	1	L903184	03/23/2009	03/26/2009	6010B
Lead	3.44	0.338	mg/kg	1	L903184	03/23/2009	03/26/2009	6010B
Lithium	6.18	1.69	mg/kg	1	L903184	03/23/2009	03/26/2009	6010B
Magnesium	2390	50.7	mg/kg	1	L903184	03/23/2009	03/26/2009	6010B
Manganese	202	3.38	mg/kg	1	L903184	03/23/2009	03/26/2009	6010B
Molybdenum	0.237 ~~B~~ U J	1.35	mg/kg	1	L903184	03/23/2009	03/26/2009	6010B
Nickel	6.28	2.70	mg/kg	1	L903184	03/23/2009	03/26/2009	6010B
Phosphorus	456	33.8	mg/kg	1	L903184	03/23/2009	03/26/2009	6010B
Potassium	1230	330	mg/kg	1	L903184	03/23/2009	03/26/2009	6010B
Selenium	0.676 U	0.676	mg/kg	1	L903184	03/23/2009	03/26/2009	6010B
Silicon	911	1.35	mg/kg	1	L903184	03/23/2009	03/26/2009	6010B
Silver	0.135 U	0.135	mg/kg	1	L903184	03/23/2009	03/26/2009	6010B
Sodium	182	33.8	mg/kg	1	L903184	03/23/2009	03/26/2009	6010B
Strontium	17.0	0.676	mg/kg	1	L903184	03/23/2009	03/26/2009	6010B
Thallium	0.338 U J	0.338	mg/kg	1	L903184	03/23/2009	03/26/2009	6010B
Tin	6.76 U	6.76	mg/kg	1	L903184	03/23/2009	03/26/2009	6010B
Uranium	13.5 U	13.5	mg/kg	1	L903184	03/23/2009	03/26/2009	6010B
Vanadium	46.3 J	1.69	mg/kg	1	L903184	03/23/2009	03/26/2009	6010B
Zinc	33.4	6.76	mg/kg	1	L903184	03/23/2009	03/26/2009	6010B
Mercury	0.0237 U	0.0237	mg/kg	1	L902180	02/25/2009	02/26/2009	7471A

11/20/09

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264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

WC Hanford, Inc
2620 Fermi Avenue
Richland WA 99354

Project: RC-116
Project Number: K1323
Project Manager: Joan Kessner

Reported:
04/24/2009 11:19

J1X177

0902012-05 (Solid)

Lionville Laboratory

Metals by SW846 6000/7000 series

Analyte	Result	Reporting Limit	Qualifier	Units	Dilution	Batch	Prepared	Analyzed	Method
Aluminum	**5120**	2.94		mg/kg	1	1903184	03/23/2009	03/26/2009	6010B
Antimony	0.353	0.353	U J	"	"	"	"	"	"
Arsenic	**2.56**	0.588	J	"	"	"	"	"	"
Barium	**42.7**	0.294		"	"	"	"	"	"
Beryllium	**0.175**	0.118		"	"	"	"	"	"
Bismuth	5.88	5.88	U	"	"	"	"	"	"
Boron	**0.679**	1.18	B	"	"	"	"	"	"
Cadmium	**0.290**	0.118		"	"	"	"	"	"
Calcium	**2040**	58.8		"	"	"	"	"	"
Chromium	**7.66**	0.118		"	"	"	"	"	"
Cobalt	**4.04**	1.18		"	"	"	"	"	"
Copper	**6.41**	0.588		"	"	"	"	"	"
Iron	**15100**	11.8	J	"	"	"	"	"	"
Lead	**3.08**	0.294		"	"	"	"	"	"
Lithium	**5.32**	1.47		"	"	"	"	"	"
Magnesium	**3060**	44.1		"	"	"	"	"	"
Manganese	**140**	2.94		"	"	"	"	"	"
Molybdenum	**0.233**	1.18	~~B~~ U J	"	"	"	"	"	"
Nickel	**6.39**	2.35		"	"	"	"	"	"
Phosphorus	**535**	29.4		"	"	"	"	"	"
Potassium	**841**	235		"	"	"	"	"	"
Selenium	0.588	0.588	U	"	"	"	"	"	"
Silicon	**625**	1.18		"	"	"	"	"	"
Silver	0.118	0.118	U	"	"	"	"	"	"
Sodium	**168**	29.4		"	"	"	"	"	"
Strontium	**15.7**	0.588		"	"	"	"	"	"
Thallium	0.294	0.294	U J	"	"	"	"	"	"
Tin	5.88	5.88	U	"	"	"	"	"	"
Uranium	11.8	11.8	U	"	"	"	"	"	"
Vanadium	**41.4**	1.47	J	"	"	"	"	"	"
Zinc	**50.9**	5.88		"	"	"	"	"	"
Mercury	0.0281	0.0281	U	mg/kg wet	"	1903180	03/25/2009	03/26/2009	7471A

11/20/09

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

WCH Hanford, Inc
2620 Fermi Avenue
Richland WA, 99354

Project: RC-116
Project Number: K1525
Project Manager: Joan Kessner

Reported:
03/24/2009 11:19

J18198

0902012-06 (Solid)

Analyte	Result	Reporting Limit	Qualifier	Units	Dilution	Batch	Prepared	Analyzed	Method

Lionville Laboratory

Metals by SW846 6000/7000 series

Aluminum	**6030**	3.62		mg/kg	1	1903184	03/23/2009	03/26/2009	6010B
Antimony	0.435	0.435	U J	"	"	"	"	"	"
Arsenic	**2.82**	0.725	J	"	"	"	"	"	"
Barium	**47.7**	0.362		"	"	"	"	"	"
Beryllium	**0.192**	0.145		"	"	"	"	"	"
Bismuth	7.25	7.25	U	"	"	"	"	"	"
Boron	**0.860**	1.45	B	"	"	"	"	"	"
Cadmium	**1.47**	0.145		"	"	"	"	"	"
Calcium	**2550**	72.5		"	"	"	"	"	"
Chromium	**10.8**	0.145		"	"	"	"	"	"
Cobalt	**4.65**	1.45		"	"	"	"	"	"
Copper	**9.16**	0.725		"	"	"	"	"	"
Iron	**12800**	14.5	J	"	"	"	"	"	"
Lead	**7.01**	0.362		"	"	"	"	"	"
Lithium	**5.66**	1.81		"	"	"	"	"	"
Magnesium	**2840**	54.3		"	"	"	"	"	"
Manganese	**134**	3.62		"	"	"	"	"	"
Molybdenum	**0.252**	1.45	B U J	"	"	"	"	"	"
Nickel	**8.80**	2.90		"	"	"	"	"	"
Phosphorus	**443**	36.2		"	"	"	"	"	"
Potassium	**884**	290		"	"	"	"	"	"
Selenium	0.725	0.725	U	"	"	"	"	"	"
Silicon	**827**	1.45		"	"	"	"	"	"
Silver	0.145	0.145	U	"	"	"	"	"	"
Sodium	**180**	36.2		"	"	"	"	"	"
Strontium	**17.7**	0.725		"	"	"	"	"	"
Thallium	0.362	0.362	U J	"	"	"	"	"	"
Tin	7.25	7.25	U	"	"	"	"	"	"
Uranium	14.5	14.5	U	"	"	"	"	"	"
Vanadium	**30.5**	1.81	J	"	"	"	"	"	"
Zinc	**125**	7.25		"	"	"	"	"	"
Mercury	**0.0406**	0.0281		mg/kg wet	1	1903190	03/25/2009	03/26/2009	7471A

11/20/09

208 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

WC Hanford, Inc	Project: RC-116	
2620 Fermi Avenue	Project Number: K1525	Reported:
Richland WA, 99354	Project Manager: Joan Kessner	04/24/2009 11:19

J18199
0902012-07 (Solid)

Lionville Laboratory

Metals by SW846 6000/7000 series

Analyte	Result	Reporting Limit	Qualifier	Units	Dilution	Batch	Prepared	Analyzed	Method
Aluminum	**4140**	3.85		mg/kg	1	1903184	03/21/2009	03/26/2009	6010B
Antimony	0.462	0.462	U J	"	"	"	"	"	"
Arsenic	**2.49**	0.769	J	"	"	"	"	"	"
Barium	**39.1**	0.385		"	"	"	"	"	"
Beryllium	**0.162**	0.154		"	"	"	"	"	"
Bismuth	7.69	7.69	U	"	"	"	"	"	"
Boron	**0.572**	1.54	B	"	"	"	"	"	"
Cadmium	**0.253**	0.154		"	"	"	"	"	"
Calcium	**2760**	76.9		"	"	"	"	"	"
Chromium	**5.56**	0.154		"	"	"	"	"	"
Cobalt	**5.32**	1.54		"	"	"	"	"	"
Copper	**4.94**	0.769			"	"	"	"	"
Iron	**16700**	15.4	J	"	"	"	"	"	"
Lead	**2.98**	0.385		"	"	"	"	"	"
Lithium	**3.95**	1.92		"	"	"	"	"	"
Magnesium	**2530**	57.7		"	"	"	"	"	"
Manganese	**170**	3.85		"	"	"	"	"	"
Molybdenum	**0.340**	1.54	B UJ	"	"	"	"	"	"
Nickel	**5.23**	3.08		"	"	"	"	"	"
Phosphorus	**690**	38.5		"	"	"	"	"	"
Potassium	**634**	308		"	"	"	"	"	"
Selenium	0.769	0.769	U	"	"	"	"	"	"
Silicon	**295**	1.54		"	"	"	"	"	"
Silver	0.154	0.154	U	"	"	"	"	"	"
Sodium	**161**	38.5		"	"	"	"	"	"
Strontium	**11.0**	0.769		"	"	"	"	"	"
Thallium	0.385	0.385	U J	"	"	"	"	"	"
Tin	7.69	7.69	U	"	"	"	"	"	"
Uranium	15.4	15.4	U	"	"	"	"	"	"
Vanadium	**49.8**	1.92	J	"	"	"	"	"	"
Zinc	**49.6**	7.69		"	"	"	"	"	"
Mercury	0.0231	0.0231	U	mg/kg wet	"	1902180	02/25/2009	02/26/2009	7471A

11/20/09

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
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WC Hanford, Inc.
2620 Fermi Avenue
Richland WA 99354

Project: RC-116
Project Number: K1525
Project Manager: Joan Kessner

Reported:
04/24/2009 11:19

J181B0

0902012-08 (Solid)

Lionville Laboratory

Metals by SW846 6000/7000 series

Analyte	Result	Reporting Limit	Qualifier	Units	Dilution	Batch	Prepared	Analyzed	Method
Aluminum	5780	3.73		mg/kg	1	0902084	02/23/2009	02/26/2009	6010B
Antimony	0.448	0.448	U J	"	"	"	"	"	"
Arsenic	2.92	0.746	J	"	"	"	"	"	"
Barium	47.9	0.373		"	"	"	"	"	"
Beryllium	0.193	0.149		"	"	"	"	"	"
Bismuth	7.46	7.46	U	"	"	"	"	"	"
Boron	0.833	1.49	B	"	"	"	"	"	"
Cadmium	1.33	0.149		"	"	"	"	"	"
Calcium	2400	74.6		"	"	"	"	"	"
Chromium	11.1	0.149		"	"	"	"	"	"
Cobalt	4.83	1.49		"	"	"	"	"	"
Copper	9.63	0.746		"	"	"	"	"	"
Iron	12600	14.9	J	"	"	"	"	"	"
Lead	7.80	0.373		"	"	"	"	"	"
Lithium	5.38	1.87		"	"	"	"	"	"
Magnesium	2720	56.0		"	"	"	"	"	"
Manganese	123	3.73		"	"	"	"	"	"
Molybdenum	0.262	1.49	~~B~~ U J	"	"	"	"	"	"
Nickel	8.98	2.99		"	"	"	"	"	"
Phosphorus	438	37.3		"	"	"	"	"	"
Potassium	834	299		"	"	"	"	"	"
Selenium	0.453	0.746	B	"	"	"	"	"	"
Silicon	772	1.49		"	"	"	"	"	"
Silver	0.149	0.149	U	"	"	"	"	"	"
Sodium	357	37.3		"	"	"	"	"	"
Strontium	16.6	0.746		"	"	"	"	"	"
Thallium	0.554	0.373	J	"	"	"	"	"	"
Tin	7.46	7.46	U	"	"	"	"	"	"
Titanium	14.9	14.9	U	"	"	"	"	"	"
Vanadium	29.8	1.87	J	"	"	"	"	"	"
Zinc	129	7.46		"	"	"	"	"	"
Mercury	0.219	0.0257		mg/kg wet	"	0902180	02/25/2009	02/26/2009	7471A

11/20/09

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

WC-Hanford, Inc 2620 Fermi Avenue Richland WA, 99354	Project: RC-116 Project Number: K1525 Project Manager: Joan Kessner	**Reported:** 04/24/2009 11:19

J181B1
0902012-09 (Solid)

Lionville Laboratory

Metals by SW846 6000/7000 series

Analyte	Result	Reporting Limit	Qualifier	Units	Dilution	Batch	Prepared	Analyzed	Method
Aluminum	**9460**	3.57		mg/kg	1	0902144	02/23/2009	02/26/2009	6010B
Antimony	0.429	0.429	U J	"	"	"	"	"	"
Arsenic	**3.44**	0.714	J	"	"	"	"	"	"
Barium	**65.4**	0.357		"	"	"	"	"	"
Beryllium	**0.341**	0.143		"	"	"	"	"	"
Bismuth	7.14	7.14	U	"	"	"	"	"	"
Boron	**1.29**	1.43	B	"	"	"	"	"	"
Cadmium	**0.759**	0.143		"	"	"	"	"	"
Calcium	**2620**	71.4		"	"	"	"	"	"
Chromium	**12.1**	0.143		"	"	"	"	"	"
Cobalt	**4.26**	1.43		"	"	"	"	"	"
Copper	**14.1**	0.714		"	"	"	"	"	"
Iron	**13700**	14.3	J	"	"	"	"	"	"
Lead	**7.92**	0.357		"	"	"	"	"	"
Lithium	**7.88**	1.79		"	"	"	"	"	"
Magnesium	**2890**	53.6		"	"	"	"	"	"
Manganese	**178**	3.57		"	"	"	"	"	"
Molybdenum	**0.256**	1.43	~~B~~ UJ	"	"	"	"	"	"
Nickel	**9.79**	2.86		"	"	"	"	"	"
Phosphorus	**345**	35.7		"	"	"	"	"	"
Potassium	**1140**	286		"	"	"	"	"	"
Selenium	0.714	0.714	U	"	"	"	"	"	"
Silicon	**926**	1.43		"	"	"	"	"	"
Silver	0.143	0.143	U	"	"	"	"	"	"
Sodium	**171**	35.7		"	"	"	"	"	"
Strontium	**20.1**	0.714		"	"	"	"	"	"
Thallium	0.357	0.357	U J	"	"	"	"	"	"
Tin	7.14	7.14	U	"	"	"	"	"	"
Uranium	14.3	14.3	U	"	"	"	"	"	"
Vanadium	**30.4**	1.79	J	"	"	"	"	"	"
Zinc	**85.5**	7.14		"	"	"	"	"	"
Mercury	**0.0400**	0.0281		mg/kg wet	"	0902180	02/25/2009	02/26/2009	7471A

11/26/09

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Phone: 610-280-3000
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WCH-Hanford, Inc 2620 Fermi Avenue Richland WA, 99354	Project: RC-116 Project Number: R3525 Project Manager: Joan Kessner	Reported: 04/24/2009 11:19

J181B2

0902012-10 (Solid)

Analyte	Result	Reporting Limit	Qualifier	Units	Dilution	Batch	Prepared	Analyzed	Method

Lionville Laboratory

Metals by SW846 6000/7000 series

Analyte	Result	Reporting Limit	Qualifier	Units	Dilution	Batch	Prepared	Analyzed	Method
Aluminum	7440	4.03		mg/kg	1	L902184	02/23/2009	02/26/2009	6010B
Antimony	0.484	0.484	U J	"	"	"	"	"	"
Arsenic	2.80	0.806	J	"	"	"	"	"	"
Barium	54.1	0.403		"	"	"	"	"	"
Beryllium	0.280	0.161		"	"	"	"	"	"
Bismuth	8.06	8.06	U	"	"	"	"	"	"
Boron	3.19	1.61	B	"	"	"	"	"	"
Cadmium	0.532	0.161		"	"	"	"	"	"
Calcium	2260	80.6		"	"	"	"	"	"
Chromium	10.2	0.161		"	"	"	"	"	"
Cobalt	3.68	1.61		"	"	"	"	"	"
Copper	10.7	0.806		"	"	"	"	"	"
Iron	11600	16.1	J	"	"	"	"	"	"
Lead	6.42	0.403		"	"	"	"	"	"
Lithium	6.44	2.02		"	"	"	"	"	"
Magnesium	2480	60.5		"	"	"	"	"	"
Manganese	209	4.03		"	"	"	"	"	"
Molybdenum	0.216	1.61	~~B~~ UJ	"	"	"	"	"	"
Nickel	8.30	1.23		"	"	"	"	"	"
Phosphorus	525	40.3		"	"	"	"	"	"
Potassium	948	323		"	"	"	"	"	"
Selenium	0.806	0.806	U	"	"	"	"	"	"
Silicon	996	1.61		"	"	"	"	"	"
Silver	0.161	0.161	U	"	"	"	"	"	"
Sodium	147	40.3		"	"	"	"	"	"
Strontium	17.0	0.806		"	"	"	"	"	"
Thallium	0.403	0.403	U J	"	"	"	"	"	"
Tin	8.06	8.06	U	"	"	"	"	"	"
Uranium	16.1	16.1	U	"	"	"	"	"	"
Vanadium	25.3	2.02	J	"	"	"	"	"	"
Zinc	67.3	8.06		"	"	"	"	"	"
Mercury	0.0273	0.0257		mg/kg wet	"	L902180	02/25/2009	02/26/2009	7471A

11/20/09

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WC Hanford, Inc 2620 Fermi Avenue Richland WA 99354	Project: KC-116 Project Number: K1523 Project Manager: Joan Kessner	**Reported:** 04/24/2009 11:19

J181B3

0902012-11 (Solid)

Analyte	Result	Reporting Limit	Qualifier	Units	Dilution	Batch	Prepared	Analyzed	Method

Lionville Laboratory

Metals by SW846 6000/7000 series

Analyte	Result	Reporting Limit	Qualifier	Units	Dilution	Batch	Prepared	Analyzed	Method
Aluminum	7810	3.57		mg/kg	1	0903180	03/2?/2009	03/26/2009	6010B
Antimony	0.429	0.429	U J	"	"	"	"	"	"
Arsenic	2.86	0.714	J	"	"	"	"	"	"
Barium	54.1	0.357		"	"	"	"	"	"
Beryllium	0.308	0.143		"	"	"	"	"	"
Bismuth	7.14	7.14	U	"	"	"	"	"	"
Boron	1.20	1.43	B	"	"	"	"	"	"
Cadmium	0.551	0.143		"	"	"	"	"	"
Calcium	3220	21.4		"	"	"	"	"	"
Chromium	10.1	0.143		"	"	"	"	"	"
Cobalt	3.57	1.43		"	"	"	"	"	"
Copper	11.4	0.714		"	"	"	"	"	"
Iron	11600	14.3	J	"	"	"	"	"	"
Lead	7.09	0.357		"	"	"	"	"	"
Lithium	6.40	1.79		"	"	"	"	"	"
Magnesium	2450	51.6		"	"	"	"	"	"
Manganese	172	3.57		"	"	"	"	"	"
Molybdenum	0.222	1.43	~~B~~ UJ	"	"	"	"	"	"
Nickel	8.17	2.86		"	"	"	"	"	"
Phosphorus	322	35.7		"	"	"	"	"	"
Potassium	926	286		"	"	"	"	"	"
Selenium	0.714	0.714	U	"	"	"	"	"	"
Silicon	957	1.43		"	"	"	"	"	"
Silver	0.143	0.143	U	"	"	"	"	"	"
Sodium	145	35.7		"	"	"	"	"	"
Strontium	17.2	0.714		"	"	"	"	"	"
Thallium	0.357	0.357	U J	"	"	"	"	"	"
Tin	7.14	7.14	U	"	"	"	"	"	"
Uranium	14.3	14.3	U	"	"	"	"	"	"
Vanadium	25.1	1.79	J	"	"	"	"	"	"
Zinc	70.8	7.14		"	"	"	"	"	"
Mercury	0.0329	0.0290		mg/kg wet	"	0902180	02/25/2009	02/26/2009	7471A

W
11/20/09

264 Welsh Pool Road
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WCH Hanford Inc 2620 Fermi Avenue Richland WA 99354	Project: RC-116 Project Number: K1525 Project Manager: John Kessner	**Reported:** 04/24/2009 11:19

J17V87

0902012-12 (Solid)

Lionville Laboratory

Metals by SW846 6000/7000 series

Analyte	Result	Reporting Limit	Qualifier	Units	Dilution	Batch	Prepared	Analyzed	Method
Aluminum	**6840**	3.57		mg/kg	1	9C03184	03/23/2009	03/26/2009	6010B
Antimony	0.429	0.429	U J	"	"	"	"	"	"
Arsenic	**2.82**	0.714	J	"	"	"	"	"	"
Barium	**56.6**	0.357		"	"	"	"	"	"
Beryllium	**0.215**	0.143		"	"	"	"	"	"
Bismuth	7.14	7.14	U	"	"	"	"	"	"
Boron	**1.43**	1.43	U	"	"	"	"	"	"
Cadmium	**0.984**	0.143		"	"	"	"	"	"
Calcium	**2390**	71.4		"	"	"	"	"	"
Chromium	**15.5**	0.143		"	"	"	"	"	"
Cobalt	**3.46**	1.43		"	"	"	"	"	"
Copper	**15.1**	0.714		"	"	"	"	"	"
Iron	**9360**	14.3	J	"	"	"	"	"	"
Lead	**12.5**	0.357		"	"	"	"	"	"
Lithium	**6.52**	1.79		"	"	"	"	"	"
Magnesium	**3370**	35.7		"	"	"	"	"	"
Manganese	**220**	3.57		"	"	"	"	"	"
Molybdenum	**0.202**	1.43	~~B~~ UJ	"	"	"	"	"	"
Nickel	**15.6**	2.86		"	"	"	"	"	"
Phosphorus	**202**	35.7		"	"	"	"	"	"
Potassium	**775**	286		"	"	"	"	"	"
Selenium	0.714	0.714	U	"	"	"	"	"	"
Silicon	**2040**	1.43		"	"	"	"	"	"
Silver	0.143	0.143	U	"	"	"	"	"	"
Sodium	**129**	35.7		"	"	"	"	"	"
Strontium	**17.8**	0.714		"	"	"	"	"	"
Thallium	0.357	0.357	U J	"	"	"	"	"	"
Tin	**0.474**	7.14	~~B~~ UJ	"	"	"	"	"	"
Uranium	14.3	14.3	U	"	"	"	"	"	"
Vanadium	**19.2**	1.79	J	"	"	"	"	"	"
Zinc	**113**	7.14		"	"	"	"	"	"
Mercury	**0.0396**	0.0225		mg/kg wet	1	9C03180	03/25/2009	03/26/2009	7471A

11/20/09

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WCH Hanford Inc	Project: RC 116	
2620 Fermi Avenue	Project Number: K1525	**Reported:**
Richland WA, 99354	Project Manager: Joan Kessner	03/24/2009 11:19

J17Y88

0902012-13 (Solid)

Analyte	Result	Reporting Limit	Qualifier	Units	Dilution	Batch	Prepared	Analyzed	Method

Lionville Laboratory

Metals by SW846 6000/7000 series

Analyte	Result	Reporting Limit	Qualifier	Units	Dilution	Batch	Prepared	Analyzed	Method
Aluminum	**8060**	4.46		mg/kg	1	L903184	03/21/2009	03/24/2009	6010B
Antimony	0.536	0.536	U J	"	"	"	"	"	"
Arsenic	**3.79**	0.893	J	"	"	"	"	"	"
Barium	**62.2**	0.446		"	"	"	"	"	"
Beryllium	**0.238**	0.179		"	"	"	"	"	"
Bismuth	8.93	8.93	U	"	"	"	"	"	"
Boron	**1.22**	1.79	B	"	"	"	"	"	"
Cadmium	**3.09**	0.179		"	"	"	"	"	"
Calcium	**3060**	89.3		"	"	"	"	"	"
Chromium	**18.5**	0.179		"	"	"	"	"	"
Cobalt	**3.97**	1.79		"	"	"	"	"	"
Copper	**18.6**	0.893		"	"	"	"	"	"
Iron	**10800**	17.9	J	"	"	"	"	"	"
Lead	**21.2**	0.446		"	"	"	"	"	"
Lithium	**7.50**	2.23		"	"	"	"	"	"
Magnesium	**3960**	67.0		"	"	"	"	"	"
Manganese	**233**	4.46		"	"	"	"	"	"
Molybdenum	**0.233**	1.79	B UJ	"	"	"	"	"	"
Nickel	**19.0**	4.57		"	"	"	"	"	"
Phosphorus	**349**	44.6		"	"	"	"	"	"
Potassium	**953**	357		"	"	"	"	"	"
Selenium	0.893	0.893	U	"	"	"	"	"	"
Silicon	**1310**	1.79		"	"	"	"	"	"
Silver	0.179	0.179	U	"	"	"	"	"	"
Sodium	**169**	44.6		"	"	"	"	"	"
Strontium	**21.1**	0.893		"	"	"	"	"	"
Thallium	0.446	0.446	U J	"	"	"	"	"	"
Tin	**0.535**	8.93	B UJ	"	"	"	"	"	"
Titanium	17.9	17.9	U	"	"	"	"	"	"
Vanadium	**23.1**	2.23	J	"	"	"	"	"	"
Zinc	**230**	8.93		"	"	"	"	"	"
Mercury	0.110	0.0223		mg/kg wet	1	L902180	02/25/2009	02/26/2009	7471A

K 11/20/09

264 Welsh Pool Road
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WCH Hanford, Inc 2620 Fermi Avenue Richland WA 99354	Project: RC-116 Project Number: K1525 Project Manager: Joan Kessner	Reported: 04/24/2009 11:19

J17V89

0902012-14 (Solid)

Lionville Laboratory

Metals by SW846 6000/7000 series

Analyte	Result	Reporting Limit	Qualifier	Units	Dilution	Batch	Prepared	Analyzed	Method
Aluminum	7300	4.46		mg/kg	1	L901184	01/23/2009	01/26/2009	6010B
Antimony	0.536	0.536	U J	"	"	"	"	"	"
Arsenic	3.44	0.891	J	"	"	"	"	"	"
Barium	58.3	0.446		"	"	"	"	"	"
Beryllium	0.200	0.179		"	"	"	"	"	"
Bismuth	8.93	8.93	U	"	"	"	"	"	"
Boron	1.20	1.79	B	"	"	"	"	"	"
Cadmium	1.57	0.179		"	"	"	"	"	"
Calcium	3610	89.3		"	"	"	"	"	"
Chromium	17.0	0.179		"	"	"	"	"	"
Cobalt	3.74	1.79		"	"	"	"	"	"
Copper	17.2	0.893		"	"	"	"	"	"
Iron	10000	17.9	J	"	"	"	"	"	"
Lead	15.2	0.446		"	"	"	"	"	"
Lithium	7.14	2.23		"	"	"	"	"	"
Magnesium	3640	67.0		"	"	"	"	"	"
Manganese	201	4.46		"	"	"	"	"	"
Molybdenum	0.239	1.79	B UJ	"	"	"	"	"	"
Nickel	17.4	3.57		"	"	"	"	"	"
Phosphorus	292	44.6		"	"	"	"	"	"
Potassium	858	157		"	"	"	"	"	"
Selenium	0.893	0.893	U	"	"	"	"	"	"
Silicon	1170	1.79		"	"	"	"	"	"
Silver	0.179	0.179	U	"	"	"	"	"	"
Sodium	137	44.6		"	"	"	"	"	"
Strontium	18.8	0.893		"	"	"	"	"	"
Thallium	0.446	0.446	U J	"	"	"	"	"	"
Tin	0.573	8.93	B UJ	"	"	"	"	"	"
Uranium	17.9	17.9	U	"	"	"	"	"	"
Vanadium	21.3	2.21	J	"	"	"	"	"	"
Zinc	143	8.93		"	"	"	"	"	"
Mercury	0.0566	0.0200		mg/kg wet	"	1902180	02/23/2009	02/26/2009	7471A

11/20/09

208 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

WC Hanford, Inc 2620 Fermi Avenue Richland WA, 99354	Project: 300-116 Project Number: K1525 Project Manager: Joan Kessner	Reported: 04/24/2009 11:19

J17V90
0902012-15 (Solid)

Lionville Laboratory

Metals by SW846 6000/7000 series

Analyte	Result	Reporting Limit	Qualifier	Units	Dilution	Batch	Prepared	Analyzed	Method
Aluminum	7480	4.10		mg/kg	1	1903184	03/21/2009	03/26/2009	6010B
Antimony	0.492	0.492	U J	"	"	"	"	"	"
Arsenic	3.45	0.820	J	"	"	"	"	"	"
Barium	58.8	0.410		"	"	"	"	"	"
Beryllium	0.205	0.164		"	"	"	"	"	"
Bismuth	8.20	8.20	U	"	"	"	"	"	"
Boron	1.21	1.64	B	"	"	"	"	"	"
Cadmium	1.97	0.164		"	"	"	"	"	"
Calcium	2780	82.0		"	"	"	"	"	"
Chromium	17.6	0.164		"	"	"	"	"	"
Cobalt	3.88	1.64		"	"	"	"	"	"
Copper	17.0	0.820		"	"	"	"	"	"
Iron	10200	16.4	J	"	"	"	"	"	"
Lead	16.7	0.410		"	"	"	"	"	"
Lithium	7.35	2.05		"	"	"	"	"	"
Magnesium	3830	61.5		"	"	"	"	"	"
Manganese	210	4.10		"	"	"	"	"	"
Molybdenum	0.248	1.64	~~B~~ U J	"	"	"	"	"	"
Nickel	10.9	1.28		"	"	"	"	"	"
Phosphorus	324	41.0		"	"	"	"	"	"
Potassium	861	123		"	"	"	"	"	"
Selenium	0.820	0.820	U	"	"	"	"	"	"
Silicon	1140	1.64		"	"	"	"	"	"
Silver	0.164	0.164	U	"	"	"	"	"	"
Sodium	158	41.0		"	"	"	"	"	"
Strontium	19.6	0.820		"	"	"	"	"	"
Thallium	0.410	0.410	U J	"	"	"	"	"	"
Tin	8.20	8.20	U	"	"	"	"	"	"
Uranium	16.4	16.4	U	"	"	"	"	"	"
Vanadium	22.4	2.05	J	"	"	"	"	"	"
Zinc	168	8.20		"	"	"	"	"	"
Mercury	0.0770	0.0237		mg/kg wet	1	1902180	03/25/2009	03/26/2009	7471A

K 11/20/09

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

WC Hanford Inc
2620 Fermi Avenue
Richland WA, 99354

Project: [illegible]
Project Number: K1525
Project Manager: John Kessner

Reported:
04/24/2009 11:19

J17V91

0902012-16 (Solid)

Analyte	Result	Reporting Limit	Qualifier	Units	Dilution	Batch	Prepared	Analyzed	Method
Lionville Laboratory									
Metals by SW846 6000/7000 series									
Aluminum	7690	3.47							
Antimony	0.417	0.417	U J	mg/kg	1	0903184	03/23/2009	03/26/2009	6010B
Arsenic	3.70	0.694	J	"	"	"	"	"	"
Barium	59.9	0.347		"	"	"	"	"	"
Beryllium	0.233	0.139		"	"	"	"	"	"
Bismuth	6.94	6.94	U	"	"	"	"	"	"
Boron	1.17	1.39	B	"	"	"	"	"	"
Cadmium	1.61	0.139		"	"	"	"	"	"
Calcium	3650	69.4		"	"	"	"	"	"
Chromium	17.3	0.139		"	"	"	"	"	"
Cobalt	3.79	1.39		"	"	"	"	"	"
Copper	19.7	0.694		"	"	"	"	"	"
Iron	9850	13.9	J	"	"	"	"	"	"
Lead	15.8	0.347		"	"	"	"	"	"
Lithium	6.97	1.74		"	"	"	"	"	"
Magnesium	3630	52.1		"	"	"	"	"	"
Manganese	168	3.47		"	"	"	"	"	"
Molybdenum	0.282	1.39	B U J	"	"	"	"	"	"
Nickel	17.2	2.78		"	"	"	"	"	"
Phosphorus	266	34.7		"	"	"	"	"	"
Potassium	898	278		"	"	"	"	"	"
Selenium	0.694	0.694	U	"	"	"	"	"	"
Silicon	945	1.39		"	"	"	"	"	"
Silver	0.139	0.139	U	"	"	"	"	"	"
Sodium	145	34.7		"	"	"	"	"	"
Strontium	19.7	0.694		"	"	"	"	"	"
Thallium	0.347	0.347	U J	"	"	"	"	"	"
Tin	6.94	6.94	U	"	"	"	"	"	"
Uranium	13.9	13.9	U	"	"	"	"	"	"
Vanadium	21.8	1.74	J	"	"	"	"	"	"
Zinc	145	6.94		"	"	"	"	"	"
Mercury	0.0632	0.0243		mg/kg wet	"	0902180	02/25/2009	02/26/2009	7471A

11/20/09

WC-Hanford, Inc. 2620 Fermi Avenue Richland WA 99354	Project: RC-116 Project Number: K1525 Project Manager: Joan Kessner	Reported: 03/23/2009 11:19

J17V92

0902012-17 (Solid)

Lionville Laboratory

Metals by SW846 6000/7000 series

Analyte	Result	Reporting Limit	Qualifier	Units	Dilution	Batch	Prepared	Analyzed	Method
Aluminum	**6610**	3.73		mg/kg	1	1903184	02/23/2009	02/26/2009	6010B
Antimony	0.448	0.448	U J	"	"	"	"	"	"
Arsenic	**2.99**	0.746	J	"	"	"	"	"	"
Barium	**54.9**	0.373		"	"	"	"	"	"
Beryllium	**0.191**	0.149		"	"	"	"	"	"
Bismuth	7.46	7.46	U	"	"	"	"	"	"
Boron	**1.14**	1.49	B	"	"	"	"	"	"
Cadmium	**0.878**	0.149		"	"	"	"	"	"
Calcium	**2280**	74.6		"	"	"	"	"	"
Chromium	**15.5**	0.149		"	"	"	"	"	"
Cobalt	**3.45**	1.49		"	"	"	"	"	"
Copper	**15.1**	0.746		"	"	"	"	"	"
Iron	**8980**	14.9	J	"	"	"	"	"	"
Lead	**11.0**	0.373		"	"	"	"	"	"
Lithium	**6.28**	1.87		"	"	"	"	"	"
Magnesium	**3410**	56.0		"	"	"	"	"	"
Manganese	**210**	3.73		"	"	"	"	"	"
Molybdenum	**0.228**	1.49	~~B~~ UJ	"	"	"	"	"	"
Nickel	**16.5**	2.99		"	"	"	"	"	"
Phosphorus	**354**	37.3		"	"	"	"	"	"
Potassium	**743**	299		"	"	"		"	"
Selenium	0.746	0.746	U	"	"	"	"	"	"
Silicon	**987**	3.49		"	"	"	"	"	"
Silver	0.149	0.149	U	"	"	"	"	"	"
Sodium	**126**	37.3		"	"	"	"	"	"
Strontium	**17.4**	0.746		"	"	"	"	"	"
Thallium	0.373	0.373	U J	"	"	"	"	"	"
Tin	7.46	7.46	U	"	"	"	"	"	"
Uranium	14.9	14.9	U	"	"	"	"	"	"
Vanadium	**18.8**	1.87	J	"	"	"	"	"	"
Zinc	**100**	7.46		"	"	"	"	"	"
Mercury	**0.0342**	0.0225		mg/kg wet	"	1902180	02/23/2009	02/26/2009	7471A

11/20/09

WC-Hanford, Inc	Project: RC-116	
2620 Fermi Avenue	Project Number: K1525	Reported:
Richland WA, 99354	Project Manager: Joan Kessner	04/24/2009 11:19

J17VP0

0902012-18 (Solid)

Lionville Laboratory

Metals by SW846 6010/7000 series

Analyte	Result	Reporting Limit	Qualifier	Units	Dilution	Batch	Prepared	Analyzed	Method
Aluminum	**5450**	3.33		mg/kg	1	1902184	02/23/2009	02/26/2009	6010B
Antimony	0.400	0.400	U J	"	"	"	"	"	"
Arsenic	**2.60**	0.667	J	"	"	"	"	"	"
Barium	**46.5**	0.333		"	"	"	"	"	"
Beryllium	**0.394**	0.133		"	"	"	"	"	"
Bismuth	6.67	6.67	U	"	"	"	"	"	"
Boron	**0.720**	1.33	B	"	"	"	"	"	"
Cadmium	**0.279**	0.133		"	"	"	"	"	"
Calcium	**2770**	66.7		"	"	"	"	"	"
Chromium	**9.05**	0.133		"	"	"	"	"	"
Cobalt	**4.50**	1.33		"	"	"	"	"	"
Copper	**6.58**	0.667		"	"	"	"	"	"
Iron	**15200**	13.3	J	"	"	"	"	"	"
Lead	**3.00**	0.333		"	"	"	"	"	"
Lithium	**5.67**	1.67		"	"	"	"	"	"
Magnesium	**3280**	50.0		"	"	"	"	"	"
Manganese	**147**	3.33		"	"	"	"	"	"
Molybdenum	**0.265**	1.33	~~B~~ U J	"	"	"	"	"	"
Nickel	**7.69**	2.67		"	"	"	"	"	"
Phosphorus	**531**	33.3		"	"	"	"	"	"
Potassium	**985**	267		"	"	"	"	"	"
Selenium	0.667	0.667	U	"	"	"	"	"	"
Silicon	**622**	1.33		"	"	"	"	"	"
Silver	0.133	0.133	U	"	"	"	"	"	"
Sodium	**173**	33.3		"	"	"	"	"	"
Strontium	**16.2**	0.667		"	"	"	"	"	"
Thallium	0.333	0.333	U J	"	"	"	"	"	"
Tin	6.67	6.67	U	"	"	"	"	"	"
Uranium	13.3	13.3	U J	"	"	"	"	"	"
Vanadium	**41.3**	1.67		"	"	"	"	"	"
Zinc	**31.2**	6.67		"	"	"	"	"	"
Mercury	0.0225	0.0225	U	mg/kg wet	1	1902180	02/25/2009	02/26/2009	7471A

11/20/09

208 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
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WCH Hanford, Inc	Project: [illegible]	
2620 Fermi Avenue	Project Number: K1525	Reported:
Richland WA 99354	Project Manager: Joan Kessner	04/24/2009 11:19

J17VP5

0902012-19 (Solid)

Analyte	Result	Reporting Limit	Qualifier	Units	Dilution	Batch	Prepared	Analyzed	Method
Lionville Laboratory									
Metals by SW846 6000/7000 series									
Aluminum	6800	3.62		mg/kg	1	9B03184	02/25/2009	02/26/2009	6010B
Antimony	0.435	0.435	U J	"	"	"	"	"	"
Arsenic	2.81	0.725	J	"	"	"	"	"	"
Barium	56.9	0.362		"	"	"	"	"	"
Beryllium	0.206	0.145		"	"	"	"	"	"
Bismuth	7.25	7.25	U	"	"	"	"	"	"
Boron	1.14	1.45	B	"	"	"	"	"	"
Cadmium	0.964	0.145		"	"	"	"	"	"
Calcium	2390	72.5		"	"	"	"	"	"
Chromium	15.6	0.145		"	"	"	"	"	"
Cobalt	3.47	1.45		"	"	"	"	"	"
Copper	15.3	0.725		"	"	"	"	"	"
Iron	9260	14.5	J	"	"	"	"	"	"
Lead	12.2	0.362		"	"	"	"	"	"
Lithium	6.47	1.81		"	"	"	"	"	"
Magnesium	3430	54.3		"	"	"	"	"	"
Manganese	242	3.62		"	"	"	"	"	"
Molybdenum	0.194	1.45	J 05	"	"	"	"	"	"
Nickel	16.4	2.90		"	"	"	"	"	"
Phosphorus	267	36.2		"	"	"	"	"	"
Potassium	770	290		"	"	"	"	"	"
Selenium	0.725	0.725	U	"	"	"	"	"	"
Silicon	1050	1.45		"	"	"	"	"	"
Silver	0.145	0.145	U	"	"	"	"	"	"
Sodium	133	36.2		"	"	"	"	"	"
Strontium	18.1	0.725		"	"	"	"	"	"
Thallium	0.362	0.362	U J	"	"	"	"	"	"
Tin	7.25	7.25	U	"	"	"	"	"	"
Uranium	14.5	14.5	U	"	"	"	"	"	"
Vanadium	19.4	1.81	J	"	"	"	"	"	"
Zinc	112	7.25		"	"	"	"	"	"
Mercury	0.0369	0.0281		mg/kg wet	"	9B02180	02/25/2009	02/26/2009	7471A

VL 11/20/09

WCH-Hanford, Inc 2620 Fermi Avenue Richland WA, 99354	Project: RC-116 Project Number: K1525 Project Manager: Joan Kessner	**Reported:** 10/10/2009 12:49

J180W8-A
0902012-20 (Solid)

Analyte	Result and Qualifier		Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method

Lionville Laboratory

Metals by SW846 6000/7000 series

Analyte	Result	Qualifier	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Aluminum	7650		13.3	mg/kg	1	1903184	03/23/2009	03/26/2009	6010B
Antimony	0.400	U J	0.400	mg/kg	1	1903184	03/23/2009	03/26/2009	6010B
Arsenic	2.35	J	0.667	mg/kg	1	1903184	03/23/2009	03/26/2009	6010B
Barium	58.6		0.333	mg/kg	1	1903184	03/23/2009	03/26/2009	6010B
Beryllium	0.257		0.133	mg/kg	1	1903184	03/23/2009	03/26/2009	6010B
Bismuth	6.67	U	6.67	mg/kg	1	1903184	03/23/2009	03/26/2009	6010B
Boron	3.22	B	3.33	mg/kg	1	1903184	03/23/2009	03/26/2009	6010B
Cadmium	0.152		0.133	mg/kg	1	1903184	03/23/2009	03/26/2009	6010B
Calcium	2270		66.7	mg/kg	1	1903184	03/23/2009	03/26/2009	6010B
Chromium	8.25		0.133	mg/kg	1	1903184	03/23/2009	03/26/2009	6010B
Cobalt	3.82		1.33	mg/kg	1	1903184	03/23/2009	03/26/2009	6010B
Copper	9.27		0.667	mg/kg	1	1903184	03/23/2009	03/26/2009	6010B
Iron	13400	J	13.3	mg/kg	1	1903184	03/23/2009	03/26/2009	6010B
Lead	3.48		0.333	mg/kg	1	1903184	03/23/2009	03/26/2009	6010B
Lithium	6.15		1.67	mg/kg	1	1903184	03/23/2009	03/26/2009	6010B
Magnesium	2150		30.0	mg/kg	1	1903184	03/23/2009	03/26/2009	6010B
Manganese	234		3.33	mg/kg	1	1903184	03/23/2009	03/26/2009	6010B
Molybdenum	0.206	~~B~~ UJ	1.33	mg/kg	1	1903184	03/23/2009	03/26/2009	6010B
Nickel	6.08		2.67	mg/kg	1	1903184	03/23/2009	03/26/2009	6010B
Phosphorus	365		33.3	mg/kg	1	1903184	03/23/2009	03/26/2009	6010B
Potassium	1090		267	mg/kg	1	1903184	03/23/2009	03/26/2009	6010B
Selenium	0.667	U	0.667	mg/kg	1	1903184	03/23/2009	03/26/2009	6010B
Silicon	847		1.33	mg/kg	1	1903184	03/23/2009	03/26/2009	6010B
Silver	0.133	U	0.133	mg/kg	1	1903184	03/23/2009	03/26/2009	6010B
Sodium	165		33.3	mg/kg	1	1903184	03/23/2009	03/26/2009	6010B
Strontium	17.0		0.667	mg/kg	1	1903184	03/23/2009	03/26/2009	6010B
Thallium	0.333	U J	0.333	mg/kg	1	1903184	03/23/2009	03/26/2009	6010B
Tin	6.67	U	6.67	mg/kg	1	1903184	03/23/2009	03/26/2009	6010B
Uranium	13.3	U	13.3	mg/kg	1	1903184	03/23/2009	03/26/2009	6010B
Vanadium	35.8	J	1.67	mg/kg	1	1903184	03/23/2009	03/26/2009	6010B
Zinc	31.8		6.67	mg/kg	1	1903184	03/23/2009	03/26/2009	6010B
Mercury	0.0104	B	0.0250	mg/kg	1	1902180	02/25/2009	02/26/2009	7471A

11/20/09

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264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
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WC-Hanford, Inc 2620 Fermi Avenue Richland WA, 99354	Project: RC-136 Project Number: K1525 Project Manager: Joan Kessner	Reported: 10/10/2009 12:49

J180W9-A
0902012-21 (Solid)

Lionville Laboratory

Metals by SW846 6000/7000 series

Analyte	Result and Qualifier	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Aluminum	6080 J	3.73	mg/kg	1	1903198	03/23/2009	03/25/2009	6010B
Antimony	0.448 U	0.448	mg/kg	1	1903198	03/23/2009	03/25/2009	6010B
Arsenic	1.94	0.746	mg/kg	1	1903198	03/23/2009	03/25/2009	6010B
Barium	83.1	0.373	mg/kg	1	1903198	03/23/2009	03/25/2009	6010B
Beryllium	0.238	0.149	mg/kg	1	1903198	03/23/2009	03/25/2009	6010B
Bismuth	7.46 U	7.46	mg/kg	1	1903198	03/23/2009	03/25/2009	6010B
Boron	0.907 B	1.49	mg/kg	1	1903198	03/23/2009	03/25/2009	6010B
Cadmium	0.186	0.149	mg/kg	1	1903198	03/23/2009	03/25/2009	6010B
Calcium	2520	74.6	mg/kg	1	1903198	03/23/2009	03/25/2009	6010B
Chromium	10.5	0.149	mg/kg	1	1903198	03/23/2009	03/25/2009	6010B
Cobalt	3.85	1.49	mg/kg	1	1903198	03/23/2009	03/25/2009	6010B
Copper	6.67	0.746	mg/kg	1	1903198	03/23/2009	03/25/2009	6010B
Iron	12700	14.9	mg/kg	1	1903198	03/23/2009	03/25/2009	6010B
Lead	4.46	0.373	mg/kg	1	1903198	03/23/2009	03/25/2009	6010B
Lithium	5.69	1.87	mg/kg	1	1903198	03/23/2009	03/25/2009	6010B
Magnesium	3530	56.0	mg/kg	1	1903198	03/23/2009	03/25/2009	6010B
Manganese	252	3.73	mg/kg	1	1903198	03/23/2009	03/25/2009	6010B
Molybdenum	0.258 B	1.49	mg/kg	1	1903198	03/23/2009	03/25/2009	6010B
Nickel	7.54	2.99	mg/kg	1	1903198	03/23/2009	03/25/2009	6010B
Phosphorus	420	37.3	mg/kg	1	1903198	03/23/2009	03/25/2009	6010B
Potassium	1020	299	mg/kg	1	1903198	03/23/2009	03/25/2009	6010B
Selenium	0.746 U	0.746	mg/kg	1	1903198	03/23/2009	03/25/2009	6010B
Silicon	601	1.49	mg/kg	1	1903198	03/23/2009	03/25/2009	6010B
Silver	0.149 U	0.149	mg/kg	1	1903198	03/23/2009	03/25/2009	6010B
Sodium	222	37.3	mg/kg	1	1903198	03/23/2009	03/25/2009	6010B
Strontium	22.2	0.746	mg/kg	1	1903198	03/23/2009	03/25/2009	6010B
Thallium	0.373 U	0.373	mg/kg	1	1903198	03/23/2009	03/25/2009	6010B
Tin	7.46 U	7.46	mg/kg	1	1903198	03/23/2009	03/25/2009	6010B
Titanium	14.9 U	14.9	mg/kg	1	1903198	03/23/2009	03/25/2009	6010B
Vanadium	35.9	1.87	mg/kg	1	1903198	03/23/2009	03/25/2009	6010B
Zinc	46.8	7.46	mg/kg	1	1903198	03/23/2009	03/25/2009	6010B
Mercury	0.0300 U	0.0300	mg/kg	1	1902183	02/25/2009	02/26/2009	7471A

11/20/09

Appendix 4

Laboratory Narrative and Chain-of-Custody Documentation

Case Narrative

Client: WC-HANFORD RC-116
LVL#: 0902012
SDG/SAF#: K1525/RC-116

W.O.#: 60049-001-001-0001-00
Date Received: 02-05-09

METALS

The following is a summary of the QC results accompanying the sample results. Lionville Laboratory (LvL) certifies that all test results meet the requirements of NELAC except as noted below.

All soil samples are reported on a dry weight basis unless requested by the client, required by the method, or noted otherwise.

1. This narrative covers the analyses of 21 soil samples. The samples are reported on a wet weight, 'as-received' basis.
2. The samples were prepared and analyzed in accordance with methods checked on the attached glossary.
3. All analyses were performed within the required holding times.
4. All Initial and Continuing Calibration Verifications (ICV/CCVs) were within the 90-110% control limits.
5. All Initial and Continuing Calibration Blanks (ICB/CCBs) were within control limits (less than the LOQ).
6. All preparation/method blanks (MB) were within method criteria (less than the Limit of Quantitation (3-10X the LOD), or samples greater than 20X MB value).
7. All ICP Interference Check Standards were within control limits.
8. The Standard Reference Material results (SRM) were within the Prediction Intervals supplied by the SRM manufacturer.
9. The matrix spike (MS) recoveries for 4 analytes were outside the 75-125% control limits
10. For analytes where the ICP MS is out-of-control, a post-digestion MS (PDS) and serial dilution are performed. A PDS was prepared at meaningful concentration level for the following analytes:

Sample ID	Element	PDS Concentration (ppb)	PDS % Recovery
J18157	Aluminum	22,000	89.5
	Antimony	100	96.8
	Iron	22,000	53.6
	Silicon	2,600	94.6

11. All duplicate analyses were within the 20% Relative Percent Difference (RPD) control limits.

12. For the purposes of this report, the data has been reported to the Limit of Detection (LOD). Values between the LOD and the Limit of Quantitation (LOQ) are acquired in a region of less-certain quantification.

13. LvL is NELAP accredited by the State of Pennsylvania. For a complete listing of accrediting authorities and the corresponding analytes/methods, please contact your Project Manager.

14. I certify that this sample data package is in compliance with SOW requirements, both technically and for completeness, other than the conditions detailed above. Release of the data contained in this hard-copy data package has been authorized by the Laboratory Manager or a designee, as verified by the following signature.

Iain Daniels
Laboratory Manager
Lionville Laboratory

1/21/09
Date

gw0602.012

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-116-732 | Page 1 of 1

Collector	B.S
Project Designation	Columbia River Component of the RCBRA - Sediment
Ice Chest No.	WCH-08-012, 034,053
Shipped To	EBERLINE SERVICES (CONVRETE)
Company Contact	JOAN KESSNER
Telephone No.	375-4688
Sampling Location	WB- 7 SD
Field Logbook No.	EL-1610-01
COA	RESCRC6530
Offsite Property No.	N/A
Project Coordinator	WEISS, RL
SAF No.	RC-116
Price Code	9K
Data Turnaround	45 Days
Method of Shipment	FED EX
Bill of Lading/Air Bill No.	796313456583

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

Preservation	None	None	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	None	
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	aG	aG	G/P	
No. of Container(s)	1	1	1	1	1	1	1	1	1	
Volume	1500g	100g	10g	10g	250g	250g	250g	125g	1000g	
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Technetium-99	See item (2) in Special Instructions	See item (3) in Special Instructions	PCBs - 8082	Semi-VOA - 8270A (TCL)	TOC - 415.1	Particle Size (Dry Sieve) - D422	

Sample No.	Matrix *	Sample Date	Sample Time										
J16157	OTHER SOLID	2/2/09	1430					X	X	X	X	X	

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Brett Moyle B.S.	2/4/09 1215	Fey A	2/4/09 1215
Craig A	2/4/09 0830	D. Heidelberg DH	2/4/09 0830
D. Heidelberg DH	2/4/09 1130	Fedex	2/4/09 1130
Fedex	2-5-09 0915	Vicki Thompson	2-5-09 0915

SPECIAL INSTRUCTIONS

(1) Gamma Spec - {Full List} (Americium-241, Antimony-125, Beryllium-7, Cerium-144, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238}
(2) Strontium-89,90 - Total Sr; Isotopic Thorium {Thorium-232}; Isotopic Uranium {Uranium-233/234, Uranium-235, Uranium-238}; Isotopic Plutonium
(3) ICP Metals - 6010 {Full List} (Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc}; Mercury - 7471 - {CV}

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab.

Matrix *
S = Soil
SE = Sediment
SO = Solid
SL = Sludge
W = Water
O = Oil
A = Air
DS = Drum Solids
DL = Drum Liquids
T = Tissue
WI = Wipe
L = Liquid
V = Vegetation
X = Other

LABORATORY SECTION	Received By / Title / Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method / Disposed By / Date/Time

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-116-733 Page 1 of 1

Collector: BM

Company Contact: JOAN KESSNER
Telephone No.: 375-4688

Project Coordinator: WEISS, RL

Price Code: 9K
Data Turnaround: 45 Days

Project Designation: Columbia River Component of the RCBRA - Sediment

Sampling Location: WR- { SD

SAF No.: RC-136

Ice Chest No.: WCH-08-012, 634653

Field Logbook No.: EL-1631-1

COA: BESCRC0520

Method of Shipment: FED EX

Shipped To: EBERLINE SERVICES [✓ LIONVILLE]

Offsite Property No.: N/A

Bill of Lading/Air Bill No.: 796313456383

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

0010036

Preservation	None	None	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	None	
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	aG	aG	G/P	
No. of Container(s)	1	1	1	1	1	1	1	1	1	
Volume	1000g	100g	10g	10g	250g	250g	250g	125g	1000g	
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Technetium-99	See item (2) in Special Instructions	See item (3) in Special Instructions	PCBs - 8082	Semi-VOA - 8270A (TCL)	TOC - 415.1	Particle Size (Dry Sieve) D422	

Sample No.	Matrix *	Sample Date	Sample Time										
J16158	OTHER SOLID	2/2/09	1310					X	X	X	X	X	

CHAIN OF POSSESSION

Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Brett Boyle	2/2/09 1315	Eric A	2/2/09 1315
Eric A	2/4/09 0830	Stollberg	2/4/09 0830
Stollberg	2/4/09 1130	FedEx	2/4/09 1130
FedEx	2-5-09 0945		2-5-09 0945

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) [Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238]
(2) Strontium-89,90 -- Total Sr; Isotopic Thorium [Thorium-232]; Isotopic Uranium [Uranium-233/234, Uranium-235, Uranium-238]; Isotopic Plutonium
(3) ICP Metals - 6010 (Full List) [Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Titanium, Vanadium, Zinc]; Mercury - 7471 - (CV)

Sampler unavailable to remove samples
from controlled storage. Shipper removed
samples from storage location taking custody
of samples for shipment to lab.

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION — Received By: Title: Date/Time:

FINAL SAMPLE DISPOSITION — Disposal Method: Disposed By: Date/Time:

WCH-EE-011

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-116-734 | Page 1 of 1

llector: B/M	Company Contact: JOAN KESSNER	Telephone No.: 375 4688	Project Coordinator: WEISS, RL
roject Designation: Columbia River Component of the RCBRA - Sediment	Sampling Location: WB-3 SD		SAF No.: RC-116
e Chest No.: WCH-08-012,034,053	Field Logbook No.: EL-1631-1	COA: BLSCRC 6520	Method of Shipment: FED EX
hipped To: EBERLINE SERVICES (LIONVILLE)	Offsite Property No.: N/A		Bill of Lading/Air Bill No.: 796313456383

Price Code: 9K

Data Turnaround: 45 Days

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

Preservation	None	None	None	None	Cool 4C	Cool 4C	Cool 4C	None	
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	aG	G/P	
No. of Container(s)	1	1	1	1	1	1	1	1	
Volume	1500g	100g	10g	10g	250g	250g	125g	1000g	
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Technetium-99	See item (2) in Special Instructions	See item (3) in Special Instructions	PCBs - 8082	TOC - 9060	Particle Size (Dry Sieve) D422	

Sample No.	Matrix *	Sample Date	Sample Time									
8159	OTHER SOLID	2/2/09	1500					X	X	X	X	

CHAIN OF POSSESSION

Sign/Print Names

Relinquished By/Removed From: Scott Mayhew	Date/Time: 2/2/09 1715		Received By/Stored In: Fred A.	Date/Time: 2/2/09 1715	
Relinquished By/Removed From: Fred A	Date/Time: 2/4/09 0830		Received By/Stored In: D. Heidelberg	Date/Time: 2/4/09 0830	
Relinquished By/Removed From: D. Heidelberg	Date/Time: 2/4/09 1130		Received By/Stored In: Fedex	Date/Time: 2/4/09 1130	
Relinquished By/Removed From: Fed Ex	Date/Time: 2-5-09 0715		Received By/Stored In:	Date/Time: 2-5-09 0715	
Relinquished By/Removed From:	Date/Time:		Received By/Stored In:	Date/Time:	
Relinquished By/Removed From:	Date/Time:		Received By/Stored In:	Date/Time:	

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) {Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238}

(2) Strontium-89,90 - Total Sr; Isotopic Thorium {Thorium-232}; Isotopic Uranium {Uranium-233/234, Uranium-235, Uranium-238}; Isotopic Plutonium

(3) ICP Metals - 6010 (Full List) {Aluminum, Antimony, Arsenic, Barium, Beryllium, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc}; Mercury - 7471 - (CV)

Sampler or designee to remove samples
from controlled storage. Shipper removed
samples from storage location taking custody
of samples for shipment to lab

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION | Received By | Title | Date/Time

FINAL SAMPLE DISPOSITION | Disposal Method | Disposed By | Date/Time

HCE 4013

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-116-735 Page 1 of 1

llector B H	Company Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator WEISS, RL
ject Designation Columbia River Component of the RCBRA - Sediment	Sampling Location WR-4 SD		SAF No. RC-116
Chest No. WCH-08-012,034,053	Field Logbook No. EL-1631-1	COA BESCRC6530	Method of Shipment FED EX
ipped To EBERLINE SERVICES LIONVILLE	Offsite Property No. N/A		Bill of Lading/Air Bill No. 796313456383

Price Code 9K

Data Turnaround 45 Days

OSSIBLE SAMPLE HAZARDS/REMARKS

pecial Handling and/or Storage

Preservation	None	None	None	None	Cool 4C	Cool 4C	Cool 4C	None		
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	aG	G/P		
No. of Container(s)	1	1	1	1	1	1	1	1		
Volume	1500g	100g	50g	10g	250g	250g	125g	1000g		
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Technetium-99	See item (2) in Special Instructions	See item (3) in Special Instructions	PCBs - 8082	TOC - 415.1	Particle Size (Dry Sieve) - D422		

Sample No.	Matrix *	Sample Date	Sample Time										
18160	OTHER SOLID	2/2/09	15:30					X	X	X	X		

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Bomyl	2/2 1715	Eric A	2/2/09 1715
Eric A	2/4/09 0830	D. Heidelberg	2/4/09 0830
D. Heidelberg	2/4/09 1130	Fedex	2/4/09 1130
Fed Ex	2-5-09 0915	Vicki Hernandez	2-5-09 0915

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) {Americium-241, Antimony-125, Beryllium-7, Cerium-144, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238}

(2) Strontium-89,90 - Total Sr, Isotopic Thorium {Thorium-232}, Isotopic Uranium {Uranium-233/234, Uranium-235, Uranium-238}, Isotopic Plutonium

(3) ICP Metals - 6010 (Full List) {Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Titanium, Vanadium, Zinc}, Mercury - 7470 - 7471

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab.

Matrix *

S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

CH-EE-011

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-116-751 | Page 1 of 1

llector L Stratton	Company Contact JOAN KESSNER	Telephone No. 375-4645	Project Coordinator WEISS, RL
Project Designation Columbia River Component of the RI/BRA - Sediment	Sampling Location MBRA-4 SD		SAF No. RC-116
Ice Chest No. WCH-08-012,034,053	Field Logbook No. EL-1631-1	COA RESCRC6520	Method of Shipment FED EX
Shipped To EBERLINE SERVICES (LIONVILLE)	Offsite Property No. N/A		Bill of Lading/Air Bill No. 796313456383

Price Code 9K

Data Turnaround 45 Days

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

[illegible]

Preservation	None	None	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	None
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	aG	aG	G	*
No. of Container(s)	1	4	1	1	1	1	1	1	1	1
Volume	1500g	100g	10g	10g	750g	250g	125g	250g	250g	5*
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Technetium-99	See item (2) in Special Instructions	See item (3) in Special Instructions	PCBs - 8082	Pesticides - 8081	Semi-VOA - 8270A (TCL)	See item (4) in Special Instructions	

Sample No.	Matrix *	Sample Date	Sample Time										
8177	OTHER SOLID	2/3/09	1025					X	X	X	X	X	

Sample unavailable to receive samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab.

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
	2-3-09 1630	Ref B	2-3-09 1630
Ref B	2/4/09 0830	Bu Woodward	2/4/09 0830
B Woodward	2/4/09 1130	FedEx	2/4/09 1130
	2-5-09 0915		2-5-09 0915

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) {Americium-241, Antimony-125, Beryllium-7, Cerium-144, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238}
(2) Strontium-89,90 – Total Sr; Isotopic Thorium {Thorium-232}; Isotopic Uranium {Uranium-233/234, Uranium-235, Uranium-238}; Isotopic Plutonium
(3) ICP Metals - 6010 (Full List) {Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Titanium, Vanadium, Zinc}; Mercury - 7471 - (CVAA)
(4) VOA - 8260A (TCL) {1,1,1-Trichloroethane, 1,1,2,2-Tetrachloroethane, 1,1,2-Trichloroethane, 1,1-Dichloroethane, 1,1-Dichloroethene, 1,2-Dichloroethane, 1,2-Dichloropropane, 2-Butanone, 2-Hexanone, 4-Methyl-2-Pentanone, Acetone, Benzene, Bromodichloromethane, Bromoform, Bromomethane, Carbon disulfide, Carbon tetrachloride, Chlorobenzene, Chloroethane, Chloroform, Chloromethane, cis-1,2-Dichloroethylene, cis-1,3-Dichloropropene, Dibromochloromethane, [illegible]

Matrix *
S = Soil
SE = Sediment
SO = Solid
SL = Sludge
W = Water
O = Oil
A = Air
DS = Drum Solids
DL = Drum Liquids
T = Tissue
WI = Wipe
L = Liquid
V = Vegetation
X = Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

935669615

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-116-756

Page 1 of 1

Collector L Stratton	Company Contact JOAN KESSNER	Telephone No. 375 4688	Project Coordinator WEISS, RL
Project Designation Columbia River Component of the RCBRA - Sediment	Sampling Location MINR 6 SD		SAF No. RC-116
Ice Chest No. WCH-08-012, 034, 053	Field Logbook No. EL-1650-1	COA BESCRL 6920	Method of Shipment FEDEX
Shipped To EBERLINE SERVICES [✓ DONVILLE]	Offsite Property No. N/A		Bill of Lading/Air Bill No. 796513456383

Price Code 9K

Data Turnaround 45 Days

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

Preservation	None	None	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	None
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	aG	aG	G	-
No. of Container(s)	1	1	1	1	1	1	1	1		1
Volume	1500g	1500g	10g	10g	250g	250g	125g	250g	250g	1
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Technetium-99	See item (2) in Special Instructions	See item (3) in Special Instructions	PCBs - 8082	Pesticides 8081	Semi-VOA 8270A (TCL)	See item (4) in Special Instructions	

Sample No.	Matrix *	Sample Date	Sample Time										
18158	OTHER SOLID	2/3/09	1440					X	X	X	X	X	

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
	2-3-09 / 1630		2-3-09 / 1630
	2/4/09 0830	B Woodward	2/4/09 0830
B Woodward	2/4/09 1130	FedEx	2/4/09 1130
FedEx	2-5-09 0915		2-5-09 0915

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) {Americium-241, Antimony-125, Beryllium-7, Cerium-144, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238}

(2) Strontium-89,90 - Total Sr; Isotopic Thorium {Thorium-232}; Isotopic Uranium {Uranium-233/234, Uranium-235, Uranium-238}; Isotopic Plutonium

(3) ICP Metals - 6010 (Full List) {Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Titanium, Vanadium, Zinc}; Mercury - 7471 - (CV)

(4) VOA - 8260A (TCL) {1,1,1-Trichloroethane, 1,1,2,2-Tetrachloroethane, 1,1,2-Trichloroethane, 1,1-Dichloroethane, 1,1-Dichloroethene, 1,2-Dichloroethane, 1,2-Dichloropropane, 2-Butanone, 2-Hexanone, 4-Methyl-2-Pentanone, Acetone, Benzene, Bromodichloromethane, Bromoform, Bromomethane, Carbon disulfide, Carbon tetrachloride, Chlorobenzene, Chloroethane, Chloroform, Chloromethane, cis-1,2-Dichloroethylene, cis-1,3-Dichloropropene, Dibromochloromethane, [illegible]

Matrix *
S = Soil
SE = Sediment
SO = Solid
SL = Sludge
W = Water
O = Oil
A = Air
DS = Drum Solids
DL = Drum Liquids
T = Tissue
WI = Wipe
L = Liquid
V = Vegetation
X = Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-116-757

Page 1 of 2

Collector L S Mitton

Company Contact JOAN KESSNER **Telephone No.** 375-4688

Project Coordinator WEISS, RL

Price Code 9K

Data Turnaround 45 Days

Project Designation Columbia River Component of the RCBRA - Sediment

Sampling Location MCRR - 4 SD

SAF No. RC-116

Ice Chest No. WCH-08-012, 084, 053

Field Logbook No. EL-1611-4

COA BFSCRC6520

Method of Shipment FED EX

Shipped To EBERLINE SERVICES [✓ ORVILLE]

Offsite Property No. N/A

Bill of Lading/Air Bill No. 796313456383

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

Preservation	None	None	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	None
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	aG	aG	G	[illegible]
No. of Container(s)	1	1	1	1	1	1	1	1	1	1
Volume	1500g	100g	[illegible]	10g	250g	250g	125g	250g	250g	[illegible]
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Technetium-99	See item (2) in Special Instructions	See item (3) in Special Instructions	PCBs - 8082	Pesticides 8081	Semi-VOA 8270A (TCL)	See item (4) in Special Instructions	

Sample No.	Matrix *	Sample Date	Sample Time										
J18199	OTHER SOLID	2/3/09	1340					X	X	X	X	X	

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab.

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
	2-3-09 / 1630	Ret B	2-3-09 / 1630
Ret B	2/4/09 0830	B Woodward	2/4/09 0830
B Woodward	2/4/09 1130	Fed Ex	2/4/09 1130
	2-5-09 0915		2-5-09 0915

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) (Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238)

(2) Strontium-89,90 - Total Sr; Isotopic Thorium (Thorium-228, ...); Isotopic Uranium (Uranium-233/234, Uranium-235, Uranium-238); Isotopic Plutonium

(3) ICP Metals - 6010 (TAL) (Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc); Mercury - 7471 - (CV)

(4) VOA - 8260A (TCL) (1,1,1-Trichloroethane, 1,1,2,2-Tetrachloroethane, 1,1,2-Trichloroethane, 1,1-Dichloroethane, 1,1-Dichloroethene, 1,2-Dichloroethane, 1,2-Dichloropropane, 2-Butanone, 2-Hexanone, 4-Methyl-2-Pentanone, Acetone, Benzene, Bromodichloromethane, Bromoform, Bromomethane, Carbon disulfide, Carbon tetrachloride, Chlorobenzene, Chloroethane, Chloroform, Chloromethane, cis-1,2-Dichloroethylene, cis-1,3-Dichloropropene, Dibromochloromethane, [illegible]

Matrix *

LABORATORY SECTION Received By | Title | Date/Time

FINAL SAMPLE DISPOSITION Disposal Method | Disposed By | Date/Time

WCH-EE-011

T00041

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-116-758 | Page 1 of 1

Collector: S Matthews	Company Contact: JOAN KESSNER	Telephone No.: 375-4688	Project Coordinator: WEISS, RL
Project Designation: Columbia River Component of the RCBRA - Sediment	Sampling Location: MDGR- 5 SD		SAF No.: RC-116
Ice Chest No.: WCH-08-012,034,053	Field Logbook No.: EL-1631/-1	COA: BESCRC6520	Method of Shipment: FED EX
Shipped To: EBERLINE SERVICES (LIONVILLE)	Offsite Property No.: N/A		Bill of Lading/Air Bill No.: 796313456383

Price Code: 9K

Data Turnaround: 45 Days

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

Preservation	None	None	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	None
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	aG	aG	G	-
No. of Container(s)	1	1	1	1	1	1	1	1	1	
Volume	1500g	100g	10g	10g	250g	250g	125g	250g	250g	1*
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Technetium-99	See item (2) in Special Instructions	See item (3) in Special Instructions	PCBs - 8082	Pesticides 8081	Semi-VOA - 8270 SIM	See item (4) in Special Instructions	-

Sample No.	Matrix *	Sample Date	Sample Time										
18100	OTHER SOLID	2/3/09	1410					X	X	X	X	X	

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment. [illegible]

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
[illegible]	2-3-09 / 1630	RefB	2-3-09 / 1630
RefB	2/4/09 0830	B Wedland	2/4/09 0830
S Wedland	2/4/09 1130	FedEx	2/4/09 1130
Fed Ex	2-5-09 0915	[illegible]	2-5-09 0915

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) {Americium-241, Antimony-125, Beryllium-7, Cerium-144, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238};
(2) Strontium-89,90 -- Total Sr, Isotopic Thorium {Thorium-232}, Isotopic Uranium {Uranium-233/234, Uranium-235, Uranium-238}, Isotopic Plutonium;
(3) ICP Metals - 6010 (Full List) {Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc}, Mercury - 7471 - (CV);
(4) VOA - 8260A (TCL) {1,1,1-Trichloroethane, 1,1,2,2-Tetrachloroethane, 1,1,2-Trichloroethane, 1,1-Dichloroethane, 1,1-Dichloroethene, 1,2-Dichloroethane, 1,2-Dichloropropane, 2-Butanone, 2-Hexanone, 4-Methyl-2-Pentanone, Acetone, Benzene, Bromodichloromethane, Bromoform, Bromomethane, Carbon disulfide, Carbon tetrachloride, Chlorobenzene, Chloroethane, Chloroform, Chloromethane, cis-1,2-Dichloroethylene, cis-1,3-Dichloropropene, Dibromochloromethane, [illegible]

Matrix *
[illegible]

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-116-759 | Page 1 of 2

Collector L Stafford	Company Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator WEISS, RI
Project Designation Columbia River Component of the RCBRA - Sediment	Sampling Location MIHIR- / SD		SAF No. RC-116
Ice Chest No. WCH-08-012, 639, 653	Field Logbook No. EL-1619-1	COA DESCRC6520	Method of Shipment FED EX
Shipped to EBERLINE SERVICES (LIONVILLE)	Offsite Property No. N/A		Bill of Lading/Air Bill No. 796313456383

Price Code 9K

Data Turnaround 45 Days

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

0301043

Preservation	None	None	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	None
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	aG	aG	G	
No. of Container(s)	1	1	1	1	1	1	2	2	1	
Volume	1500g	100g	10g	10g	250g	250g	125g	250g	250g	
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Technetium-99	See item (2) in Special Instructions	See item (3) in Special Instructions	PCBs - 8082	Pesticides - 8081	Semi-VOA - 8270A (TCL)	See item (4) in Special Instructions	

Sample No.	Matrix *	Sample Date	Sample Time										
J18161	OTHER SOLID	2/3/09	1110					X	X	X	X	X	

CHAIN OF POSSESSION

Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
[illegible]	2-3-09 1630	Ref B	2-3-09 1630
Ref B	2/4/09 0850	Birdwood	2/4/09 0850
Birdwood	2/4/09 1130	Fed Ex	2/4/09 1130
Fed Ex	2-5-09 0915	[illegible]	2-5-09 0915

SPECIAL INSTRUCTIONS

Sample unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab.

(1) Gamma Spec - (Full List) (Americium-241, Antimony-125, Beryllium-7, Cerium-144, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238)

(2) Strontium-89,90 -- Total Sr, Isotopic Thorium (Thorium-232), Isotopic Uranium (Uranium-233/234, Uranium-235, Uranium-238), Isotopic Plutonium

(3) ICP Metals - 6010 (Full List) (Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc), Mercury - 7471 - (CV)

(4) VOA - 8260A (TCL) (1,1,1-Trichloroethane, 1,1,2,2-Tetrachloroethane, 1,1,2-Trichloroethane, 1,1-Dichloroethane, 1,1-Dichloroethene, 1,2-Dichloroethane, 1,2-Dichloropropane, 2-Butanone, 2-Hexanone, 4-Methyl-2-Pentanone, Acetone, Benzene, Bromodichloromethane, Bromoform, Bromomethane, Carbon disulfide, Carbon tetrachloride, Chlorobenzene, Chloroethane, Chloroform, Chloromethane, cis-1,2-Dichloroethylene, cis-1,3-Dichloropropene, Dibromochloromethane, [illegible]

Matrix *

[illegible]

LABORATORY SECTION	Received By	Title
		Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By
		Date/Time

WCH-EE-011

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-116-760 | Page 1 of 2

Collector L Stratton	Company Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator WEISS, RL
Project Designation Columbia River Component of the RCBRA - Sediment	Sampling Location MDBR - 2 - SD		SAF No. RC-116
Ice Chest No. WCH-08-062, 034, 053	Field Logbook No. EL-1610-4	COA BESCRC6320	Method of Shipment FED EX
Shipped To EBERLINE SERVICES (LIONVILLE)	Offsite Property No. N/A		Bill of Lading/Air Bill No. 796313456383

Price Code 9K

Date Turnaround 45 Days

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

0000044

Preservation	None	None	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	None
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	aG	aG	aG	-
No. of Container(s)	1	1	1	1	1	1	1	1	1	1
Volume	1500g	100g	10g	10g	250g	250g	125g	250g	250g	1
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Technetium-99	See item (2) in Special Instructions	See item (3) in Special Instructions	PCBs - 8082	Pesticides - 8081	Semi-VOA - 8270A (TCL)	See item (4) in Special Instructions	

Sample No.	Matrix *	Sample Date	Sample Time										
I181B2	OTHER SOLID	2/3/09	1150					X	X	X	X	X	

Samples unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
	2-3-09 / 1630	Rick B	2-3-09 / 1630
Rick B	2/4/09 0830	B Woodward	2/4/09 0830
B Woodward	2/4/09 1130	Fed Ex	2/4/09 1130
	2-5-09 0915		2-5-09 0915

SPECIAL INSTRUCTIONS

(1) Gamma Spec - GEA Lab (Americium-241, Antimony-125, Beryllium-7, Cerium-144, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238)
(2) Strontium-89/90 - Total Sr, Isotopic Thorium (Thorium-232), Isotopic Uranium (Uranium-233/234, Uranium-235, Uranium-238); Isotopic Plutonium
(3) ICP Metals - 6010 Full List (Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc); Mercury - 7471 - (CV)
(4) VOA - 8260A (TCL) (1,1,1-Trichloroethane, 1,1,2,2-Tetrachloroethane, 1,1,2-Trichloroethane, 1,1-Dichloroethane, 1,1-Dichloroethene, 1,2-Dichloroethane, 1,2-Dichloropropane, 2-Butanone, 2-Hexanone, 4-Methyl-2-Pentanone, Acetone, Benzene, Bromodichloromethane, Bromoform, Bromomethane, Carbon disulfide, Carbon tetrachloride, Chlorobenzene, Chloroethane, Chloroform, Chloromethane, cis-1,2-Dichloroethylene, cis-1,3-Dichloropropene, Dibromochloromethane, Ethylbenzene, Methylene chloride, Styrene, Tetrachloroethene, Toluene, trans-1,3-Dichloropropene

Matrix *
S = Soil
SE = Sediment
SO = Solid
SL = Sludge
W = Water
O = Oil
A = Air
DS = Drum Solids
DL = Drum Liquids
T = Tissue
WI = Wipe
L = Liquid
V = Vegetation
X = Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-116-761

Page 1 of 2

llector: L Smathers

Company Contact: JOAN KESSNER

Telephone No.: 375-4688

Project Coordinator: WEISS, RL

Price Code: 9K

Data Turnaround: 45 Days

ject Designation: Columbia River Component of the RCBRA - Sediment

Sampling Location: MDDR-1 SD

SAF No.: RC-116

e Chest No.: WCH-08-012, 034, 053

Field Logbook No.: EL-1637-1

COA: 1BESCRC6320

Method of Shipment: FED EX

pped To: EBERLINE SERVICES/ DONVILLE

Offsite Property No.: N/A

Bill of Lading/Air Bill No.: 796313456383

OSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

010045

Preservation	None	None	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	None
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	aG	aG	G	*
No. of Container(s)	1	1	1	1	1	1	1	1	1	1
Volume	1500g	100g	10g	10g	250g	250g	125g	250g	250g	*
SAMPLE ANALYSIS	See item (1) in Special Instructions.	Carbon-14	Technetium-99	See item (2) in Special Instructions	See item (3) in Special Instructions	PCBs - 8082	Pesticides 8081	Semi-VOA - 8270A (TCL)	See item (4) in Special Instructions	-

Sample No.	Matrix *	Sample Date	Sample Time										
J18103	OTHER SOLID	2/3/09	1300					X	X	X	X	X	

Sample unavailable to remove samples from custodied storage. Shipper removed samples from storage location taking custody of samples for shipment to lab

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
[illegible]	2 3 09 1630	R. E. B.	2 3 09 / 1630
R E B	2/4/09 0830	B Woodward	2/4/09 0830
B Woodward	2/4/09 1130	FedEx	2/4/09 1130
FedEx	2-5-09 0915	[illegible]	2-5-09 0915

SPECIAL INSTRUCTIONS

(1) Gamma Spec - Full List (Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238);
(2) Strontium-89,90 -- Total Sr, Isotopic Thorium (Thorium-232), Isotopic Uranium (Uranium-233/234, Uranium-235, Uranium-238), Isotopic Plutonium;
(3) ICP Metals - 6010 (Full List) (Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc), Mercury - 7471 - (CV);
(4) VOA - 8260A (TCL) (1,1,1-Trichloroethane, 1,1,2,2-Tetrachloroethane, 1,1,2-Trichloroethane, 1,1-Dichloroethane, 1,1-Dichloroethene, 1,2-Dichloroethane, 1,2-Dichloropropane, 2-Butanone, 2-Hexanone, 4-Methyl-2-Pentanone, Acetone, Benzene, Bromodichloromethane, Bromoform, Bromomethane, Carbon disulfide, Carbon tetrachloride, Chlorobenzene, Chloroethane, Chloroform, Chloromethane, cis-1,2-Dichloroethylene, cis-1,3-Dichloropropene, Dibromochloromethane, Ethylbenzene, Methylene chloride, Styrene, Tetrachloroethene, [illegible]

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-116-9 Page 2 of 2

Collector 1319	Company Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator WEISS, RL
Project Designation Columbia River Component of the RCBRA - Sediment	Sampling Location WP-15D		SAF No. RC-116
Ice Chest No. WH-08-012, 034, 053	Field Logbook No. EL-1631-6	COA BESCRC6130	Method of Shipment FEDEX
Shipped To EBERLINE SERVICES (DONVILLE)	Offsite Property No. N/A		Bill of Lading/Air Bill No. 796813456383

Price Code 9K

Data Turnaround 45 Days

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

			Preservation	None	None	None	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C
			Type of Container	G/P	G/P	G/P	G/P	G/P	G/P	aG	aG	aG	G
			No. of Container(s)	1	1	1	1	1	1	1	1	1	1
			Volume	1500g	100g	100g	10g	10g	250g	250g	120g	250g	250g
SAMPLE ANALYSIS				See item (1) in Special Instructions	Carbon-14	Tritium - H3	Technetium-99	See item (2) in Special Instructions	See item (3) in Special Instructions	PCBs - 8082	Pesticides - 8081	Semi-VOA - 8270 (TCL)	See item (4) in Special Instructions
Sample No.	Matrix *	Sample Date	Sample Time										
J17V87	OTHER SOLID	2/3/09	1245						X	X	X	X	X

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab.

CHAIN OF POSSESSION Sign/Print Names

Relinquished By/Removed From	Date/Time 2/3/09 1700	Received By/Stored In Fry A	Date/Time 2/3/09 1700
Relinquished By/Removed From A. F. A	Date/Time 2/4/09 0830	Received By/Stored In Blackwood	Date/Time 2/4/09 0830
Relinquished By/Removed From Blackwood	Date/Time 2/4/09 1130	Received By/Stored In FedEx	Date/Time 2/4/09 1130
Relinquished By/Removed From	Date/Time 2-5-09 0915	Received By/Stored In	Date/Time 2-5-09 0915
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time

SPECIAL INSTRUCTIONS

(1) Gamma Spec - {Full List} {Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238}

(2) Strontium-89,90 - Total Sr, Isotopic Thorium {Thorium-232}, Isotopic Uranium {Uranium-233/234, Uranium-235, Uranium-238}, Isotopic Plutonium

(3) ICP Metals - 6010 {Full List} {Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc}; Mercury - 7471 - (CV)

(4) VOA - 8260A (TCL) {1,1,1-Trichloroethane, 1,1,2,2-Tetrachloroethane, 1,1,2-Trichloroethane, 1,1-Dichloroethane, 1,1-Dichloroethene, 1,2-Dichloroethane, 1,2-Dichloropropane, 2-Butanone, 2-Hexanone, 4-Methyl-2-Pentanone, Acetone, Benzene, Bromodichloromethane, Bromoform, Bromomethane, Carbon disulfide, Carbon tetrachloride, Chlorobenzene, Chloroethane, Chloroform, Chloromethane, cis-1,2-Dichloroethylene, cis-1,3-Dichloropropene, Dibromochloromethane, Ethylbenzene, Methylenechloride, Styrene, Tetrachloroethene, Toluene,

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-116-10 | Page 1 of 2

Collector BM	Company Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator WEISS, RL
Project Designation Columbia River Component of the RCBRA - Sediment	Sampling Location WP-25D		SAF No. RC-116
Ice Chest No. WCH-08-012,034,053	Field Logbook No. EL-1651-1	COA HESCRC6520	Method of Shipment FED EX
Shipped To EBERLINE SERVICES (LIONVILLE)	Offsite Property No. N/A		Bill of Lading/Air Bill No. 796313456383

Price Code 9K

Data Turnaround 45 Days

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

240000

			Preservation	None	None	None	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C
			Type of Container	G/P	G/P	G/P	G/T	G/P	G/P	aG	aG	aG	G
			No. of Container(s)	1	1	1	1	1	1	1	1	1	1
			Volume	1500g	400g	200g	10g	10g	250g	250g	125g	250g	250g
SAMPLE ANALYSIS				See item (1) in Special Instructions	Carbon-14	Tritium - H3	Technetium-99	See item (2) in Special Instructions	See item (3) in Special Instructions	PCBs - 8082	Pesticides 8081	Semi-VOA 8270A (TCL)	See item (4) in Special Instructions
Sample No.	Matrix *	Sample Date	Sample Time										
J17V88	OTHER SOLID	2/3/09	1115						X	X	X	X	X

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location using custody & samples for shipment to TA

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
BM 4L	2/3/09 1120	Fy A	2/3/09 1120
Fy A	2/4/09 0830	B Woodward	2/4/09 0830
B Woodward	2/4/09 1130	FedEx	2/4/09 1130
	2-5-09 0915		2-5-09 0915

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) {Americium-241, Antimony-125, Beryllium-7, Cerium-144, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238}

(2) Strontium-89,90 - Total Sr; Isotopic Thorium {Thorium-228, Thorium-230, Thorium-232}; Isotopic Uranium {Uranium-233/234, Uranium-235, Uranium-238}; Isotopic Plutonium

(3) ICP Metals - 6010 (Full List) {Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Titanium, Vanadium, Zinc}; Mercury - 7471 - (CV)

(4) VOA - 8260A (TCL) {1,1,1-Trichloroethane, 1,1,2,2-Tetrachloroethane, 1,1,2-Trichloroethane, 1,1-Dichloroethane, 1,1-Dichloroethene, 1,2-Dichloroethane, 1,2-Dichloropropane, 2-Butanone, 2-Hexanone, 4-Methyl-2-Pentanone, Acetone, Benzene, Bromodichloromethane, Bromoform, Bromomethane, Carbon disulfide, Carbon tetrachloride, Chlorobenzene, Chloroethane, Chloroform, Chloromethane, cis-1,2-Dichloroethylene, cis-1,3-Dichloropropene, Dibromochloromethane, [illegible]

Matrix *

S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-116-11

Page 1 of 1

Collector: BM

Company Contact: RYAN KESSNER

Telephone No.: 375-4688

Project Coordinator: WEISS, RL

Price Code: 9K

Data Turnaround: 45 Days

Project Designation: Columbia River Component of the RCBRA - Sediment

Sampling Location: WP-15D

SAF No.: RC-116

Ice Chest No.: LOCH-08-012,034,053

Field Logbook No.: EL-1630-4

COA: 1HESCRC6530

Method of Shipment: FED EX

Shipped To: EBERLINE SERVICES (LIONVILLE)

Offsite Property No.: N/A

Bill of Lading/Air Bill No.: 796313456383

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

0000048

Preservation	None	None	None	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C
Type of Container	G/P	G/P	G/P	G/P	G/P	G/P	aG	aG	aG	G
No. of Container(s)	1	1	1	1	1	1	1	1	1	1
Volume	1500g	100g	100g	10g	10g	250g	250g	125g	250g	250g
SAMPLE ANALYSIS	Gamma Spec - See Special Instructions	Carbon-14	Tritium - H3	Technetium-99	Strontium-89,90 - See Special Instructions	See item (3) in Special Instructions	PCBs - 8082	Pesticides - 8081	Semi-VOA 8270A (TCL)	See item (4) in Special Instructions

Sample No.	Matrix *	Sample Date	Sample Time										
J17V89	OTHER SOLID	2/3/09	~~1220~~ 1315						X	X	X	X	X

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab

CHAIN OF POSSESSION

Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
BM BM	2/3/09 1700	[illegible]	2/3/09 1700
[illegible]	2/4/09 0830	B Woodward	2/4/09 0830
B Woodward	2/4/09 1130	FedEx	2/4/09 1130
Fed Ex	2-5-09 0915	[illegible]	2-5-09 0915

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) {Americium-241, Antimony-125, Beryllium-7, Cerium-144, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238}

(2) Strontium-89,90 - Total Sr, Isotopic Thorium {Thorium-232}, Isotopic Uranium {Uranium-233/234, Uranium-235, Uranium-238}, Isotopic Plutonium

(3) ICP Metals - 6010 (Full List) {Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Titanium, Vanadium, Zinc}, Mercury - 7471 - (CV)

(4) VOA - 8260A (TCL) {1,1,1-Trichloroethane, 1,1,2,2-Tetrachloroethane, 1,1,2-Trichloroethane, 1,1-Dichloroethane, 1,1-Dichloroethene, 1,2-Dichloroethane, 1,2-Dichloropropane, 2-Butanone, 2-Hexanone, 4-Methyl-2-Pentanone, Acetone, Benzene, Bromodichloromethane, Bromoform, Bromomethane, Carbon disulfide, Carbon tetrachloride, Chlorobenzene, Chloroethane, Chloroform, Chloromethane, cis-1,2-Dichloroethylene, cis-1,3-Dichloropropene, Dibromochloromethane, [illegible]

Matrix *

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-116-12

Page 1 of 2

Collector B M	Company Contact RYAN KESSNER	Telephone No. 375-4688	Project Coordinator WEISS, RL
Project Designation Columbia River Component of the RCBRA - Sediment	Sampling Location WP-4SD		SAF No. RC-116
Ice Chest No. WCH-08-034, 012, 053	Field Logbook No. EL-1631-1	COA BESCRC6520	Method of Shipment FED EX
Shipped To EBERLINE SERVICES (LIONVILLE)	Offsite Property No. N/A		Bill of Lading/Air Bill No. 796313456383

Price Code 9K

Data Turnaround 45 Days

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

Preservation	None	None	None	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C
Type of Container	G/P	G/P	G/P	G/P	G/P	G/P	aG	aG	aG	G
No. of Container(s)	1	1	1	1	1	1	1	1	1	1
Volume	1500g	100g	100g	10g	10g	250g	250g	125g	250g	250g
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Iodine-129	Technetium-99	See item (2) in Special Instructions	See item (3) in Special Instructions	PCBs - 8082	Pesticides - 8081	Semi-VOA 8270A (TCL)	See item (4) in Special Instructions

Sample No.	Matrix *	Sample Date	Sample Time										
J17V90	OTHER SOLID	2/3/09	1220						X	X	X	X	X

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab

CHAIN OF POSSESSION Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
	2/4/09 1200	F. A	2/4/09 1200
R A	2/4/09 0830		2/4/09 0830
	2/4/09 1130	Fed Ex	2/4/09 1130
Fed Ex	2-5-09 0915		2-5-09 0915

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) {Americium-241, Antimony-125, Beryllium-7, Cerium-144, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238}

(2) Strontium-89,90 - Total Sr; Isotopic Thorium {Thorium-232}; Isotopic Uranium {Uranium-233/234, Uranium-235, Uranium-238}; Isotopic Plutonium

(3) ICP Metals - 6010 (Full List) {Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc}; Mercury - 7471 - (CV)

(4) VOA - 8260A (TCL) {1,1,1-Trichloroethane, 1,1,2,2-Tetrachloroethane, 1,1,2-Trichloroethane, 1,1-Dichloroethane, 1,1-Dichloroethene, 1,2-Dichloroethene, 1,2-Dichloropropane, 2-Butanone, 2-Hexanone, 4-Methyl-2-Pentanone, Acetone, Benzene, Bromodichloromethane, Bromoform, Bromomethane, Carbon disulfide, Carbon tetrachloride, Chlorobenzene, Chloroethane, Chloroform, Chloromethane, cis-1,2-Dichloroethylene, cis-1,3-Dichloropropene, Dibromochloromethane, Ethylbenzene, Methylene chloride, Styrene, Tetrachloroethene, Toluene

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST		RC-116-13	Page 1 of 1
Collector BM	Company Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator WEISS, RL	Price Code 9K
Project Designation Columbia River Component of the RCBRA - Sediment	Sampling Location WP-5SD		SAF No. RC-116	Data Turnaround 45 Days
Ice Chest No. WCH-08-012, 034, 053	Field Logbook No. EL-1631-4	COA BESCRC6520	Method of Shipment FEDEX	
Shipped To EBERLINE SERVICES (LIONVILLE)	Offsite Property No. N/A		Bill of Lading/Air Bill No. 796334156383	

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

Preservation	None	None	None	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C
Type of Container	G/P	G/P	G/P	G/P	G/P	G/P	aG	aG	aG	G
No. of Container(s)	1	1	1	1	1	1	1	1	1	1
Volume	1500g	100g	100g	10g	10g	250g	250g	120g	250g	250g
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Tritium - H3	Technetium-99	See item (2) in Special Instructions	See item (3) in Special Instructions	PCBs - 8082	Pesticides 8081	Semi-VOA - 8270A (TCL)	See item (4) in Special Instructions

Sample No.	Matrix *	Sample Date	Sample Time										
J17V91	OTHER SOLID	2/3/09	1400						X	X	X	X	X

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab.

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
B. L. Balyk	2/3/09 1700	E. A.	2/3/09 1700
E. A.	2/4/09 0830	[illegible]	2/4/09 0830
[illegible]	2/4/09 1130	FedEx	2/4/09 1130
FedEx	2-5-09 0915	[illegible]	2-5-09 0915

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) {Americium-241, Antimony-125, Beryllium-7, Cerium-144, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238};
(2) Strontium-89/90 - Total Sr; Isotopic Thorium {Thorium-232}; Isotopic Uranium {Uranium-233/234, Uranium-235, Uranium-238}; Isotopic Plutonium
(3) ICP Metals - 6010 (Full List) {Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc}; Mercury - 7471 - (CV)
(4) VOA - 8260A (TCL) {1,1,1-Trichloroethane, 1,1,2,2-Tetrachloroethane, 1,1,2-Trichloroethane, 1,1-Dichloroethane, 1,1-Dichloroethene, 1,2-Dichloroethane, 1,2-Dichloropropane, 2-Butanone, 2-Hexanone, 4-Methyl-2-Pentanone, Acetone, Benzene, Bromodichloromethane, Bromoform, Bromomethane, Carbon disulfide, Carbon tetrachloride, Chlorobenzene, Chloroethane, Chloroform, Chloromethane, cis-1,2-Dichloroethylene, cis-1,3-Dichloropropene, Dibromochloromethane, [illegible]

Matrix *
S = Soil
SE = Sediment
SO = Solid
SL = Sludge
W = Water
O = Oil
A = Air
DS = Drum Solids
DL = Drum Liquids
T = Tissue
WI = Wipe
L = Liquid
V = Vegetation
X = Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Washington Closure Hanford	**CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST**	RC-116-14	Page 1 of 2
Collector B/A	Company Contact JOAN KESSNER	Telephone No. 373-4688	Project Coordinator WEISS, RL
Price Code 9K	Data Turnaround 45 Days		
Project Designation Columbia River Component of the RC RRA - Sediment	Sampling Location WP-65D		SAF No. RC-16
Ice Chest No. WCH-08-012, 039, 053	Field Logbook No. EL-1631-1	COA BESCRC6520	Method of Shipment FED EX
Shipped To EBERLINE SERVICES/ RICHMOND	Offsite Property No. N/A		Bill of Lading/Air Bill No. 796313456383

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

1500051

Preservation	None	None	None	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C
Type of Container	G/P	G/P	G/P	G/P	G/P	G/P	aG	aG	aG	G
No. of Container(s)	1	1	1	1	1	1	2	1	1	1
Volume	1500g	100g	100g	10g	10g	250g	250g	120g	250g	250g
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Tritium - H3	Technetium-99	See item (2) in Special Instructions	See item (3) in Special Instructions	PCBs - 8082	Pesticides 8081	Semi-VOA 8270A (TCL)	See item (4) in Special Instructions

Sample No.	Matrix *	Sample Date	Sample Time										
J17V92	OTHER SOLID	2/5/09	1430						X	X	X	X	X

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab.

CHAIN OF POSSESSION	Sign/Print Names		
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
B. Y. Byrd	2/3/09 1700	F. A	2/3/09 1700
Ref A	2/4/09 0830	B Woodward	2/4/09 0830
B Woodward	2/4/09 1130	Fed Ex	2/4/09 1130
F. S.	2-5-09 0915		2-5-09 0915

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) {Americium-241, Antimony-125, Beryllium-7, Cerium-144, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Thorium-228, Uranium-235, Uranium-238};
(2) Strontium-89,90 - Total Sr; Isotopic Thorium {Thorium-230}; Isotopic Uranium {Uranium-233/234, Uranium-235, Uranium-238}; Isotopic Plutonium
(3) ICP Metals - 6010 (Full List) {Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Titanium, Vanadium, Zinc}; Mercury - 7471 - (CV);
(4) VOA - 8260A (TCL) {1,1,1-Trichloroethane, 1,1,2,2-Tetrachloroethane, 1,1,2-Trichloroethane, 1,1-Dichloroethane, 1,1-Dichloroethene, 1,2-Dichloroethane, 1,2-Dichloropropane, 2-Butanone, 2-Hexanone, 4-Methyl-2-Pentanone, Acetone, Benzene, Bromodichloromethane, Bromoform, Bromomethane, Carbon disulfide, Carbon tetrachloride, Chlorobenzene, Chloroethane, Chloroform, Chloromethane, cis-1,2-Dichloroethylene, cis-1,3-Dichloropropene, Dibromochloromethane,

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

Washington Closure Hanford	**CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST**	RC-116-82	Page 1 of 2

Collector [illegible]	Company Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator WEISS, RL	Price Code 9K
Project Designation Columbia River Component of the RCBRA - Sediment	Sampling Location MOKA - 950		SAF No. RC-116	Data Turnaround 45 Days
Ice Chest No. WCH-08-012,134,053	Field Logbook No. EL-1610-1	COA BL20RC6520	Method of Shipment FED EX	
Shipped To EBERLINE SERVICES (RICHMOND)	Offsite Property No. N/A		Bill of Lading/Air Bill No. 796318056823	

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

Preservation	None	None	None	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C
Type of Container	G/P	G/P	G/P	G/P	G/P	G/P	aG	aG	aG	G
No. of Container(s)	1	1	1	1	1	1	1	1	1	1
Volume	1500g	100g	100g	10g	10g	250g	250g	125g	250g	250g
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Tritium - H3	Technetium-99	See item (2) in Special Instructions	See item (3) in Special Instructions	PCBs - 8082	Pesticides - 8081	Semi-VOA - 8270A (TCL)	See item (4) in Special Instructions

Sample No.	Matrix *	Sample Date	Sample Time										
J17VP0	OTHER SOLID	2/3/09	1030						X	X	X	X	X

Sampler unavailable to remove samples from controlled storage. Shipper retrieved samples from storage location taking custody of samples for shipment to lab.

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
[illegible]	2-3-09 / 1630	Ref B	2-3-09 1650
Ref B	2/4/09 0830	BU Redwood	2/4/09 0830
BU Redwood	2/4/09 1130	FedEx	2/4/09 1130
FedEx	2-5-09 0915	[illegible]	2-5-09 0915

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) {Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238}

(2) Strontium-89,90 - Total Sr, Isotopic Thorium {Thorium-232}, Isotopic Uranium {Uranium-233/234, Uranium-235, Uranium-238}; Isotopic Plutonium

(3) ICP Metals - 6010 (Full List) {Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Titanium, Vanadium, Zinc}; Mercury - 7471 - (CV)

(4) VOA - 8260A (TCL) {1,1,1-Trichloroethane, 1,1,2,2-Tetrachloroethane, 1,1,2-Trichloroethane, 1,1-Dichloroethane, 1,1-Dichloroethene, 1,2-Dichloroethane, 1,2-Dichloropropane, 2-Butanone, 2-Hexanone, 4-Methyl-2-Pentanone, Acetone, Benzene, Bromodichloromethane, Bromoform, Bromomethane, Carbon disulfide, Carbon tetrachloride, Chlorobenzene, Chloroethane, Chloroform, Chloromethane, cis-1,2-Dichloroethylene, cis-1,3-Dichloropropene, Dibromochloromethane, Ethylbenzene, Methylene chloride, Styrene, Tetrachloroethene, Toluene, trans-1,2-Dichloroethylene

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-116-87

Page [illegible]

Collector BM	Company Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator WEISS, RL
Project Designation Columbia River Component of the RCBRA - Sediment	Sampling Location ~~BM 212 PA-15D~~ WP-15D		SAF No. RC-116
Ice Chest No. WCH-08-012, 034, 053	Field Logbook No. EL-1634-1	COA RESCRU6520	Method of Shipment FED EX
Shipped To LIBERTINE SERVICES / LIONVILLE	Offsite Property No. N/A		Bill of Lading/Air Bill No. 796313456383

Price Code 9K

Data Turnaround 45 Days

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

			Preservation	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C
			Type of Container	G/P	G/P	G/P	G/P	G/P	G/P	aG	aG	aG	G
			No. of Container(s)	1	1	1	1	1	1	1	1	1	1
			Volume	1500g	400g	100g	60g	10g	150g	250g	1?0g	250g	250g
SAMPLE ANALYSIS				See item (1) in Special Instructions	Carbon-14	Tritium - H3	Technetium-99	See item (2) in Special Instructions	See item (3) in Special Instructions	PCBs - 8082	[illegible]	Semi-VOA 8270A (TCL)	See item (4) in Special Instructions
Sample No.	Matrix *	Sample Date	Sample Time										
J17VP5	OTHER SOLID	2/3/09	~~945~~ 1025						X	X	X	X	X

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab.

CHAIN OF POSSESSION	Date/Time	Sign/Print Names Received By/Stored In	Date/Time
Relinquished By/Removed From BM [illegible]	2/3/09 1700	Received By/Stored In Fr A	2/3/09 1700
Relinquished By/Removed From Ref A	2/4/09 0830	Received By/Stored In B Woodward	2/4/09 0830
Relinquished By/Removed From B Woodward	2/4/09 1130	Received By/Stored In FedEx	2/4/09 1130
Relinquished By/Removed From FedEx	2-5-09 0915	Received By/Stored In	2-5-09 0915
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) (Americium-241, Antimony-125, Beryllium-7, Cerium-144, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238)

(2) Strontium-89,90 -- Total Sr; Isotopic Thorium (Thorium-232); Isotopic Uranium (Uranium-233/234, Uranium-235, Uranium-238); Isotopic Plutonium

(3) ICP Metals - 6010 (Full List) (Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc); Mercury - 7471 - (CV)

(4) VOA - 8260A (TCL) (1,1,1-Trichloroethane, 1,1,2,2-Tetrachloroethane, 1,1,2-Trichloroethane, 1,1-Dichloroethane, 1,1-Dichloroethene, 1,2-Dichloroethane, 1,2-Dichloropropane, 2-Butanone, 2-Hexanone, 4-Methyl-2-Pentanone, Acetone, Benzene, Bromodichloromethane, Bromoform, Bromomethane, Carbon disulfide, Carbon tetrachloride, Chlorobenzene, Chloroethane, Chloroform, Chloromethane, cis-1,2-Dichloroethylene, cis-1,3-Dichloropropene, Dibromochloromethane, [illegible]

Matrix *

[illegible]

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-116-720 | Page 1 of 2

Collector BA	Company Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator WEISS, RT
Project Designation Columbia River Component of the RCBRA - Sediment	Sampling Location PM-1 SD		SAF No. RC-116
Ice Chest No. WCH-05-012,034,053	Field Logbook No. EL 1631-1	COA 1FSCRC6820	Method of Shipment FEDEX
Shipped To EBERLINE SERVICES/ [✓ LIONVILLE]	Offsite Property No. N/A		Bill of Lading/Air Bill No. 796313456383

Price Code 9K

Data Turnaround 45 Days

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

D50I1000

Preservation	None	None	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	None
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	aG	aG	G	*
No. of Container(s)	1	1	1	1	1	1	1	1	1	1
Volume	1500g	400g	10g	50g	250g	250g	125g	250g	250g	--
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Technetium-99	See item (2) in Special Instructions	See item (3) in Special Instructions	PCBs - 8082	Pesticides - 8081	Semi-VOA - 8270A (TCL)	See item (4) in Special Instructions	-

Sample No.	Matrix *	Sample Date	Sample Time										
J18CW8	OTHER SOLID	2/2/09	1130					X	X	X	X	X	

Sample unavailable to remove samples from controlled storage. Shipper entered samples from storage location taking custody of samples for shipment to lab.

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
BA M. L. Bay	2/2/09 1705	Fix A	2/2/09 1705
Fix A 2/4/09	0830	D Heldberg	2/4/09 0830
D Heldberg	2/4/09 1130	Fedex 2/4/09	1130
2/5/09	0915	2/5/09	0915

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) (Americium-241, Antimony-125, Beryllium-7, Cerium-144, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238);
(2) Strontium-89,90 - Total Sr; Isotopic Thorium (Thorium-232); Isotopic Uranium (Uranium-233/234, Uranium-235, Uranium-238); Isotopic Plutonium
(3) ICP Metals - 6010 (Full List) (Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc); Mercury - 7471 - (CV)
(4) VOA - 8260A (TCL) (1,1,1-Trichloroethane, 1,1,2,2-Tetrachloroethane, 1,1,2-Trichloroethane, 1,1-Dichloroethane, 1,1-Dichloroethene, 1,2-Dichloroethane, 1,2-Dichloropropane, 2-Butanone, 2-Hexanone, 4-Methyl-2-Pentanone, Acetone, Benzene, Bromodichloromethane, Bromoform, Bromomethane, Carbon disulfide, Carbon tetrachloride, Chlorobenzene, Chloroethane, Chloroform, Chloromethane, cis-1,2-Dichloroethylene, cis-1,3-Dichloropropene, Dibromochloromethane, Ethylbenzene, Methylene chloride, Styrene, Tetrachloroethene, Toluene, trans-1,2-Dichloroethylene

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-031

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-116-721

Page 2 of 2

Collector: BAM

Company Contact: JOAN KESSNER

Telephone No.: 375-4688

Project Coordinator: WEISS, RL

Price Code: 9K

Data Turnaround: 45 Days

Project Designation: Columbia River Component of the RCBRA - Sediment

Sampling Location: PM- 2 SD

SAF No.: RC-116

Ice Chest No.: WCH-08-012, 034, 053

Field Logbook No.: EL-1651-1

COA: 055CRC6520

Method of Shipment: FED EX

Shipped To: EBERLINE SERVICES (RICHMOND) LIONVILLE

Offsite Property No.: N/A

Bill of Lading/Air Bill No.: 796313456383

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

SS00005

3505655

			Preservation	None	None	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	None
			Type of Container	G/P	G/P	G/P	G/P	G/P	aG	aG	aG	G	-
			No. of Container(s)	1	1	1	1	1	1	1	1	1	1
			Volume	1500g	100g	17g	10g	250g	250g	125g	250g	250g	1
SAMPLE ANALYSIS				See item (1) in Special Instructions	Carbon-14	Technetium-99	See item (2) in Special Instructions	See item (3) in Special Instructions	PCBs - 8082	Pesticides - 8081	Semi-VOA - 8270A (TCL)	See item (4) in Special Instructions	
Sample No.	Matrix *	Sample Date	Sample Time										
J18CW9	OTHER SOLID	2/2/09	1230										
								X	X	X	X	X	

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to [illegible]

CHAIN OF POSSESSION

Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Seth Mayle BAM	2/2/09 1235	Eric A	2/2/09 1235
Eric A	2/4/09 0830	D. Heidelberg	2/4/09 0830
D. Heidelberg	2/4/09 1130	FedEx	2/4/09 1130
FedEx	2-5-09 0915		2-5-09 0915

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (GEA) [Americium-241, Antimony-125, Beryllium-7, Cerium-144, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238]
(2) Strontium-89,90 - Total Sr; Isotopic Thorium (Thorium-232); Isotopic Uranium (Uranium-233/234, Uranium-235, Uranium-238); Isotopic Plutonium
(3) ICP Metals - 6010 (Full List) [Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc]; Mercury - 7471 (CV)
(4) VOA - 8260A (TCL) [1,1,1-Trichloroethane, 1,1,2,2-Tetrachloroethane, 1,1,2-Trichloroethane, 1,1-Dichloroethane, 1,1-Dichloroethene, 1,2-Dichloroethane, 1,2-Dichloropropane, 2-Butanone, 2-Hexanone, 4-Methyl-2-Pentanone, Acetone, Benzene, Bromodichloromethane, Bromoform, Bromomethane, Carbon disulfide, Carbon tetrachloride, Chlorobenzene, Chloroethane, Chloroform, Chloromethane, cis-1,2-Dichloroethylene, cis-1,3-Dichloropropene, Dibromochloromethane, Ethylbenzene, Methylene chloride, Styrene, Tetrachloroethene, Toluene, trans-1,2-Dichloroethylene

Matrix *
[illegible]

LABORATORY SECTION | Received By | Title | Date/Time

FINAL SAMPLE DISPOSITION | Disposal Method | Disposed By | Date/Time

Appendix 5

Data Validation Supporting Documentation

INORGANIC ANALYSIS DATA VALIDATION CHECKLIST

VALIDATION LEVEL:	A	B	[✓ C]	D	E

PROJECT: RCBRA

DATA PACKAGE: K1575

VALIDATOR: ELK

LAB: LLI

DATE: 11/16/07

SDG: K1565

ANALYSES PERFORMED

[✓ SW-846/ICP]	SW-846/GFAA	[✓ SW-846/Hg]	SW-846 Cyanide		

SAMPLES/MATRIX

J18157-A J18158-A J18159-A J18160-A J18177 J18179 J18180
J18181 J18182 J18183 J17V87 J17V88 J17V89 J17V90
J17V91 J17V92 J17VP0 J17VP5 J18048-A J18049-A

Solid

1. DATA PACKAGE COMPLETENESS AND CASE NARRATIVE

Technical verification documentation present? Yes [✓ No] N/A

Comments:

2. INSTRUMENT PERFORMANCE AND CALIBRATIONS (Levels D and E)

Initial calibrations performed on all instruments? Yes No [✓ N/A]

Initial calibrations acceptable? Yes No [✓ N/A]

ICP interference checks acceptable? Yes No [✓ N/A]

ICV and CCV checks performed on all instruments? Yes No [✓ N/A]

ICV and CCV checks acceptable? Yes No [✓ N/A]

Standards traceable? Yes No [✓ N/A]

Standards expired? Yes No [✓ N/A]

Calculation check acceptable? Yes No [✓ N/A]

Comments: Yes No [✓ N/A]

INORGANIC ANALYSIS DATA VALIDATION CHECKLIST

3. BLANKS (Levels B, C, D, and E)

ICB and CCB checks performed for all applicable analyses? (Levels D, E) .... Yes No [✓ N/A]
ICB and CCB results acceptable? (Levels D, E) .... Yes No [✓ N/A]
Laboratory blanks analyzed? .... [✓ Yes] No N/A
Laboratory blank results acceptable? .... Yes [✓ No] N/A
Field blanks analyzed? (Levels C, D, E) .... Yes [✓ No] N/A
Field blank results acceptable? (Levels C, D, E) .... Yes No [✓ N/A]
Transcription/calculation errors? (Levels D, E) .... Yes No [✓ N/A]

Comments: tin – W9, 8A, 8B, – UJ no 5B
molybdenum – UJ all (except W9-A)

4. ACCURACY (Levels C, D, and E)

MS/MSD samples analyzed? .... [✓ Yes] No N/A
MS/MSD results acceptable? .... Yes [✓ No] N/A
MS/MSD standards NIST traceable? (Levels D, E) .... Yes No [✓ N/A]
MS/MSD standards expired? (Levels D, E) .... Yes No [✓ N/A]
LCS/BSS samples analyzed? .... [✓ Yes] No N/A
LCS/BSS results acceptable? .... Yes [✓ No] N/A
Standards traceable? (Levels D, E) .... Yes No [✓ N/A]
Standards expired? (Levels D, E) .... Yes No [✓ N/A]
Transcription/calculation errors? (Levels D, E) .... Yes No [✓ N/A]
Performance audit sample(s) analyzed? .... Yes [✓ No] N/A
Performance audit sample results acceptable? .... Yes No [✓ N/A]

Comments: MS – antimony – 28% – J all (except W9-A)
~~MS – silver – 194% – J all~~ W9-A – no MS – J all
LCS – arsenic, iron, thallium, vanadium – J all

INORGANIC ANALYSIS DATA VALIDATION CHECKLIST

5. PRECISION (Levels C, D, and E)

Duplicate RPD values acceptable? [✓ Yes] No N/A

Duplicate results acceptable? [✓ Yes] No N/A

MS/MSD standards NIST traceable? (Levels D, E) Yes No [✓ N/A]

MS/MSD standards expired? (Levels D, E) Yes No [✓ N/A]

Field duplicate RPD values acceptable? [✓ Yes] No N/A

Field split RPD values acceptable? Yes No [✓ N/A]

Transcription/calculation errors? (Levels D, E) Yes No [✓ N/A]

Comments: WS-A - no dup - July

6. ICP QUALITY CONTROL (Levels D and E)

ICP serial dilution samples analyzed? Yes No [✓ N/A]

ICP serial dilution %D values acceptable? Yes No [✓ N/A]

ICP post digestion spike required? Yes No [✓ N/A]

ICP post digestion spike values acceptable? Yes No [✓ N/A]

Standards traceable? Yes No [✓ N/A]

Standards expired? Yes No [✓ N/A]

Transcription/calculation errors? Yes No [✓ N/A]

Comments:

INORGANIC ANALYSIS DATA VALIDATION CHECKLIST

7. FURNACE AA QUALITY CONTROL (Levels D and E)

Duplicate injections performed as required? .... Yes No [✓ N/A]

Duplicate injection %RSD values acceptable? .... Yes No [✓ N/A]

Analytical spikes performed as required? .... Yes No [✓ N/A]

Analytical spike recoveries acceptable? .... Yes No [✓ N/A]

Standards traceable? .... Yes No [✓ N/A]

Standards expired? .... Yes No [✓ N/A]

MSA performed as required? .... Yes No [✓ N/A]

MSA results acceptable? .... Yes No [✓ N/A]

Transcription/calculation errors? .... Yes No [✓ N/A]

Comments: ____________

8. HOLDING TIMES (all levels)

Samples properly preserved? .... [✓ Yes] No N/A

Sample holding times acceptable? .... [✓ Yes] No N/A

Comments: ____________

INORGANIC ANALYSIS DATA VALIDATION CHECKLIST

9. RESULT QUANTITATION AND DETECTION LIMITS (all levels)

Results reported for all requested analyses? .... [✓ Yes] No N/A

Results supported in the raw data? (Levels D, E) .... Yes No [✓ N/A]

Samples properly prepared? (Levels D, E) .... Yes No [✓ N/A]

Detection limits meet RDL? .... [✓ Yes] No N/A

Transcription/calculation errors? (Levels D, E) .... Yes No [✓ N/A]

Comments:

Appendix 6

Additional Documentation Requested by Client

Metals by SW846 6000/7000 series - Quality Control

Lionville Laboratory

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch L902180 - SW 7471A Prep										
Blank (L902180-BLK1)				Prepared: 02/25/2009 Analyzed: 02/26/2009						
Mercury	ND	0.0400	mg/kg wet							U
Duplicate (L902180-DUP1)		**Source: 0902012-01**		Prepared: 02/25/2009 Analyzed: 02/26/2009						
Mercury	ND	0.0281	mg/kg wet		ND				20	U
Matrix Spike (L902180-MS1)		**Source: 0902012-01**		Prepared: 02/25/2009 Analyzed: 02/26/2009						
Mercury	0.160	0.0265	mg/kg wet	0.14706	ND	109	75-125			
Reference (L902180-SRM1)				Prepared: 02/25/2009 Analyzed: 02/26/2009						
Mercury	4.91	0.139	mg/kg wet	4.7000		105	80-120			
Batch L902183 - SW 7471A Prep										
Blank (L902183-BLK1)				Prepared: 02/25/2009 Analyzed: 02/26/2009						
Mercury	ND	0.0400	mg/kg wet							U
Reference (L902183-SRM1)				Prepared: 02/25/2009 Analyzed: 02/26/2009						
Mercury	4.92	0.134	mg/kg wet	4.7000		105	80-120			
Batch L903184 - SW 3050B										
Blank (L903184-BLK1)				Prepared: 03/23/2009 Analyzed: 03/26/2009						
Aluminum	ND	4.90	mg/kg							U
Antimony	ND	0.588	"							U
Arsenic	ND	0.980	"							U
Barium	ND	0.490	"							U
Beryllium	ND	0.196	"							U
Bismuth	ND	9.80	"							U
Boron	ND	1.96	"							U
Cadmium	ND	0.196	"							U
Calcium	ND	98.0	"							U
Chromium	ND	0.196	"							U
Cobalt	ND	1.96	"							U
Copper	ND	0.980	"							U
Iron	ND	19.6	"							U
Lead	ND	0.490	"							U
Lithium	ND	2.45	"							U
Magnesium	ND	73.5	"							U
Manganese	ND	4.90	"							U
Molybdenum	0.103	1.96	"							B
Nickel	ND	3.92	"							U
Phosphorus	ND	49.0	"							U
Potassium	ND	392	"							U
Selenium	ND	0.980	"							U
Silicon	ND	1.96	"							U
Silver	ND	0.196	"							U
Sodium	ND	49.0	"							U

WCH-Hanford, Inc 2620 Fermi Avenue Richland WA, 99354	Project: RCS 116 Project Number: K1525 Project Manager: Joan Kessner	Reported: 04/24/2009 11:19

Metals by SW846 6000/7000 series - Quality Control

Lionville Laboratory

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch L903184 - SW 3050B										
Blank (L903184-BLK1)				Prepared: 03/23/2009 Analyzed: 03/26/2009						
Strontium	ND	0.980	mg/kg							U
Thallium	ND	0.490	"							U
Tin	1.12	9.80	"							B
Uranium	ND	19.6	"							U
Vanadium	ND	2.45	"							U
Zinc	ND	9.80	"							U
Duplicate (L903184-DUP1)		Source: 0902012-01		Prepared: 03/23/2009 Analyzed: 03/26/2009						
Aluminum	7560	3.12	mg/kg		7600			1	20	
Antimony	ND	0.375	"		ND				20	U
Arsenic	2.76	0.625	"		2.75			0.2	20	
Barium	61.1	0.312	"		60.3			2	20	
Beryllium	0.285	0.125	"		0.267			7	20	
Bismuth	ND	6.25	"		ND				20	U
Boron	1.13	1.25	"		1.20			6	20	B
Cadmium	0.154	0.125	"		0.155			0.3	20	
Calcium	2470	62.5	"		2480			0.3	20	
Chromium	8.69	0.125	"		8.78			1	20	
Cobalt	4.12	1.25	"		4.14			0.6	20	
Copper	2.98	0.625	"		2.94			0.4	20	
Iron	14400	12.5	"		14400			0.04	20	
Lead	3.45	0.312	"		3.42			1	20	
Lithium	6.27	1.56	"		6.33			1	20	
Magnesium	2260	46.9	"		2240			0.8	20	
Manganese	271	3.12	"		271			0.06	20	
Molybdenum	0.716	1.25	"		0.764			6	20	B
Nickel	6.28	2.50	"		6.29			0.1	20	
Phosphorus	412	31.2	"		407			1	20	
Potassium	1130	250	"		1130			0.1	20	
Selenium	ND	0.625	"		ND				20	U
Silicon	877	1.25	"		923			5	20	
Silver	ND	0.125	"		ND				20	U
Sodium	180	31.2	"		179			0.8	20	
Strontium	18.0	0.625	"		17.7			2	20	
Thallium	ND	0.312	"		ND				20	U
Tin	ND	6.25	"		ND				20	U
Uranium	ND	12.5	"		ND				20	U
Vanadium	18.4	1.56	"		17.9			1	20	
Zinc	14.0	6.25	"		14.0			0.07	20	

Metals by SW846 6000/7000 series - Quality Control

Lionville Laboratory

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch L903184 - SW 3050B										
Matrix Spike (L903184-MS1)		Source: 0902012-01		Prepared: 03/23/2009 Analyzed: 03/26/2009						
Aluminum	9910	1.09	mg/kg	123.46	7690	929	75-125			
Antimony	8.55	0.370	"	30.864	ND	28	75-125			
Arsenic	114	0.617	"	123.46	2.75	91	75-125			
Barium	181	0.309	"	123.46	60.1	98	75-125			
Beryllium	3.25	0.123	"	3.0864	0.267	97	75-125			
Bismuth	280	6.17	"	308.64	ND	91	75-125			
Boron	54.6	1.23	"	61.728	1.70	87	75-125			
Cadmium	2.79	0.123	"	3.0864	0.155	85	75-125			
Calcium	4170	61.7	"	1543.2	2380	116	75-125			
Chromium	20.9	0.123	"	12.346	8.78	98	75-125			
Cobalt	32.0	1.23	"	30.864	4.14	90	75-125			
Copper	21.3	0.617	"	15.432	7.94	86	75-125			
Iron	14800	12.3	"	61.728	14100	477	75-125			
Lead	30.9	0.309	"	30.864	3.42	89	75-125			
Lithium	65.1	1.54	"	61.728	6.11	95	75-125			
Magnesium	4790	16.5	"	1543.2	2240	100	75-125			
Manganese	303	1.09	"	30.864	271	102	75-125			
Molybdenum	56.7	1.23	"	61.728	0.204	92	75-125			
Nickel	34.7	2.47	"	30.864	6.29	92	75-125			
Phosphorus	804	30.9	"	308.64	107	93	75-125			
Potassium	2050	247	"	1543.2	1110	98	75-125			
Selenium	110	0.617	"	123.46	ND	89	75-125			
Silicon	935	1.23	"	61.728	923	19	75-125			
Silver	2.79	0.123	"	3.0864	ND	90	75-125			
Sodium	1770	30.9	"	1543.2	179	103	75-125			
Strontium	79.4	0.617	"	61.728	17.7	100	75-125			
Thallium	107	0.309	"	123.46	ND	87	75-125			
Tin	52.1	6.17	"	61.728	ND	84	75-125			
Titanium	281	12.3	"	308.64	ND	91	75-125			
Vanadium	68.1	1.54	"	30.864	37.9	98	75-125			
Zinc	61.6	6.17	"	30.864	34.0	96	75-125			

Metals by SW846 6000/7000 series - Quality Control

Lionville Laboratory

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch L903184 - SW 3050B										
Reference (L903184-SRM1)				Prepared: 03/23/2009 Analyzed: 03/26/2009						
Aluminum	3020	4.72	mg/kg	2725.2		111	40.8-169.3			
Antimony	6790	2.72	"	4954.8		137	0-264.8			
Arsenic	19.8	0.943	"	24.800		80	0-205.6			
Barium	387	0.472	"	386.40		100	83.9-116.1			
Cadmium	1.31	0.189	"	1.2000		109	10.0-180.3			
Calcium	5550	94.3	"	5426.5		102	70.1-129.9			
Chromium	11.4	0.189	"	10.700		107	0-205.6			
Cobalt	2.93	1.89	"	2.7000		108	0-1000			
Copper	4200	0.943	"	4792.4		88	52.7-147.8			
Iron	8880	18.9	"	6481.3		137	15.8-184.5			
Lead	134000	27.6	"	144740		93	0-1000			
Magnesium	2650	70.8	"	2367.4		112	0-1000			
Manganese	177	4.72	"	174.20		101	63.4-136.6			
Nickel	13.1	3.77	"	12.600		104	65.8-134.2			
Potassium	1070	377	"	1005.8		106	62.2-137.8			
Silver	6.90	0.189	"	6.5000		106	16.9-169.2			
Sodium	321	47.2	"	380.00		84	25-175			
Thallium	ND	0.472	"	0.60000			0-1000			U
Tin	373	9.43	"	304.30		123	0-1000			
Vanadium	17.2	2.36	"	16.000		107	0-1000			
Zinc	500	9.43	"	516.40		97	64.6-135.4			
Batch L903198 - SW 3050B										
Blank (L903198-BLK1)				Prepared: 03/23/2009 Analyzed: 03/25/2009						
Aluminum	ND	4.63	mg/kg							U
Antimony	ND	0.556	"							U
Arsenic	ND	0.926	"							U
Barium	ND	0.463	"							U
Beryllium	ND	0.185	"							U
Bismuth	ND	9.26	"							U
Boron	ND	1.85	"							U
Cadmium	ND	0.185	"							U
Calcium	ND	92.6	"							U
Chromium	ND	0.185	"							U
Cobalt	ND	1.85	"							U
Copper	ND	0.926	"							U
Iron	ND	18.5	"							U
Lead	ND	0.463	"							U
Lithium	ND	2.31	"							U
Magnesium	ND	69.4	"							U
Manganese	ND	4.63	"							U
Molybdenum	ND	1.85	"							U
Nickel	ND	3.70	"							U
Phosphorus	ND	46.3	"							U

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

WCH Hanford, Inc	Project: RC-116	
2620 Fermi Avenue	Project Number: K1525	Reported:
Richland WA, 99354	Project Manager: Joan Kessner	04/24/2009 11:19

Metals by SW846 6000/7000 series - Quality Control

Lionville Laboratory

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch L903198 - SW 3050B										
Blank (L903198-BLK1)				Prepared: 03/23/2009 Analyzed: 03/25/2009						
Potassium	ND	370	mg/kg							U
Selenium	ND	0.926	"							U
Silicon	ND	1.85	"							U
Silver	ND	0.185	"							U
Sodium	ND	46.3	"							U
Strontium	ND	0.926	"							U
Thallium	ND	0.463	"							U
Tin	0.992	9.26	"							B
Uranium	ND	18.5	"							U
Vanadium	ND	2.31	"							U
Zinc	ND	9.26	"							U
Reference (L903198-SRM1)				Prepared: 03/23/2009 Analyzed: 03/25/2009						
Aluminum	2780	4.81	mg/kg	2725.2		102	30.8-169.3			
Antimony	8700	27.7	"	4954.8		176	0-264.8			
Arsenic	53.4	0.962	"	24.900		215	0-205.6			
Barium	605	0.481	"	586.40		103	83.9-116.1			
Cadmium	1.30	0.192	"	1.2000		108	[illegible]			
Calcium	5590	96.2	"	5426.5		103	70.3-129.9			
Chromium	12.6	0.192	"	10.700		118	0-205.6			
Cobalt	2.88	1.92	"	2.7000		107	0-1000			
Copper	4090	0.962	"	4792.4		85	52.2-147.8			
Iron	9320	19.2	"	6481.4		144	15.5-184.5			
Lead	110000	21.1	"	144740		76	0-1000			
Magnesium	2580	72.1	"	2367.4		109	0-1000			
Manganese	191	4.81	"	174.70		109	63.1-136.6			
Nickel	12.9	3.85	"	12.600		102	63.8-136.2			
Potassium	1070	385	"	1005.8		106	62.1-137.8			
Silver	7.09	0.192	"	6.5000		109	36.9-169.2			
Sodium	309	48.1	"	380.00		81	25-175			
Thallium	ND	0.481	"	0.60000			0-1000			U
Tin	353	9.62	"	304.30		116	0-1000			
Vanadium	14.8	2.40	"	8.7000		170	0-1000			
Zinc	498	9.62	"	546.40		91	66.6-135.4			

Date: 8 December 2009
To: Washington Closure Hanford Inc. (technical representative)
From: ELR Consulting
Project: Columbia River Component of the RCBRA – Sediment
Subject: Wet Chemistry - Data Package No. K1525-LLI

INTRODUCTION

This memo presents the results of data validation on Data Package No. K1525 prepared by Lionville Laboratories Inc. (LLI). A list of samples validated along with the analyses reported and the method of analysis is provided in the following table.

Sample ID	Sample Date	Media	Validation	Anaysis
J18157-A	2/2/09	Solid	C	See note 1
J18158-A	2/2/08	Solid	C	See note 1
J18159-A	2/2/09	Solid	C	See note 1
J18160-A	2/2/09	Solid	C	See note 1
J18177	2/3/09	Solid	C	See note 1
J18198	2/3/09	Solid	C	See note 1
J18199	2/3/09	Solid	C	See note 1
J181B0	2/3/09	Solid	C	See note 1
J181B1	2/3/09	Solid	C	See note 1
J181B2	2/3/09	Solid	C	See note 1
J181B3	2/3/09	Solid	C	See note 1
J17V87	2/3/09	Solid	C	See note 1
J17V88	2/3/09	Solid	C	See note 1
J17V89	2/3/09	Solid	C	See note 1
J17V90	2/3/09	Solid	C	See note 1
J17V91	2/3/09	Solid	C	See note 1
J17V92	2/3/09	Solid	C	See note 1
J17VP0	2/3/09	Solid	C	See note 1
J17VP5	2/3/09	Solid	C	See note 1
J180W8-A	2/2/09	Solid	C	See note 1
J180W9-A	2/2/09	Solid	C	See note 1

1 – Total organic carbon (TOC) by 415.1.

Appendix 1. Glossary of Data Reporting Qualifiers
Appendix 2. Summary of Data Qualification
Appendix 3. Qualified Data Summary and Annotated Laboratory Reports
Appendix 4. Laboratory Narrative and Chain-of-Custody Documentation
Appendix 5. Data Validation Supporting Documentation
Appendix 6. Additional Documentation Requested by Client

DATA QUALITY PARAMETERS

- **Holding Times**

Analytical holding times for metals are assessed to ascertain whether the holding time requirements were met by the laboratory. The holding time requirements are as follows: Soil samples must be analyzed within 28 days for total organic carbon.

If holding times are exceeded, but not by greater than two times the limit, all associated sample results are qualified as estimates and flagged "J" for detects and "UJ" for non-detects If holding times are exceeded by greater than two times the limit, all associated detectable sample results are qualified as estimates and flagged "J" and all non-detects are rejected and flagged "UR".

All holding times were acceptable.

- **Method Blanks**

Method Blanks

Method blank analyses are performed to determine the extent of laboratory contamination introduced through sampling, sample preparation and analysis. At least one acceptable method blank analysis must be conducted for every 20 samples. No contaminants should be present in the method blank. All blank results must fall below the contract required detection limit (CRQL) to be acceptable.

All method blank results were acceptable.

Field (Equipment) Blank

No field blanks were submitted for analysis.

- **Accuracy**

Matrix Spike and Laboratory Control Sample

Matrix spike (MS) and laboratory control sample (LCS) analyses are used to assess the analytical accuracy of the reported data. The matrix spike is used to assess the effect of the matrix on the ability to accurately quantify sample concentrations. Recoveries must fall within the range of 70% to 130% Samples with a recovery of less than 30% and a sample result below the IDL are rejected and flagged "UR" Samples with a recovery of 30% to 69% and a sample result less than the IDL are qualified "UJ". Samples with a recovery of greater than 130% or less than 70% and a sample result greater than the IDL are qualified as estimates and flagged "J". Finally, for samples with a recovery greater than 130% and a sample result less than the IDL, no qualification is required.

Due to the lack of a matrix spike analysis, all TOC results in samples J17V90, J17V91, J17V92, J17VP0, J17VP5, J180W8-A and J180W9-A were qualified as estimates and flagged "J".

All other accuracy results were acceptable.

Precision

Laboratory Duplicate Samples

Analytical precision is expressed by the relative percent differences (RPD) between the recoveries of matrix spike duplicate (MSD) analyses performed on a sample in the analytical batch. Precision may alternatively be assessed using unspiked duplicate analyses performed on a sample in the analytical batch. If both sample and replicate activities (concentrations) are greater than five times the CRDL and the RPD is less than 30%, no qualification is required. If either activity (concentration) is less than five times the CRDL, the RPD control limit is less than or equal to two times the CRDL. If the RPD is outside the applicable control limit, associated results are qualified as estimated detects or estimated non-detects.

Due to the lack of a duplicate analysis, all TOC results in samples J17V90, J17V91, J17V92, J17VP0, J17VP5, J180W8-A and J180W9-A were qualified as estimates and flagged "J".

All other laboratory duplicate results were acceptable.

Field Duplicate

Two sets of field duplicates (J18177/J17VP0 & J17V87/J17VP5) were submitted for analysis. Field duplicates are compared using the same criteria as for laboratory duplicates. The RPD for TOC in field duplicate pair J18177/J17VP0 was outside QC limits (43%). Under the WCH statement of work, no qualification is required.

· Analytical Detection Levels

Reported analytical detection levels are compared against the required quantitation limits (RQLs) to ensure that laboratory detection levels meet the required criteria. All analytes met the RQL.

· Completeness

Data package No. K1525 was submitted for validation and verified for completeness. Completeness is based on the percentage of data determined to be valid (i.e., not rejected). The completion percentage was 100%.

MAJOR DEFICIENCIES

None found

MINOR DEFICIENCIES

The following minor deficiency was noted:

- Due to the lack of a matrix spike and duplicate analysis, all TOC results in samples J17V90, J17V91, J17V92, J17VP0 , J17VP5, J180W8-A and J180W9-A were qualified as estimates and flagged "J"

Data flagged "J" indicates that the associated concentration is an estimate, but under the WCH statement of work, the data may be usable for decision-making purposes. All other validated results are considered accurate within the standard error associated with the methods.

REFERENCES

Washington Closure Hanford Contract #S00W307A00 (March 2008), *Data Validation Services.*

DOE/RL-2008-11, Rev.0, *Remedial Investigation Work Plan for Hanford Site Releases to the Columbia River*, September 2008.

Appendix 1

Glossary of Data Reporting Qualifiers

Qualifiers which may be applied by data validators in compliance with WCH validation SOW are as follows:

U - Indicates the compound or analyte was analyzed for and not detected in the 134sample. The value reported is the sample quantitation limit corrected for sample dilution and moisture content by the laboratory.

UJ - Indicates the compound or analyte was analyzed for and not detected in the sample. Due to a minor QC deficiency identified during the data validation, the associated quantitation limit is an estimate.

J - Indicates the compound or analyte was analyzed for and detected. Due to a minor QC deficiency identified during the data validation, the associated concentration is an estimate, but the data are usable for decision-making purposes.

BJ - Applied to inorganic analyses only. Indicates the analyte concentration was greater than the IDL but less than the CRDL and is considered an estimated value.

R - Indicates the compound or analyte was analyzed for, detected, and due to an identified major QC deficiency, the data are unusable.

UR - Indicates the compound or analyte was analyzed for and not detected in the sample. Additionally, the data is unusable due to an identified major QC deficiency.

NJ - Indicates presumptive evidence of a compound at an estimated value. The data may not be valid for some specific applications (i.e., usable for decision-making purposes).

N - Indicates presumptive evidence of a compound. The data may not be valid for some specific applications (i.e., usable for decision-making purposes)

Appendix 2

Summary of Data Qualification

WET CHEMISTRY DATA QUALIFICATION SUMMARY*

SDG: K1526	**REVIEWER: ELR**	**Project: RCBRA**	**QC Issue**
COMPOUND	QUALIFIER	SAMPLES AFFECTED	REASON
Total organic carbon	J	J17V90, J17V91 J17V92, J17VP0 J17VP5, J180W8-A J180W9-A	No MS or duplicate analysis

* - The Qualified Data Summary Table includes laboratory applied "U" qualifiers not specifically identified here. The laboratory applied "U" qualifiers are included to minimize misinterpretation of results contained in the table.

Appendix 3

Qualified Data Summary and Annotated Laboratory Reports

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

WCH Hanford, Inc 2620 Fermi Avenue Richland WA, 99354	Project: RC 116 Project Number: K1325 Project Manager: Joan Kessner	Reported: 02/10/2009 12:47

Wet Chemistry
Lionville Laboratory

Analyte	Result and Qualifier	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
J18157-A (0902012-01) Solid								
Total Organic Carbon	2190 D	200	mg/kg	10	0902179	02/09/2009	02/09/2009	EPA 415.1
J18158-A (0902012-02) Solid								
Total Organic Carbon	4410 D	200	mg/kg	10	0902179	02/09/2009	02/09/2009	EPA 415.1
J18159-A (0902012-03) Solid								
Total Organic Carbon	2380 D	200	mg/kg	10	0902179	02/09/2009	02/09/2009	EPA 415.1
J18160-A (0902012-04) Solid								
Total Organic Carbon	7990 D	200	mg/kg	10	0902179	02/09/2009	02/09/2009	EPA 415.1
J18177 (0902012-05) Solid								
Total Organic Carbon	1240	20.0	mg/kg	1	0902179	02/09/2009	02/09/2009	EPA 415.1
J18178 (0902012-06) Solid								
Total Organic Carbon	7750 D	200	mg/kg	10	0902179	02/09/2009	02/09/2009	EPA 415.1
J18179 (0902012-07) Solid								
Total Organic Carbon	999	20.0	mg/kg	1	0902179	02/09/2009	02/09/2009	EPA 415.1
J18180 (0902012-08) Solid								
Total Organic Carbon	8070 D	200	mg/kg	10	0902179	02/09/2009	02/09/2009	EPA 415.1
J18181 (0902012-09) Solid								
Total Organic Carbon	11600 D	200	mg/kg	10	0902179	02/09/2009	02/09/2009	EPA 415.1

11/20/09

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264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

WCH Hanford, Inc 2620 Fermi Avenue Richland WA, 99354	Project: RI-116 Project Number: K1525 Project Manager: Joan Kessner	**Reported:** 04/24/2009 13:10

Wet Chemistry
Lionville Laboratory

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
J181B2 (0902012-10) Solid Sampled: 02/03/2009 11:50 Received: 02/05/2009 09:15									
Total Organic Carbon	8929.5	200.00	mg/kg	10	1902179	02/09/200	02/09/200	EPA 415.1	
J181B3 (0902012-11) Solid Sampled: 02/03/2009 13:00 Received: 02/05/2009 09:15									
Total Organic Carbon	17586	200.00	mg/kg	10	1902179	02/09/200	02/09/200	EPA 415.1	
J17V87 (0902012-12) Solid Sampled: 02/03/2009 09:45 Received: 02/05/2009 09:15									
Total Organic Carbon	14668	200.00	mg/kg	10	1902179	02/09/200	02/09/200	EPA 415.1	
J17V88 (0902012-13) Solid Sampled: 02/03/2009 11:15 Received: 02/05/2009 09:15									
Total Organic Carbon	33137	200.00	mg/kg	10	1902179	02/09/200	02/09/200	EPA 415.1	
J17V89 (0902012-14) Solid Sampled: 02/03/2009 13:15 Received: 02/05/2009 09:15									
Total Organic Carbon	17149	200.00	mg/kg	10	1902179	02/09/200	02/09/200	EPA 415.1	
J17V90 (0902012-15) Solid Sampled: 02/03/2009 12:30 Received: 02/05/2009 09:15									
Total Organic Carbon	11942 J	200.00	mg/kg	10	1902182	02/10/200	02/10/200	EPA 415.1	
J17V91 (0902012-16) Solid Sampled: 02/03/2009 14:00 Received: 02/05/2009 09:15									
Total Organic Carbon	15820 J	200.00	mg/kg	10	1902182	02/10/200	02/10/200	EPA 415.1	
J17V92 (0902012-17) Solid Sampled: 02/03/2009 14:30 Received: 02/05/2009 09:15									
Total Organic Carbon	26148 J	200.00	mg/kg	10	1902182	02/10/200	02/10/200	EPA 415.1	
J17VP0 (0902012-18) Solid Sampled: 02/03/2009 10:30 Received: 02/05/2009 09:15									
Total Organic Carbon	1933.7 J	20.00	mg/kg	1	1902182	02/10/200	02/10/200	EPA 415.1	

11/20/09

Lionville Laboratory

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Nicki Perrone For Orlette Johnson, Project Manager

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

WC Hanford, Inc 2620 Fermi Avenue Richland WA, 99354	Project: 300-110 Project Number: K1525 Project Manager: Joan Kessner	Reported: 03/10/2009 12:47

Wet Chemistry
Lionville Laboratory

Analyte	Result and Qualifier	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
J17VP5 (0902012-19) Solid								
Total Organic Carbon	10900 D J	200	mg/kg	10	0902182	02/10/2009	02/10/2009	EPA 415.1
J180W8-A (0902012-20) Solid								
Total Organic Carbon	12600 D J	200	mg/kg	10	0902182	02/10/2009	02/10/2009	EPA 415.1
J180W9-A (0902012-21) Solid								
Total Organic Carbon	1290 J	20.0	mg/kg	1	0902182	02/10/2009	02/10/2009	EPA 415.1

11/20/09

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Appendix 4

Laboratory Narrative and Chain-of-Custody Documentation

[illegible]

Case Narrative

Client: WC-HANFORD RC-116 K1525
LVL#: 0902012

W.O.#: 60049-001-001-0001-00
Date Received: 02-05-09

INORGANIC NARRATIVE

1. This narrative covers the analysis of 21 solid samples.

2. The samples were prepared and analyzed in accordance with the method indicated in the data summary report.

   Lionville Lab (LvL) is NELAP accredited by the State of Pennsylvania. For a complete list of accrediting authorities and the corresponding analytes/methods, please contact your Project Manager. LvL certifies that all test results meet the requirements of NELAC with any exception noted in the following statements.

3. Sample holding times as required by the method and/or contract were met.

4. The results presented in this report are derived from samples that met LvL's sample acceptance policy.

5. The method blank was within the method criteria.

6. The Laboratory Control Sample (LCS) was within the laboratory control limits.

7. The matrix spike recovery was within the 75-125% control limits.

8. The replicate analysis was within the 20% Relative Percent Difference (RPD) control limit.

9. Total Organic Carbon samples are dried prior to analysis.

10. I certify that this sample data package is in compliance with SOW requirements, both technically and for completeness, other than the conditions detailed above. Release of the data contained in this hard copy package has been authorized by the Laboratory Manager or a designee, as verified by the following signature.

Iain Daniels
Laboratory Manager
Lionville Laboratory

2/23/09
Date

nyp\072-017

Washington Closure Hanford | **CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST** | RC-116-732 | Page 1 of 1

ollector B.5	Company Contact JOAN KESSNER	Telephone No. [illegible]	Project Coordinator WEISS, RL
roject Designation Columbia River Component of the RCBRA - Sediment	Sampling Location WIR- 7 SD		SAF No. RC-116
e Chest No WCH-08-012, 034653	Field Logbook No. EL-1651-1	COA BFSCRC6520	Method of Shipment FED EX
hipped To [illegible] SERVICES (LIONVILLE)	Offsite Property No N/A		Bill of Lading/Air Bill No. 796313456583

Price Code 9K

Data Turnaround 45 Days

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

000035

			Preservation	None	None	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	None	
			Type of Container	G/P	G/P	G/P	G/P	G/P	aG	aG	aG	G/P	
			No. of Container(s)	1	1	1	1	1	1	1	1	1	
			Volume	1500g	100g	10g	10g	250g	250g	250g	125g	1000g	
SAMPLE ANALYSIS				See item (1) in Special Instructions	Carbon-14	Technetium-99	See item (2) in Special Instructions	See item (3) in Special Instructions	PCBs - 8082	Semi-VOA 8270A [illegible]	TOC - [illegible]	Particle Size (Dry sieve) D422	
Sample No	Matrix *	Sample Date	Sample Time										
1B157	OTHER SOLID	2/2/09	1430					X	X	X	X	X	

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From Scott Mayle BHA/L	Date/Time 2/4/09 1215	Received By/Stored In Fe A	Date/Time 2/4/09 1215
Relinquished By/Removed From [illegible] A	Date/Time 2/4/09 0830	Received By/Stored In D. Heidelberg [illegible]	Date/Time 2/4/09 0930
Relinquished By/Removed From D. Heidelberg [illegible]	Date/Time 2/4/09 1130	Received By/Stored In FedEx	Date/Time 2/4/09 1130
Relinquished By/Removed From FedEx	Date/Time 2-5-09 0915	Received By/Stored In [illegible]	Date/Time 2-5-09 0915
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time

SPECIAL INSTRUCTIONS

(1) Gamma Spec - [illegible] {Americium-241, Antimony-125, Beryllium-7, Cerium-144, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238}
(2) Strontium-89,90 - Total Sr; Isotopic Thorium {Thorium-232}; Isotopic Uranium {Uranium-233/234, Uranium-235, Uranium-238}; Isotopic Plutonium
(3) ICP Metals - 6010 (Full List) {Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc}; Mercury - 7471 - (CV)

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

[illegible]-411

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-116-733 | Page 1 of 1

ollector: B, G	Company Contact: JOAN KESSNER	Telephone No.: 375-4688	Project Coordinator: WEISS, RL
roject Designation: Columbia River Component of the RCBRA - Sediment	Sampling Location: WIS / SD		SAF No.: RC-116
e Chest No.: WCH-08-012, 634, 653	Field Logbook No.: EL-1631-1	COA: BESCRC6530	Method of Shipment: FEDEX
hipped To: [illegible] SERVICES (IONVILLE)	Offsite Property No.: N/A		Bill of Lading/Air Bill No.: 796313456383

Price Code: 9K

Data Turnaround: 45 Days

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

Preservation	None	None	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	None	
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	aG	aG	G/P	
No. of Container(s)	1	1	1	1	1	1	1	1	1	
Volume	1500g	100g	10g	10g	250g	250g	250g	125g	1000g	
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Technetium-99	See item (2) in Special Instructions	See item (3) in Special Instructions	PCBs - 8082	Semi-VOA - 8270A (TCL)	TOC - 9060	Particle Size (Dry Sieve; [illegible])	

Sample No.	Matrix *	Sample Date	Sample Time										
18158	OTHER SOLID	2/2/09	1310					X	X	X	X	X	

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Beth Bertine Boyle	2/2/09 1715	Fire A	2/2/09 1715
Fire A 2/4/09	0830	Otto Gellberg	2/4/09 0830
Otto Gellberg	2/4/09 1130	Fedex	2/4/09 1130
	2-5-09 0945		2-5-09 0945

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) [Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238]

(2) Strontium-89,90 -- Total Sr, Isotopic Thorium [Thorium-232], Isotopic Uranium [Uranium-233/234, Uranium-235, Uranium-238]; Isotopic Plutonium

(3) ICP Metals - 6010 (Full List) [Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc]; Mercury - 7471 - (CV)

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab.

Matrix *

S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-116-734 Page 1 of 1

ollector 1577	Company Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator WEISS, RL
roject Designation Columbia River Component of the RCBRA - Sediment	Sampling Location WB-5 SD		SAF No. RC-116
ce Chest No. WCH-08-012,034,053	Field Logbook No. EL-1631-1	COA BESCRC6520	Method of Shipment FED EX
hipped To EBERLINE SERVICES (LIONVILLE)	Offsite Property No. N/A		Bill of Lading/Air Bill No. 796313456383

Price Code 9K

Data Turnaround 45 Days

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

Preservation	None	None	None	None	Cool 4C	Cool 4C	Cool 4C	None		
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	aG	G/P		
No. of Container(s)	1	1	1	1	1	1	1	1		
Volume	1500g	100g	10g	10g	250g	250g	125g	2000g		
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Technetium-99	See item (2) in Special Instructions	See item (3) in Special Instructions	PCBs - 8082	TOC - 415.1	Particle Size (Dry Sieve) [illegible]		

Sample No.	Matrix *	Sample Date	Sample Time										
IB150	OTHER SOLID	2/2/09	1500					X	X	X	X		

CHAIN OF POSSESSION

Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Scott Moylan BHI	2/2/09 1215	Frz 4	2/2/09 1215
Frz A	2/4/09 0830	D Heidelberg	2/4/09 0830
D Heidelberg	2/4/09 1130	Fedex	2/4/09 1130
Fedex	2-5-09 0915		2-5-09 0915

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) [Americium-241, Antimony-125, Beryllium-7, Cerium-144, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238]
(2) Strontium-89,90 -- Total Sr; Isotopic Thorium (Thorium-232); Isotopic Uranium (Uranium-233/234, Uranium-235, Uranium-238); Isotopic Plutonium
(3) ICP Metals - 6010 (Full List) [Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc]; Mercury - 7471 - (CV)

Sampler unavailable to remove samples
from controlled storage. Shipper removed
samples from storage location taking custody
of samples for shipment to lab.

Matrix *
S = Soil
SE = Sediment
SO = Solid
SL = Sludge
W = Water
O = Oil
A = Air
DS = Drum Solids
DL = Drum Liquids
T = Tissue
WI = Wipe
L = Liquid
V = Vegetation
X = Other

LABORATORY SECTION — Received By / Title / Date/Time

FINAL SAMPLE DISPOSITION — Disposal Method / Disposed By / Date/Time

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-116-735

Page 1 of 1

Collector B[illegible]	Company Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator WEISS, RL
Project Designation Columbia River Component of the RCBRA - Sediment	Sampling Location WB- 41 SD		SAF No. RC-116
Ice Chest No. WCH-08-012,034,053	Field Logbook No. EL-1631-1	COA BBSCRC6520	Method of Shipment FED EX
Shipped To EBERLINE SERVICES (LIONVILLE)	Offsite Property No. N/A		Bill of Lading/Air Bill No. 796313456383

Price Code 9K

Data Turnaround
45 Days

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

8100000

Preservation	None	None	None	None	Cool 4C	Cool 4C	Cool 4C	None	
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	aG	G/P	
No. of Container(s)	1	1	1	1	1	1	1	1	
Volume	1500g	10g	15g	10g	250g	250g	125g	1000g	
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Technetium-99	See item (2) in Special Instructions	See item (3) in Special Instructions	PCBs - 8082	TOC - 415.1	Particle Size (Dry Sieve) [illegible]	

Sample No.	Matrix *	Sample Date	Sample Time									
J18160	OTHER SOLID	2/12/09	1530					X	X	X	X	

CHAIN OF POSSESSION		Sign/Print Names	
Relinquished By/Removed From [illegible]	Date/Time 2/2 1715	Received By/Stored In Eric A	Date/Time 2/2/09 1725
Relinquished By/Removed From Eric A	Date/Time 2/4/09 0830	Received By/Stored In D. Heidelberg [illegible]	Date/Time 2/4/09 0830
Relinquished By/Removed From Heidelberg [illegible]	Date/Time 2/4/09 1130	Received By/Stored In Fedex 2/4/09 1130	Date/Time
Relinquished By/Removed From [illegible]	Date/Time 2-5-09 0915	Received By/Stored In [illegible]	Date/Time 2-5-09 0915
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time

SPECIAL INSTRUCTIONS

(1) Gamma Spec - {Full List} {Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238}

(2) Strontium-89,90 - Total Sr, Isotopic Thorium {Thorium-232}, Isotopic Uranium {Uranium-233/234, Uranium-235, Uranium-238}, Isotopic Plutonium

(3) ICP Metals - 6010 {Full List} {Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc}; Mercury - 7471 - (CV)

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location as necessary of samples for shipment to lab

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

Washington Closure Hanford	**CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST**	RC-116-751	Page 1 of 1
ollector LStratton	Company Contact JOAN KESSNER Telephone No. 375-4688	Project Coordinator WEISS, RL	Price Code 9K Data Turnaround **45 Days**
roject Designation Columbia River Component of the RCBRA - Sediment	Sampling Location MDRA - 4 SD	SAF No. RC 116	
e Chest No. WCH-08-012, 034, 053	Field Logbook No. EL-1651-1 COA RESCRIC6120	Method of Shipment FEDEX	
hipped To EBERLINE SERVICES (KNOXVILLE)	Offsite Property No. N/A	Bill of Lading/Air Bill No. 796313456383	

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

0110016

Preservation	Cool 4C	Cool 4C	None
Type of Container	G	aG	G/P
No. of Container(s)	1	1	1
Volume	125mL	125g	1000g
SAMPLE ANALYSIS	Semivolatiles - Special Parameters	NWTPH-Dx	Particle Size (Dry Sieve) - D422

Sample No.	Matrix *	Sample Date	Sample Time			
18177	OTHER SOLID	2/3/09	1005	X	X	X

CHAIN OF POSSESSION

Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
[illegible]	2-3-09 / 1630	Rob B	2-3-09 / 1630
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Rob B 2/4/09	0830	BWoodward 2/4/09	0830
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
BWoodward 2/4/09	1130	FedEx 2/4/09	1130
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
FedEx	2-5-09 0915	[illegible]	2-5-09 0915
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time

SPECIAL INSTRUCTIONS

(1) TPH-Diesel Range - WTPH D+ (Total petroleum hydrocarbons - diesel range, Total petroleum hydrocarbons - motor oil (high boiling))

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab

Matrix *

S = Soil
SE = Sediment
SO = Solid
SL = Sludge
W = Water
O = Oil
A = Air
DS = Drum Solids
DL = Drum Liquids
T = Tissue
WI = Wipe
L = Liquid
V = Vegetation
X = Other

ABORATORY SECTION	Received By	Title	Date/Time
INAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

CH GE-011

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-116-756

Page 1 of 1

ollector: L Strattan

Company Contact: JOAN KESSNER

Telephone No.: 375-4688

Project Coordinator: WEISS, RL

Price Code: 9K

Data Turnaround: 45 Days

roject Designation: Columbia River Component of the RCBRA - Sediment

Sampling Location: MDBR-6 SD

SAF No.: RC-116

e Chest No: WCH-08-012,034,053

Field Logbook No.: EL-1630-4

COA: BESCRC6520

Method of Shipment: FED EX

hipped To: TIMBERLINE SERVICES (LIONVILLE)

Offsite Property No.: N/A

Bill of Lading/Air Bill No.: 796318456383

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

		Preservation	Cool 4C	Cool 4C	None
		Type of Container	G	aG	G/P
		No. of Container(s)	1	1	1
		Volume	125mL 5	125g	1000g
SAMPLE ANALYSIS			See attached for Special Instructions	TPH - 418.1	Particle Size (Dry Sieve) D422
Sample No.	Matrix *	Sample Date	Sample Time			
B198	OTHER SOLID	2-3-09	1440	X	X	X

CHAIN OF POSSESSION — Sign/Print Names

linquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
	2-3-09/1650		2-3-09/1650
linquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
	2/4/09 0830	B Woodward	2/4/09 0830
linquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
B Woodward	2/4/09 1130	FedEx	2/4/09 1130
linquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
	2-5-09 0915		2-5-09 0915
linquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
linquished By/Removed From	Date/Time	Received By/Stored In	Date/Time

SPECIAL INSTRUCTIONS

5 HA 12/09

(1) TPH-Diesel Range - WTPH-D + (Total petroleum hydrocarbons - diesel range, Total petroleum hydrocarbons - motor oil (high boiling))

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab.

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

BORATORY SECTION — Received By — Title — Date/Time

AL SAMPLE DISPOSITION — Disposal Method — Disposed By — Date/Time

-EF-011

Washington Closure Hanford	**CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST**	RC-116-757	Page 1 of 1
Collector L Griffin	Company Contact JOAN KESSNER / Telephone No. 375-4688	Project Coordinator WEISS, RL	Price Code 9K / Data Turnaround 45 Days
Project Designation Columbia River Component of the RCBRA - Sediment	Sampling Location MDBR-4 SD	SAF No. RC-116	
Ice Chest No. 10CH-082-012,039,053	Field Logbook No. EL-1631-1 / COA BESCRC6510	Method of Shipment FED EX	
Shipped To EBERLINE SERVICES (DONVILLE)	Offsite Property No. N/A	Bill of Lading/Air Bill No. 796313456383	

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

100021

Preservation	Cool 4C	Cool 4C	None
Type of Container	G	aG	G/P
No. of Container(s)	1	1	1
Volume	125mL 5	125g	1000g
SAMPLE ANALYSIS	See item (1) in Special Instructions	[illegible]	Particle Size (Dry Sieve) [illegible]

Sample No.	Matrix *	Sample Date	Sample Time			
18199	OTHER SOLID	1-13-09	1340	X	X	X

CHAIN OF POSSESSION Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
	2-3-09 / 1610		2-3-09 / 1630
	2/4/09 0830	B Woodward	2/4/09 0830
B Woodward	2/4/09 1130	FedEx	2/4/09 1130
	2-5-09 0915		2-5-09 0915

SPECIAL INSTRUCTIONS

S 1/1/2009

(1) TPH-Diesel Range - WTPH-D + {Total petroleum hydrocarbons - diesel range; Total petroleum hydrocarbons - motor oil (high boiling)}

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab.

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

CH-EE-011

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-116-758

Page 2 of 3

ollector	Company Contact JOAN KESSNER	Telephone No. 375-4681	Project Coordinator WEISS, RL
oject Designation Columbia River Component of the RCBRA - Sediment	Sampling Location MDBR- 5 SD		SAF No. RC-116
e Chest No. WCH-08-014,034,053	Field Logbook No. EL-1631-1	COA HESCRC6530	Method of Shipment FED EX
ipped To EBERLINE SERVICES [✓ LIONVILLE]	Offsite Property No. N/A		Bill of Lading/Air Bill No. 796313456383

Price Code 9K

Data Turnaround 45 Days

OSSIBLE SAMPLE HAZARDS/REMARKS

pecial Handling and/or Storage

0K1022

Preservation	Cool 4C	Cool 4C	None
Type of Container	G	aG	G/P
No. of Container(s)	1	1	1
Volume	125mL 5	125g	100g
SAMPLE ANALYSIS	See item (1) in Special Instructions	TOC - 415.1	Particle Size (Dry Sieve) (422)

Sample No	Matrix *	Sample Date	Sample Time			
B1B0	OTHER SOLID	2/3/09	1410	X	X	X

CHAIN OF POSSESSION

Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
	2-3-09 / 1610		2-3-09 / 1610
	2/4/09 0830	B Woodland	2/4/09 0830
B Woodland	2/4/09 1130	FedEx	2/4/09 1130
	2-5-09 0915		2-5-09 0915

SPECIAL INSTRUCTIONS

5 410 / 2,400 F

(1) TPH Diesel Range - WTPH-D = (Total petroleum hydrocarbons - diesel range, Total petroleum hydrocarbons - motor oil (high boiling))

Matrix *
S = Soil
SE = Sediment
SO = Solid
SL = Sludge
W = Water
O = Oil
A = Air
DS = Drum Solids
DL = Drum Liquids
T = Tissue
WI = Wipe
L = Liquid
V = Vegetation
X = Other

ABORATORY SECTION	Received By	Title	Date/Time
NAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

RC-EE-011

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-116-759 Page 2 of 2

Collector L Smith	Company Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator WEISS, RL
Project Designation Columbia River Component of the RCBRA - Sediment	Sampling Location MOHR- / SD		SAF No. RC-116
Ice Chest No. WCH-08-012, 039, 053	Field Logbook No. EL 1631-1	COA BESCRC6530	Method of Shipment FED EX
Shipped To EBERLINE SERVICES (LIONVILLE)	Offsite Property No. N/A		Bill of Lading/Air Bill No. 796313456383

Price Code 9K

Data Turnaround 45 Days

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

Preservation	Cool 4C	Cool 4C	None
Type of Container	G	aG	G/P
No. of Container(s)	1	1	1
Volume	125mL 5	125g	1000g
SAMPLE ANALYSIS	[illegible]	TPH - 418.1	Particle Size (Dry Sieve) [illegible]

E20000

Sample No.	Matrix *	Sample Date	Sample Time			
B1B1	OTHER SOLID	2/3/09	1111	X	X	X

CHAIN OF POSSESSION Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
	2-3-09 / 1630		2-3-09 / 1630
Cot B	2/4/09 0830	B Woodward	2/4/09 0830
B Woodward	2/4/09 1130	Fed Ex	2/4/09 1120
Fed Ex	2-5-09 0915		2-5-09 0915

SPECIAL INSTRUCTIONS

5 [illegible]

LPI TPH-Diesel Range - WTPH-D+ (Total petroleum hydrocarbons - diesel range, Total petroleum hydrocarbons - motor oil (high boiling))

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location using custody of Cooler. By shipment today.

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

CH-CE-011

Washington Closure Hanford	**CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST**	RC-116-760	Page 2 of 2

ollector: L Stratton	Company Contact: JOAN KESSNER	Telephone No.: 375-4688	Project Coordinator: WEISS, RL
roject Designation: Columbia River Component of the RCBRA - Sediment	Sampling Location: MDDR- 2 SD		SAF No.: RC-116
e Chest No.: WCH-08-012,039,053	Field Logbook No.: EL-1631-1	COA: BESCRC6520	Method of Shipment: FED EX
hipped To: EBERLINE SERVICES (LIONVILLE)	Offsite Property No.: N/A		Bill of Lading/Air Bill No.: 796313456383

Price Code: 9K

Data Turnaround: 45 Days

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

0000024

Preservation	Cool 4C	Cool 4C	None
Type of Container	G	aG	G/P
No. of Container(s)	1	1	1
Volume	125mL 5	125g	2000g
SAMPLE ANALYSIS	See item (1) in Special Instructions	TOC - 415.1	Particle Size (Dry Sieve) - D422

Sample No.	Matrix *	Sample Date	Sample Time			
18182	OTHER SOLID	2/3/09	1150	X	X	X

CHAIN OF POSSESSION Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
	2-3-09 1630	Ref B	2-3-09 1630
Ref B	2/4/09 0830		2/4/09 0830
	2/4/08 1130	Fed Ex	2/4/09 1130
	2-5-09 0915		2-5-09 0915

SPECIAL INSTRUCTIONS

S 4/2/2008

(1) TPH-Diesel Range - WTPH-D + (Total petroleum hydrocarbons - diesel range, Total petroleum hydrocarbons - motor oil (high boiling))

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location, taking custody of samples for shipment to lab.

Matrix *

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

CH EE 015

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-116-761 | Page 2 of 2

ollector: L Spratt[illegible]

Company Contact: JOAN KESSNER | Telephone No.: 375-4688

Project Coordinator: WEISS, RL

Price Code: 9K | Data Turnaround: 45 Days

roject Designation: Columbia River Component of the RCBRA - Sediment

Sampling Location: MDBR-7 SD

SAF No.: RC-116

e Chest No.: WCH-08-012, 034, 053

Field Logbook No.: EL-1631-1

COA: BESCRC6520

Method of Shipment: FED EX

hipped To: LIBERTY SERVICES/ LIONVILLE

Offsite Property No.: N/A

Bill of Lading/Air Bill No.: 796313456383

OSSIBLE SAMPLE HAZARDS/REMARKS

pecial Handling and/or Storage

S200025

Preservation	Cool 4C	Cool 4C	None
Type of Container	G	aG	G/P
No. of Container(s)	1	1	1
Volume	125mL 5	125g	1000g
SAMPLE ANALYSIS	See item (1) in Special Instructions	TOC - 415.1	Particle Size (Dry Sieve) - D422

Sample No.	Matrix *	Sample Date	Sample Time			
B1B3	OTHER SOLID	2/3/09	13[illegible]	X	X	X

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
[illegible]	2/3/09 / 1650	[illegible]	2/3/09 / 1650
[illegible]	2/4/09 0830	BWoodward	2/4/09 0830
BWoodward	2/4/09 1130	Fed Ex	2/4/09 1130
Fed Ex	[illegible]	[illegible]	[illegible]

SPECIAL INSTRUCTIONS

[illegible] 12/10/08

(1) TPH-Diesel Range - WTPH-D+ (Total petroleum hydrocarbons - diesel range, Total petroleum hydrocarbons - motor oil (high boiling))

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab.

Matrix *

S = Soil
SE = Sediment
SO = Solid
SL = Sludge
W = Water
O = Oil
A = Air
DS = Drum Solids
DL = Drum Liquids
T = Tissue
WI = Wipe
L = Liquid
V = Vegetation
X = Other

ABORATORY SECTION | Received By | Title | Date/Time

NAL SAMPLE DISPOSITION | Disposal Method | Disposed By | Date/Time

01-EE-011

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-316-9 | Page 2 of 2

Collector BM	Company Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator WEISS, RL	Price Code 9K
Project Designation Columbia River Component of the RCBRA - Sediment	Sampling Location WP-15D		SAF No. RC-116	Data Turnaround 45 Days
Ice Chest No. WCH-08-012,034,053	Field Logbook No. EL-1631-1	COA BESCRC6520	Method of Shipment FED EX	
Shipped To EBERLINE SERVICES LIONVILLE	Offsite Property No. N/A		Bill of Lading/Air Bill No. 796313456383	

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

Preservation	Cool 4C	Cool 4C	Cool 4C	
Type of Container	G	aG	G/P	
No. of Container(s)	1	1	1	
Volume	125g 5	125ml	1000g	
SAMPLE ANALYSIS	See item (5) in Special Instructions	TPH - 418.1	Particle Size (Dry Sieve) - Dist	

Sample No.	Matrix *	Sample Date	Sample Time			
J17V87	OTHER SOLID	2/3/09	945	X	X	X

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
BM	2/3/09 1700	[illegible]	2/3/09 1700
Rof A	2/4/09 0830	BWoodward	2/4/09 0830
BWoodward	2/4/09 1130	Fed Ex	2/4/09 1130
[illegible]	2-5-09 0915	[illegible]	2-5-09 09:15

SPECIAL INSTRUCTIONS

5 [illegible]

(5) TPH-Diesel Range - WTPH-Dx (Total petroleum hydrocarbons - diesel range, Total petroleum hydrocarbons - motor oil (high boiling))

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EF-031

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-116-10

Page 2 of 2

Collector BM	Company Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator WEISS, RL
Project Designation Columbia River Component of the RCBRA - Sediment	Sampling Location WP-7SD		SAF No. RC-116
Ice Chest No. WCH-08-62, 034, 053	Field Logbook No. EL-1637-1	COA DESCRC6520	Method of Shipment FED EX
Shipped To FIBER INL SERVICES LIONVILLE	Offsite Property No. N/A		Bill of Lading/Air Bill No. 796313456383

Price Code 9K

Data Turnaround
45 Days

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

0000227

Preservation	Cool 4C	Cool 4C	Cool 4C
Type of Container	G	aG	G/P
No. of Container(s)	1	1	1
Volume	125g 5	125mL	1000g
SAMPLE ANALYSIS	Semivolatiles Special Compounds	TPH [illegible]	Particle Size (Dry Sieve) D422

Sample No.	Matrix *	Sample Date	Sample Time			
J17V88	OTHER SOLID	2/3/09	1115	X	X	X

CHAIN OF POSSESSION

Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
[illegible] 2/3/09		Fa A	2/3/09 [illegible]
Kurt A 2/4/09	0830	B Woodward	2/4/09 0830
B Woodward 2/4/09	1130	Fed Ex	2/4/09 1130
[illegible]	2-5-09 0915	[illegible]	2-5-09 0915
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time

SPECIAL INSTRUCTIONS

5 [illegible]

** TPH Diesel Range - WTPH-Dx {Total petroleum hydrocarbons - diesel range, Total petroleum hydrocarbons - motor oil (high boiling)}

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody signatures for shipment to lab

Matrix *

S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION Received By Title Date/Time

FINAL SAMPLE DISPOSITION Disposal Method Disposed By Date/Time

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-116-11	Page 2 of 2		
ollector TBM	Company Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator WEISS, RL
roject Designation Columbia River Component of the RCIRA - Sediment	Sampling Location WP-15D		SAF No. RC-116
ce Chest No. WCH-08-012, 029, 053	Field Logbook No. EL-1631-1	COA DESCRC6520	Method of Shipment FED EX
hipped To EBERLINE SERVICES (OAK RIDGE)	Offsite Property No. N/A		Bill of Lading/Air Bill No. 796313456383

Price Code 9K

Data Turnaround 45 Days

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

00000028

Preservation	Cool 4C	Cool 4C	Cool 4C
Type of Container	G	aG	G/P
No. of Container(s)	1	1	1
Volume	125g 5	125ml	1000g
SAMPLE ANALYSIS	See item (#) in Special Instructions	TOC - [illegible]	Particle Size (Dry Sieve) (D422)

Sample No.	Matrix *	Sample Date	Sample Time			
17V89	OTHER SOLID	2/3/09	~~023~~1315	X	X	X

CHAIN OF POSSESSION

Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Hayden Dirt Ap	2/3/09 1700	Eric A	2/3/09 1700
Eric A	2/4/09 0830	B. Wadsworth	2/4/09 0830
B. Wadsworth	2/4/09 1130	FedEx	2/4/09 1130
[illegible]	2-5-09 0915	[illegible]	2-5-09 0915

SPECIAL INSTRUCTIONS

5 Ash 11504

(#) TPH-Diesel Range - WTPH D - {Total petroleum hydrocarbons - diesel range, Total petroleum hydrocarbons - motor oil (high boiling)}

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab.

Matrix *

[illegible]

LABORATORY SECTION	Received By	Title
FINAL SAMPLE DISPOSITION	Disposal Method	Date/Time
	Disposed By	Date/Time

[illegible]

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-116-12

Page 2 of 2

Collector: TBM

Company Contact: JOAN KESSNER

Telephone No.: 375-4614

Project Coordinator: WEISS, RE

Price Code: 9K

Data Turnaround: 45 Days

Project Designation: Columbia River Component of the RCBRA - Sediment

Sampling Location: WP-4SD

SAF No.: RC-116

Ice Chest No.: WCH-08-02, 031, 053

Field Logbook No.: FL-1630-1

COA: DESCRC6520

Method of Shipment: FEDEX

Shipped To: [illegible] SERVICES [illegible]

Offsite Property No.: N/A

Bill of Lading/Air Bill No.: 796313456 383

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

Preservation	Cool 4C	Cool 4C	Cool 4C
Type of Container	G	aG	G/P
No. of Container(s)	1	1	1
Volume	125g 5	125mL	1000g
SAMPLE ANALYSIS	See item (1) in Special Instructions	TOC - 415.1	Particle Size (Dry Sieve) D422

Sample No.	Matrix *	Sample Date	Sample Time			
J17V90	OTHER SOLID	2/2/09	1220	X	X	X

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
[illegible]	2/3/09 1700	F C A	2/3/09 1700
FCA 2/4/09	0830	B Buckland	2/4/09 0830
B Buckland	2/4/09 1130	Fed Ex	2/4/09 1130
Fed Ex	2-5-09 0915	[illegible]	2-5-09 0915

SPECIAL INSTRUCTIONS

5 all/stor

(1) TPH-Diesel Range - WTPH-dx {Total petroleum hydrocarbons - diesel range; Total petroleum hydrocarbons - motor oil (high boiling)}

Samples unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab

Matrix *

[illegible]

LABORATORY SECTION Received By | Title | Date/Time

FINAL SAMPLE DISPOSITION Disposal Method | Disposed By | Date/Time

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-116-13 | Page 2 of 2

Collector B	**Company Contact** JOAN KESSNER	**Telephone No.** 375-4688	**Project Coordinator** WEISS, RL
Project Designation Columbia River Component of the RCBRA - Sediment	**Sampling Location** WP-5SD		**SAF No.** RC-116
Ice Chest No. WCH-08-02,034,053	**Field Logbook No.** EL-1611-1	**COA** BESCRC6520	**Method of Shipment** FEDEX
Shipped To EBERLINE SERVICES (LIONVILLE)	**Offsite Property No.** N/A		**Bill of Lading/Air Bill No.** 796313456383

Price Code 9K

Data Turnaround 45 Days

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

0050030

Preservation	Cool 4C	Cool 4C	Cool 4C
Type of Container	G	aG	G/P
No. of Container(s)	1	1	1
Volume	125g 5	125mL	1000g
SAMPLE ANALYSIS	See item (1) in Special Instructions	TOC - 415.1	Particle Size (Dry Sieve) D422

Sample No.	Matrix *	Sample Date	Sample Time			
B7V91	OTHER SOLID	2/3/09	1422	X	X	X

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
	2/3/09 1700		2/3/09 1700
	2/4/09 0830	B Woodward	2/4/09 0830
Woodward	2/4/09 1130	Fed EX	2/4/09 1130
	2-5-09 0915		2-5-09 0915

SPECIAL INSTRUCTIONS

SAN NEFF

(1) TPH-Diesel Range - WTPH-Dx {Total petroleum hydrocarbons - diesel range, Total petroleum hydrocarbons - motor oil (high boiling)}

Sample unavailable to remove samples from controlled storage. Shipper removed samples from storage location during custody 2 samples for shipment to lab

Matrix *

S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

[illegible]-E-011

Washington Closure Hanford | **CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST** | RC-116-14 | Page 2 of 2

Collector B-h	Company Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator WEISS, RL
Project Designation Columbia River Component of the RCBRA - Sediment	Sampling Location WP-65D		SAF No. RC-116
Ice Chest No. WCH-09 012,034,053	Field Logbook No. EL-1610-1	COA BESCRC6520	Method of Shipment FED EX
Shipped To EBERLINE SERVICES (LIONVILLE)	Offsite Property No. N/A		Bill of Lading/Air Bill No. 796313456383

Price Code 9K

Data Turnaround 45 Days

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

000031

Preservation	Cool 4C	Cool 4C	Cool 4C
Type of Container	G	aG	G/P
No. of Container(s)	1	1	1
Volume	125g	125mL	1000g
SAMPLE ANALYSIS	See item (1) in Special Instructions	TOC - 415.1	Particle Size (Dry Sieve) - D422

Sample No.	Matrix *	Sample Date	Sample Time			
J17V02	OTHER SOLID	2/3/09	1430	X	X	X

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
RM Lee 1541X	2/3/09 1700	Fr. A	2/3/09 1700
Ref A	2/4/09 0830	B. Woodward	2/4/09 0830
B. Woodward	2/4/09 1130	FedEx	2/4/09 1130
	2-5-09 0945		2-5-09 0945

SPECIAL INSTRUCTIONS

5 of 8 #508

(1) TPH-Diesel Range - WTPH-Dx {Total petroleum hydrocarbons - diesel range; Total petroleum hydrocarbons - motor oil (high boiling)}

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment 10420

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION | Received By | Title | Date/Time

FINAL SAMPLE DISPOSITION | Disposal Method | Disposed By | Date/Time

WCH-EE-011

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-116-82 Page 2 of 2

Collector: LS

Company Contact: JOAN KESSNER

Telephone No.: 375-4688

Project Coordinator: WEISS, RL

Price Code: 9K

Data Turnaround: 45 Days

Project Designation: Columbia River Component of the RCRRA - Sediment

Sampling Location: AREA - 410

SAF No.: RC 116

Ice Chest No.: WH-08-DI2,034,163

Field Logbook No.: EL-1610-1

COA: DESCRC6530

Method of Shipment: FED EX

Shipped To: EBERLINE SERVICES [✓ LIONVILLE]

Offsite Property No.: N/A

Bill of Lading/Air Bill No.: 796313456383

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

Preservation	Cool 4C	Cool 4C	Cool 4C
Type of Container	G	aG	G/P
No. of Container(s)	1	1	1
Volume	125g	125ml	1500g
SAMPLE ANALYSIS	See item (1) in Special Instructions	TOC - [illegible]	Particle Size (Dry Sieve) [illegible]

Sample No.	Matrix *	Sample Date	Sample Time			
J17VP0	OTHER SOLID	2/3/09	1030	X	X	X

CHAIN OF POSSESSION

Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
	2-3-09 / 1630		2-3-09 / 1630
	2/4/09 0830	BWoodward	2/4/09 0830
BWoodward	2/4/09 1130	FedEx	2/4/09 1130
	2-5-09 0915		2-5-09 0915

SPECIAL INSTRUCTIONS

(1) TPH Diesel Range - WTPH-Dx (Total petroleum hydrocarbons - diesel range, Total petroleum hydrocarbons - motor oil (high boiling))

Sample unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab

Matrix *

LABORATORY SECTION Received By Date/Time

FINAL SAMPLE DISPOSITION Disposal Method Disposed By Date/Time

BC-EE-011

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-116-87

Page 2 of 2

Collector: [illegible]

Company Contact: JOAN KESSNER

Telephone No.: 375-4688

Project Coordinator: WEISS, RL

Price Code: 9K

Data Turnaround: 45 Days

Project Designation: Columbia River Component of the RCBRA - Sediment

Sampling Location: ~~[illegible]~~ WP-15D

SAF No.: RC-116

Ice Chest No.: WCH-02-012, 034, 053

Field Logbook No.: EL-1631-1

COA: HESCRC6520

Method of Shipment: FED EX

Shipped To: EBERLINE SERVICES (TONSVILLE)

Offsite Property No.: N/A

Bill of Lading/Air Bill No.: 796313456383

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

Preservation	Cool 4C	Cool 4C	Cool 4C
Type of Container	G	aG	G/P
No. of Container(s)	1	1	1
Volume	125g	125mL	1000g
SAMPLE ANALYSIS	5 See sample/Special Instructions	TOC - 415.1	Particle Size (Dry Sieve) - D422

Sample No.	Matrix *	Sample Date	Sample Time			
J17VP5	OTHER SOLID	2/3/09	~~0945~~ 1025	X	X	X

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
[illegible]	2/4/09 1200	[illegible]	2/3/09 1200
[illegible]	2/4/09 0830	B Woodward	2/4/09 0830
B Woodward	2/4/09 1130	FedEx	2/4/09 1130
[illegible]	2-5-09 0915	[illegible]	2-5-09 0915

SPECIAL INSTRUCTIONS

5 [illegible]

~~#~~ TPH-Diesel Range - WTPH-Dx (Total petroleum hydrocarbons - diesel range, Total petroleum hydrocarbons - motor oil (high boiling))

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab.

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION — Received By: Date/Time

FINAL SAMPLE DISPOSITION — Disposal Method: Disposed By: Date/Time

CH-EE-011

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-116-720	Page 2 of 2

llector [illegible]	Company Contact JOAN KESSNER	Telephone No. 375 4688	Project Coordinator WEISS, RL
oject Designation Columbia River Component of the RCBRA - Sediment	Sampling Location PM- / SD		SAF No. RC-116
e Chest No. WCH - 08 012, 034, 053	Field Logbook No. EL-1630-1	COA [illegible]	Method of Shipment FEDEX
ipped To EBERLINE SERVICES - [illegible]	Offsite Property No. N/A		Bill of Lading/Air Bill No. 776313456383

Price Code 9K

Data Turnaround 45 Days

OSSIBLE SAMPLE HAZARDS/REMARKS

pecial Handling and/or Storage

000034

Preservation	Cool 4C	Cool 4C	None
Type of Container	G	aG	G/P
No. of Container(s)	1	1	1
Volume	125mL 5	125g	100g
SAMPLE ANALYSIS	See Item (1) in Special Instructions	[illegible]	Particle Size (Dry Sieve) (Only)

Sample No.	Matrix *	Sample Date	Sample Time			
69W8	OTHER SOLID	2/2/09	1130	X	X	X

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Bittig L	2/2/09 1715		2/2/09 1715
	2/4/09 0830	SL Woodward	2/4/09 0830
SL Woodward	2/4/09 1130	Fed Ex	2/4/09 1130
Fed Ex	2-5-09 0915		2-5-09 0915

SPECIAL INSTRUCTIONS

[illegible]

☑ TPH-Diesel Range - WTPH-D + (Total petroleum hydrocarbons - diesel range. Total petroleum hydrocarbons - motor oil (high boiling))

Sampler available to remove samples
from controlled storage. Shipper removed
samples from storage location taking custody
of samples for shipment to lab.

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

BORATORY SECTION	Received By	Title	Date/Time
NAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

EE 011

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-116-721

Page 2 of 2

ollector: [illegible]

Company Contact: JOAN KESSNER

Telephone No.: 375-4688

Project Coordinator: WEISS, RL

Price Code: 9K

Data Turnaround: 45 Days

roject Designation: Columbia River Component of the RCBRA - Sediment

Sampling Location: PA- 2 SD

SAF No.: RC-116

e Chest No: WCH-08-012, 034, 053

Field Logbook No.: EL-1617-1

COA: BESCRC6520

Method of Shipment: FED EX

hipped To: EBERLINE SERVICES LIONVILLE

Offsite Property No.: N/A

Bill of Lading/Air Bill No.: 796313456383

OSSIBLE SAMPLE HAZARDS/REMARKS

pecial Handling and/or Storage

000035

Preservation		Cool 4C	Cool 4C	None
Type of Container		G	aG	aP
No. of Container(s)		1	1	1
Volume		125mL 5	125g	1000g
SAMPLE ANALYSIS		Semivolatiles Special (Semivolatiles)	TOC 415.1	Particle Size (Dry Sieve) D422

Sample No.	Matrix *	Sample Date	Sample Time			
180W3	OTHER SOLID	2/2/09	1230	X	X	X

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Scott Maylor [illegible]	2/2/09 1715	[illegible]	2/2/09 1715
[illegible]	2/4/09 0830	D. Heidelberg	2/4/09 0830
Heidelberg	2/4/09 1130	FedEx 2/4/09	1130
[illegible]	2-5-09 0715	[illegible]	2-5-09 0715

SPECIAL INSTRUCTIONS

5 AAG 2-9-09

TPH-Diesel Range - WTPH-D + (Total petroleum hydrocarbons - diesel range, Total petroleum hydrocarbons - motor oil (high boiling))

Sampler unavailable to retrieve samples from cold/locked storage. Shipper removed samples from storage location taking custody of samples for shipment to lab

Matrix *
S = Soil
SE = Sediment
SO = Solid
SL = Sludge
W = Water
O = Oil
A = Air
DS = Drum Solids
DL = Drum Liquids
T = Tissue
WI = Wipe
L = Liquid
V = Vegetation
X = Other

ABORATORY SECTION — Received By: Title: Date/Time:

NAL SAMPLE DISPOSITION — Disposal Method: Disposed By: Date/Time:

Appendix 5

Data Validation Supporting Documentation

GENERAL CHEMISTRY ANALYSIS DATA VALIDATION CHECKLIST

VALIDATION LEVEL:	A	B	[✓ C]	D	E

PROJECT: RCBRA

DATA PACKAGE: K1525

VALIDATOR: ELR

LAB: LLI

DATE: 11/9/09

SDG: K1525

ANALYSES PERFORMED					
Anions/IC	[✓ TOC]	TOX	TPH-418.1	Oil and Grease	Alkalinity
Ammonia	BOD/COD	Chloride	Chromium-VI	pH	NO_2/NO_3
Sulfate	TDS	TKN	Phosphate		

SAMPLES/MATRIX

J18157-A J18158-A J18159-A J18160-A J18177

J18178 J18179 J18180 J18181 J18182 J18183

J17V87 J17V88 J17V89 J17V90 J17V91 J17V92

J17VP4 J17VP5 J180W8-A J180W9-A

solid

1. DATA PACKAGE COMPLETENESS AND CASE NARRATIVE

Technical verification documentation present? .... Yes [✓ No] N/A

Comments:

2. INSTRUMENT PERFORMANCE AND CALIBRATIONS (Levels D and E)

Initial calibrations performed on all instruments? .... Yes No [✓ N/A]

Initial calibrations acceptable? .... Yes No [✓ N/A]

ICV and CCV checks performed on all instruments? .... Yes No [✓ N/A]

ICV and CCV checks acceptable? .... Yes No [✓ N/A]

Standards traceable? .... Yes No [✓ N/A]

Standards expired? .... Yes No [✓ N/A]

Calculation check acceptable? .... Yes No [✓ N/A]

Comments:

GENERAL CHEMISTRY ANALYSIS DATA VALIDATION CHECKLIST

3. BLANKS (Levels B, C, D, and E)

ICB and CCB checks performed for all applicable analyses? (Levels D, E) .... Yes No [✓ N/A]
ICB and CCB results acceptable? (Levels D, E) .... Yes No [✓ N/A]
Laboratory blanks analyzed? .... [✓ Yes] No N/A
Laboratory blank results acceptable? .... [✓ Yes] No N/A
Field blanks analyzed? (Levels C, D, E) .... Yes [✓ No] N/A
Field blank results acceptable? (Levels C, D, E) .... Yes No [✓ N/A]
Transcription/calculation errors? (Levels D, E) .... Yes No [✓ N/A]
Comments: no FB

4. ACCURACY (Levels C, D, and E)

Spike samples analyzed? .... [✓ Yes] No N/A
Spike recoveries acceptable? .... [✓ Yes] No N/A
Sike standards NIST traceable? (Levels D, E) .... Yes No [✓ N/A]
Spike standards expired? (Levels D, E) .... Yes No [✓ N/A]
LCS/BSS samples analyzed? .... [✓ Yes] No N/A
LCS/BSS results acceptable? .... [✓ Yes] No N/A
Standards traceable? (Levels D, E) .... Yes No [✓ N/A]
Standards expired? (Levels D, E) .... Yes No [✓ N/A]
Transcription/calculation errors? (Levels D, E) .... Yes No [✓ N/A]
Performance audit sample(s) analyzed? .... Yes [✓ No] N/A
Performance audit sample results acceptable? .... Yes No [✓ N/A]
Comments: no PAS

No MS - 90 - W9-A - J all

GENERAL CHEMISTRY ANALYSIS DATA VALIDATION CHECKLIST

5. PRECISION (Levels C, D, and E)

Duplicate RPD values acceptable? .... [✓ Yes] No N/A

Duplicate results acceptable? .... [✓ Yes] No N/A

MS/MSD standards NIST traceable? (Levels D, E) .... Yes No [✓ N/A]

MS/MSD standards expired? (Levels D, E) .... Yes No [✓ N/A]

Field duplicate RPD values acceptable? .... Yes [✓ No] N/A

Field split RPD values acceptable? .... Yes No [✓ N/A]

Transcription/calculation errors? (Levels D, E) .... Yes No [✓ N/A]

Comments:

Fld dup = 90 thru W9-9 - J all

FD - RPD - 43 %

6. HOLDING TIMES (all levels)

Samples properly preserved? .... [✓ Yes] No N/A

Sample holding times acceptable? .... [✓ Yes] No N/A

Comments:

GENERAL CHEMISTRY ANALYSIS DATA VALIDATION CHECKLIST

7. RESULT QUANTITATION AND DETECTION LIMITS (all levels)

Results reported for all requested analyses? .... [✓ Yes] No N/A
Results supported in the raw data? (Levels D, E) .... Yes No [✓ N/A]
Samples properly prepared? (Levels D, E) .... ~~Yes~~ No [✓ N/A]
Detection limits meet RDL? .... [✓ Yes] No N/A
Transcription/calculation errors? (Levels D, E) .... Yes No [✓ N/A]

Comments:

Appendix 6

Additional Documentation Requested by Client

WC Hanford, Inc. 2620 Fermi Avenue Richland WA, 99354	Project: RC-116 Project Number: K1525 Project Manager: Joan Kessner	**Reported:** 04/23/2009 13:10

Wet Chemistry - Quality Control

Lionville Laboratory

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch L902179 - Default Prep GenChem										
Blank (L902179-BLK1)				Prepared & Analyzed: 02/09/2009						
Total Organic Carbon	8.32	20.00	mg/kg							
LCS (L902179-BS1)				Prepared & Analyzed: 02/09/2009						
Total Organic Carbon	990.67	20.00	mg/kg	1000.00		97.7	80-120			
Duplicate (L902179-DUP1)		Source: 0902012-05		Prepared & Analyzed: 02/09/2009						
Total Organic Carbon	1264.8	20.00	mg/kg		1239.5			2.02	20	
Matrix Spike (L902179-MS1)		Source: 0902012-05		Prepared & Analyzed: 02/09/2009						
Total Organic Carbon	6189.3	20.00	mg/kg	5063.1	1239.5	97.8	75-125			
Batch L902182 - Default Prep GenChem										
Blank (L902182-BLK1)				Prepared & Analyzed: 02/10/2009						
Total Organic Carbon	6.50	20.00	mg/kg							
LCS (L902182-BS1)				Prepared & Analyzed: 02/10/2009						
Total Organic Carbon	185.06	20.00	mg/kg	192.00		96.4	80-120			

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Nicki Perrone For Odette Johnson, Project Manager

Date: 8 December 2009
To: Washington Closure Hanford (technical representative)
From: ELR Consultants
Project: Columbia River Component of the RCBRA - Sediment
Subject: Semivolatile/DRO - Data Package No. K1525-LLI

INTRODUCTION

This memo presents the results of data validation on Data Package No. K1525 prepared by Lionville Laboratory Inc. (LLI). A list of samples validated along with the analyses reported and the method of analysis is provided in the following table.

Sample ID	Sample Date	Media	Validation	Anaysis
J18157-A	2/2/09	Solid	C	See note 1
J18158-A	2/2/09	Solid	C	See note 1
J18177	2/3/09	Solid	C	See note 1 & 2
J18198	2/3/09	Solid	C	See note 1 & 2
J18199	2/3/09	Solid	C	See note 1 & 2
J181B0	2/3/09	Solid	C	See note 1 & 2
J181B1	2/3/09	Solid	C	See note 1 & 2
J181B2	2/3/09	Solid	C	See note 1 & 2
J181B3	2/3/09	Solid	C	See note 1 & 2
J17V87	2/3/09	Solid	C	See note 1 & 2
J17V88	2/3/09	Solid	C	See note 1 & 2
J17V89	2/3/09	Solid	C	See note 1 & 2
J17V90	2/3/09	Solid	C	See note 1 & 2
J17V91	2/3/09	Solid	C	See note 1 & 2
J17V92	2/3/09	Solid	C	See note 1 & 2
J17VP0	2/3/09	Solid	C	See note 1 & 2
J17VP5	2/3/09	Solid	C	See note 1 & 2
J180W8-A	2/2/09	Solid	C	See note 1 & 2
J180W9-A	2/2/09	Solid	C	See note 1 & 2

1 – Semivolatiles by 8270 & diesel range organics by 8015D.

Data validation was conducted in accordance with the Washington Closure Hanford (WCH) validation statement of work and the Remedial Investigation Work Plan for Hanford Site Releases to the Columbia River (DOE/RL-2008-11, Rev. 0, September 2008). Appendices 1 through 6 provide the following information as indicated below:

Appendix 1. Glossary of Data Reporting Qualifiers
Appendix 2. Summary of Data Qualification
Appendix 3. Qualified Data Summary and Annotated Laboratory Reports
Appendix 4. Laboratory Narrative and Chain of Custody Documentation
Appendix 5. Data Validation Supporting Documentation
Appendix 6. Additional Data Requested by Client

DATA QUALITY OBJECTIVES

- **Holding Times & Sample Preservation**

Analytical holding times were assessed to ascertain whether the holding time requirements were met by the laboratory. The holding time requirements are as follows: Samples must be extracted within 14 days of the date of sample collection and analyzed within 40 days from the date of extraction.

If holding times are exceeded, but not by greater than two times the limit, all associated sample results are qualified as estimates and flagged "J" for detects and "UJ" for non-detects. If holding times are exceeded by greater than two times the limit, all associated detectable sample results are qualified as estimates and flagged "J" and all non-detects are rejected and flagged "UR".

All holding times were acceptable.

Method Blanks

Method blank analyses are conducted to determine the extent of laboratory contamination introduced through sampling, sample preparation and analysis. At least one acceptable method blank analysis must be conducted for every 20 samples. No contaminants should be present in the method blank. Analytical results for analytes present in any sample at less than five times the concentration of that analyte found in the associated blank are qualified as non-detects and flagged "U". Common laboratory contaminants present in samples at less than ten times the concentration of that analyte found in the associated blank are qualified as non-detects. If a sample result is less than the CRQL and is less than five times (or less than ten times for lab contaminants) the highest associated blank result, the sample result value is raised to the CRQL level and qualified as undetected "U".

Due to method blank contamination, all motor oil results (except J17VP0, J17VB0, J18177 and J18198) were qualified as undetected and flagged "U".

All other method blank results were acceptable.

Field Blanks

No field blanks were submitted for analysis.

- **Accuracy**

Matrix Spike/Matrix Spike Duplicate & Blank Spike Recoveries

Matrix spike/matrix spike duplicate analyses are used to assess the analytical accuracy of the reported data and the effect of the matrix on the ability to accurately quantify sample concentrations. Matrix spike/matrix spike duplicate analyses are performed in duplicate using five compounds for which percent recoveries must be within a range of 50-150% or within laboratory control limits. If spike recoveries are outside control limits, detected sample results less than five times the spike concentration are qualified as estimates and flagged "J". Undetected sample results with spike recoveries below control limits are qualified as estimates and flagged "UJ". Undetected sample results are not qualified if the spike recovery is above control limits. Sample results greater than five times the spike concentration require no qualification.

Due to the lack of a matrix spike, matrix spike duplicate and LCS analysis, all motor oil results were qualified as estimates and flagged "J".

Due to matrix spike recovery outside QC limits, all hexachloroethane (44%), 4-chloroanaline (29%), hexachlorocyclopentadiene (0%) and 3,3-dichlorobenzidine (0%) results were qualified as estimates and flagged "J".

Due to a matrix spike duplicate recovery outside QC limits, all hexachloroethane (38%), 4-chloroanaline (28%), hexachlorocyclopentadiene (0%) and 3,3-dichlorobenzidine (0%) results were qualified as estimates and flagged "J".

All other accuracy results were acceptable.

Surrogate Recovery

The analyses of surrogate compounds provide a measure of performance for individual samples. Matrix-specific surrogate compound recovery control windows have been established by the EPA CLP program. If two surrogates of the same class of compounds (base/neutral or acid) are out of control limits, all associated sample results greater than the contract required quantitation limit (CRQL) are qualified as estimates and flagged "J". Sample results less than the CRQL and below the lower control limit are qualified as estimates and flagged "UJ". Sample results less than the CRQL with recoveries above the upper control limit require no qualification. If a surrogate recovery is less than 10%, detects are qualified as estimates and flagged "J" and nondetects are rejected and flagged "UR".

Due surrogate recoveries outside QC limits, all semivolatile results in sample J17VP5 (except naphthalene, acenaphthylene, acenaphthene, fluorene, phenanthrene, anthracene, fluoranthene, pyrene, benzo(a)anthracene, chrysene, benzo(b)fluoranthrene, benzo(k)fluoranthene, benzo(a)pyrene, indeno(1,2,3-c,d)pyrene and benzo(g,h,i)perylene) were qualified as estimates and flagged "J".

All other surrogate results were acceptable.

- Precision

Matrix Spike/Matrix Spike Duplicate Samples

Matrix spike (MS)/matrix spike duplicate (MSD) results provide matrix-specific information on the precision of the method for specific target compound classes. Precision is expressed by the relative percent difference (RPD) between the recoveries of duplicate matrix spike analyses performed on a sample. Samples results must be within RPD limits of +/-30%. If RPD values are out of specification and the sample concentration is less than five times the spike concentration, all associated detected sample results are qualified as estimates and flagged "J". If RPD values are out of specification and the sample concentration is greater than five times the spike concentration, no qualification is required.

Due to the lack of a matrix spike and matrix spike recovery, all hexachlorocyclopentadiene and 3,3-dichlorobenzidine results were qualified as estimates and flagged "J".

Due to RPDs outside QC limits, all 4-nitrophenol (45%) and pentachlorophenol (44%) results were qualified as estimates and flagged "J".

Due to the lack of a matrix spike and matrix spike duplicate analysis, all motor oil results were qualified as estimates and flagged "J".

All other precision results were acceptable.

Field Duplicate Samples

Two sets of field duplicates (J18177/J17VP0 & J17V87/J17VP5) were submitted for analysis. Field duplicates are compared using the same criteria as for laboratory duplicates. All field duplicates results were acceptable.

- **Analytical Detection Levels**

Reported analytical detection levels are compared against the required quantitation limits (RQL's) to ensure that laboratory detection levels meet the required criteria. All semivolatile analytes exceeded the RQL. Under the WCH statement of work, no qualification is required.

- **Completeness**

Data package No. K1525 was submitted for validation and verified for completeness. Completeness is based on the percentage of data determined to be valid (i.e., not rejected). The completion percentage was 100%.

MAJOR DEFICIENCIES

None found.

MINOR DEFICIENCIES

The following minor deficiencies were noted:

- Due to method blank contamination, all motor oil results (except J17VP0, J17VB0, J18177 and J18198) were qualified as undetected and flagged "U".
- Due to the lack of a matrix spike, matrix spike duplicate and LCS analysis, all motor oil results were qualified as estimates and flagged "J".
- Due to matrix spike recovery outside QC limits, all hexachloroethane (44%), 4-chloroanaline (29%), hexachlorocyclopentadiene (0%) and 3,3-dichlorobenzidine (0%) results were qualified as estimates and flagged "J".
- Due to a matrix spike duplicate recovery outside QC limits, all hexachloroethane (38%), 4-chloroanaline (28%), hexachlorocyclopentadiene (0%) and 3,3-dichlorobenzidine (0%) results were qualified as estimates and flagged "J".
- Due surrogate recoveries outside QC limits, all semivolatile results (except naphthalene, acenaphthylene, acenaphthene, fluorene, phenanthrene, anthracene, fluoranthene, pyrene, benzo(a)anthracene, chrysene, benzo(b)fluoranthrene, benzo(k)fluoranthene, benzo(a)pyrene, indeno(1,2,3-c,d)pyrene and benzo(g,h,i)perylene) in sample J17VP5 were qualified as estimates and flagged "J".
- Due to the lack of a matrix spike and matrix spike recovery, all hexachlorocyclopentadiene and 3,3-dichlorobenzidine results were qualified as estimates and flagged "J".
- Due to RPDs outside QC limits, all 4-nitrophenol (45%) and pentachlorophenol (44%) results were qualified as estimates and flagged "J".

Data flagged "J" indicates that the associated concentration is an estimate, but under the WCH statement of work, the data may be usable for decision-making purposes. All other validated results are considered accurate within the standard error associated with the methods.

All semivolatile analytes exceeded the RQL. Under the WCH statement of work, no qualification is required.

REFERENCES

Washington Closure Hanford Contract #S00W307A00 (March 2008). *Data Validation Services.*

DOE/RL-2008-11, Rev.0, *Remedial Investigation Work Plan for Hanford Site Releases to the Columbia River*, September 2008.

Appendix 1

Glossary of Data Reporting Qualifiers

Qualifiers which may be applied by data validators in compliance with the WCH validation SOW are as follows:

U - Indicates the compound or analyte was analyzed for and not detected in the sample The value reported is the same quantitation limit corrected for sample dilution and moisture content by the laboratory.

UJ - Indicates the compound or analyte was analyzed for and not detected in the sample. Due to a minor QC deficiency identified during the data validation, the associated quantitation limit is an estimate.

J - Indicates the compound or analyte was analyzed for and detected. Due to a minor QC deficiency identified during the data validation, the associated quantitation limit is an estimate.

R - Indicates the compound or analyte was analyzed for, detected, and due to an identified major QC deficiency, the data are unusable.

UR - Indicates the compound or analyte was analyzed for and not detected in the sample. Additionally, the data is unusable due to an identified major QC deficiency.

NJ - Indicates presumptive evidence of a compound at an estimated value. The data may not be valid for some specific applications (i.e., usable for decision-making purposes).

N - Indicates presumptive evidence of a compound. The data may not be valid for some specific applications usable for decision-making purposes).

Appendix 2

Summary of Data Qualification

SEMIVOLATILE/DRO ORGANIC DATA QUALIFICATION SUMMARY*

SDG: K1525	**REVIEWER: ELR**	**Project: RCBRA**	**QC Issue**
COMPOUND	QUALIFIER	SAMPLES AFFECTED	REASON
Motor oil	U	All (except J17VP0, J17VB0, J18177 and J18198)	Method blank contamination
Motor oil	J	All	No MS, MSD or LCS analysis
Hexachloroethane 4-chloroanaline hexachlorocyclopentadiene 3,3-dichlorobenzidine	J	All	MS and MSD recovery
All (except naphthalene, acenaphthylene, acenaphthene, fluorene, phenanthrene, anthracene, fluoranthene, pyrene, benzo(a)anthracene, chrysene, benzo(b)fluoranthrene, benzo(k)fluoranthene, benzo(a)pyrene, indeno(1,2,3-c,d)pyrene and benzo(g,h,i)perylene)	J	J17VP5	Surrogate recovery
hexachorocyclopentadiene 3,3-dichlorobenzidine 4-nitrophenol pentachlorophenol	J	All	RPD

* - The Qualified Data Summary Table includes laboratory applied "U" qualifiers not specifically identified here. The laboratory applied "U" qualifiers are included to minimize misinterpretation of results contained in the table.

Appendix 3

Qualified Data Summary and Annotated Laboratory Reports

WC-Hanford, Inc 2620 Fermi Avenue Richland WA, 99354	Project: RC-116 Project Number: K1575 Project Manager: Joan Kessner	Reported: 10/10/2009 12:55

J18157-A
0902012-01 (Solid)

Lionville Laboratory

Vl 11/20/09

Semivolatile Organic Compounds by SW846 8270C

Analyte	Result and Qualifier	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
1,2,4-Trichlorobenzene	660 U	660	ug/kg	2	L902069	02/11/2009	02/16/2009	8270C
1,2-Dichlorobenzene	660 U	660	ug/kg	2	L902069	02/11/2009	02/16/2009	8270C
1,3-Dichlorobenzene	660 U	660	ug/kg	2	L902069	02/11/2009	02/16/2009	8270C
1,4-Dichlorobenzene	660 U	660	ug/kg	2	L902069	02/11/2009	02/16/2009	8270C
2,4,5-Trichlorophenol	660 U	660	ug/kg	2	L902069	02/11/2009	02/16/2009	8270C
2,4,6-Trichlorophenol	660 U	660	ug/kg	2	L902069	02/11/2009	02/16/2009	8270C
2,4-Dichlorophenol	660 U	660	ug/kg	2	L902069	02/11/2009	02/16/2009	8270C
2,4-Dimethylphenol	660 U	660	ug/kg	2	L902069	02/11/2009	02/16/2009	8270C
2,4-Dinitrophenol	3300 U	3300	ug/kg	2	L902069	02/11/2009	02/16/2009	8270C
2,4-Dinitrotoluene	660 U	660	ug/kg	2	L902069	02/11/2009	02/16/2009	8270C
2,6-Dinitrotoluene	660 U	660	ug/kg	2	L902069	02/11/2009	02/16/2009	8270C
2-Chloronaphthalene	660 U	660	ug/kg	2	L902069	02/11/2009	02/16/2009	8270C
2-Chlorophenol	660 U	660	ug/kg	2	L902069	02/11/2009	02/16/2009	8270C
2-Methylnaphthalene	660 U	660	ug/kg	2	L902069	02/11/2009	02/16/2009	8270C
2-Methylphenol	660 U	660	ug/kg	2	L902069	02/11/2009	02/16/2009	8270C
2-Nitroaniline	3300 U	3300	ug/kg	2	L902069	02/11/2009	02/16/2009	8270C
2-Nitrophenol	660 U	660	ug/kg	2	L902069	02/11/2009	02/16/2009	8270C
3,3'-Dichlorobenzidine	1320 U J	1320	ug/kg	2	L902069	02/11/2009	02/16/2009	8270C
3-Nitroaniline	3300 U	3300	ug/kg	2	L902069	02/11/2009	02/16/2009	8270C
4,6-Dinitro-2-methylphenol	660 U	660	ug/kg	2	L902069	02/11/2009	02/16/2009	8270C
4-Bromophenyl Phenyl Ether	660 U	660	ug/kg	2	L902069	02/11/2009	02/16/2009	8270C
4-Chloro-3-methylphenol	660 U	660	ug/kg	2	L902069	02/11/2009	02/16/2009	8270C
4-Chloroaniline	660 U J	660	ug/kg	2	L902069	02/11/2009	02/16/2009	8270C
4-Chlorophenyl Phenyl Ether	660 U	660	ug/kg	2	L902069	02/11/2009	02/16/2009	8270C
4-Methylphenol	660 U	660	ug/kg	2	L902069	02/11/2009	02/16/2009	8270C
4-Nitroaniline	3300 U	3300	ug/kg	2	L902069	02/11/2009	02/16/2009	8270C
4-Nitrophenol	3300 U	3300	ug/kg	2	L902069	02/11/2009	02/16/2009	8270C
Acenaphthene	660 U	660	ug/kg	2	L902069	02/11/2009	02/16/2009	8270C
Acenaphthylene	660 U	660	ug/kg	2	L902069	02/11/2009	02/16/2009	8270C
Anthracene	660 U	660	ug/kg	2	L902069	02/11/2009	02/16/2009	8270C
Benz[a]anthracene	660 U	660	ug/kg	2	L902069	02/11/2009	02/16/2009	8270C
Benzo[a] pyrene	660 U	660	ug/kg	2	L902069	02/11/2009	02/16/2009	8270C
Benzo[b] fluoranthene	660 U	660	ug/kg	2	L902069	02/11/2009	02/16/2009	8270C
Benzo[g,h,i] perylene	660 U	660	ug/kg	2	L902069	02/11/2009	02/16/2009	8270C
Benzo[k] fluoranthene	660 U	660	ug/kg	2	L902069	02/11/2009	02/16/2009	8270C
Bis(2-chloroethoxy) methane	660 U	660	ug/kg	2	L902069	02/11/2009	02/16/2009	8270C
Bis(2-chloroethyl) ether	660 U	660	ug/kg	2	L902069	02/11/2009	02/16/2009	8270C
Bis(2-chloroisopropyl) ether	660 U	660	ug/kg	2	L902069	02/11/2009	02/16/2009	8270C
Bis(2-ethylhexyl) phthalate	660 U	660	ug/kg	2	L902069	02/11/2009	02/16/2009	8270C

9

WC-Hanford, Inc
2620 Fermi Avenue
Richland WA, 99354

Project: RC-116
Project Number: K1525
Project Manager: Joan Kessner

Reported:
10/10/2009 12:55

J18157-A
0902012-01 (Solid)

Lionville Laboratory

11/20/09

Semivolatile Organic Compounds by SW846 8270C

Analyte	Result and Qualifier	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Butyl Benzyl Phthalate	660 U	660	ug/kg	2	1902069	02/11/2009	02/16/2009	8270C
Carbazole	660 U	660	ug/kg	2	1902069	02/11/2009	02/16/2009	8270C
Chrysene	660 U	660	ug/kg	2	1902069	02/11/2009	02/16/2009	8270C
Dibenz[a,h]anthracene	660 U	660	ug/kg	2	1902069	02/11/2009	02/16/2009	8270C
Dibenzofuran	660 U	660	ug/kg	2	1902069	02/11/2009	02/16/2009	8270C
Diethyl Phthalate	660 U	660	ug/kg	2	1902069	02/11/2009	02/16/2009	8270C
Dimethyl Phthalate	660 U	660	ug/kg	2	1902069	02/11/2009	02/16/2009	8270C
Di-n-butyl Phthalate	660 U	660	ug/kg	2	1902069	02/11/2009	02/16/2009	8270C
Di-n-octyl Phthalate	660 U	660	ug/kg	2	1902069	02/11/2009	02/16/2009	8270C
Fluoranthene	660 U	660	ug/kg	2	1902069	02/11/2009	02/16/2009	8270C
Fluorene	660 U	660	ug/kg	2	1902069	02/11/2009	02/16/2009	8270C
Hexachlorobenzene	660 U	660	ug/kg	2	1902069	02/11/2009	02/16/2009	8270C
Hexachlorobutadiene	660 U	660	ug/kg	2	1902069	02/11/2009	02/16/2009	8270C
Hexachlorocyclopentadiene	660 U J	660	ug/kg	2	1902069	02/11/2009	02/16/2009	8270C
Hexachloroethane	660 U J	660	ug/kg	2	1902069	02/11/2009	02/16/2009	8270C
Indeno[1,2,3-cd]pyrene	660 U	660	ug/kg	2	1902069	02/11/2009	02/16/2009	8270C
Isophorone	660 U	660	ug/kg	2	1902069	02/11/2009	02/16/2009	8270C
Naphthalene	660 U	660	ug/kg	2	1902069	02/11/2009	02/16/2009	8270C
Nitrobenzene	660 U	660	ug/kg	2	1902069	02/11/2009	02/16/2009	8270C
N-Nitrosodi-n-propylamine	660 U	660	ug/kg	2	1902069	02/11/2009	02/16/2009	8270C
N-Nitrosodiphenylamine	660 U	660	ug/kg	2	1902069	02/11/2009	02/16/2009	8270C
Pentachlorophenol	1300 U	1300	ug/kg	2	1902069	02/11/2009	02/16/2009	8270C
Phenanthrene	660 U	660	ug/kg	2	1902069	02/11/2009	02/16/2009	8270C
Phenol	660 U	660	ug/kg	2	1902069	02/11/2009	02/16/2009	8270C
Pyrene	660 U	660	ug/kg	2	1902069	02/11/2009	02/16/2009	8270C
TIC: Unknown 1	1450 J, D, ~~B~~		ug/kg	2	1902069	02/11/2009	02/16/2009	8270C
TIC: Unknown 3	533 J, D, ~~B~~		ug/kg	2	1902069	02/11/2009	02/16/2009	8270C
TIC: Unknown 2	75100 B, J, D		ug/kg	2	1902069	02/11/2009	02/16/2009	8270C
TIC: Alkane 1	317 J, D		ug/kg	2	1902069	02/11/2009	02/16/2009	8270C
TIC: Aldol Condensate 1	1280 J, D, ~~B~~ A		ug/kg	2	1902069	02/11/2009	02/16/2009	8270C
Surrogate: 2-Fluorophenol	67 %	25-121			1902069	02/11/2009	02/16/2009	8270C
Surrogate: Phenol-d5	73 %	24-113			1902069	02/11/2009	02/16/2009	8270C
Surrogate: Nitrobenzene-d5	58 %	23-120			1902069	02/11/2009	02/16/2009	8270C
Surrogate: 2-Fluorobiphenyl	71 %	30-115			1902069	02/11/2009	02/16/2009	8270C
Surrogate: 2,4,6-Tribromophenol	50 %	19-122			1902069	02/11/2009	02/16/2009	8270C
Surrogate: p-Terphenyl-d14	93 %	18-137			1902069	02/11/2009	02/16/2009	8270C

[illegible]

10

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

WCH Hanford, Inc 2620 Fermi Avenue Richland WA, 99354	Project: RC-116 Project Number: K1525 Project Manager: Joan Kessner	Reported: 10/10/2009 12:53

J18158-A
0902012-02 (Solid)

Analyte	Result and Qualifier	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
		Lionville Laboratory				K	11/20/09	
Semivolatile Organic Compounds by SW846 8270C								
1,2,4-Trichlorobenzene	660 U	660	ug/kg	2	L902069	02/11/2009	02/16/2009	8270C
1,2-Dichlorobenzene	660 U	660	ug/kg	2	L902069	02/11/2009	02/16/2009	8270C
1,3-Dichlorobenzene	660 U	660	ug/kg	2	L902069	02/11/2009	02/16/2009	8270C
1,4-Dichlorobenzene	660 U	660	ug/kg	2	L902069	02/11/2009	02/16/2009	8270C
2,4,5-Trichlorophenol	660 U	660	ug/kg	2	L902069	02/11/2009	02/16/2009	8270C
2,4,6-Trichlorophenol	660 U	660	ug/kg	2	L902069	02/11/2009	02/16/2009	8270C
2,4-Dichlorophenol	660 U	660	ug/kg	2	L902069	02/11/2009	02/16/2009	8270C
2,4-Dimethylphenol	660 U	660	ug/kg	2	L902069	02/11/2009	02/16/2009	8270C
2,4-Dinitrophenol	3300 U	3300	ug/kg	2	L902069	02/11/2009	02/16/2009	8270C
2,4-Dinitrotoluene	660 U	660	ug/kg	2	L902069	02/11/2009	02/16/2009	8270C
2,6-Dinitrotoluene	660 U	660	ug/kg	2	L902069	02/11/2009	02/16/2009	8270C
2-Chloronaphthalene	660 U	660	ug/kg	2	L902069	02/11/2009	02/16/2009	8270C
2-Chlorophenol	660 U	660	ug/kg	2	L902069	02/11/2009	02/16/2009	8270C
2-Methylnaphthalene	660 U	660	ug/kg	2	L902069	02/11/2009	02/16/2009	8270C
2-Methylphenol	660 U	660	ug/kg	2	L902069	02/11/2009	02/16/2009	8270C
2-Nitroaniline	3300 U	3300	ug/kg	2	L902069	02/11/2009	02/16/2009	8270C
2-Nitrophenol	660 U	660	ug/kg	2	L902069	02/11/2009	02/16/2009	8270C
3,3'-Dichlorobenzidine	1320 U J	1320	ug/kg	2	L902069	02/11/2009	02/16/2009	8270C
3-Nitroaniline	3300 U	3300	ug/kg	2	L902069	02/11/2009	02/16/2009	8270C
4,6-Dinitro-2-methylphenol	660 U	660	ug/kg	2	L902069	02/11/2009	02/16/2009	8270C
4-Bromophenyl Phenyl Ether	660 U	660	ug/kg	2	L902069	02/11/2009	02/16/2009	8270C
4-Chloro-3-methylphenol	660 U	660	ug/kg	2	L902069	02/11/2009	02/16/2009	8270C
4-Chloroaniline	660 U J	660	ug/kg	2	L902069	02/11/2009	02/16/2009	8270C
4-Chlorophenyl Phenyl Ether	660 U	660	ug/kg	2	L902069	02/11/2009	02/16/2009	8270C
4-Methylphenol	660 U	660	ug/kg	2	L902069	02/11/2009	02/16/2009	8270C
4-Nitroaniline	3300 U	3300	ug/kg	2	L902069	02/11/2009	02/16/2009	8270C
4-Nitrophenol	3300 U	3300	ug/kg	2	L902069	02/11/2009	02/16/2009	8270C
Acenaphthene	660 U	660	ug/kg	2	L902069	02/11/2009	02/16/2009	8270C
Acenaphthylene	660 U	660	ug/kg	2	L902069	02/11/2009	02/16/2009	8270C
Anthracene	660 U	660	ug/kg	2	L902069	02/11/2009	02/16/2009	8270C
Benz[a]anthracene	660 U	660	ug/kg	2	L902069	02/11/2009	02/16/2009	8270C
Benzo[a] pyrene	660 U	660	ug/kg	2	L902069	02/11/2009	02/16/2009	8270C
Benzo[b] fluoranthene	660 U	660	ug/kg	2	L902069	02/11/2009	02/16/2009	8270C
Benzo[g,h,i] perylene	660 U	660	ug/kg	2	L902069	02/11/2009	02/16/2009	8270C
Benzo[k] fluoranthene	660 U	660	ug/kg	2	L902069	02/11/2009	02/16/2009	8270C
Bis(2-chloroethoxy) methane	660 U	660	ug/kg	2	L902069	02/11/2009	02/16/2009	8270C
Bis(2-chloroethyl) ether	660 U	660	ug/kg	2	L902069	02/11/2009	02/16/2009	8270C
Bis(2-chloroisopropyl) ether	660 U	660	ug/kg	2	L902069	02/11/2009	02/16/2009	8270C
Bis(2-ethylhexyl) phthalate	660 U	660	ug/kg	2	L902069	02/11/2009	02/16/2009	8270C

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WCH-Hanford, Inc 2620 Fermi Avenue Richland WA, 99354	Project: RC-116 Project Number: K1525 Project Manager: Joan Kessner	Reported: 10/10/2009 12:55

J18158-A
0902012-02 (Solid)

VL 11/20/09

Analyte	Result and Qualifier	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Lionville Laboratory								
Semivolatile Organic Compounds by SW846 8270C								
Butyl Benzyl Phthalate	660 U	660	ug/kg	2	L902069	02/11/2009	02/16/2009	8270C
Carbazole	660 U	660	ug/kg	2	L902069	02/11/2009	02/16/2009	8270C
Chrysene	660 U	660	ug/kg	2	L902069	02/11/2009	02/16/2009	8270C
Dibenz[a,h]anthracene	660 U	660	ug/kg	2	L902069	02/11/2009	02/16/2009	8270C
Dibenzofuran	660 U	660	ug/kg	2	L902069	02/11/2009	02/16/2009	8270C
Diethyl Phthalate	660 U	660	ug/kg	2	L902069	02/11/2009	02/16/2009	8270C
Dimethyl Phthalate	660 U	660	ug/kg	2	L902069	02/11/2009	02/16/2009	8270C
Di-n-butyl Phthalate	660 U	660	ug/kg	2	L902069	02/11/2009	02/16/2009	8270C
Di-n-octyl Phthalate	660 U	660	ug/kg	2	L902069	02/11/2009	02/16/2009	8270C
Fluoranthene	660 U	660	ug/kg	2	L902069	02/11/2009	02/16/2009	8270C
Fluorene	660 U	660	ug/kg	2	L902069	02/11/2009	02/16/2009	8270C
Hexachlorobenzene	660 U	660	ug/kg	2	L902069	02/11/2009	02/16/2009	8270C
Hexachlorobutadiene	660 U	660	ug/kg	2	L902069	02/11/2009	02/16/2009	8270C
Hexachlorocyclopentadiene	660 U J	660	ug/kg	2	L902069	02/11/2009	02/16/2009	8270C
Hexachloroethane	660 U J	660	ug/kg	2	L902069	02/11/2009	02/16/2009	8270C
Indeno[1,2,3-cd]pyrene	660 U	660	ug/kg	2	L902069	02/11/2009	02/16/2009	8270C
Isophorone	660 U	660	ug/kg	2	L902069	02/11/2009	02/16/2009	8270C
Naphthalene	660 U	660	ug/kg	2	L902069	02/11/2009	02/16/2009	8270C
Nitrobenzene	660 U	660	ug/kg	2	L902069	02/11/2009	02/16/2009	8270C
N-Nitrosodi-n-propylamine	660 U	660	ug/kg	2	L902069	02/11/2009	02/16/2009	8270C
N-Nitrosodiphenylamine	660 U	660	ug/kg	2	L902069	02/11/2009	02/16/2009	8270C
Pentachlorophenol	3300 U	3300	ug/kg	2	L902069	02/11/2009	02/16/2009	8270C
Phenanthrene	660 U	660	ug/kg	2	L902069	02/11/2009	02/16/2009	8270C
Phenol	660 U	660	ug/kg	2	L902069	02/11/2009	02/16/2009	8270C
Pyrene	660 U	660	ug/kg	2	L902069	02/11/2009	02/16/2009	8270C
TIC: Unknown 3	338 J, D, ~~B~~		ug/kg	2	L902069	02/11/2009	02/16/2009	8270C
TIC: Unknown 2	44800 B, J, D		ug/kg	2	L902069	02/11/2009	02/16/2009	8270C
TIC: Unknown 1	887 J, D		ug/kg	2	L902069	02/11/2009	02/16/2009	8270C
TIC: Alkane 1	375 J, D		ug/kg	2	L902069	02/11/2009	02/16/2009	8270C
Surrogate: 2-Fluorophenol	*66 %*	*25-121*			*L902069*	*02/11/2009*	*02/16/2009*	*8270C*
Surrogate: Phenol-d5	*69 %*	*24-113*			*L902069*	*02/11/2009*	*02/16/2009*	*8270C*
Surrogate: Nitrobenzene-d5	*61 %*	*23-120*			*L902069*	*02/11/2009*	*02/16/2009*	*8270C*
Surrogate: 2-Fluorobiphenyl	*68 %*	*30-115*			*L902069*	*02/11/2009*	*02/16/2009*	*8270C*
Surrogate: 2,4,6-Tribromophenol	*63 %*	*19-122*			*L902069*	*02/11/2009*	*02/16/2009*	*8270C*
Surrogate: p-Terphenyl-d14	*83 %*	*18-137*			*L902069*	*02/11/2009*	*02/16/2009*	*8270C*

RS 10/10/09

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WCH Hanford, Inc 2620 Fermi Avenue Richland WA, 99354	Project: RC-116 Project Number: K1525 Project Manager: Joan Kessner	Reported: 04/14/2009 10:17

J18177
0902012-05 (Solid)

Lionville Laboratory

yr 11/20/09

Semivolatile Organic Compounds by SW846 8270C

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Phenol	ND	660	ug/kg wet	2	0902009	02/11/2009	02/16/2009	8270C	U
Bis(2-chloroethyl) ether	ND	660	"	"	"	"	"	"	U
2-Chlorophenol	ND	660	"	"	"	"	"	"	U
1,3-Dichlorobenzene	ND	660	"	"	"	"	"	"	U
1,4-Dichlorobenzene	ND	660	"	"	"	"	"	"	U
1,2-Dichlorobenzene	ND	660	"	"	"	"	"	"	U
2-Methylphenol	ND	660	"	"	"	"	"	"	U
Bis(2-chloroisopropyl) ether	ND	660	"	"	"	"	"	"	U
4-Methylphenol	ND	660	"	"	"	"	"	"	U
N-Nitrosodi-n-propylamine	ND	660	"	"	"	"	"	"	U
Hexachloroethane	ND J	660	"	"	"	"	"	"	U
Nitrobenzene	ND	660	"	"	"	"	"	"	U
Isophorone	ND	660	"	"	"	"	"	"	U
2-Nitrophenol	ND	660	"	"	"	"	"	"	U
2,4-Dimethylphenol	ND	660	"	"	"	"	"	"	U
Bis(2-chloroethoxy) methane	ND	660	"	"	"	"	"	"	U
2,4-Dichlorophenol	ND	660	"	"	"	"	"	"	U
1,2,4-Trichlorobenzene	ND	660	"	"	"	"	"	"	U
Naphthalene	ND	660	"	"	"	"	"	"	U
4-Chloroaniline	ND J	660	"	"	"	"	"	"	U
Hexachlorobutadiene	ND	660	"	"	"	"	"	"	U
4-Chloro-3-methylphenol	ND	660	"	"	"	"	"	"	U
2-Methylnaphthalene	ND	660	"	"	"	"	"	"	U
Hexachlorocyclopentadiene	ND J	660	"	"	"	"	"	"	U
2,4,6-Trichlorophenol	ND	660	"	"	"	"	"	"	U
2,4,5-Trichlorophenol	ND	660	"	"	"	"	"	"	U
2-Chloronaphthalene	ND	660	"	"	"	"	"	"	U
2-Nitroaniline	ND	3300	"	"	"	"	"	"	U
Dimethyl Phthalate	ND	660	"	"	"	"	"	"	U
2,6-Dinitrotoluene	ND	660	"	"	"	"	"	"	U
Acenaphthylene	ND	660	"	"	"	"	"	"	U
3-Nitroaniline	ND	3300	"	"	"	"	"	"	U
Acenaphthene	ND	660	"	"	"	"	"	"	U
2,4-Dinitrophenol	ND	3300	"	"	"	"	"	"	U
4-Nitrophenol	ND	3300	"	"	"	"	"	"	U
Dibenzofuran	ND	660	"	"	"	"	"	"	U
2,4-Dinitrotoluene	ND	660	"	"	"	"	"	"	U
Diethyl Phthalate	ND	660	"	"	"	"	"	"	U
4-Chlorophenyl Phenyl Ether	ND	660	"	"	"	"	"	"	U

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WC Hanford, Inc 2620 Fermi Avenue Richland WA, 99354	Project: RC-116 Project Number: K1525 Project Manager: Joan Kessner	**Reported:** 02/17/2009 10:17

J18177

0902012-05 (Solid)

Lionville Laboratory

Uh 11/24/09

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Semivolatile Organic Compounds by SW846 8270C									
Fluorene	ND	660	ug/kg wet	2	1902069	02/11/2009	02/16/2009	8270C	U
4-Nitroaniline	ND	3300	"	"	"	"	"	"	U
4,6-Dinitro-2-methylphenol	ND	660	"	"	"	"	"	"	U
N-Nitrosodiphenylamine	ND	660	"	"	"	"	"	"	U
4-Bromophenyl Phenyl Ether	ND	660	"	"	"	"	"	"	U
Hexachlorobenzene	ND	660	"	"	"	"	"	"	U
Pentachlorophenol	ND	3300	"	"	"	"	"	"	U
Phenanthrene	ND	660	"	"	"	"	"	"	U
Anthracene	ND	660	"	"	"	"	"	"	U
Carbazole	ND	660	"	"	"	"	"	"	U
Di-n-butyl Phthalate	ND	660	"	"	"	"	"	"	U
Fluoranthene	ND	660	"	"	"	"	"	"	U
Pyrene	ND	660	"	"	"	"	"	"	U
Butyl Benzyl Phthalate	ND	660	"	"	"	"	"	"	U
Bis(2-ethylhexyl) phthalate	ND	660	"	"	"	"	"	"	U
3,3'-Dichlorobenzidine	ND J	1320	"	"	"	"	"	"	U
Benz[a]anthracene	ND	660	"	"	"	"	"	"	U
Chrysene	ND	660	"	"	"	"	"	"	U
Di-n-octyl Phthalate	ND	660	"	"	"	"	"	"	U
Benzo[b] fluoranthene	ND	660	"	"	"	"	"	"	U
Benzo[k] fluoranthene	ND	660	"	"	"	"	"	"	U
Benzo[a] pyrene	ND	660	"	"	"	"	"	"	U
Indeno[1,2,3-cd]pyrene	ND	660	"	"	"	"	"	"	U
Dibenz[a,h]anthracene	ND	660	"	"	"	"	"	"	U
Benzo[g,h,i] perylene	ND	660	"	"	"	"	"	"	U
TIC: Unknown 1	**1510**		"	"	"	"	"	"	U
TIC: Alkane 2	**539**		"	"	"	"	"	"	J, D
TIC: Alkane 1	**275**		"	"	"	"	"	"	J, D
TIC: Aldol Condensate 1	**310**		"	"	"	"	"	"	J, D
TIC: Unknown 2	**73000**		"	"	"	"	"	"	J, D, KA
Surrogate: 2-Fluorophenol		*74 %*	*25-121*		"	"	"	"	B, J, D
Surrogate: Phenol-d5		*73 %*	*24-113*		"	"	"	"	[illegible]
Surrogate: Nitrobenzene-d5		*39 %*	*23-120*		"	"	"	"	
Surrogate: 2-Fluorobiphenyl		*67 %*	*30-115*		"	"	"	"	
Surrogate: 2,4,6-Tribromophenol		*64 %*	*19-122*		"	"	"	"	
Surrogate: p-Terphenyl-d14		*81 %*	*18-137*		"	"	"	"	

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WC-Hanford, Inc 2620 Fermi Avenue Richland WA 99354	Project: RC-116 Project Number: K1525 Project Manager: John Kessner	Reported: 04/14/2009 10:17

J18198
8902012-06 (Solid)

Lionville Laboratory

11/20/09

Semivolatile Organic Compounds by SW846 8270C

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Phenol	ND	660	ug/kg wet	2	1902009	02/11/2009	02/17/2009	8270C	U
Bis(2-chloroethyl) ether	ND	660	"	"	"	"	"	"	U
2-Chlorophenol	ND	660	"	"	"	"	"	"	U
1,3-Dichlorobenzene	ND	660	"	"	"	"	"	"	U
1,4-Dichlorobenzene	ND	660	"	"	"	"	"	"	U
1,2-Dichlorobenzene	ND	660	"	"	"	"	"	"	U
2-Methylphenol	ND	660	"	"	"	"	"	"	U
Bis(2-chloroisopropyl) ether	ND	660	"	"	"	"	"	"	U
4-Methylphenol	ND	660	"	"	"	"	"	"	U
N-Nitrosodi-n-propylamine	ND	660	"	"	"	"	"	"	U
Hexachloroethane	ND J	660	"	"	"	"	"	"	U
Nitrobenzene	ND	660	"	"	"	"	"	"	U
Isophorone	ND	660	"	"	"	"	"	"	U
2-Nitrophenol	ND	660	"	"	"	"	"	"	U
2,4-Dimethylphenol	ND	660	"	"	"	"	"	"	U
Bis(2-chloroethoxy) methane	ND	660	"	"	"	"	"	"	U
2,4-Dichlorophenol	ND	660	"	"	"	"	"	"	U
1,2,4-Trichlorobenzene	ND	660	"	"	"	"	"	"	U
Naphthalene	ND	660	"	"	"	"	"	"	U
4-Chloroaniline	ND J	660	"	"	"	"	"	"	U
Hexachlorobutadiene	ND	660	"	"	"	"	"	"	U
4-Chloro-3-methylphenol	ND	660	"	"	"	"	"	"	U
2-Methylnaphthalene	ND	660	"	"	"	"	"	"	U
Hexachlorocyclopentadiene	ND J	660	"	"	"	"	"	"	U
2,4,6-Trichlorophenol	ND	660	"	"	"	"	"	"	U
2,4,5-Trichlorophenol	ND	660	"	"	"	"	"	"	U
2-Chloronaphthalene	ND	660	"	"	"	"	"	"	U
2-Nitroaniline	ND	3300	"	"	"	"	"	"	U
Dimethyl Phthalate	ND	660	"	"	"	"	"	"	U
2,6-Dinitrotoluene	ND	660	"	"	"	"	"	"	U
Acenaphthylene	ND	660	"	"	"	"	"	"	U
3-Nitroaniline	ND	3300	"	"	"	"	"	"	U
Acenaphthene	ND	660	"	"	"	"	"	"	U
2,4-Dinitrophenol	ND	3300	"	"	"	"	"	"	U
4-Nitrophenol	ND	3300	"	"	"	"	"	"	U
Dibenzofuran	ND	660	"	"	"	"	"	"	U
2,4-Dinitrotoluene	ND	660	"	"	"	"	"	"	U
Diethyl Phthalate	ND	660	"	"	"	"	"	"	U
4-Chlorophenyl Phenyl Ether	ND	660	"	"	"	"	"	"	U

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WC Hanford, Inc 2620 Fermi Avenue Richland WA, 99354	Project: RC-116 Project Number: K1535 Project Manager: Joan Kessner	Reported: 04/14/2009 10:17

J18198

0902012-06 (Solid)

Lionville Laboratory

11/20/09

Semivolatile Organic Compounds by SW846 8270C

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Fluorene	ND	660	ug/kg wet	2	1902069	02/11/2009	02/17/2009	8270C	U
4-Nitroaniline	ND	3300	"	"	"	"	"	"	U
4,6-Dinitro-2-methylphenol	ND	660	"	"	"	"	"	"	U
N-Nitrosodiphenylamine	ND	660	"	"	"	"	"	"	U
4-Bromophenyl Phenyl Ether	ND	660	"	"	"	"	"	"	U
Hexachlorobenzene	ND	660	"	"	"	"	"	"	U
Pentachlorophenol	ND	3300	"	"	"	"	"	"	U
Phenanthrene	ND	660	"	"	"	"	"	"	U
Anthracene	ND	660	"	"	"	"	"	"	U
Carbazole	ND	660	"	"	"	"	"	"	U
Di-n-butyl Phthalate	ND	660	"	"	"	"	"	"	U
Fluoranthene	ND	660	"	"	"	"	"	"	U
Pyrene	ND	660	"	"	"	"	"	"	U
Butyl Benzyl Phthalate	ND	660	"	"	"	"	"	"	U
Bis(2-ethylhexyl) phthalate	ND	660	"	"	"	"	"	"	U
3,3'-Dichlorobenzidine	ND J	1320	"	"	"	"	"	"	U
Benz[a]anthracene	ND	660	"	"	"	"	"	"	U
Chrysene	ND	660	"	"	"	"	"	"	U
Di-n-octyl Phthalate	ND	660	"	"	"	"	"	"	U
Benzo[b] fluoranthene	ND	660	"	"	"	"	"	"	U
Benzo[k] fluoranthene	ND	660	"	"	"	"	"	"	U
Benzo[a] pyrene	ND	660	"	"	"	"	"	"	U
Indeno[1,2,3-cd]pyrene	ND	660	"	"	"	"	"	"	U
Dibenz[a,h]anthracene	ND	660	"	"	"	"	"	"	U
Benzo[g,h,i] perylene	ND	660	"	"	"	"	"	"	U
TIC: Unknown 1	**34500**		"	"	"	"	"	"	B, J, D
TIC: Alkene 4	**3050**		"	"	"	"	"	"	J, D
TIC: Alkene 2	**4380**		"	"	"	"	"	"	J, D
TIC: Alkene 1	**4810**		"	"	"	"	"	"	J, D
TIC: Alkene 3	**4320**		"	"	"	"	"	"	J, D
Surrogate: 2-Fluorophenol		*79 %*	*25-121*		"	"	"	"	
Surrogate: Phenol-d5		*79 %*	*24-113*		"	"	"	"	
Surrogate: Nitrobenzene-d5		*66 %*	*23-120*		"	"	"	"	
Surrogate: 2-Fluorobiphenyl		*78 %*	*30-115*		"	"	"	"	
Surrogate: 2,4,6-Tribromophenol		*61 %*	*19-122*		"	"	"	"	
Surrogate: p-Terphenyl-d14		*100 %*	*18-137*		"	"	"	"	

WCH Hanford, Inc. 2620 Fermi Avenue Richland WA, 99354	Project: RC-116 Project Number: K1525 Project Manager: Joan Kessner	Reported: 04/14/2009 10:17

J18199

0902012-07 (Solid)

Lionville Laboratory

Vr 11/20/09

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Semivolatile Organic Compounds by SW846 8270C									
Phenol	ND	660	ug/kg wet	2	1902069	02/11/2009	02/12/2009	8270C	U
Bis(2-chloroethyl) ether	ND	660	"	"	"	"	"	"	U
2-Chlorophenol	ND	660	"	"	"	"	"	"	U
1,3-Dichlorobenzene	ND	660	"	"	"	"	"	"	U
1,4-Dichlorobenzene	ND	660	"	"	"	"	"	"	U
1,2-Dichlorobenzene	ND	660	"	"	"	"	"	"	U
2-Methylphenol	ND	660	"	"	"	"	"	"	U
Bis(2-chloroisopropyl) ether	ND	660	"	"	"	"	"	"	U
4-Methylphenol	ND	660	"	"	"	"	"	"	U
N-Nitrosodi-n-propylamine	ND	660	"	"	"	"	"	"	U
Hexachloroethane	ND J	660	"	"	"	"	"	"	U
Nitrobenzene	ND	660	"	"	"	"	"	"	U
Isophorone	ND	660	"	"	"	"	"	"	U
2-Nitrophenol	ND	660	"	"	"	"	"	"	U
2,4-Dimethylphenol	ND	660	"	"	"	"	"	"	U
Bis(2-chloroethoxy) methane	ND	660	"	"	"	"	"	"	U
2,4-Dichlorophenol	ND	660	"	"	"	"	"	"	U
1,2,4-Trichlorobenzene	ND	660	"	"	"	"	"	"	U
Naphthalene	ND	660	"	"	"	"	"	"	U
4-Chloroaniline	ND J	660	"	"	"	"	"	"	U
Hexachlorobutadiene	ND	660	"	"	"	"	"	"	U
4-Chloro-3-methylphenol	ND	660	"	"	"	"	"	"	U
2-Methylnaphthalene	ND	660	"	"	"	"	"	"	U
Hexachlorocyclopentadiene	ND J	660	"	"	"	"	"	"	U
2,4,6-Trichlorophenol	ND	660	"	"	"	"	"	"	U
2,4,5-Trichlorophenol	ND	660	"	"	"	"	"	"	U
2-Chloronaphthalene	ND	660	"	"	"	"	"	"	U
2-Nitroaniline	ND	3300	"	"	"	"	"	"	U
Dimethyl Phthalate	ND	660	"	"	"	"	"	"	U
2,6-Dinitrotoluene	ND	660	"	"	"	"	"	"	U
Acenaphthylene	ND	660	"	"	"	"	"	"	U
3-Nitroaniline	ND	3300	"	"	"	"	"	"	U
Acenaphthene	ND	660	"	"	"	"	"	"	U
2,4-Dinitrophenol	ND	3300	"	"	"	"	"	"	U
4-Nitrophenol	ND	3300	"	"	"	"	"	"	U
Dibenzofuran	ND	660	"	"	"	"	"	"	U
2,4-Dinitrotoluene	ND	660	"	"	"	"	"	"	U
Diethyl Phthalate	ND	660	"	"	"	"	"	"	U
4-Chlorophenyl Phenyl Ether	ND	660	"	"	"	"	"	"	U

264 Welsh Pool Road
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Phone: 610-280-3000
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WC Hanford, Inc
2620 Fermi Avenue
Richland WA, 99354

Project: RC-116
Project Number: K1525
Project Manager: Joan Kessner

Reported:
04/14/2009 10:17

J18199

0902012-07 (Solid)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Lionville Laboratory							

Semivolatile Organic Compounds by SW846 8270C 11/20/08

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Fluorene	ND	660	ug/kg wet	2	1907069	02/11/2009	02/17/2009	8270C	U
4-Nitroaniline	ND	3300	"	"	"	"	"	"	U
4,6-Dinitro-2-methylphenol	ND	660	"	"	"	"	"	"	U
N-Nitrosodiphenylamine	ND	660	"	"	"	"	"	"	U
4-Bromophenyl Phenyl Ether	ND	660	"	"	"	"	"	"	U
Hexachlorobenzene	ND	660	"	"	"	"	"	"	U
Pentachlorophenol	ND	3300	"	"	"	"	"	"	U
Phenanthrene	ND	660	"	"	"	"	"	"	U
Anthracene	ND	660	"	"	"	"	"	"	U
Carbazole	ND	660	"	"	"	"	"	"	U
Di-n-butyl Phthalate	ND	660	"	"	"	"	"	"	U
Fluoranthene	ND	660	"	"	"	"	"	"	U
Pyrene	ND	660	"	"	"	"	"	"	U
Butyl Benzyl Phthalate	ND	660	"	"	"	"	"	"	U
Bis(2-ethylhexyl) phthalate	ND	660	"	"	"	"	"	"	U
3,3'-Dichlorobenzidine	ND	1320	"	"	"	"	"	"	U
Benz[a]anthracene	ND	660	"	"	"	"	"	"	U
Chrysene	ND	660	"	"	"	"	"	"	U
Di-n-octyl Phthalate	ND	660	"	"	"	"	"	"	U
Benzo[b] fluoranthene	ND	660	"	"	"	"	"	"	U
Benzo[k] fluoranthene	ND	660	"	"	"	"	"	"	U
Benzo[a] pyrene	ND	660	"	"	"	"	"	"	U
Indeno[1,2,3-cd]pyrene	ND	660	"	"	"	"	"	"	U
Dibenz[a,h]anthracene	ND	660	"	"	"	"	"	"	U
Benzo[g,h,i] perylene	ND	660	"	"	"	"	"	"	U
TIC: Unknown 3	75400		"	"	"	"	"	"	B, J, D
TIC: Unknown 2	3430		"	"	"	"	"	"	J, D M
TIC: Unknown 1	735		"	"	"	"	"	"	J, D
TIC: Alkane 1	764		"	"	"	"	"	"	J, D
TIC: Unknown 4	719		"	"	"	"	"	"	J, D, B
Surrogate: 2-Fluorophenol		*61 %*	*25-121*		"	"	"	"	[illegible]
Surrogate: Phenol-d5		*64 %*	*24-113*		"	"	"	"	
Surrogate: Nitrobenzene-d5		*52 %*	*23-120*		"	"	"	"	
Surrogate: 2-Fluorobiphenyl		*62 %*	*30-115*		"	"	"	"	
Surrogate: 2,4,6-Tribromophenol		*72 %*	*19-122*		"	"	"	"	
Surrogate: p-Terphenyl-d14		*83 %*	*18-137*		"	"	"	"	

WC Hanford, Inc	Project: RC-116	
2620 Fermi Avenue	Project Number: K1525	Reported:
Richland WA, 99354	Project Manager: Joan Kessner	04/14/2009 10:17

J181B0

0902012-08 (Solid)

11/20/09

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes

Lionville Laboratory

Semivolatile Organic Compounds by SW846 8270C

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Phenol	ND	990	ug/kg wet	1	1902069	02/11/2009	02/23/2009	8270C	U
Bis(2-chloroethyl) ether	ND	990	"	"	"	"	"	"	U
2-Chlorophenol	ND	990	"	"	"	"	"	"	U
1,3-Dichlorobenzene	ND	990	"	"	"	"	"	"	U
1,4-Dichlorobenzene	ND	990	"	"	"	"	"	"	U
1,2-Dichlorobenzene	ND	990	"	"	"	"	"	"	U
2-Methylphenol	ND	990	"	"	"	"	"	"	U
Bis(2-chloroisopropyl) ether	ND	990	"	"	"	"	"	"	U
4-Methylphenol	ND	990	"	"	"	"	"	"	U
N-Nitrosodi-n-propylamine	ND	990	"	"	"	"	"	"	U
Hexachloroethane	ND J	990	"	"	"	"	"	"	U
Nitrobenzene	ND	990	"	"	"	"	"	"	U
Isophorone	ND	990	"	"	"	"	"	"	U
2-Nitrophenol	ND	990	"	"	"	"	"	"	U
2,4-Dimethylphenol	ND	990	"	"	"	"	"	"	U
Bis(2-chloroethoxy) methane	ND	990	"	"	"	"	"	"	U
2,4-Dichlorophenol	ND	990	"	"	"	"	"	"	U
1,2,4-Trichlorobenzene	ND	990	"	"	"	"	"	"	U
Naphthalene	ND	990	"	"	"	"	"	"	U
4-Chloroaniline	ND J	990	"	"	"	"	"	"	U
Hexachlorobutadiene	ND	990	"	"	"	"	"	"	U
4-Chloro-3-methylphenol	ND	990	"	"	"	"	"	"	U
2-Methylnaphthalene	ND	990	"	"	"	"	"	"	U
Hexachlorocyclopentadiene	ND J	990	"	"	"	"	"	"	U
2,4,6-Trichlorophenol	ND	990	"	"	"	"	"	"	U
2,4,5-Trichlorophenol	ND	990	"	"	"	"	"	"	U
2-Chloronaphthalene	ND	990	"	"	"	"	"	"	U
2-Nitroaniline	ND	4950	"	"	"	"	"	"	U
Dimethyl Phthalate	ND	990	"	"	"	"	"	"	U
2,6-Dinitrotoluene	ND	990	"	"	"	"	"	"	U
Acenaphthylene	ND	990	"	"	"	"	"	"	U
3-Nitroaniline	ND	4950	"	"	"	"	"	"	U
Acenaphthene	ND	990	"	"	"	"	"	"	U
2,4-Dinitrophenol	ND	4950	"	"	"	"	"	"	U
4-Nitrophenol	ND	4950	"	"	"	"	"	"	U
Dibenzofuran	ND	990	"	"	"	"	"	"	U
2,4-Dinitrotoluene	ND	990	"	"	"	"	"	"	U
Diethyl Phthalate	ND	990	"	"	"	"	"	"	U
4-Chlorophenyl Phenyl Ether	ND	990	"	"	"	"	"	"	U

264 Welsh Pool Road
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WC Hanford, Inc. 2620 Fermi Avenue Richland WA, 99354	Project: RC-116 Project Number: K1525 Project Manager: Joan Kessner	Reported: 04/14/2009 10:17

J181B0
9B02012-08 (Solid)

11/20/09

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes

Lionville Laboratory

Semivolatile Organic Compounds by SW846 8270C

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Fluorene	ND	990	ug/kg wet	1	9B02069	02/11/2009	03/21/2009	8270C	U
4-Nitroaniline	ND	4950	"	"	"	"	"	"	U
4,6-Dinitro-2-methylphenol	ND	990	"	"	"	"	"	"	U
N-Nitrosodiphenylamine	ND	990	"	"	"	"	"	"	U
4-Bromophenyl Phenyl Ether	ND	990	"	"	"	"	"	"	U
Hexachlorobenzene	ND	990	"	"	"	"	"	"	U
Pentachlorophenol	ND	4950	"	"	"	"	"	"	U
Phenanthrene	ND	990	"	"	"	"	"	"	U
Anthracene	ND	990	"	"	"	"	"	"	U
Carbazole	ND	990	"	"	"	"	"	"	U
Di-n-butyl Phthalate	ND	990	"	"	"	"	"	"	U
Fluoranthene	ND	990	"	"	"	"	"	"	U
Pyrene	ND	990	"	"	"	"	"	"	U
Butyl Benzyl Phthalate	ND	990	"	"	"	"	"	"	U
Bis(2-ethylhexyl) phthalate	ND	990	"	"	"	"	"	"	U
3,3'-Dichlorobenzidine	ND J	1980	"	"	"	"	"	"	U
Benz[a]anthracene	ND	990	"	"	"	"	"	"	U
Chrysene	ND	990	"	"	"	"	"	"	U
Di-n-octyl Phthalate	ND	990	"	"	"	"	"	"	U
Benzo[b] fluoranthene	ND	990	"	"	"	"	"	"	U
Benzo[k] fluoranthene	ND	990	"	"	"	"	"	"	U
Benzo[a] pyrene	ND	990	"	"	"	"	"	"	U
Indeno[1,2,3-cd]pyrene	ND	990	"	"	"	"	"	"	U
Dibenz[a,h]anthracene	ND	990	"	"	"	"	"	"	U
Benzo[g,h,i] perylene	ND	990	"	"	"	"	"	"	U
TIC: Unknown 1	**92900**		"	"	"	"	"	"	B, J, D
TIC: Alkene 4	**8400**		"	"	"	"	"	"	J, D
TIC: Alkene 3	**9540**		"	"	"	"	"	"	J, D
TIC: Alkene 2	**9370**		"	"	"	"	"	"	J, D
TIC: Alkene 1	**8140**		"	"	"	"	"	"	J, D
Surrogate: 2-Fluorophenol		*65 %*	*25-121*		"	"	"	"	
Surrogate: Phenol-d5		*68 %*	*24-113*		"	"	"	"	
Surrogate: Nitrobenzene-d5		*44 %*	*23-120*		"	"	"	"	
Surrogate: 2-Fluorobiphenyl		*65 %*	*30-115*		"	"	"	"	
Surrogate: 2,4,6-Tribromophenol		*39 %*	*19-122*		"	"	"	"	
Surrogate: p-Terphenyl-d14		*60 %*	*18-137*		"	"	"	"	

WC-Hanford, Inc.	Project: RCS-116	
2620 Fermi Avenue	Project Number: K1525	Reported:
Richland WA, 99354	Project Manager: Joan Kessner	03/14/2009 10:17

J181B1

0902012-09 (Solid)

Lionville Laboratory

✓ 11/24/09

Semivolatile Organic Compounds by SW846 8270C

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Phenol	ND	990	ug/kg wet	3	B902069	02/11/2009	02/23/2009	8270C	U
Bis(2-chloroethyl) ether	ND	990	"	"	"	"	"	"	U
2-Chlorophenol	ND	990	"	"	"	"	"	"	U
1,3-Dichlorobenzene	ND	990	"	"	"	"	"	"	U
1,4-Dichlorobenzene	ND	990	"	"	"	"	"	"	U
1,2-Dichlorobenzene	ND	990	"	"	"	"	"	"	U
2-Methylphenol	ND	990	"	"	"	"	"	"	U
Bis(2-chloroisopropyl) ether	ND	990	"	"	"	"	"	"	U
4-Methylphenol	ND	990	"	"	"	"	"	"	U
N-Nitrosodi-n-propylamine	ND	990	"	"	"	"	"	"	U
Hexachloroethane	ND J	990	"	"	"	"	"	"	U
Nitrobenzene	ND	990	"	"	"	"	"	"	U
Isophorone	ND	990	"	"	"	"	"	"	U
2-Nitrophenol	ND	990	"	"	"	"	"	"	U
2,4-Dimethylphenol	ND	990	"	"	"	"	"	"	U
Bis(2-chloroethoxy) methane	ND	990	"	"	"	"	"	"	U
2,4-Dichlorophenol	ND	990	"	"	"	"	"	"	U
1,2,4-Trichlorobenzene	ND	990	"	"	"	"	"	"	U
Naphthalene	ND	990	"	"	"	"	"	"	U
4-Chloroaniline	ND J	990	"	"	"	"	"	"	U
Hexachlorobutadiene	ND	990	"	"	"	"	"	"	U
4-Chloro-3-methylphenol	ND	990	"	"	"	"	"	"	U
2-Methylnaphthalene	ND	990	"	"	"	"	"	"	U
Hexachlorocyclopentadiene	ND J	990	"	"	"	"	"	"	U
2,4,6-Trichlorophenol	ND	990	"	"	"	"	"	"	U
2,4,5-Trichlorophenol	ND	990	"	"	"	"	"	"	U
2-Chloronaphthalene	ND	990	"	"	"	"	"	"	U
2-Nitroaniline	ND	4950	"	"	"	"	"	"	U
Dimethyl Phthalate	ND	990	"	"	"	"	"	"	U
2,6-Dinitrotoluene	ND	990	"	"	"	"	"	"	U
Acenaphthylene	ND	990	"	"	"	"	"	"	U
3-Nitroaniline	ND	4950	"	"	"	"	"	"	U
Acenaphthene	ND	990	"	"	"	"	"	"	U
2,4-Dinitrophenol	ND	4950	"	"	"	"	"	"	U
4-Nitrophenol	ND	4950	"	"	"	"	"	"	U
Dibenzofuran	ND	990	"	"	"	"	"	"	U
2,4-Dinitrotoluene	ND	990	"	"	"	"	"	"	U
Diethyl Phthalate	ND	990	"	"	"	"	"	"	U
4-Chlorophenyl Phenyl Ether	ND	990	"	"	"	"	"	"	U

208 Welsh Pool Road
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WCH-Hanford, Inc 2620 Fermi Avenue Richland WA, 99354	Project: RC-116 Project Number: K1525 Project Manager: Joan Kessner	**Reported:** 04/14/2009 10:17

J181B1
0902012-09 (Solid)

V 11/20/09

Lionville Laboratory

Semivolatile Organic Compounds by SW846 8270C

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Fluorene	ND	990	ug/kg wet	1	L902069	02/11/2009	03/23/2009	8270C	U
4-Nitroaniline	ND	4950	"	"	"	"	"	"	U
4,6-Dinitro-2-methylphenol	ND	990	"	"	"	"	"	"	U
N-Nitrosodiphenylamine	ND	990	"	"	"	"	"	"	U
4-Bromophenyl Phenyl Ether	ND	990	"	"	"	"	"	"	U
Hexachlorobenzene	ND	990	"	"	"	"	"	"	U
Pentachlorophenol	ND	4950	"	"	"	"	"	"	U
Phenanthrene	ND	990	"	"	"	"	"	"	U
Anthracene	ND	990	"	"	"	"	"	"	U
Carbazole	ND	990	"	"	"	"	"	"	U
Di-n-butyl Phthalate	ND	990	"	"	"	"	"	"	U
Fluoranthene	ND	990	"	"	"	"	"	"	U
Pyrene	ND	990	"	"	"	"	"	"	U
Butyl Benzyl Phthalate	ND	990	"	"	"	"	"	"	U
Bis(2-ethylhexyl) phthalate	ND	990	"	"	"	"	"	"	U
3,3'-Dichlorobenzidine	ND J	1980	"	"	"	"	"	"	U
Benz[a]anthracene	ND	990	"	"	"	"	"	"	U
Chrysene	ND	990	"	"	"	"	"	"	U
Di-n-octyl Phthalate	ND	990	"	"	"	"	"	"	U
Benzo[b] fluoranthene	ND	990	"	"	"	"	"	"	U
Benzo[k] fluoranthene	ND	990	"	"	"	"	"	"	U
Benzo[a] pyrene	ND	990	"	"	"	"	"	"	U
Indeno[1,2,3-cd]pyrene	ND	990	"	"	"	"	"	"	U
Dibenz[a,h]anthracene	ND	990	"	"	"	"	"	"	U
Benzo[g,h,i] perylene	ND	990	"	"	"	"	"	"	U
TIC: Aldol Condensate 1	**434**		"	"	"	"	"	"	J, D, ~~N~~ A
TIC: Unknown 1	**63200**		"	"	"	"	"	"	N, J, D
Surrogate: 2-Fluorophenol		*59 %*	*25-121*		"	"	"	"	[illegible]
Surrogate: Phenol-d5		*57 %*	*24-113*		"	"	"	"	
Surrogate: Nitrobenzene-d5		*39 %*	*23-120*		"	"	"	"	
Surrogate: 2-Fluorobiphenyl		*55 %*	*30-115*		"	"	"	"	
Surrogate: 2,4,6-Tribromophenol		*34 %*	*19-122*		"	"	"	"	
Surrogate: p-Terphenyl-d14		*61 %*	*18-137*		"	"	"	"	

264 Welsh Pool Road
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WC-Hanford, Inc 2620 Fermi Avenue Richland WA, 99354	Project: RC-116 Project Number: K1525 Project Manager: Joan Kessner	**Reported:** 03/14/2009 10:17

J181B2

0902012-10 (Solid)

11/26/09

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes

Lionville Laboratory

Semivolatile Organic Compounds by SW846 8270C

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Phenol	ND	990	ug/kg wet	5	9B02069	02/11/2009	02/21/2009	8270C	U
Bis(2-chloroethyl) ether	ND	990	"	"	"	"	"	"	U
2-Chlorophenol	ND	990	"	"	"	"	"	"	U
1,3-Dichlorobenzene	ND	990	"	"	"	"	"	"	U
1,4-Dichlorobenzene	ND	990	"	"	"	"	"	"	U
1,2-Dichlorobenzene	ND	990	"	"	"	"	"	"	U
2-Methylphenol	ND	990	"	"	"	"	"	"	U
Bis(2-chloroisopropyl) ether	ND	990	"	"	"	"	"	"	U
4-Methylphenol	ND	990	"	"	"	"	"	"	U
N-Nitrosodi-n-propylamine	ND	990	"	"	"	"	"	"	U
Hexachloroethane	ND J	990	"	"	"	"	"	"	U
Nitrobenzene	ND	990	"	"	"	"	"	"	U
Isophorone	ND	990	"	"	"	"	"	"	U
2-Nitrophenol	ND	990	"	"	"	"	"	"	U
2,4-Dimethylphenol	ND	990	"	"	"	"	"	"	U
Bis(2-chloroethoxy) methane	ND	990	"	"	"	"	"	"	U
2,4-Dichlorophenol	ND	990	"	"	"	"	"	"	U
1,2,4-Trichlorobenzene	ND	990	"	"	"	"	"	"	U
Naphthalene	ND	990	"	"	"	"	"	"	U
4-Chloroaniline	ND J	990	"	"	"	"	"	"	U
Hexachlorobutadiene	ND	990	"	"	"	"	"	"	U
4-Chloro-3-methylphenol	ND	990	"	"	"	"	"	"	U
2-Methylnaphthalene	ND	990	"	"	"	"	"	"	U
Hexachlorocyclopentadiene	ND J	990	"	"	"	"	"	"	U
2,4,6-Trichlorophenol	ND	990	"	"	"	"	"	"	U
2,4,5-Trichlorophenol	ND	990	"	"	"	"	"	"	U
2-Chloronaphthalene	ND	990	"	"	"	"	"	"	U
2-Nitroaniline	ND	4950	"	"	"	"	"	"	U
Dimethyl Phthalate	ND	990	"	"	"	"	"	"	U
2,6-Dinitrotoluene	ND	990	"	"	"	"	"	"	U
Acenaphthylene	ND	990	"	"	"	"	"	"	U
3-Nitroaniline	ND	4950	"	"	"	"	"	"	U
Acenaphthene	ND	990	"	"	"	"	"	"	U
2,4-Dinitrophenol	ND	4950	"	"	"	"	"	"	U
4-Nitrophenol	ND	4950	"	"	"	"	"	"	U
Dibenzofuran	ND	990	"	"	"	"	"	"	U
2,4-Dinitrotoluene	ND	990	"	"	"	"	"	"	U
Diethyl Phthalate	ND	990	"	"	"	"	"	"	U
4-Chlorophenyl Phenyl Ether	ND	990	"	"	"	"	"	"	U

764 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

WC Hanford, Inc
2620 Fermi Avenue
Richland WA, 99354

Project: RC-116
Project Number: K1525
Project Manager: Joan Kessner

Reported:
04/14/2009 10:17

J181B2

0902012-10 (Solid)

W 11/20/09

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Lionville Laboratory									
Semivolatile Organic Compounds by SW846 8270C									
Fluorene	ND	990	ug/kg wet	1	1902069	03/11/2009	03/23/2009	8270C	U
4-Nitroaniline	ND	4950	"	"	"	"	"	"	U
4,6-Dinitro-2-methylphenol	ND	990	"	"	"	"	"	"	U
N-Nitrosodiphenylamine	ND	990	"	"	"	"	"	"	U
4-Bromophenyl Phenyl Ether	ND	990	"	"	"	"	"	"	U
Hexachlorobenzene	ND	990	"	"	"	"	"	"	U
Pentachlorophenol	ND	4950	"	"	"	"	"	"	U
Phenanthrene	ND	990	"	"	"	"	"	"	U
Anthracene	ND	990	"	"	"	"	"	"	U
Carbazole	ND	990	"	"	"	"	"	"	U
Di-n-butyl Phthalate	ND	990	"	"	"	"	"	"	U
Fluoranthene	ND	990	"	"	"	"	"	"	U
Pyrene	ND	990	"	"	"	"	"	"	U
Butyl Benzyl Phthalate	ND	990	"	"	"	"	"	"	U
Bis(2-ethylhexyl) phthalate	ND	990	"	"	"	"	"	"	U
3,3'-Dichlorobenzidine	ND J	1980	"	"	"	"	"	"	U
Benz[a]anthracene	ND	990	"	"	"	"	"	"	U
Chrysene	ND	990	"	"	"	"	"	"	U
Di-n-octyl Phthalate	ND	990	"	"	"	"	"	"	U
Benzo[b] fluoranthene	ND	990	"	"	"	"	"	"	U
Benzo[k] fluoranthene	ND	990	"	"	"	"	"	"	U
Benzo[a] pyrene	ND	990	"	"	"	"	"	"	U
Indeno[1,2,3-cd]pyrene	ND	990	"	"	"	"	"	"	U
Dibenz[a,h]anthracene	ND	990	"	"	"	"	"	"	U
Benzo[g,h,i] perylene	ND	990	"	"	"	"	"	"	U
TIC: Unknown 1	52700		"	"	"	"	"	"	U
Surrogate: 2-Fluorophenol		*37 %*	*25-121*		"	"	"	"	B, J, D
Surrogate: Phenol-d5		*62 %*	*24-113*		"	"	"	"	
Surrogate: Nitrobenzene-d5		*46 %*	*23-120*		"	"	"	"	
Surrogate: 2-Fluorobiphenyl		*49 %*	*30-115*		"	"	"	"	
Surrogate: 2,4,6-Tribromophenol		*40 %*	*19-122*		"	"	"	"	
Surrogate: p-Terphenyl-d14		*58 %*	*18-137*		"	"	"	"	

WC-Hanford, Inc. 2620 Fermi Avenue Richland WA, 99354	Project: RC-116 Project Number: K1525 Project Manager: John Kessner	Reported: 04/14/2009 10:17

J1B1B3
0902012-11 (Solid)

JW 11/20/09

Lionville Laboratory

Semivolatile Organic Compounds by SW846 8270C

Analyte	Result		Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Phenol	ND		990	ug/kg wet	1	1902069	02/11/2009	02/13/2009	8270C	U
Bis(2-chloroethyl) ether	ND		990	"	"	"	"	"	"	U
2-Chlorophenol	ND		990	"	"	"	"	"	"	U
1,3-Dichlorobenzene	ND		990	"	"	"	"	"	"	U
1,4-Dichlorobenzene	ND		990	"	"	"	"	"	"	U
1,2-Dichlorobenzene	ND		990	"	"	"	"	"	"	U
2-Methylphenol	ND		990	"	"	"	"	"	"	U
Bis(2-chloroisopropyl) ether	ND		990	"	"	"	"	"	"	U
4-Methylphenol	ND		990	"	"	"	"	"	"	U
N-Nitrosodi-n-propylamine	ND		990	"	"	"	"	"	"	U
Hexachloroethane	ND	J	990	"	"	"	"	"	"	U
Nitrobenzene	ND		990	"	"	"	"	"	"	U
Isophorone	ND		990	"	"	"	"	"	"	U
2-Nitrophenol	ND		990	"	"	"	"	"	"	U
2,4-Dimethylphenol	ND		990	"	"	"	"	"	"	U
Bis(2-chloroethoxy) methane	ND		990	"	"	"	"	"	"	U
2,4-Dichlorophenol	ND		990	"	"	"	"	"	"	U
1,2,4-Trichlorobenzene	ND		990	"	"	"	"	"	"	U
Naphthalene	ND		990	"	"	"	"	"	"	U
4-Chloroaniline	ND	J	990	"	"	"	"	"	"	U
Hexachlorobutadiene	ND		990	"	"	"	"	"	"	U
4-Chloro-3-methylphenol	ND		990	"	"	"	"	"	"	U
2-Methylnaphthalene	ND		990	"	"	"	"	"	"	U
Hexachlorocyclopentadiene	ND	J	990	"	"	"	"	"	"	U
2,4,6-Trichlorophenol	ND		990	"	"	"	"	"	"	U
2,4,5-Trichlorophenol	ND		990	"	"	"	"	"	"	U
2-Chloronaphthalene	ND		990	"	"	"	"	"	"	U
2-Nitroaniline	ND		4950	"	"	"	"	"	"	U
Dimethyl Phthalate	ND		990	"	"	"	"	"	"	U
2,6-Dinitrotoluene	ND		990	"	"	"	"	"	"	U
Acenaphthylene	ND		990	"	"	"	"	"	"	U
3-Nitroaniline	ND		4950	"	"	"	"	"	"	U
Acenaphthene	ND		990	"	"	"	"	"	"	U
2,4-Dinitrophenol	ND		4950	"	"	"	"	"	"	U
4-Nitrophenol	ND		4950	"	"	"	"	"	"	U
Dibenzofuran	ND		990	"	"	"	"	"	"	U
2,4-Dinitrotoluene	ND		990	"	"	"	"	"	"	U
Diethyl Phthalate	ND		990	"	"	"	"	"	"	U
4-Chlorophenyl Phenyl Ether	ND		990	"	"	"	"	"	"	U

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
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WC-Hanford, Inc
2620 Fermi Avenue
Richland WA, 99354

Project: RC-116
Project Number: K1525
Project Manager: Joan Kessner

Reported:
04/16/2009 10:17

J181B3
0902012-11 (Solid)

✓ 11/20/09

Lionville Laboratory

Semivolatile Organic Compounds by SW846 8270C

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Fluorene	ND	990	ug/kg wet	1	1902069	02/11/2009	03/23/2009	8270C	U
4-Nitroaniline	ND	4950	"	"	"	"	"	"	U
4,6-Dinitro-2-methylphenol	ND	990	"	"	"	"	"	"	U
N-Nitrosodiphenylamine	ND	990	"	"	"	"	"	"	U
4-Bromophenyl Phenyl Ether	ND	990	"	"	"	"	"	"	U
Hexachlorobenzene	ND	990	"	"	"	"	"	"	U
Pentachlorophenol	ND	4950	"	"	"	"	"	"	U
Phenanthrene	ND	990	"	"	"	"	"	"	U
Anthracene	ND	990	"	"	"	"	"	"	U
Carbazole	ND	990	"	"	"	"	"	"	U
Di-n-butyl Phthalate	ND	990	"	"	"	"	"	"	U
Fluoranthene	ND	990	"	"	"	"	"	"	U
Pyrene	ND	990	"	"	"	"	"	"	U
Butyl Benzyl Phthalate	ND	990	"	"	"	"	"	"	U
Bis(2-ethylhexyl) phthalate	ND	990	"	"	"	"	"	"	U
3,3'-Dichlorobenzidine	ND ✓	1980	"	"	"	"	"	"	U
Benz[a]anthracene	ND	990	"	"	"	"	"	"	U
Chrysene	ND	990	"	"	"	"	"	"	U
Di-n-octyl Phthalate	ND	990	"	"	"	"	"	"	U
Benzo[b] fluoranthene	ND	990	"	"	"	"	"	"	U
Benzo[k] fluoranthene	ND	990	"	"	"	"	"	"	U
Benzo[a] pyrene	ND	990	"	"	"	"	"	"	U
Indeno[1,2,3-cd]pyrene	ND	990	"	"	"	"	"	"	U
Dibenz[a,h]anthracene	ND	990	"	"	"	"	"	"	U
Benzo[g,h,i] perylene	ND	990	"	"	"	"	"	"	U
TIC: Unknown 2	**512**		"	"	"	"	"	"	J, D, ~~R~~
TIC: Unknown 1	**79000**		"	"	"	"	"	"	R, J, D
TIC: Aldol Condensate 1	**451**		"	"	"	"	"	"	J, D, ~~R~~ A
Surrogate: 2-Fluorophenol		*54 %*	*23-121*		"	"	"	"	AA 4.16.09
Surrogate: Phenol-d5		*57 %*	*24-113*		"	"	"	"	
Surrogate: Nitrobenzene-d5		*39 %*	*23-120*		"	"	"	"	
Surrogate: 2-Fluorobiphenyl		*43 %*	*30-115*		"	"	"	"	
Surrogate: 2,4,6-Tribromophenol		*28 %*	*19-122*		"	"	"	"	
Surrogate: p-Terphenyl-d14		*36 %*	*18-137*		"	"	"	"	

264 Welsh Pool Road
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WCH-Hanford, Inc
2620 Fermi Avenue
Richland WA, 99354

Project: RC-116
Project Number: K1525
Project Manager: Joan Kessner

Reported:
04/14/2009 10:17

J17V87
0902012-12 (Solid)

K 11/20/09

Lionville Laboratory

Semivolatile Organic Compounds by SW846 8270C

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Phenol	ND	990	ug/kg wet	1	L902069	03/11/2009	03/23/2009	8270C	U
Bis(2-chloroethyl) ether	ND	990	"	"	"	"	"	"	U
2-Chlorophenol	ND	990	"	"	"	"	"	"	U
1,3-Dichlorobenzene	ND	990	"	"	"	"	"	"	U
1,4-Dichlorobenzene	ND	990	"	"	"	"	"	"	U
1,2-Dichlorobenzene	ND	990	"	"	"	"	"	"	U
2-Methylphenol	ND	990	"	"	"	"	"	"	U
Bis(2-chloroisopropyl) ether	ND	990	"	"	"	"	"	"	U
4-Methylphenol	ND	990	"	"	"	"	"	"	U
N-Nitrosodi-n-propylamine	ND	990	"	"	"	"	"	"	U
Hexachloroethane	ND J	990	"	"	"	"	"	"	U
Nitrobenzene	ND	990	"	"	"	"	"	"	U
Isophorone	ND	990	"	"	"	"	"	"	U
2-Nitrophenol	ND	990	"	"	"	"	"	"	U
2,4-Dimethylphenol	ND	990	"	"	"	"	"	"	U
Bis(2-chloroethoxy) methane	ND	990	"	"	"	"	"	"	U
2,4-Dichlorophenol	ND	990	"	"	"	"	"	"	U
1,2,4-Trichlorobenzene	ND	990	"	"	"	"	"	"	U
Naphthalene	ND	990	"	"	"	"	"	"	U
4-Chloroaniline	ND J	990	"	"	"	"	"	"	U
Hexachlorobutadiene	ND	990	"	"	"	"	"	"	U
4-Chloro-3-methylphenol	ND	990	"	"	"	"	"	"	U
2-Methylnaphthalene	ND	990	"	"	"	"	"	"	U
Hexachlorocyclopentadiene	ND J	990	"	"	"	"	"	"	U
2,4,6-Trichlorophenol	ND	990	"	"	"	"	"	"	U
2,4,5-Trichlorophenol	ND	990	"	"	"	"	"	"	U
2-Chloronaphthalene	ND	990	"	"	"	"	"	"	U
2-Nitroaniline	ND	4950	"	"	"	"	"	"	U
Dimethyl Phthalate	ND	990	"	"	"	"	"	"	U
2,6-Dinitrotoluene	ND	990	"	"	"	"	"	"	U
Acenaphthylene	ND	990	"	"	"	"	"	"	U
3-Nitroaniline	ND	4950	"	"	"	"	"	"	U
Acenaphthene	ND	990	"	"	"	"	"	"	U
2,4-Dinitrophenol	ND	4950	"	"	"	"	"	"	U
4-Nitrophenol	ND	4950	"	"	"	"	"	"	U
Dibenzofuran	ND	990	"	"	"	"	"	"	U
2,4-Dinitrotoluene	ND	990	"	"	"	"	"	"	U
Diethyl Phthalate	ND	990	"	"	"	"	"	"	U
4-Chlorophenyl Phenyl Ether	ND	990	"	"	"	"	"	"	U

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

WC-Hanford, Inc	Project: RC-116	
2620 Fermi Avenue	Project Number: K1525	**Reported:**
Richland WA, 99354	Project Manager: Joan Kessner	04/14/2009 10:17

J17V87

0902012-12 (Solid)

11/24/09

Lionville Laboratory

Semivolatile Organic Compounds by SW846 8270C

Analyte	Result	Reporting Limit	Unit	Dilution	Batch	Prepared	Analyzed	Method	Notes
Fluorene	ND	990	ug/kg wet	5	L902069	02/11/2009	03/23/2009	8270C	U
4-Nitroaniline	ND	4950	"	"	"	"	"	&	U
4,6-Dinitro-2-methylphenol	ND	990	"	"	"	"	"	&	U
N-Nitrosodiphenylamine	ND	990	"	"	"	"	"	&	U
4-Bromophenyl Phenyl Ether	ND	990	"	"	"	"	"	&	U
Hexachlorobenzene	ND	990	"	"	"	"	"	&	U
Pentachlorophenol	ND	4950	"	"	"	"	"	&	U
Phenanthrene	ND	990	"	"	"	"	"	&	U
Anthracene	ND	990	"	"	"	"	"	&	U
Carbazole	ND	990	"	"	"	"	"	&	U
Di-n-butyl Phthalate	ND	990	"	"	"	"	"	&	U
Fluoranthene	ND	990	"	"	"	"	"	&	U
Pyrene	ND	990	"	"	"	"	"	&	U
Butyl Benzyl Phthalate	ND	990	"	"	"	"	"	&	U
Bis(2-ethylhexyl) phthalate	ND	990	"	"	"	"	"	&	U
3,3'-Dichlorobenzidine	ND J	1980	"	"	"	"	"	&	U
Benz[a]anthracene	ND	990	"	"	"	"	"	&	U
Chrysene	ND	990	"	"	"	"	"	&	U
Di-n-octyl Phthalate	ND	990	"	"	"	"	"	&	U
Benzo[b] fluoranthene	ND	990	"	"	"	"	"	&	U
Benzo[k] fluoranthene	ND	990	"	"	"	"	"	&	U
Benzo[a] pyrene	ND	990	"	"	"	"	"	&	U
Indeno[1,2,3-cd]pyrene	ND	990	"	"	"	"	"	&	U
Dibenz[a,h]anthracene	ND	990	"	"	"	"	"	&	U
Benzo[g,h,i] perylene	ND	990	"	"	"	"	"	&	U
TIC: Unknown 1	70500		"	"	"	"	"	&	B, J, U
Surrogate: 2-Fluorophenol		*49 %*	*25-121*		"	"	"	&	
Surrogate: Phenol-d5		*50 %*	*24-113*		"	"	"	&	
Surrogate: Nitrobenzene-d5		*35 %*	*23-120*		"	"	"	&	
Surrogate: 2-Fluorobiphenyl		*45 %*	*30-115*		"	"	"	&	
Surrogate: 2,4,6-Tribromophenol		*29 %*	*19-122*		"	"	"	&	
Surrogate: p-Terphenyl-d14		*53 %*	*18-137*		"	"	"	&	

264 Welsh Pool Road
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Phone: 610-280-3000
Fax: 610-280-3041

WC-Hanford, Inc. 2620 Fermi Avenue Richland WA, 99354	Project: RC-116 Project Number: K1525 Project Manager: Joan Kessner	Reported: 04/14/2009 10:17

J17V88
0902012-13 (Solid)

V 11/20/09

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes

Lionville Laboratory

Semivolatile Organic Compounds by SW846 8270C

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Phenol	ND	990	ug/kg wet	5	9002069	02/11/2009	03/23/2009	8270C	U
Bis(2-chloroethyl) ether	ND	990	"	"	"	"	"	"	U
2-Chlorophenol	ND	990	"	"	"	"	"	"	U
1,3-Dichlorobenzene	ND	990	"	"	"	"	"	"	U
1,4-Dichlorobenzene	ND	990	"	"	"	"	"	"	U
1,2-Dichlorobenzene	ND	990	"	"	"	"	"	"	U
2-Methylphenol	ND	990	"	"	"	"	"	"	U
Bis(2-chloroisopropyl) ether	ND	990	"	"	"	"	"	"	U
4-Methylphenol	ND	990	"	"	"	"	"	"	U
N-Nitrosodi-n-propylamine	ND	990	"	"	"	"	"	"	U
Hexachloroethane	ND J	990	"	"	"	"	"	"	U
Nitrobenzene	ND	990	"	"	"	"	"	"	U
Isophorone	ND	990	"	"	"	"	"	"	U
2-Nitrophenol	ND	990	"	"	"	"	"	"	U
2,4-Dimethylphenol	ND	990	"	"	"	"	"	"	U
Bis(2-chloroethoxy) methane	ND	990	"	"	"	"	"	"	U
2,4-Dichlorophenol	ND	990	"	"	"	"	"	"	U
1,2,4-Trichlorobenzene	ND	990	"	"	"	"	"	"	U
Naphthalene	ND	990	"	"	"	"	"	"	U
4-Chloroaniline	ND J	990	"	"	"	"	"	"	U
Hexachlorobutadiene	ND	990	"	"	"	"	"	"	U
4-Chloro-3-methylphenol	ND	990	"	"	"	"	"	"	U
2-Methylnaphthalene	ND	990	"	"	"	"	"	"	U
Hexachlorocyclopentadiene	ND J	990	"	"	"	"	"	"	U
2,4,6-Trichlorophenol	ND	990	"	"	"	"	"	"	U
2,4,5-Trichlorophenol	ND	990	"	"	"	"	"	"	U
2-Chloronaphthalene	ND	990	"	"	"	"	"	"	U
2-Nitroaniline	ND	4950	"	"	"	"	"	"	U
Dimethyl Phthalate	ND	990	"	"	"	"	"	"	U
2,6-Dinitrotoluene	ND	990	"	"	"	"	"	"	U
Acenaphthylene	ND	990	"	"	"	"	"	"	U
3-Nitroaniline	ND	4950	"	"	"	"	"	"	U
Acenaphthene	ND	990	"	"	"	"	"	"	U
2,4-Dinitrophenol	ND	4950	"	"	"	"	"	"	U
4-Nitrophenol	ND	4950	"	"	"	"	"	"	U
Dibenzofuran	ND	990	"	"	"	"	"	"	U
2,4-Dinitrotoluene	ND	990	"	"	"	"	"	"	U
Diethyl Phthalate	ND	990	"	"	"	"	"	"	U
4-Chlorophenyl Phenyl Ether	ND	990	"	"	"	"	"	"	U

WC-Hanford, Inc 2620 Fermi Avenue Richland WA, 99354	Project: RC-116 Project Number: K1323 Project Manager: Joan Kessner	Reported: 04/14/2009 10.17

J17V88
0902012-13 (Solid)

ك 10/20/09

Lionville Laboratory

Semivolatile Organic Compounds by SW846 8270C

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Fluorene	ND	990	ug/kg wet	1	1902069	03/17/2009	03/23/2009	8270C	U
4-Nitroaniline	ND	4950	"	"	"	"	"	&	U
4,6-Dinitro-2-methylphenol	ND	990	"	"	"	"	"	&	U
N-Nitrosodiphenylamine	ND	990	"	"	"	"	"	&	U
4-Bromophenyl Phenyl Ether	ND	990	"	"	"	"	"	&	U
Hexachlorobenzene	ND	990	"	"	"	"	"	&	U
Pentachlorophenol	ND	4950	"	"	"	"	"	&	U
Phenanthrene	ND	990	"	"	"	"	"	&	U
Anthracene	ND	990	"	"	"	"	"	&	U
Carbazole	ND	990	"	"	"	"	"	&	U
Di-n-butyl Phthalate	ND	990	"	"	"	"	"	&	U
Fluoranthene	ND	990	"	"	"	"	"	&	U
Pyrene	ND	990	"	"	"	"	"	&	U
Butyl Benzyl Phthalate	ND	990	"	"	"	"	"	&	U
Bis(2-ethylhexyl) phthalate	ND	990	"	"	"	"	"	&	U
3,3'-Dichlorobenzidine	ND ✓	1980	"	"	"	"	"	&	U
Benz[a]anthracene	ND	990	"	"	"	"	"	&	U
Chrysene	ND	990	"	"	"	"	"	&	U
Di-n-octyl Phthalate	ND	990	"	"	"	"	"	&	U
Benzo[b] fluoranthene	ND	990	"	"	"	"	"	&	U
Benzo[k] fluoranthene	ND	990	"	"	"	"	"	&	U
Benzo[a] pyrene	ND	990	"	"	"	"	"	&	U
Indeno[1,2,3-cd]pyrene	ND	990	"	"	"	"	"	&	U
Dibenz[a,h]anthracene	ND	990	"	"	"	"	"	&	U
Benzo[g,h,i] perylene	ND	990	"	"	"	"	"	&	U
TIC: Unknown 1	83300		"	"	"	"	"	&	B, J, D
Surrogate: 2-Fluorophenol		*70 %*	*25-121*		"	"	"	&	
Surrogate: Phenol-d5		*70 %*	*24-113*		"	"	"	&	
Surrogate: Nitrobenzene-d5		*56 %*	*23-120*		"	"	"	&	
Surrogate: 2-Fluorobiphenyl		*66 %*	*30-115*		"	"	"	&	
Surrogate: 2,4,6-Tribromophenol		*51 %*	*19-122*		"	"	"	&	
Surrogate: p-Terphenyl-d14		*65 %*	*18-137*		"	"	"	&	

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WC-Hanford, Inc 2620 Fermi Avenue Richland WA, 99354	Project: RC-116 Project Number: K1525 Project Manager: Joan Kessner	**Reported:** 04/14/2009 10:17

J17V89

0902012-14 (Solid)

11/20/09

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes

Lionville Laboratory

Semivolatile Organic Compounds by SW846 8270C

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Phenol	ND	990	ug/kg wet	3	L902069	02/11/2009	02/21/2009	8270C	U
Bis(2-chloroethyl) ether	ND	990	"	"	"	"	"	"	U
2-Chlorophenol	ND	990	"	"	"	"	"	"	U
1,3-Dichlorobenzene	ND	990	"	"	"	"	"	"	U
1,4-Dichlorobenzene	ND	990	"	"	"	"	"	"	U
1,2-Dichlorobenzene	ND	990	"	"	"	"	"	"	U
2-Methylphenol	ND	990	"	"	"	"	"	"	U
Bis(2-chloroisopropyl) ether	ND	990	"	"	"	"	"	"	U
4-Methylphenol	ND	990	"	"	"	"	"	"	U
N-Nitrosodi-n-propylamine	ND	990	"	"	"	"	"	"	U
Hexachloroethane	ND J	990	"	"	"	"	"	"	U
Nitrobenzene	ND	990	"	"	"	"	"	"	U
Isophorone	ND	990	"	"	"	"	"	"	U
2-Nitrophenol	ND	990	"	"	"	"	"	"	U
2,4-Dimethylphenol	ND	990	"	"	"	"	"	"	U
Bis(2-chloroethoxy) methane	ND	990	"	"	"	"	"	"	U
2,4-Dichlorophenol	ND	990	"	"	"	"	"	"	U
1,2,4-Trichlorobenzene	ND	990	"	"	"	"	"	"	U
Naphthalene	ND	990	"	"	"	"	"	"	U
4-Chloroaniline	ND J	990	"	"	"	"	"	"	U
Hexachlorobutadiene	ND	990	"	"	"	"	"	"	U
4-Chloro-3-methylphenol	ND	990	"	"	"	"	"	"	U
2-Methylnaphthalene	ND	990	"	"	"	"	"	"	U
Hexachlorocyclopentadiene	ND J	990	"	"	"	"	"	"	U
2,4,6-Trichlorophenol	ND	990	"	"	"	"	"	"	U
2,4,5-Trichlorophenol	ND	990	"	"	"	"	"	"	U
2-Chloronaphthalene	ND	990	"	"	"	"	"	"	U
2-Nitroaniline	ND	4950	"	"	"	"	"	"	U
Dimethyl Phthalate	ND	990	"	"	"	"	"	"	U
2,6-Dinitrotoluene	ND	990	"	"	"	"	"	"	U
Acenaphthylene	ND	990	"	"	"	"	"	"	U
3-Nitroaniline	ND	4950	"	"	"	"	"	"	U
Acenaphthene	ND	990	"	"	"	"	"	"	U
2,4-Dinitrophenol	ND	4950	"	"	"	"	"	"	U
4-Nitrophenol	ND	4950	"	"	"	"	"	"	U
Dibenzofuran	ND	990	"	"	"	"	"	"	U
2,4-Dinitrotoluene	ND	990	"	"	"	"	"	"	U
Diethyl Phthalate	ND	990	"	"	"	"	"	"	U
4-Chlorophenyl Phenyl Ether	ND	990	"	"	"	"	"	"	U

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WCH Hanford, Inc 2620 Fermi Avenue Richland WA, 99354	Project: RC-116 Project Number: K1525 Project Manager: Joan Kessner	**Reported:** 04/14/2009 10:17

J17V89
0902012-14 (Solid)

W 11/20/09

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes

Lionville Laboratory

Semivolatile Organic Compounds by SW846 8270C

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Fluorene	ND	990	ug/kg wet	3	1902069	02/11/2009	03/23/2009	8270C	U
4-Nitroaniline	ND	4950	"	"	"	"	"	"	U
4,6-Dinitro-2-methylphenol	ND	990	"	"	"	"	"	"	U
N-Nitrosodiphenylamine	ND	990	"	"	"	"	"	"	U
4-Bromophenyl Phenyl Ether	ND	990	"	"	"	"	"	"	U
Hexachlorobenzene	ND	990	"	"	"	"	"	"	U
Pentachlorophenol	ND	4950	"	"	"	"	"	"	U
Phenanthrene	ND	990	"	"	"	"	"	"	U
Anthracene	ND	990	"	"	"	"	"	"	U
Carbazole	ND	990	"	"	"	"	"	"	U
Di-n-butyl Phthalate	ND	990	"	"	"	"	"	"	U
Fluoranthene	ND	990	"	"	"	"	"	"	U
Pyrene	ND	990	"	"	"	"	"	"	U
Butyl Benzyl Phthalate	ND	990	"	"	"	"	"	"	U
Bis(2-ethylhexyl) phthalate	ND	990	"	"	"	"	"	"	U
3,3'-Dichlorobenzidine	ND J	1980	"	"	"	"	"	"	U
Benz[a]anthracene	ND	990	"	"	"	"	"	"	U
Chrysene	ND	990	"	"	"	"	"	"	U
Di-n-octyl Phthalate	ND	990	"	"	"	"	"	"	U
Benzo[b] fluoranthene	ND	990	"	"	"	"	"	"	U
Benzo[k] fluoranthene	ND	990	"	"	"	"	"	"	U
Benzo[a] pyrene	ND	990	"	"	"	"	"	"	U
Indeno[1,2,3-cd]pyrene	ND	990	"	"	"	"	"	"	U
Dibenz[a,h]anthracene	ND	990	"	"	"	"	"	"	U
Benzo[g,h,i] perylene	ND	990	"	"	"	"	"	"	U
TIC: Unknown 2	750		"	"	"	"	"	"	J, D, N
TIC: Unknown 1	70,900		"	"	"	"	"	"	N, J, D
Surrogate: 2-Fluorophenol		*66 %*	*25-121*		"	"	"	"	[illegible]
Surrogate: Phenol-d5		*67 %*	*24-113*		"	"	"	"	
Surrogate: Nitrobenzene-d5		*45 %*	*23-120*		"	"	"	"	
Surrogate: 2-Fluorobiphenyl		*62 %*	*30-115*		"	"	"	"	
Surrogate: 2,4,6-Tribromophenol		*29 %*	*19-122*		"	"	"	"	
Surrogate: p-Terphenyl-d14		*67 %*	*18-137*		"	"	"	"	

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WC Hanford, Inc 2620 Fermi Avenue Richland WA, 99354	Project: RC-116 Project Number: K1525 Project Manager: Joan Kessner	**Reported:** 04/14/2009 10:17

J17V90

0902012-15 (Solid) R 11/20/09

Lionville Laboratory

Semivolatile Organic Compounds by SW846 8270C

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Phenol	ND	660	ug/kg wet	7	L902069	02/11/2009	02/23/2009	8270C	U
Bis(2-Chloroethyl) ether	ND	660	"	"	"	"	"	"	U
2-Chlorophenol	ND	660	"	"	"	"	"	"	U
1,3-Dichlorobenzene	ND	660	"	"	"	"	"	"	U
1,4-Dichlorobenzene	ND	660	"	"	"	"	"	"	U
1,2-Dichlorobenzene	ND	660	"	"	"	"	"	"	U
2-Methylphenol	ND	660	"	"	"	"	"	"	U
Bis(2-chloroisopropyl) ether	ND	660	"	"	"	"	"	"	U
4-Methylphenol	ND	660	"	"	"	"	"	"	U
N-Nitrosodi-n-propylamine	ND	660	"	"	"	"	"	"	U
Hexachloroethane	ND J	660	"	"	"	"	"	"	U
Nitrobenzene	ND	660	"	"	"	"	"	"	U
Isophorone	ND	660	"	"	"	"	"	"	U
2-Nitrophenol	ND	660	"	"	"	"	"	"	U
2,4-Dimethylphenol	ND	660	"	"	"	"	"	"	U
Bis(2-chloroethoxy) methane	ND	660	"	"	"	"	"	"	U
2,4-Dichlorophenol	ND	660	"	"	"	"	"	"	U
1,2,4-Trichlorobenzene	ND	660	"	"	"	"	"	"	U
Naphthalene	ND	660	"	"	"	"	"	"	U
4-Chloroaniline	ND J	660	"	"	"	"	"	"	U
Hexachlorobutadiene	ND	660	"	"	"	"	"	"	U
4-Chloro-3-methylphenol	ND	660	"	"	"	"	"	"	U
2-Methylnaphthalene	ND	660	"	"	"	"	"	"	U
Hexachlorocyclopentadiene	ND J	660	"	"	"	"	"	"	U
2,4,6-Trichlorophenol	ND	660	"	"	"	"	"	"	U
2,4,5-Trichlorophenol	ND	660	"	"	"	"	"	"	U
2-Chloronaphthalene	ND	660	"	"	"	"	"	"	U
2-Nitroaniline	ND	3300	"	"	"	"	"	"	U
Dimethyl Phthalate	ND	660	"	"	"	"	"	"	U
2,6-Dinitrotoluene	ND	660	"	"	"	"	"	"	U
Acenaphthylene	ND	660	"	"	"	"	"	"	U
3-Nitroaniline	ND	3300	"	"	"	"	"	"	U
Acenaphthene	ND	660	"	"	"	"	"	"	U
2,4-Dinitrophenol	ND	3300	"	"	"	"	"	"	U
4-Nitrophenol	ND	3300	"	"	"	"	"	"	U
Dibenzofuran	ND	660	"	"	"	"	"	"	U
2,4-Dinitrotoluene	ND	660	"	"	"	"	"	"	U
Diethyl Phthalate	ND	660	"	"	"	"	"	"	U
4-Chlorophenyl Phenyl Ether	ND	660	"	"	"	"	"	"	U

WC Hanford, Inc. 2620 Fermi Avenue Richland WA, 99354	Project: RC-116 Project Number: K1525 Project Manager: Joan Kessner	**Reported:** 04/14/2009 10:12

J17V90

0902012-15 (Solid)

K 1C 2/09

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes

Lionville Laboratory

Semivolatile Organic Compounds by SW846 8270C

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Fluorene	ND	660	ug/kg wet	2	0902069	03/11/2009	03/21/2009	8270C	U
4-Nitroaniline	ND	3300	"	"	"	"	"	"	U
4,6-Dinitro-2-methylphenol	ND	660	"	"	"	"	"	"	U
N-Nitrosodiphenylamine	ND	660	"	"	"	"	"	"	U
4-Bromophenyl Phenyl Ether	ND	660	"	"	"	"	"	"	U
Hexachlorobenzene	ND	660	"	"	"	"	"	"	U
Pentachlorophenol	ND	3300	"	"	"	"	"	"	U
Phenanthrene	ND	660	"	"	"	"	"	"	U
Anthracene	ND	660	"	"	"	"	"	"	U
Carbazole	ND	660	"	"	"	"	"	"	U
Di-n-butyl Phthalate	ND	660	"	"	"	"	"	"	U
Fluoranthene	ND	660	"	"	"	"	"	"	U
Pyrene	ND	660	"	"	"	"	"	"	U
Butyl Benzyl Phthalate	ND	660	"	"	"	"	"	"	U
Bis(2-ethylhexyl) phthalate	ND	660	"	"	"	"	"	"	U
3,3'-Dichlorobenzidine	ND J	1320	"	"	"	"	"	"	U
Benz[a]anthracene	ND	660	"	"	"	"	"	"	U
Chrysene	ND	660	"	"	"	"	"	"	U
Di-n-octyl Phthalate	ND	660	"	"	"	"	"	"	U
Benzo[b] fluoranthene	ND	660	"	"	"	"	"	"	U
Benzo[k] fluoranthene	ND	660	"	"	"	"	"	"	U
Benzo[a] pyrene	ND	660	"	"	"	"	"	"	U
Indeno[1,2,3-cd]pyrene	ND	660	"	"	"	"	"	"	U
Dibenz[a,h]anthracene	ND	660	"	"	"	"	"	"	U
Benzo[g,h,i] perylene	ND	660	"	"	"	"	"	"	U
TIC: Unknown 5	**309**		"	"	"	"	"	"	J, D, M
TIC: Unknown 1	**268**		"	"	"	"	"	"	J, D
TIC: Aldol Condensate 2	**927**		"	"	"	"	"	"	J, D, F
TIC: Aldol Condensate 1	**452**		"	"	"	"	"	"	J, D, FA
TIC: Unknown 2	**99000**		"	"	"	"	"	"	R, J, D
Surrogate: 2-Fluorophenol		*38 %*	*25-121*		"	"	"	"	[illegible]
Surrogate: Phenol-d5		*55 %*	*24-113*		"	"	"	"	
Surrogate: Nitrobenzene-d5		*56 %*	*23-120*		"	"	"	"	
Surrogate: 2-Fluorobiphenyl		*58 %*	*30-115*		"	"	"	"	
Surrogate: 2,4,6-Tribromophenol		*34 %*	*19-122*		"	"	"	"	
Surrogate: p-Terphenyl-d14		*76 %*	*18-137*		"	"	"	"	

LVL
LIONVILLE LABORATORY

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WCH-Hanford, Inc
2620 Fermi Avenue
Richland WA, 99354

Project: RC-116
Project Number: K1525
Project Manager: Joan Kessner

Reported:
04/14/2009 12:41

J17V91
0902012-16 (Solid)

11/20/09

Lionville Laboratory

Semivolatile Organic Compounds by SW846 8270C:

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Phenol	ND	660	ug/kg wet	2	1902069	02/13/2009	02/24/2009	8270C	U
Bis(2-chloroethyl) ether	ND	660	"	"	"	"	"	"	U
2-Chlorophenol	ND	660	"	"	"	"	"	"	U
1,3-Dichlorobenzene	ND	660	"	"	"	"	"	"	U
1,4-Dichlorobenzene	ND	660	"	"	"	"	"	"	U
1,2-Dichlorobenzene	ND	660	"	"	"	"	"	"	U
2-Methylphenol	ND	660	"	"	"	"	"	"	U
Bis(2-chloroisopropyl) ether	ND	660	"	"	"	"	"	"	U
4-Methylphenol	ND	660	"	"	"	"	"	"	U
N-Nitrosodi-n-propylamine	ND	660	"	"	"	"	"	"	U
Hexachloroethane	ND J	660	"	"	"	"	"	"	U
Nitrobenzene	ND	660	"	"	"	"	"	"	U
Isophorone	ND	660	"	"	"	"	"	"	U
2-Nitrophenol	ND	660	"	"	"	"	"	"	U
2,4-Dimethylphenol	ND	660	"	"	"	"	"	"	U
Bis(2-chloroethoxy) methane	ND	660	"	"	"	"	"	"	U
2,4-Dichlorophenol	ND	660	"	"	"	"	"	"	U
1,2,4-Trichlorobenzene	ND	660	"	"	"	"	"	"	U
Naphthalene	ND	660	"	"	"	"	"	"	U
4-Chloroaniline	ND J	660	"	"	"	"	"	"	U
Hexachlorobutadiene	ND	660	"	"	"	"	"	"	U
4-Chloro-3-methylphenol	ND	660	"	"	"	"	"	"	U
2-Methylnaphthalene	ND	660	"	"	"	"	"	"	U
Hexachlorocyclopentadiene	ND J	660	"	"	"	"	"	"	U
2,4,6-Trichlorophenol	ND	660	"	"	"	"	"	"	U
2,4,5-Trichlorophenol	ND	660	"	"	"	"	"	"	U
2-Chloronaphthalene	ND	660	"	"	"	"	"	"	U
2-Nitroaniline	ND	3300	"	"	"	"	"	"	U
Dimethyl Phthalate	ND	660	"	"	"	"	"	"	U
2,6-Dinitrotoluene	ND	660	"	"	"	"	"	"	U
Acenaphthylene	ND	660	"	"	"	"	"	"	U
3-Nitroaniline	ND	3300	"	"	"	"	"	"	U
Acenaphthene	ND	660	"	"	"	"	"	"	U
2,4-Dinitrophenol	ND	3300	"	"	"	"	"	"	U
4-Nitrophenol	ND	3300	"	"	"	"	"	"	U
Dibenzofuran	ND	660	"	"	"	"	"	"	U
2,4-Dinitrotoluene	ND	660	"	"	"	"	"	"	U
Diethyl Phthalate	ND	660	"	"	"	"	"	"	U
4-Chlorophenyl Phenyl Ether	ND	660	"	"	"	"	"	"	U

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WC-Hanford, Inc 2620 Fermi Avenue Richland WA 99354	Project: RC-116 Project Number: K1525 Project Manager: Joan Kessner	Reported: 04/14/2009 12:43

J17V91

0902012-16 (Solid) 11/20/09

Lionville Laboratory

Semivolatile Organic Compounds by SW846 8270C

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Fluorene	ND	660	ug/kg wet	2	L902069	02/11/2009	02/24/2009	8270C	U
4-Nitroaniline	ND	3300	"	"	"	"	"	"	U
4,6-Dinitro-2-methylphenol	ND	660	"	"	"	"	"	"	U
N-Nitrosodiphenylamine	ND	660	"	"	"	"	"	"	U
4-Bromophenyl Phenyl Ether	ND	660	"	"	"	"	"	"	U
Hexachlorobenzene	ND	660	"	"	"	"	"	"	U
Pentachlorophenol	ND	3300	"	"	"	"	"	"	U
Phenanthrene	ND	660	"	"	"	"	"	"	U
Anthracene	ND	660	"	"	"	"	"	"	U
Carbazole	ND	660	"	"	"	"	"	"	U
Di-n-butyl Phthalate	ND	660	"	"	"	"	"	"	U
Fluoranthene	ND	660	"	"	"	"	"	"	U
Pyrene	ND	660	"	"	"	"	"	"	U
Butyl Benzyl Phthalate	ND	660	"	"	"	"	"	"	U
Bis(2-ethylhexyl) phthalate	ND	660	"	"	"	"	"	"	U
3,3'-Dichlorobenzidine	ND J	1320	"	"	"	"	"	"	U
Benz[a]anthracene	ND	660	"	"	"	"	"	"	U
Chrysene	ND	660	"	"	"	"	"	"	U
Di-n-octyl Phthalate	ND	660	"	"	"	"	"	"	U
Benzo[b] fluoranthene	ND	660	"	"	"	"	"	"	U
Benzo[k] fluoranthene	ND	660	"	"	"	"	"	"	U
Benzo[a] pyrene	ND	660	"	"	"	"	"	"	U
Indeno[1,2,3-cd]pyrene	ND	660	"	"	"	"	"	"	U
Dibenz[a,h]anthracene	ND	660	"	"	"	"	"	"	U
Benzo[g,h,i] perylene	ND	660	"	"	"	"	"	"	U
TIC: Unknown 3	530		"	"	"	"	"	"	J, D, ~~N~~
TIC: Unknown 2	122000		"	"	"	"	"	"	B, J, D
TIC: Alkane 1	476		"	"	"	"	"	"	J, D
TIC: Aldol Condensate 1	606		"	"	"	"	"	"	J, D, ~~N~~ A
TIC: Unknown 1	512		"	"	"	"	"	"	J, D
Surrogate: 2-Fluorophenol		68 %	*25-121*		"	"	"	"	[illegible]
Surrogate: Phenol-d5		68 %	*24-113*		"	"	"	"	
Surrogate: Nitrobenzene-d5		52 %	*23-120*		"	"	"	"	
Surrogate: 2-Fluorobiphenyl		72 %	*30-115*		"	"	"	"	
Surrogate: 2,4,6-Tribromophenol		29 %	*19-122*		"	"	"	"	
Surrogate: p-Terphenyl-d14		93 %	*18-137*		"	"	"	"	

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WC-Hanford, Inc. 2620 Fermi Avenue Richland WA, 99354	Project: RC-116 Project Number: K1525 Project Manager: Joan Kessner	**Reported:** 04/14/2009 12:43

J17V92

0902012-17 (Solid)

V 11/24/09

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes

Lionville Laboratory

Semivolatile Organic Compounds by SW846 8270C

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Phenol	ND	660	ug/kg wet	2	L902069	02/11/2009	02/23/2009	8270C	U
Bis(2-chloroethyl) ether	ND	660	"	"	"	"	"	"	U
2-Chlorophenol	ND	660	"	"	"	"	"	"	U
1,3-Dichlorobenzene	ND	660	"	"	"	"	"	"	U
1,4-Dichlorobenzene	ND	660	"	"	"	"	"	"	U
1,2-Dichlorobenzene	ND	660	"	"	"	"	"	"	U
2-Methylphenol	ND	660	"	"	"	"	"	"	U
Bis(2-chloroisopropyl) ether	ND	660	"	"	"	"	"	"	U
4-Methylphenol	ND	660	"	"	"	"	"	"	U
N-Nitrosodi-n-propylamine	ND	660	"	"	"	"	"	"	U
Hexachloroethane	ND J	660	"	"	"	"	"	"	U
Nitrobenzene	ND	660	"	"	"	"	"	"	U
Isophorone	ND	660	"	"	"	"	"	"	U
2-Nitrophenol	ND	660	"	"	"	"	"	"	U
2,4-Dimethylphenol	ND	660	"	"	"	"	"	"	U
Bis(2-chloroethoxy) methane	ND	660	"	"	"	"	"	"	U
2,4-Dichlorophenol	ND	660	"	"	"	"	"	"	U
1,2,4-Trichlorobenzene	ND	660	"	"	"	"	"	"	U
Naphthalene	ND	660	"	"	"	"	"	"	U
4-Chloroaniline	ND J	660	"	"	"	"	"	"	U
Hexachlorobutadiene	ND	660	"	"	"	"	"	"	U
4-Chloro-3-methylphenol	ND	660	"	"	"	"	"	"	U
2-Methylnaphthalene	ND	660	"	"	"	"	"	"	U
Hexachlorocyclopentadiene	ND J	660	"	"	"	"	"	"	U
2,4,6-Trichlorophenol	ND	660	"	"	"	"	"	"	U
2,4,5-Trichlorophenol	ND	660	"	"	"	"	"	"	U
2-Chloronaphthalene	ND	660	"	"	"	"	"	"	U
2-Nitroaniline	ND	3300	"	"	"	"	"	"	U
Dimethyl Phthalate	ND	660	"	"	"	"	"	"	U
2,6-Dinitrotoluene	ND	660	"	"	"	"	"	"	U
Acenaphthylene	ND	660	"	"	"	"	"	"	U
3-Nitroaniline	ND	3300	"	"	"	"	"	"	U
Acenaphthene	ND	660	"	"	"	"	"	"	U
2,4-Dinitrophenol	ND	3300	"	"	"	"	"	"	U
4-Nitrophenol	ND	3300	"	"	"	"	"	"	U
Dibenzofuran	ND	660	"	"	"	"	"	"	U
2,4-Dinitrotoluene	ND	660	"	"	"	"	"	"	U
Diethyl Phthalate	ND	660	"	"	"	"	"	"	U
4-Chlorophenyl Phenyl Ether	ND	660	"	"	"	"	"	"	U

LIONVILLE LABORATORY

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

WC Hanford, Inc
2620 Fermi Avenue
Richland WA, 99354

Project: RC-116
Project Number: K1525
Project Manager: Joan Kessner

Reported:
04/14/2009 12:43

J17V92
0902012-17 (Solid)

μ 11/24/09

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Lionville Laboratory									
Semivolatile Organic Compounds by SW846 8270C									
Fluorene	ND	660	ug/kg wet	2	1902069	02/11/2009	02/23/2009	8270C	U
4-Nitroaniline	ND	3300	"	"	"	"	"	"	U
4,6-Dinitro-2-methylphenol	ND	660	"	"	"	"	"	"	U
N-Nitrosodiphenylamine	ND	660	"	"	"	"	"	"	U
4-Bromophenyl Phenyl Ether	ND	660	"	"	"	"	"	"	U
Hexachlorobenzene	ND	660	"	"	"	"	"	"	U
Pentachlorophenol	ND	3300	"	"	"	"	"	"	U
Phenanthrene	ND	660	"	"	"	"	"	"	U
Anthracene	ND	660	"	"	"	"	"	"	U
Carbazole	ND	660	"	"	"	"	"	"	U
Di-n-butyl Phthalate	ND	660	"	"	"	"	"	"	U
Fluoranthene	ND	660	"	"	"	"	"	"	U
Pyrene	ND	660	"	"	"	"	"	"	U
Butyl Benzyl Phthalate	ND	660	"	"	"	"	"	"	U
Bis(2-ethylhexyl) phthalate	ND	660	"	"	"	"	"	"	U
3,3'-Dichlorobenzidine	ND J	1320	"	"	"	"	"	"	U
Benz[a]anthracene	ND	660	"	"	"	"	"	"	U
Chrysene	ND	660	"	"	"	"	"	"	U
Di-n-octyl Phthalate	ND	660	"	"	"	"	"	"	U
Benzo[b] fluoranthene	ND	660	"	"	"	"	"	"	U
Benzo[k] fluoranthene	ND	660	"	"	"	"	"	"	U
Benzo[a] pyrene	ND	660	"	"	"	"	"	"	U
Indeno[1,2,3-cd]pyrene	ND	660	"	"	"	"	"	"	U
Dibenz[a,h]anthracene	ND	660	"	"	"	"	"	"	U
Benzo[g,h,i] perylene	ND	660	"	"	"	"	"	"	U
TIC: Unknown 3	318		"	"	"	"	"	"	J, D, B
TIC: Unknown 1	397		"	"	"	"	"	"	J, D
TIC: Unknown 2	34900		"	"	"	"	"	"	B, J, D
Surrogate: 2-Fluorophenol		*63 %*	*25-121*		"	"	"	"	[illegible]
Surrogate: Phenol-d5		*63 %*	*24-113*		"	"	"	"	
Surrogate: Nitrobenzene-d5		*57 %*	*23-120*		"	"	"	"	
Surrogate: 2-Fluorobiphenyl		*69 %*	*30-115*		"	"	"	"	
Surrogate: 2,4,6-Tribromophenol		*42 %*	*19-122*		"	"	"	"	
Surrogate: p-Terphenyl-d14		*90 %*	*18-137*		"	"	"	"	

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WC-Hanford, Inc. 2620 Fermi Avenue Richland WA, 99354	Project: RC-116 Project Number: K1525 Project Manager: Joan Kessner	Reported: 04/14/2009 12:43

J17YP0

0902012-18 (Solid)

11/24/09

Lionville Laboratory

Semivolatile Organic Compounds by SW846 8270C

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Phenol	ND	660	ug/kg wet	1	0902069	02/11/2009	02/24/2009	8270C	U
Bis(2-chloroethyl) ether	ND	660	"	"	"	"	"	"	U
2-Chlorophenol	ND	660	"	"	"	"	"	"	U
1,3-Dichlorobenzene	ND	660	"	"	"	"	"	"	U
1,4-Dichlorobenzene	ND	660	"	"	"	"	"	"	U
1,2-Dichlorobenzene	ND	660	"	"	"	"	"	"	U
2-Methylphenol	ND	660	"	"	"	"	"	"	U
Bis(2-chloroisopropyl) ether	ND	660	"	"	"	"	"	"	U
4-Methylphenol	ND	660	"	"	"	"	"	"	U
N-Nitrosodi-n-propylamine	ND	660	"	"	"	"	"	"	U
Hexachloroethane	ND J	660	"	"	"	"	"	"	U
Nitrobenzene	ND	660	"	"	"	"	"	"	U
Isophorone	ND	660	"	"	"	"	"	"	U
2-Nitrophenol	ND	660	"	"	"	"	"	"	U
2,4-Dimethylphenol	ND	660	"	"	"	"	"	"	U
Bis(2-chloroethoxy) methane	ND	660	"	"	"	"	"	"	U
2,4-Dichlorophenol	ND	660	"	"	"	"	"	"	U
1,2,4-Trichlorobenzene	ND	660	"	"	"	"	"	"	U
Naphthalene	ND	660	"	"	"	"	"	"	U
4-Chloroaniline	ND J	660	"	"	"	"	"	"	U
Hexachlorobutadiene	ND	660	"	"	"	"	"	"	U
4-Chloro-3-methylphenol	ND	660	"	"	"	"	"	"	U
2-Methylnaphthalene	ND	660	"	"	"	"	"	"	U
Hexachlorocyclopentadiene	ND J	660	"	"	"	"	"	"	U
2,4,6-Trichlorophenol	ND	660	"	"	"	"	"	"	U
2,4,5-Trichlorophenol	ND	660	"	"	"	"	"	"	U
2-Chloronaphthalene	ND	660	"	"	"	"	"	"	U
2-Nitroaniline	ND	3300	"	"	"	"	"	"	U
Dimethyl Phthalate	ND	660	"	"	"	"	"	"	U
2,6-Dinitrotoluene	ND	660	"	"	"	"	"	"	U
Acenaphthylene	ND	660	"	"	"	"	"	"	U
3-Nitroaniline	ND	3300	"	"	"	"	"	"	U
Acenaphthene	ND	660	"	"	"	"	"	"	U
2,4-Dinitrophenol	ND	3300	"	"	"	"	"	"	U
4-Nitrophenol	ND	3300	"	"	"	"	"	"	U
Dibenzofuran	ND	660	"	"	"	"	"	"	U
2,4-Dinitrotoluene	ND	660	"	"	"	"	"	"	U
Diethyl Phthalate	ND	660	"	"	"	"	"	"	U
4-Chlorophenyl Phenyl Ether	ND	660	"	"	"	"	"	"	U
								"	U

LVL

264 Welsh Pool Road
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Phone: 610-280-3000
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WC Hanford, Inc.
2620 Fermi Avenue
Richland WA, 99354

Project: RCA116
Project Number: K1525
Project Manager: Joan Kessner

Reported:
04/14/2009 12:48

J17VP0

0902012-18 (Solid)

K 11/20/09

Lionville Laboratory

Semivolatile Organic Compounds by SW846 8270C

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Fluorene	ND	660	ug/kg wet	2	1902069	02/11/2009	02/24/2009	8270C	U
4-Nitroaniline	ND	3300	"	"	"	"	"	"	U
4,6-Dinitro-2-methylphenol	ND	660	"	"	"	"	"	"	U
N-Nitrosodiphenylamine	ND	660	"	"	"	"	"	"	U
4-Bromophenyl Phenyl Ether	ND	660	"	"	"	"	"	"	U
Hexachlorobenzene	ND	660	"	"	"	"	"	"	U
Pentachlorophenol	ND	3300	"	"	"	"	"	"	U
Phenanthrene	ND	660	"	"	"	"	"	"	U
Anthracene	ND	660	"	"	"	"	"	"	U
Carbazole	ND	660	"	"	"	"	"	"	U
Di-n-butyl Phthalate	ND	660	"	"	"	"	"	"	U
Fluoranthene	ND	660	"	"	"	"	"	"	U
Pyrene	ND	660	"	"	"	"	"	"	U
Butyl Benzyl Phthalate	ND	660	"	"	"	"	"	"	U
Bis(2-ethylhexyl) phthalate	ND	660	"	"	"	"	"	"	U
3,3'-Dichlorobenzidine	ND J	1320	"	"	"	"	"	"	U
Benz[a]anthracene	ND	660	"	"	"	"	"	"	U
Chrysene	ND	660	"	"	"	"	"	"	U
Di-n-octyl Phthalate	ND	660	"	"	"	"	"	"	U
Benzo[b] fluoranthene	ND	660	"	"	"	"	"	"	U
Benzo[k] fluoranthene	ND	660	"	"	"	"	"	"	U
Benzo[a] pyrene	ND	660	"	"	"	"	"	"	U
Indeno[1,2,3-cd]pyrene	ND	660	"	"	"	"	"	"	U
Dibenz[a,h]anthracene	ND	660	"	"	"	"	"	"	U
Benzo[g,h,i] perylene	ND	660	"	"	"	"	"	"	U
TIC: Unknown 3	955		"	"	"	"	"	"	U
TIC: Unknown 2	1290		"	"	"	"	"	"	J, D, JN
TIC: Unknown 1	52900		"	"	"	"	"	"	J, D, JN
TIC: Alkane 2	0.00		"	"	"	"	"	"	U, J, D
TIC: Alkane 1	958		"	"	"	"	"	"	U
Surrogate: 2-Fluorophenol		*41 %*	*25-121*		"	"	"	"	J, D
Surrogate: Phenol-d5		*50 %*	*24-113*		"	"	"	"	[illegible]
Surrogate: Nitrobenzene-d5		*45 %*	*23-120*		"	"	"	"	
Surrogate: 2-Fluorobiphenyl		*64 %*	*30-115*		"	"	"	"	
Surrogate: 2,4,6-Tribromophenol		*34 %*	*19-122*		"	"	"	"	
Surrogate: p-Terphenyl-d14		*102 %*	*18-137*		"	"	"	"	

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WC-Hanford, Inc. 2620 Fermi Avenue Richland WA, 99354	Project: RC-116 Project Number: K1525 Project Manager: Joan Kessner	Reported: 04/14/2009 12:58

J17VP5

0902012-19 (Solid)

JK 11/20/09

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes

Lionville Laboratory

Semivolatile Organic Compounds by SW846 8270C

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Phenol	ND	660	ug/kg wet	2	L902069	02/11/2009	02/24/2009	8270C	U
Bis(2-chloroethyl) ether	ND	660	"	"	"	"	"	&	U
2-Chlorophenol	ND	660	"	"	"	"	"	&	U
1,3-Dichlorobenzene	ND	660	"	"	"	"	"	&	U
1,4-Dichlorobenzene	ND	660	"	"	"	"	"	&	U
1,2-Dichlorobenzene	ND	660	"	"	"	"	"	&	U
2-Methylphenol	ND	660	"	"	"	"	"	&	U
Bis(2-chloroisopropyl) ether	ND	660	"	"	"	"	"	&	U
4-Methylphenol	ND	660	"	"	"	"	"	&	U
N-Nitrosodi-n-propylamine	ND	660	"	"	"	"	"	&	U
Hexachloroethane	ND	660	"	"	"	"	"	&	U
Nitrobenzene	ND	660	"	"	"	"	"	&	U
Isophorone	ND	660	"	"	"	"	"	&	U
2-Nitrophenol	ND	660	"	"	"	"	"	&	U
2,4-Dimethylphenol	ND	660	"	"	"	"	"	&	U
Bis(2-chloroethoxy) methane	ND	660	"	"	"	"	"	&	U
2,4-Dichlorophenol	ND	660	"	"	"	"	"	&	U
1,2,4-Trichlorobenzene	ND	660	"	"	"	"	"	&	U
Naphthalene	ND	660	"	"	"	"	"	&	U
4-Chloroaniline	ND	660	"	"	"	"	"	&	U
Hexachlorobutadiene	ND	660	"	"	"	"	"	&	U
4-Chloro-3-methylphenol	ND	660	"	"	"	"	"	&	U
2-Methylnaphthalene	ND	660	"	"	"	"	"	&	U
Hexachlorocyclopentadiene	ND	660	"	"	"	"	"	&	U
2,4,6-Trichlorophenol	ND	660	"	"	"	"	"	&	U
2,4,5-Trichlorophenol	ND	660	"	"	"	"	"	&	U
2-Chloronaphthalene	ND	660	"	"	"	"	"	&	U
2-Nitroaniline	ND	3300	"	"	"	"	"	&	U
Dimethyl Phthalate	ND	660	"	"	"	"	"	&	U
2,6-Dinitrotoluene	ND	660	"	"	"	"	"	&	U
Acenaphthylene	ND	660	"	"	"	"	"	&	U
3-Nitroaniline	ND	3300	"	"	"	"	"	&	U
Acenaphthene	ND	660	"	"	"	"	"	&	U
2,4-Dinitrophenol	ND	3300	"	"	"	"	"	&	U
4-Nitrophenol	ND	3300	"	"	"	"	"	&	U
Dibenzofuran	ND	660	"	"	"	"	"	&	U
2,4-Dinitrotoluene	ND	660	"	"	"	"	"	&	U
Diethyl Phthalate	ND	660	"	"	"	"	"	&	U
4-Chlorophenyl Phenyl Ether	ND	660	"	"	"	"	"	&	U

LVL

264 Welsh Pool Road
Exton, PA 19341
Phone 610-280-3000
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WC Hanford, Inc
2620 Fermi Avenue
Richland WA, 99354

Project: RC-116
Project Number: K1525
Project Manager: Joan Kessner

Reported:
03/14/2009 12:58

J17VP5

0902012-19 (Solid)

JK 12/4/05

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Lionville Laboratory									
Semivolatile Organic Compounds by SW846 8270C									
Fluorene	ND	660	ug/kg wet	1	1902069	02/11/2009	02/24/2009	8270C	U
4-Nitroaniline	ND J	3300	"	"	"	"	"	"	U
4,6-Dinitro-2-methylphenol	ND	660	"	"	"	"	"	"	U
N-Nitrosodiphenylamine	ND	660	"	"	"	"	"	"	U
4-Bromophenyl Phenyl Ether	ND	660	"	"	"	"	"	"	U
Hexachlorobenzene	ND	660	"	"	"	"	"	"	U
Pentachlorophenol	ND J	3300	"	"	"	"	"	"	U
Phenanthrene	ND	660	"	"	"	"	"	"	U
Anthracene	ND	660	"	"	"	"	"	"	U
Carbazole	ND J	660	"	"	"	"	"	"	U
Di-n-butyl Phthalate	ND J	660	"	"	"	"	"	"	U
Fluoranthene	ND	660	"	"	"	"	"	"	U
Pyrene	ND	660	"	"	"	"	"	"	U
Butyl Benzyl Phthalate	ND J	660	"	"	"	"	"	"	U
Bis(2-ethylhexyl) phthalate	ND J	660	"	"	"	"	"	"	U
3,3'-Dichlorobenzidine	ND J	1300	"	"	"	"	"	"	U
Benz[a]anthracene	ND	660	"	"	"	"	"	"	U
Chrysene	ND	660	"	"	"	"	"	"	U
Di-n-octyl Phthalate	ND J	660	"	"	"	"	"	"	U
Benzo[b] fluoranthene	ND	660	"	"	"	"	"	"	U
Benzo[k] fluoranthene	ND	660	"	"	"	"	"	"	U
Benzo[a] pyrene	ND	660	"	"	"	"	"	"	U
Indeno[1,2,3-cd]pyrene	ND	660	"	"	"	"	"	"	U
Dibenz[a,h]anthracene	ND	660	"	"	"	"	"	"	U
Benzo[g,h,i] perylene	ND	660	"	"	"	"	"	"	U
TIC: Unknown 5	284		"	"	"	"	"	"	J, D
TIC: Unknown 1	3560		"	"	"	"	"	"	B, J, D
TIC: Unknown 2	495		"	"	"	"	"	"	J, D
Surrogate: 2-Fluorophenol		[illegible]	*25-121*		"	"	"	"	
Surrogate: Phenol-d5		[illegible]	*24-113*		"	"	"	"	
Surrogate: Nitrobenzene-d5		[illegible]	*23-120*		"	"	"	"	
Surrogate: 2-Fluorobiphenyl		[illegible]	*30-115*		"	"	"	"	U
Surrogate: 2,4,6-Tribromophenol		[illegible]	*19-122*		"	"	"	"	
Surrogate: p-Terphenyl-d14		[illegible]	*18-137*		"	"	"	"	

000045

264 Welsh Pool Road
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Phone: 610-280-3000
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WC-Hanford, Inc.
2620 Fermi Avenue
Richland WA, 99354

Project: RCT-116
Project Number: K1525
Project Manager: Joan Kessner

Reported:
10/10/2009 12:55

J180W8-A
0902012-20 (Solid)

11/20/09

Analyte	Result and Qualifier		Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Lionville Laboratory									
Semivolatile Organic Compounds by SW846 8270C									
1,2,4-Trichlorobenzene	660 U		660	ug/kg	2	L902069	02/11/2009	02/23/2009	8270C
1,2-Dichlorobenzene	660 U		660	ug/kg	2	L902069	02/11/2009	02/23/2009	8270C
1,3-Dichlorobenzene	660 U		660	ug/kg	2	L902069	02/11/2009	02/23/2009	8270C
1,4-Dichlorobenzene	660 U		660	ug/kg	2	L902069	02/11/2009	02/23/2009	8270C
2,4,5-Trichlorophenol	660 U		660	ug/kg	2	L902069	02/11/2009	02/23/2009	8270C
2,4,6-Trichlorophenol	660 U		660	ug/kg	2	L902069	02/11/2009	02/23/2009	8270C
2,4-Dichlorophenol	660 U		660	ug/kg	2	L902069	02/11/2009	02/23/2009	8270C
2,4-Dimethylphenol	660 U		660	ug/kg	2	L902069	02/11/2009	02/23/2009	8270C
2,4-Dinitrophenol	3300 U		3300	ug/kg	2	L902069	02/11/2009	02/23/2009	8270C
2,4-Dinitrotoluene	660 U		660	ug/kg	2	L902069	02/11/2009	02/23/2009	8270C
2,6-Dinitrotoluene	660 U		660	ug/kg	2	L902069	02/11/2009	02/23/2009	8270C
2-Chloronaphthalene	660 U		660	ug/kg	2	L902069	02/11/2009	02/23/2009	8270C
2-Chlorophenol	660 U		660	ug/kg	2	L902069	02/11/2009	02/23/2009	8270C
2-Methylnaphthalene	660 U		660	ug/kg	2	L902069	02/11/2009	02/23/2009	8270C
2-Methylphenol	660 U		660	ug/kg	2	L902069	02/11/2009	02/23/2009	8270C
2-Nitroaniline	3300 U		3300	ug/kg	2	L902069	02/11/2009	02/23/2009	8270C
2-Nitrophenol	660 U		660	ug/kg	2	L902069	02/11/2009	02/23/2009	8270C
3,3'-Dichlorobenzidine	1320 U	J	1320	ug/kg	2	L902069	02/11/2009	02/23/2009	8270C
3-Nitroaniline	3300 U		3300	ug/kg	2	L902069	02/11/2009	02/23/2009	8270C
4,6-Dinitro-2-methylphenol	660 U		660	ug/kg	2	L902069	02/11/2009	02/23/2009	8270C
4-Bromophenyl Phenyl Ether	660 U		660	ug/kg	2	L902069	02/11/2009	02/23/2009	8270C
4-Chloro-3-methylphenol	660 U		660	ug/kg	2	L902069	02/11/2009	02/23/2009	8270C
4-Chloroaniline	660 U	J	660	ug/kg	2	L902069	02/11/2009	02/23/2009	8270C
4-Chlorophenyl Phenyl Ether	660 U		660	ug/kg	2	L902069	02/11/2009	02/23/2009	8270C
4-Methylphenol	660 U		660	ug/kg	2	L902069	02/11/2009	02/23/2009	8270C
4-Nitroaniline	3300 U		3300	ug/kg	2	L902069	02/11/2009	02/23/2009	8270C
4-Nitrophenol	3300 U		3300	ug/kg	2	L902069	02/11/2009	02/23/2009	8270C
Acenaphthene	660 U		660	ug/kg	2	L902069	02/11/2009	02/23/2009	8270C
Acenaphthylene	660 U		660	ug/kg	2	L902069	02/11/2009	02/23/2009	8270C
Anthracene	660 U		660	ug/kg	2	L902069	02/11/2009	02/23/2009	8270C
Benz[a]anthracene	660 U		660	ug/kg	2	L902069	02/11/2009	02/23/2009	8270C
Benzo[a] pyrene	660 U		660	ug/kg	2	L902069	02/11/2009	02/23/2009	8270C
Benzo[b] fluoranthene	660 U		660	ug/kg	2	L902069	02/11/2009	02/23/2009	8270C
Benzo[g,h,i] perylene	660 U		660	ug/kg	2	L902069	02/11/2009	02/23/2009	8270C
Benzo[k] fluoranthene	660 U		660	ug/kg	2	L902069	02/11/2009	02/23/2009	8270C
Bis(2-chloroethoxy) methane	660 U		660	ug/kg	2	L902069	02/11/2009	02/23/2009	8270C
Bis(2-chloroethyl) ether	660 U		660	ug/kg	2	L902069	02/11/2009	02/23/2009	8270C
Bis(2-chloroisopropyl) ether	660 U		660	ug/kg	2	L902069	02/11/2009	02/23/2009	8270C
Bis(2-ethylhexyl) phthalate	660 U		660	ug/kg	2	L902069	02/11/2009	02/23/2009	8270C

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264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

WC-Hanford, Inc. 2620 Fermi Avenue Richland WA, 99354	Project: RC 116 Project Number: K1525 Project Manager: Joan Kessner	Reported: 10/10/2009 12:55

J180W8-A

0902012-20 (Solid)

11/20/09

Analyte	Result and Qualifier	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method

Lionville Laboratory

Semivolatile Organic Compounds by SW846 8270C

Analyte	Result and Qualifier	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Butyl Benzyl Phthalate	660 U	660	ug/kg	2	L902069	02/11/2009	02/23/2009	8270C
Carbazole	660 U	660	ug/kg	2	L902069	02/11/2009	02/23/2009	8270C
Chrysene	660 U	660	ug/kg	2	L902069	02/11/2009	02/23/2009	8270C
Dibenz[a,h]anthracene	660 U	660	ug/kg	2	L902069	02/11/2009	02/23/2009	8270C
Dibenzofuran	660 U	660	ug/kg	2	L902069	02/11/2009	02/23/2009	8270C
Diethyl Phthalate	660 U	660	ug/kg	2	L902069	02/11/2009	02/23/2009	8270C
Dimethyl Phthalate	660 U	660	ug/kg	2	L902069	02/11/2009	02/23/2009	8270C
Di-n-butyl Phthalate	660 U	660	ug/kg	2	L902069	02/11/2009	02/23/2009	8270C
Di-n-octyl Phthalate	660 U	660	ug/kg	2	L902069	02/11/2009	02/23/2009	8270C
Fluoranthene	660 U	660	ug/kg	2	L902069	02/11/2009	02/23/2009	8270C
Fluorene	660 U	660	ug/kg	2	L902069	02/11/2009	02/23/2009	8270C
Hexachlorobenzene	660 U	660	ug/kg	2	L902069	02/11/2009	02/23/2009	8270C
Hexachlorobutadiene	660 U	660	ug/kg	2	L902069	02/11/2009	02/23/2009	8270C
Hexachlorocyclopentadiene	660 U J	660	ug/kg	2	L902069	02/11/2009	02/23/2009	8270C
Hexachloroethane	660 U J	660	ug/kg	2	L902069	02/11/2009	02/23/2009	8270C
Indeno(1,2,3-cd)pyrene	660 U	660	ug/kg	2	L902069	02/11/2009	02/23/2009	8270C
Isophorone	660 U	660	ug/kg	2	L902069	02/11/2009	02/23/2009	8270C
Naphthalene	660 U	660	ug/kg	2	L902069	02/11/2009	02/23/2009	8270C
Nitrobenzene	660 U	660	ug/kg	2	L902069	02/11/2009	02/23/2009	8270C
N-Nitrosodi-n-propylamine	660 U	660	ug/kg	2	L902069	02/11/2009	02/23/2009	8270C
N-Nitrosodiphenylamine	660 U	660	ug/kg	2	L902069	02/11/2009	02/23/2009	8270C
Pentachlorophenol	1300 U	1300	ug/kg	2	L902069	02/11/2009	02/23/2009	8270C
Phenanthrene	660 U	660	ug/kg	2	L902069	02/11/2009	02/23/2009	8270C
Phenol	660 U	660	ug/kg	2	L902069	02/11/2009	02/23/2009	8270C
Pyrene	660 U	660	ug/kg	2	L902069	02/11/2009	02/23/2009	8270C
TIC:Unknown 2	41300 B, J, D		ug/kg	2	L902069	02/11/2009	02/23/2009	8270C
TIC:Unknown 1	371 J, D, B		ug/kg	2	L902069	02/11/2009	02/23/2009	8270C
Surrogate: 2-Fluorophenol	*71 %*	*25-121*			*L902069*	*02/11/2009*	*02/23/2009*	*8270C*
Surrogate: Phenol-d5	*67 %*	*24-113*			*L902069*	*02/11/2009*	*02/23/2009*	*8270C*
Surrogate: Nitrobenzene-d5	*70 %*	*23-120*			*L902069*	*02/11/2009*	*02/23/2009*	*8270C*
Surrogate: 2-Fluorobiphenyl	*73 %*	*30-115*			*L902069*	*02/11/2009*	*02/23/2009*	*8270C*
Surrogate: 2,4,6-Tribromophenol	*47 %*	*19-122*			*L902069*	*02/11/2009*	*02/23/2009*	*8270C*
Surrogate: p-Terphenyl-d14	*99 %*	*18-137*			*L902069*	*02/11/2009*	*02/23/2009*	*8270C*

43A

WC-Hanford, Inc 2620 Fermi Avenue Richland WA, 99354	Project RC-116 Project Number K1525 Project Manager John Kessner	Reported: 10/10/2009 12:55

J180W9-A
0902012-21 (Solid)

ℓ~ 11/20/09

Analyte	Result and Qualifier	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
			Lionville Laboratory					
Semivolatile Organic Compounds by SW846 8270C								
1,2,4-Trichlorobenzene	660 U	660	ug/kg	2	L902069	02/11/2009	02/23/2009	8270C
1,2-Dichlorobenzene	660 U	660	ug/kg	2	L902069	02/11/2009	02/23/2009	8270C
1,3-Dichlorobenzene	660 U	660	ug/kg	2	L902069	02/11/2009	02/23/2009	8270C
1,4-Dichlorobenzene	660 U	660	ug/kg	2	L902069	02/11/2009	02/23/2009	8270C
2,4,5-Trichlorophenol	660 U	660	ug/kg	2	L902069	02/11/2009	02/23/2009	8270C
2,4,6-Trichlorophenol	660 U	660	ug/kg	2	L902069	02/11/2009	02/23/2009	8270C
2,4-Dichlorophenol	660 U	660	ug/kg	2	L902069	02/11/2009	02/23/2009	8270C
2,4-Dimethylphenol	660 U	660	ug/kg	2	L902069	02/11/2009	02/23/2009	8270C
2,4-Dinitrophenol	3300 U	3300	ug/kg	2	L902069	02/11/2009	02/23/2009	8270C
2,4-Dinitrotoluene	660 U	660	ug/kg	2	L902069	02/11/2009	02/23/2009	8270C
2,6-Dinitrotoluene	660 U	660	ug/kg	2	L902069	02/11/2009	02/23/2009	8270C
2-Chloronaphthalene	660 U	660	ug/kg	2	L902069	02/11/2009	02/23/2009	8270C
2-Chlorophenol	660 U	660	ug/kg	2	L902069	02/11/2009	02/23/2009	8270C
2-Methylnaphthalene	660 U	660	ug/kg	2	L902069	02/11/2009	02/23/2009	8270C
2-Methylphenol	660 U	660	ug/kg	2	L902069	02/11/2009	02/23/2009	8270C
2-Nitroaniline	3300 U	3300	ug/kg	2	L902069	02/11/2009	02/23/2009	8270C
2-Nitrophenol	660 U	660	ug/kg	2	L902069	02/11/2009	02/23/2009	8270C
3,3'-Dichlorobenzidine	1320 U J	1320	ug/kg	2	L902069	02/11/2009	02/23/2009	8270C
3-Nitroaniline	3300 U	3300	ug/kg	2	L902069	02/11/2009	02/23/2009	8270C
4,6-Dinitro-2-methylphenol	660 U	660	ug/kg	2	L902069	02/11/2009	02/23/2009	8270C
4-Bromophenyl Phenyl Ether	660 U	660	ug/kg	2	L902069	02/11/2009	02/23/2009	8270C
4-Chloro-3-methylphenol	660 U	660	ug/kg	2	L902069	02/11/2009	02/23/2009	8270C
4-Chloroaniline	660 U J	660	ug/kg	2	L902069	02/11/2009	02/23/2009	8270C
4-Chlorophenyl Phenyl Ether	660 U	660	ug/kg	2	L902069	02/11/2009	02/23/2009	8270C
4-Methylphenol	660 U	660	ug/kg	2	L902069	02/11/2009	02/23/2009	8270C
4-Nitroaniline	3300 U	3300	ug/kg	2	L902069	02/11/2009	02/23/2009	8270C
4-Nitrophenol	3300 U	3300	ug/kg	2	L902069	02/11/2009	02/23/2009	8270C
Acenaphthene	660 U	660	ug/kg	2	L902069	02/11/2009	02/23/2009	8270C
Acenaphthylene	660 U	660	ug/kg	2	L902069	02/11/2009	02/23/2009	8270C
Anthracene	660 U	660	ug/kg	2	L902069	02/11/2009	02/23/2009	8270C
Benz[a]anthracene	660 U	660	ug/kg	2	L902069	02/11/2009	02/23/2009	8270C
Benzo[a] pyrene	660 U	660	ug/kg	2	L902069	02/11/2009	02/23/2009	8270C
Benzo[b] fluoranthene	660 U	660	ug/kg	2	L902069	02/11/2009	02/23/2009	8270C
Benzo[g,h,i] perylene	660 U	660	ug/kg	2	L902069	02/11/2009	02/23/2009	8270C
Benzo[k] fluoranthene	660 U	660	ug/kg	2	L902069	02/11/2009	02/23/2009	8270C
Bis(2-chloroethoxy) methane	660 U	660	ug/kg	2	L902069	02/11/2009	02/23/2009	8270C
Bis(2-chloroethyl) ether	660 U	660	ug/kg	2	L902069	02/11/2009	02/23/2009	8270C
Bis(2-chloroisopropyl) ether	660 U	660	ug/kg	2	L902069	02/11/2009	02/23/2009	8270C
Bis(2-ethylhexyl) phthalate	660 U	660	ug/kg	2	L902069	02/11/2009	02/23/2009	8270C

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WC Hanford, Inc
2620 Fermi Avenue
Richland WA, 99354

Project: RC Eis
Project Number: K1525
Project Manager: Joan Kessner

Reported:
03/10/2009 12:55

J180W9-A
0902012-21 (Solid)

11/20/09

Analyte	Result and Qualifier	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Lionville Laboratory								
Semivolatile Organic Compounds by SW846 8270C								
Butyl Benzyl Phthalate	660 U	660	ug/kg	2	L902069	02/11/2009	02/23/2009	8270C
Carbazole	660 U	660	ug/kg	2	L902069	02/11/2009	02/23/2009	8270C
Chrysene	660 U	660	ug/kg	2	L902069	02/11/2009	02/23/2009	8270C
Dibenz[a,h]anthracene	660 U	660	ug/kg	2	L902069	02/11/2009	02/23/2009	8270C
Dibenzofuran	660 U	660	ug/kg	2	L902069	02/11/2009	02/23/2009	8270C
Diethyl Phthalate	660 U	660	ug/kg	2	L902069	02/11/2009	02/23/2009	8270C
Dimethyl Phthalate	660 U	660	ug/kg	2	L902069	02/11/2009	02/23/2009	8270C
Di-n-butyl Phthalate	660 U	660	ug/kg	2	L902069	02/11/2009	02/23/2009	8270C
Di-n-octyl Phthalate	660 U	660	ug/kg	2	L902069	02/11/2009	02/23/2009	8270C
Fluoranthene	660 U	660	ug/kg	2	L902069	02/11/2009	02/23/2009	8270C
Fluorene	660 U	660	ug/kg	2	L902069	02/11/2009	02/23/2009	8270C
Hexachlorobenzene	660 U	660	ug/kg	2	L902069	02/11/2009	02/23/2009	8270C
Hexachlorobutadiene	660 U	660	ug/kg	2	L902069	02/11/2009	02/23/2009	8270C
Hexachlorocyclopentadiene	660 U J	660	ug/kg	2	L902069	02/11/2009	02/23/2009	8270C
Hexachloroethane	660 U J	660	ug/kg	2	L902069	02/11/2009	02/23/2009	8270C
Indeno[1,2,3-cd]pyrene	660 U	660	ug/kg	2	L902069	02/11/2009	02/23/2009	8270C
Isophorone	660 U	660	ug/kg	2	L902069	02/11/2009	02/23/2009	8270C
Naphthalene	660 U	660	ug/kg	2	L902069	02/11/2009	02/23/2009	8270C
Nitrobenzene	660 U	660	ug/kg	2	L902069	02/11/2009	02/23/2009	8270C
N-Nitrosodi-n-propylamine	660 U	660	ug/kg	2	L902069	02/11/2009	02/23/2009	8270C
N-Nitrosodiphenylamine	660 U	660	ug/kg	2	L902069	02/11/2009	02/23/2009	8270C
Pentachlorophenol	3300 U	3300	ug/kg	2	L902069	02/11/2009	02/23/2009	8270C
Phenanthrene	660 U	660	ug/kg	2	L902069	02/11/2009	02/23/2009	8270C
Phenol	660 U	660	ug/kg	2	L902069	02/11/2009	02/23/2009	8270C
Pyrene	660 U	660	ug/kg	2	L902069	02/11/2009	02/23/2009	8270C
TIC:Unknown 2	327 J, D		ug/kg	2	L902069	02/11/2009	02/23/2009	8270C
TIC:Unknown 1	281 J, D, X		ug/kg	2	L902069	02/11/2009	02/23/2009	8270C
TIC:Unknown 3	36000 B, J, D		ug/kg	2	L902069	02/11/2009	02/23/2009	8270C
Surrogate: 2-Fluorophenol	54 %	25-121			L902069	02/11/2009	02/23/2009	8270C
Surrogate: Phenol-d5	46 %	24-113			L902069	02/11/2009	02/23/2009	8270C
Surrogate: Nitrobenzene-d5	60 %	23-120			L902069	02/11/2009	02/23/2009	8270C
Surrogate: 2-Fluorobiphenyl	65 %	30-115			L902069	02/11/2009	02/23/2009	8270C
Surrogate: 2,4,6-Tribromophenol	42 %	19-122			L902069	02/11/2009	02/23/2009	8270C
Surrogate: p-Terphenyl-d14	77 %	18-137			L902069	02/11/2009	02/23/2009	8270C

10/16/09

45

264 Welsh Pool Roa
Exton, PA 1934
Phone: 610-280-300
Fax: 610-280-304

WC-Hanford, Inc. 2620 Fermi Avenue Richland WA, 99354	Project: RC-116 Project Number: [none] Project Manager: Joan Kessner	Reported: 04/03/2009 13:32

J18177

0902012-05 (Solid)

Analyte	Result		Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Lionville Laboratory										
Extractable Petroleum Hydrocarbons by SW846 8015										
Diesel Range Organics	ND		3300	ug/kg wet	1	1902101	02/13/2009	02/21/2009	SW846 8015M	U
Motor Oil	67000	J	10000	"	"	"	"	"	"	
Surrogate: p-Terphenyl		*	*131 %*	*30-129*		"	"	"	"	

V
11/20/09

364 Welsh Pool Roac
Exton, PA 19341
Phone: 610-280-300(
Fax: 610-280-3041

WC-Hanford, Inc.
2620 Fermi Avenue
Richland WA, 99354

Project: RC-116
Project Number: [none]
Project Manager: Joan Kessner

Reported:
04/03/2009 13:32

J18198

0902012-06 (Solid)

Analyte	Result		Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
			Lionville Laboratory							
Extractable Petroleum Hydrocarbons by SW846 8015										
Diesel Range Organics	ND		3300	ug/kg wet	1	L902101	02/13/2009	02/21/2009	SW846 8015M	U
Motor Oil	**43400**	J	10000	"	"	"	"	"	"	
Surrogate: p-Terphenyl			*88 %*	*19-129*		"	"	"	"	

11/20/09

264 Welsh Pool Roa
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

WC-Hanford, Inc.
2620 Fermi Avenue
Richland WA, 99354

Project: RC 116
Project Number: [none]
Project Manager: Joan Kessner

Reported:
04/03/2009 13:32

J18199

0902012-07 (Solid)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Lionville Laboratory									
Extractable Petroleum Hydrocarbons by SW846 8015									
Diesel Range Organics	ND	3300	ug/kg wet	1	L902101	02/15/2009	02/21/2009	SW846 8015M	U
Motor Oil	30800 UJ	10000	"	"	"	"	"	"	
Surrogate: p-Terphenyl		96 %	39-129		"	"	"	"	

11/20/09

264 Webb Pool Road
Kalon, PA 19541
Phone: 610-280-3000
Fax: 610-280-3041

WC Hanford, Inc 2620 Fermi Avenue Richland WA, 99354	Project: RC-116 Project Number: [none] Project Manager: Joan Kessner	Reported: 04/03/2009 13:32

J181B0

0902012-08 (Solid)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Lionville Laboratory									
Extractable Petroleum Hydrocarbons by SW846 8015									
Diesel Range Organics	ND	3300	ug/kg wet	1	1902101	02/15/2009	02/21/2009	SW846 8015M	U
Motor Oil	**86400** J	10000	"	"	"	"	"	"	
Surrogate: p-Terphenyl		*102 %*	*39-129*		"	"	"	"	

11/20/09

LVL

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

WC-Hanford, Inc. 2620 Fermi Avenue Richland WA, 99354	Project: RC-116 Project Number: [none] Project Manager: Joan Kessner	**Reported:** 04/03/2009 11:32

J181B1

0902012-09 (Solid)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes

Lionville Laboratory

Extractable Petroleum Hydrocarbons by SW846 8015

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Diesel Range Organics	ND	3300	ug/kg wet	1	0902101	02/15/2009	02/21/2009	SW846 8015M	U
Motor Oil	17900 √J	10000	"	"	"	"	"	"	
Surrogate: p-Terphenyl		90 %	*39-129*		"	"	"	"	

11/20/09

WC-Hanford, Inc 2620 Fermi Avenue Richland WA, 99354	Project: RC-116 Project Number: [none] Project Manager: Joan Kessner	**Reported:** 04/03/2009 13:32

J181B2

0902012-10 (Solid)

Analyte	Result		Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
				Lionville Laboratory						
Extractable Petroleum Hydrocarbons by SW846 8015										
Diesel Range Organics	ND		3300	ug/kg wet	1	L902101	02/15/2009	02/21/2009	SW846 8015M	U
Motor Oil	27000	UJ	10000	"	"	"	"	"	"	
Surrogate: p-Terphenyl			*105 %*	*39-129*		"	"	"	"	

11/20/09

WC-Hanford, Inc	Project: RC-116	
2620 Fermi Avenue	Project Number: [none]	Reported:
Richland WA, 99354	Project Manager: Joan Kessner	04/03/2009 13:12

J181H3

0902012-11 (Solid)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Note
				Lionville Laboratory					
Extractable Petroleum Hydrocarbons by SW846 8015									
Diesel Range Organics	ND	3300	ug/kg wet	1	0902101	02/15/2009	02/21/2009	SW846 8015M	O
Motor Oil	10500 UJ	10000	"	"	"	"	"	"	
Surrogate: p-Terphenyl		*78 %*	*39-129*		"	"	"	"	

11/20/09

WC-Hanford, Inc. 2620 Fermi Avenue Richland WA, 99354	Project: RC-116 Project Number: [none] Project Manager: Joan Kessner	Reported: 04/03/2009 13:32

J17V87

0902012-12 (Solid)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Note
Lionville Laboratory									
Extractable Petroleum Hydrocarbons by SW846 8015									
Diesel Range Organics	ND	3300	ug/kg wet	1	L902101	02/13/2009	02/21/2009	SW846 8015M	U
Motor Oil	28900 UJ	10000	"	"	"	"	"	"	
Surrogate: p-Terphenyl		*108 %*	*39-129*		"	"	"	"	

11/20/09

WC-Hanford, Inc 2620 Fermi Avenue Richland WA, 99354	Project: RC-116 Project Number: [none] Project Manager: Joan Kessner	**Reported:** 04/03/2009 13:32

J17V88

0902012-13 (Solid)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Lionville Laboratory									
Extractable Petroleum Hydrocarbons by SW846 8015									
Diesel Range Organics	ND	3300	ug/kg wet	1	L902101	02/15/2009	02/21/2009	SW846 8015M	U
Motor Oil	**26700** ✓ J	10000	"	"	"	"	"	"	
Surrogate: p-Terphenyl		*90 %*	*39-129*		"	"	"	"	

K
11/20/09

WC Hanford, Inc. 2620 Fermi Avenue Richland WA, 99354	Project: RC-116 Project Number: [none] Project Manager: Joan Kessner	**Reported:** 04/03/2009 13:32

J17V89

0902012-14 (Solid)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
			Lionville Laboratory						
Extractable Petroleum Hydrocarbons by SW846 8015									
Diesel Range Organics	ND	3300	ug/kg wet	1	L902101	02/15/2009	02/21/2009	SW846 8015M	U
Motor Oil	**28100** UJ	10000	"	"	"	"	"	"	
Surrogate: p-Terphenyl		*88 %*	*30-120*		"	"	"	"	

11/20/09

264 Webb Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

WC-Hanford, Inc 2620 Fermi Avenue Richland WA, 99354	Project: RC-116 Project Number: [none] Project Manager: Joan Kessner	**Reported:** 04/03/2009 13:32

J17V90

0902012-15 (Solid)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
			Lionville Laboratory						
Extractable Petroleum Hydrocarbons by SW846 8015									
Diesel Range Organics	ND	3300	ug/kg wet	1	L902101	02/13/2009	02/21/2009	SW846 8015M	U
Motor Oil	28400 UJ	10000	"	"	"	"	"	"	
Surrogate: p-Terphenyl		*98 %*	*30-129*		"	"	"	"	

11/24/09

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

WC-Hanford, Inc. 2620 Fermi Avenue Richland WA 99354	Project: RC-116 Project Number: [none] Project Manager: Joan Kessner	Reported: 04/03/2009 13:32

J17V91

0902012 16 (Solid)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Lionville Laboratory									
Extractable Petroleum Hydrocarbons by SW846 8015									
Diesel Range Organics	ND	3300	mg/kg wet	1	L902101	02/15/2009	02/21/2009	SW846 8015M	1:
Motor Oil	26200 U J	10000	"	"	"	"	"	"	
Surrogate: p-Terphenyl		*87 %*	*39-129*		"	"	"	"	

11/20/09

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

WC-Hanford, Inc 2620 Fermi Avenue Richland WA, 99354	Project: RC-116 Project Number: [none] Project Manager: Joan Kessner	**Reported:** 04/03/2009 13:32

J17V92

0902012-17 (Solid)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Note

Lionville Laboratory

Extractable Petroleum Hydrocarbons by SW846 8015

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Note
Diesel Range Organics	ND	3300	ug/kg wet	1	0902101	02/13/2009	02/21/2009	SW846 8015M	U
Motor Oil	**31600** UJ	10000	"	"	"	"	"	"	
Surrogate: p-Terphenyl		96 %	30-120		"	"	"	"	

11/20/09

WC-Hanford, Inc
2620 Fermi Avenue
Richland WA, 99354

Project: RC-116
Project Number: [none]
Project Manager: Joan Kessner

Reported:
04/03/2009 13:32

J17VP0

0902012-18 (Solid)

Analyte	Result		Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Lionville Laboratory										
Extractable Petroleum Hydrocarbons by SW846 8015										
Diesel Range Organics	ND		3300	ug/kg wet	1	1902101	02/15/2009	02/21/2009	SW846 8015M	U
Motor Oil	61900	J	10000	"	"	"	"	"	"	
Surrogate: p-Terphenyl			93.5 %	39-129		"	"	"	"	

11/20/09

WC-Hanford, Inc.	Project: RC-116	
2620 Fermi Avenue	Project Number: [none]	**Reported:**
Richland WA, 99354	Project Manager: Joan Kessner	04/03/2009 13:32

J17VP5

0902012-19 (Solid)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Lionville Laboratory							
Extractable Petroleum Hydrocarbons by SW846 8015									
Diesel Range Organics	ND	3300	ug/kg wet	1	L902101	02/15/2009	02/21/2009	SW846 8015M	U
Motor Oil	**14800** U J	10000	"	"	"	"	"	"	
Surrogate: p-Terphenyl		*85 %*	*39-129*		"	"	"	"	

11/20/09

764 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

WCH-Hanford, Inc 2620 Fermi Avenue Richland WA, 99354	Project: RC-116 Project Number: K1525 Project Manager: Joan Kessner	Reported: 03/10/2009 12:51

J180W8-A

0902012-20 (Solid)

Analyte	Result and Qualifier	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Lionville Laboratory								
Extractable Petroleum Hydrocarbons by SW846 8015								
Diesel Range Organics	3300 U	3300	ug/kg	1	L902101	02/15/2009	02/21/2009	8015M
Motor Oil	**15700** UJ	10000	ug/kg	1	L902101	02/15/2009	02/21/2009	8015M
Surrogate: p-Terphenyl	*80 %*	*30-129*			*L902101*	*02/15/2009*	*02/21/2009*	*8015M*

11/20/09

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264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

WC-Hanford, Inc 2620 Fermi Avenue Richland WA, 99354	Project: RC 116 Project Number: K1525 Project Manager: Josh Kessner	Reported: 10/10/2009 12 51

J180W9-A

0902012-21 (Solid)

Analyte	Result and Qualifier	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method

Lionville Laboratory

Extractable Petroleum Hydrocarbons by SW846 8015

Analyte	Result and Qualifier	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Diesel Range Organics	3300 U	3300	ug/kg	1	1902101	02/15/2009	02/21/2009	8015M
Motor Oil	9670 Z UJ	10000	ug/kg	1	1902101	02/15/2009	02/21/2009	8015M
Surrogate: p-Terphenyl	*78 %*	*39-129*			*1902101*	*02/15/2009*	*02/21/2009*	*8015M*

10/20/09

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Appendix 4

Laboratory Narrative and Chain-of-Custody Documentation

264 Welsh Pool Road
Exton, Pennsylvania 19341
Phone (610) 280-3000
Fax (610) 280-3041

Case Narrative

Client: WC-HANFORD RC-116
LVL #: 0902012
SDG# K1525 SAF# RC-116

W.O. #: 60049-001-001-0001-00
Date Received: 02-05-2009

SEMIVOLATILE

Nineteen (19) solid samples were collected on 02-02,03-2009.

The samples and their associated QC samples were extracted according to Lionville Laboratory SOPs based on SW 846 method 3540C on 02-11-2009 and analyzed according to criteria set forth in Lionville Laboratory SOPs based on SW 846 Method 8270C for TCL Semivolatile target compounds on 02-16,17,23,24-2009 and 03-23-2009.

All solid samples are reported on a wet weight basis. The following is a summary of QC results accompanying the sample results. Lionville Laboratory (LVL) certifies that all test results meet the requirements of NELAC except as noted below.

1. All results presented in this report are derived from samples that met LvL's sample acceptance policy.
2. Samples were extracted and analyzed within the recommended holding time.
3. Non-target compounds were detected in these samples.
4. All samples required between 2-fold and 3-fold instrument dilutions due to matrix. Reporting limits have been adjusted to reflect the necessary dilutions.
5. Five (5) of one hundred thirty-eight (138) surrogate recoveries were outside acceptance criteria. The surrogate recovery criteria were not met for sample J17VP5. A copy of the Sample Discrepancy Report (SDR# 09MS069) has been enclosed.
6. Nine (9) of one hundred twenty-eight (128) matrix spike recoveries were outside acceptance criteria. A copy of the Sample Discrepancy Report (SDR# 09MS069) has been enclosed.
7. All blank spike recoveries were within acceptance criteria.
8. The method blanks were below the reporting limit for all target compounds.
9. All initial calibrations associated with this data set were within acceptance criteria.
10. All continuing calibration standards analyzed prior to sample extracts were within acceptance criteria.

11. Internal standard area criteria were not met for sample J17V90. The GC/MS instrument was inspected for possible malfunction and was judged to be functioning properly and all surrogate recoveries were within QC limits; consequently, the sample was not reanalyzed.

12. Manual integrations are performed according to SOP QA-125 to produce quality data with the utmost integrity. All manual integrations are required to be technically valid and properly documented. Appropriate technical flags are defined in the Glossary ("Technical Flags For Manual Integration").

13. LVL is NELAP accredited by the State of Pennsylvania. For a complete listing of accrediting authorities and the corresponding analytes/methods, please contact your Project Manager.

14. I certify that this sample data package is in compliance with SOW requirements, both technically and for completeness, other than the conditions detailed above. Release of the data contained in this hard-copy data package has been authorized by the Laboratory Manager or a designee as verified by the following signature.

Iain Daniels
Laboratory Manager
Lionville Laboratory

4/14/09
Date

Lionville Laboratory Sample Discrepancy Report (SDR)

SDR #: 0905069

Initiator: Robert Carden
Date: 9/9/09
Client: [illegible]

Batch: 09[illegible]2012
Samples: JJ9VPS (MS/MSD)
Method: [✓ SW846]/MCAWW/CLPL

Parameter: [illegible]
Matrix: Solid
Prep Batch: 09[illegible]2049

1. Reason for SDR

a. COC Discrepancy

Tech Profile Error
__ Client Request
__ Sampler Error on C-O-C
__ Transcription Error
__ Wrong Test Code
__ Other ____

b. General Discrepancy

__ Missing Sample/Extract*
__ Container Broken
__ Wrong Sample Pulled
Label ID's Illegible
__ Hold Time Exceeded
Insufficient Sample*
Preservation Wrong
__ Received Past Hold
__ Improper Bottle Type
Not Amenable to Analysis

Note* Verified by (Log-In) or (Prep Group) (circle)...signature/date.

c. Problem (include all relevant specific results; attach data if necessary)

(1) Surrogates outside QC acceptance criteria in sample JJ9VPS
(2) Several spike recoveries outside QC acceptance criteria in MS/MSD. BS [illegible] All surrogates within acceptance criteria

2. Known or Probable Causes(s) (1) possible loss during sample concentration in N-Evap, lab blank surrogate within acceptance criteria (2) [illegible] chemical reactions in solution, photochemical decomposition. [illegible] sample concentration. VPS specific

3. Discussion and Proposed Action

Other Description: None

_ Re-log
__ Entire Batch
__ Following Samples: ____
Re-leach
__ Re-extract
Re-digest
__ Revise EDD
__ Change Test Code to ____
__ Place On/Take Off Hold (circle)

4. Project Manager Instructions...signature/date. 9/14/09

__ Concur with Proposed Action
__ Disagree with Proposed Action; See Instruction
__ Include in Case Narrative
__ Client Contacted:
Date/Person ____
__ Add
__ Cancel

5. Final Action...signature/date. 9-14-09

Other Explanation:

__ Verified re-[log][leach][extract][digest][analysis] (circle)
✓ Included in Case Narrative
__ Hard Copy COC Revised
Electronic COC Revised
__ EDD Corrections Completed

When Final Action has been recorded, forward original to QA for diposition.

Route
__ Lab Manager: Daniels
1 Project Mgr (circle): [✓ Johnson] / Stone
__ Sample Prep (circle): Ford
__ Log-in: King

Route
__ Metals: Welsh / ____
__ Inorganic: Perrone / ____
__ GC/LC: Carey / ____
__ MS VOA: Rubino / ____
2 MS BNA: [✓ Carden] / ____
__ Other: ____

264 Welsh Pool Road
Exton, Pennsylvania 19341
Phone (610) 280-3000
Fax (610) 280-3041

Case Narrative

Client: WC-HANFORD RC-116
LVL #: 0902012
SDG/SAF # K1525 / RC-116

W.O. #: 60049-001-001-0001-00
Date Received: 02-05-2009

DIESEL RANGE ORGANICS

Seventeen (17) solid samples were collected on 02-02,03-2009.

The samples and their associated QC samples were extracted on 02-15-2009 and analyzed according to Lionville Laboratory SOPs based on SW846, 3rd Edition procedure on 02-20,21-2009. The extraction procedure was based on method 3540C and the extracts were analyzed based on method 8015B.

All soil samples are reported on a dry weight basis unless requested by the client, required by the method, or noted otherwise. The following is a summary of QC results accompanying the sample results. Lionville Laboratory Inc (LvL) certifies that all test results meet the requirements of NELAC except as noted below:

1. All required holding times for extraction and analysis have been met.
2. The method blank was below the client specified reporting limits for all target compounds.
3. One (1) of twenty-one (21) surrogate recoveries was outside acceptance criteria. However, the surrogate acceptance criteria were met (i.e., no more than one outlier per sample).
4. All blank spike recoveries were within acceptance criteria.
5. All matrix spike recoveries were within acceptance criteria.
6. All initial calibrations associated with this data set were within acceptance criteria.
7. All continuing calibration standards analyzed prior to sample extracts were within acceptance criteria.
8. LvL is NELAP accredited by the State of Pennsylvania. For a complete listing of accrediting authorities and the corresponding analytes/methods, please contact your Project Manager.

9. I certify that this sample data package is in compliance with SOW requirements, both technically and for completeness, other than the conditions detailed above. Release of the data contained in this hard-copy data package has been authorized by the laboratory Manager or a designee, as verified by the following signature.

Iain Daniels
Laboratory Manager
Lionville Laboratory

4/6/09
Date

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

[illegible]

ollector B M	Company Contact JOAN KESSNER	Telephone No. 373-4688	Project Coordinator WEISS, RL
roject Designation Columbia River Component of the RCBRA - Sediment	Sampling Location WB- 7 SD		SAF No. RC-116
e Chest No. WCH08-012, 034653	Field Logbook No. EL-1631-1	COA BESCRC6530	Method of Shipment FED EX
hipped To LIONVILLE ~~EBERLINE SERVICES~~ EBERLINE SERVICES (LIONVILLE)	Offsite Property No. N/A		Bill of Lading/Air Bill No. 796313456583

Price Code 9K

Data Turnaround 45 Days

OSSIBLE SAMPLE HAZARDS/REMARKS

pecial Handling and/or Storage

Preservation	None	None	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	None
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	aG	aG	G/P
No. of Container(s)	1	1	1	1	1	1	1	1	1
Volume	1500g	500g	10g	10g	750g	250g	750g	125g	1000g
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Technetium-99	See item (2) in Special Instructions	See item (3) in Special Instructions	NO3 - 9056	Semi-VOA - 8270A (TCL)	TOC - 415.1	Particle Size (Dry Sieve - D422)

Sample No.	Matrix *	Sample Date	Sample Time									
8157	OTHER SOLID	2/2/09	1430					X	X	X	X	X

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Scott Mayle	2/4/09 1715	Fsr A	2/4/09 1715
Fsr A	2/4/09 0830	D. Heidelberg BS	2/4/09 0830
Heidelberg BS	2/4/09 1130	Fedex	2/4/09 1130
Fedex	2-5-09 0915		2-5-09 0915

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) (Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238)
(2) Strontium-89,90 -- Total Sr, Isotopic Thorium (Thorium-232); Isotopic Uranium (Uranium 233/234, Uranium-235, Uranium-238), Isotopic Plutonium
(3) ICP Metals - 6010 (Full List) (Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc); Mercury - 7471 - (CV)

Sampler unavailable to remove samples
from controlled storage. Shipper removed
samples from storage location taking custody
of samples for shipment to lab

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

ABORATORY SECTION	Received By	Title	Date/Time
NAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

H-EE-011

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-116-733

Page 1 of 1

ollector: B.M	Company Contact: JOAN KESSNER	Telephone No.: 375-4688	Project Coordinator: WEISS, RL
Price Code: 9K	Data Turnaround: 45 Days		
roject Designation: Columbia River Component of the RCBRA - Sediment	Sampling Location: WB- / SD		SAF No.: RC-116
e Chest No.: WCH-08-012, 634 653	Field Logbook No.: EL-1631-1	COA: 1ESCRC6520	Method of Shipment: FED EX
hipped To: EBERLINE SERVICES (LIONVILLE)	Offsite Property No.: N/A		Bill of Lading/Air Bill No.: 796313456383

OSSIBLE SAMPLE HAZARDS/REMARKS

pecial Handling and/or Storage

Preservation	None	None	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	None	
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	aG	aG	G/P	
No. of Container(s)	1	1	1	1	1	1	1	1	1	
Volume	1500g	100g	10g	10g	250g	250g	250g	125g	1000g	
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Technetium-99	See item (2) in Special Instructions	See item (3) in Special Instructions	PCBs - 8082	Semi-VOA - 8270 (TCL)	TOC - 415.1	Particle Size (Dry Sieve) - D422	

Sample No	Matrix *	Sample Date	Sample Time										
8158	OTHER SOLID	2/2/09	1310					X	X	X	X	X	

CHAIN OF POSSESSION Sign/Print Names

quished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Boyle	2/2/09 715		2/2/09 1215
	2/4/09 0850		2/4/09 0830
	2/4/09 1150	Fedex 2/4/09	1150
	2-5-09 0945		2-5-09 0945

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) {Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238}

(2) Strontium-89,90 -- Total Sr; Isotopic Thorium {Thorium-232}; Isotopic Uranium {Uranium-233/234, Uranium-235, Uranium-238}; Isotopic Plutonium

(3) ICP Metals - 6010 (Full List) {Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc}; Mercury - 7471 - (CV)

Sampler unavailable to remove samples from controlled storage. Shipper received samples from storage location taking custody of samples for shipment to lab.

Matrix *
[illegible]

ABORATORY SECTION	Received By	Title	Date/Time
INAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

H-EE-011

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-116-756

Page 1 of 2

Collector: LStrathan

Company Contact: JOAN KESSNER

Telephone No.: 375-4688

Project Coordinator: WEISS, RL

Price Code: 9K

Data Turnaround: 45 Days

Project Designation: Columbia River Component of the RCBRA - Sediment

Sampling Location: MDBR- 6 SD

SAF No.: RC-116

Ice Chest No: WCH-08-012,034,053

Field Logbook No.: EL-1631-1

COA: BESCRC6520

Method of Shipment: FED EX

Shipped To: EBERLINE SERVICES [✓ LIONVILLE]

Offsite Property No.: N/A

Bill of Lading/Air Bill No.: 7963134563 83

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

000075

Preservation	None	None	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	None
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	aG	aG	G	-
No. of Container(s)	1	1	1	1	1	2	1	1	1	1
Volume	1500g	100g	10g	10g	250g	250g	125g	250g	250g	1
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Technetium-99	See item (2) in Special Instructions	See item (3) in Special Instructions	PCBs - 8082	Pesticides - 8081	Semi-VOA - 8270A (TCL)	See item (4) in Special Instructions	-

Sample No.	Matrix *	Sample Date	Sample Time										
10198	OTHER SOLID	6/1/05	1440					X	X	X	X	X	

Samples unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab.

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
	2-3-09 / 1630	RPB	2-3-09 / 1630
RPB	2/4/09 0830	BWoodward	2/4/09 0830
BWoodward	2/4/09 1130	FedEx	2/4/09 1130
FedEx	2-5-09 0915		2-5-09 0915

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) {Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238}

(2) Strontium-89,90 - Total Sr, Isotopic Thorium {Thorium-232}, Isotopic Uranium {Uranium-233/234, Uranium-235, Uranium-238}, Isotopic Plutonium

(3) ICP Metals - 6010 (Full List) {Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc}, Mercury - 7471 - (CV)

(4) VOA - 8260A (TCL) {1,1,1-Trichloroethane, 1,1,2,2-Tetrachloroethane, 1,1,2-Trichloroethane, 1,1-Dichloroethane, 1,1-Dichloroethene, 1,2-Dichloroethane, 1,2-Dichloropropane, 2-Butanone, 2-Hexanone, 4-Methyl-2-Pentanone, Acetone, Benzene, Bromodichloromethane, Bromoform, Bromomethane, Carbon disulfide, Carbon tetrachloride, Chlorobenzene, Chloroethane, Chloroform, Chloromethane, cis-1,2-Dichloroethylene, cis-1,3-Dichloropropene, Dibromochloromethane, Ethylbenzene, Methylene chloride, Styrene, Tetrachloroethene, Toluene, trans-1,2-Dichloroethylene

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

CH-EE-011

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-116-756

lector: L Stratton	Company Contact: JOAN KESSNER	Telephone No.: 375-4688	Project Coordinator: WEISS, RL	Price Code: 9K
ject Designation: Columbia River Component of the RCBRA - Sediment	Sampling Location: MDBK-6 5D		SAF No.: RC-116	Data Turnaround: 45 Days
Chest No.: WCH-08-012,034,053	Field Logbook No.: EL-1635-1	COA: BESCRO6520	Method of Shipment: FED EX	
ipped To: EBERLINE SERVICES (IONVILLE)	Offsite Property No.: N/A		Bill of Lading/Air Bill No.: 796313456383	

OSSIBLE SAMPLE HAZARDS/REMARKS

pecial Handling and/or Storage

Preservation	Cool 4C	Cool 4C	None
Type of Container	G	aG	G/P
No. of Container(s)	1	1	1
Volume	125mL 5	125g	1000g
SAMPLE ANALYSIS	See item (5) in Special Instructions	TOC - 415.1	Particle Size (Dry Sieve) - D422

Sample No.	Matrix *	Sample Date	Sample Time			
6198	OTHER SOLID	2/3/09	1440	X	X	X

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
	2-3-09 / 1650	RefB	2-3-09 / 1650
RFB 2/4/09	0830	B Woodward	2/4/09 0830
B Woodward	2/4/09 1130	FedEx	2/4/09 1130
FedEx	2-5-09 0915		2-5-09 0915

SPECIAL INSTRUCTIONS
5 [illegible]
(5) TPH-Diesel Range - WTPH-D + (Total petroleum hydrocarbons - diesel range, Total petroleum hydrocarbons - motor oil (high boiling))

Samplers unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab.

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

CH-EE-011

RC-116-737

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

Washington Closure Hanford

ector L Stratton	Company Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator WEISS, RL
ject Designation olumbia River Component of the RCBRA - Sediment	Sampling Location MDBR- 4 SD		SAF No. RC-116
Chest No. WXH-08-012,034,053	Field Logbook No. EL-1631/-1	COA BESCRC6520	Method of Shipment FED EX
pped To EBERLINE SERVICES [✓ OAKVILLE]	Offsite Property No. N/A		Bill of Lading/Air Bill No. 796313456383

Price Code 9K

Data Turnaround 45 Days

000000037

ssible Sample Hazards/Remarks

ecial Handling and/or Storage

220000

Preservation	None	None	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	None
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	aG	aG	G	*
No. of Container(s)	1	1	1	1	1	1	1	1	1	1
Volume	1500g	100g	10g	10g	250g	250g	125g	250g	250g	1"
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Technetium-99	See item (2) in Special Instructions	See item (3) in Special Instructions	PCBs - 8082	Pesticides 8081	Semi-VOA - 8270A (TCL)	See item (4) in Special Instructions	-

Sample No.	Matrix *	Sample Date	Sample Time										
1199	OTHER SOLID	2/3/09	1340					X	X	X	X	X	

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab

CHAIN OF POSSESSION — Sign/Print Names

quished By/Removed From	Date/Time	Received By/Stored In	Date/Time
	2-3-09 / 1630	RES B	2-3-09 / 1630
RES B	2/4/09 0830	B Woodward	2/4/09 0830
B Woodward	2/4/09 1130	Fed Ex	2/4/09 1130
LE	2-5-09 0915		2-5-09 0915

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) (Americium-241, Antimony-125, Beryllium-7, Cerium-144, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238)

(2) Strontium-89,90 -- Total Sr; Isotopic Thorium (Thorium-232); Isotopic Uranium (Uranium-233/234, Uranium-235, Uranium-238); Isotopic Plutonium

(3) ICP Metals - 6010 (Full List) (Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc), Mercury - 7471 - (CV)

(4) VOA - 8260A (TCL) (1,1,1-Trichloroethane, 1,1,2,2-Tetrachloroethane, 1,1,2-Trichloroethane, 1,1-Dichloroethane, 1,1-Dichloroethene, 1,2-Dichloroethane, 1,2-Dichloropropane, 2-Butanone, 2-Hexanone, 4-Methyl-2-Pentanone, Acetone, Benzene, Bromodichloromethane, Bromoform, Bromomethane, Carbon disulfide, Carbon tetrachloride, Chlorobenzene, Chloroethane, Chloroform, Chloromethane, cis-1,2-Dichloroethylene, cis-1,3-Dichloropropene, Dibromochloromethane, Ethylbenzene, Methylene chloride, Styrene, Tetrachloroethene, Toluene, trans-1,2-Dichloroethylene

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

ABORATORY SECTION	Received By	Title	Date/Time
NAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

CH-EE-011

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-116-137

llector LStratton

ject Designation
Columbia River Component of the RCBRA - Sediment

: Chest No. WXH-08-012, 034, 053

ipped To
EBERLINE SERVICES (LIONVILLE)

Company Contact
JOAN KESSNER

Telephone No.
375-4688

Sampling Location
MDBR - 6 SD

Field Logbook No.
EL-1631-1

COA
BBSCRC6570

Offsite Property No.
N/A

Project Coordinator
WEISS, RL

SAF No.
RC-116

Price Code 9K

Data Turnaround
45 Days

Method of Shipment
FED EX

Bill of Lading/Air Bill No. 796313456383

OSSIBLE SAMPLE HAZARDS/REMARKS

pecial Handling and/or Storage

	Preservation	Cool 4C	Cool 4C	None
	Type of Container	G	aG	G/P
	No. of Container(s)	1	1	1
	Volume	175mL 5	125g	1000g
SAMPLE ANALYSIS		[illegible] Special Instructions	TPH - 418.1	Particle Size (Dry Sieve) - [illegible]

Sample No.	Matrix *	Sample Date	Sample Time			
B19B	OTHER SOLID	2/3/09	1340	X	X	X

CHAIN OF POSSESSION

Sign/Print Names

quished By/Removed From	Date/Time 2-3-09 / 1630	Received By/Stored In	Date/Time 2-3-09 / 1630
quished By/Removed From JEB	Date/Time 2/4/09 0830	Received By/Stored In B Woodward	Date/Time 2/4/09 0830
quished By/Removed From B Woodward	Date/Time 2/4/09 1130	Received By/Stored In FedEx	Date/Time 2/4/09 1130
quished By/Removed From	Date/Time 2-5-09 0915	Received By/Stored In	Date/Time 2-5-09 0915
quished By/Removed From	Date/Time	Received By/Stored In	Date/Time
quished By/Removed From	Date/Time	Received By/Stored In	Date/Time

SPECIAL INSTRUCTIONS
5 [illegible]
(1) TPH-Diesel Range - WTPH-D + (Total petroleum hydrocarbons - diesel range, Total petroleum hydrocarbons - motor oil (high boiling))

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

ABORATORY SECTION | Received By | Title | Date/Time

NAL SAMPLE DISPOSITION | Disposal Method | Disposed By | Date/Time

CHEE-015

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-116-758 Page 1 of 1

ollector J Smith	Company Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator WEISS, RL
roject Designation Columbia River Component of the RCBRA - Sediment	Sampling Location MDBR- 5 SD		SAP No. RC-116
e Chest No. WCH-08-012,034,053	Field Logbook No. EL-1631-1	COA BESCRC6520	Method of Shipment FED EX
hipped To EBERLINE SERVICES (LIONVILLE)	Offsite Property No. N/A		Bill of Lading/Air Bill No. 796313456383

Price Code 9K

Data Turnaround 45 Days

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

Preservation	None	None	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	None
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	aG	aG	G	*
No. of Container(s)	1	1	1	1	1	1	1	1	1	1
Volume	1500g	100g	10g	10g	250g	250g	125g	250g	250g	1*
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Technetium-99	See item (2) in Special Instructions	See item (3) in Special Instructions	PCBs - 8082	Pesticides 8081	Semi-VOA 8270A (TCL)	See item (4) in Special Instructions	*

Sample No.	Matrix *	Sample Date	Sample Time										
81B0	OTHER SOLID	2/3/09	1410					X	X	X	X	X	

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage before taking custody of samples for shipment to lab

CHAIN OF POSSESSION	Date/Time	Sign/Print Names Received By/Stored In	Date/Time
Relinquished By/Removed From	2-5-09 / 1630	Received By/Stored In RJB	2-5-09 / 1630
Relinquished By/Removed From RFB	2/4/09 0830	Received By/Stored In BW Woodward	2/4/09 0830
Relinquished By/Removed From SW Woodward	2/4/09 1130	Received By/Stored In FedEx	2/4/09 1130
Relinquished By/Removed From Fed Ex	2-5-09 0915	Received By/Stored In	2-5-09 0915
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) [Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238]
(2) Strontium-89,90 - Total Sr, Isotopic Thorium [Thorium-232], Isotopic Uranium [Uranium-233/234, Uranium-235, Uranium-238], Isotopic Plutonium
(3) ICP Metals - 6010 (Full List) [Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc]; Mercury - 7471 - (CV)
(4) VOA - 8260A (TCL) [1,1,1-Trichloroethane, 1,1,2,2-Tetrachloroethane, 1,1,2-Trichloroethane, 1,1-Dichloroethane, 1,1-Dichloroethene, 1,2-Dichloroethane, 1,2-Dichloropropane, 2-Butanone, 2-Hexanone, 4-Methyl-2-Pentanone, Acetone, Benzene, Bromodichloromethane, Bromoform, Bromomethane, Carbon disulfide, Carbon tetrachloride, Chlorobenzene, Chloroethane, Chloroform, Chloromethane, cis-1,2-Dichloroethylene, cis-1,3-Dichloropropene, Dibromochloromethane,
Ethylbenzene, Methylene chloride, Styrene, Tetrachloroethene, Toluene, trans-1,2-Dichloroethylene

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

CH-EE-011

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

ector	Company Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator WEISS, RL
ject Designation Columbia River Component of the RCBRA - Sediment	Sampling Location MDBR- 5 50		SAF No. RC-116
Chest No. WCH-08-012, 034, 053	Field Logbook No. EL-1631-1	COA BESCRC6520	Method of Shipment FED EX
ipped To EBERLINE SERVICES (LIONVILLE)	Offsite Property No. N/A		Bill of Lading/Air Bill No. 796313456383

Price Code 9K

Data Turnaround 45 Days

OSSIBLE SAMPLE HAZARDS/REMARKS

pecial Handling and/or Storage

080000

Preservation	Cool 4C	Cool 4C	None
Type of Container	G	aG	G/P
No. of Container(s)	1	1	1
Volume	125mL 5	125g	1000g
SAMPLE ANALYSIS	See item (1) in Special Instructions	TOC - 415.1	Particle Size (Dry Sieve) - D422

Sample No.	Matrix *	Sample Date	Sample Time			
8160	OTHER SOLID	2/3/09	1410	X	X	X

CHAIN OF POSSESSION Sign/Print Names

Relinquished By/Removed From	Date/Time 2-3-09 / 1630	Received By/Stored In	Date/Time 2-3-09 / 1630
Relinquished By/Removed From	Date/Time 2/4/09 0830	Received By/Stored In B Woodward	Date/Time 2/4/09 0830
Relinquished By/Removed From B Woodward	Date/Time 2/4/09 1130	Received By/Stored In FedEx	Date/Time 2/4/09 1130
Relinquished By/Removed From FedEx	Date/Time 2-5-09 0915	Received By/Stored In	Date/Time 2-5-09 0915
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time

SPECIAL INSTRUCTIONS
5 410 / 2.100 F
(1) TPH-Diesel Range - WTPH-D + (Total petroleum hydrocarbons - diesel range, Total petroleum hydrocarbons - motor oil (high boiling))

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

CH-EE-011

000000040

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-116-759 Page 1 of 1

ollector L Strothers	Company Contact JOAN KESSNER	Telephone No. 373-4698	Project Coordinator WEISS, RL
oject Designation Columbia River Component of the RCBRA - Sediment	Sampling Location MDBR- / SD		SAF No. RC-116
e Chest No. WCH-08-012, 034, 053	Field Logbook No. EL-1631-1	COA BESCRC6520	Method of Shipment FED EX
hipped To EBERLINE SERVICES [✓ LIONVILLE]	Offsite Property No. N/A		Bill of Lading/Air Bill No. 796313456383

Price Code 9K

Data Turnaround 45 Days

OSSIBLE SAMPLE HAZARDS/REMARKS

pecial Handling and/or Storage

TS100181

Preservation	None	None	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	None
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	aG	aG	G	-
No. of Container(s)	1	1	1	1	1	1	1	1	1	1
Volume	1500g	100g	60g	10g	250g	250g	125g	250g	250g	1*
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Technetium-99	See item (2) in Special Instructions	See item (3) in Special Instructions	PCBs - 8082	Pesticides - 8081	Semi-VOA - 8270A (TCL)	See item (4) in Special Instructions	-

Sample No.	Matrix *	Sample Date	Sample Time										
B1B1	OTHER SOLID	2/3/09	1110					X	X	X	X	X	

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab

CHAIN OF POSSESSION Sign/Print Names

elinquished By/Removed From	Date/Time 2-3-09 1630	Received By/Stored In Ref B	Date/Time 2-3-09/1630
elinquished By/Removed From Ref B	Date/Time 2/4/09 0830	Received By/Stored In B Woodward	Date/Time 2/4/09 0830
elinquished By/Removed From B Woodward	Date/Time 2/4/09 1130	Received By/Stored In Fed Ex	Date/Time 2/4/09 1130
elinquished By/Removed From Fed Ex	Date/Time 2-5-09 0915	Received By/Stored In	Date/Time 2-5-09 0915
elinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
elinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) {Americium-241, Antimony-125, Beryllium-7, Cerium-144, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238}
(2) Strontium-89,90 -- Total Sr; Isotopic Thorium (Thorium-232); Isotopic Uranium {Uranium-233/234, Uranium-235, Uranium-238}, Isotopic Plutonium
(3) ICP Metals - 6010 (Full List) {Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc}; Mercury - 7471 - {CV}
(4) VOA - 8260A (TCL) {1,1,1-Trichloroethane, 1,1,2,2-Tetrachloroethane, 1,1,2-Trichloroethane, 1,1-Dichloroethane, 1,1-Dichloroethene, 1,2-Dichloroethane, 1,2-Dichloropropane, 2-Butanone, 2-Hexanone, 4-Methyl-2-Pentanone, Acetone, Benzene, Bromodichloromethane, Bromoform, Bromomethane, Carbon disulfide, Carbon tetrachloride, Chlorobenzene, Chloroethane, Chloroform, Chloromethane, cis-1,2-Dichloroethylene, cis-1,3-Dichloropropene, Dibromochloromethane,

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

ABORATORY SECTION	Received By	Title	Date/Time
INAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

CN-EE-011

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-116-?55

ector L Shatkin

ject Designation
Columbia River Component of the RCBRA - Sediment

Chest No. WCH-08-012, 034, 053

pped To
ERLINE SERVICES (LIONVILLE)

SSIBLE SAMPLE HAZARDS/REMARKS

ecial Handling and/or Storage

Company Contact
JOAN KESSNER

Telephone No.
375-4648

Sampling Location
MDBR- 7 SD

Field Logbook No.
EL-1631-1

COA
BESCRC6520

Offsite Property No.
N/A

Project Coordinator
WEISS, RL

SAF No.
RC-116

Method of Shipment
FED EX

Bill of Lading/Air Bill No. 796313456383

Price Code 9K

Data Turnaround
45 Days

Preservation	Cool 4C	Cool 4C	None
Type of Container	G	aG	G/P
No. of Container(s)	1	1	1
Volume	125mL 5	125g	1000g
SAMPLE ANALYSIS	See item (1) in Special Instructions	TOC - 415.1	Particle Size (Dry Sieve) - D422

Sample No	Matrix *	Sample Date	Sample Time			
5:01	OTHER SOLID	2/3/09	1112	X	X	X

CHAIN OF POSSESSION Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
	2-3-09 / 1630		2-3-09 / 1630
ef B	2/4/09 0830	B Woodward	2/4/09 0830
B Woodward	2/4/09 1130	Fed Ex	2/4/09 1130
Fed Ex	2-5-09 0915		2-5-09 0915

SPECIAL INSTRUCTIONS
5 dry/tot T
(1) TPH-Diesel Range - WTPH D + {Total petroleum hydrocarbons - diesel range, Total petroleum hydrocarbons - motor oil (high boiling)}

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab.

Matrix *
[illegible]

LABORATORY SECTION | Received By | Title | Date/Time

FINAL SAMPLE DISPOSITION | Disposal Method | Disposed By | Date/Time

CH-EE-011

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-116-760 Page 1 of 1

ector L Stratton	Company Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator WEISS, RL
			Price Code 9K
			Data Turnaround 45 Days
ject Designation Columbia River Component of the RCBRA - Sediment	Sampling Location MDBR- 1 SD		SAF No. RC-116
Chest No. WCH-08-012, 034, 053	Field Logbook No. EL-1631-1	COA BESCRC6530	Method of Shipment FED EX
hipped To EBERLINE SERVICES (LIONVILLE)	Offsite Property No. N/A		Bill of Lading/Air Bill No. 796313456383

OSSIBLE SAMPLE HAZARDS/REMARKS

pecial Handling and/or Storage

CS0000

SAMPLE ANALYSIS

Preservation	None	None	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	None
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	aG	aG	G	-
No. of Container(s)	1	1	1	1	1	1	1	1	1	1
Volume	1500g	100g	10g	10g	250g	250g	125g	250g	250g	1*
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Technetium-99	See item (2) in Special Instructions	See item (3) in Special Instructions	PCBs - 8082	Pesticides - 8081	Semi-VOA - 8270A (TCL)	See item (4) in Special Instructions	-

Sample No.	Matrix *	Sample Date	Sample Time										
8182	OTHER SOLID	2/3/09	1150					X	X	X	X	X	

Samples unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab.

CHAIN OF POSSESSION Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
2-3-09 / 1630		2-3-09 / 1630	
Relinquished By/Removed From GEB	Date/Time 2/4/09 0830	Received By/Stored In B Woodward	Date/Time 2/4/09 0830
Relinquished By/Removed From B Woodward	Date/Time 2/4/09 1130	Received By/Stored In Fed Ex	Date/Time 2/4/09 1130
Relinquished By/Removed From Fed Ex	Date/Time 2-5-09 0915	Received By/Stored In	Date/Time 2-5-09 0915
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) {Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238}
(2) Strontium-89,90 - Total Sr; Isotopic Thorium {Thorium-232}; Isotopic Uranium {Uranium-233/234, Uranium-235, Uranium-238}; Isotopic Plutonium
(3) ICP Metals - 6010 (Full List) {Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc}; Mercury - 7471 - {CV}
(4) VOA - 8260A (TCL) {1,1,1-Trichloroethane, 1,1,2,2-Tetrachloroethane, 1,1,2-Trichloroethane, 1,1-Dichloroethane, 1,1-Dichloroethene, 1,2-Dichloroethane, 1,2-Dichloropropane, 2-Butanone, 2-Hexanone, 4-Methyl-2-Pentanone, Acetone, Benzene, Bromodichloromethane, Bromoform, Bromomethane, Carbon disulfide, Carbon tetrachloride, Chlorobenzene, Chloroethane, Chloroform, Chloromethane, cis-1,2-Dichloroethylene, cis-1,3-Dichloropropene, Dibromochloromethane, Ethylbenzene, Methylene chloride, Styrene, Tetrachloroethene, Toluene, trans-1,2-Dichloroethylene

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

ABORATORY SECTION	Received By	Title		Date/Time
INAL SAMPLE DISPOSITION	Disposal Method	Disposed By		Date/Time

CH-EE-011

000000047

RC-116-760

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

llector L Stratton	Company Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator WEISS, RL	Price Code 9K
ject Designation Columbia River Component of the RCBRA - Sediment	Sampling Location MDBR- 2 SD		SAF No. RC-116	Data Turnaround 45 Days
Chest No. WCH-08-012,039,053	Field Logbook No. EL-1631-1	COA BESCRC6520	Method of Shipment FED EX	
ipped To EBERLINE SERVICES (RICHMOND)	Offsite Property No. N/A		Bill of Lading/Air Bill No. 796313456383	

OSSIBLE SAMPLE HAZARDS/REMARKS

pecial Handling and/or Storage

Preservation	Cool 4C	Cool 4C	None
Type of Container	G	aG	G/P
No. of Container(s)	1	1	1
Volume	125mL 5	125g	1000g
SAMPLE ANALYSIS	[illegible]	TOC - 415.1	Particle Size (Dry Sieve) - D422

Sample No.	Matrix *	Sample Date	Sample Time			
1R1B2	OTHER SOLID	2/3/09	1150	X	X	X

SPECIAL INSTRUCTIONS
[illegible]
(1) TPH-Diesel Range - WTPH D + (Total petroleum hydrocarbons - diesel range, Total petroleum hydrocarbons - motor oil (high boiling))

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

CHAIN OF POSSESSION — Sign/Print Names

linquished By/Removed From	Date/Time 2-3-09 1630	Received By/Stored In Ref B	Date/Time 2-3-09 1630
linquished By/Removed From Ref B	Date/Time 2/4/09 0830	Received By/Stored In B Woodward	Date/Time 2/4/09 0830
linquished By/Removed From B Woodward	Date/Time 2/4/08 1130	Received By/Stored In Fed Ex	Date/Time 2/4/09 1130
linquished By/Removed From Ref B	Date/Time 2-5-09 0915	Received By/Stored In	Date/Time 2-5-09 0915
linquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
linquished By/Removed From	Date/Time	Received By/Stored In	Date/Time

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-116-761

llector: L Stratton	Company Contact: JOAN KESSNER	Telephone No.: 375-4688	Project Coordinator: WEISS, RL
oject Designation: Columbia River Component of the RCBRA - Sediment	Sampling Location: MDBB-7 SD		SAF No.: RC-116
: Chest No.: WCH-08-012,034,053	Field Logbook No.: EL-1631-1	COA: BESCRC6520	Method of Shipment: FED EX
ipped To: EBERLINE SERVICES/LIONVILLE	Offsite Property No.: N/A		Bill of Lading/Air Bill No.: 796313456383

Price Code: 9K

Data Turnaround: 45 Days

OSSIBLE SAMPLE HAZARDS/REMARKS

pecial Handling and/or Storage

S80000

000000045

			Preservation	None	None	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	None
			Type of Container	G/P	G/P	G/P	G/P	G/P	aG	aG	aG	G	
			No. of Container(s)	1	1	1	1	1	1	1	1	1	1
			Volume	1500g	100g	10g	10g	250g	250g	125g	250g	250g	1
SAMPLE ANALYSIS				See item (1) in Special Instructions	Carbon-14	Technetium-99	See item (2) in Special Instructions	See item (3) in Special Instructions	PCBs - 8082	Pesticides - 8081	Semi-VOA - 8270A (TCL)	See item (4) in Special Instructions	-
Sample No.	Matrix *	Sample Date	Sample Time										
81B3	OTHER SOLID	2/3/09	1300					X	X	X	X	X	

Samples unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time 2 3 09 / 1630	Received By/Stored In RLB	Date/Time 2 3 09 / 1630
Relinquished By/Removed From RLB	Date/Time 2/4/09 0830	Received By/Stored In B. Woodward	Date/Time 2/4/09 0830
Relinquished By/Removed From B. Woodward	Date/Time 2/4/09 1130	Received By/Stored In FedEx	Date/Time 2/4/09 1130
Relinquished By/Removed From FedEx	Date/Time 2-5-09 0915	Received By/Stored In	Date/Time 2-5-09 0915
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List (Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238)

(2) Strontium-89,90 -- Total Sr; Isotopic Thorium (Thorium-232); Isotopic Uranium (Uranium-233/234, Uranium-235, Uranium-238); Isotopic Plutonium

(3) ICP Metals - 6010 (Full List) (Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc); Mercury - 7471 - (CV)

(4) VOA - 8260A (TCL) (1,1,1-Trichloroethane, 1,1,2,2-Tetrachloroethane, 1,1,2-Trichloroethane, 1,1-Dichloroethane, 1,1-Dichloroethene, 1,2-Dichloroethane, 1,2-Dichloropropane, 2-Butanone, 2-Hexanone, 4-Methyl-2-Pentanone, Acetone, Benzene, Bromodichloromethane, Bromoform, Bromomethane, Carbon disulfide, Carbon tetrachloride, Chlorobenzene, Chloroethane, Chloroform, Chloromethane, cis-1,2-Dichloroethylene, cis-1,3-Dichloropropene, Dibromochloromethane, Ethylbenzene, Methylene chloride, Styrene, Tetrachloroethene, Toluene, trans-1,2-Dichloroethylene,

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

CH-EE-011

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-116-761

Page 2 of 4

0901056

000000046

ector L Smith	Company Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator WEISS, RL
ject Designation Columbia River Component of the RCBRA - Sediment	Sampling Location MDBR-3 SD		SAP No. RC-116
Chest No. WCH-08-012,034,053	Field Logbook No. EL-1631-1	COA RESCRC6520	Method of Shipment FED EX
ipped To EBERLINE SERVICES/ LIONVILLE	Offsite Property No. N/A		Bill of Lading/Air Bill No. 796313456383

Price Code 9K

Data Turnaround 45 Days

SSIBLE SAMPLE HAZARDS/REMARKS

ecial Handling and/or Storage

	Cool 4C	Cool 4C	None
Preservation	Cool 4C	Cool 4C	None
Type of Container	G	aG	G/P
No. of Container(s)	1	1	1
Volume	125mL	125g	1000g
SAMPLE ANALYSIS	See item (5) in Special Instructions	TOC - 415.1	Particle Size (Dry Sieve) D422

Sample No.	Matrix *	Sample Date	Sample Time			
3183	OTHER SOLID	2/3/09	1340	X	X	X

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
	2-3-09 / 1631	RfB	2-3-09 1632
RfB	2/4/09 0830	B Woodland	2/4/09 0830
B Woodland	2/4/09 1130	Fed Ex	2/4/09 1130
Fed Ex	2-5-09 0915		2-5-09 0915

SPECIAL INSTRUCTIONS

(5) TPH-Diesel Range - WTPH-D + (Total petroleum hydrocarbons - diesel range, Total petroleum hydrocarbons - motor oil (high boiling))

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab.

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

ABORATORY SECTION	Received By	Title	Date/Time
NAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

CH-EE-011

Washington Closure Hanford	**CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST**	RC-116-9	Page 1 of 2

Collector BA	Company Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator WEISS, RL
Project Designation Columbia River Component of the RCBRA - Sediment	Sampling Location WP-15D		SAF No. RC-116
Ice Chest No. WCH-08-012, 034, 053	Field Logbook No. EL-1631-1	COA BESCRC6530	Method of Shipment FED EX
Shipped To EBERLINE SERVICES (LIONVILLE)	Offsite Property No. N/A		Bill of Lading/Air Bill No. 796813456383

Price Code 9K

Data Turnaround 45 Days

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

Preservation	None	None	None	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C
Type of Container	G/P	G/P	G/P	G/P	G/P	G/P	aG	aG	aG	G
No. of Container(s)	1	1	1	1	1	1	1	1	1	1
Volume	1500g	100g	100g	10g	10g	250g	250g	120g	250g	250g
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Tritium - H3	Technetium-99	See item (2) in Special Instructions	See item (3) in Special Instructions	PCBs - 8082	Pesticides - 8081	Semi-VOA - 8270A (TCL)	See item (4) in Special Instructions

Sample No	Matrix *	Sample Date	Sample Time										
J17V87	OTHER SOLID	2/3/09	0945						X	X	X	X	X

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location using custody of samples for shipment to lab

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
B... BA	2/3/09 1700	Fz A	2/3/09 1700
R F A	2/4/09 0830	B Woodward	2/4/09 0830
B Woodward	2/4/09 1130	FedEx	2/4/09 1130
	2-5-09 0915		2-5-09 0915

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) (Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238)
(2) Strontium-89,90 – Total Sr; Isotopic Thorium (Thorium-232); Isotopic Uranium (Uranium-233/234, Uranium-235, Uranium-238); Isotopic Plutonium
(3) ICP Metals - 6010 (Full List) (Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc); Mercury - 7471 - (CV)
(4) VOA - 8260A (TCL) (1,1,1-Trichloroethane, 1,1,2,2-Tetrachloroethane, 1,1,2-Trichloroethane, 1,1-Dichloroethane, 1,1-Dichloroethene, 1,2-Dichloroethene, 1,2-Dichloropropane, 2-Butanone, 2-Hexanone, 4-Methyl-2-Pentanone, Acetone, Benzene, Bromodichloromethane, Bromoform, Bromomethane, Carbon disulfide, Carbon tetrachloride, Chlorobenzene, Chloroethane, Chloroform, Chloromethane, cis-1,2-Dichloroethylene, cis-1,3-Dichloropropene, Dibromochloromethane,

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-116-9	Page 1 of 2

Collector BM	Company Contact JOAN KESSNER	Telephone No. 371-4684	Project Coordinator WEISS, RL
Project Designation Columbia River Component of the RCBRA - Sediment	Sampling Location WP-15D		SAF No. RC-116
Ice Chest No. WXH-DE-012, 034, 053	Field Logbook No. EL-1631/-1	COA BESCRC6520	Method of Shipment FED EX
Shipped To EBERLINE SERVICES LIONVILLE	Offsite Property No. N/A		Bill of Lading/Air Bill No. 796313456383

Price Code 9K

Data Turnaround
45 Days

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

Preservation	Cool 4C	Cool 4C	Cool 4C
Type of Container	G	aG	G/P
No. of Container(s)	1	1	1
Volume	125g 5	125mL	1000g
SAMPLE ANALYSIS	See item (1) in Special Instructions	TOC - 415.1	Particle Size (Dry Sieving) D422

Sample No.	Matrix *	Sample Date	Sample Time			
J17V87	OTHER SOLID	2/3/09	945	X	X	X

CHAIN OF POSSESSION

Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
BM	2/3/09 1700	Fr A	2/3/09 1700
Ref A	2/4/09 0830	BWoodward	2/4/09 0830
BWoodward	2/4/09 1130	FedEx	2/4/09 1130
	2-5-09 0915		2-5-09 0915

SPECIAL INSTRUCTIONS
5 AM #5 #1
(1) TPH-Diesel Range - WTPH-D+ (Total petroleum hydrocarbons - diesel range, Total petroleum hydrocarbons - motor oil (high boiling))

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab

Matrix *
[illegible]

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-116-10

Page 1 of 2

Collector: BM

Company Contact: JOAN KESSNER

Telephone No.: 375-4688

Project Coordinator: WEISS, RL

Price Code: 9K

Data Turnaround: 45 Days

Project Designation: Columbia River Component of the RCBRA - Sediment

Sampling Location: WP-2SD

SAF No.: RC-116

Ice Chest No.: WCH-08-612,034,053

Field Logbook No.: EL-1631-1

COA: HESCRC6570

Method of Shipment: FED EX

Shipped To: EBERLINE SERVICES [✓ LIONVILLE]

Offsite Property No.: N/A

Bill of Lading/Air Bill No.: 796313456383

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

Preservation	None	None	None	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C
Type of Container	G/P	G/P	G/P	G/P	G/P	G/P	aG	aG	aG	G
No. of Container(s)	1	1	1	1	1	1	1	1	1	1
Volume	1500g	100g	100g	10g	10g	250g	250g	120g	250g	250g
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Tritium - H3	Technetium-99	See item (2) in Special Instructions	See item (3) in Special Instructions	PCBs - 8082	Pesticides - 8081	Semi-VOA - 8270A (TCL)	See item (4) in Special Instructions

Sample No.	Matrix *	Sample Date	Sample Time										
J17V88	OTHER SOLID	2/3/09	1115						X	X	X	X	X

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location using custody and sampled for shipment to lab

CHAIN OF POSSESSION		Sign/Print Names	
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
BM for BF 4C	2/3/09 1120	E.A	2/3/09 1120
RfA	2/4/09 0830	BWoodward	2/4/09 0830
BWoodward	2/4/09 1130	Fed Ex	2/4/09 1130
Fed Ex	2-5-09 0915		2-5-09 0915

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) {Americium-241, Antimony-125, Beryllium-7, Cerium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238}

(2) Strontium-89,90 -- Total Sr; Isotopic Thorium {Thorium-232}; Isotopic Uranium {Uranium-233/234, Uranium-235, Uranium-238}; Isotopic Plutonium

(3) ICP Metals - 6010 (Full List) {Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc}; Mercury - 7471 - (CV)

(4) VOA - 8260A (TCL) {1,1,1-Trichloroethane, 1,1,2,2-Tetrachloroethane, 1,1,2-Trichloroethane, 1,1-Dichloroethane, 1,1-Dichloroethene, 1,2-Dichloroethane, 1,2-Dichloropropane, 2-Butanone, 2-Hexanone, 4-Methyl-2-Pentanone, Acetone, Benzene, Bromodichloromethane, Bromoform, Bromomethane, Carbon disulfide, Carbon tetrachloride, Chlorobenzene, Chloroethane, Chloroform, Chloromethane, cis-1,2-Dichloroethylene, cis-1,3-Dichloropropene, Dibromochloromethane, Ethylbenzene, Methylene chloride, Styrene, Tetrachloroethene, Toluene, trans-1,2-Dichloroethylene

Matrix *

S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-116-10

Page 2 of 2

Collector: BM

Company Contact: JOAN KESSNER

Telephone No.: 375-4688

Project Coordinator: WEISS, RL

Price Code: 9K

Data Turnaround: 45 Days

Project Designation: Columbia River Component of the RCBRA - Sediment

Sampling Location: WP 29D

SAF No.: RC-116

Ice Chest No.: WCH-08-012, 034, 053

Field Logbook No.: EL-1631-3

COA: BESCRC6520

Method of Shipment: FED EX

Shipped To: EBERLINE SERVICES [✓ LIONVILLE]

Offsite Property No.: N/A

Bill of Lading/Air Bill No.: 794313456383

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

0600010

Preservation	Cool 4C	Cool 4C	Cool 4C	
Type of Container	G	aG	G/P	
No. of Container(s)	1	1	1	
Volume	125g	125mL	1000g	
SAMPLE ANALYSIS	See item (5) in Special Instructions	TOC - 415.1	Particle Size (Dry Sieve) - D422	

Sample No.	Matrix *	Sample Date	Sample Time			
J17V88	OTHER SOLID	2/3/09	1115	X	X	X

CHAIN OF POSSESSION

Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
BM	2/3/09		2/3/09
	2/4/09 0830	Bluewood	2/4/09 0830
Bluewood	2/4/09 1130	Fed Ex	2/4/09 1130
Fed Ex	2-5-09 0915		2-5-09 0915

SPECIAL INSTRUCTIONS

5 [illegible]

(5) TPH-Diesel Range - WTPH-D+ (Total petroleum hydrocarbons - diesel range, Total petroleum hydrocarbons - motor oil (high boiling))

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab

Matrix *

S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

Washington Closure Hanford	**CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST**	RC-116-11	Page 1 of 1
ollector: BM	Company Contact: JOAN KESSNER Telephone No.: 375-4688	Project Coordinator: WEISS, RL	Price Code: 9K Data Turnaround: 45 Days
roject Designation: Columbia River Component of the RCBRA - Sediment	Sampling Location: WP-3SD	SAF No.: RC-116	
e Chest No.: WCH-08-012, 034, 053	Field Logbook No.: EL-1631-F COA: BESCRC6120	Method of Shipment: FED EX	
hipped To: EBERLINE SERVICES (LIONVILLE)	Offsite Property No.: N/A	Bill of Lading/Air Bill No.: 796313456383	

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

E600069

000000051

			Preservation	None	None	None	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C
			Type of Container	G/P	G/P	G/P	G/P	G/P	G/P	aG	aG	aG	G
			No. of Container(s)	1	1	1	1	1	1	1	1	1	1
			Volume	1500g	100g	100g	10g	10g	250g	250g	120g	250g	250g
SAMPLE ANALYSIS				See item (1) in Special Instructions	Carbon-14	Tritium - H3	Technetium-99	See item (2) in Special Instructions	See item (3) in Special Instructions	PCBs - 8082	Pesticides 8081	Semi VOA - 8270A (TCL)	See item (4) in Special Instructions
Sample No.	**Matrix ***	**Sample Date**	**Sample Time**										
J17V89	OTHER SOLID	2/3/09	~~1230~~ 1315						X	X	X	X	X

CHAIN OF POSSESSION	Date/Time	Sign/Print Names Received By/Stored In	Date/Time
Relinquished By/Removed From	2/3/09 1700	Received By/Stored In	2/3/09 1700
Relinquished By/Removed From	2/4/09 0830	Received By/Stored In B Woodward	2/4/09 0830
Relinquished By/Removed From B Woodward	2/4/09 1130	Received By/Stored In FedEx	2/4/09 1130
Relinquished By/Removed From Fed Ex	2-5-09 0915	Received By/Stored In	2-5-09 0915
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location using custody of samples for shipment to lab.

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) [Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238]
(2) Strontium-89,90 – Total Sr; Isotopic Thorium {Thorium-232}; Isotopic Uranium {Uranium-233/234, Uranium-235, Uranium-238}; Isotopic Plutonium
(3) ICP Metals - 6010 (Full List) {Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc}; Mercury - 7471 - (CV)
(4) VOA - 8260A (TCL) [1,1,1-Trichloroethane, 1,1,2,2-Tetrachloroethane, 1,1,2-Trichloroethane, 1,1-Dichloroethane, 1,1-Dichloroethene, 1,2-Dichloroethane, 1,2-Dichloropropane, 2-Butanone, 2-Hexanone, 4-Methyl-2-Pentanone, Acetone, Benzene, Bromodichloromethane, Bromoform, Bromomethane, Carbon disulfide, Carbon tetrachloride, Chlorobenzene, Chloroethane, Chloroform, Chloromethane, cis-1,2-Dichloroethylene, cis-1,3-Dichloropropene, Dibromochloromethane, Ethylbenzene, Methylene chloride, Styrene, Tetrachloroethene, Toluene, trans-1,2-Dichloroethylene

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By		Title		Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method		Disposed By		Date/Time

WCH-EE-011

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-116-11

Collector BM	Company Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator WEISS, RL
Project Designation Columbia River Component of the RCBRA - Sediment	Sampling Location WP-35D		SAF No. RC-116
Ice Chest No. WCH-08-012, 024, 053	Field Logbook No. EL-1631/-1	COA DESCRC6520	Method of Shipment FED EX
Shipped To EBERLINE SERVICES [✓ LIONVILLE]	Offsite Property No. N/A		Bill of Lading/Air Bill No. 796313456383

Price Code 9K

Data Turnaround 45 Days

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

Preservation	Cool 4C	Cool 4C	Cool 4C
Type of Container	G	aG	G/P
No. of Container(s)	1	1	1
Volume	125g 5	125mL	1000g
SAMPLE ANALYSIS	See sample [illegible] in Special Instructions	TOC - 415.1	Particle Size (Dry Sieve) - D422

Sample No.	Matrix *	Sample Date	Sample Time			
J17V89	OTHER SOLID	2/3/09	~~0830~~1215	X	X	X

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
B Mayhew	2/3/09 1700	Eric A	2/3/09 1700
Eric A	2/4/09 0830	B Woodward	2/4/09 0830
B Woodward	2/4/09 1130	FedEx	2/4/09 1130
FedEx	2-5-09 0915		2-5-09 0915

SPECIAL INSTRUCTIONS

5 MA 11509

[F] TPH-Diesel Range - WTPH-D+ {Total petroleum hydrocarbons - diesel range; Total petroleum hydrocarbons - motor oil (high boiling)}

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab

Matrix *

S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

000092

0000000052

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-116-12 Page 1 of 1

Collector: BM

Company Contact: JOAN KESSNER

Telephone No.: 375-4634

Project Coordinator: WEISS, RJ.

Price Code: 9K

Data Turnaround: 45 Days

Project Designation: Columbia River Component of the RCBRA - Sediment

Sampling Location: WP-4SD

SAF No.: RC-116

Ice Chest No.: WCH 08-034,012,053

Field Logbook No.: EL-1631-1

COA: BESCRC6520

Method of Shipment: FED EX

Shipped To: EBERLINE SERVICES (LIONVILLE)

Offsite Property No.: N/A

Bill of Lading/Air Bill No.: 796313456383

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

0600093

Preservation	None	None	None	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C
Type of Container	G/P	G/P	G/P	G/P	G/P	G/P	aG	aG	aG	G
No. of Container(s)	1	1	1	1	1	1	1	1	1	1
Volume	1500g	100g	100g	10g	10g	250g	250g	120g	250g	250g
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Tritium - H3	Technetium-99	See item (2) in Special Instructions	See item (3) in Special Instructions	PCBs - 8082	Pesticides - 8081	Semi-VOA - 8270A (TCL)	See item (4) in Special Instructions

Sample No.	Matrix *	Sample Date	Sample Time										
J17V90	OTHER SOLID	2/3/09	1220						X	X	X	X	X

Sample unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab.

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
B... 2/3/09 1220		Frz A	2/3/09 1220
Frz A	2/4/09 0830	BWoodruff	2/4/09 0830
BWoodruff	2/4/09 1130	Fed Ex	2/4/09 1130
Fed Ex	2-5-09 0915		2-5-09 0915

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) {Americium-241, Antimony-125, Beryllium-7, Cerium-144, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238}

(2) Strontium-89,90 -- Total Sr; Isotopic Thorium {Thorium-232}; Isotopic Uranium {Uranium-233/234, Uranium-235, Uranium-238}; Isotopic Plutonium

(3) ICP Metals - 6010 (Full List) {Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc}; Mercury - 7471 - (CV)

(4) VOA - 8260A (TCL) {1,1,1-Trichloroethane, 1,1,2,2-Tetrachloroethane, 1,1,2-Trichloroethane, 1,1-Dichloroethane, 1,1-Dichloroethene, 1,2-Dichloroethane, 1,2-Dichloropropane, 2-Butanone, 2-Hexanone, 4-Methyl-2-Pentanone, Acetone, Benzene, Bromodichloromethane, Bromoform, Bromomethane, Carbon disulfide, Carbon tetrachloride, Chlorobenzene, Chloroethane, Chloroform, Chloromethane, cis-1,2-Dichloroethylene, cis-1,3-Dichloropropene, Dibromochloromethane, Ethylbenzene, Methylene chloride, Styrene, Tetrachloroethene, Toluene,

Matrix *
S = Soil
SE = Sediment
SO = Solid
SL = Sludge
W = Water
O = Oil
A = Air
DS = Drum Solids
DL = Drum Liquids
T = Tissue
WI = Wipe
L = Liquid
V = Vegetation
X = Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-116-12

Page 2 of 2

Collector: BM	Company Contact: JOAN KESSNER	Telephone No.: 375-4688	Project Coordinator: WEISS, RL
Project Designation: Columbia River Component of the RCBRA - Sediment	Sampling Location: WP-45D		SAF No.: RC-116
Ice Chest No.: WCH-08-012, 034, 053	Field Logbook No.: EL-1631-1	COA: HESCRC6520	Method of Shipment: FED EX
Shipped To: EBERLINE SERVICES / LIONVILLE	Offsite Property No.: N/A		Bill of Lading/Air Bill No.: 796313456383

Price Code: 9K

Data Turnaround: 45 Days

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

		Preservation	Cool 4C	Cool 4C	Cool 4C			
		Type of Container	G	aG	G/P			
		No. of Container(s)	1	1	1			
		Volume	125g 5	125mL	1000g			
SAMPLE ANALYSIS			See item (1) in Special Instructions.	TOC - 415.1	Particle Size (Dry Sieve) - D422			
Sample No.	Matrix *	Sample Date	Sample Time					
J17V90	OTHER SOLID	2/3/09	1220	X	X	X		

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
	2/3/09 1700		2/3/09 1700
ReF A	2/4/09 0830		2/4/09 0830
	2/4/09 1130	Fed Ex	2/4/09 1130
	2-5-09 0915		2-5-09 0915

SPECIAL INSTRUCTIONS

5 g for
(1) TPH-Diesel Range - WTPH-D+ {Total petroleum hydrocarbons - diesel range, Total petroleum hydrocarbons - motor oil (high boiling)}

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab

Matrix *
S = Soil
SE = Sediment
SO = Solid
SL = Sludge
W = Water
O = Oil
A = Air
DS = Drum Solids
DL = Drum Liquids
T = Tissue
WI = Wipe
L = Liquid
V = Vegetation
X = Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-116-13 Page 1 of 2

Collector BM	Company Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator WEISS, RL
Project Designation Columbia River Component of the RCBRA - Sediment	Sampling Location WP-SSD		SAP No. RC-116
Ice Chest No. WCH-08-012, 034, 053	Field Logbook No. EL-1631-1	COA DESCRC6520	Method of Shipment FED EX
Shipped To EBERLINE SERVICES (LIONVILLE)	Offsite Property No. N/A		Bill of Lading/Air Bill No. 796313456383

Price Code 9K

Data Turnaround 45 Days

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

000095

Preservation	None	None	None	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C
Type of Container	G/P	G/P	G/P	G/P	G/P	G/P	aG	aG	aG	G
No. of Container(s)	1	1	1	1	1	1	1	1	1	1
Volume	1500g	100g	100g	10g	10g	250g	250g	120g	250g	250g
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Tritium - H3	Technetium-99	See item (2) in Special Instructions	See item (3) in Special Instructions	PCBs - 8082	Pesticides - 8081	Semi-VOA - 8270A (TCL)	See item (4) in Special Instructions

Sample No.	Matrix *	Sample Date	Sample Time										
J17V81	OTHER SOLID	2/3/09	1400						X	X	X	X	X

Sampler unavailable to remove samples from controlled storage. [illegible] removed samples from storage location taking custody of samples for shipment to lab.

CHAIN OF POSSESSION

Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
BM L. [illegible]	2/3/09 1700	F.. A	2/3/09 1700
F. A	2/4/09 0830	B. Woodward	2/4/09 0830
B. Woodward	2/4/09 1130	FedEx	2/4/09 1130
FedEx	2-5-09 0915		2-5-09 0915

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) {Americium-241, Antimony-125, Beryllium-7, Cerium-144, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238}

(2) Strontium-89,90 - Total Sr; Isotopic Thorium {Thorium-232}, Isotopic Uranium {Uranium-233/234, Uranium-235, Uranium-238}, Isotopic Plutonium

(3) ICP Metals - 6010 (Full List) {Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc}; Mercury - 7471 - (CV)

(4) VOA - 8260A (TCL) {1,1,1-Trichloroethane, 1,1,2,2-Tetrachloroethane, 1,1,2-Trichloroethane, 1,1-Dichloroethane, 1,1-Dichloroethene, 1,2-Dichloroethane, 1,2-Dichloropropane, 2-Butanone, 2-Hexanone, 4-Methyl-2-Pentanone, Acetone, Benzene, Bromodichloromethane, Bromoform, Bromomethane, Carbon disulfide, Carbon tetrachloride, Chlorobenzene, Chloroethane, Chloroform, Chloromethane, cis-1,2-Dichloroethylene, cis-1,3-Dichloropropene, Dibromochloromethane, Ethylbenzene, Methylenechloride, Styrene, Tetrachloroethene, Toluene, trans-1,2-Dichloro

Matrix *

S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

RC-116-13

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

ollector BJ	Company Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator WEISS, RL	Price Code 9K
oject Designation Columbia River Component of the RCBRA - Sediment	Sampling Location WP-35D		SAF No. RC-116	Data Turnaround 45 Days
e Chest No. WCH-08-02, 134,053	Field Logbook No. EL-1651-1	COA BESCRC6520	Method of Shipment FED EX	
ipped To EBERLINE SERVICES / LIONVILLE	Offsite Property No. N/A		Bill of Lading/Air Bill No. 796313456383	

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

	Preservation	Cool 4C	Cool 4C	Cool 4C
	Type of Container	G	aG	G/P
	No. of Container(s)	1	1	1
	Volume	125g 5	125mL	1000g
SAMPLE ANALYSIS		See item (1) in Special Instructions	TOC - 415.1	Particle Size (Dry Sieve) - D422

Sample No.	Matrix *	Sample Date	Sample Time			
17VB1	OTHER SOLID	2/3/09	1400	X	X	X

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
BJ Lindstrom	2/3/09 1700	Fx A	2/3/09 1700
Ref A	2/4/09 0830	B Woodward	2/4/09 0830
B Woodward	2/4/09 1130	Fed Ex	2/4/09 1130
Fed Ex	2-5-09 0915		2-5-09 0915

SPECIAL INSTRUCTIONS

[illegible]

(1) TPH-Diesel Range - WTPH-D+ (Total petroleum hydrocarbons - diesel range, Total petroleum hydrocarbons - motor oil (high boiling))

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab.

Matrix *

S = Soil
SE = Sediment
SO = Solid
SL = Sludge
W = Water
O = Oil
A = Air
DS = Drum Solids
DL = Drum Liquids
T = Tissue
WI = Wipe
L = Liquid
V = Vegetation
X = Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-110-14

Collector: BM

Company Contact: JOAN KESSNER

Telephone No.: 375-4684

Project Coordinator: WEISS, RL

Price Code: 9K

Data Turnaround: 45 Days

Project Designation: Columbia River Component of the RCBRA - Sediment

Sampling Location: WP-65D

SAF No.: RC-116

Ice Chest No.: WCH-08-012, 034, 053

Field Logbook No.: EL-1631-1

COA: RESCRC6520

Method of Shipment: FED EX

Shipped To: EBERLINE SERVICES/ [✓ DONVILLE]

Offsite Property No.: N/A

Bill of Lading/Air Bill No.: 796313456385

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

Preservation	None	None	None	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C
Type of Container	G/P	G/P	G/P	G/P	G/P	G/P	aG	aG	aG	G
No. of Container(s)	1	1	1	1	1	1	1	1	1	1
Volume	1500g	100g	100g	10g	10g	250g	250g	120g	250g	250g
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Tritium - H3	Technetium-99	See item (2) in Special Instructions	See item (3) in Special Instructions	PCBs - 8082	Pesticides 8081	Semi-VOA 8270A (TCL)	See item (4) in Special Instructions

Sample No.	Matrix *	Sample Date	Sample Time										
J17V92	OTHER SOLID	2/3/09	1430						X	X	X	X	X

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab.

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
B Mayhew B	2/3/09 1700	Fx A	2/3/09 1700
R F A	2/4/09 0830	B Woodward	2/4/09 0830
B Woodward	2/4/09 1120	Fed Ex	2/4/09 1130
Fed Ex	2-5-09 0915		2-5-09 0915

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) {Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238}

(2) Strontium-89,90 - Total Sr, Isotopic Thorium {Thorium-232}; Isotopic Uranium {Uranium-233/234, Uranium-235, Uranium-238}, Isotopic Plutonium

(3) ICP Metals - 6010 (Full List) {Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc}; Mercury - 7471 - (CV)

(4) VOA - 8260A (TCL) {1,1,1-Trichloroethane, 1,1,2,2-Tetrachloroethane, 1,1,2-Trichloroethane, 1,1-Dichloroethane, 1,1-Dichloroethene, 1,2-Dichloroethane, 1,2-Dichloropropane, 2-Butanone, 2-Hexanone, 4-Methyl-2-Pentanone, Acetone, Benzene, Bromodichloromethane, Bromoform, Bromomethane, Carbon disulfide, Carbon tetrachloride, Chlorobenzene, Chloroethane, Chloroform, Chloromethane, cis-1,2-Dichloroethylene, cis-1,3-Dichloropropene, Dibromochloromethane, [illegible]

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

RC-119-14

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

0000000659

Collector: BM

Company Contact: JOAN KESSNER

Telephone No.: 375-4688

Project Coordinator: WEISS, RL

Price Code: 9K

Data Turnaround: 45 Days

Project Designation: Columbia River Component of the RCBRA - Sediment

Sampling Location: WP-ASD

SAF No.: RC-116

Ice Chest No.: WCH-08-012,034,053

Field Logbook No.: EL-1631/-1

COA: BESCRC6520

Method of Shipment: FED EX

Shipped To: EBERLINE SERVICES (LIONVILLE)

Offsite Property No.: N/A

Bill of Lading/Air Bill No.: 796313456383

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

000098

Preservation	Cool 4C	Cool 4C	Cool 4C
Type of Container	G	aG	G/P
No. of Container(s)	1	1	1
Volume	125g	125mL	1000g
SAMPLE ANALYSIS	5 See note (1) in Special Instructions	TOC - 415.1	Particle Size (Dry Sieve) - D422

Sample No.	Matrix *	Sample Date	Sample Time			
17V82	OTHER SOLID	2/3/09	1430	X	X	X

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
BM ... B4-X	2/3/09 1700	Fr A	2/3/09 1700
Ref A	2/4/09 0830	B Woodward	2/4/09 0830
B Woodward	2/4/09 1130	Fed Ex	2/4/09 1130
Fed Ex	2-5-09 0915		2-5-09 0915

SPECIAL INSTRUCTIONS

5 #4 1/50 b

(1) TPH-Diesel Range - WTPH-D+ (Total petroleum hydrocarbons - diesel range, Total petroleum hydrocarbons - motor oil (high boiling))

Samples unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab

Matrix *

S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION Received By: Title: Date/Time:

FINAL SAMPLE DISPOSITION Disposal Method: Disposed By: Date/Time:

WCH-EE-011

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-116-82

Page 1 of 2

Collector I Shipton	Company Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator WEISS, RL
Project Designation Columbia River Component of the RCBRA - Sediment	Sampling Location MBAA-45D		SAP No. RC-116
Ice Chest No. WCH-08-012,034,053	Field Logbook No. EL-1631-1	COA BBSCRC6570	Method of Shipment FED EX
Shipped To EBERLINE SERVICES (RICHMOND) [✓ DANVILLE]	Offsite Property No. N/A		Bill of Lading/Air Bill No. 796313456383

Price Code 9K

Data Turnaround 45 Days

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

Preservation	None	None	None	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C
Type of Container	G/P	G/P	G/P	G/P	G/P	G/P	aG	aG	aG	G
No. of Container(s)	1	1	1	1	1	1	1	1	1	1
Volume	1500g	100g	100g	10g	10g	250g	250g	120g	250g	250g
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Tritium - H3	Technetium-99	See item (2) in Special Instructions	See item (3) in Special Instructions	PCBs - 8082	Pesticides - 8081	Semi VOA - 8270A (TCL)	See item (4) in Special Instructions

Sample No.	Matrix *	Sample Date	Sample Time										
J17VP0	OTHER SOLID	2/3/09	1030						X	X	X	X	X

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab

CHAIN OF POSSESSION	Date/Time	Sign/Print Names	Date/Time
Relinquished By/Removed From I Shipton	2-3-09 / 1630	Received By/Stored In Ref 13	2-3-09 1650
Relinquished By/Removed From Ref 13	2/4/09 0830	Received By/Stored In B Woodward	2/4/09 0830
Relinquished By/Removed From B Woodward	2/4/09 1130	Received By/Stored In FedEx	2/4/09 1130
Relinquished By/Removed From FedEx	2-5-09 0915	Received By/Stored In	2-5-09 0915
Relinquished By/Removed From		Received By/Stored In	
Relinquished By/Removed From		Received By/Stored In	

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) {Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238}

(2) Strontium-89,90 -- Total Sr; Isotopic Thorium {Thorium-232}; Isotopic Uranium {Uranium-233/234, Uranium-235, Uranium-238}; Isotopic Plutonium

(3) ICP Metals - 6010 (Full List) {Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc}; Mercury - 7471 - (CV)

(4) VOA - 8260A (TCL) {1,1,1-Trichloroethane, 1,1,2,2-Tetrachloroethane, 1,1,2-Trichloroethane, 1,1-Dichloroethane, 1,1-Dichloroethene, 1,2-Dichloroethane, 1,2-Dichloropropane, 2-Butanone, 2-Hexanone, 4-Methyl-2-Pentanone, Acetone, Benzene, Bromodichloromethane, Bromoform, Bromomethane, Carbon disulfide, Carbon tetrachloride, Chlorobenzene, Chloroethane, Chloroform, Chloromethane, cis-1,2-Dichloroethylene, cis-1,3-Dichloropropene, Dibromochloromethane, Ethylbenzene, Methylene chloride, Styrene, Tetrachloroethene, Toluene, trans-1,3-Dichloropropene

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-116-82

Collector LS	Company Contact JOAN KESSNER	Telephone No. 375-4600	Project Coordinator WEISS, RL
Project Designation Columbia River Component of the RCBRA - Sediment	Sampling Location MB24-450		SAF No. RC-116
Ice Chest No. WCH-08-012, 034, 053	Field Logbook No. EL-1631/4	COA HESCRC6520	Method of Shipment FED EX
Shipped To EBERLINE SERVICES [✓ LIONVILLE]	Offsite Property No. N/A		Bill of Lading/Air Bill No. 796313456383

Price Code 9K

Data Turnaround 45 Days

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

Preservation	Cool 4C	Cool 4C	Cool 4C
Type of Container	G	aG	G/P
No. of Container(s)	1	1	1
Volume	125g 5	125mL	1000g
SAMPLE ANALYSIS	[illegible] Special Instructions	TOC - 415.1	Particle Size (Dry Sieve) - D422

Sample No.	Matrix *	Sample Date	Sample Time			
J17VP0	OTHER SOLID	2/3/09	1030	X	X	X

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
	2-3-09 / 1630	Kef B	2-3-09 / 1630
Kef B	2/4/09 0830	B Woodward	2/4/09 0830
B Woodward	2/4/09 1130	FedEx	2/4/09 1130
FedEx	2-5-09 0915		2-5-09 0915

SPECIAL INSTRUCTIONS

5 [illegible]

(1) TPH-Diesel Range - WTPH-D+ (Total petroleum hydrocarbons - diesel range, Total petroleum hydrocarbons - motor oil (high boiling))

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab

Matrix *

S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-116-87 Page 1 of 2

Collector ZM	Company Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator WEISS, RL
Project Designation Columbia River Component of the RCBRA - Sediment	Sampling Location ~~BM-2D~~ ~~BM-15D~~ WP-15D		SAF No. RC-116
Ice Chest No. WCH-08-012,024,053	Field Logbook No. EL-1631-3	COA BESCRC6520	Method of Shipment FED EX
Shipped To EBERLINE SERVICES/LIONVILLE	Offsite Property No. N/A		Bill of Lading/Air Bill No. 796313456383

Price Code 9K

Data Turnaround 45 Days

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

E01100

Preservation	None	None	None	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C
Type of Container	G/P	G/P	G/P	G/P	G/P	G/P	aG	aG	aG	G
No. of Container(s)	1	1	1	1	1	1	1	1	1	1
Volume	1500g	100g	100g	10g	10g	250g	250g	150g	150g	250g
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Tritium - H3	Technetium-99	See item (2) in Special Instructions	See item (3) in Special Instructions	PCBs - 8082	Pesticides 8081	Semi-VOA 8270A (TCL)	See item (4) in Special Instructions

Sample No.	Matrix *	Sample Date	Sample Time										
J17VP5	OTHER SOLID	2/3/09	~~945~~ 1025						X	X	X	X	X

Sampler available to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab.

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
BAL	2/3/09 1700	Fz A	2/3/09 1700
Ref A	2/4/09 0830	BWoodward	2/4/09 0830
BWoodward	2/4/09 1130	FedEx	2/4/09 1130
FedEx	2-5-09 0915		2-5-09 0915

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) (Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238)
(2) Strontium-89,90 – Total Sr; Isotopic Thorium (Thorium-232); Isotopic Uranium (Uranium-233/234, Uranium-235, Uranium-238); Isotopic Plutonium
(3) ICP Metals - 6010 (Full List) (Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc); Mercury - 7471 - (CV)
(4) VOA - 8260A (TCL) (1,1,1-Trichloroethane, 1,1,2,2-Tetrachloroethane, 1,1,2-Trichloroethane, 1,1-Dichloroethane, 1,1-Dichloroethene, 1,2-Dichloroethane, 1,2-Dichloropropane, 2-Butanone, 2-Hexanone, 4-Methyl-2-Pentanone, Acetone, Benzene, Bromodichloromethane, Bromoform, Bromomethane, Carbon disulfide, Carbon tetrachloride, Chlorobenzene, Chloroethane, Chloroform, Chloromethane, cis-1,2-Dichloroethylene, cis-1,3-Dichloropropene, Dibromochloromethane, [illegible]

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-116-03 Page 4 of 6

Collector B~	Company Contact JOAN KESSNER	Telephone No. 375-4644	Project Coordinator WEISS, RL	Price Code 9K
Project Designation Columbia River Component of the RCBRA - Sediment	Sampling Location ~~B-??-15D~~ — WP-15D		SAF No. RC-116	Data Turnaround 45 Days
Ice Chest No. WCH-OR-012, 034, 053	Field Logbook No. EL-1631/-1	COA BESCRC6520	Method of Shipment FED EX	
Shipped To EBERLINE SERVICES (LIONVILLE)	Offsite Property No. N/A		Bill of Lading/Air Bill No. 796313466383	

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

0060102

Preservation	Cool 4C	Cool 4C	Cool 4C
Type of Container	G	aG	G/P
No. of Container(s)	1	1	1
Volume	125g	125mL	1000g
SAMPLE ANALYSIS	5 See item (1) in Special Instructions	TOC - 415.1	Particle Size (Dry Sieve) - D422

Sample No.	Matrix *	Sample Date	Sample Time			
J17VP5	OTHER SOLID	2/3/09	~~0945~~ 1025	X	X	X

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
B. M. L. BAGL	2/3/09 1700	Fri A	2/3/09 1700
KiEA	2/4/09 0830	B Woodward	2/4/09 0830
B Woodward	2/4/09 1130	FedEx	2/4/09 1130
FedEx	2-5-09 0915		2-5-09 0915

SPECIAL INSTRUCTIONS

5 [illegible]

(1) TPH-Diesel Range - WTPH-D+ (Total petroleum hydrocarbons - diesel range, Total petroleum hydrocarbons - motor oil (high boiling))

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab.

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By		Title		Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method		Disposed By		Date/Time

WCH-EE-011

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-116-120

llector BA	Company Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator WEISS, RL
oject Designation Columbia River Component of the RCBRA - Sediment	Sampling Location PM- / SD		SAF No. RC-116
e Chest No. WCH-08-012,034,053	Field Logbook No. EL-1637-1	COA BESCRC6570	Method of Shipment FED EX
ipped To BERLINE SERVICES/LIONVILLE	Offsite Property No. N/A		Bill of Lading/Air Bill No. 796313456385

Price Code 9K

Data Turnaround 45 Days

OSSIBLE SAMPLE HAZARDS/REMARKS

pecial Handling and/or Storage

0001103

Preservation	None	None	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	None
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	aG	aG	G	-
No. of Container(s)	1	1	1	1	1	1	1	1	1	1
Volume	1500g	100g	10g	10g	250g	250g	125g	250g	250g	5^
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Technetium-99	See item (2) in Special Instructions	See item (3) in Special Instructions	PCBs - 8082	Pesticides - 8081	Semi-VOA - 8270A (TCL)	See item (4) in Special Instructions	-

Sample No.	Matrix *	Sample Date	Sample Time										
B0W8	OTHER SOLID	2/2/09	1130					X	X	X	X	X	

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location using custody of samples for shipment to lab

CHAIN OF POSSESSION		Sign/Print Names	
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
BA	2/2/09 175		2/2/09 175
CG A	2/4/09 0830	D Heidelberg ESD	2/4/09 0830
Heidelberg ESD	2/4/09 1130	FedEx	2/4/09 1130
FedEx	2-5-09 0915		2-5-09 0915
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) (Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238)

(2) Strontium-89,90 -- Total Sr, Isotopic Thorium (Thorium-232); Isotopic Uranium (Uranium-233/234, Uranium-235, Uranium-238), Isotopic Plutonium

(3) ICP Metals - 6010 (Full List) (Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc); Mercury - 7471 - (CV)

(4) VOA - 8260A (TCL) (1,1,1-Trichloroethane, 1,1,2,2-Tetrachloroethane, 1,1,2-Trichloroethane, 1,1-Dichloroethane, 1,1-Dichloroethene, 1,2-Dichloroethane, 1,2-Dichloropropane, 2-Butanone, 2-Hexanone, 4-Methyl-2-Pentanone, Acetone, Benzene, Bromodichloromethane, Bromoform, Bromomethane, Carbon disulfide, Carbon tetrachloride, Chlorobenzene, Chloroethane, Chloroform, Chloromethane, cis-1,2-Dichloroethylene, cis-1,3-Dichloropropene, Dibromochloromethane,

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

BORATORY SECTION	Received By	Title	Date/Time
AL SAMPLE ISPOSITION	Disposal Method	Disposed By	Date/Time

H-EE-011

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-116-720

ector 134	Company Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator WEISS, RL
Project Designation Columbia River Component of the RCBRA - Sediment	Sampling Location PM- / SD		SAF No. RC-116
Chest No. WH-08-012, 034, 053	Field Logbook No. EL-1631-1	COA BESCRC6520	Method of Shipment FED EX
hipped To EBERLINE SERVICES [✓ LIONVILLE]	Offsite Property No. N/A		Bill of Lading/Air Bill No. 796313456383

Price Code 9K

Data Turnaround 45 Days

OSSIBLE SAMPLE HAZARDS/REMARKS

pecial Handling and/or Storage

Preservation	Cool 4C	Cool 4C	None
Type of Container	G	aG	G/P
No. of Container(s)	1	1	1
Volume	125mL 5	125g	1000g
SAMPLE ANALYSIS	See item (5) in Special Instructions	TOC - 9060	Particle Size (Dry Sieve) - D421

Sample No.	Matrix *	Sample Date	Sample Time			
80W8	OTHER SOLID	7/2/09	1130	X	X	X

CHAIN OF POSSESSION

Sign/Print Names

nquished By/Removed From Jeff Meyer Bengh	Date/Time 2/2/09 1715	Received By/Stored In Frig 4	Date/Time 2/2/09 1715
nquished By/Removed From Frig 4	Date/Time 2/4/09 0830	Received By/Stored In B Woodward	Date/Time 2/4/09 0830
nquished By/Removed From B Woodward	Date/Time 2/4/09 1130	Received By/Stored In Fed Ex	Date/Time 2/4/09 1130
nquished By/Removed From FOE	Date/Time 2-5-09 0915	Received By/Stored In	Date/Time 2-5-09 0915
nquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
nquished By/Removed From	Date/Time	Received By/Stored In	Date/Time

SPECIAL INSTRUCTIONS

5 AMPLE 01

(5) TPH - Diesel Range - WTPH-D+ (Total petroleum hydrocarbons - diesel range, Total petroleum hydrocarbons - motor oil (high boiling))

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab.

Matrix *

ABORATORY SECTION	Received By	Title	Date/Time
INAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

CH-EE-011

0000000064

401100

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-116-721 Page 1 of 1

00000065

lector BM	Company Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator WEISS, RL
ject Designation Columbia River Component of the RCBRA - Sediment	Sampling Location PM-2 SO		SAF No. RC-116
Chest No. WCH-08-012, 034, 053	Field Logbook No. EL-1631-1	COA BESCRC6520	Method of Shipment FED EX
pped To EBERLINE SERVICES (LIONVILLE)	Offsite Property No. N/A		Bill of Lading/Air Bill No. 79613456383

Price Code 9K

Data Turnaround 45 Days

SSIBLE SAMPLE HAZARDS/REMARKS

ecial Handling and/or Storage

SG1000

Preservation	None	None	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	None
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	aG	aG	G	*
No. of Container(s)	1	1	1	1	1	1	1	1	1	1
Volume	1500g	100g	10g	10g	250g	250g	125g	250g	250g	1*
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Tritium - H3	See item (2) in Special Instructions	See item (3) in Special Instructions	PCBs - 8082	Pesticides - 8081	Semi-VOA - 8270A (TCL)	See item (4) in Special Instructions	-

Sample No.	Matrix *	Sample Date	Sample Time										
0W9	OTHER SOLID	2/2/09	1230					X	X	X	X	X	

Sampler unavailable to remove samples
om controlled storage. Shipper removed
samples from storage location using custody
d samples for shipment to lab

CHAIN OF POSSESSION Sign/Print Names

quished By/Removed From	Date/Time	Received By/Stored In	Date/Time
[illegible] Taylor	2/2/09 1705	Fay A	2/2/09 1705
Fay A	2/4/09 0830	D Hollelberg	2/4/09 0830
Hollelberg	2/4/09 1130	FedEx	2/4/09 1130
[illegible]	2-5-09 0915	[illegible]	2-5-09 09:15

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) [Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238]
(2) Strontium-89,90 -- Total Sr; Isotopic Thorium [Thorium-232], Isotopic Uranium [Uranium-233/234, Uranium-235, Uranium-238], Isotopic Plutonium
(3) ICP Metals - 6010 (Full List) {Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc}; Mercury - 7471 - (CV)
(4) VOA - 8260A (TCL) [1,1,1-Trichloroethane, 1,1,2,2-Tetrachloroethane, 1,1,2-Trichloroethane, 1,1-Dichloroethane, 1,1-Dichloroethene, 1,2-Dichloroethane, 1,2-Dichloropropane, 2-Butanone, 2-Hexanone, 4-Methyl-2-Pentanone, Acetone, Benzene, Bromodichloromethane, Bromoform, Bromomethane, Carbon disulfide, Carbon tetrachloride, Chlorobenzene, Chloroethane, Chloroform, Chloromethane, cis-1,2-Dichloroethylene, cis-1,3-Dichloropropene, Dibromochloromethane, Ethylbenzene, Methylene chloride, Styrene, Tetrachloroethene, Toluene, trans-1,2-Dichloroethylene

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

BORATORY SECTION	Received By	Title	Date/Time
AL SAMPLE SPOSITION	Disposal Method	Disposed By	Date/Time

4-EE-011

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-116-221 | Page 2 of 2

Collector: Ben

Company Contact: JOAN KESSNER

Telephone No.: 375-4688

Project Coordinator: WEISS, RL

Price Code: 9K

Data Turnaround: 45 Days

Project Designation: Columbia River Component of the RCBRA - Sediment

Sampling Location: PM- 2 SD

SAF No.: RC-116

Chest No.: WCH-08-012, 034, 053

Field Logbook No.: EL-1631-1

COA: BESCRC6520

Method of Shipment: FED EX

Shipped To: EBERLINE SERVICES (LIONVILLE)

Offsite Property No.: N/A

Bill of Lading/Air Bill No.: 796313456383

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

Preservation	Cool 4C	Cool 4C	None
Type of Container	G	aG	G/P
No. of Container(s)	1	1	1
Volume	125mL 5	125g	1000g
SAMPLE ANALYSIS	See item (1) in Special Instructions	VOC - 8151	Particle Size (Dry Sieve) D422

901000

Sample No.	Matrix *	Sample Date	Sample Time			
0WB	OTHER SOLID	2/2/09	1230	X	X	X

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Matt Mayberry BHH	2/2/09 1715	Eric A	2/2/09 1715
Eric A.	2/4/09 0850	D. Heidelberg	2/4/09 0850
Heidelberg	2/4/09 1030	Fedex 2/4/09	1030
Ed E.	2-5-09 0715		2-5-09 0715

SPECIAL INSTRUCTIONS

5 AAG 2-9-09

(1) TPH-Diesel Range - WTPH-D + (Total petroleum hydrocarbons - diesel range, Total petroleum hydrocarbons - motor oil (high boiling))

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab.

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W = Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION — Received By: | Title: | Date/Time:

FINAL SAMPLE DISPOSITION — Disposal Method: | Disposed By: | Date/Time:

A-6003-011

AAAAAAAC

Appendix 5

Data Validation Supporting Documentation

GC/MS ORGANIC DATA VALIDATION CHECKLIST

VALIDATION LEVEL	A	B	[✓ C]	D	E
PROJECT: RCBRA			DATA PACKAGE: K1525		
VALIDATOR: BLR	LAB LLI		DATE: 11/16/05		
			SDG: K1525		
ANALYSES PERFORMED					
SW-846 8260		SW-846 8260 (TCLP)	[✓ SW-846 8270]	[✓ 8015B]	SW-846 8270 (TCLP)

SAMPLES/MATRIX

J18157-A J18158-A J18177 J18178 J18179 J18180

J18181 J18182 J18183 J17V87 J17V88 J17V89

J17V90 J17V91 J17V92 J17V80 J17V85 J18049-A

J19045-A

solid

1. DATA PACKAGE COMPLETENESS AND CASE NARRATIVE

Technical verification documentation present? .... Yes [✓ No] N/A

Comments:

2. INSTRUMENT TUNING AND CALIBRATION (Levels D and E)

GC/MS tuning/performance check acceptable? .... Yes No [✓ N/A]

Initial calibrations acceptable? .... Yes No [✓ N/A]

Continuing calibrations acceptable? .... Yes No [✓ N/A]

Standards traceable? .... Yes No [✓ N/A]

Standards expired? .... Yes No [✓ N/A]

Calculation check acceptable? .... Yes No [✓ N/A]

Comments:

GC/MS ORGANIC DATA VALIDATION CHECKLIST

3. BLANKS (Levels B, C, D, and E)

Calibration blanks analyzed? (Levels D, E) .... Yes No [✓ N/A]

Calibration blank results acceptable? (Levels D, E) .... Yes No [✓ N/A]

Laboratory blanks analyzed? .... [✓ Yes] No N/A

Laboratory blank results acceptable? .... ~~Yes~~ [✓ No] N/A

Field/trip blanks analyzed? (Levels C, D, E) .... Yes [✓ No] N/A

Field/trip blank results acceptable? (Levels C, D, E) .... Yes No [✓ N/A]

Transcription/calculation errors? (Levels D, E) .... Yes No [✓ N/A]

Comments: Method - Blank (all but 90, 80, 99, 77) - U   No FB.

4. ACCURACY (Levels C, D, and E)

Surrogates/system monitoring compounds analyzed? .... [✓ Yes] No N/A

Surrogate/system monitoring compound recoveries acceptable? .... Yes [✓ No] N/A

Surrogates traceable? (Levels D, E) .... Yes No [✓ N/A]

Surrogates expired? (Levels D, E) .... Yes No [✓ N/A]

MS/MSD samples analyzed? .... [✓ Yes] No N/A

MS/MSD results acceptable? .... Yes [✓ No] N/A

MS/MSD standards NIST traceable? (Levels D, E) .... Yes No [✓ N/A]

MS/MSD standards? (Levels D, E) .... Yes No [✓ N/A]

LCS/BSS samples analyzed? .... [✓ Yes] No N/A

LCS/BSS results acceptable? .... [✓ Yes] No N/A

Standards traceable? (Levels D, E) .... Yes No [✓ N/A]

Standards expired? (Levels D, E) .... Yes No [✓ N/A]

Transcription/calculation errors? (Levels D, E) .... Yes No [✓ N/A]

Performance audit sample(s) analyzed? .... Yes [✓ No] N/A

Performance audit sample results acceptable? .... Yes No [✓ N/A]

Comments: 95 - all surr low ~~[illegible]~~ volatile + terphenyl - J all   No PES

MS - 1111   MSD - 1111 - J all

Surr - MO - J - 77   No MO   MS, MSD or LCS - J all

GC/MS ORGANIC DATA VALIDATION CHECKLIST

5. PRECISION (Levels C, D, and E)

MS/MSD samples analyzed? .... [✓ Yes] No N/A
MS/MSD RPD values acceptable? .... Yes [✓ No] N/A
MS/MSD standards NIST traceable? (Levels D, E) .... Yes No [✓ N/A]
MS/MSD standards expired? (Levels D, E) .... Yes No [✓ N/A]
Field duplicate RPD values acceptable? .... [✓ Yes] No N/A
Field split RPD values acceptable? .... Yes No [✓ N/A]
Transcription/calculation errors? (Levels D, E) .... Yes No [✓ N/A]
Comments: hexachlorocyclopentadiene - no RPD 3,3'-dichlorobenzidine - no RPD 4-nitrophenol - 45% pentachlorophenol (44%) - J all
MW - No MS/MSD - J all

6. SYSTEM PERFORMANCE (Levels D and E)

Internal standards analyzed? .... Yes No [✓ N/A]
Internal standard areas acceptable? .... Yes No [✓ N/A]
Internal standard retention times acceptable? .... Yes No [✓ N/A]
Standards traceable? .... Yes No [✓ N/A]
Standards expired? .... Yes No [✓ N/A]
Transcription/calculation errors? .... Yes No [✓ N/A]
Comments:

7. HOLDING TIMES (all levels)

Samples properly preserved? .... [✓ Yes] No N/A
Sample holding times acceptable? .... [✓ Yes] No N/A
Comments:

GC/MS ORGANIC DATA VALIDATION CHECKLIST

8. COMPOUND IDENTIFICATION, QUANTITATION, AND DETECTION LIMITS (all levels)

Compound identification acceptable? (Levels D, E) .... Yes No [✓ N/A]
Compound quantitation acceptable? (Levels D, E) .... Yes No [✓ N/A]
Results reported for all requested analyses? .... [✓ Yes] No N/A
Results supported in the raw data? (Levels D, E) .... Yes No [✓ N/A]
Samples properly prepared? (Levels D, E) .... Yes No [✓ N/A]
Laboratory properly identified and coded all TIC? (Levels D, E) .... Yes No [✓ N/A]
Detection limits meet RDL? .... Yes [✓ No] N/A
Transcription/calculation errors? (Levels D, E) .... Yes No [✓ N/A]
Comments: all [illegible]

9. SAMPLE CLEANUP (Levels D and E)

GPC cleanup performed? .... Yes No [✓ N/A]
GPC check performed? .... Yes No [✓ N/A]
GPC check recoveries acceptable? .... Yes No [✓ N/A]
GPC calibration performed? .... Yes No [✓ N/A]
GPC calibration check performed? .... Yes No [✓ N/A]
GPC calibration check retention times acceptable? .... Yes No [✓ N/A]
Check/calibration materials traceable? .... Yes No [✓ N/A]
Check/calibration materials Expired? .... Yes No [✓ N/A]
Analytical batch QC given similar cleanup? .... Yes No [✓ N/A]
Transcription/Calculation Errors? .... Yes No [✓ N/A]
Comments:

Appendix 6

Additional Documentation Requested by Client

364 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

WC Hanford, Inc. 2620 Fermi Avenue Richland WA, 99354	Project: RC-116 Project Number: [none] Project Manager: John Kessner	Reported: 04/03/2009 13:32

Extractable Petroleum Hydrocarbons by SW846 8015 - Quality Control

Lionville Laboratory

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch L902101 - SW 3540C										
Blank (L902101-BLK1)				Prepared: 02/15/2009 Analyzed: 02/20/2009						
~~[illegible]~~	~~[illegible]~~		~~ug/kg wet~~							
~~DRO Bulk~~	~~[illegible]~~									
Diesel Range Organics	4490	3300	"							
Motor Oil	7840	10000	"							J
Surrogate: p-Terphenyl	*4880*		"	*6666.7*		*73*	*39-129*			
LCS (L902101-BS1)				Prepared: 02/15/2009 Analyzed: 02/20/2009						
Diesel Range Organics	54200	3300	ug/kg wet	66667		81	34-104			H
Surrogate: p-Terphenyl	*5920*		"	*6666.7*		*89*	*39-129*			
Matrix Spike (L902101-MS2)	**Source: 0902012-21**			Prepared: 02/15/2009 Analyzed: 02/21/2009						
Diesel Range Organics	54100	3300	ug/kg wet	66667	ND	81	34-104			H
Surrogate: p-Terphenyl	*6540*		"	*6666.7*		*98*	*39-129*			
Matrix Spike Dup (L902101-MSD2)	**Source: 0902012-21**			Prepared: 02/15/2009 Analyzed: 02/21/2009						
Diesel Range Organics	55300	3300	ug/kg wet	66667	ND	83	34-104	3	40	B
Surrogate: p-Terphenyl	*6820*		"	*6666.7*		*102*	*39-129*			

WC-Hanford, Inc 2620 Fermi Avenue Richland WA, 99354	Project: RC-116 Project Number: K1525 Project Manager: Joan Kessner	Reported: 04/14/2009 12:58

Semivolatile Organic Compounds by SW846 8270C - Quality Control

Lionville Laboratory

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch L902069 - SW 3540C										
Blank (L902069-BLK1)				Prepared: 02/11/2009 Analyzed: 02/16/2009						
Phenol	ND	330	ug/kg wet							U
Bis(2-chloroethyl) ether	ND	330	"							U
2-Chlorophenol	ND	330	"							U
1,3-Dichlorobenzene	ND	330	"							U
1,4-Dichlorobenzene	ND	330	"							U
1,2-Dichlorobenzene	ND	330	"							U
2-Methylphenol	ND	330	"							U
Bis(2-chloroisopropyl) ether	ND	330	"							U
4-Methylphenol	ND	330	"							U
N-Nitroso-di-n-propylamine	ND	330	"							U
Hexachloroethane	ND	330	"							U
Nitrobenzene	ND	330	"							U
Isophorone	ND	330	"							U
2-Nitrophenol	ND	330	"							U
2,4-Dimethylphenol	ND	330	"							U
Bis(2-chloroethoxy) methane	ND	330	"							U
2,4-Dichlorophenol	ND	330	"							U
1,2,4-Trichlorobenzene	ND	330	"							U
Naphthalene	ND	330	"							U
4-Chloroaniline	ND	330	"							U
Hexachlorobutadiene	ND	330	"							U
4-Chloro-3-methylphenol	ND	330	"							U
2-Methylnaphthalene	ND	330	"							U
Hexachlorocyclopentadiene	ND	330	"							U
2,4,6-Trichlorophenol	ND	330	"							U
2,4,5-Trichlorophenol	ND	330	"							U
2-Chloronaphthalene	ND	330	"							U
2-Nitroaniline	ND	1650	"							U
Dimethyl Phthalate	ND	330	"							U
2,6-Dinitrotoluene	ND	330	"							U
Acenaphthylene	ND	330	"							U
3-Nitroaniline	ND	1650	"							U
Acenaphthene	ND	330	"							U
2,4-Dinitrophenol	ND	1650	"							U
4-Nitrophenol	ND	1650	"							U
Dibenzofuran	ND	330	"							U
2,4-Dinitrotoluene	ND	330	"							U
Diethyl Phthalate	ND	330	"							U
4-Chlorophenyl Phenyl Ether	ND	330	"							U
Fluorene	ND	330	"							U
4-Nitroaniline	ND	1650	"							U
4,6-Dinitro-2-methylphenol	ND	330	"							U
N-Nitrosodiphenylamine	ND	330	"							U

204 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

WC Hanford, Inc 2620 Fermi Avenue Richland WA, 99354	Project: RC-116 Project Number: K1525 Project Manager: Joan Kessner	**Reported:** 04/14/2009 12:58

Semivolatile Organic Compounds by SW846 8270C - Quality Control

Lionville Laboratory

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch L902069 - SW 3540C										
Blank (L902069-BLK1)				Prepared: 02/11/2009 Analyzed: 02/16/2009						
4-Bromophenyl Phenyl Ether	ND	330	ug/kg wet							U
Hexachlorobenzene	ND	330	"							U
Pentachlorophenol	ND	1650	"							U
Phenanthrene	ND	330	"							U
Anthracene	ND	330	"							U
Carbazole	ND	330	"							U
Di-n-butyl Phthalate	ND	330	"							U
Fluoranthene	ND	330	"							U
Pyrene	ND	330	"							U
Butyl Benzyl Phthalate	ND	330	"							U
Bis(2-ethylhexyl) phthalate	ND	330	"							U
3,3'-Dichlorobenzidine	ND	660	"							U
Benz[a]anthracene	ND	330	"							U
Chrysene	ND	330	"							U
Di-n-octyl Phthalate	ND	330	"							U
Benzo[b] fluoranthene	ND	330	"							U
Benzo[k] fluoranthene	ND	330	"							U
Benzo[a] pyrene	ND	330	"							U
Indeno[1,2,3-cd]pyrene	ND	330	"							U
Dibenz[a,h]anthracene	ND	330	"							U
Benzo[g,h,i] perylene	ND	330	"							U
TIC: Unknown 1	114000		"							J
TIC: Unknown 4	1120		"							J
TIC: Unknown 2	590		"							J
TIC: Aldol Condensate 1	1100		"							J A
TIC: Unknown 3	425		"							J
Surrogate: 2-Fluorophenol	*1830*		"	*2500.0*		*73*	*15-121*			AJM 4-14-09
Surrogate: Phenol-d5	*1820*		"	*2500.0*		*73*	*24-113*			
Surrogate: Nitrobenzene-d5	*1190*		"	*1666.7*		*72*	*23-120*			
Surrogate: 2-Fluorobiphenyl	*1330*		"	*1666.7*		*80*	*30-115*			
Surrogate: 2,4,6-Tribromophenol	*1420*		"	*2500.0*		*57*	*19-122*			
Surrogate: p-Terphenyl-d14	*1150*		"	*1666.7*		*69*	*18-137*			

Semivolatile Organic Compounds by SW846 8270C - Quality Control

Lionville Laboratory

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch L902069 - SW 3540C										
Blank (L902069-BLK2)				Prepared: 02/11/2009 Analyzed: 02/16/2009						
Phenol	ND	330	ug/kg wet							
Bis(2-chloroethyl) ether	ND	330	"							U
2-Chlorophenol	ND	330	"							U
1,3-Dichlorobenzene	ND	330	"							U
1,4-Dichlorobenzene	ND	330	"							U
1,2-Dichlorobenzene	ND	330	"							U
2-Methylphenol	ND	330	"							U
Bis(2-chloroisopropyl) ether	ND	330	"							U
4-Methylphenol	ND	330	"							U
N-Nitrosodi-n-propylamine	ND	330	"							U
Hexachloroethane	ND	330	"							U
Nitrobenzene	ND	330	"							U
Isophorone	ND	330	"							U
2-Nitrophenol	ND	330	"							U
2,4-Dimethylphenol	ND	330	"							U
Bis(2-chloroethoxy) methane	ND	330	"							U
2,4-Dichlorophenol	ND	330	"							U
1,2,4-Trichlorobenzene	ND	330	"							U
Naphthalene	ND	330	"							U
4-Chloroaniline	ND	330	"							U
Hexachlorobutadiene	ND	330	"							U
4-Chloro-3-methylphenol	ND	330	"							U
2-Methylnaphthalene	ND	330	"							U
Hexachlorocyclopentadiene	ND	330	"							U
2,4,6-Trichlorophenol	ND	330	"							U
2,4,5-Trichlorophenol	ND	330	"							U
2-Chloronaphthalene	ND	330	"							U
2-Nitroaniline	ND	1650	"							U
Dimethyl Phthalate	ND	330	"							U
2,6-Dinitrotoluene	ND	330	"							U
Acenaphthylene	ND	330	"							U
3-Nitroaniline	ND	1650	"							U
Acenaphthene	ND	330	"							U
2,4-Dinitrophenol	ND	1650	"							U
4-Nitrophenol	ND	1650	"							U
Dibenzofuran	ND	330	"							U
2,4-Dinitrotoluene	ND	330	"							U
Diethyl Phthalate	ND	330	"							U
4-Chlorophenyl Phenyl Ether	ND	330	"							U
Fluorene	ND	330	"							U
4-Nitroaniline	ND	1650	"							U
4,6-Dinitro-2-methylphenol	ND	330	"							U
N-Nitrosodiphenylamine	ND	330	"							U

LIONVILLE LABORATORY

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WC-Hanford, Inc. 2620 Fermi Avenue Richland WA, 99354	Project: RC-116 Project Number: K1525 Project Manager: John Kessner	Reported: 04/14/2009 12:58

Semivolatile Organic Compounds by SW846 8270C - Quality Control

Lionville Laboratory

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch L902069 - SW 3540C										
Blank (L902069-BLK2)				Prepared: 02/11/2009 Analyzed: 02/16/2009						
4-Bromophenyl Phenyl Ether	ND	330	ug/kg wet							U
Hexachlorobenzene	ND	330	"							U
Pentachlorophenol	ND	1650	"							U
Phenanthrene	ND	330	"							U
Anthracene	ND	330	"							U
Carbazole	ND	330	"							U
Di-n-butyl Phthalate	ND	330	"							U
Fluoranthene	ND	330	"							U
Pyrene	ND	330	"							U
Butyl Benzyl Phthalate	ND	330	"							U
Bis(2-ethylhexyl) phthalate	ND	330	"							U
3,3'-Dichlorobenzidine	ND	660	"							U
Benz[a]anthracene	ND	330	"							U
Chrysene	ND	330	"							U
Di-n-octyl Phthalate	ND	330	"							U
Benzo[b] fluoranthene	ND	330	"							U
Benzo[k] fluoranthene	ND	330	"							U
Benzo[a] pyrene	ND	330	"							U
Indeno[1,2,3-cd]pyrene	ND	330	"							U
Dibenz[a,h]anthracene	ND	330	"							U
Benzo[g,h,i] perylene	ND	330	"							U
Surrogate: 2-Fluorophenol	*1810*		"	*2500.0*		*73*	*25-121*			
Surrogate: Phenol-d5	*1820*		"	*2500.0*		*73*	*24-113*			
Surrogate: Nitrobenzene-d5	*1190*		"	*1666.7*		*72*	*23-120*			
Surrogate: 2-Fluorobiphenyl	*1330*		"	*1666.7*		*80*	*30-115*			
Surrogate: 2,4,6-Tribromophenol	*1420*		"	*2500.0*		*57*	*19-122*			
Surrogate: p-Terphenyl-d14	*1150*		"	*1666.7*		*69*	*18-137*			

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WC-Hanford, Inc
2620 Fermi Avenue
Richland WA, 99354

Project: KC-116
Project Number: K1523
Project Manager: Joan Kessner

Reported:
04/14/2009 12:58

Semivolatile Organic Compounds by SW846 8270C - Quality Control

Lionville Laboratory

Batch 1.902069 - SW 3540C

LCS (1.902069-BS1) Prepared: 02/11/2009 Analyzed: 02/16/2009

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
N-Nitrosodimethylamine	1690	330	ug/kg wet	2000.0		84	0-200			
Pyridine	1110	330	"	2000.0		55	0-200			
Phenol	1570	330	"	2000.0		79	50-110			
Aniline	1060	330	"	2000.0		53	0-200			
Bis(2-chloroethyl) ether	1590	330	"	2000.0		79	50-130			
2-Chlorophenol	1540	330	"	2000.0		77	50-130			
1,3-Dichlorobenzene	1450	330	"	2000.0		73	50-110			
1,4-Dichlorobenzene	1500	330	"	2000.0		75	50-120			
Benzyl alcohol	1570	330	"	2000.0		78	0-200			
1,2-Dichlorobenzene	1410	330	"	2000.0		70	50-110			
2-Methylphenol	1410	330	"	2000.0		70	60-120			
Bis(2-chloroisopropyl) ether	1540	330	"	2000.0		77	50-120			
4-Methylphenol	1550	330	"	2000.0		78	60-130			
N-Nitrosodi-n-propylamine	1650	330	"	2000.0		82	50-130			
Acetophenone	1290	330	"	2000.0		65	0-200			
Hexachloroethane	1490	330	"	2000.0		74	50-110			
Nitrobenzene	1470	330	"	2000.0		74	50-110			
Isophorone	1380	330	"	2000.0		69	60-120			
2-Nitrophenol	1440	330	"	2000.0		72	50-130			
2,4-Dimethylphenol	1340	330	"	2000.0		67	50-120			
Benzoic Acid	1050	1650	"	2000.0		52	0-200			J
Bis(2-chloroethoxy) methane	1710	330	"	2000.0		86	40-140			
2,4-Dichlorophenol	1560	330	"	2000.0		78	45-110			
1,2,4-Trichlorobenzene	1450	330	"	2000.0		72	60-120			
Naphthalene	1490	330	"	2000.0		74	40-130			
4-Chloroaniline	1240	330	"	2000.0		62	20-120			
Hexachlorobutadiene	1510	330	"	2000.0		75	40-130			
4-Chloro-3-methylphenol	1620	330	"	2000.0		81	60-130			
2-Methylnaphthalene	1430	330	"	2000.0		71	60-100			
1-Methylnaphthalene	1410	N/T	"	2000.0		71	0-200			
Hexachlorocyclopentadiene	994	330	"	2000.0		50	20-100			
2,4,6-Trichlorophenol	1600	330	"	2000.0		80	50-110			
2,4,5-Trichlorophenol	1680	330	"	2000.0		84	50-110			
2-Chloronaphthalene	1560	330	"	2000.0		78	50-130			
2-Nitroaniline	1670	1650	"	2000.0		84	60-130			
1,4-Dinitrobenzene	1650	330	"	2000.0		82	0-200			
Dimethyl Phthalate	1800	330	"	2000.0		90	50-140			
2,6-Dinitrotoluene	1750	330	"	2000.0		87	50-140			
Acenaphthylene	1590	330	"	2000.0		80	60-110			
3-Nitroaniline	1510	1650	"	2000.0		76	40-130			J
1,3-Dinitrobenzene	1680	330	"	2000.0		84	0-200			
1,2-Dinitrobenzene	1630	NT	"	2000.0		82	0-200			
Acenaphthene	1590	330	"	2000.0		79	60-130			

M 4-14-09

Semivolatile Organic Compounds by SW846 8270C - Quality Control

Lionville Laboratory

Batch L902069 - SW 3540C

LCS (L902069-BS1) Prepared: 02/11/2009 Analyzed: 02/16/2009

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
2,4-Dinitrophenol	1960	1650	ug/kg wet	2000.0		98	20-120			
4-Nitrophenol	1790	1650	"	2000.0		89	40-140			
Dibenzofuran	1500	330	"	2000.0		75	60-130			
2,4-Dinitrotoluene	1570	330	"	2000.0		78	60-130			
2,3,5,6-Tetrachlorophenol	1540	[illegible]	"	2000.0		77	50-110	[illegible]		
2,3,4,6-Tetrachlorophenol	1470	330	"	2000.0		73	50-110			
Diethyl Phthalate	1840	330	"	2000.0		92	50-130			
4-Chlorophenyl Phenyl Ether	1640	330	"	2000.0		82	50-120			
Fluorene	1580	330	"	2000.0		79	60-130			
4-Nitroaniline	1780	1650	"	2000.0		89	50-120			
4,6-Dinitro-2-methylphenol	1790	330	"	2000.0		89	30-140			
N-Nitrosodiphenylamine	1340	330	"	2000.0		67	50-130			
1,2-Diphenylhydrazine	1500	330	"	2000.0		75	0-200			
4-Bromophenyl Phenyl Ether	1520	330	"	2000.0		76	50-120			
Hexachlorobenzene	1590	330	"	2000.0		79	60-130			
Pentachlorophenol	1730	1650	"	2000.0		87	30-130			
Phenanthrene	1590	330	"	2000.0		79	60-130			
Anthracene	1570	330	"	2000.0		78	60-130			
Carbazole	1510	330	"	2000.0		75	60-120			
Di-n-butyl Phthalate	1810	330	"	2000.0		90	40-150			
Fluoranthene	1770	330	"	2000.0		88	50-130			
Benzidine	ND	1650	"	2000.0			0-200			U
Pyrene	1200	330	"	2000.0		60	50-140			
Butyl Benzyl Phthalate	1450	330	"	2000.0		72	50-150			
bis(2-ethylhexyl) adipate	1160	330	"	2000.0		58	40-140			
bis(2-ethylhexyl) phthalate	1540	330	"	2000.0		77	50-150			
3,3'-Dichlorobenzidine	1560	660	"	2000.0		78	20-140			
Benz(a)anthracene	1580	330	"	2000.0		79	50-130			
Chrysene	1620	330	"	2000.0		81	50-130			
Di-n-octyl Phthalate	1180	330	"	2000.0		59	50-150			
Benzo(b) fluoranthene	1510	330	"	2000.0		76	60-130			
Benzo(k) fluoranthene	1570	330	"	2000.0		79	50-130			
Benzo(a) pyrene	1570	330	"	2000.0		79	50-130			
Indeno(1,2,3-cd)pyrene	1600	330	"	2000.0		80	60-140			
Dibenz(a,h)anthracene	1630	330	"	2000.0		82	50-140			
Benzo(g,h,i) perylene	1610	330	"	2000.0		81	60-140			
Surrogate: 2-Fluorophenol	*1930*		"	*2500.0*		*[illegible]*	*25-121*			
Surrogate: Phenol-d5	*2080*		"	*2500.0*		*83*	*24-113*			
Surrogate: Nitrobenzene-d5	*1380*		"	*1666.7*		*83*	*23-120*			
Surrogate: 2-Fluorobiphenyl	*1390*		"	*1666.7*		*83*	*30-115*			
Surrogate: 2,4,6-Tribromophenol	*2020*		"	*2500.0*		*81*	*19-122*			
Surrogate: p-Terphenyl-d14	*1160*		"	*1666.7*		*70*	*18-137*			

LVL LIONVILLE LABORATORY

264 Welsh Pool Road
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WC-Hanford, Inc 2620 Fermi Avenue Richland WA, 99354	Project: RC-116 Project Number: K1525 Project Manager: Joan Kessner	Reported: 04/14/2009 12:58

Semivolatile Organic Compounds by SW846 8270C - Quality Control
Lionville Laboratory

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch L902069 - SW 3540C										
LCS (L902069-BS2)				Prepared: 02/11/2009 Analyzed: 02/16/2009						
N-Nitrosodimethylamine	1690	330	ug/kg wet	2000.0		84	0-200			
Pyridine	1110	330	"	2000.0		55	0-200			
Phenol	1570	330	"	2000.0		79	50-130			
Aniline	1060	330	"	2000.0		53	0-200			
Bis(2-chloroethyl) ether	1590	330	"	2000.0		79	50-130			
2-Chlorophenol	1540	330	"	2000.0		77	50-130			
1,3-Dichlorobenzene	1450	330	"	2000.0		73	50-110			
1,4-Dichlorobenzene	1500	330	"	2000.0		75	50-120			
Benzyl alcohol	1570	330	"	2000.0		78	0-200			
1,2-Dichlorobenzene	1410	330	"	2000.0		70	50-110			
2-Methylphenol	1410	330	"	2000.0		70	60-120			
Bis(2-chloroisopropyl) ether	1540	330	"	2000.0		77	50-120			
4-Methylphenol	1550	330	"	2000.0		78	60-130			
N-Nitrosodi-n-propylamine	1650	330	"	2000.0		82	50-130			
Acetophenone	1290	330	"	2000.0		65	0-200			
Hexachloroethane	1490	330	"	2000.0		74	50-110			
Nitrobenzene	1470	330	"	2000.0		74	50-110			
Isophorone	1380	330	"	2000.0		69	60-120			
2-Nitrophenol	1440	330	"	2000.0		72	50-130			
2,4-Dimethylphenol	1350	330	"	2000.0		67	50-120			
Benzoic Acid	1050	1650	"	2000.0		52	0-200			
Bis(2-chloroethoxy) methane	1710	330	"	2000.0		86	40-140			
2,4-Dichlorophenol	1560	330	"	2000.0		78	45-110			
1,2,4-Trichlorobenzene	1450	330	"	2000.0		72	60-120			
Naphthalene	1490	330	"	2000.0		74	40-130			
4-Chloroaniline	1240	330	"	2000.0		62	20-120			
Hexachlorobutadiene	1510	330	"	2000.0		75	40-130			
4-Chloro-3-methylphenol	1620	330	"	2000.0		81	60-130			
2-Methylnaphthalene	1430	330	"	2000.0		71	60-100			
1-Methylnaphthalene	1410	NJT	"	2000.0		71	0-200	[illegible]		
Hexachlorocyclopentadiene	994	330	"	2000.0		50	20-100			
2,4,6-Trichlorophenol	1600	330	"	2000.0		80	50-110			
2,4,5-Trichlorophenol	1680	330	"	2000.0		84	50-110			
2-Chloronaphthalene	1560	330	"	2000.0		78	50-110			
2-Nitroaniline	1670	1650	"	2000.0		84	60-130			
1,4-Dinitrobenzene	1650	330	"	2000.0		82	0-200			
Dimethyl Phthalate	1800	330	"	2000.0		90	50-140			
2,6-Dinitrotoluene	1650	330	"	2000.0		82	50-140			
Acenaphthylene	1590	330	"	2000.0		80	60-110			
3-Nitroaniline	1510	1650	"	2000.0		76	40-130			
1,3-Dinitrobenzene	1680	330	"	2000.0		84	0-200			
1,2-Dinitrobenzene	1640	N/T	"	2000.0		82	0-200			
Acenaphthene	1580	330	"	2000.0		79	60-110			

LIONVILLE LABORATORY

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WC-Hanford, Inc	Project: 100-118	
2620 Fermi Avenue	Project Number: K1525	Reported:
Richland WA, 99354	Project Manager: Joan Kessner	04/14/2009 12:58

Semivolatile Organic Compounds by SW846 8270C - Quality Control

Lionville Laboratory

Batch L902069 - SW 3540C

LCS (L902069-BS2) Prepared: 02/11/2009 Analyzed: 02/16/2009

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
2,4-Dinitrophenol	1960	1650	ug/kg wet	2000.0		98	20-120			
4-Nitrophenol	1790	1650	"	2000.0		89	40-140			
Dibenzofuran	1500	330	"	2000.0		75	60-130			
2,4-Dinitrotoluene	1570	330	"	2000.0		78	60-130			
2,3,5,6-Tetrachlorophenol	1540	NJ	"	2000.0		77	50-110	[illegible]		
2,3,4,6-Tetrachlorophenol	1470	330	"	2000.0		73	40-110			
Diethyl Phthalate	1840	330	"	2000.0		92	50-130			
4-Chlorophenyl Phenyl Ether	1640	330	"	2000.0		82	50-120			
Fluorene	1580	330	"	2000.0		79	60-130			
4-Nitroaniline	1780	1650	"	2000.0		89	50-120			
4,6-Dinitro-2-methylphenol	1790	330	"	2000.0		89	40-140			
N-Nitrosodiphenylamine	1340	330	"	2000.0		67	50-130			
1,2-Diphenylhydrazine	1500	330	"	2000.0		75	0-200			
4-Bromophenyl Phenyl Ether	1520	330	"	2000.0		76	50-120			
Hexachlorobenzene	1590	330	"	2000.0		79	60-130			
Pentachlorophenol	1730	1650	"	2000.0		87	30-130			
Phenanthrene	1590	330	"	2000.0		79	60-130			
Anthracene	1570	330	"	2000.0		78	60-130			
Carbazole	1510	330	"	2000.0		75	60-120			
Di-n-butyl Phthalate	1810	330	"	2000.0		90	40-150			
Fluoranthene	1770	330	"	2000.0		88	50-130			
Benzidine	ND	1650	"	2000.0			0-200			U
Pyrene	1200	330	"	2000.0		60	50-140			
Butyl Benzyl Phthalate	1450	330	"	2000.0		72	50-150			
Bis(2-ethylhexyl) adipate	1160	330	"	2000.0		58	40-140			
Bis(2-ethylhexyl) phthalate	1540	330	"	2000.0		77	50-150			
3,3'-Dichlorobenzidine	1560	660	"	2000.0		78	20-140			
Benz[a]anthracene	1580	330	"	2000.0		79	50-130			
Chrysene	1620	330	"	2000.0		81	50-130			
Di-n-octyl Phthalate	1180	330	"	2000.0		59	50-150			
Benzo[b] fluoranthene	1510	330	"	2000.0		76	60-130			
Benzo[k] fluoranthene	1570	330	"	2000.0		79	50-130			
Benzo[a] pyrene	1570	330	"	2000.0		79	50-130			
Indeno[1,2,3-cd]pyrene	1600	330	"	2000.0		80	60-140			
Dibenz[a,h]anthracene	1630	330	"	2000.0		82	50-140			
Benzo[g,h,i] perylene	1610	330	"	2000.0		81	60-140			
Surrogate: 2-Fluorophenol	*1950*		"	*2500.0*		*78*	*25-121*			
Surrogate: Phenol-d5	*2080*		"	*2500.0*		*83*	*24-113*			
Surrogate: Nitrobenzene-d5	*1380*		"	*1666.7*		*83*	*23-120*			
Surrogate: 2-Fluorobiphenyl	*1390*		"	*1666.7*		*83*	*30-115*			
Surrogate: 2,4,6-Tribromophenol	*2020*		"	*2500.0*		*81*	*19-122*			
Surrogate: p-Terphenyl-d14	*1160*		"	*1666.7*		*70*	*18-137*			

WC-Hanford, Inc.
2620 Fermi Avenue
Richland WA, 99354

Project: RC/116
Project Number: K1525
Project Manager: Joan Kessner

Reported:
04/14/2009 12:58

Semivolatile Organic Compounds by SW846 8270C - Quality Control

Lionville Laboratory

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch L902069 - SW 3540C										
Matrix Spike (L902069-MS2)		**Source: 0902012-01**		Prepared: 02/11/2009 Analyzed: 02/16/2009						
N-Nitrosodimethylamine	1520	660	ug/kg wet	2000.0	ND	76	0-200			D
Pyridine	684	660	"	2000.0	ND	34	0-200			D
Phenol	1900	660	"	2000.0	ND	95	50-130			D
Aniline	456	660	"	2000.0	ND	23	0-200			J, D
Bis(2-chloroethyl) ether	1600	660	"	2000.0	ND	80	50-110			D
2-Chlorophenol	1720	660	"	2000.0	ND	86	50-130			D
1,3-Dichlorobenzene	1210	660	"	2000.0	ND	60	50-110			D
1,4-Dichlorobenzene	1240	660	"	2000.0	ND	62	50-120			D
Benzyl alcohol	2820	660	"	2000.0	ND	141	0-200			D
1,2-Dichlorobenzene	1340	660	"	2000.0	ND	67	50-110			D
2-Methylphenol	1910	660	"	2000.0	ND	95	60-120			D
Bis(2-chloroisopropyl) ether	1610	660	"	2000.0	ND	81	50-120			D
4-Methylphenol	2020	660	"	2000.0	ND	101	40-110			D
N-Nitrosodi-n-propylamine	1760	660	"	2000.0	ND	88	40-130			D
Acetophenone	1450	660	"	2000.0	ND	73	0-200			D
Hexachloroethane	885	660	"	2000.0	ND	44	50-110			D
Nitrobenzene	1320	660	"	2000.0	ND	66	50-110			D
Isophorone	1400	660	"	2000.0	ND	70	60-120			D
2-Nitrophenol	1420	660	"	2000.0	ND	71	50-130			D
2,4-Dimethylphenol	1910	660	"	2000.0	ND	95	50-120			D
Benzoic Acid	2180	3300	"	2000.0	323	93	0-200			J, D
Bis(2-chloroethoxy) methane	1690	660	"	2000.0	ND	85	40-140			D
2,4-Dichlorophenol	1730	660	"	2000.0	ND	86	45-110			D
1,2,4-Trichlorobenzene	1310	660	"	2000.0	ND	65	60-120			D
Naphthalene	1470	660	"	2000.0	ND	73	40-130			D
4-Chloroaniline	583	660	"	2000.0	ND	29	20-120			J, D
Hexachlorobutadiene	1290	660	"	2000.0	ND	64	40-130			D
4-Chloro-3-methylphenol	1740	660	"	2000.0	ND	87	60-130			D
2-Methylnaphthalene	1570	660	"	2000.0	ND	79	60-100			D
1-Methylnaphthalene	1540	N/T	"	2000.0	0.00	77	0-200	A [illegible]		D
Hexachlorocyclopentadiene	ND	660	"	2000.0	ND		20-100			D
2,4,6-Trichlorophenol	1600	660	"	2000.0	ND	80	50-110			D
2,4,5-Trichlorophenol	1990	660	"	2000.0	ND	100	50-110			D
2-Chloronaphthalene	1840	660	"	2000.0	ND	92	50-130			D
2-Nitroaniline	2000	3300	"	2000.0	ND	100	60-130			J, D
1,4-Dinitrobenzene	1620	660	"	2000.0	ND	81	0-200			D
Dimethyl Phthalate	2170	660	"	2000.0	ND	108	50-140			D
2,6-Dinitrotoluene	1900	660	"	2000.0	ND	95	50-140			D
Acenaphthylene	1970	660	"	2000.0	ND	98	60-110			D
3-Nitroaniline	1270	3300	"	2000.0	ND	63	40-130			J, D
1,3-Dinitrobenzene	1930	660	"	2000.0	ND	96	0-200			D
1,2-Dinitrobenzene	1780	N/T	"	2000.0	0.00	89	0-200			D
Acenaphthene	1950	660	"	2000.0	ND	97	60-130			D

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WCH-Hanford, Inc. 2620 Fermi Avenue Richland WA, 99354	Project: KC-116 Project Number: K1525 Project Manager: Joan Kessner	Reported: 04/14/2009 12:58

Semivolatile Organic Compounds by SW846 8270C - Quality Control

Lionville Laboratory

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch L902069 - SW 3540C										
Matrix Spike (L902069-MS2)	Source: 0902012-01			Prepared: 02/11/2009 Analyzed: 02/16/2009						
2,4-Dinitrophenol	1690	3300	ug/kg wet	2000.0	ND	85	20-120			J, D
4-Nitrophenol	2090	3300	"	2000.0	ND	104	40-140			J, D
Dibenzofuran	1960	660	"	2000.0	ND	98	60-130			D
2,4-Dinitrotoluene	1920	660	"	2000.0	ND	96	60-130			D
2,3,5,6-Tetrachlorophenol	1490	N/T	"	2000.0	0.00	75	50-110	[illegible]		D
2,3,4,6-Tetrachlorophenol	1440	660	"	2000.0	ND	72	50-110			D
Diethyl Phthalate	2150	660	"	2000.0	ND	107	50-130			D
4-Chlorophenyl Phenyl Ether	2110	660	"	2000.0	ND	105	50-120			D
Fluorene	1970	660	"	2000.0	ND	98	60-130			D
4-Nitroaniline	1750	3300	"	2000.0	ND	87	50-120			J, D
4,6-Dinitro-2-methylphenol	1770	660	"	2000.0	ND	88	40-140			D
N-Nitrosodiphenylamine	1810	660	"	2000.0	ND	91	30-130			D
1,2-Diphenylhydrazine	1920	660	"	2000.0	ND	96	0-200			D
4-Bromophenyl Phenyl Ether	1940	660	"	2000.0	ND	97	50-120			D
Hexachlorobenzene	2010	660	"	2000.0	ND	101	60-130			D
Pentachlorophenol	1660	3300	"	2000.0	ND	83	30-130			J, D
Phenanthrene	2010	660	"	2000.0	ND	101	60-130			D
Anthracene	2130	660	"	2000.0	ND	107	60-130			D
Carbazole	2080	660	"	2000.0	ND	104	60-120			D
Di-n-butyl Phthalate	2360	660	"	2000.0	ND	118	40-150			D
Fluoranthene	2130	660	"	2000.0	ND	107	50-130			D
Benzidine	ND	3300	"	2000.0	ND		0-200			U
Pyrene	1990	660	"	2000.0	ND	99	50-140			D
Butyl Benzyl Phthalate	2360	660	"	2000.0	ND	118	50-150			D
Bis(2-ethylhexyl) adipate	1990	660	"	2000.0	ND	100	40-140			D
Bis(2-ethylhexyl) phthalate	2390	660	"	2000.0	ND	120	50-150			D
3,3'-Dichlorobenzidine	ND	1320	"	2000.0	ND		20-140			U
Benz[a]anthracene	1970	660	"	2000.0	ND	99	50-130			D
Chrysene	1970	660	"	2000.0	ND	98	50-130			D
Di-n-octyl Phthalate	2270	660	"	2000.0	ND	113	30-150			D
Benzo[b] fluoranthene	1840	660	"	2000.0	ND	92	60-130			D
Benzo[k] fluoranthene	1940	660	"	2000.0	ND	97	50-130			D
Benzo[a] pyrene	1810	660	"	2000.0	ND	90	50-130			D
Indeno[1,2,3-cd]pyrene	1660	660	"	2000.0	ND	83	60-140			D
Dibenz[a,h]anthracene	1710	660	"	2000.0	ND	85	50-140			D
Benzo[g,h,i] perylene	1670	660	"	2000.0	ND	83	60-140			D
Surrogate: 2-Fluorophenol	*2160*		"	*2500.0*		*86*	*25-121*			
Surrogate: Phenol-d5	*2250*		"	*2500.0*		*90*	*24-113*			
Surrogate: Nitrobenzene-d5	*1070*		"	*1666.7*		*64*	*23-120*			
Surrogate: 2-Fluorobiphenyl	*1520*		"	*1666.7*		*91*	*30-115*			
Surrogate: 2,4,6-Tribromophenol	*1900*		"	*2500.0*		*76*	*19-122*			
Surrogate: p-Terphenyl-d14	*1760*		"	*1666.7*		*106*	*18-137*			

WC-Hanford, Inc	Project: RC-116	
2620 Fermi Avenue	Project Number: K1525	**Reported:**
Richland WA, 99354	Project Manager: Joan Kessner	04/14/2009 12:58

Semivolatile Organic Compounds by SW846 8270C - Quality Control

Lionville Laboratory

Batch L902069 - SW 3540C

Matrix Spike Dup (L902069-MSD2) Source: 0902012-01 Prepared: 02/10/2009 Analyzed: 02/16/2009

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Phenol	1540	660	ug/kg wet	2000.0	ND	77	50-130	21	40	D
Bis(2-chloroethyl) ether	1330	660	"	2000.0	ND	66	50-130	20	40	D
2-Chlorophenol	1450	660	"	2000.0	ND	73	50-110	17	40	D
1,3-Dichlorobenzene	1080	660	"	2000.0	ND	54	50-110	11	40	D
1,4-Dichlorobenzene	1100	660	"	2000.0	ND	55	50-120	12	40	D
1,2-Dichlorobenzene	1160	660	"	2000.0	ND	58	50-110	14	40	D
2-Methylphenol	1530	660	"	2000.0	ND	77	60-120	22	40	D
Bis(2-chloroisopropyl) ether	1390	660	"	2000.0	ND	69	50-120	15	40	D
4-Methylphenol	1600	660	"	2000.0	ND	80	60-130	23	40	D
N-Nitrosodi-n-propylamine	1410	660	"	2000.0	ND	70	50-130	22	40	D
Hexachloroethane	761	660	"	2000.0	ND	38	50-110	15	40	D
Nitrobenzene	1160	660	"	2000.0	ND	58	50-110	13	40	D
Isophorone	1170	660	"	2000.0	ND	59	60-120	18	40	D
2-Nitrophenol	1300	660	"	2000.0	ND	65	50-130	9	40	D
2,4-Dimethylphenol	1690	660	"	2000.0	ND	84	50-120	14	40	D
Bis(2-chloroethoxy) methane	1470	660	"	2000.0	ND	74	40-140	14	40	D
2,4-Dichlorophenol	1470	660	"	2000.0	ND	73	45-110	16	40	D
1,2,4-Trichlorobenzene	1150	660	"	2000.0	ND	58	60-120	11	40	D
Naphthalene	1270	660	"	2000.0	ND	64	40-130	14	40	D
4-Chloroaniline	567	660	"	2000.0	ND	28	20-120	3	40	J, D
Hexachlorobutadiene	1150	660	"	2000.0	ND	57	40-130	12	40	D
4-Chloro-3-methylphenol	1570	660	"	2000.0	ND	78	60-130	10	40	D
2-Methylnaphthalene	1340	660	"	2000.0	ND	67	60-100	16	40	D
Hexachlorocyclopentadiene	ND	660	"	2000.0	ND		20-100		40	U
2,4,6-Trichlorophenol	1190	660	"	2000.0	ND	60	50-110	29	40	D
2,4,5-Trichlorophenol	1520	660	"	2000.0	ND	76	50-110	27	40	D
2-Chloronaphthalene	1530	660	"	2000.0	ND	77	50-130	18	40	D
2-Nitroaniline	1680	3300	"	2000.0	ND	84	60-130	17	40	J, D
Dimethyl Phthalate	1830	660	"	2000.0	ND	91	50-140	17	40	D
2,6-Dinitrotoluene	1630	660	"	2000.0	ND	81	50-140	15	40	D
Acenaphthylene	1640	660	"	2000.0	ND	82	60-110	18	40	D
3-Nitroaniline	1070	3300	"	2000.0	ND	54	40-130	16	40	J, D
Acenaphthene	1630	660	"	2000.0	ND	81	60-130	18	40	D
2,4-Dinitrophenol	1470	3300	"	2000.0	ND	74	20-120	14	40	J, D
4-Nitrophenol	1310	3300	"	2000.0	ND	66	40-140	45	40	J, D
Dibenzofuran	1650	660	"	2000.0	ND	82	60-130	13	40	D
2,4-Dinitrotoluene	1650	660	"	2000.0	ND	82	60-130	15	40	D
Diethyl Phthalate	1870	660	"	2000.0	ND	94	50-130	14	40	D
4-Chlorophenyl Phenyl Ether	1760	660	"	2000.0	ND	88	50-120	18	40	D
Fluorene	1690	660	"	2000.0	ND	84	60-110	15	40	D
4-Nitroaniline	1390	3300	"	2000.0	ND	70	50-120	21	40	J, D
4,6-Dinitro-2-methylphenol	1650	660	"	2000.0	ND	82	40-140	7	40	D
N-Nitrosodiphenylamine	1520	660	"	2000.0	ND	76	50-130	17	40	D

Semivolatile Organic Compounds by SW846 8270C - Quality Control

Lionville Laboratory

Batch L902069 - SW 3540C

Matrix Spike Dup (L902069-MSD2) **Source: 0902012-01** **Prepared: 02/11/2009 Analyzed: 02/16/2009**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
4-Bromophenyl Phenyl Ether	1680	660	ug/kg wet	2000.0	ND	84	50-120	14	40	D
Hexachlorobenzene	1710	660	"	2000.0	ND	86	60-130	16	40	D
Pentachlorophenol	1070	3300	"	2000.0	ND	53	10-130	44	40	L, D
Phenanthrene	1760	660	"	2000.0	ND	88	60-130	13	40	D
Anthracene	1820	660	"	2000.0	ND	91	60-130	16	40	D
Carbazole	1690	660	"	2000.0	ND	85	60-120	21	40	D
Di-n-butyl Phthalate	2020	660	"	2000.0	ND	101	40-150	15	40	D
Fluoranthene	1840	660	"	2000.0	ND	92	50-130	15	40	D
Pyrene	1740	660	"	2000.0	ND	87	50-140	13	40	D
Butyl Benzyl Phthalate	2100	660	"	2000.0	ND	105	50-150	12	40	D
Bis(2-ethylhexyl) phthalate	2250	660	"	2000.0	ND	112	50-150	6	40	D
3,3'-Dichlorobenzidine	ND	1320	"	2000.0	ND		20-140		40	D
Benz[a]anthracene	1720	660	"	2000.0	ND	86	40-130	14	40	D
Chrysene	1780	660	"	2000.0	ND	89	50-130	10	40	D
Di-n-octyl Phthalate	1990	660	"	2000.0	ND	100	50-150	13	40	D
Benzo[b] fluoranthene	1630	660	"	2000.0	ND	81	40-130	12	20	D
Benzo[k] fluoranthene	1730	660	"	2000.0	ND	87	50-130	11	20	D
Benzo[a] pyrene	1590	660	"	2000.0	ND	79	50-130	13	20	D
Indeno[1,2,3-cd]pyrene	1530	660	"	2000.0	ND	77	60-140	8	40	D
Dibenz[a,h]anthracene	1580	660	"	2000.0	ND	79	50-140	8	40	D
Benzo[g,h,i] perylene	1510	660	"	2000.0	ND	76	60-140	9	20	D
Surrogate: 2-Fluorophenol	*1820*		"	*2500.0*		*73*	*25-121*			
Surrogate: Phenol-d5	*1860*		"	*2500.0*		*74*	*24-113*			
Surrogate: Nitrobenzene-d5	*967*		"	*1666.7*		*58*	*23-120*			
Surrogate: 2-Fluorobiphenyl	*1300*		"	*1666.7*		*78*	*30-115*			
Surrogate: 2,4,6-Tribromophenol	*1540*		"	*2500.0*		*62*	*19-122*			
Surrogate: p-Terphenyl-d14	*1590*		"	*1666.7*		*95*	*18-137*			

Date: 8 December 2009
To: Washington Closure Hanford (technical representative)
From: ELR Consultants
Project: Columbia River Component of the RCBRA - Sediment
Subject: Volatile - Data Package No. K1525-LLI

INTRODUCTION

This memo presents the results of data validation on Data Package No K1525 prepared by Lionville Laboratory Inc. (LLI). A list of samples validated along with the analyses reported and the method of analysis is provided in the following table.

Sample ID	Sample Date	Media	Validation	Analysis
J18177	2/3/09	Solid	C	See note 1
J18198	2/3/09	Solid	C	See note 1
J18199	2/3/09	Solid	C	See note 1
J181B0	2/3/09	Solid	C	See note 1
J181B1	2/3/09	Solid	C	See note 1
J181B2	2/3/09	Solid	C	See note 1
J181B3	2/3/09	Solid	C	See note 1
J17V88	2/3/09	Solid	C	See note 1
J17V89	2/3/09	Solid	C	See note 1
J17V90	2/3/09	Solid	C	See note 1
J17V91	2/3/09	Solid	C	See note 1
J17V92	2/3/09	Solid	C	See note 1
J17VP0	2/3/09	Solid	C	See note 1
J17VP5	2/3/09	Solid	C	See note 1
J180W8-A	2/3/09	Solid	C	See note 1
J180W9-A	2/3/09	Solid	C	See note 1
J17W10	2/3/09	Solid	C	See note 1
J17W14	2/3/09	Solid	C	See note 1
J17VY4	2/2/09	Solid	C	See note 1

1 Volatiles by 8260C

Data validation was conducted in accordance with the Washington Closure Hanford (WCH) validation statement of work and the Remedial Investigation Work Plan for Hanford Site Releases to the Columbia River (DOE/RL-2008-11, Rev. 0, September 2008). Appendices 1 through 6 provide the following information as indicated below:

Appendix 1. Glossary of Data Reporting Qualifiers
Appendix 2. Summary of Data Qualification
Appendix 3. Qualified Data Summary and Annotated Laboratory Reports
Appendix 4. Laboratory Narrative and Chain-of-Custody Documentation
Appendix 5. Data Validation Supporting Documentation
Appendix 6 Additional Date Requested by Client

DATA QUALITY OBJECTIVES

- **Holding Times & Sample Preservation**

Analytical holding times were assessed to ascertain whether the holding time requirements were met by the laboratory. The holding time requirements are as follows. Samples must be extracted and analyzed within 14 days of the date of sample collection.

If holding times are exceeded, but not by greater than two times the limit, all associated sample results are qualified as estimates and flagged "J" for detects and "UJ" for non-detects. If holding times are exceeded by greater than two
times the limit, all associated detectable sample results are qualified as estimates and flagged "J" and all non-detects are rejected and flagged "UR".

All holding times were acceptable.

- **Method Blanks**

Method blank analyses are conducted to determine the extent of laboratory contamination introduced through sampling, sample preparation and analysis. At least one acceptable method blank analysis must be conducted for every 20 samples. No contaminants should be present in the method blank. Analytical results for analytes present in any sample at less than five times the concentration of that analyte found in the associated blank are qualified as non-detects and flagged "U". Common laboratory contaminants present in samples at less than ten times the concentration of that analyte found in the associated blank are qualified as non-detects. If a sample result is less than the CRQL and is less than five times (or less than ten times for lab contaminants) the highest associated blank result, the sample result value is raised to the CRQL level and qualified as undetected "U".

Due to method blank contamination, all detected methylene chloride results (except J18198, J180W8-A, J180W9-A, J17W10, J17W14, J17VY4) were either raised to the RQL, qualified as undetected and flagged "U" (if less than the RQL) or qualified as undetected and flagged "U" (if over the RQL).

All other method blank results were acceptable.

Field Blanks

Three field (trip) blanks (J17W14, J17VY4 & J17W10) were submitted for analysis. Methylene chloride was detected in all field blanks. Under the WCH statement of work, no qualification is required. No other analytes were detected in the field blank.

· **Accuracy**

Matrix Spike/Matrix Spike Duplicate & Blank Spike Recoveries

Matrix spike/matrix spike duplicate analyses are used to assess the analytical accuracy of the reported data and the effect of the matrix on the ability to accurately quantify sample concentrations. Matrix spike/matrix spike duplicate analyses are performed in duplicate using five compounds for which percent recoveries must be within a range of 50-150% or within laboratory control limits. If spike recoveries are outside control limits, detected sample results less than five times the spike concentration are qualified as estimates and flagged "J". Undetected sample results with spike recoveries below control limits are qualified as estimates and flagged "UJ". Undetected sample results are not qualified if the spike recovery is above control limits. Sample results greater than five times the spike concentration require no qualification.

Due to the lack of a matrix spike and matrix spike duplicate analysis, all volatile organic results (except J18198, J180W8-A, J180W9-A, J17W10, J17W14, J17VY4) were qualified as estimates and flagged "J".

All other accuracy results were acceptable.

Surrogate Recovery

The analyses of surrogate compounds provide a measure of performance for individual samples. Matrix-specific surrogate compound recovery control windows have been established by the EPA CLP program. If two surrogates of the same class of compounds (base/neutral or acid) are out of control limits, all associated sample results greater than the contract required quantitation limit (CRQL) are qualified as estimates and flagged "J". Sample results less than the CRQL and below the lower control limit are qualified as estimates and flagged "UJ". Sample results less than the CRQL with recoveries above the upper control limit require no qualification. If a surrogate recovery is less than 10%, detects are qualified as estimates and flagged "J" and nondetects are rejected and flagged "UR".

All surrogate results were acceptable

Precision

Matrix Spike/Matrix Spike Duplicate Samples

Matrix spike (MS)/matrix spike duplicate (MSD) results provide matrix-specific information on the precision of the method for specific target compound classes. Precision is expressed by the relative percent difference (RPD) between the recoveries of duplicate matrix spike analyses performed on a sample. Samples results must be within RPD limits of +/-30%. If RPD values are out of specification and the sample

concentration is less than five times the spike concentration, all associated detected sample results are qualified as estimates and flagged "J". If RPD values are out of specification and the sample concentration is greater than five times the spike concentration, no qualification is required.

Due to the lack of a matrix spike and matrix spike duplicate analysis, all volatile organic results (except J18198, J180W8-A, J180W9-A, J17W10, J17W14, J17VY4) were qualified as estimates and flagged "J".

All other precision results were acceptable

Field Duplicate Samples

Two sets of field duplicates (J18177/J17VP0 & J17V87/J17VP5) were submitted for analysis. Field duplicates are compared using the same criteria as for laboratory duplicates. All field duplicates results were acceptable.

- **Analytical Detection Levels**

Reported analytical detection levels are compared against the required quantitation limits (RQL's) to ensure that laboratory detection levels meet the required criteria. One-hundred thirty-four results exceeded the RQL. Under the WCH statement of work, no qualification is required. All other analytes met the RQL.

- **Completeness**

Data package No. K1525 was submitted for validation and verified for completeness. Completeness is based on the percentage of data determined to be valid (i.e., not rejected). The completion percentage was 100%.

MAJOR DEFICIENCIES

None found.

MINOR DEFICIENCIES

The following minor deficiencies were noted:

- Due to method blank contamination, all detected methylene chloride results (except J18198, J180W8-A, J180W9-A, J17W10, J17W14, J17VY4) were either raised to the RQL, qualified as undetected and flagged "U" (if less than the RQL) or qualified as undetected and flagged "U" (if over the RQL)

- Due to the lack of a matrix spike and matrix spike duplicate analysis, all volatile organic results (except J18198, J180W8-A, J180W9-A, J17W10, J17W14, J17VY4) were qualified as estimates and flagged "J".

Data flagged "J" indicates that the associated concentration is an estimate, but under the WCH statement of work, the data may be usable for decision-making purposes. All other validated results are considered accurate within the standard error associated with the methods.

One-hundred thirty-four results exceeded the RQL. Under the WCH statement of work, no qualification is required.

REFERENCES

Washington Closure Hanford Contract #S00W307A00 (March 2008), *Data Validation Services.*

DOE/RL-2008-11, Rev.0, *Remedial Investigation Work Plan for Hanford Site Releases to the Columbia River*, September 2008.

Appendix 1

Glossary of Data Reporting Qualifiers

Qualifiers which may be applied by data validators in compliance with the WCH validation SOW are as follows:

U - Indicates the compound or analyte was analyzed for and not detected in the sample. The value reported is the same quantitation limit corrected for sample dilution and moisture content by the laboratory.

UJ - Indicates the compound or analyte was analyzed for and not detected in the sample. Due to a minor QC deficiency identified during the data validation, the associated quantitation limit is an estimate.

J - Indicates the compound or analyte was analyzed for and detected. Due to a minor QC deficiency identified during the data validation, the associated quantitation limit is an estimate.

R - Indicates the compound or analyte was analyzed for, detected, and due to an identified major QC deficiency, the data are unusable.

UR - Indicates the compound or analyte was analyzed for and not detected in the sample. Additionally, the data is unusable due to an identified major QC deficiency.

NJ - Indicates presumptive evidence of a compound at an estimated value. The data may not be valid for some specific applications (i.e., usable for decision-making purposes).

N - Indicates presumptive evidence of a compound. The data may not be valid for some specific applications usable for decision-making purposes).

Appendix 2

Summary of Data Qualification

VOLATILE ORGANIC DATA QUALIFICATION SUMMARY*

SDG: K1525	**REVIEWER: ELR**	**Project: RCBRA**	**QC Issue**
COMPOUND	QUALIFIER	SAMPLES AFFECTED	REASON
Methylene chloride	U at RQL	J17V87, J17V88 J17V92, J17VP0 J17VP5	Method blank contamination
Methylene chloride	U	J18177, J18199 J181B0, J181B1 J181B2, J181B3 J17V89, J17V90 J17V91	Method blank contamination
All	J	J17V87, J17V88 J17V92, J17VP0 J17VP5, J18177 J18199, J181B0 J181B1, J181B2 J181B3, J17V89 J17V90, J17V91	No MS or MSD analysis

* - The Qualified Data Summary Table includes laboratory applied "U" qualifiers not specifically identified here. The laboratory applied "U" qualifiers are included to minimize misinterpretation of results contained in the table.

Appendix 3

Qualified Data Summary and Annotated Laboratory Reports

264 Welsh Pool Rc
Exton, PA 193
Phone: 610-280-30
Fax: 610-280-30

WC-Hanford, Inc. 2620 Fermi Avenue Richland WA, 99354	Project: RC-116 Project Number: [none] Project Manager: Joan Kessner	Reported: 04/01/2009 14:13

J18177

0902012-05 (Solid)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	No
			Lionville Laboratory						
Volatile Organic Compounds by SW846 8260B									
1,1,1-Trichloroethane	ND	5.10	ug/kg wet	1	0903233	02/09/2009	02/09/2009	8260B	
1,1,2,2-Tetrachloroethane	ND	5.10	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	5.10	"	"	"	"	"	"	
1,1-Dichloroethane	ND	5.10	"	"	"	"	"	"	
1,1-Dichloroethene	ND	5.10	"	"	"	"	"	"	
1,2-Dichloroethane	ND	6.12	"	"	"	"	"	"	
1,2-Dichloropropane	ND	5.10	"	"	"	"	"	"	
2-Butanone	ND	12.2	"	"	"	"	"	"	
2-Hexanone	ND	12.2	"	"	"	"	"	"	
4-Methyl-2-pentanone	ND	12.2	"	"	"	"	"	"	
Acetone	ND	12.2	"	"	"	"	"	"	
Benzene	ND	5.10	"	"	"	"	"	"	
Bromodichloromethane	ND	6.12	"	"	"	"	"	"	
Bromoform	ND	5.10	"	"	"	"	"	"	
Bromomethane	ND	10.2	"	"	"	"	"	"	
Carbon Disulfide	ND	5.10	"	"	"	"	"	"	
Carbon Tetrachloride	ND	5.10	"	"	"	"	"	"	
Chlorobenzene	ND	5.10	"	"	"	"	"	"	
Chloroethane	ND	10.2	"	"	"	"	"	"	
Chloroform	ND	5.10	"	"	"	"	"	"	
Chloromethane	ND	10.2	"	"	"	"	"	"	
cis-1,3-Dichloropropene	ND	5.10	"	"	"	"	"	"	
Dibromochloromethane	ND	5.10	"	"	"	"	"	"	
Ethylbenzene	ND	5.10	"	"	"	"	"	"	
Methylene Chloride	**14.0** U	6.12	"	"	"	"	"	"	
Styrene	ND	5.10	"	"	"	"	"	"	
Tetrachloroethene	ND	5.10	"	"	"	"	"	"	
Toluene	ND	5.10	"	"	"	"	"	"	
trans-1,3-Dichloropropene	ND	5.10	"	"	"	"	"	"	
Trichloroethene	ND	5.10	"	"	"	"	"	"	
Vinyl chloride	ND	10.2	"	"	"	"	"	"	
Xylenes, total	ND	6.12	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	5.10	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	5.10	"	"	"	"	"	"	

11/20/09

LIONVILLE LABORATORY

264 Welsh Pool Ro
Exton, PA 193
Phone: 610-280-30
Fax: 610-280-30

WC-Hanford, Inc.
2620 Fermi Avenue
Richland WA, 99354

Project: RC-116
Project Number: [none]
Project Manager: Joan Kessner

Reported:
04/01/2009 14:13

J18177

0902012-05 (Solid)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Not
Lionville Laboratory									
Volatile Organic Compounds by SW846 8260B									
Tentatively Identified Compound	0.00		ug/kg wet	1	L903233	02/09/2009	02/09/2009	8260B	
Surrogate: 1,2-Dichloroethane-d4		*99 %*	*63-131*		"	"	"	"	
Surrogate: Toluene-d8		*100 %*	*68-140*		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*105 %*	*66-122*		"	"	"	"	

11/20/09

LVL
LIONVILLE LABORATORY

264 Welsh Pool Ro
Exton, PA 193
Phone: 610-280-30
Fax: 610-280-30

WC-Hanford, Inc. 2620 Fermi Avenue Richland WA 99354	Project: RC-116 Project Number: [none] Project Manager: Joan Kessner	Reported: 04/01/2009 14:13

J18199

0902012-07 (Solid)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Not
			Lionville Laboratory						
Volatile Organic Compounds by SW846 8260B									
1,1,1-Trichloroethane	ND	5.10	ug/kg wet	1	L903233	02/09/2009	02/09/2009	8260B	
1,1,2,2-Tetrachloroethane	ND	5.10	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	5.10	"	"	"	"	"	"	
1,1-Dichloroethane	ND	5.10	"	"	"	"	"	"	
1,1-Dichloroethene	ND	5.10	"	"	"	"	"	"	
1,2-Dichloroethane	ND	6.12	"	"	"	"	"	"	
1,2-Dichloropropane	ND	5.10	"	"	"	"	"	"	
2-Butanone	ND	12.2	"	"	"	"	"	"	
2-Hexanone	ND	12.2	"	"	"	"	"	"	
4-Methyl-2-pentanone	ND	12.2	"	"	"	"	"	"	
Acetone	ND	12.2	"	"	"	"	"	"	
Benzene	ND	5.10	"	"	"	"	"	"	
Bromodichloromethane	ND	6.12	"	"	"	"	"	"	
Bromoform	ND	5.10	"	"	"	"	"	"	
Bromomethane	ND	10.2	"	"	"	"	"	"	
Carbon Disulfide	ND	5.10	"	"	"	"	"	"	
Carbon Tetrachloride	ND	5.10	"	"	"	"	"	"	
Chlorobenzene	ND	5.10	"	"	"	"	"	"	
Chloroethane	ND	10.2	"	"	"	"	"	"	
Chloroform	ND	5.10	"	"	"	"	"	"	
Chloromethane	ND	10.2	"	"	"	"	"	"	
cis-1,3-Dichloropropene	ND	5.10	"	"	"	"	"	"	
Dibromochloromethane	ND	5.10	"	"	"	"	"	"	
Ethylbenzene	ND	5.10	"	"	"	"	"	"	
Methylene Chloride	**10.8** U	6.12	"	"	"	"	"	"	
Styrene	ND	5.10	"	"	"	"	"	"	
Tetrachloroethene	ND	5.10	"	"	"	"	"	"	
Toluene	ND	5.10	"	"	"	"	"	"	
trans-1,3-Dichloropropene	ND	5.10	"	"	"	"	"	"	
Trichloroethene	ND	5.10	"	"	"	"	"	"	
Vinyl chloride	ND	10.2	"	"	"	"	"	"	
Xylenes, total	ND	6.12	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	5.10	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	5.10	"	"	"	"	"	"	

11/20/09

LVL
LIONVILLE LABORATORY

264 Welsh Pool Ro
Exton, PA 193
Phone: 610-280-30
Fax: 610-280-30

WC-Hanford, Inc.
2620 Fermi Avenue
Richland WA, 99354

Project: RC-116
Project Number: [none]
Project Manager: Joan Kessner

Reported:
04/01/2009 14:13

J18199

0902012-07 (Solid)

Lionville Laboratory

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	No
Volatile Organic Compounds by SW846 8260B									
Unknown 26.036	**5.19**		ug/kg wet	1	1902211	02/09/2009	02/09/2009	8260B	
Surrogate: 1,2-Dichloroethane-d4		*93 %*	*63-151*		"	"	"	"	
Surrogate: Toluene-d8		*95 %*	*68-140*		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*104 %*	*66-122*		"	"	"	"	

JW
11/20/09

LVL
LIONVILLE LABORATORY

264 Welsh Pool Ro
Exton, PA 193
Phone: 610-280-30
Fax: 610-280 30

WC-Hanford, Inc.
2620 Fermi Avenue
Richland WA, 99354

Project: RC-116
Project Number: [none]
Project Manager: Joan Kessner

Reported:
04/01/2009 14.13

J181B0

0902012-08 (Solid)

Lionville Laboratory

Volatile Organic Compounds by SW846 8260B

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Not
1,1,1-Trichloroethane	ND	4.55	ug/kg wet	1	1903233	02/09/2009	02/09/2009	8260B	
1,1,2,2-Tetrachloroethane	ND	4.55	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	4.55	"	"	"	"	"	"	
1,1-Dichloroethane	ND	4.55	"	"	"	"	"	"	
1,1-Dichloroethene	ND	4.55	"	"	"	"	"	"	
1,2-Dichloroethane	ND	5.45	"	"	"	"	"	"	
1,2-Dichloropropane	ND	4.55	"	"	"	"	"	"	
2-Butanone	ND	10.9	"	"	"	"	"	"	
2-Hexanone	ND	10.9	"	"	"	"	"	"	
4-Methyl-2-pentanone	ND	10.9	"	"	"	"	"	"	
Acetone	ND	10.9	"	"	"	"	"	"	
Benzene	ND	4.55	"	"	"	"	"	"	
Bromodichloromethane	ND	5.45	"	"	"	"	"	"	
Bromoform	ND	4.55	"	"	"	"	"	"	
Bromomethane	ND	9.09	"	"	"	"	"	"	
Carbon Disulfide	ND	4.55	"	"	"	"	"	"	
Carbon Tetrachloride	ND	4.55	"	"	"	"	"	"	
Chlorobenzene	ND	4.55	"	"	"	"	"	"	
Chloroethane	ND	9.09	"	"	"	"	"	"	
Chloroform	ND	4.55	"	"	"	"	"	"	
Chloromethane	ND	9.09	"	"	"	"	"	"	
cis-1,3-Dichloropropene	ND	4.55	"	"	"	"	"	"	
Dibromochloromethane	ND	4.55	"	"	"	"	"	"	
Ethylbenzene	ND	4.55	"	"	"	"	"	"	
Methylene Chloride	**8.81** U	5.45	"	"	"	"	"	"	
Styrene	ND	4.55	"	"	"	"	"	"	
Tetrachloroethene	ND	4.55	"	"	"	"	"	"	
Toluene	ND	4.55	"	"	"	"	"	"	
trans-1,3-Dichloropropene	ND	4.55	"	"	"	"	"	"	
Trichloroethene	ND	4.55	"	"	"	"	"	"	
Vinyl chloride	ND	9.09	"	"	"	"	"	"	
Xylenes, total	ND	5.45	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	4.55	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	4.55	"	"	"	"	"	"	

11/20/09

264 Welsh Pool Ro
Exton, PA 193
Phone: 610-280-30
Fax: 610-280-30

WC-Hanford, Inc. 2620 Fermi Avenue Richland WA, 99354	Project: RC-116 Project Number: [none] Project Manager: Joan Kessner	Reported: 04/01/2009 14:13

J181B0

0902012-08 (Solid)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Not
			Lionville Laboratory						
Volatile Organic Compounds by SW846 8260B									
Unknown 23.548	8.74		ug/kg wet	1	L901133	02/09/2009	02/09/2009	8260B	
Unknown 26.017	11.1		"	"	"	"	"	"	
Surrogate: 1,2-Dichloroethane-d4		*102 %*	*63-151*		"	"	"	"	
Surrogate: Toluene-d8		*97 %*	*68-140*		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*105 %*	*66-122*		"	"	"	"	

11/20/09

264 Welsh Pool R
Exton, PA 19
Phone: 610-280-3
Fax: 610-280-3

WC-Hanford, Inc.
2620 Fermi Avenue
Richland WA 99354

Project: RC-116
Project Number: [none]
Project Manager: Joan Kessner

Reported:
04/01/2009 14:13

J181B1
0902012-09 (Solid)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	No
Lionville Laboratory									
Volatile Organic Compounds by SW846 8260B									
1,1,1-Trichloroethane	ND J	5.21	ug/kg wet	1	0903733	02/09/2009	02/09/2009	8260B	
1,1,2,2-Tetrachloroethane	ND	5.21	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	5.21	"	"	"	"	"	"	
1,1-Dichloroethane	ND	5.21	"	"	"	"	"	"	
1,1-Dichloroethene	ND	5.21	"	"	"	"	"	"	
1,2-Dichloroethane	ND	6.25	"	"	"	"	"	"	
1,2-Dichloropropane	ND	5.21	"	"	"	"	"	"	
2-Butanone	ND	12.5	"	"	"	"	"	"	
2-Hexanone	ND	12.5	"	"	"	"	"	"	
4-Methyl-2-pentanone	ND	12.5	"	"	"	"	"	"	
Acetone	ND	12.5	"	"	"	"	"	"	
Benzene	ND	5.21	"	"	"	"	"	"	
Bromodichloromethane	ND	6.25	"	"	"	"	"	"	
Bromoform	ND	5.21	"	"	"	"	"	"	
Bromomethane	ND	10.4	"	"	"	"	"	"	
Carbon Disulfide	ND	5.21	"	"	"	"	"	"	
Carbon Tetrachloride	ND	5.21	"	"	"	"	"	"	
Chlorobenzene	ND	5.21	"	"	"	"	"	"	
Chloroethane	ND	10.4	"	"	"	"	"	"	
Chloroform	ND	5.21	"	"	"	"	"	"	
Chloromethane	ND	10.4	"	"	"	"	"	"	
cis-1,3-Dichloropropene	ND	5.21	"	"	"	"	"	"	
Dibromochloromethane	ND	5.21	"	"	"	"	"	"	
Ethylbenzene	ND	5.21	"	"	"	"	"	"	
Methylene Chloride	**9.94** U	6.25	"	"	"	"	"	"	
Styrene	ND	5.21	"	"	"	"	"	"	
Tetrachloroethene	ND	5.21	"	"	"	"	"	"	
Toluene	ND	5.21	"	"	"	"	"	"	
trans-1,3-Dichloropropene	ND	5.21	"	"	"	"	"	"	
Trichloroethene	ND	5.21	"	"	"	"	"	"	
Vinyl chloride	ND	10.4	"	"	"	"	"	"	
Xylenes, total	ND	6.25	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	5.21	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	5.21	"	"	"	"	"	"	

11/20/09

WC-Hanford, Inc 2620 Fermi Avenue Richland WA, 99354	Project: RC-116 Project Number: [none] Project Manager: Joan Kessner	**Reported:** 04/01/2009 14:13

J181B1

0902012-09 (Solid)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	No
			Lionville Laboratory						
Volatile Organic Compounds by SW846 8260B									
Unknown 23.553	9.14		ug/kg wet	1	1.903233	02/09/2009	02/09/2009	8260B	
Unknown 26.040	8.90		"	"	"	"	"	"	
Surrogate: 1,2-Dichloroethane-d4		*95 %*	*63-131*		"	"	"	"	
Surrogate: Toluene-d8		*99 %*	*68-140*		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*107 %*	*66-122*		"	"	"	"	

11/20/09

LIONVILLE LABORATORY

264 Welsh Pool Rd
Exton, PA 193
Phone: 610-280-30
Fax: 610-280-30

WC-Hanford, Inc.
2620 Fermi Avenue
Richland WA, 99354

Project: RC-116
Project Number: [none]
Project Manager: Joan Kessner

Reported:
04/01/2009 14:11

J181B2

0902012-10 (Solid)

Lionville Laboratory

Volatile Organic Compounds by SW846 8260B

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Not
1,1,1-Trichloroethane	ND J	4.63	ug/kg wet	1	L903233	02/09/2009	02/09/2009	8260B	
1,1,2,2-Tetrachloroethane	ND	4.63	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	4.63	"	"	"	"	"	"	
1,1-Dichloroethane	ND	4.63	"	"	"	"	"	"	
1,1-Dichloroethene	ND	4.63	"	"	"	"	"	"	
1,2-Dichloroethane	ND	5.56	"	"	"	"	"	"	
1,2-Dichloropropane	ND	4.63	"	"	"	"	"	"	
2-Butanone	ND	11.1	"	"	"	"	"	"	
2-Hexanone	ND	11.1	"	"	"	"	"	"	
4-Methyl-2-pentanone	ND	11.1	"	"	"	"	"	"	
Acetone	ND	11.1	"	"	"	"	"	"	
Benzene	ND	4.63	"	"	"	"	"	"	
Bromodichloromethane	ND	5.56	"	"	"	"	"	"	
Bromoform	ND	4.63	"	"	"	"	"	"	
Bromomethane	ND	9.26	"	"	"	"	"	"	
Carbon Disulfide	ND	4.63	"	"	"	"	"	"	
Carbon Tetrachloride	ND	4.63	"	"	"	"	"	"	
Chlorobenzene	ND	4.63	"	"	"	"	"	"	
Chloroethane	ND	9.26	"	"	"	"	"	"	
Chloroform	ND	4.63	"	"	"	"	"	"	
Chloromethane	ND	9.26	"	"	"	"	"	"	
cis-1,3-Dichloropropene	ND	4.63	"	"	"	"	"	"	
Dibromochloromethane	ND	4.63	"	"	"	"	"	"	
Ethylbenzene	ND	4.63	"	"	"	"	"	"	
Methylene Chloride	8.64 U	5.56	"	"	"	"	"	"	
Styrene	ND	4.63	"	"	"	"	"	"	
Tetrachloroethene	ND	4.63	"	"	"	"	"	"	
Toluene	ND	4.63	"	"	"	"	"	"	
trans-1,3-Dichloropropene	ND	4.63	"	"	"	"	"	"	
Trichloroethene	ND	4.63	"	"	"	"	"	"	
Vinyl chloride	ND	9.26	"	"	"	"	"	"	
Xylenes, total	ND	5.56	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	4.63	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	4.63	"	"	"	"	"	"	

264 Welsh Pool Ro
Exton, PA 193
Phone: 610-280-30
Fax: 610-280-30

WC-Hanford, Inc.
2620 Fermi Avenue
Richland WA, 99354

Project: RC-116
Project Number: [none]
Project Manager: Joan Kessner

Reported:
04/01/2009 14:13

J181B2

0902012-10 (Solid)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Note
Lionville Laboratory									
Volatile Organic Compounds by SW846 8260B									
Unknown 23.553	9.77		ug/kg wet	1	0903233	02/09/2009	02/09/2009	8260B	
Unknown 26.039	7.42		"	"	"	"	"	"	
Surrogate: 1,2-Dichloroethane-d4		*101 %*	*63-151*		"	"	"	"	
Surrogate: Toluene-d8		*102 %*	*68-140*		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*118 %*	*66-122*		"	"	"	"	

11/20/09

LVL
LIONVILLE LABORATORY

264 Welsh Pool R
Exton, PA 19
Phone: 610-280-3
Fax: 610-280-3

WC-Hanford, Inc. 2620 Fermi Avenue Richland WA, 99354	Project: RC-116 Project Number: [none] Project Manager: Joan Kessner	Reported: 04/01/2009 14:13

J181B3

0902012-11 (Solid)

Analyte	Result		Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	No
Lionville Laboratory										
Volatile Organic Compounds by SW846 8260B										
1,1,1-Trichloroethane	ND	J	4.55	ug/kg wet	1	1903233	02/09/2009	02/09/2009	8260B	
1,1,2,2-Tetrachloroethane	ND		4.55	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND		4.55	"	"	"	"	"	"	
1,1-Dichloroethane	ND		4.55	"	"	"	"	"	"	
1,1-Dichloroethene	ND		4.55	"	"	"	"	"	"	
1,2-Dichloroethane	ND		5.45	"	"	"	"	"	"	
1,2-Dichloropropane	ND		4.55	"	"	"	"	"	"	
2-Butanone	ND		10.9	"	"	"	"	"	"	
2-Hexanone	ND		10.9	"	"	"	"	"	"	
4-Methyl-2-pentanone	ND		10.9	"	"	"	"	"	"	
Acetone	ND		10.9	"	"	"	"	"	"	
Benzene	ND		4.55	"	"	"	"	"	"	
Bromodichloromethane	ND		5.45	"	"	"	"	"	"	
Bromoform	ND		4.55	"	"	"	"	"	"	
Bromomethane	ND		9.09	"	"	"	"	"	"	
Carbon Disulfide	ND		4.55	"	"	"	"	"	"	
Carbon Tetrachloride	ND		4.55	"	"	"	"	"	"	
Chlorobenzene	ND		4.55	"	"	"	"	"	"	
Chloroethane	ND		9.09	"	"	"	"	"	"	
Chloroform	ND		4.55	"	"	"	"	"	"	
Chloromethane	ND		9.09	"	"	"	"	"	"	
cis-1,3-Dichloropropene	ND		4.55	"	"	"	"	"	"	
Dibromochloromethane	ND		4.55	"	"	"	"	"	"	
Ethylbenzene	ND		4.55	"	"	"	"	"	"	
Methylene Chloride	5.07	U	5.45	"	"	"	"	"	"	B
Styrene	ND		4.55	"	"	"	"	"	"	
Tetrachloroethene	ND		4.55	"	"	"	"	"	"	
Toluene	ND		4.55	"	"	"	"	"	"	
trans-1,3-Dichloropropene	ND		4.55	"	"	"	"	"	"	
Trichloroethene	ND		4.55	"	"	"	"	"	"	
Vinyl chloride	ND		9.09	"	"	"	"	"	"	
Xylenes, total	ND		5.45	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND		4.55	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND		4.55	"	"	"	"	"	"	

11/20/09

LIONVILLE LABORATORY

204 Welsh Pool Ro
Exton, PA 193
Phone: 610-280-30
Fax: 610-280-30

WC Hanford, Inc.
2620 Fermi Avenue
Richland WA, 99354

Project: RC-116
Project Number: [none]
Project Manager: Joan Kessner

Reported:
04/01/2009 14:11

J181R3

0902012-11 (Solid)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Not
Lionville Laboratory									
Volatile Organic Compounds by SW846 8260B									
Unknown 23.549	8.06		ug/kg wet	1	L901231	02/09/2009	02/09/2009	8260B	
Unknown 26.036	7.30		"	"	"	"	"	"	
Surrogate: 1,2-Dichloroethane-d4		*96 %*	*63-131*		"	"	"	"	
Surrogate: Toluene-d8		*94 %*	*68-140*		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*105 %*	*66-122*		"	"	"	"	

11/20/09

WC-Hanford, Inc. 2620 Fermi Avenue Richland WA, 99354	Project: RC-116 Project Number: [none] Project Manager: Joan Kessner	Reported: 04/01/2009 14:13

J17Y87
0902012-12 (Solid)

Lionville Laboratory

Volatile Organic Compounds by SW846 8260B

Analyte	Result		Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
1,1,1-Trichloroethane	ND	J	4.03	ug/kg wet	1	B903213	03/09/2009	03/09/2009	8260B
1,1,2,2-Tetrachloroethane	ND		4.03	"	"	"	"	"	"
1,1,2-Trichloroethane	ND		4.03	"	"	"	"	"	"
1,1-Dichloroethane	ND		4.03	"	"	"	"	"	"
1,1-Dichloroethene	ND		4.03	"	"	"	"	"	"
1,2-Dichloroethane	ND		4.84	"	"	"	"	"	"
1,2-Dichloropropane	ND		4.03	"	"	"	"	"	"
2-Butanone	ND		9.68	"	"	"	"	"	"
2-Hexanone	ND		9.68	"	"	"	"	"	"
4-Methyl-2-pentanone	ND		9.68	"	"	"	"	"	"
Acetone	ND		9.68	"	"	"	"	"	"
Benzene	ND		4.03	"	"	"	"	"	"
Bromodichloromethane	ND		4.84	"	"	"	"	"	"
Bromoform	ND		4.03	"	"	"	"	"	"
Bromomethane	ND		8.06	"	"	"	"	"	"
Carbon Disulfide	ND		4.03	"	"	"	"	"	"
Carbon Tetrachloride	ND		4.03	"	"	"	"	"	"
Chlorobenzene	ND		4.03	"	"	"	"	"	"
Chloroethane	ND		8.06	"	"	"	"	"	"
Chloroform	ND		4.03	"	"	"	"	"	"
Chloromethane	ND		8.06	"	"	"	"	"	"
cis-1,3-Dichloropropene	ND		4.03	"	"	"	"	"	"
Dibromochloromethane	ND		4.03	"	"	"	"	"	"
Ethylbenzene	ND		4.03	"	"	"	"	"	"
Methylene Chloride	5 ~~[illegible]~~	U	4.84	"	"	"	"	"	"
Styrene	ND		4.03	"	"	"	"	"	"
Tetrachloroethene	ND		4.03	"	"	"	"	"	"
Toluene	ND		4.03	"	"	"	"	"	"
trans-1,3-Dichloropropene	ND		4.03	"	"	"	"	"	"
Trichloroethene	ND		4.03	"	"	"	"	"	"
Vinyl chloride	ND		8.06	"	"	"	"	"	"
Xylenes, total	ND		4.84	"	"	"	"	"	"
cis-1,2-Dichloroethene	ND		4.03	"	"	"	"	"	"
trans-1,2-Dichloroethene	ND		4.03	"	"	"	"	"	"

11/24/09

LVL
LIONVILLE LABORATORY

264 Webb Pool
Exton, PA 19
Phone: 610-280-3
Fax: 610-280-3

WC-Hanford, Inc.
2620 Fermi Avenue
Richland WA, 99354

Project: RC-116
Project Number: [none]
Project Manager: Joan Kessner

Reported:
04/01/2009 14:13

J17V87

0902012-12 (Solid)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	No
			Lionville Laboratory						
Volatile Organic Compounds by SW846 8260B									
Unknown 23.990	9.11		ug/kg wet	1	L903233	02/09/2009	02/09/2009	8260B	
Unknown 26.019	8.40		"	"	"	"	"	"	
Surrogate: 1,2-Dichloroethane-d4		*101 %*	*63-151*		"	"	"	"	
Surrogate: Toluene-d8		*102 %*	*68-140*		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*108 %*	*66-122*		"	"	"	"	

11/24/09

LIONVILLE LABORATORY

264 Welsh Pool Ro
Exton, PA 193
Phone: 610-280-30
Fax: 610-280-30

WC-Hanford, Inc.	Project: RC-116	
2620 Fermi Avenue	Project Number: [none]	Reported:
Richland WA, 99354	Project Manager: Joan Kessner	04/01/2009 14:13

J17V88

0902012-13 (Solid)

Lionville Laboratory

Volatile Organic Compounds by SW846 8260B

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Not
1,1,1-Trichloroethane	ND U	3.97	ug/kg wet	1	L903233	02/09/2009	02/09/2009	8260B	
1,1,2,2-Tetrachloroethane	ND	3.97	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	3.97	"	"	"	"	"	"	
1,1-Dichloroethane	ND	3.97	"	"	"	"	"	"	
1,1-Dichloroethene	ND	3.97	"	"	"	"	"	"	
1,2-Dichloroethane	ND	4.76	"	"	"	"	"	"	
1,2-Dichloropropane	ND	3.97	"	"	"	"	"	"	
2-Butanone	ND	9.52	"	"	"	"	"	"	
2-Hexanone	ND	9.52	"	"	"	"	"	"	
4-Methyl-2-pentanone	ND	9.52	"	"	"	"	"	"	
Acetone	ND	9.52	"	"	"	"	"	"	
Benzene	ND	3.97	"	"	"	"	"	"	
Bromodichloromethane	ND	4.76	"	"	"	"	"	"	
Bromoform	ND	3.97	"	"	"	"	"	"	
Bromomethane	ND	7.94	"	"	"	"	"	"	
Carbon Disulfide	ND	3.97	"	"	"	"	"	"	
Carbon Tetrachloride	ND	3.97	"	"	"	"	"	"	
Chlorobenzene	ND	3.97	"	"	"	"	"	"	
Chloroethane	ND	7.94	"	"	"	"	"	"	
Chloroform	ND	3.97	"	"	"	"	"	"	
Chloromethane	ND	7.94	"	"	"	"	"	"	
cis-1,3-Dichloropropene	ND	3.97	"	"	"	"	"	"	
Dibromochloromethane	ND	3.97	"	"	"	"	"	"	
Ethylbenzene	ND	3.97	"	"	"	"	"	"	
Methylene Chloride	5 ~~[illegible]~~ U	4.76	"	"	"	"	"	"	J, B
Styrene	ND	3.97	"	"	"	"	"	"	
Tetrachloroethene	ND	3.97	"	"	"	"	"	"	U
Toluene	ND	3.97	"	"	"	"	"	"	U
trans-1,3-Dichloropropene	ND	3.97	"	"	"	"	"	"	U
Trichloroethene	ND	3.97	"	"	"	"	"	"	U
Vinyl chloride	ND	7.94	"	"	"	"	"	"	U
Xylenes, total	ND	4.76	"	"	"	"	"	"	U
cis-1,2-Dichloroethene	ND	3.97	"	"	"	"	"	"	U
trans-1,2-Dichloroethene	ND	3.97	"	"	"	"	"	"	U

11/20/09

LVL
LIONVILLE LABORATORY

264 Welsh Pool R
Exton, PA 19
Phone: 610-280-3
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WC-Hanford, Inc.
2620 Fermi Avenue
Richland WA, 99354

Project: RC-116
Project Number: [none]
Project Manager: Joan Kessner

Reported
04/01/2009 14:13

J17V88

0902013-13 (Solid)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	No
Lionville Laboratory									
Volatile Organic Compounds by SW846 8260B									
TIC:Hexane 7.950 13.4165	4.38		ug/kg wet	1	L903213	02/09/2009	02/09/2009	8260B	
Unknown 23.540	7.83		"	"	"	"	"	"	
Unknown 26.019	8.06		"	"	"	"	"	"	
Surrogate: 1,2-Dichloroethane-d4		99 %	63-151		"	"	"	"	
Surrogate: Toluene-d8		97 %	68-140		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		106 %	66-132		"	"	"	"	

K 11/20/05

WC-Hanford, Inc. 2620 Fermi Avenue Richland WA 99354	Project: RC-116 Project Number: [none] Project Manager: Joan Kessner	Reported: 04/01/2009 14:13

J17VB9

0902012-14 (Solid)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Not
Lionville Laboratory									
Volatile Organic Compounds by SW846 8260B									
1,1,1-Trichloroethane	ND	4.39	ug/kg wet	1	L903233	02/09/2009	02/09/2009	8260B	
1,1,2,2-Tetrachloroethane	ND	4.39	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	4.39	"	"	"	"	"	"	
1,1-Dichloroethane	ND	4.39	"	"	"	"	"	"	
1,1-Dichloroethene	ND	4.39	"	"	"	"	"	"	
1,2-Dichloroethane	ND	5.26	"	"	"	"	"	"	
1,2-Dichloropropane	ND	4.39	"	"	"	"	"	"	
2-Butanone	ND	10.5	"	"	"	"	"	"	
2-Hexanone	ND	10.5	"	"	"	"	"	"	
4-Methyl-2-pentanone	ND	10.5	"	"	"	"	"	"	
Acetone	ND	10.5	"	"	"	"	"	"	
Benzene	ND	4.39	"	"	"	"	"	"	
Bromodichloromethane	ND	5.26	"	"	"	"	"	"	
Bromoform	ND	4.39	"	"	"	"	"	"	
Bromomethane	ND	8.77	"	"	"	"	"	"	
Carbon Disulfide	ND	4.39	"	"	"	"	"	"	
Carbon Tetrachloride	ND	4.39	"	"	"	"	"	"	
Chlorobenzene	ND	4.39	"	"	"	"	"	"	
Chloroethane	ND	8.77	"	"	"	"	"	"	
Chloroform	ND	4.39	"	"	"	"	"	"	
Chloromethane	ND	8.77	"	"	"	"	"	"	
cis-1,3-Dichloropropene	ND	4.39	"	"	"	"	"	"	
Dibromochloromethane	ND	4.39	"	"	"	"	"	"	
Ethylbenzene	ND	4.39	"	"	"	"	"	"	
Methylene Chloride	5.28 U	5.26	"	"	"	"	"	"	
Styrene	ND	4.39	"	"	"	"	"	"	
Tetrachloroethene	ND	4.39	"	"	"	"	"	"	
Toluene	ND	4.39	"	"	"	"	"	"	
trans-1,3-Dichloropropene	ND	4.39	"	"	"	"	"	"	
Trichloroethene	ND	4.39	"	"	"	"	"	"	
Vinyl chloride	ND	8.77	"	"	"	"	"	"	
Xylenes, total	ND	5.26	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	4.39	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	4.39	"	"	"	"	"	"	

WC-Hanford, Inc.	Project: RC-116	
2620 Fermi Avenue	Project Number: [none]	Reported:
Richland WA, 99354	Project Manager: Joan Kessner	04/01/2009 14:13

J17V89

0902012-14 (Solid)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Not

Lionville Laboratory

Volatile Organic Compounds by SW846 8260B

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Not
Unknown 23.554	9.37		ug/kg wet	1	1903233	02/09/2009	02/09/2009	8260B	
Unknown 26.006	8.01		"	"	"	"	"	"	
Surrogate: 1,2-Dichloroethane-d4		*96 %*	*63-151*		"	"	"	"	
Surrogate: Toluene-d8		*100 %*	*68-140*		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*110 %*	*66-122*		"	"	"	"	

11/24/09

WC-Hanford, Inc. 2620 Fermi Avenue Richland WA, 99354	Project: RC-116 Project Number: [none] Project Manager: Joan Kessner	Reported: 04/01/2009 14:15

J17V90
0902012-15 (Solid)

Lionville Laboratory

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Note
Volatile Organic Compounds by SW846 8260B									
1,1,1-Trichloroethane	ND	4.46	ug/kg wet	1	L903233	02/09/2009	02/09/2009	8260B	
1,1,2,2-Tetrachloroethane	ND	4.46	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	4.46	"	"	"	"	"	"	
1,1-Dichloroethane	ND	4.46	"	"	"	"	"	"	
1,1-Dichloroethene	ND	4.46	"	"	"	"	"	"	
1,2-Dichloroethane	ND	5.36	"	"	"	"	"	"	
1,2-Dichloropropane	ND	4.46	"	"	"	"	"	"	
2-Butanone	ND	10.7	"	"	"	"	"	"	
2-Hexanone	ND	10.7	"	"	"	"	"	"	
4-Methyl-2-pentanone	ND	10.7	"	"	"	"	"	"	
Acetone	ND	10.7	"	"	"	"	"	"	
Benzene	ND	4.46	"	"	"	"	"	"	
Bromodichloromethane	ND	5.36	"	"	"	"	"	"	
Bromoform	ND	4.46	"	"	"	"	"	"	
Bromomethane	ND	8.93	"	"	"	"	"	"	
Carbon Disulfide	ND	4.46	"	"	"	"	"	"	
Carbon Tetrachloride	ND	4.46	"	"	"	"	"	"	
Chlorobenzene	ND	4.46	"	"	"	"	"	"	
Chloroethane	ND	8.93	"	"	"	"	"	"	
Chloroform	ND	4.46	"	"	"	"	"	"	
Chloromethane	ND	8.93	"	"	"	"	"	"	
cis-1,3-Dichloropropene	ND	4.46	"	"	"	"	"	"	
Dibromochloromethane	ND	4.46	"	"	"	"	"	"	
Ethylbenzene	ND	4.46	"	"	"	"	"	"	
Methylene Chloride	5.06 U	5.36	"	"	"	"	"	"	J
Styrene	ND	4.46	"	"	"	"	"	"	
Tetrachloroethene	ND	4.46	"	"	"	"	"	"	
Toluene	ND	4.46	"	"	"	"	"	"	
trans-1,3-Dichloropropene	ND	4.46	"	"	"	"	"	"	
Trichloroethene	ND	4.46	"	"	"	"	"	"	
Vinyl chloride	ND	8.93	"	"	"	"	"	"	
Xylenes, total	ND	5.36	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	4.46	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	4.46	"	"	"	"	"	"	

11/20/09

WC-Hanford, Inc.
2620 Fermi Avenue
Richland WA, 99354

Project: RC-116
Project Number: [none]
Project Manager: Joan Kessner

Reported:
04/01/2009 14:13

J17V90

0902012-15 (Solid)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Not
Lionville Laboratory									
Volatile Organic Compounds by SW846 8260B									
Unknown 23.549	9.52		ug/kg wet	1	1903233	02/09/2009	02/09/2009	8260B	
Unknown 26.091	8.14		"	"	"	"	"	"	
Surrogate: 1,2-Dichloroethane-d4		*103 %*	*63-151*		"	"	"	"	
Surrogate: Toluene-d8		*101 %*	*68-140*		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*108 %*	*66-122*		"	"	"	"	

1/20/9

LVL
LIONVILLE LABORATORY

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WC-Hanford, Inc.
2620 Fermi Avenue
Richland WA, 99354

Project: RC-116
Project Number: [none]
Project Manager: Joan Kessner

Reported
04/01/2009 14:13

J17V91
0902012-16 (Solid)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Note
			Lionville Laboratory						
Volatile Organic Compounds by SW846 8260B									
1,1,1-Trichloroethane	ND	4.72	ug/kg wet	1	L903231	02/09/2009	02/09/2009	8260B	
1,1,2,2-Tetrachloroethane	ND	4.72	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	4.72	"	"	"	"	"	"	
1,1-Dichloroethane	ND	4.72	"	"	"	"	"	"	
1,1-Dichloroethene	ND	4.72	"	"	"	"	"	"	
1,2-Dichloroethane	ND	5.66	"	"	"	"	"	"	
1,2-Dichloropropane	ND	4.72	"	"	"	"	"	"	
2-Butanone	ND	11.3	"	"	"	"	"	"	
2-Hexanone	ND	11.3	"	"	"	"	"	"	
4-Methyl-2-pentanone	ND	11.3	"	"	"	"	"	"	
Acetone	ND	11.3	"	"	"	"	"	"	
Benzene	ND	4.72	"	"	"	"	"	"	
Bromodichloromethane	ND	5.66	"	"	"	"	"	"	
Bromoform	ND	4.72	"	"	"	"	"	"	
Bromomethane	ND	9.43	"	"	"	"	"	"	
Carbon Disulfide	ND	4.72	"	"	"	"	"	"	
Carbon Tetrachloride	ND	4.72	"	"	"	"	"	"	
Chlorobenzene	ND	4.72	"	"	"	"	"	"	
Chloroethane	ND	9.43	"	"	"	"	"	"	
Chloroform	ND	4.72	"	"	"	"	"	"	
Chloromethane	ND	9.43	"	"	"	"	"	"	
cis-1,3-Dichloropropene	ND	4.72	"	"	"	"	"	"	
Dibromochloromethane	ND	4.72	"	"	"	"	"	"	
Ethylbenzene	ND	4.72	"	"	"	"	"	"	
Methylene Chloride	5.02 U	5.66	"	"	"	"	"	"	J,
Styrene	ND	4.72	"	"	"	"	"	"	
Tetrachloroethene	ND	4.72	"	"	"	"	"	"	
Toluene	ND	4.72	"	"	"	"	"	"	
trans-1,3-Dichloropropene	ND	4.72	"	"	"	"	"	"	
Trichloroethene	ND	4.72	"	"	"	"	"	"	
Vinyl chloride	ND	9.43	"	"	"	"	"	"	
Xylenes, total	ND	5.66	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	4.72	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	4.72	"	"	"	"	"	"	

11/20/09

WC-Hanford, Inc.
2620 Fermi Avenue
Richland WA, 99354

Project: RC-116
Project Number: [none]
Project Manager: Joan Kessner

Reported:
04/01/2009 14:13

J17V91
0902012-16 (Solid)

Lionville Laboratory

Volatile Organic Compounds by SW846 8260B

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	No
Unknown 23.533	10.3		ug/kg wet	1	1903235	02/09/2009	02/09/2009	8260B	
Unknown 26.020	8.54		"	"	"	"	"	"	
Surrogate: 1,2-Dichloroethane-d4		*95 %*	*63-131*		"	"	"	"	
Surrogate: Toluene-d8		*96 %*	*68-140*		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*104 %*	*66-122*		"	"	"	"	

11/20/09

WC-Hanford, Inc.
2620 Fermi Avenue
Richland WA, 99354

Project: RC-116
Project Number: [none]
Project Manager: Joan Kessner

Reported:
04/01/2009 14:1

J17V92
0902012-17 (Solid)

Analyte	Result		Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Not
Lionville Laboratory										
Volatile Organic Compounds by SW846 8260B										
1,1,1-Trichloroethane	ND	J	5.10	ug/kg wet	1	1903233	02/09/2009	02/09/2009	8260B	
1,1,2,2-Tetrachloroethane	ND		5.10	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND		5.10	"	"	"	"	"	"	
1,1-Dichloroethane	ND		5.10	"	"	"	"	"	"	
1,1-Dichloroethene	ND		5.10	"	"	"	"	"	"	
1,2-Dichloroethane	ND		6.12	"	"	"	"	"	"	
1,2-Dichloropropane	ND		5.10	"	"	"	"	"	"	
2-Butanone	ND		12.2	"	"	"	"	"	"	
2-Hexanone	ND		12.2	"	"	"	"	"	"	
4-Methyl-2-pentanone	ND		12.2	"	"	"	"	"	"	
Acetone	ND		12.2	"	"	"	"	"	"	
Benzene	ND		5.10	"	"	"	"	"	"	
Bromodichloromethane	ND		6.12	"	"	"	"	"	"	
Bromoform	ND		5.10	"	"	"	"	"	"	
Bromomethane	ND		10.2	"	"	"	"	"	"	
Carbon Disulfide	ND		5.10	"	"	"	"	"	"	
Carbon Tetrachloride	ND		5.10	"	"	"	"	"	"	
Chlorobenzene	ND		5.10	"	"	"	"	"	"	
Chloroethane	ND		10.2	"	"	"	"	"	"	
Chloroform	ND		5.10	"	"	"	"	"	"	
Chloromethane	ND		10.2	"	"	"	"	"	"	
cis-1,3-Dichloropropene	ND		5.10	"	"	"	"	"	"	
Dibromochloromethane	ND		5.10	"	"	"	"	"	"	
Ethylbenzene	ND		5.10	"	"	"	"	"	"	
Methylene Chloride	5 ~~ND~~ U		6.12	"	"	"	"	"	"	
Styrene	ND		5.10	"	"	"	"	"	"	
Tetrachloroethene	ND		5.10	"	"	"	"	"	"	
Toluene	ND		5.10	"	"	"	"	"	"	
trans-1,3-Dichloropropene	ND		5.10	"	"	"	"	"	"	
Trichloroethene	ND		5.10	"	"	"	"	"	"	
Vinyl chloride	ND		10.2	"	"	"	"	"	"	
Xylenes, total	ND		6.12	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND		5.10	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND		5.10	"	"	"	"	"	"	

11/20/09

WC-Hanford, Inc.	Project: RC-116	
2620 Fermi Avenue	Project Number: [none]	Reported:
Richland WA, 99354	Project Manager: Joan Kessner	04/01/2009 14:13

J17V92

0902012-17 (Solid)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Not
Lionville Laboratory									
Volatile Organic Compounds by SW846 8260B									
Unknown 23.549	10.6		ug/kg wet	1	L903233	02/09/2009	02/09/2009	8260B	
Unknown 26.019	14.4		"	"	"	"	"	"	
Surrogate: 1,2-Dichloroethane-d4		*102 %*	*63-151*		"	"	"	"	
Surrogate: Toluene-d8		*101 %*	*68-140*		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*108 %*	*66-122*		"	"	"	"	

11/20/09

LVL
LIONVILLE LABORATORY

264 Welsh Pool Ro
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WC-Hanford, Inc.
2620 Fermi Avenue
Richland WA, 99354

Project: RC-116
Project Number: [none]
Project Manager: Joan Kessner

Reported:
04/01/2009 14:13

J17VP0
0902012-18 (Solid)

Lionville Laboratory

Volatile Organic Compounds by SW846 8260B

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Note
1,1,1-Trichloroethane	ND J	4.46	ug/kg wet	1	1.903233	02/09/2009	02/09/2009	8260B	
1,1,2,2-Tetrachloroethane	ND	4.46	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	4.46	"	"	"	"	"	"	
1,1-Dichloroethane	ND	4.46	"	"	"	"	"	"	
1,1-Dichloroethene	ND	4.46	"	"	"	"	"	"	
1,2-Dichloroethane	ND	5.36	"	"	"	"	"	"	
1,2-Dichloropropane	ND	4.46	"	"	"	"	"	"	
2-Butanone	ND	10.7	"	"	"	"	"	"	
2-Hexanone	ND	10.7	"	"	"	"	"	"	
4-Methyl-2-pentanone	ND	10.7	"	"	"	"	"	"	
Acetone	ND	10.7	"	"	"	"	"	"	
Benzene	ND	4.46	"	"	"	"	"	"	
Bromodichloromethane	ND	5.36	"	"	"	"	"	"	
Bromoform	ND	4.46	"	"	"	"	"	"	
Bromomethane	ND	8.93	"	"	"	"	"	"	
Carbon Disulfide	ND	4.46	"	"	"	"	"	"	
Carbon Tetrachloride	ND	4.46	"	"	"	"	"	"	
Chlorobenzene	ND	4.46	"	"	"	"	"	"	
Chloroethane	ND	8.93	"	"	"	"	"	"	
Chloroform	ND	4.46	"	"	"	"	"	"	
Chloromethane	ND	8.93	"	"	"	"	"	"	
cis-1,3-Dichloropropene	ND	4.46	"	"	"	"	"	"	
Dibromochloromethane	ND	4.46	"	"	"	"	"	"	
Ethylbenzene	ND	4.46	"	"	"	"	"	"	
Methylene Chloride	5 ~~[illegible]~~ U	5.36	"	"	"	"	"	"	
Styrene	ND	4.46	"	"	"	"	"	"	
Tetrachloroethene	ND	4.46	"	"	"	"	"	"	
Toluene	ND	4.46	"	"	"	"	"	"	
trans-1,3-Dichloropropene	ND	4.46	"	"	"	"	"	"	
Trichloroethene	ND	4.46	"	"	"	"	"	"	
Vinyl chloride	ND	8.93	"	"	"	"	"	"	
Xylenes, total	ND	5.36	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	4.46	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	4.46	"	"	"	"	"	"	

11/20/09

LVL
LIONVILLE LABORATORY

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WC-Hanford, Inc. 2620 Fermi Avenue Richland WA, 99354	Project: RC-116 Project Number: [none] Project Manager: Joan Kessner	Reported: 04/01/2009 14:13

J17VP0

0902012-18 (Solid)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Note

Lionville Laboratory

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Note
Volatile Organic Compounds by SW846 8260B									
Unknown 23.536	**8.41**		ug/kg wet	1	L903233	02/09/2009	02/09/2009	8260B	
Unknown 26.006	**0.89**		"	"	"	"	"	"	
Surrogate: 1,2-Dichloroethane-d4		*98 %*	*63-151*		"	"	"	"	
Surrogate: Toluene-d8		*100 %*	*68-140*		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*107 %*	*66-122*		"	"	"	"	

11/20/09

WC-Hanford, Inc.
2620 Fermi Avenue
Richland WA, 99354

Project: RC-116
Project Number: [none]
Project Manager: Joan Kessner

Reported:
04/01/2009 14:13

J17VF5

0902012-19 (Solid)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Lionville Laboratory									
Volatile Organic Compounds by SW846 8260B									
1,1,1-Trichloroethane	ND	4.90	ug/kg wet	1	1.003233	02/09/2009	02/09/2009	8260B	
1,1,2,2-Tetrachloroethane	ND	4.90	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	4.90	"	"	"	"	"	"	
1,1-Dichloroethane	ND	4.90	"	"	"	"	"	"	
1,1-Dichloroethene	ND	4.90	"	"	"	"	"	"	
1,2-Dichloroethane	ND	5.88	"	"	"	"	"	"	
1,2-Dichloropropane	ND	4.90	"	"	"	"	"	"	
2-Butanone	ND	11.8	"	"	"	"	"	"	
2-Hexanone	ND	11.8	"	"	"	"	"	"	
4-Methyl-2-pentanone	ND	11.8	"	"	"	"	"	"	
Acetone	ND	11.8	"	"	"	"	"	"	
Benzene	ND	4.90	"	"	"	"	"	"	
Bromodichloromethane	ND	5.88	"	"	"	"	"	"	
Bromoform	ND	4.90	"	"	"	"	"	"	
Bromomethane	ND	9.80	"	"	"	"	"	"	
Carbon Disulfide	ND	4.90	"	"	"	"	"	"	
Carbon Tetrachloride	ND	4.90	"	"	"	"	"	"	
Chlorobenzene	ND	4.90	"	"	"	"	"	"	
Chloroethane	ND	9.80	"	"	"	"	"	"	
Chloroform	ND	4.90	"	"	"	"	"	"	
Chloromethane	ND	9.80	"	"	"	"	"	"	
cis-1,3-Dichloropropene	ND	4.90	"	"	"	"	"	"	
Dibromochloromethane	ND	4.90	"	"	"	"	"	"	
Ethylbenzene	ND	4.90	"	"	"	"	"	"	
Methylene Chloride	5 ~~[illegible]~~ U	5.88	"	"	"	"	"	"	
Styrene	ND	4.90	"	"	"	"	"	"	
Tetrachloroethene	ND	4.90	"	"	"	"	"	"	
Toluene	ND	4.90	"	"	"	"	"	"	
trans-1,3-Dichloropropene	ND	4.90	"	"	"	"	"	"	
Trichloroethene	ND	4.90	"	"	"	"	"	"	
Vinyl chloride	ND	9.80	"	"	"	"	"	"	
Xylenes, total	ND	5.88	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	4.90	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	4.90	"	"	"	"	"	"	

LVL
LIONVILLE LABORATORY

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WC-Hanford, Inc. 2620 Fermi Avenue Richland WA, 99354	Project: RC-116 Project Number: [none] Project Manager: Joan Kessner	Reported: 04/01/2009 14:13

J17VP5

0902012-19 (Solid)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Lionville Laboratory									
Volatile Organic Compounds by SW846 8260B									
Unknown 13.548	10.8		ug/kg wet	1	1903213	02/09/2009	02/09/2009	8260B	J
Unknown 26.000	9.23		"	"	"	"	"	"	J
Surrogate: 1,2-Dichloroethane-d4		*98 %*	*63-151*		"	"	"	"	
Surrogate: Toluene-d8		*101 %*	*68-140*		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*103 %*	*66-122*		"	"	"	"	

11/20/09

WC-Hanford, Inc.
2620 Fermi Avenue
Richland WA, 99354

Project: RC-116
Project Number: (none)
Project Manager: Joan Kessner

Reported:
04/01/2009 14:13

J18198
0902012-06 (Solid)

Lionville Laboratory

Volatile Organic Compounds by SW846 8260B

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	N
1,1,1-Trichloroethane	ND	4.24	ug/kg wet	1	9903237	02/10/2009	02/10/2009	8260B	
1,1,2,2-Tetrachloroethane	ND	4.24	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	4.24	"	"	"	"	"	"	
1,1-Dichloroethane	ND	4.24	"	"	"	"	"	"	
1,1-Dichloroethene	ND	4.24	"	"	"	"	"	"	
1,2-Dichloroethane	ND	5.08	"	"	"	"	"	"	
1,2-Dichloropropane	ND	4.24	"	"	"	"	"	"	
2-Butanone	ND	10.2	"	"	"	"	"	"	
2-Hexanone	ND	10.2	"	"	"	"	"	"	
4-Methyl-2-pentanone	ND	10.2	"	"	"	"	"	"	
Acetone	ND	10.2	"	"	"	"	"	"	
Benzene	ND	4.24	"	"	"	"	"	"	
Bromodichloromethane	ND	5.08	"	"	"	"	"	"	
Bromoform	ND	4.24	"	"	"	"	"	"	
Bromomethane	ND	8.47	"	"	"	"	"	"	
Carbon Disulfide	ND	4.24	"	"	"	"	"	"	
Carbon Tetrachloride	ND	4.24	"	"	"	"	"	"	
Chlorobenzene	ND	4.24	"	"	"	"	"	"	
Chloroethane	ND	8.47	"	"	"	"	"	"	
Chloroform	ND	4.24	"	"	"	"	"	"	
Chloromethane	ND	8.47	"	"	"	"	"	"	
cis-1,3-Dichloropropene	ND	4.24	"	"	"	"	"	"	
Dibromochloromethane	ND	4.24	"	"	"	"	"	"	
Ethylbenzene	ND	4.24	"	"	"	"	"	"	
Methylene Chloride	2.74	5.08	"	"	"	"	"	"	
Styrene	ND	4.24	"	"	"	"	"	"	
Tetrachloroethene	ND	4.24	"	"	"	"	"	"	
Toluene	ND	4.24	"	"	"	"	"	"	
trans-1,3-Dichloropropene	ND	4.24	"	"	"	"	"	"	
Trichloroethene	ND	4.24	"	"	"	"	"	"	
Vinyl chloride	ND	8.47	"	"	"	"	"	"	
Xylenes, total	ND	5.08	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	4.24	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	4.24	"	"	"	"	"	"	

K 11/20/08

LIONVILLE LABORATORY

264 Welsh Pool R
Exton, PA 19
Phone: 610-280-3
Fax: 610-280-3

WC-Hanford, Inc.
2620 Fermi Avenue
Richland WA, 99354

Project: RC-116
Project Number: [none]
Project Manager: Joan Kessner

Reported:
04/01/2009 14:13

J18198

0902012-06 (Solid)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	No
Lionville Laboratory									
Volatile Organic Compounds by SW846 8260B									
Unknown 23.571	4.95		ug/kg wet	1	1903217	02/10/2009	02/10/2009	8260B	
Unknown 26.058	10.4		"	"	"	"	"	"	J,
Surrogate: 1,2-Dichloroethane-d4		100 %	65-131		"	"	"	"	R
Surrogate: Toluene-d8		100 %	68-140		"	"	"	"	4
Surrogate: 4-Bromofluorobenzene		118 %	66-122		"	"	"	"	

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

WC Hanford, Inc 2620 Fermi Avenue Richland WA, 99354	Project: RC-116 Project Number: K1525 Project Manager: Joan Kessner	Reported: 10/10/2009 12:53

V 11/20/09

J180W8-A
0902012-20 (Solid)

Lionville Laboratory

Analyte	Result and Qualifier	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Volatile Organic Compounds by SW846 8260B								
1,1,1-Trichloroethane	4.72 U	4.72	ug/kg	1	L903237	02/10/2009	02/10/2009	8260B
1,1,2,2-Tetrachloroethane	4.72 U	4.72	ug/kg	1	L903237	02/10/2009	02/10/2009	8260B
1,1,2-Trichloroethane	4.72 U	4.72	ug/kg	1	L903237	02/10/2009	02/10/2009	8260B
1,1-Dichloroethane	4.72 U	4.72	ug/kg	1	L903237	02/10/2009	02/10/2009	8260B
1,1-Dichloroethene	4.72 U	4.72	ug/kg	1	L903237	02/10/2009	02/10/2009	8260B
1,2-Dichloroethane	5.66 U	5.66	ug/kg	1	L903237	02/10/2009	02/10/2009	8260B
1,2-Dichloropropane	4.72 U	4.72	ug/kg	1	L903237	02/10/2009	02/10/2009	8260B
2-Butanone	11.3 U	11.3	ug/kg	1	L903237	02/10/2009	02/10/2009	8260B
2-Hexanone	11.3 U	11.3	ug/kg	1	L903237	02/10/2009	02/10/2009	8260B
4-Methyl-2-pentanone	11.3 U	11.3	ug/kg	1	L903237	02/10/2009	02/10/2009	8260B
Acetone	11.3 U	11.3	ug/kg	1	L903237	02/10/2009	02/10/2009	8260B
Benzene	4.72 U	4.72	ug/kg	1	L903237	02/10/2009	02/10/2009	8260B
Bromodichloromethane	5.66 U	5.66	ug/kg	1	L903237	02/10/2009	02/10/2009	8260B
Bromoform	4.72 U	4.72	ug/kg	1	L903237	02/10/2009	02/10/2009	8260B
Bromomethane	9.43 U	9.43	ug/kg	1	L903237	02/10/2009	02/10/2009	8260B
Carbon Disulfide	4.72 U	4.72	ug/kg	1	L903237	02/10/2009	02/10/2009	8260B
Carbon Tetrachloride	4.72 U	4.72	ug/kg	1	L903237	02/10/2009	02/10/2009	8260B
Chlorobenzene	4.72 U	4.72	ug/kg	1	L903237	02/10/2009	02/10/2009	8260B
Chloroethane	9.41 U	9.43	ug/kg	1	L903237	02/10/2009	02/10/2009	8260B
Chloroform	4.72 U	4.72	ug/kg	1	L903237	02/10/2009	02/10/2009	8260B
Chloromethane	9.43 U	9.43	ug/kg	1	L903237	02/10/2009	02/10/2009	8260B
cis-1,2-Dichloroethene	4.72 U	4.72	ug/kg	1	L903237	02/10/2009	02/10/2009	8260B
cis-1,3-Dichloropropene	4.72 U	4.72	ug/kg	1	L903237	02/10/2009	02/10/2009	8260B
Dibromochloromethane	4.72 U	4.72	ug/kg	1	L903237	02/10/2009	02/10/2009	8260B
Ethylbenzene	4.72 U	4.72	ug/kg	1	L903237	02/10/2009	02/10/2009	8260B
Methylene Chloride	2.92 J	5.66	ug/kg	1	L903237	02/10/2009	02/10/2009	8260B
Styrene	4.72 U	4.72	ug/kg	1	L903237	02/10/2009	02/10/2009	8260B
Tetrachloroethene	4.72 U	4.72	ug/kg	1	L903237	02/10/2009	02/10/2009	8260B
trans-1,2-Dichloroethene	4.72 U	4.72	ug/kg	1	L903237	02/10/2009	02/10/2009	8260B
Toluene	4.72 U	4.72	ug/kg	1	L903237	02/10/2009	02/10/2009	8260B
trans-1,3-Dichloropropene	4.72 U	4.72	ug/kg	1	L903237	02/10/2009	02/10/2009	8260B
Trichloroethene	4.72 U	4.72	ug/kg	1	L903237	02/10/2009	02/10/2009	8260B
Vinyl chloride	9.43 U	9.43	ug/kg	1	L903237	02/10/2009	02/10/2009	8260B
Xylenes, total	5.66 U	5.66	ug/kg	1	L903237	02/10/2009	02/10/2009	8260B
Unknown 23.586	5.73 J B		ug/kg	1	L903237	02/10/2009	02/10/2009	8260B
Unknown 26.056	5.66 J B		ug/kg	1	L903237	02/10/2009	02/10/2009	8260B
Surrogate: 1,2-Dichloroethane-d4	98 %	*63-151*			*L903237*	*02/10/2009*	*02/10/2009*	*8260B*
Surrogate: Toluene-d8	95 %	*68-140*			*L903237*	*02/10/2009*	*02/10/2009*	*8260B*
Surrogate: 4-Bromofluorobenzene	107 %	*66-122*			*L903237*	*02/10/2009*	*02/10/2009*	*8260B*

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208 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
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WC-Hanford, Inc.	Project: RC-116	
2620 Fermi Avenue	Project Number: K1525	Reported:
Richland WA, 99354	Project Manager: Joan Kessner	10/10/2009 12:53

J180W9-A
0902012-21 (Solid)

V 11/20/09

Analyte	Result and Qualifier	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method

Lionville Laboratory

Volatile Organic Compounds by SW846 8260B

Analyte	Result and Qualifier	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
1,1,1-Trichloroethane	4.46 U	4.46	ug/kg	1	L903237	02/10/2009	02/10/2009	8260B
1,1,2,2-Tetrachloroethane	4.46 U	4.46	ug/kg	1	L903237	02/10/2009	02/10/2009	8260B
1,1,2-Trichloroethane	4.46 U	4.46	ug/kg	1	L903237	02/10/2009	02/10/2009	8260B
1,1-Dichloroethane	4.46 U	4.46	ug/kg	1	L903237	02/10/2009	02/10/2009	8260B
1,1-Dichloroethene	4.46 U	4.46	ug/kg	1	L903237	02/10/2009	02/10/2009	8260B
1,2-Dichloroethane	5.36 U	5.36	ug/kg	1	L903237	02/10/2009	02/10/2009	8260B
1,2-Dichloropropane	4.46 U	4.46	ug/kg	1	L903237	02/10/2009	02/10/2009	8260B
2-Butanone	10.7 U	10.7	ug/kg	1	L903237	02/10/2009	02/10/2009	8260B
2-Hexanone	10.7 U	10.7	ug/kg	1	L903237	02/10/2009	02/10/2009	8260B
4-Methyl-2-pentanone	10.7 U	10.7	ug/kg	1	L903237	02/10/2009	02/10/2009	8260B
Acetone	10.7 U	10.7	ug/kg	1	L903237	02/10/2009	02/10/2009	8260B
Benzene	4.46 U	4.46	ug/kg	1	L903237	02/10/2009	02/10/2009	8260B
Bromodichloromethane	5.36 U	5.36	ug/kg	1	L903237	02/10/2009	02/10/2009	8260B
Bromoform	4.46 U	4.46	ug/kg	1	L903237	02/10/2009	02/10/2009	8260B
Bromomethane	8.93 U	8.93	ug/kg	1	L903237	02/10/2009	02/10/2009	8260B
Carbon Disulfide	4.46 U	4.46	ug/kg	1	L903237	02/10/2009	02/10/2009	8260B
Carbon Tetrachloride	4.46 U	4.46	ug/kg	1	L903237	02/10/2009	02/10/2009	8260B
Chlorobenzene	4.46 U	4.46	ug/kg	1	L903237	02/10/2009	02/10/2009	8260B
Chloroethane	8.93 U	8.93	ug/kg	1	L903237	02/10/2009	02/10/2009	8260B
Chloroform	4.46 U	4.46	ug/kg	1	L903237	02/10/2009	02/10/2009	8260B
Chloromethane	8.93 U	8.93	ug/kg	1	L903237	02/10/2009	02/10/2009	8260B
cis-1,2-Dichloroethene	4.46 U	4.46	ug/kg	1	L903237	02/10/2009	02/10/2009	8260B
cis-1,3-Dichloropropene	4.46 U	4.46	ug/kg	1	L903237	02/10/2009	02/10/2009	8260B
Dibromochloromethane	4.46 U	4.46	ug/kg	1	L903237	02/10/2009	02/10/2009	8260B
Ethylbenzene	4.46 U	4.46	ug/kg	1	L903237	02/10/2009	02/10/2009	8260B
Methylene Chloride	3.27 J	5.36	ug/kg	1	L903237	02/10/2009	02/10/2009	8260B
Styrene	4.46 U	4.46	ug/kg	1	L903237	02/10/2009	02/10/2009	8260B
Tetrachloroethene	4.46 U	4.46	ug/kg	1	L903237	02/10/2009	02/10/2009	8260B
trans-1,2-Dichloroethene	4.46 U	4.46	ug/kg	1	L903237	02/10/2009	02/10/2009	8260B
Toluene	4.46 U	4.46	ug/kg	1	L903237	02/10/2009	02/10/2009	8260B
trans-1,3-Dichloropropene	4.46 U	4.46	ug/kg	1	L903237	02/10/2009	02/10/2009	8260B
Trichloroethene	4.46 U	4.46	ug/kg	1	L903237	02/10/2009	02/10/2009	8260B
Vinyl chloride	8.93 U	8.93	ug/kg	1	L903237	02/10/2009	02/10/2009	8260B
Xylenes, total	5.36 U	5.36	ug/kg	1	L903237	02/10/2009	02/10/2009	8260B
Furan, tetrahydro- 11.53/	6.72 J		ug/kg	1	L903237	02/10/2009	02/10/2009	8260B
Unknown 23.483	7.93 J B		ug/kg	1	L903237	02/10/2009	02/10/2009	8260B
Unknown 26.052	10.2 J B		ug/kg	1	L903237	02/10/2009	02/10/2009	8260B
Surrogate: 1,2-Dichloroethane-d4	*100 %*	*63-151*			*L903237*	*02/10/2009*	*02/10/2009*	*8260B*
Surrogate: Toluene-d8	*99 %*	*68-140*			*L903237*	*02/10/2009*	*02/10/2009*	*8260B*

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WC Hanford, Inc
2620 Fermi Avenue
Richland WA, 99354

Project: RC-116
Project Number: K1525
Project Manager: Joan Kessner

Reported:
10/10/2009 12:53

J180W9-A
0902012-21 (Solid)

V 11/20/09

Analyte	Result and Qualifier	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Lionville Laboratory								
Volatile Organic Compounds by SW846 8260B								
Surrogate: 4-Bromofluorobenzene	*106 %*	*66-132*			*L903217*	*02/10/2009*	*02/10/2009*	*8260B*

WC-Hanford, Inc	Project: RC-116	
2620 Fermi Avenue	Project Number: K1523	Reported:
Richland WA, 99354	Project Manager: Joan Kessner	10/10/2009 17:53

J17W104 [illegible]

0902012-22 (Solid)

V 11/20/09

Analyte	Result and Qualifier		Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method

Lionville Laboratory

Volatile Organic Compounds by SW846 8260B

Analyte	Result	Qualifier	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
1,1,1-Trichloroethane	4.03	U	4.03	ug/kg	1	L903237	02/10/2009	02/10/2009	8260B
1,1,2,2-Tetrachloroethane	4.03	U	4.03	ug/kg	1	L903237	02/10/2009	02/10/2009	8260B
1,1,2-Trichloroethane	4.03	U	4.03	ug/kg	1	L903237	02/10/2009	02/10/2009	8260B
1,1-Dichloroethane	4.03	U	4.03	ug/kg	1	L903237	02/10/2009	02/10/2009	8260B
1,1-Dichloroethene	4.03	U	4.03	ug/kg	1	L903237	02/10/2009	02/10/2009	8260B
1,2-Dichloroethane	4.84	U	4.84	ug/kg	1	L903237	02/10/2009	02/10/2009	8260B
1,2-Dichloropropane	4.03	U	4.03	ug/kg	1	L903237	02/10/2009	02/10/2009	8260B
2-Butanone	9.68	U	9.68	ug/kg	1	L903237	02/10/2009	02/10/2009	8260B
2-Hexanone	9.68	U	9.68	ug/kg	1	L903237	02/10/2009	02/10/2009	8260B
4-Methyl-2-pentanone	9.68	U	9.68	ug/kg	1	L903237	02/10/2009	02/10/2009	8260B
Acetone	9.68	U	9.68	ug/kg	1	L903237	02/10/2009	02/10/2009	8260B
Benzene	4.03	U	4.03	ug/kg	1	L903237	02/10/2009	02/10/2009	8260B
Bromodichloromethane	4.84	U	4.84	ug/kg	1	L903237	02/10/2009	02/10/2009	8260B
Bromoform	4.03	U	4.03	ug/kg	1	L903237	02/10/2009	02/10/2009	8260B
Bromomethane	8.06	U	8.06	ug/kg	1	L903237	02/10/2009	02/10/2009	8260B
Carbon Disulfide	4.03	U	4.03	ug/kg	1	L903237	02/10/2009	02/10/2009	8260B
Carbon Tetrachloride	4.03	U	4.03	ug/kg	1	L903237	02/10/2009	02/10/2009	8260B
Chlorobenzene	4.03	U	4.03	ug/kg	1	L903237	02/10/2009	02/10/2009	8260B
Chloroethane	8.06	U	8.06	ug/kg	1	L903237	02/10/2009	02/10/2009	8260B
Chloroform	4.03	U	4.03	ug/kg	1	L903237	02/10/2009	02/10/2009	8260B
Chloromethane	8.06	U	8.06	ug/kg	1	L903237	02/10/2009	02/10/2009	8260B
cis-1,2-Dichloroethene	4.03	U	4.03	ug/kg	1	L903237	02/10/2009	02/10/2009	8260B
cis-1,3-Dichloropropene	4.03	U	4.03	ug/kg	1	L903237	02/10/2009	02/10/2009	8260B
Dibromochloromethane	4.03	U	4.03	ug/kg	1	L903237	02/10/2009	02/10/2009	8260B
Ethylbenzene	4.03	U	4.03	ug/kg	1	L903237	02/10/2009	02/10/2009	8260B
Methylene Chloride	2.72	J	4.84	ug/kg	1	L903237	02/10/2009	02/10/2009	8260B
Styrene	4.03	U	4.03	ug/kg	1	L903237	02/10/2009	02/10/2009	8260B
Tetrachloroethene	4.03	U	4.03	ug/kg	1	L903237	02/10/2009	02/10/2009	8260B
trans-1,2-Dichloroethene	4.03	U	4.03	ug/kg	1	L903237	02/10/2009	02/10/2009	8260B
Toluene	4.03	U	4.03	ug/kg	1	L903237	02/10/2009	02/10/2009	8260B
trans-1,3-Dichloropropene	4.03	U	4.03	ug/kg	1	L903237	02/10/2009	02/10/2009	8260B
Trichloroethene	4.03	U	4.03	ug/kg	1	L903237	02/10/2009	02/10/2009	8260B
Vinyl chloride	8.06	U	8.06	ug/kg	1	L903237	02/10/2009	02/10/2009	8260B
Xylenes, total	4.84	U	4.84	ug/kg	1	L903237	02/10/2009	02/10/2009	8260B
Furan, tetrahydro- n 5/4/9 [illegible]	5.96	J		ug/kg	1	L903237	02/10/2009	02/10/2009	8260B
Unknown 23.583	4.32	J 5		ug/kg	1	L903237	02/10/2009	02/10/2009	8260B
Unknown 23.931	12.1	J		ug/kg	1	L903237	02/10/2009	02/10/2009	8260B
Unknown 25.479	5.47	J		ug/kg	1	L903237	02/10/2009	02/10/2009	8260B
Unknown 26.053	7.43	J 6		ug/kg	1	L903237	02/10/2009	02/10/2009	8260B

WC-Hanford, Inc
2620 Fermi Avenue
Richland WA, 99354

Project: RC-116
Project Number: K1525
Project Manager: Joan Kessner

Reported:
11/10/2009 12:53

J17W10-[illegible]
0902012-22 (Solid)

V 11/20/09

Analyte	Result and Qualifier	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Lionville Laboratory								
Volatile Organic Compounds by SW846 8260B								
Unknown 22.957	**7.81 J**		ug/kg	1	1903237	02/10/2009	02/10/2009	8260B
Surrogate: 1,2-Dichloroethane-d4	*99 %*	*63-151*			*1903237*	*02/10/2009*	*02/10/2009*	*8260B*
Surrogate: Toluene-d8	*95 %*	*68-140*			*1903237*	*02/10/2009*	*02/10/2009*	*8260B*
Surrogate: 4-Bromofluorobenzene	*99 %*	*66-112*			*1903237*	*02/10/2009*	*02/10/2009*	*8260B*

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264 Welsh Pool Road
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WC-Hanford, Inc.
2620 Fermi Avenue
Richland WA, 99354

Project: RC-116
Project Number: K1525
Project Manager: Joan Kessner

Reported:
10/10/2009 12:53

J17W14~~A~~ Eu 10/19/09 W 10/20/09
0902012-23 (Solid)

Lionville Laboratory

Analyte	Result and Qualifier	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Volatile Organic Compounds by SW846 8260B								
1,1,1-Trichloroethane	4.72 U	4.72	ug/kg	1	1903237	02/10/2009	02/10/2009	8260B
1,1,2,2-Tetrachloroethane	4.72 U	4.72	ug/kg	1	1903237	02/10/2009	02/10/2009	8260B
1,1,2-Trichloroethane	4.72 U	4.72	ug/kg	1	1903237	02/10/2009	02/10/2009	8260B
1,1-Dichloroethane	4.72 U	4.72	ug/kg	1	1903237	02/10/2009	02/10/2009	8260B
1,1-Dichloroethene	4.72 U	4.72	ug/kg	1	1903237	02/10/2009	02/10/2009	8260B
1,2-Dichloroethane	5.66 U	5.66	ug/kg	1	1903237	02/10/2009	02/10/2009	8260B
1,2-Dichloropropane	4.72 U	4.72	ug/kg	1	1903237	02/10/2009	02/10/2009	8260B
2-Butanone	11.3 U	11.3	ug/kg	1	1903237	02/10/2009	02/10/2009	8260B
2-Hexanone	11.3 U	11.3	ug/kg	1	1903237	02/10/2009	02/10/2009	8260B
4-Methyl-2-pentanone	11.3 U	11.3	ug/kg	1	1903237	02/10/2009	02/10/2009	8260B
Acetone	11.3 U	11.3	ug/kg	1	1903237	02/10/2009	02/10/2009	8260B
Benzene	4.72 U	4.72	ug/kg	1	1903237	02/10/2009	02/10/2009	8260B
Bromodichloromethane	5.66 U	5.66	ug/kg	1	1903237	02/10/2009	02/10/2009	8260B
Bromoform	4.72 U	4.72	ug/kg	1	1903237	02/10/2009	02/10/2009	8260B
Bromomethane	9.43 U	9.43	ug/kg	1	1903237	02/10/2009	02/10/2009	8260B
Carbon Disulfide	4.72 U	4.72	ug/kg	1	1903237	02/10/2009	02/10/2009	8260B
Carbon Tetrachloride	4.72 U	4.72	ug/kg	1	1903237	02/10/2009	02/10/2009	8260B
Chlorobenzene	4.72 U	4.72	ug/kg	1	1903237	02/10/2009	02/10/2009	8260B
Chloroethane	9.43 U	9.43	ug/kg	1	1903237	02/10/2009	02/10/2009	8260B
Chloroform	4.72 U	4.72	ug/kg	1	1903237	02/10/2009	02/10/2009	8260B
Chloromethane	9.43 U	9.43	ug/kg	1	1903237	02/10/2009	02/10/2009	8260B
cis-1,2-Dichloroethene	4.72 U	4.72	ug/kg	1	1903237	02/10/2009	02/10/2009	8260B
cis-1,3-Dichloropropene	4.72 U	4.72	ug/kg	1	1903237	02/10/2009	02/10/2009	8260B
Dibromochloromethane	4.72 U	4.72	ug/kg	1	1903237	02/10/2009	02/10/2009	8260B
Ethylbenzene	4.72 U	4.72	ug/kg	1	1903237	02/10/2009	02/10/2009	8260B
Methylene Chloride	3.10 J	5.66	ug/kg	1	1903237	02/10/2009	02/10/2009	8260B
Styrene	4.72 U	4.72	ug/kg	1	1903237	02/10/2009	02/10/2009	8260B
Tetrachloroethene	4.72 U	4.72	ug/kg	1	1903237	02/10/2009	02/10/2009	8260B
trans-1,2-Dichloroethene	4.72 U	4.72	ug/kg	1	1903237	02/10/2009	02/10/2009	8260B
Toluene	4.72 U	4.72	ug/kg	1	1903237	02/10/2009	02/10/2009	8260B
trans-1,3-Dichloropropene	4.72 U	4.72	ug/kg	1	1903237	02/10/2009	02/10/2009	8260B
Trichloroethene	4.72 U	4.72	ug/kg	1	1903237	02/10/2009	02/10/2009	8260B
Vinyl chloride	9.43 U	9.43	ug/kg	1	1903237	02/10/2009	02/10/2009	8260B
Xylenes, total	5.66 U	5.66	ug/kg	1	1903237	02/10/2009	02/10/2009	8260B
Furan, tetrahydro- 11.949	4.89 J		ug/kg	1	1903237	02/10/2009	02/10/2009	8260B
Unknown 22.940 ES 10/20/09	6.56 J		ug/kg	1	1903237	02/10/2009	02/10/2009	8260B
Unknown 23.583	5.29 J B		ug/kg	1	1903237	02/10/2009	02/10/2009	8260B
Unknown 23.948	10.0 J		ug/kg	1	1903237	02/10/2009	02/10/2009	8260B
Unknown 25.479	4.98 J		ug/kg	1	1903237	02/10/2009	02/10/2009	8260B

ES 10/20/09

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

WC-Hanford, Inc 2620 Fermi Avenue Richland WA, 99354	Project: RC-116 Project Number: K1525 Project Manager: Joan Kessner	Reported: 10/10/2009 12 53

11/20/09

J17W14-
0902012-23 (Solid)

Analyte	Result and Qualifier	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Lionville Laboratory								
Volatile Organic Compounds by SW846 8260B								
Unknown 26.070	8.25 J B		ug/kg	1	L903237	02/10/2009	02/10/2009	8260B
Surrogate: 1,2-Dichloroethane-d4	94 %	63-151			L903237	02/10/2009	02/10/2009	8260B
Surrogate: Toluene-d8	91 %	68-140			L903237	02/10/2009	02/10/2009	8260B
Surrogate: 4-Bromofluorobenzene	98 %	66-122			L903237	02/10/2009	02/10/2009	8260B

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164 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

WCH-Hanford, Inc.
2620 Fermi Avenue
Richland WA, 99354

Project: RC-116
Project Number: K1525
Project Manager: Joan Kessner

Reported:
10/10/2009 12:53

11/20/09

J17VY4

09J2012-24 (Solid)

Analyte	Result and Qualifier	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Lionville Laboratory								
Volatile Organic Compounds by SW846 8260B								
1,1,1-Trichloroethane	4.31 U	4.31	ug/kg	1	1903237	02/10/2009	02/10/2009	8260B
1,1,2,2-Tetrachloroethane	4.31 U	4.31	ug/kg	1	1903237	02/10/2009	02/10/2009	8260B
1,1,2-Trichloroethane	4.31 U	4.31	ug/kg	1	1903237	02/10/2009	02/10/2009	8260B
1,1-Dichloroethane	4.31 U	4.31	ug/kg	1	1903237	02/10/2009	02/10/2009	8260B
1,1-Dichloroethene	4.31 U	4.31	ug/kg	1	1903237	02/10/2009	02/10/2009	8260B
1,2-Dichloroethane	5.17 U	5.17	ug/kg	1	1903237	02/10/2009	02/10/2009	8260B
1,2-Dichloropropane	4.31 U	4.31	ug/kg	1	1903237	02/10/2009	02/10/2009	8260B
2-Butanone	10.3 U	10.3	ug/kg	1	1903237	02/10/2009	02/10/2009	8260B
2-Hexanone	10.3 U	10.3	ug/kg	1	1903237	02/10/2009	02/10/2009	8260B
4-Methyl-2-pentanone	10.3 U	10.3	ug/kg	1	1903237	02/10/2009	02/10/2009	8260B
Acetone	10.3 U	10.3	ug/kg	1	1903237	02/10/2009	02/10/2009	8260B
Benzene	4.31 U	4.31	ug/kg	1	1903237	02/10/2009	02/10/2009	8260B
Bromodichloromethane	5.17 U	5.17	ug/kg	1	1903237	02/10/2009	02/10/2009	8260B
Bromoform	4.31 U	4.31	ug/kg	1	1903237	02/10/2009	02/10/2009	8260B
Bromomethane	8.62 U	8.62	ug/kg	1	1903237	02/10/2009	02/10/2009	8260B
Carbon Disulfide	4.31 U	4.31	ug/kg	1	1903237	02/10/2009	02/10/2009	8260B
Carbon Tetrachloride	4.31 U	4.31	ug/kg	1	1903237	02/10/2009	02/10/2009	8260B
Chlorobenzene	4.31 U	4.31	ug/kg	1	1903237	02/10/2009	02/10/2009	8260B
Chloroethane	8.62 U	8.62	ug/kg	1	1903237	02/10/2009	02/10/2009	8260B
Chloroform	4.31 U	4.31	ug/kg	1	1903237	02/10/2009	02/10/2009	8260B
Chloromethane	8.62 U	8.62	ug/kg	1	1903237	02/10/2009	02/10/2009	8260B
cis-1,2-Dichloroethene	4.31 U	4.31	ug/kg	1	1903237	02/10/2009	02/10/2009	8260B
cis-1,3-Dichloropropene	4.31 U	4.31	ug/kg	1	1903237	02/10/2009	02/10/2009	8260B
Dibromochloromethane	4.31 U	4.31	ug/kg	1	1903237	02/10/2009	02/10/2009	8260B
Ethylbenzene	4.31 U	4.31	ug/kg	1	1903237	02/10/2009	02/10/2009	8260B
Methylene Chloride	2.77 J	5.17	ug/kg	1	1903237	02/10/2009	02/10/2009	8260B
Styrene	4.31 U	4.31	ug/kg	1	1903237	02/10/2009	02/10/2009	8260B
Tetrachloroethene	4.31 U	4.31	ug/kg	1	1903237	02/10/2009	02/10/2009	8260B
trans-1,2-Dichloroethene	4.31 U	4.31	ug/kg	1	1903237	02/10/2009	02/10/2009	8260B
Toluene	4.31 U	4.31	ug/kg	1	1903237	02/10/2009	02/10/2009	8260B
trans-1,3-Dichloropropene	4.31 U	4.31	ug/kg	1	1903237	02/10/2009	02/10/2009	8260B
Trichloroethene	4.31 U	4.31	ug/kg	1	1903237	02/10/2009	02/10/2009	8260B
Vinyl chloride	8.62 U	8.62	ug/kg	1	1903237	02/10/2009	02/10/2009	8260B
Xylenes, total	5.17 U	5.17	ug/kg	1	1903237	02/10/2009	02/10/2009	8260B
Furan, tetrahydro- 11.535 10/10/09	4.43 J		ug/kg	1	1903237	02/10/2009	02/10/2009	8260B
Unknown 22.943	4.37 J		ug/kg	1	1903237	02/10/2009	02/10/2009	8260B
Unknown 23.570	6.48 JB		ug/kg	1	1903237	02/10/2009	02/10/2009	8260B
Unknown 23.935	10.4 J		ug/kg	1	1903237	02/10/2009	02/10/2009	8260B
Unknown 25.483	5.12 J		ug/kg	1	1903237	02/10/2009	02/10/2009	8260B

10/10/09

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

WCH Hanford, Inc 2620 Fermi Avenue Richland WA, 99354	Project: RC-116 Project Number: K1535 Project Manager: Joan Kessner	Reported: 10/10/2009 17:53

11/20/09

J17YY4
0902012 24 (Solid)

Analyte	Result and Qualifier	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method

Lionville Laboratory

Analyte	Result and Qualifier	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Volatile Organic Compounds by SW846 8260B								
Unknown 26.074	9.21 J		ug/kg	1	1903237	02/10/2009	02/10/2009	8260B
Surrogate: 1,2-Dichloroethane-d4	*97 %*	*63-151*			*1903237*	*02/10/2009*	*02/10/2009*	*8260B*
Surrogate: Toluene-d8	*97 %*	*68-140*			*1903237*	*02/10/2009*	*02/10/2009*	*8260B*
Surrogate: 4-Bromofluorobenzene	*100 %*	*66-122*			*1903237*	*02/10/2009*	*02/10/2009*	*8260B*

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Appendix 4

Laboratory Narrative and Chain-of-Custody Documentation

Case Narrative

Client: WC-HANFORD RC-116
LVL #: 0902012
SDG/SAF # RC-116 KIS 2-5

W.O. #: 60049-001-001-0001-00
Date Received: 02-05-2009

GC/MS VOLATILE

Twenty (20) solid samples were collected on 02-02,03-2009.

The samples and associated QC samples were analyzed according to criteria set forth in Lionville Laboratory SOPs based on EPA Method 8260B and Soil Method 5030A for TCL Volatile target compounds on 02-09,10-2009.

The following is a summary of QC results accompanying the sample results. All samples are reported on a wet weight basis. Lionville Laboratory (LvL) certifies that all test results meet the requirements of NELAC except as noted below:

1. Samples were analyzed within hold time.
2. Non-target compounds were detected in these samples.
3. All surrogate recoveries were within acceptance criteria.
4. Six (6) of sixty-eight (68) matrix spike recoveries were outside acceptance criteria.
5. All blank spike recoveries were within acceptance criteria.
6. The method blanks were below the reporting limit for all target compounds.
7. All internal standard area and retention time criteria were met.
8. Manual integrations are performed according to SOP QA-125 to produce quality data with utmost integrity. All manual integrations are required to be technically valid and properly documented. Appropriate technical flags are defined in the Glossary ("Technical Flags For Manual Integration").
9. LvL is NELAP accredited by the State of Pennsylvania. For a complete listing of accrediting authorities and the corresponding analytes/methods, please contact your Project Manager

10. "I certify that this sample data package is in compliance with SOW requirements, both technically and for completeness, other than the conditions detailed above. Release of the data contained in this hard-copy data package has been authorized by the Laboratory Manager or a designee, as verified by the following signature."

Iain Daniels
Laboratory Manager
Lionville Laboratory

4/2/09
Date

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-116-751 | Page 1 of 1

Collector LStratton	**Company Contact** JOAN KESSNER	**Telephone No.** 375-4688	**Project Coordinator** WEISS, RL
Project Designation Columbia River Component of the RCBRA - Sediment	**Sampling Location** MBRA- 4 SD		**SAF No.** RC-116
Ice Chest No. WCH-08-012,034,053	**Field Logbook No.** EL-1631-1	**COA** BESCRC6520	**Method of Shipment** FED EX
Shipped To EBERLINE SERVICES (LIONVILLE)	**Offsite Property No.** N/A		**Bill of Lading/Air Bill No.** 796313456383

Price Code 9K

Data Turnaround 45 Days

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

000053

Preservation	None	None	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	None
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	aG	aG	G	-
No. of Container(s)	1	1	1	1	1	1	1	1	1	1
Volume	1500g	100g	10g	10g	250g	250g	125g	250g	250g	[illegible]
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Technetium-99	See item (2) in Special Instructions	See item (3) in Special Instructions	PCBs - 8082	Pesticides - 8081	Semi VOA - 8270A (TCL)	See item (4) in Special Instructions	-

Sample No.	Matrix *	Sample Date	Sample Time										
18177	OTHER SOLID	2/3/09	10:25					X	X	X	X	X	

Sample unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
[illegible]	2-3-09 1630	Ref B	2-3-09 1630
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Ref B	2/4/09 0830	B Woodward	2/4/09 0830
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
B Woodward	2/4/09 1130	FedEX	2/4/09 1130
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Fed Ex	2-5-09 0915	[illegible]	2-5-09 0915
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) {Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238}
(2) Strontium-89,90 -- Total Sr; Isotopic Thorium {Thorium-232}; Isotopic Uranium {Uranium-233/234, Uranium-235, Uranium-238}; Isotopic Plutonium
(3) ICP Metals - 6010 (Full List) {Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc}; Mercury - 7471 - (CV)
(4) VOA - 8260A (TCL) {1,1,1-Trichloroethane, 1,1,2,2-Tetrachloroethane, 1,1,2-Trichloroethane, 1,1-Dichloroethane, 1,1-Dichloroethene, 1,2-Dichloroethane, 1,2-Dichloropropane, 2-Butanone, 2-Hexanone, 4-Methyl-2-Pentanone, Acetone, Benzene, Bromodichloromethane, Bromoform, Bromomethane, Carbon disulfide, Carbon tetrachloride, Chlorobenzene, Chloroethane, Chloroform, Chloromethane, cis-1,2-Dichloroethylene, cis-1,3-Dichloropropene, Dibromochloromethane, Ethylbenzene, Methylenechloride, Styrene, Tetrachloroethene, Toluene, trans-1,2-Dichloroethylene

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

CH-EE-011

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-116-756

Page 1 of 1

Collector L Strathus	Company Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator WEISS, RL
Project Designation Columbia River Component of the RCBRA - Sediment	Sampling Location MDBR- 67 SD		SAF No. RC-116
Ice Chest No. WCH-08-012, 034, 053	Field Logbook No. EL-1631-1	COA BPSCRC6520	Method of Shipment FEDEX
Shipped To EBERLINE SERVICES [✓ IONVILLE]	Offsite Property No. N/A		Bill of Lading/Air Bill No. 796313456383

Price Code 9K

Data Turnaround 45 Days

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

450100

			Preservation	None	None	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	None
			Type of Container	G/P	G/P	G/P	G/P	G/P	aG	aG	aG	G	-
			No. of Container(s)	1	1	1	1	1	1	1	1	1	1
			Volume	1500g	100g	10g	10g	250g	250g	125g	250g	250g	1?
SAMPLE ANALYSIS				See item (1) in Special Instructions	Carbon-14	Technetium-99	See item (2) in Special Instructions	See item (3) in Special Instructions	PCBs - 8082	Pesticides - 8081	Semi-VOA - 8270A (TCL)	See item (4) in Special Instructions	-
Sample No.	Matrix *	Sample Date	Sample Time										
J18198	OTHER SOLID	2/3/09	1440					X	X	X	X	X	

CHAIN OF POSSESSION	Date/Time	Sign/Print Names	Date/Time
Relinquished By/Removed From	2-3-09/1630	Received By/Stored In RFB	2-3-09/1630
Relinquished By/Removed From RFB	2/4/09 0830	Received By/Stored In B Woodward	2/4/09 0830
Relinquished By/Removed From B Woodward	2/4/09 1130	Received By/Stored In FedEx	2/4/09 1130
Relinquished By/Removed From FedEx	2-5-09 0915	Received By/Stored In	2-5-09 0915
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab.

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) (Americium-241, Antimony-125, Beryllium-7, Cerium-144, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238)
(2) Strontium-89,90 – Total Sr; Isotopic Thorium (Thorium-232); Isotopic Uranium (Uranium-233/234, Uranium-235, Uranium-238); Isotopic Plutonium
(3) ICP Metals - 6010 (Full List) (Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc); Mercury - 7471 - (CV)
(4) VOA - 8260A (TCL) (1,1,1-Trichloroethane, 1,1,2,2-Tetrachloroethane, 1,1,2-Trichloroethane, 1,1-Dichloroethane, 1,1-Dichloroethene, 1,2-Dichloroethane, 1,2-Dichloropropane, 2-Butanone, 2-Hexanone, 4-Methyl-2-Pentanone, Acetone, Benzene, Bromodichloromethane, Bromoform, Bromomethane, Carbon disulfide, Carbon tetrachloride, Chlorobenzene, Chloroethane, Chloroform, Chloromethane, cis-1,2-Dichloroethylene, cis-1,3-Dichloropropene, Dibromochloromethane, Ethylbenzene, Methylene chloride, Styrene, Tetrachloroethene, trans-1,2-Dichloroethylene

Matrix *
S = Soil
SE = Sediment
SO = Solid
SL = Sludge
W = Water
O = Oil
A = Air
DS = Drum Solids
DL = Drum Liquids
T = Tissue
WI = Wipe
L = Liquid
V = Vegetation
X = Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

Collector: L Stratton

Company Contact: JOAN KESSNER

Telephone No.: 375-4680

Project Coordinator: WEISS, RL

Price Code: 9K

Data Turnaround: 45 Days

Project Designation: Columbia River Component of the RCBRA - Sediment

Sampling Location: MDDR- 4 SD

SAF No.: RC-116

Ice Chest No.: WCH-08-012, 034, 053

Field Logbook No.: EL-1631-1

COA: BESCRC6520

Method of Shipment: FED EX

Shipped To: EBERLINE SERVICES [✓ LIONVILLE]

Offsite Property No.: N/A

Bill of Lading/Air Bill No.: 796313456383

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

Preservation	None	None	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	None
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	aG	aG	G	-
No. of Container(s)	1	1	1	1	1	1	1	1	1	1
Volume	1500g	100g	10g	10g	250g	250g	125g	250g	250g	1"
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Technetium-99	See item (2) in Special Instructions	See item (3) in Special Instructions	PCBs - 8082	Pesticides - 8081	Semi VOA - 8270A (TCL)	See item (4) in Special Instructions	-

Sample No.	Matrix *	Sample Date	Sample Time										
J18189	OTHER SOLID	2/3/09	1340					X	X	X	X	X	

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
	2-5-09 / 1630	Res R	2-3-09 / 1630
Res R	2/4/09 0830	B Woodward	2/4/09 0830
B Woodward	2/4/09 1130	Fed Ex	2/4/09 1130
Fed Ex	2-5-09 0915		2-5-09 0915

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) {Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238}
(2) Strontium-89,90 -- Total Sr; Isotopic Thorium {Thorium-232}; Isotopic Uranium {Uranium-233/234, Uranium-235, Uranium-238}; Isotopic Plutonium
(3) ICP Metals - 6010 (Full List) {Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc}; Mercury - 7471 - (CV)
(4) VOA - 8260A (TCL) {1,1,1-Trichloroethane, 1,1,2,2-Tetrachloroethane, 1,1,2-Trichloroethane, 1,1-Dichloroethane, 1,1-Dichloroethene, 1,2-Dichloroethane, 1,2-Dichloropropane, 2-Butanone, 2-Hexanone, 4-Methyl-2-Pentanone, Acetone, Benzene, Bromodichloromethane, Bromoform, Bromomethane, Carbon disulfide, Carbon tetrachloride, Chlorobenzene, Chloroethane, Chloroform, Chloromethane, cis-1,2-Dichloroethylene, cis-1,3-Dichloropropene, Dibromochloromethane,

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

RC-116-756

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

ollector: Sjhatton	Company Contact: JOAN KESSNER	Telephone No.: 375-4688	Project Coordinator: WEISS, RL
roject Designation: Columbia River Component of the RCBRA - Sediment	Sampling Location: MDBR- 5 SD		SAF No.: RC-116
e Chest No.: WCH-08-012,034,053	Field Logbook No.: EL-1631-1	COA: BESCRC6520	Method of Shipment: FED EX
hipped To: EBERLINE SERVICES (LIONVILLE)	Offsite Property No.: N/A		Bill of Lading/Air Bill No.: 796313456383

Price Code: 9K

Data Turnaround: 45 Days

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

0001056

Preservation	None	None	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	None
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	aG	aG	G	-
No. of Container(s)	1	1	1	1	1	1	1	1	1	1
Volume	1500g	100g	10g	10g	250g	250g	125g	250g	250g	[illegible]
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon 14	Technetium-99	See item (2) in Special Instructions	See item (3) in Special Instructions	PCBs - 8082	Pesticides - 8081	Semi-VOA - 8270A (TCL)	See item (4) in Special Instructions	-

Sample No.	Matrix *	Sample Date	Sample Time										
1B1D6	OTHER SOLID	2/3/09	1410					X	X	X	X	X	

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab

CHAIN OF POSSESSION Sign/Print Names

Relinquished By/Removed From	Date/Time 2-3-09/1630	Received By/Stored In RWB	Date/Time 2-3-09/1630
Relinquished By/Removed From RWB	Date/Time 2/4/09 0830	Received By/Stored In B Woodward	Date/Time 2/4/09 0830
Relinquished By/Removed From B Woodward	Date/Time 2/4/09 1130	Received By/Stored In Fed Ex	Date/Time 2/4/09 1130
Relinquished By/Removed From Fed Ex	Date/Time 2-5-09 0915	Received By/Stored In	Date/Time 2-5-09 0915
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) (Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238)
(2) Strontium-89,90 – Total Sr; Isotopic Thorium (Thorium-232); Isotopic Uranium (Uranium-233/234, Uranium-235, Uranium-238); Isotopic Plutonium
(3) ICP Metals - 6010 (Full List) (Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc); Mercury - 7471 - (CV)
(4) VOA - 8260A (TCL) (1,1,1-Trichloroethane, 1,1,2,2-Tetrachloroethane, 1,1,2-Trichloroethane, 1,1-Dichloroethane, 1,1-Dichloroethene, 1,2-Dichloroethane, 1,2-Dichloropropane, 2-Butanone, 2-Hexanone, 4-Methyl-2-Pentanone, Acetone, Benzene, Bromodichloromethane, Bromoform, Bromomethane, Carbon disulfide, Carbon tetrachloride, Chlorobenzene, Chloroethane, Chloroform, Chloromethane, cis-1,2-Dichloroethylene, cis-1,3-Dichloropropene, Dibromochloromethane, [illegible]

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

RC-116-157

000000067

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

llector L. [illegible]

Company Contact JOAN KESSNER

Telephone No. 375-4688

Project Coordinator WEISS, RL

Price Code 9K

Data Turnaround 45 Days

oject Designation Columbia River Component of the RCBRA - Sediment

Sampling Location MDBR- / SD

SAF No. RC-116

e Chest No. WCH-08-012,034,053

Field Logbook No. EL-1631-1

COA BPSCRC6320

Method of Shipment FED EX

ipped To EBERLINE SERVICES [✓ LIONVILLE]

Offsite Property No. N/A

Bill of Lading/Air Bill No. 796313456383

OSSIBLE SAMPLE HAZARDS/REMARKS

pecial Handling and/or Storage

Preservation	None	None	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	None
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	aG	aG	G	-
No. of Container(s)	1	1	1	1	1	1	1	1	1	1
Volume	1500g	100g	10g	10g	250g	250g	125g	250g	250g	1*
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Technetium-99	See item (2) in Special Instructions	See item (3) in Special Instructions	PCBs - 8082	Pesticides - 8081	Semi-VOA - 8270A (TCL)	See item (4) in Special Instructions	-

Sample No.	Matrix *	Sample Date	Sample Time										
16181	OTHER SOLID	2/3/09	1110					X	X	X	X	X	

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab

CHAIN OF POSSESSION Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
	2-3-09 1630	Ref B	2-3-09/1630
Ref B	2/4/09 0830	Bladdwood	2/4/09 0830
Bladdwood	2/4/09 1130	Fed Ex	2/4/09 1130
Fed Ex	2-5-09 0815		2-5-09 0815

SPECIAL INSTRUCTIONS

(1) Gamma Spec (Full List) [Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238]
(2) Strontium-89,90 – Total Sr; Isotopic Thorium (Thorium-232); Isotopic Uranium [Uranium-233/234, Uranium-235, Uranium-238]; Isotopic Plutonium
(3) ICP Metals - 6010 (Full List) [Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc]; Mercury - 7471 - (CV)
(4) VOA - 8260A (TCL) [1,1,1-Trichloroethane, 1,1,2,2-Tetrachloroethane, 1,1,2-Trichloroethane, 1,1-Dichloroethane, 1,1-Dichloroethene, 1,2-Dichloroethane, 1,2-Dichloropropane, 2-Butanone, 2-Hexanone, 4-Methyl-2-Pentanone, Acetone, Benzene, Bromodichloromethane, Bromoform, Bromomethane, Carbon disulfide, Carbon tetrachloride, Chlorobenzene, Chloroethane, Chloroform, Chloromethane, cis-1,2-Dichloroethylene, cis-1,3 Dichloropropene, Dibromochloromethane, Ethylbenzene, Methylene chloride, Styrene, Tetrachloroethene, Toluene, trans-1,2-Dichloroethylene [illegible]

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-116-760 Page 1 of 1

Collector: L Stratton	Company Contact: JOAN KESSNER	Telephone No.: 375-4688	Project Coordinator: WEISS, RL	Price Code: 9K
Project Designation: Columbia River Component of the RCBRA - Sediment	Sampling Location: MDDR- 2 SD		SAF No.: RC-116	Data Turnaround: 45 Days
Ice Chest No.: WCH-08-612, 034, 053	Field Logbook No.: EL-1631/-1	COA: BESCRC6530	Method of Shipment: FED EX	
Shipped To: EBERLINE SERVICES (LIONVILLE)	Offsite Property No.: N/A		Bill of Lading/Air Bill No.: 796313456383	

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

Preservation	None	None	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	None
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	aG	aG	G	-
No. of Container(s)	1	1	1	1	1	1	1	1	1	1
Volume	1500g	100g	10g	10g	250g	250g	125g	250g	250g	1*
SAMPLE ANALYSIS	See item (1) in Special Instructions.	Carbon-14	Technetium-99	See item (2) in Special Instructions.	See item (3) in Special Instructions.	PCBs - 8082	Pesticides - 8081	Semi VOA - 8270A (TCL)	See item (4) in Special Instructions.	-

Sample No.	Matrix *	Sample Date	Sample Time										
J18182	OTHER SOLID	2/3/09	1150					X	X	X	X	X	

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
	2-3-09 / 1630	Ref B	2-3-09 / 1630
Ref B	2/4/09 0830	B Woodward	2/4/09 0830
B Woodward	2/4/09 1130	Fed Ex	2/4/09 1130
E.S.E.	2-5-09 0915		2-5-09 0915

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) {Americium-241, Antimony-125, Beryllium-7, Cerium-144, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238}
(2) Strontium-89,90 -- Total Sr; Isotopic Thorium {Thorium-232}; Isotopic Uranium {Uranium-233/234, Uranium-235, Uranium-238}; Isotopic Plutonium
(3) ICP Metals - 6010 (Full List) {Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth}, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc}; Mercury - 7471 - (CV)
(4) VOA - 8260A (TCL) {1,1,1-Trichloroethane, 1,1,2,2-Tetrachloroethane, 1,1,2-Trichloroethane, 1,1-Dichloroethane, 1,1-Dichloroethene, 1,2-Dichloroethane, 1,2-Dichloropropane, 2-Butanone, 2-Hexanone, 4-Methyl-2-Pentanone, Acetone, Benzene, Bromodichloromethane, Bromoform, Bromomethane, Carbon disulfide, Carbon tetrachloride, Chlorobenzene, Chloroethane, Chloroform, Chloromethane, cis-1,2-Dichloroethylene, cis-1,3-Dichloropropene, Dibromochloromethane, Ethylbenzene, Methylene chloride, Styrene, Tetrachloroethene, Toluene, trans-1,3-Dichloro

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-136-761

Collector: L Stratton

Company Contact: JOAN KESSNER

Telephone No.: 375-4684

Project Coordinator: WEISS, RL

Price Code: 9K

Data Turnaround: 45 Days

Project Designation: Columbia River Component of the RCBRA - Sediment

Sampling Location: MOHR- 7 SD

SAF No.: RC-136

Ice Chest No.: WCH-08-012, 034, 053

Field Logbook No.: EL-1631-1

COA: DESCRC6520

Method of Shipment: FED EX

Shipped To: EBERLINE SERVICES [✓ LIONVILLE]

Offsite Property No.: N/A

Bill of Lading/Air Bill No.: 796313456383

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

Preservation	None	None	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	None
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	aG	aG	G	*
No. of Container(s)	1	1	1	1	1	1	1	1	1	1
Volume	1500g	100g	10g	10g	250g	250g	125g	250g	250g	1*
SAMPLE ANALYSIS	See item (1) in Special Instructions.	Carbon-14	Technetium-99	See item (2) in Special Instructions.	See item (3) in Special Instructions.	PCBs - 8082	Pesticides 8081	Semi-VOA - 8270A (TCL)	See item (4) in Special Instructions.	-

Sample No.	Matrix *	Sample Date	Sample Time										
J18103	OTHER SOLID	2/3/09	1300					X	X	X	X	X	

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
	2 3 09 /1630	RLB	2-3-09/1630
RLB	2/4/09 0830	B Woodward	2/4/09 0830
B Woodward	2/4/09 1130	FedEx	2/4/09 1130
FedEx	2-5-09 0915		2-5-09 0915

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) {Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238}

(2) Strontium-89,90 - Total Sr; Isotopic Thorium {Thorium-232}; Isotopic Uranium {Uranium-233/234, Uranium-235, Uranium-238}; Isotopic Plutonium

(3) ICP Metals - 6010 (Full List) {Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc}; Mercury - 7471 - (CV)

(4) VOA - 8260A (TCL) {1,1,1-Trichloroethane, 1,1,2,2-Tetrachloroethane, 1,1,2-Trichloroethane, 1,1-Dichloroethane, 1,1-Dichloroethene, 1,2-Dichloroethane, 1,2-Dichloropropane, 2-Butanone, 2-Hexanone, 4-Methyl-2-Pentanone, Acetone, Benzene, Bromodichloromethane, Bromoform, Bromomethane, Carbon disulfide, Carbon tetrachloride, Chlorobenzene, Chloroethane, Chloroform, Chloromethane, cis-1,2-Dichloroethylene, cis-1,3-Dichloropropene, Dibromochloromethane, Ethylbenzene, Methylene chloride, Styrene, Tetrachloroethene, Toluene, trans-1,2-Dichloroethylene

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

00000071

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

Collector BA	Company Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator WEISS, RL
Project Designation Columbia River Component of the RCBRA - Sediment	Sampling Location WP-1SD		SAF No. RC-110
Ice Chest No. WCH-08-012, 034, 053	Field Logbook No. EL-1637-1	COA BFSCRC6520	Method of Shipment FED EX
Shipped To EBERLINE SERVICES [✓ LIONVILLE]	Offsite Property No. N/A		Bill of Lading/Air Bill No. 796813456383

Price Code **9K**

Data Turnaround **45 Days**

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

Preservation	None	None	None	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C
Type of Container	G/P	G/P	G/P	G/P	G/P	G/P	aG	aG	aG	G
No. of Container(s)	1	1	1	1	1	1	1	1	1	1
Volume	1500g	100g	100g	10g	10g	250g	250g	120g	250g	250g
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Tritium - H3	Technetium-99	See item (2) in Special Instructions	See item (3) in Special Instructions	PCBs - 8082	Pesticides - 8081	Semi-VOA - 8270A (TCL)	See item (4) in Special Instructions

Sample No.	Matrix *	Sample Date	Sample Time										
J17V87	OTHER SOLID	2/3/09	1245						X	X	X	X	X

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab

CHAIN OF POSSESSION

Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
B. L. BH...	2/3/09 1700	Fx A	2/3/09 1700
R F A	2/4/09 0830	B Woodward	2/4/09 0830
B Woodward	2/4/09 1130	FedEx	2/4/09 1130
FedEx	2-5-09 09:15		2-5-09 0915

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) [Americium-241, Antimony-125, Beryllium-7, Cerium-144, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238]
(2) Strontium-89,90 -- Total Sr; Isotopic Thorium [Thorium-232]; Isotopic Uranium [Uranium-233/234, Uranium-235, Uranium-238]; Isotopic Plutonium
(3) ICP Metals - 6010 (Full List) [Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc]; Mercury - 7471 - (CV)
(4) VOA - 8260A (TCL) [1,1,1-Trichloroethane, 1,1,2,2-Tetrachloroethane, 1,1,2-Trichloroethane, 1,1-Dichloroethane, 1,1-Dichloroethene, 1,2-Dichloroethane, 1,2-Dichloropropane, 2-Butanone, 2-Hexanone, 4-Methyl-2-Pentanone, Acetone, Benzene, Bromodichloromethane, Bromoform, Bromomethane, Carbon disulfide, Carbon tetrachloride, Chlorobenzene, Chloroethane, Chloroform, Chloromethane, cis-1,2-Dichloroethylene, cis-1,3-Dichloropropene, Dibromochloromethane,

Matrix *
S = Soil
SE = Sediment
SO = Solid
SL = Sludge
W = Water
O = Oil
A = Air
DS = Drum Solids
DL = Drum Liquids
T = Tissue
WI = Wipe
L = Liquid
V = Vegetation
X = Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

RC-116-10

000000825

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

Collector BM	Company Contact JOAN KESSNER Telephone No. 375-4688	Project Coordinator WEISS, RL	Price Code 9K Data Turnaround 45 Days
Project Designation Columbia River Component of the RCBRA - Sediment	Sampling Location WP-25D	SAF No. RC-116	
Ice Chest No. WCH-08-012, 034, 053	Field Logbook No. EL-1631/-1 COA BESCRC6520	Method of Shipment FED EX	
Shipped To EBERLINE SERVICES [✓ LIONVILLE]	Offsite Property No. N/A	Bill of Lading/Air Bill No. 796313456383	

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

000061

Preservation	None	None	None	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C
Type of Container	G/P	G/P	G/P	G/P	G/P	G/P	aG	aG	aG	G
No. of Container(s)	1	1	1	1	1	1	1	1	1	1
Volume	1500g	100g	100g	10g	10g	250g	250g	120g	250g	250g
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Tritium - H3	Technetium-99	See item (2) in Special Instructions	See item (3) in Special Instructions	PCBs - 8082	Pesticides 8081	Semi-VOA 8270A (TCL)	See item (4) in Special Instructions

Sample No	Matrix *	Sample Date	Sample Time										
J17V86	OTHER SOLID	2/3/09	1115						X	X	X	X	X

Sample unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab

CHAIN OF POSSESSION Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
BM / BA / AL	2/3/09 1200	E. A	2/3/09 1200
RefA	2/4/09 0830	B Woodward	2/4/09 0830
B Woodward	2/4/09 1130	Fed Ex	2/4/09 1130
Fed Ex	2-5-09 0915		2-5-09 0915

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) [Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238]
(2) Strontium-89,90 - Total Sr; Isotopic Thorium [Thorium-232]; Isotopic Uranium [Uranium-233/234, Uranium-235, Uranium-238]; Isotopic Plutonium
(3) ICP Metals - 6010 (Full List) [Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc]; Mercury - 7471 (CV)
(4) VOA - 8260A (TCL) [1,1,1-Trichloroethane, 1,1,2,2-Tetrachloroethane, 1,1,2-Trichloroethane, 1,1-Dichloroethane, 1,1-Dichloroethene, 1,2-Dichloroethane, 1,2-Dichloropropane, 2-Butanone, 2-Hexanone, 4-Methyl-2-Pentanone, Acetone, Benzene, Bromodichloromethane, Bromoform, Bromomethane, Carbon disulfide, Carbon tetrachloride, Chlorobenzene, Chloroethane, Chloroform, Chloromethane, cis-1,2-Dichloroethylene, cis-1,3-Dichloropropene, Dibromochloromethane, Ethylbenzene, Methylene chloride, Styrene, Tetrachloroethene, Toluene, trans-1,2-Dichloroethylene

Matrix *
S = Soil
SE = Sediment
SO = Solid
SL = Sludge
W = Water
O = Oil
A = Air
DS = Drum Solids
DL = Drum Liquids
T = Tissue
WI = Wipe
L = Liquid
V = Vegetation
X = Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-116-11

Page 1 of 1

Collector: BM	Company Contact: JOAN KESSNER	Telephone No.: 375-4688	Project Coordinator: WEISS, RL
Project Designation: Columbia River Component of the RCBRA - Sediment	Sampling Location: WP-15D		SAF No.: RC-116
Ice Chest No.: WCH-08-012, 034, 053	Field Logbook No.: EL-1631-4	COA: BESCRC6520	Method of Shipment: FED EX
Shipped To: EBERLINE SERVICES (LIONVILLE)	Offsite Property No.: N/A		Bill of Lading/Air Bill No.: 796313456383

Price Code: 9K

Data Turnaround: 45 Days

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

Preservation	None	None	None	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C
Type of Container	G/P	G/P	G/P	G/P	G/P	G/P	aG	aG	aG	G
No. of Container(s)	1	1	1	1	1	1	1	1	1	1
Volume	1500g	100g	100g	10g	10g	250g	250g	150g	250g	250g
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Tritium - H3	Technetium-99	See item (2) in Special Instructions	See item (3) in Special Instructions	PCBs - 8082	Pesticides - 8081	Semi-VOA - 8270A (TCL)	See item (4) in Special Instructions

Sample No.	Matrix *	Sample Date	Sample Time										
J17V89	OTHER SOLID	2/3/09	~~1220~~ 1315						X	X	X	X	X

CHAIN OF POSSESSION	Date/Time	Sign/Print Names	Date/Time
Relinquished By/Removed From: BM	2/3/09 1700	Received By/Stored In:	2/3/09 1700
Relinquished By/Removed From:	2/4/09 0830	Received By/Stored In: B Woodward	2/4/09 0830
Relinquished By/Removed From: B Woodward	2/4/09 1130	Received By/Stored In: FedEx	2/4/09 1130
Relinquished By/Removed From:	2-5-09 0915	Received By/Stored In:	2-5-09 0915
Relinquished By/Removed From:	Date/Time	Received By/Stored In:	Date/Time
Relinquished By/Removed From:	Date/Time	Received By/Stored In:	Date/Time

Sample unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) (Americium-241, Antimony-125, Beryllium-7, Cerium-144, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238)
(2) Strontium-89,90 -- Total Sr, Isotopic Thorium (Thorium-232), Isotopic Uranium (Uranium-233/234, Uranium-235, Uranium-238), Isotopic Plutonium
(3) ICP Metals - 6010 (Full List) (Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc); Mercury - 7471 - (CV)
(4) VOA - 8260A (TCL) (1,1,1-Trichloroethane, 1,1,2,2-Tetrachloroethane, 1,1,2-Trichloroethane, 1,1-Dichloroethane, 1,1-Dichloroethene, 1,2-Dichloroethane, 1,2-Dichloropropane, 2-Butanone, 2-Hexanone, 4-Methyl-2-Pentanone, Acetone, Benzene, Bromodichloromethane, Bromoform, Bromomethane, Carbon disulfide, Carbon tetrachloride, Chlorobenzene, Chloroethane, Chloroform, Chloromethane, cis-1,2-Dichloroethylene, cis-1,3-Dichloropropene, Dibromochloromethane,

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

RC-116-12

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

Collector BW

Company Contact JOAN KESSNER

Telephone No. 375-4688

Project Coordinator WEISS, RL

Price Code 9K

Data Turnaround 45 Days

Project Designation Columbia River Component of the RCBRA - Sediment

Sampling Location WP-45D

SAP No. RC-116

Ice Chest No. WCH 08-034,012,053

Field Logbook No. EL-1631/-1

COA HESCRC6510

Method of Shipment FED EX

Shipped To EBERLINE SERVICES [✓ LIONVILLE]

Offsite Property No. N/A

Bill of Lading/Air Bill No. 796313456383

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

0000653

			Preservation	None	None	None	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C
			Type of Container	G/P	G/P	G/P	G/P	G/P	G/P	aG	aG	aG	G
			No. of Container(s)	1	1	1	1	1	1	1	1	1	1
			Volume	1500g	100g	100g	10g	60g	250g	250g	120g	250g	250g
SAMPLE ANALYSIS				See item (1) in Special Instructions	Carbon-14	Tritium - H3	Technetium-99	See item (2) in Special Instructions	See item (3) in Special Instructions	PCBs - 8082	Pesticides - 8081	Semi VOA - 8270A (TCL)	See item (4) in Special Instructions
Sample No.	Matrix *	Sample Date	Sample Time										
J17V90	OTHER SOLID	2/3/09	1230						X	X	X	X	X

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
	2/3/09 1700	Fr A	2/3/09 1700
Ref A	2/4/09 0830	BWoodward	2/4/09 0830
BWoodward	2/4/09 1130	Fed Ex	2/4/09 1130
Fed Ex	2-5-09 0915		2-5-09 0915

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) {Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238}

(2) Strontium-89,90 - Total Sr; Isotopic Thorium {Thorium-232}, Isotopic Uranium {Uranium-233/234, Uranium-235, Uranium-238}, Isotopic Plutonium

(3) ICP Metals - 6010 (Full List) {Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc}; Mercury - 7471 - (CV)

(4) VOA - 8260A (TCL) {1,1,1-Trichloroethane, 1,1,2,2-Tetrachloroethane, 1,1,2-Trichloroethane, 1,1-Dichloroethane, 1,1-Dichloroethene, 1,2-Dichloroethane, 1,2-Dichloropropane, 2-Butanone, 2-Hexanone, 4-Methyl-2-Pentanone, Acetone, Benzene, Bromodichloromethane, Bromoform, Bromomethane, Carbon disulfide, Carbon tetrachloride, Chlorobenzene, Chloroethane, Chloroform, Chloromethane, cis-1,2-Dichloroethylene, cis-1,3-Dichloropropene, Dibromochloromethane,

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

000000079

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-116-13

Page 1 of 2

Collector: BM

Company Contact: JOAN KESSNER

Telephone No.: 375-4688

Project Coordinator: WEISS, RL

Price Code: 9K

Data Turnaround: 45 Days

Project Designation: Columbia River Component of the RCBRA - Sediment

Sampling Location: WP-SSD

SAF No.: RC-116

Ice Chest No.: WCH-08-012, 034, 053

Field Logbook No.: EL-1610-1

COA: BESCRC6520

Method of Shipment: FED EX

Shipped To: EBERLINE SERVICES [✓ LIONVILLE]

Offsite Property No.: N/A

Bill of Lading/Air Bill No.: 796313456383

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

Preservation	None	None	None	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C
Type of Container	G/P	G/P	G/P	G/P	G/P	G/P	aG	aG	aG	G
No. of Container(s)	1	1	1	1	1	1	1	1	1	1
Volume	1500g	100g	100g	10g	10g	250g	250g	120g	250g	250g
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Tritium - H3	Technetium-99	See item (2) in Special Instructions	See item (3) in Special Instructions	PCBs - 8082	Pesticides 8081	Semi-VOA - 8270A (TCL)	See item (4) in Special Instructions

Sample No.	Matrix *	Sample Date	Sample Time										
J17V91	OTHER SOLID	2/3/09	1400						X	X	X	X	X

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
BM L Bailey	2/3/09 1700	Fi A	2/3/09 1700
Fi A	2/4/09 0830	B Woodward	2/4/09 0830
B Woodward	2/4/09 1130	FedEx	2/4/09 1130
FedEx	2-5-09 0915		2-5-09 0915

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) {Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238}

(2) Strontium-89,90 - Total Sr; Isotopic Thorium {Thorium-232}; Isotopic Uranium {Uranium-233/234, Uranium-235, Uranium-238}; Isotopic Plutonium

(3) ICP Metals - 6010 (Full List) {Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc}; Mercury - 7471 - (CV)

(4) VOA - 8260A (TCL) {1,1,1-Trichloroethane, 1,1,2,2-Tetrachloroethane, 1,1,2-Trichloroethane, 1,1-Dichloroethane, 1,1-Dichloroethene, 1,2-Dichloroethane, 1,2-Dichloropropane, 2-Butanone, 2-Hexanone, 4-Methyl-2-Pentanone, Acetone, Benzene, Bromodichloromethane, Bromoform, Bromomethane, Carbon disulfide, Carbon tetrachloride, Chlorobenzene, Chloroethane, Chloroform, Chloromethane, cis-1,2-Dichloroethylene, cis-1,3-Dichloropropene, Dibromochloromethane, Ethylbenzene, Methylene chloride, Styrene, Tetrachloroethene, Toluene, trans-1,2-Dichloroethylene

Matrix *

S = Soil
SE = Sediment
SO = Solid
SL = Sludge
W = Water
O = Oil
A = Air
DS = Drum Solids
DL = Drum Liquids
T = Tissue
WI = Wipe
L = Liquid
V = Vegetation
X = Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

RC-116-14

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

Collector: B-4	Company Contact: JOAN KESSNER · Telephone No.: 375-4688	Project Coordinator: WEISS, RL	Price Code: 9K · Data Turnaround: 45 Days
Project Designation: Columbia River Component of the RCBRA - Sediment	Sampling Location: WP-65D	SAF No.: RC-116	
Ice Chest No.: WCH-08-012, 034, 053	Field Logbook No.: EL-1631-1 · COA: BESCRC6520	Method of Shipment: FED EX	
Shipped To: EBERLINE SERVICES / [✓ DONVILLE]	Offsite Property No.: N/A	Bill of Lading/Air Bill No.: 796313456383	

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

S90000

			Preservation	None	None	None	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C
			Type of Container	G/P	G/P	G/P	G/P	G/P	G/P	aG	aG	aG	G
			No. of Container(s)	1	1	1	1	1	1	1	1	1	1
			Volume	1500g	100g	100g	10g	10g	250g	250g	120g	250g	250g
SAMPLE ANALYSIS				See item (1) in Special Instructions	Carbon-14	Tritium - H3	Technetium-99	See item (2) in Special Instructions	See item (3) in Special Instructions	PCBs - 8082	Pesticides 8081	Semi-VOA - 8270A (TCL)	See item (4) in Special Instructions
Sample No.	Matrix *	Sample Date	Sample Time										
J17V92	OTHER SOLID	2/2/09	1430						X	X	X	X	X

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab

CHAIN OF POSSESSION	Date/Time	Sign/Print Names	Date/Time
Relinquished By/Removed From: B Mayer BMYL	2/3/05 1700	Received By/Stored In: Fix A	2/3/09 1700
Relinquished By/Removed From: Rif A	2/4/09 0830	Received By/Stored In: B Woodward	2/4/09 0830
Relinquished By/Removed From: B Woodward	2/4/09 1130	Received By/Stored In: Fed Ex	2/4/09 1130
Relinquished By/Removed From: Fed Ex	2/5/09 0915	Received By/Stored In:	2/5/09 0915
Relinquished By/Removed From:		Received By/Stored In:	
Relinquished By/Removed From:		Received By/Stored In:	

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) [Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238]
(2) Strontium-89,90 – Total Sr; Isotopic Thorium (Thorium-232), Isotopic Uranium (Uranium-233/234, Uranium-235, Uranium-238); Isotopic Plutonium
(3) ICP Metals - 6010 (Full List) [Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc]; Mercury - 7471 - (CV)
(4) VOA - 8260A (TCL) [1,1,1-Trichloroethane, 1,1,2,2-Tetrachloroethane, 1,1,2-Trichloroethane, 1,1-Dichloroethane, 1,1-Dichloroethene, 1,2-Dichloroethane, 1,2-Dichloropropane, 2-Butanone, 2-Hexanone, 4-Methyl-2-Pentanone, Acetone, Benzene, Bromodichloromethane, Bromoform, Bromomethane, Carbon disulfide, Carbon tetrachloride, Chlorobenzene, Chloroethane, Chloroform, Chloromethane, cis-1,2-Dichloroethylene, cis-1,3-Dichloropropene, Dibromochloromethane, Ethylbenzene, Methylene chloride, Styrene, Tetrachloroethene, Toluene, trans-1,2-Dichloroethylene

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-116-82 Page 1 of 1

Collector	Company Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator WEISS, RL
Price Code 9K	Data Turnaround 45 Days		
Project Designation Columbia River Component of the RCBRA - Sediment	Sampling Location MSRA-45D		SAF No. RC-116
Ice Chest No. WCH-08-012, 034, 053	Field Logbook No. EL-1631-1	COA BPSCRC6520	Method of Shipment FED EX
Shipped To EBERLINE SERVICES ([illegible])	Offsite Property No. N/A		Bill of Lading/Air Bill No. 796313456383

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

Preservation		None	None	None	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C
Type of Container		G/P	G/P	G/P	G/P	G/P	G/P	aG	aG	aG	G
No. of Container(s)		1	1	1	1	1	1	1	1	1	1
Volume		1500g	100g	100g	10g	10g	250g	250g	120g	250g	250g
SAMPLE ANALYSIS		See item (1) in Special Instructions	Carbon-14	Tritium - H3	Technetium-99	See item (2) in Special Instructions	See item (3) in Special Instructions	PCBs - 8082	Pesticides - 8081	Semi-VOA - 8270A (TCL)	See item (4) in Special Instructions
Sample No.	Matrix *	Sample Date	Sample Time								
J17VP0	OTHER SOLID	2/3/09	1030						X	X	X	X	X

Samples unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
	2-3-09 / 1630	RJB	2-3-09 1650
RJB	2/4/09 0830	BW Woodward	2/4/09 0830
BW Woodward	2/4/09 1130	FedEx	2/4/09 1130
FedEx	2-5-09 0915		2-5-09 0915

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) (Americium-241, Antimony-125, Beryllium-7, Cerium-144, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238)
(2) Strontium-89,90 -- Total Sr; Isotopic Thorium (Thorium-232), Isotopic Uranium (Uranium-233/234, Uranium-235, Uranium-238), Isotopic Plutonium
(3) ICP Metals - 6010 (Full List) (Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc); Mercury - 7471 - (CV)
(4) VOA - 8260A (TCL) (1,1,1-Trichloroethane, 1,1,2,2-Tetrachloroethane, 1,1,2-Trichloroethane, 1,1-Dichloroethane, 1,1-Dichloroethene, 1,2-Dichloroethane, 1,2-Dichloropropane, 2-Butanone, 2-Hexanone, 4-Methyl-2-Pentanone, Acetone, Benzene, Bromodichloromethane, Bromoform, Bromomethane, Carbon disulfide, Carbon tetrachloride, Chlorobenzene, Chloroethane, Chloroform, Chloromethane, cis-1,2-Dichloroethylene, cis-1,3-Dichloropropene, Dibromochloromethane,

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

000000685

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-116-87 | Page 1 of 1

Collector: BM

Company Contact: JOAN KESSNER

Telephone No.: 373-4688

Project Coordinator: WEISS, RL

Price Code: 9K

Data Turnaround: 45 Days

Project Designation: Columbia River Component of the RCBRA - Sediment

Sampling Location: ~~BM 2B~~ ~~BM-15D~~ WP-15D

SAF No.: RC-116

Ice Chest No.: WCH-NR-012,034,053

Field Logbook No.: EL-1633/-1

COA: BESCRC6520

Method of Shipment: FED EX

Shipped To: EBERLINE SERVICES (LIONVILLE)

Offsite Property No.: N/A

Bill of Lading/Air Bill No.: 796313456383

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

000067

Preservation	None	None	None	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C
Type of Container	G/P	G/P	G/P	G/P	G/P	G/P	aG	aG	aG	G
No. of Container(s)	1	1	1	1	1	1	1	1	1	1
Volume	1500g	100g	100g	10g	10g	250g	250g	120g	250g	250g
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Tritium - H3	Technetium-99	See item (2) in Special Instructions	See item (3) in Special Instructions	PCBs - 8082	Pesticides - 8081	Semi-VOA 8270A (TCL)	See item (4) in Special Instructions

Sample No.	Matrix *	Sample Date	Sample Time										
J17VP5	OTHER SOLID	2/3/09	~~945~~ 1025						X	X	X	X	X

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab.

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
BM / BM	2/3/09 1700	Fr A	2/3/09 1700
Ref A	2/4/09 0830	BWoodward	2/4/09 0830
BWoodward	2/4/09 1130	FedEx	2/4/09 1130
FedEx	2-5-09 0915		2-5-09 0915

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) (Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238)
(2) Strontium-89,90 – Total Sr, Isotopic Thorium (Thorium-232), Isotopic Uranium (Uranium-233/234, Uranium-235, Uranium-238), Isotopic Plutonium
(3) ICP Metals - 6010 (Full List) (Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc), Mercury - 7471 - (CV)
(4) VOA - 8260A (TCL) (1,1,1-Trichloroethane, 1,1,2,2-Tetrachloroethane, 1,1,2-Trichloroethane, 1,1-Dichloroethane, 1,1-Dichloroethene, 1,2-Dichloroethane, 1,2-Dichloropropane, 2-Butanone, 2-Hexanone, 4-Methyl-2-Pentanone, Acetone, Benzene, Bromodichloromethane, Bromoform, Bromomethane, Carbon disulfide, Carbon tetrachloride, Chlorobenzene, Chloroethane, Chloroform, Chloromethane, cis-1,2-Dichloroethylene, cis-1,3-Dichloropropene, Dibromochloromethane, Ethylbenzene, Methylene chloride, Styrene, Tetrachloroethene, Toluene, trans-1,2-Dichloroethylene

Matrix *
S = Soil
SE = Sediment
SO = Solid
SL = Sludge
W = Water
O = Oil
A = Air
DS = Drum Solids
DL = Drum Liquids
T = Tissue
WI = Wipe
L = Liquid
V = Vegetation
X = Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

0090000087

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-116-720 Page 1 of 2

Collector: BA

Company Contact: JOAN KESSNER

Telephone No.: 375-4680

Project Coordinator: WEISS, RL

Price Code: 9K

Data Turnaround: 45 Days

Project Designation: Columbia River Component of the RCBRA - Sediment

Sampling Location: PM- / SD

SAF No.: RC-116

Ice Chest No.: WCH-08-012, 034, 053

Field Logbook No.: EL-1630-1

COA: BESCRC6520

Method of Shipment: FED EX

Shipped To: EBERLINE SERVICES/ LIONVILLE

Offsite Property No.: N/A

Bill of Lading/Air Bill No.: 796313456385

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

0000068

			Preservation	[illegible]	[illegible]	[illegible]	[illegible]	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	[illegible]
			Type of Container	G/P	G/P	G/P	G/P	G/P	aG	aG	aG	G	[illegible]
			No. of Container(s)	1	1	1	1	1	1	1	1	1	1
			Volume	1500g	100g	10g	10g	250g	250g	125g	250g	250g	[illegible]
SAMPLE ANALYSIS				See item (1) in Special Instructions	Carbon-14	Technetium-99	See item (2) in Special Instructions	See item (3) in Special Instructions	PCBs - 8082	Pesticides - 8081	Semi-VOA - 8270A (TCL)	See item (4) in Special Instructions	-
Sample No	Matrix *	Sample Date	Sample Time										
1B0W8	OTHER SOLID	2/2/09	1130					X	X	X	X	X	

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
BA M... B...	2/2/09 1125	[illegible]	2/2/09 1125
ECG A	2/4/09 0830	D Hellberg	2/4/09 0830
D Hellberg	2/4/09 1130	Fedex	2/4/09 1130
Fed Ex	2-5-09 0915	[illegible]	2-5-09 0915

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) [Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238]
(2) Strontium-89,90 – Total Sr; Isotopic Thorium [Thorium-232]; Isotopic Uranium {Uranium-233/234, Uranium-235, Uranium-238}; Isotopic Plutonium
(3) ICP Metals - 6010 (Full List) {Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc}; Mercury - 7471 - (CV)
(4) VOA - 8260A (TCL) {1,1,1-Trichloroethane, 1,1,2,2-Tetrachloroethane, 1,1,2-Trichloroethane, 1,1-Dichloroethane, 1,1-Dichloroethene, 1,2-Dichloroethane, 1,2-Dichloropropane, 2-Butanone, 2-Hexanone, 4-Methyl-2-Pentanone, Acetone, Benzene, Bromodichloromethane, Bromoform, Bromomethane, Carbon disulfide, Carbon tetrachloride, Chlorobenzene, Chloroethane, Chloroform, Chloromethane, cis-1,2-Dichloroethylene, cis-1,3-Dichloropropene, Dibromochloromethane, Ethylbenzene, Methylene chloride, Styrene, Tetrachloroethene, Toluene, trans-1,2-Dichloroethylene

Matrix *
S = Soil
SE = Sediment
SO = Solid
SL = Sludge
W = Water
O = Oil
A = Air
DS = Drum Solids
DL = Drum Liquids
T = Tissue
WI = Wipe
L = Liquid
V = Vegetation
X = Other

LABORATORY SECTION	Received By		Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method		Disposed By	Date/Time

RC-116-72?

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

ollector BN	Company Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator WEISS, RL	Price Code 9K
roject Designation Columbia River Component of the RCBRA - Sediment	Sampling Location PM 2 SD		SAF No. RC-116	Data Turnaround 45 Days
e Chest No. WCH-08-012, 034, 053	Field Logbook No. EL-1631-1	COA 8ESCRC6520	Method of Shipment FED EX	
hipped To EBERLINE SERVICES (IONVILLE)	Offsite Property No. N/A		Bill of Lading/Air Bill No. 7963456383	

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

Preservation	None	None	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	None
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	aG	aG	G	-
No. of Container(s)	1	1	1	1	1	1	1	1	1	1
Volume	1500g	100g	10g	10g	250g	250g	125g	250g	250g	1?
SAMPLE ANALYSIS	See note (1) in Special Instructions	Carbon-14	Technetium-99	See note (2) in Special Instructions	See note (3) in Special Instructions	PCBs - 8082	Pesticides - 8081	Semi VOA - 8270A (TCL)	See note (4) in Special Instructions	-

Sample No.	Matrix *	Sample Date	Sample Time										
180W9	OTHER SOLID	2/2/09	1230					X	X	X	X	X	

Sample unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Seth ...	2/2/09 1135	Eric A	2/2/09 1135
Eric A	2/4/09 0830	D Heidelberg	2/4/09 0850
D Heidelberg	2/4/09 1130	FedEx	2/4/09 1130
	2-5-09 0915		2-5-09 0915

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) {Americium-241, Antimony-125, Beryllium-7, Cerium-144, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238}

(2) Strontium-89,90 – Total Sr; Isotopic Thorium {Thorium-232}; Isotopic Uranium {Uranium-233/234, Uranium-235, Uranium-238}; Isotopic Plutonium

(3) ICP Metals - 6010 (Full List) {Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc}, Mercury - 7471 - (CV)

(4) VOA - 8260A (TCL) {1,1,1-Trichloroethane, 1,1,2,2-Tetrachloroethane, 1,1,2-Trichloroethane, 1,1-Dichloroethane, 1,1-Dichloroethene, 1,2-Dichloroethane, 1,2-Dichloropropane, 2-Butanone, 2-Hexanone, 4-Methyl-2-Pentanone, Acetone, Benzene, Bromodichloromethane, Bromoform, Bromomethane, Carbon disulfide, Carbon tetrachloride, Chlorobenzene, Chloroethane, Chloroform, Chloromethane, cis-1,2-Dichloroethylene, cis-1,3-Dichloropropene, Dibromochloromethane, Ethylbenzene, Methylene chloride, Styrene, Tetrachloroethene, Toluene, trans-1,2-Dichloroeth

Matrix *

S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-116-322

Collector		Company Contact: JOAN KESSNER	Telephone No.: 373-4684
Project Coordinator: WEISS, RL	Price Code: 9K	Data Turnaround: 45 Days	
Project Designation: Columbia River Component of the RCBRA - Sediment		Sampling Location: TRIP BLANK	SAF No.: RC-116
Ice Chest No.: WCH-08-034, 012, 053		Field Logbook No.: EL-1631/-1	COA: 1ESCRC6520
Method of Shipment: FED EX		Offsite Property No.: N/A	Bill of Lading/Air Bill No.: 796313456383

Shipped To: EBERLINE SERVICES/ [✓ LIONVILLE]

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

0200070

Preservation	Cool 4C
Type of Container	G
No. of Container(s)	1
Volume	250g

SAMPLE ANALYSIS: See item (1) in Special Instructions.

Sample No.	Matrix *	Sample Date	Sample Time	See item (1) in Special Instructions
J17W10	OTHER SOLID	2/3/09	715	X

CHAIN OF POSSESSION

Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
BGM	2/3/09 1700		2/3/09 1700
	2/4/09 0830	BWoodward	2/4/09 0830
BWoodward	2/4/08 1130	FedEx	2/4/09 1130
	2-5-09 0915		2-5-09 0915

SPECIAL INSTRUCTIONS

(1) VOA - 8260A (TCL) {1,1,1-Trichloroethane, 1,1,2,2-Tetrachloroethane, 1,1,2-Trichloroethane, 1,1-Dichloroethane, 1,1-Dichloroethene, 1,2-Dichloroethane, 1,2-Dichloropropane, 2-Butanone, 2-Hexanone, 4-Methyl-2-Pentanone, Acetone, Benzene, Bromodichloromethane, Bromoform, Bromomethane, Carbon disulfide, Carbon tetrachloride, Chlorobenzene, Chloroethane, Chloroform, Chloromethane, cis-1,2-Dichloroethylene, cis-1,3-Dichloropropene, Dibromochloromethane, Ethylbenzene, Methylene chloride, Styrene, Tetrachloroethene, Toluene, trans-1,2-Dichloroethylene, trans-1,3-Dichloropropene, Trichloroethene, Vinyl chloride, Xylenes (total)}

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab.

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-116-126

Collector L Smith/...

Project Designation
Columbia River Component of the RCBRA - Sediment

Ice Chest No. WCH-08-012, 034, 053

Shipped To
EBERLINE SERVICES (LIONVILLE)

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

Company Contact
JOAN KESSNER

Telephone No.
375-4688

Sampling Location
TRIP BLANK

Field Logbook No.
EL 1631-1

COA
BESCRC6520

Offsite Property No.
N/A

Project Coordinator
WEISS, RL

SAF No.
RC-116

Price Code 9K

Data Turnaround
45 Days

Method of Shipment
FED EX

Bill of Lading/Air Bill No. 796313456383

1200000

Preservation	Cool 4C											
Type of Container	G											
No. of Container(s)	1											
Volume	250g											
SAMPLE ANALYSIS	See item (1) in Special Instructions											

Sample No	Matrix *	Sample Date	Sample Time												
J17W14	OTHER SOLID	1/3/09	0730	X											

CHAIN OF POSSESSION Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
	2-3-09 / 1630	Ref B	2 3 09 / 1630
Ref B	2/4/09 0830	B Woodward	2/4/09 0830
B Woodward	2/4/09 1130	Fed Ex	2/4/09 1130
Fed Ex	2-5-09 0915		2-5-09 0915

SPECIAL INSTRUCTIONS

(1) VOA - 8260A (TCL) {1,1,1-Trichloroethane, 1,1,2,2-Tetrachloroethane, 1,1,2-Trichloroethane, 1,1-Dichloroethane, 1,1-Dichloroethene, 1,2-Dichloroethane, 1,2-Dichloropropane, 2-Butanone, 2-Hexanone, 4-Methyl-2-Pentanone, Acetone, Benzene, Bromodichloromethane, Bromoform, Bromomethane, Carbon disulfide, Carbon tetrachloride, Chlorobenzene, Chloroethane, Chloroform, Chloromethane, cis-1,2-Dichloroethylene, cis-1,3-Dichloropropene, Dibromochloromethane, Ethylbenzene, Methylene chloride, Styrene, Tetrachloroethene, Toluene, trans-1,2-Dichloroethylene, trans-1,3-Dichloropropene, Trichloroethene, Vinyl chloride, Xylenes (total)}

Samples unavailable to remove samples from controlled storage. Shipper removing samples from storage location taking custody of samples for shipment to lab

Matrix *
S = Soil
SE = Sediment
SO = Solid
SL = Sludge
W = Water
O = Oil
A = Air
DS = Drum Solids
DL = Drum Liquids
T = Tissue
WI = Wipe
L = Liquid
V = Vegetation
X = Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-116-126

llector L S[illegible]

Company Contact JOAN KESSNER

Telephone No. 375-4688

Project Coordinator WEISS, RL

Price Code 9K

Data Turnaround 45 Days

00080095

oject Designation Columbia River Component of the RCBRA - Sediment

Sampling Location TRIP BLANK

SAF No. RC-116

e Chest No. WCH-08-012, 034, 053

Field Logbook No. EL-1631-1

COA BESCRC6520

Method of Shipment FED EX

Offsite Property No. N/A

Bill of Lading/Air Bill No. 796313456383

hipped To EBERLINE SERVICES [✓ LIONVILLE]

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

2270100

Preservation	Cool 4C
Type of Container	G
No. of Container(s)	1
Volume	250g
SAMPLE ANALYSIS	See item (1) in Special Instructions

Sample No.	Matrix *	Sample Date	Sample Time	
J17W14	OTHER SOLID	2/3/09	0930	X

CHAIN OF POSSESSION

Sign/Print Names

Relinquished By/Removed From [illegible]	Date/Time 2-3-09 / 11:30	Received By/Stored In RB	Date/Time 2-3-09 / 1630
Relinquished By/Removed From RB	Date/Time 2/4/09 0830	Received By/Stored In B Woodward	Date/Time 2/4/09 0830
Relinquished By/Removed From B Woodward	Date/Time 2/4/09 1130	Received By/Stored In Fed Ex	Date/Time 2/4/09 1130
Relinquished By/Removed From Fed Ex	Date/Time 2-5-09 0915	Received By/Stored In	Date/Time 2-5-09 0915
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time

SPECIAL INSTRUCTIONS

(1) VOA - 8260A (TCL) {1,1,1-Trichloroethane, 1,1,2,2-Tetrachloroethane, 1,1,2-Trichloroethane, 1,1-Dichloroethane, 1,1-Dichloroethene, 1,2-Dichloroethane, 1,2-Dichloropropane, 2-Butanone, 2-Hexanone, 4-Methyl-2-Pentanone, Acetone, Benzene, Bromodichloromethane, Bromoform, Bromomethane, Carbon disulfide, Carbon tetrachloride, Chlorobenzene, Chloroethane, Chloroform, Chloromethane, cis-1,2-Dichloroethylene, cis-1,3-Dichloropropene, Dibromochloromethane, Ethylbenzene, Methylene chloride, Styrene, Tetrachloroethene, Toluene, trans-1,2-Dichloroethylene, trans-1,3-Dichloropropene, Trichloroethene, Vinyl chloride, Xylenes (total)}

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab.

Matrix *

S = Soil
SE = Sediment
SO = Solid
SL = Sludge
W = Water
O = Oil
A = Air
DS = Drum Solids
DL = Drum Liquids
T = Tissue
WI = Wipe
L = Liquid
V = Vegetation
X = Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Washington Closure Hanford	**CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST**		RC-116-122	Page 1 of 1
Collector B	**Company Contact** JOAN KESSNER	**Telephone No.** 375-4688	**Project Coordinator** WEISS, RL	**Price Code** 9K **Data Turnaround** 45 Days
Project Designation Columbia River Component of the RCBRA - Sediment	**Sampling Location** TRIP BLANK		**SAF No.** RC-116	
Ice Chest No. WCH- 08-034, 012, 053	**Field Logbook No.** EL-1631/-1	**COA** BESCRC6520	**Method of Shipment** FED EX	
Shipped To EBERLINE SERVICES [✓ LIONVILLE]	**Offsite Property No.** N/A		**Bill of Lading/Air Bill No.** 796313456383	

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

3200M00

Preservation	Cool 4C
Type of Container	G
No. of Container(s)	1
Volume	250g
SAMPLE ANALYSIS	See item (1) in Special Instructions

Sample No.	Matrix *	Sample Date	Sample Time	
J17W10	OTHER SOLID	2/3/09	715	X

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
B May B May	2/3/09 1700	Fri A	2/3/09 1700
K A	2/4/09 0830	B Woodward	2/4/09 0830
B Woodward	2/4/08 1130	FedEx	2/4/09 1130
FedEx	2-5-09 0815		2-5-09 0815

SPECIAL INSTRUCTIONS

(1) VOA - 8260A (TCL) {1,1,1-Trichloroethane, 1,1,2,2-Tetrachloroethane, 1,1,2-Trichloroethane, 1,1-Dichloroethane, 1,1-Dichloroethene, 1,2-Dichloroethane, 1,2-Dichloropropane, 2-Butanone, 2-Hexanone, 4-Methyl-2-Pentanone, Acetone, Benzene, Bromodichloromethane, Bromoform, Bromomethane, Carbon disulfide, Carbon tetrachloride, Chlorobenzene, Chloroethane, Chloroform, Chloromethane, cis-1,2-Dichloroethylene, cis-1,3-Dichloropropene, Dibromochloromethane, Ethylbenzene, Methylene chloride, Styrene, Tetrachloroethene, Toluene, trans-1,2-Dichloroethylene, trans-1,3-Dichloropropene, Trichloroethene, Vinyl chloride, Xylenes (total)}

Sampler unavailable to remove samples
from controlled storage. Shipper removed
samples from storage location taking custody
of samples for shipment to lab

Matrix *

S = Soil
SE = Sediment
SO = Solid
SL = Sludge
W = Water
O = Oil
A = Air
DS = Drum Solids
DL = Drum Liquids
T = Tissue
WI = Wipe
L = Liquid
V = Vegetation
X = Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH EE-011

Appendix 5

Data Validation Supporting Documentation

GC/MS ORGANIC DATA VALIDATION CHECKLIST

VALIDATION LEVEL:	A	B	[✓ C]	D	E

PROJECT: RCBRA

DATA PACKAGE: K1525

VALIDATOR: ELR

LAB: LLT

DATE: 11/19/07

SDG: K1525

ANALYSES PERFORMED

[✓ SW 846 8260]		SW-846 8260 (TCLP)	SW 846 8270		SW-846 8270 (TCLP)

SAMPLES/MATRIX

J18177 J18178 J18179 J18180 J18181 J18182

J18183 J17V87 J17V88 J17V89 J17V90 J17V91

J17V92 J17V80 J17V85 J180W8-A J180W9-A J17W10

J17W14 J17V44

solid

1. DATA PACKAGE COMPLETENESS AND CASE NARRATIVE

Technical verification documentation present? .... [✓ Yes] No N/A

Comments:

2. INSTRUMENT TUNING AND CALIBRATION (Levels D and E)

GC/MS tuning/performance check acceptable? .... Yes No [✓ N/A]

Initial calibrations acceptable? .... Yes No [✓ N/A]

Continuing calibrations acceptable? .... Yes No [✓ N/A]

Standards traceable? .... Yes No [✓ N/A]

Standards expired? .... Yes No [✓ N/A]

Calculation check acceptable? .... Yes No [✓ N/A]

Comments:

GC/MS ORGANIC DATA VALIDATION CHECKLIST

3. BLANKS (Levels B, C, D, and E)

Calibration blanks analyzed? (Levels D, E) .... Yes No [✓ N/A]

Calibration blank results acceptable? (Levels D, E) .... Yes No [✓ N/A]

Laboratory blanks analyzed? .... [✓ Yes] No N/A

Laboratory blank results acceptable? .... Yes [✓ No] N/A

Field/trip blanks analyzed? (Levels C, D, E) .... [✓ Yes] No N/A

Field/trip blank results acceptable? (Levels C, D, E) .... Yes [✓ No] N/A

Transcription/calculation errors? (Levels D, E) .... Yes No [✓ N/A]

Comments: (33) 95-85 - [illegible] [illegible] RAL or just U - methylene chloride

14, Y4+10 - FB - MC [illegible] in all

4. ACCURACY (Levels C, D, and E)

Surrogates/system monitoring compounds analyzed? .... [✓ Yes] No N/A

Surrogate/system monitoring compound recoveries acceptable? .... [✓ Yes] No N/A

Surrogates traceable? (Levels D, E) .... Yes No [✓ N/A]

Surrogates expired? (Levels D, E) .... Yes No [✓ N/A]

MS/MSD samples analyzed? .... [✓ Yes] No N/A

MS/MSD results acceptable? .... [✓ Yes] No N/A

MS/MSD standards NIST traceable? (Levels D, E) .... Yes No [✓ N/A]

MS/MSD standards? (Levels D, E) .... Yes No [✓ N/A]

LCS/BSS samples analyzed? .... [✓ Yes] No N/A

LCS/BSS results acceptable? .... [✓ Yes] No N/A

Standards traceable? (Levels D, E) .... Yes No [✓ N/A]

Standards expired? (Levels D, E) .... Yes No [✓ N/A]

Transcription/calculation errors? (Levels D, E) .... Yes No [✓ N/A]

Performance audit sample(s) analyzed? .... Yes [✓ No] N/A

Performance audit sample results acceptable? .... Yes No [✓ N/A]

Comments: No MS or MSD - 99, 00, 01, 02, 03, 87, 88, 89, 90, 91, 92, 90, 95 - [illegible] & 177

No PAS

GC/MS ORGANIC DATA VALIDATION CHECKLIST

5. PRECISION (Levels C, D, and E)

MS/MSD samples analyzed? .... [✓ Yes] No N/A

MS/MSD RPD values acceptable? .... [✓ Yes] No N/A

MS/MSD standards NIST traceable? (Levels D, E) .... Yes No [✓ N/A]

MS/MSD standards expired? (Levels D, E) .... Yes No [✓ N/A]

Field duplicate RPD values acceptable? .... [✓ Yes] No N/A

Field split RPD values acceptable? .... Yes No [✓ N/A]

Transcription/calculation errors? (Levels D, E) .... Yes No [✓ N/A]

Comments: (37) 99-95 – no MS/MSD – J all

6. SYSTEM PERFORMANCE (Levels D and E)

Internal standards analyzed? .... Yes No [✓ N/A]

Internal standard areas acceptable? .... Yes No [✓ N/A]

Internal standard retention times acceptable? .... Yes No [✓ N/A]

Standards traceable? .... Yes No [✓ N/A]

Standards expired? .... Yes No [✓ N/A]

Transcription/calculation errors? .... Yes No [✓ N/A]

Comments:

7. HOLDING TIMES (all levels)

Samples properly preserved? .... [✓ Yes] No N/A

Sample holding times acceptable? .... [✓ Yes] No N/A

Comments:

GC/MS ORGANIC DATA VALIDATION CHECKLIST

8. COMPOUND IDENTIFICATION, QUANTITATION, AND DETECTION LIMITS (all levels)

Compound identification acceptable? (Levels D, E) .... Yes No [✓ N/A]
Compound quantitation acceptable? (Levels D, E) .... Yes No [✓ N/A]
Results reported for all requested analyses? .... [✓ Yes] No N/A
Results supported in the raw data? (Levels D, E) .... Yes No [✓ N/A]
Samples properly prepared? (Levels D, E) .... Yes No [✓ N/A]
Laboratory properly identified and coded all TIC? (Levels D, E) .... Yes No [✓ N/A]
Detection limits meet RDL? .... Yes [✓ No] N/A
Transcription/calculation errors? (Levels D, E) .... Yes No [✓ N/A]

Comments Pb cont
134

9. SAMPLE CLEANUP (Levels D and E)

GPC cleanup performed? .... Yes No [✓ N/A]
GPC check performed? .... Yes No [✓ N/A]
GPC check recoveries acceptable? .... Yes No [✓ N/A]
GPC calibration performed? .... Yes No [✓ N/A]
GPC calibration check performed? .... Yes No [✓ N/A]
GPC calibration check retention times acceptable? .... Yes No [✓ N/A]
Check/calibration materials traceable? .... Yes No [✓ N/A]
Check/calibration materials Expired? .... Yes No [✓ N/A]
Analytical batch QC given similar cleanup? .... Yes No [✓ N/A]
Transcription/Calculation Errors? .... Yes No [✓ N/A]

Comments

Appendix 6

Additional Documentation Requested by Client

264 Welsh Pool Roa
Exton, PA 1934
Phone: 610-280-300
Fax: 610-280-304

WC-Hanford, Inc. 2620 Fermi Avenue Richland WA, 99354	Project: RC-116 Project Number: [none] Project Manager: Joan Kessner	Reported: 04/01/2009 14:13

Volatile Organic Compounds by SW846 8260B - Quality Control
Lionville Laboratory

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch L903233 - SW 5030B										
Blank (L903233-BLK1)				Prepared & Analyzed: 02/09/2009						
1,1,1-Trichloroethane	ND	5.00	ug/kg wet							
1,1,2,2-Tetrachloroethane	ND	5.00	"							
1,1,2-Trichloroethane	ND	5.00	"							
1,1-Dichloroethane	ND	5.00	"							
1,1-Dichloroethene	ND	5.00	"							
1,2-Dichloroethane	ND	6.00	"							
1,2-Dichloropropane	ND	5.00	"							
2-Butanone	ND	12.0	"							
2-Hexanone	ND	12.0	"							
4-Methyl-2-pentanone	ND	12.0	"							
Acetone	ND	12.0	"							
Benzene	ND	5.00	"							
Bromodichloromethane	ND	6.00	"							
Bromoform	ND	5.00	"							
Bromomethane	ND	10.0	"							
Carbon Disulfide	ND	5.00	"							
Carbon Tetrachloride	ND	5.00	"							
Chlorobenzene	ND	5.00	"							
Chloroethane	ND	10.0	"							
Chloroform	ND	5.00	"							
Chloromethane	ND	10.0	"							
cis-1,3-Dichloropropene	ND	5.00	"							
Dibromochloromethane	ND	5.00	"							
Ethylbenzene	ND	5.00	"							
Methylene Chloride	10.8	6.00	"							
Styrene	ND	5.00	"							
Tetrachloroethene	ND	5.00	"							
Toluene	ND	5.00	"							
trans-1,3-Dichloropropene	ND	5.00	"							
Trichloroethene	ND	5.00	"							
Vinyl chloride	ND	10.0	"							
Xylenes, total	ND	6.00	"							
cis-1,2-Dichloroethene	ND	5.00	"							
trans-1,2-Dichloroethene	ND	5.00	"							
Tentatively Identified Compound	0.00		"							
Surrogate: 1,2-Dichloroethane-d4	*44.8*		"	*50.000*		*90*	*65-131*			
Surrogate: Toluene-d8	*48.5*		"	*50.000*		*97*	*68-110*			

WC-Hanford, Inc. 2620 Fermi Avenue Richland WA, 99354	Project: RC-116 Project Number: [none] Project Manager: Joan Kessner	**Reported:** 04/01/2009 14:13

Volatile Organic Compounds by SW846 8260B - Quality Control
Lionville Laboratory

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch L903233 - SW 5030B										
Blank (L903233-BLK1)				Prepared & Analyzed: 02/09/2009						
Surrogate: 4-Bromofluorobenzene	*51.3*		*ug/kg wet*	*50.000*		*103*	*66-122*			
LCS (L903233-BS1)				Prepared & Analyzed: 02/09/2009						
1,1,1-Trichloroethane	51.3	5.00	ug/kg wet	50.000		103	60-140			
1,1,2,2-Tetrachloroethane	56.0	5.00	"	50.000		112	70-130			
1,1,2-Trichloroethane	52.5	5.00	"	50.000		105	70-130			
1,1-Dichloroethane	54.3	5.00	"	50.000		109	60-140			
1,1-Dichloroethene	55.5	5.00	"	50.000		111	60-130			
1,2-Dichloroethane	50.9	6.00	"	50.000		102	60-140			
1,2-Dichloropropane	52.8	5.00	"	50.000		106	70-130			
2-Butanone	80.3	12.0	"	50.000		161	20-200			
2-Hexanone	56.6	12.0	"	50.000		113	20-200			
4-Methyl-2-pentanone	46.0	12.0	"	50.000		92	50-150			
Acetone	90.2	12.0	"	50.000		180	20-200			
Benzene	53.2	5.00	"	50.000		106	70-130			
Bromodichloromethane	52.1	6.00	"	50.000		104	60-140			
Bromoform	49.8	5.00	"	50.000		100	60-140			
Bromomethane	46.5	10.0	"	50.000		93	50-180			
Carbon Disulfide	50.8	5.00	"	50.000		102	60-140			
Carbon Tetrachloride	50.4	5.00	"	50.000		101	60-140			
Chlorobenzene	50.9	5.00	"	50.000		102	70-130			
Chloroethane	45.1	10.0	"	50.000		90	50-180			
Chloroform	51.7	5.00	"	50.000		103	60-140			
Chloromethane	33.4	10.0	"	50.000		67	50-180			
cis-1,3-Dichloropropene	50.3	5.00	"	50.000		101	70-130			
Dibromochloromethane	52.6	5.00	"	50.000		105	70-130			
Ethylbenzene	50.8	5.00	"	50.000		102	70-130			
Methylene Chloride	49.3	6.00	"	50.000		99	50-180			
Styrene	49.8	5.00	"	50.000		100	70-130			
Tetrachloroethene	50.2	5.00	"	50.000		100	60-140			
Toluene	51.4	5.00	"	50.000		103	70-130			
trans-1,3-Dichloropropene	49.5	5.00	"	50.000		99	70-130			
Trichloroethene	51.9	5.00	"	50.000		104	70-130			
Vinyl chloride	44.7	10.0	"	50.000		89	50-140			
Xylenes, total	149	6.00	"	150.00		100	70-130			
cis-1,2-Dichloroethene	50.1	5.00	"	50.000		100	60-140			
trans-1,2-Dichloroethene	53.6	5.00	"	50.000		107	60-140			

LVL
LIONVILLE LABORATORY

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WC-Hanford, Inc.
2620 Fermi Avenue
Richland WA, 99354

Project: RC-116
Project Number: [none]
Project Manager: Joan Kessner

Reported:
04/01/2009 14:13

Volatile Organic Compounds by SW846 8260B - Quality Control
Lionville Laboratory

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch L903233 - SW 5030B										
LCS (L903233-BS1)				Prepared & Analyzed: 02/09/2009						
Surrogate: 1,2-Dichloroethane-d4	*47.6*		*ug/kg wet*	*50.0*		*95*	*65-131*			
Surrogate: Toluene-d8	*47.3*		*"*	*50.0*		*95*	*68-140*			
Surrogate: 4-Bromofluorobenzene	*47.8*		*"*	*50.0*		*96*	*66-127*			
Batch L903237 - SW 5030B										
Blank (L903237-BLK1)				Prepared & Analyzed: 02/10/2009						
1,1,1-Trichloroethane	ND	5.00	ug/kg wet							
1,1,2,2-Tetrachloroethane	ND	5.00	"							
1,1,2-Trichloroethane	ND	5.00	"							
1,1-Dichloroethane	ND	5.00	"							
1,1-Dichloroethene	ND	5.00	"							
1,2-Dichloroethane	ND	5.00	"							
1,2-Dichloropropane	ND	5.00	"							
2-Butanone	ND	12.0	"							
2-Hexanone	ND	12.0	"							
4-Methyl-2-pentanone	ND	12.9	"							
Acetone	ND	12.0	"							
Benzene	ND	5.00	"							
Bromodichloromethane	ND	6.00	"							
Bromoform	ND	5.00	"							
Bromomethane	ND	10.9	"							
Carbon Disulfide	ND	5.00	"							
Carbon Tetrachloride	ND	5.00	"							
Chlorobenzene	ND	5.00	"							
Chloroethane	ND	10.0	"							
Chloroform	ND	5.00	"							
Chloromethane	ND	10.0	"							
cis-1,3-Dichloropropene	ND	5.00	"							
Dibromochloromethane	ND	5.00	"							
Ethylbenzene	ND	5.00	"							
Methylene Chloride	ND	6.00	"							
Styrene	ND	5.00	"							
Tetrachloroethene	ND	5.00	"							
Toluene	ND	5.00	"							
trans-1,3-Dichloropropene	ND	5.00	"							
Trichloroethene	ND	5.00	"							
Vinyl chloride	ND	10.0	"							

WC-Hanford, Inc.
2620 Fermi Avenue
Richland WA, 99354

Project: RC-116
Project Number: [none]
Project Manager: Joan Kessner

Reported:
04/01/2009 14:13

Volatile Organic Compounds by SW846 8260B - Quality Control
Lionville Laboratory

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch L903237 - SW 5030B										
Blank (L903237-BLK1)				Prepared & Analyzed: 02/10/2009						
Xylenes, total	ND	6.00	ug/kg wet							
cis-1,2-Dichloroethene	ND	5.00	"							
trans-1,2-Dichloroethene	ND	5.00	"							
Tentatively Identified Compound	0.00		"							
Unknown 21.389	6.39		"							
Unknown 26.058	6.48		"							
Surrogate: 1,2-Dichloroethane-d4	*46.7*		"	*50.000*		*93*	*65-131*			
Surrogate: Toluene-d8	*47.7*		"	*50.000*		*95*	*68-140*			
Surrogate: 4-Bromofluorobenzene	*50.2*		"	*50.000*		*100*	*66-122*			
LCS (L903237-BS1)				Prepared & Analyzed: 02/10/2009						
1,1,1-Trichloroethane	53.8	5.00	ug/kg wet	50.000		108	60-140			
1,1,2,2-Tetrachloroethane	44.7	5.00	"	50.000		89	70-130			
1,1,2-Trichloroethane	47.2	5.00	"	50.000		94	70-130			
1,1-Dichloroethane	56.7	5.00	"	50.000		113	60-140			
1,1-Dichloroethene	60.8	5.00	"	50.000		122	60-130			
1,2-Dichloroethane	47.1	6.00	"	50.000		94	60-140			
1,2-Dichloropropane	54.1	5.00	"	50.000		108	70-130			
2-Butanone	61.1	12.0	"	50.000		122	20-200			
2-Hexanone	46.7	12.0	"	50.000		93	20-200			
4-Methyl-2-pentanone	37.4	12.0	"	50.000		75	50-150			
Acetone	72.2	12.0	"	50.000		144	70-200			
Benzene	55.6	5.00	"	50.000		111	70-130			
Bromodichloromethane	51.5	6.00	"	50.000		103	60-140			
Bromoform	40.6	5.00	"	50.000		81	60-140			
Bromomethane	48.6	10.0	"	50.000		97	30-180			
Carbon Disulfide	53.5	5.00	"	50.000		107	60-140			
Carbon Tetrachloride	55.4	5.00	"	50.000		111	60-140			
Chlorobenzene	53.0	5.00	"	50.000		106	70-130			
Chloroethane	45.3	10.0	"	50.000		91	50-180			
Chloroform	53.9	5.00	"	50.000		108	60-140			
Chloromethane	34.1	10.0	"	50.000		68	50-180			
cis-1,3-Dichloropropene	49.6	5.00	"	50.000		99	70-130			
Dibromochloromethane	49.1	5.00	"	50.000		98	70-130			
Ethylbenzene	53.0	5.00	"	50.000		106	70-130			
Methylene Chloride	50.0	6.00	"	50.000		100	50-180			
Styrene	51.7	5.00	"	50.000		103	70-130			
Tetrachloroethene	54.8	5.00	"	50.000		110	60-140			

WC-Hanford, Inc. 2620 Fermi Avenue Richland WA, 99354	Project: RC-116 Project Number: [none] Project Manager: Joan Kessner	Reported: 04/01/2009 14:13

Volatile Organic Compounds by SW846 8260B - Quality Control
Lionville Laboratory

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch L903237 - SW 5030B										
LCS (L903237-BS1)				Prepared & Analyzed: 02/10/2009						
Toluene	54.6	5.00	ug/kg wet	50.000		109	70-130			
trans-1,3-Dichloropropene	45.4	5.00	"	50.000		91	70-130			
Trichloroethene	54.8	5.00	"	50.000		110	70-130			
Vinyl chloride	44.3	10.0	"	50.000		89	50-180			
Xylenes, total	162	6.00	"	150.00		108	70-130			
cis-1,2-Dichloroethene	51.8	5.00	"	50.000		104	60-140			
trans-1,2-Dichloroethene	57.1	5.00	"	50.000		114	60-140			
Surrogate: 1,2-Dichloroethane-d4	*43.5*		"	*50.000*		*87*	*63-131*			
Surrogate: Toluene-d8	*48.8*		"	*50.000*		*98*	*68-140*			
Surrogate: 4-Bromofluorobenzene	*49.4*		"	*50.000*		*99*	*66-122*			
Matrix Spike (L903237-MS1)		Source: 0902012-06		Prepared & Analyzed: 02/10/2009						
1,1,1-Trichloroethane	58.7	5.00	ug/kg wet	50.000	ND	117	60-140			
1,1,2,2-Tetrachloroethane	88.2	5.00	"	50.000	ND	176	70-130	*		
1,1,2-Trichloroethane	68.4	5.00	"	50.000	ND	137	70-130	*		B 4/1/09
1,1-Dichloroethane	62.3	5.00	"	50.000	ND	124	60-140			
1,1-Dichloroethene	66.3	5.00	"	50.000	ND	133	60-130	*		
1,2-Dichloroethane	62.4	6.00	"	50.000	ND	125	60-140			
1,2-Dichloropropane	63.6	5.00	"	50.000	ND	127	70-130			
2-Butanone	79.8	12.0	"	50.000	ND	160	20-200			
2-Hexanone	59.7	12.0	"	50.000	ND	119	20-200			
4-Methyl-2-pentanone	63.5	12.0	"	50.000	ND	127	50-150			
Acetone	89.9	12.0	"	50.000	ND	180	20-200			
Benzene	62.5	5.00	"	50.000	ND	125	70-130			
Bromodichloromethane	59.3	6.00	"	50.000	ND	119	60-140			
Bromoform	58.5	5.00	"	50.000	ND	117	60-140			
Bromomethane	54.5	10.0	"	50.000	ND	109	50-180			
Carbon Disulfide	57.4	5.00	"	50.000	ND	115	60-140			
Carbon Tetrachloride	51.3	5.00	"	50.000	ND	103	60-140			
Chlorobenzene	58.7	5.00	"	50.000	ND	117	70-130			
Chloroethane	48.8	10.0	"	50.000	ND	98	50-180			
Chloroform	61.7	5.00	"	50.000	ND	123	60-140			
Chloromethane	40.2	10.0	"	50.000	ND	80	50-180			
cis-1,3-Dichloropropene	57.1	5.00	"	50.000	ND	114	70-130			
Dibromochloromethane	61.7	5.00	"	50.000	ND	123	70-130			
Ethylbenzene	54.5	5.00	"	50.000	ND	109	70-130			
Methylene Chloride	56.9	6.00	"	50.000	2.74	108	50-180			
Styrene	54.9	5.00	"	50.000	ND	110	70-130			

LVL
LIONVILLE LABORATORY

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WC-Hanford, Inc. 2620 Fermi Avenue Richland WA, 99354	Project: RC-116 Project Number: [none] Project Manager: Joan Kessner	Reported: 04/01/2009 14:13

Volatile Organic Compounds by SW846 8260B - Quality Control
Lionville Laboratory

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch L903237 - SW 5030B										
Matrix Spike (L903237-MS1)		**Source: 0902012-06**		**Prepared & Analyzed: 02/10/2009**						
Tetrachloroethene	53.4	5.00	ug/kg wet	50.000	ND	107	60-140			
Toluene	61.0	5.00	"	50.000	ND	122	70-130			
trans-1,3-Dichloropropene	57.9	5.00	"	50.000	ND	116	70-130			
Trichloroethene	59.2	5.00	"	50.000	ND	118	70-130			
Vinyl chloride	51.2	10.0	"	50.000	ND	102	50-180			
Xylenes, total	167	6.00	"	150.00	ND	111	70-130			
cis-1,2-Dichloroethene	58.9	5.00	"	50.000	ND	118	60-140			
trans-1,2-Dichloroethene	62.9	5.00	"	50.000	ND	126	60-140			
Surrogate: 1,2-Dichloroethane-d4	*52.5*		"	*50.000*		*105*	*61-131*			
Surrogate: Toluene-d8	*49.9*		"	*50.000*		*100*	*64-140*			
Surrogate: 4-Bromofluorobenzene	*54.9*		"	*50.000*		*110*	*66-122*			
Matrix Spike Dup (L903237-MSD1)		**Source: 0902012-06**		**Prepared & Analyzed: 02/10/2009**						
1,1,1-Trichloroethane	58.0	5.00	ug/kg wet	50.000	ND	116	60-140	1	20	
1,1,2,2-Tetrachloroethane	91.4	5.00	"	50.000	ND	183	70-130 *	4	20	
1,1,2-Trichloroethane	68.7	5.00	"	50.000	ND	137	70-130 *	0.5	20	
1,1-Dichloroethane	61.0	5.00	"	50.000	ND	122	60-140	2	20	
1,1-Dichloroethene	66.0	5.00	"	50.000	ND	132	60-130 *	0.4	20	
1,2-Dichloroethane	62.4	6.00	"	50.000	ND	125	60-140	0.06	20	
1,2-Dichloropropane	64.0	5.00	"	50.000	ND	128	70-130	0.6	20	
2-Butanone	77.8	12.0	"	50.000	ND	156	20-200	3	20	
2-Hexanone	62.7	12.0	"	50.000	ND	125	20-200	5	20	
4-Methyl-2-pentanone	66.3	12.0	"	50.000	ND	133	50-150	4	20	
Acetone	77.5	12.0	"	50.000	ND	155	20-200	15	20	
Benzene	61.9	5.00	"	50.000	ND	124	70-130	0.6	20	
Bromodichloromethane	56.1	6.00	"	50.000	ND	112	60-140	6	20	
Bromoform	58.3	5.00	"	50.000	ND	117	60-140	0.4	20	
Bromomethane	51.8	10.0	"	50.000	ND	104	50-180	5	20	
Carbon Disulfide	57.1	5.00	"	50.000	ND	114	60-140	0.4	20	
Carbon Tetrachloride	47.8	5.00	"	50.000	ND	96	60-140	7	20	
Chlorobenzene	58.4	5.00	"	50.000	ND	117	70-130	0.6	20	
Chloroethane	48.4	10.0	"	50.000	ND	97	50-180	0.9	20	
Chloroform	60.5	5.00	"	50.000	ND	121	60-140	2	20	
Chloromethane	41.4	10.0	"	50.000	ND	83	50-180	3	20	
cis-1,3-Dichloropropene	56.4	5.00	"	50.000	ND	113	70-130	1	20	
Dibromochloromethane	59.5	5.00	"	50.000	ND	119	70-130	4	20	
Ethylbenzene	53.1	5.00	"	50.000	ND	106	70-130	3	20	
Methylene Chloride	54.4	6.00	"	50.000	2.74	103	50-180	4	20	

WC-Hanford, Inc.
2620 Fermi Avenue
Richland WA, 99354

Project: RC-116
Project Number: (none)
Project Manager: Joan Kessner

Reported:
04/01/2009 14:13

Volatile Organic Compounds by SW846 8260B - Quality Control
Lionville Laboratory

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch L903237 - SW 5030B										
Matrix Spike Dup (L903237-MSD1)		**Source: 0902012-06**		**Prepared & Analyzed: 02/10/2009**						
Styrene	55.1	5.00	ug/kg wet	50.000	ND	110	70-130	0.4	20	
Tetrachloroethene	51.8	5.00	"	50.000	ND	104	60-140	3	20	
Toluene	60.2	5.00	"	50.000	ND	120	70-130	1	20	
trans-1,3-Dichloropropene	56.8	5.00	"	50.000	ND	114	70-130	2	20	
Trichloroethene	57.2	5.00	"	50.000	ND	114	70-130	3	20	
Vinyl chloride	49.9	10.0	"	50.000	ND	100	50-180	3	20	
Xylenes, total	166	6.00	"	150.00	ND	111	70-130	0.5	20	
cis-1,2-Dichloroethene	57.7	5.00	"	50.000	ND	115	60-140	2	20	
trans-1,2-Dichloroethene	62.2	5.00	"	50.000	ND	124	60-140	1	20	
Surrogate: 1,2-Dichloroethane-d4	53.9		"	*50.000*		*108*	*63-131*			
Surrogate: Toluene-d8	50.6		"	*50.000*		*101*	*68-140*			
Surrogate: 4-Bromofluorobenzene	54.3		"	*50.000*		*109*	*66-132*			

Date: 8 December 2009
To: Washington Closure Hanford Inc. (technical representative)
From: ELR Consulting
Project: Columbia River Component of the RCBRA -- Sediment
Subject: Radiochemistry - Data Package No K1525-EB

INTRODUCTION

This memo presents the results of data validation on Data Package No. K1525 prepared by Eberline Services (EB). A list of samples validated along with the analyses reported and the method of analysis is provided in the following table.

Sample ID	Sample Date	Media	Validation	Anaysis
J17V87	12/8/08	Solid	C	See note 1
J17V88	12/8/08	Solid	C	See note 1
J17V89	12/8/08	Solid	C	See note 1
J17V90	12/8/08	Solid	C	See note 1
J17V91	12/8/08	Solid	C	See note 1
J17V92	12/8/08	Solid	C	See note 1
J17VP0	12/8/08	Solid	C	See note 1
J17VP5	12/8/08	Solid	C	See note 1
J18177	12/8/08	Solid	C	See note 1
J18198	12/8/08	Solid	C	See note 1
J18199	12/8/08	Solid	C	See note 1
J181B0	12/8/08	Solid	C	See note 1
J181B1	12/8/08	Solid	C	See note 1
J181B2	12/8/08	Solid	C	See note 1
J181B3	12/8/08	Solid	C	See note 1

1 – Carbon-14, total strontium, technetium-99, alpha spectroscopy and gamma spectroscopy

Data validation was conducted in accordance with the Washington Closure Hanford (WCH) validation statement of work and the Remedial Investigation Work Plan for Hanford Site Releases to the Columbia River (DOE/RL-2008-11, Rev 0, September 2008). Appendices 1 through 6 provide the following information as indicated below:

Appendix 1. Glossary of Data Reporting Qualifiers
Appendix 2. Summary of Data Qualification
Appendix 3. Qualified Data Summary and Annotated Laboratory Reports
Appendix 4. Laboratory Narrative and Chain-of-Custody Documentation
Appendix 5. Data Validation Supporting Documentation
Appendix 6. Additional Data Requested by Client

DATA QUALITY PARAMETERS

- **Holding Times**

Holding times are calculated from Chain-of-Custody forms to determine the validity of the results. The maximum holding time for radiochemical analysis is 6 months.

All holding times were acceptable.

- **Preparation (Method) Blanks**

Laboratory Blanks

Blank samples are analyzed to determine if positive results are due to laboratory reagent, sample container, or detector contamination. If blank analysis results indicate the presence of an analyte above the minimum detectable activity (MDA), the following qualifiers are applied: All positive sample results less than five times the highest blank concentration are qualified as estimates and flagged "J"; sample results below the MDA are qualified as undetected and flagged "U"; sample results above the MDA and greater than five times the highest blank concentration are not qualified.

All blank results were acceptable.

Field (Equipment) Blank

No field blanks were submitted for analysis.

- **Accuracy**

Accuracy is evaluated from laboratory control sample (LCS) or blank spike sample (BSS) batch samples and spiked samples from the analytical batch. Measured activities are compared to the known added amounts. The acceptable LCS or BSS and matrix spike (MS) recovery range is 70-130%. In addition, samples may be spiked with a radiochemical tracer to assist in isolating the radioisotope of interest with the yield of the tracer being used in calculating sample activity. The acceptable range for tracer recovery is 20% to 105%. Spike sample results outside the above ranges result in associated sample results being qualified as estimates, or not qualified, depending on the activity of the individual sample. Results are rejected for LCS/BSS recoveries of less than 30% and tracer recoveries of less than 20%, and tracer recoveries of greater than 115% for detected results.

Due to the lack of an LCS analysis, all thorium-228 (aspec) and thorium-232 (aspec) results were qualified as estimates and flagged "J".

Due to the lack of a matrix spike analysis, all carbon-14 results were qualified as estimates and flagged "J".

All other accuracy results were acceptable.

Laboratory Duplicates

Analytical precision is expressed by the relative percent differences (RPD) between the recoveries of duplicate matrix spike analyses performed on a sample in the analytical batch. Precision may alternatively be assessed using unspiked duplicate analyses performed on a sample in the analytical batch. If both sample and replicate activities (concentrations) are greater than five times the contract required detection limit (CRDL) and the RPD is less than 30%, no qualification is required. If either activity (concentration) is less than five times the CRDL, the RPD control limit is less than or equal to two times the CRDL. If the RPD is outside the applicable control limit, associated results are qualified as estimated detects or estimated non-detects.

All duplicate results were acceptable.

Field Duplicates

One set of field duplicates (J18177/J17VP0) were submitted for analysis. Field duplicates are compared using the same criteria as for laboratory duplicates. All field duplicates results were acceptable.

Detection Levels

Reported analytical detection levels for undetected analytes are compared against the project RQLs to ensure that laboratory detection levels meet the required criteria. All analytes met the RQL.

Completeness

Data package No. K1525 was submitted for validation and verified for completeness. Completeness is based on the percentage of data determined to be valid (i.e., not rejected). The completion percentage was 100%.

MAJOR DEFICIENCIES

None found.

MINOR DEFICIENCIES

The following minor deficiency was noted:

- Due to the lack of an LCS analysis, all thorium-228 (aspec) and thorium-232 (aspec) results were qualified as estimates and flagged "J".
- Due to the lack of a matrix spike analysis, all carbon-14 results were qualified as estimates and flagged "J".

Data flagged "J" indicates that the associated concentration is an estimate, but under the WCH statement of work, the data may be usable for decision-making purposes. All other validated results are considered accurate within the standard error associated with the methods.

REFERENCES

Washington Closure Hanford Contract #S00W307A00 (March 2008), *Data Validation Services*.

DOE/RL-2008-11, Rev.0, *Remedial Investigation Work Plan for Hanford Site Releases to the Columbia River*, September 2008.

Appendix 1

Glossary of Data Reporting Qualifiers

Qualifiers which may be applied by data validators in compliance with the WCH statement of work are as follows

U - Indicates the compound or analyte was analyzed for and not detected above the minimum detectable activity (MDA) in the sample. The value reported is the sample result corrected for sample dilution and moisture content by the laboratory. The data is usable for decision making purposes.

UJ - Indicates the compound or analyte was analyzed for and not detected at concentrations above the minimum detectable activity (MDA) in the sample. Due to a minor QC deficiency identified during the data validation, the associated quantitation limit is an estimate, but is usable for decision making purposes.

J - Indicates the compound or analyte was analyzed for and detected. Due to a minor QC deficiency identified during the data validation, the associated concentration is an estimate, but the data are usable for decision-making purposes.

R - Indicates the compound or analyte was analyzed for, detected, and due to an identified major QC deficiency, the data are unusable.

UR - Indicates the compound or analyte was analyzed for and not detected in the sample. Additionally, the data is unusable due to an identified major QC deficiency.

Appendix 2

Summary of Data Qualification

RADIOCHEMISTRY DATA QUALIFICATION SUMMARY*

SDG: K1525	**REVIEWER:** ELR	**Project:** RCBRA	**QC Issue**
COMPOUND	QUALIFIER	SAMPLES AFFECTED	REASON
Thorium-228 Thorium-232	J	All	No LCS analysis
Carbon-14	J	All	No MS analysis

* - The Qualified Data Summary Table includes laboratory applied "U" qualifiers not specifically identified here. The laboratory applied "U" qualifiers are included to minimize misinterpretation of results contained in the table.

Appendix 3

Qualified Data Summary and Annotated Laboratory Reports

EBERLINE ANALYTICAL/RICHMOND

SAMPLE DELIVERY GROUP K1535

7299-001 J17V87

DATA SHEET

SDG	7299	Client/Case no	Hanford SDG K1535
Contact	N. Joseph Verville	Contract	No. 500W235A00
Lab sample id	R902010-01	Client sample id	J17V87
Dept sample id	7299-001	Location/Matrix	WP-15D SOLID
Received	02/05/09	Collected/Weight	02/03/09 09:45 1714 g
% solids	100.0	Custody/SAF No	RC-116-9 RC-116

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Carbon 14	14762-75-5	-0.159	2.4	4.09	50.0	UJ	C
Total Strontium	SR RAD	0.053	0.15	0.299	1.00	U	SR
Technetium 99	14133-76-7	0.077	0.15	0.316	15.0	U	TC
Thorium 228	14274-82-9	0.314	0.13	0.170	1.00	J	TH
Thorium 230	14269-63-7	0.035	0.11	0.184	1.00	U	TH
Thorium 232	TH-232	0.198	0.11	0.148	1.00	J	TH
Uranium 233/234	U 233/234	0.386	0.24	0.227	1.00		U
Uranium 235	15117-96-1	0	0.072	0.275	1.00	U	U
Uranium 238	U 238	0.238	0.18	0.227	1.00		U
Plutonium 238	13981-16-3	-0.028	0.17	0.338	1.00	U	PU
Plutonium 239/240	PU 239/240	0	0.055	0.210	1.00	U	PU
Potassium 40	13966-00-2	2.81	1.0	0.180			GAM
Cobalt 60	10198-40-0	U		0.020	0.050	U	GAM
Cesium 137	10045-97-3	0.080	0.021	0.023	0.100		GAM
Radium 226	13982-63-3	0.200	0.040	0.039	0.100		GAM
Radium 228	15262-20-1	0.255	0.083	0.075	0.200		GAM
Europium 152	14683-23-9	U		0.044	0.100	U	GAM
Europium 154	15585-10-1	U		0.059	0.100	U	GAM
Europium 155	14391-16-3	U		0.048	0.100	U	GAM
Thorium 228	14274-82-9	0.279	0.030	0.024			GAM
Thorium 232	TH-232	0.255	0.083	0.075			GAM
Uranium 235	15117-96-1	U		0.068		U	GAM
Uranium 238	U-238	U		2.21		U	GAM
Americium 241	14596-10-2	U		0.059		U	GAM
Beryllium 7	13966-02-4	U		0.142		U	GAM
Ruthenium 106	13967-48-1	U		0.150		U	GAM
Antimony 125	14234-35-6	U		0.041		U	GAM
Cesium 134	13967-70-9	U		0.033		U	GAM

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SAMPLE DELIVERY GROUP K1525

7299-002 J17V88

DATA SHEET

SDG	7299	Client/Case no	Hanford SDG K1525
Contact	N. Joseph Verville	Contract	No. 00W235A00
Lab sample id	R902010-02	Client sample id	J17V88
Dept sample id	7299-002	Location/Matrix	WP-2SD SOLID
Received	02/05/09	Collected/Weight	02/04/09 11:15 1971 g
% solids	100.0	Custody/SAF No	RC-116-10 RC_116

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Carbon 14	14762-75-5	0.113	2.3	3.86	50.0	U J	C
Total Strontium	SR-RAD	-0.091	0.14	0.318	1.00	U	SR
Technetium 99	14133-76-7	0.041	0.14	0.372	15.0	U	TC
Thorium 228	14274-82-9	0.396	0.27	0.316	1.00	J	TH
Thorium 230	14269-63-7	0.161	0.20	0.249	1.00	U	TH
Thorium 232	TH-232	0.261	0.20	0.249	1.00	J	TH
Uranium 233/234	U-233/234	0.410	0.20	0.267	1.00		U
Uranium 235	15117-96-1	0.041	0.083	0.317	1.00	U	U
Uranium 238	U-238	0.581	0.28	0.262	1.00		U
Plutonium 238	13981-16-3	-0.054	0.11	0.330	1.00	U	PU
Plutonium 239/240	PU-239/240	-0.027	0.054	0.205	1.00	U	PU
Potassium 40	13966-00-2	4.60	0.40	0.327			GAM
Cobalt 60	10198-40-0	U		0.021	0.050	U	GAM
Cesium 137	10045-97-3	0.108	0.023	0.025	0.100		GAM
Radium 226	13982-63-3	0.355	0.053	0.050	0.100		GAM
Radium 228	15262-20-1	0.374	0.085	0.089	0.200		GAM
Europium 152	14683-23-9	U		0.060	0.100	U	GAM
Europium 154	15585-10-1	U		0.076	0.100	U	GAM
Europium 155	14391-16-3	U		0.068	0.100	U	GAM
Thorium 228	14274-82-9	0.341	0.029	0.032			GAM
Thorium 232	TH-232	0.374	0.085	0.089			GAM
Uranium 235	15117-96-1	U		0.104		U	GAM
Uranium 238	U-238	U		2.70		U	GAM
Americium 241	14596-10-2	U		0.207		U	GAM
Beryllium 7	13966-02-4	U		0.180		U	GAM
Ruthenium 106	13967-48-1	U		0.152		U	GAM
Antimony 125	14234-35-6	U		0.056		U	GAM
Cerium 144	13967-70-9	U		0.028		U	GAM

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SAMPLE DELIVERY GROUP K1525

7299-003 J17V89

DATA SHEET

SDG	7299	Client/Case no	Hanford SDG K1525
Contact	N. Joseph Verville	Contract	No. 500N235A00
Lab sample id	R902010-03	Client sample id	J17V89
Dept sample id	7299-003	Location/Matrix	WP-15D SOLID
Received	02/05/09	Collected/Weight	02/03/09 13:15 1883 g
% solids	100.0	Custody/SAF No	RC-116-11 RC 116

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALIFIERS	TEST
Carbon 14	14762-75-5	1.34	2.4	3.93	50.0	U J	C
Total Strontium	SR-RAD	0.075	0.17	0.326	1.00	U	SR
Technetium 99	14133-76-7	0.153	0.14	0.360	15.0	U	TC
Thorium 228	14274-82-9	0.241	0.28	0.380	1.00	U J	TH
Thorium 230	14269-63-7	-0.068	0.14	0.260	1.00	U	TH
Thorium 232	TH-232	0.442	0.37	0.260	1.00	J	TH
Uranium 233/234	U-233/234	0.410	0.24	0.224	1.00		U
Uranium 235	15117-96-1	0	0.071	0.271	1.00	U	U
Uranium 238	U-238	0.528	0.24	0.224	1.00		U
Plutonium 238	13981-16-3	-0.055	0.17	0.370	1.00	U	PU
Plutonium 239/240	PU-239/240	0.028	0.055	0.211	1.00	U	PU
Potassium 40	13966-00-2	3.56	0.73	0.192			GAM
Cobalt 60	10198-40-0	U		0.021	0.050	U	GAM
Cesium 137	10045-97-3	0.095	0.025	0.025	0.100		GAM
Radium 226	13982-63-3	0.258	0.066	0.040	0.100		GAM
Radium 228	15262-20-1	0.297	0.094	0.087	0.200		GAM
Europium 152	14683-23-9	U		0.059	0.100	U	GAM
Europium 154	15585-10-1	U		0.066	0.100	U	GAM
Europium 155	14391-16-3	U		0.052	0.100	U	GAM
Thorium 228	14274-82-9	0.158	0.034	0.030			GAM
Thorium 232	TH-232	0.297	0.094	0.087			GAM
Uranium 235	15117-96-1	U		0.089		U	GAM
Uranium 238	U-238	U		7.46		U	GAM
Americium 241	14596-10-2	U		0.028		U	GAM
Beryllium 7	13966-02-4	U		0.166		U	GAM
Ruthenium 106	13967-48-1	U		0.176		U	GAM
Antimony 125	14234-35-6	U		0.046		U	GAM
Cesium 134	13967-70-9	U		0.028		U	GAM

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SAMPLE DELIVERY GROUP K1525

7299-004 J17V90

DATA SHEET

SDG	7299	Client/Case no	Hanford SDG K1525
Contact	N. Joseph Verville	Contract	No. 500W235A00
Lab sample id	R902010-04	Client sample id	J17V90
Dept sample id	7299-004	Location/Matrix	BF-4SD SOLID
Received	02/05/09	Collected/Weight	02/03/09 12:30 1830 g
% solids	100.0	Custody/SAF No	RC-116-12 RC-116

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Carbon 14	14762-75-5	2.71	2.6	4.22	50.0	U J	C
Total Strontium	SR-RAD	0.072	0.14	0.308	1.00	U	SR
Technetium 99	14133-76-7	0.128	0.21	0.357	15.0	U	TC
Thorium 228	14274-82-9	0.347	0.28	0.333	1.00	J	TH
Thorium 230	14269-63-7	0.101	0.21	0.263	1.00	U	TH
Thorium 232	TH-232	0.206	0.14	0.263	1.00	U J	TH
Uranium 233/234	U-233/234	0.484	0.30	0.285	1.00		U
Uranium 235	15117-96-1	0.045	0.090	0.345	1.00	U	U
Uranium 238	U 238	0.298	0.23	0.285	1.00		U
Plutonium 238	13981-16-3	-0.025	0.050	0.190	1.00	U	PU
Plutonium 239/240	PU-239/240	0	0.050	0.189	1.00	U	PU
Potassium 40	13966-00-2	1.94	0.30	0.180			GAM
Cobalt 60	10198-40-0	U		0.015	0.050	U	GAM
Cesium 137	10045-97-3	0.111	0.020	0.019	0.100		GAM
Radium 226	13982-63-3	0.287	0.036	0.029	0.100		GAM
Radium 228	15262-20-1	0.339	0.073	0.071	0.200		GAM
Europium 152	14683-23-9	U		0.042	0.100	U	GAM
Europium 154	15585-10-1	U		0.049	0.100	U	GAM
Europium 155	14391-16-3	U		0.053	0.100	U	GAM
Thorium 228	14274-82-9	0.354	0.023	0.021			GAM
Thorium 232	TH-232	0.339	0.073	0.071			GAM
Uranium 235	15117-96-1	U		0.076		U	GAM
Uranium 238	U-238	U		1.68		U	GAM
Americium 241	14596-10-2	U		0.025		U	GAM
Beryllium 7	13966-02-4	U		0.126		U	GAM
Ruthenium 106	13967-48-1	U		0.126		U	GAM
Antimony 125	14234-35-6	U		0.036		U	GAM
Cesium 134	13967-70-9	U		0.020		U	GAM

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SAMPLE DELIVERY GROUP K1525

7299-005 J17V91

DATA SHEET

SDG	7299	Client/Case no	Hanford SDG K1525
Contact	N. Joseph Verville	Contract	No. 600W235A00
Lab sample id	B202010-05	Client sample id	J17V91
Dept sample id	7299-005	Location/Matrix	WP-SSD SOLID
Received	02/05/09	Collected/Weight	02/03/09 14:00 1792 g
% solids	100.0	Custody/SAF No	RC-116-13 RC-116

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Carbon 14	14762-75-5	1.87	2.3	3.76	50.0	U J	C
Total Strontium	SR-RAD	-0.044	0.15	0.317	1.00	U	SR
Technetium 99	14133-76-7	0.140	0.13	0.345	15.0	U	TC
Thorium 228	14274-82-9	0.098	0.29	0.542	1.00	U J	TH
Thorium 230	14269-63-7	0.194	0.29	0.371	1.00	U	TH
Thorium 232	TH-232	0.146	0.19	0.371	1.00	U J	TH
Uranium 233/234	U-233/234	0.354	0.24	0.301	1.00		U
Uranium 235	15117-96-1	0	0.095	0.365	1.00	U	U
Uranium 238	U-238	0.433	0.24	0.301	1.00		U
Plutonium 238	13981-16-3	0.024	0.032	0.061	1.00	U	PU
Plutonium 239/240	PU-239/240	0.024	0.024	0.031	1.00	U	PU
Potassium 40	13966-00-2	3.98	0.70	0.167			GAM
Cobalt 60	10198-40-0	U		0.015	0.050	U	GAM
Cesium 137	10045-97-3	0.075	0.038	0.020	0.100		GAM
Radium 226	13982-63-3	0.294	0.038	0.031	0.100		GAM
Radium 228	15262-20-1	0.370	0.074	0.062	0.200		GAM
Europium 152	14683-23-9	U		0.047	0.100	U	GAM
Europium 154	15585-10-1	U		0.048	0.100	U	GAM
Europium 155	14391-16-3	U		0.050	0.100	U	GAM
Thorium 228	14274-82-9	0.317	0.025	0.023			GAM
Thorium 232	TH-232	0.370	0.074	0.062			GAM
Uranium 235	15117-96-1	U		0.087		U	GAM
Uranium 238	U-238	U		1.89		U	GAM
Americium 241	14596-10-2	U		0.110		U	GAM
Beryllium 7	13966-02-4	U		0.128		U	GAM
Ruthenium 106	13967-48-1	U		0.120		U	GAM
Antimony 125	14234-35-6	U		0.042		U	GAM
Cesium 134	13967-70-9	U		0.010		U	GAM

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SAMPLE DELIVERY GROUP K1525

7299-006 J17V92

DATA SHEET

SDG	7299	Client/Case no	Hanford SDG K1525
Contact	N. Joseph Verville	Contract	No. 800W235A00
Lab sample id	R702010-06	Client sample id	J17V92
Dept sample id	7299-006	Location/Matrix	WP 6SD SOLID
Received	02/05/09	Collected/Weight	02/03/09 14:30 1757 g
% solids	100.0	Custody/SAF No	RC-116-14 RC-116

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Carbon 14	14762-75-5	2.23	2.4	4.02	50.0	U J	C
Total Strontium	SR-RAD	0.106	0.17	0.321	1.00	U	SR
Technetium 99	14133-76-7	0.142	0.20	0.355	15.0	U	TC
Thorium 228	14274-82-9	0.250	0.12	0.164	1.00	J	TH
Thorium 230	14269-63-7	0.162	0.086	0.097	1.00		TH
Thorium 232	TH-232	0.209	0.067	0.053	1.00	J	TH
Uranium 233/234	U-233/234	0.552	0.24	0.222	1.00		U
Uranium 235	15117-96-1	0.035	0.070	0.269	1.00	U	U
Uranium 238	U-238	0.406	0.21	0.222	1.00		U
Plutonium 238	13981-16-3	0.015	0.030	0.057	1.00	U	PU
Plutonium 239/240	PU-239/240	0.011	0.023	0.036	1.00	U	PU
Potassium 40	13966-00-2	3.86	0.26	0.146			GAM
Cobalt 60	10198-40-0	U		0.013	0.050	U	GAM
Cesium 137	10045-97-3	0.076	0.011	0.012	0.100		GAM
Radium 226	13982-63-3	0.259	0.032	0.027	0.100		GAM
Radium 228	15262-20-1	0.337	0.062	0.059	0.200		GAM
Europium 152	14683-23-9	U		0.033	0.100	U	GAM
Europium 154	15585-10-1	U		0.035	0.100	U	GAM
Europium 155	14391-16-3	U		0.034	0.100	U	GAM
Thorium 228	14274-82-9	0.310	0.018	0.016			GAM
Thorium 232	TH-232	0.337	0.062	0.059			GAM
Uranium 235	15117-96-1	U		0.058		U	GAM
Uranium 238	U-238	U		1.68		U	GAM
Americium 241	14596-10-2	U		0.021		U	GAM
Beryllium 7	13966-02-4	U		0.099		U	GAM
Ruthenium 106	13967-48-1	U		0.114		U	GAM
Antimony 125	14234-35-6	U		0.029		U	GAM
Cesium 134	13967-70-9	U		0.018		U	GAM

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EBERLINE ANALYTICAL/RICHMOND

SAMPLE DELIVERY GROUP K1525

7299-007

J17VP0

DATA SHEET

SDG	7299	Client/Case no	Hanford SDG K1535
Contact	N. Joseph Verville	Contract	No. S0W235A00
Lab sample id	R902010-07	Client sample id	J17VP0
Dept sample id	7299-007	Location/Matrix	MBRA-43D SOLID
Received	02/05/09	Collected/Weight	02/03/09 10:30 2311 g
% solids	100.0	Custody/SAF No	RC-116-62 RC-116

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Carbon 14	14762-75-5	0.157	2.4	4.04	50.0	U J	C
Total Strontium	SR-RAD	0.007	0.16	0.326	1.00	U	SR
Technetium 99	14133-76-7	0.125	0.18	0.352	15.0	U -	TC
Thorium 228	14274-82-9	0.554	0.31	0.340	1.00	J	TH
Thorium 230	14269-63-7	0.365	0.31	0.374	1.00	U	TH
Thorium 232	TH-232	0.304	0.24	0.291	1.00	J	TH
Uranium 233/234	U-233/234	0.482	0.33	0.308	1.00		U
Uranium 235	15117-96-1	0.007	0.098	0.172	1.00	U	U
Uranium 238	U-238	0.372	0.24	0.308	1.00		U
Plutonium 238	13981-16-3	-0.051	0.044	0.124	1.00	U	PU
Plutonium 239/240	PU-239/240	0	0.029	0.081	1.00	U	PU
Potassium 40	13966-00-2	9.85	0.29	0.115			GAM
Cobalt 60	10198-40-0	U		0.012	0.050	U	GAM
Cesium 137	10045-97-3	0.037	0.012	0.015	0.100		GAM
Radium 226	13982-63-3	0.445	0.027	0.023	0.100		GAM
Radium 228	15262-20-1	0.652	0.061	0.056	0.200		GAM
Europium 152	14683-23-9	U		0.035	0.100	U	GAM
Europium 154	15585-10-1	U		0.033	0.100	U	GAM
Europium 155	14391-16-3	U		0.058	0.100	U	GAM
Thorium 228	14274-82-9	0.664	0.022	0.019			GAM
Thorium 232	TH-232	0.652	0.063	0.056			GAM
Uranium 235	15117-96-1	U		0.069		U	GAM
Uranium 238	U-238	U		1.31		U	GAM
Americium 241	14596-10-2	U		0.061		U	GAM
Beryllium 7	13966-02-4	U		0.096		U	GAM
Ruthenium 106	13967-48-1	U		0.097		U	GAM
Antimony 125	14234-35-6	U		0.027		U	GAM
Cesium 134	13967-70-9	U		0.018		U	GAM

ColumbiaRiverComp.ofRCBRA-Sediment

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7299-008

J17VP5

DATA SHEET

SDG	7299	Client/Case no	Hanford SDG K1525
Contact	N. Joseph Verville	Contract	No. 500W235A00
Lab sample id	E902010-08	Client sample id	J17VP5
Dept sample id	7299-008	Location/Matrix	WP-15D SOLID
Received	02/05/09	Collected/Weight	02/03/09 10:25 261 g
% solids	100.0	Custody/SAF No	RC-116-07 RC-116

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	MDL pCi/g	QUALI-FIERS	TEST
Carbon 14	14762-75-5	1.69	2.4	3.95	50.0	U J	C
Total Strontium	SR RAD	-0.018	0.18	0.372	1.00	U	SR
Technetium 99	14133-76-7	0.135	0.17	0.372	15.0	U	TC
Thorium 228	14274-82-9	0.332	0.088	0.092	1.00	J	TH
Thorium 230	14269-63-7	0.009	0.060	0.098	1.00	U	TH
Thorium 232	TH-232	0.238	0.069	0.033	1.00	J	TH
Uranium 233/234	U-233/234	0.278	0.21	0.266	1.00		U
Uranium 235	15117-96-1	0.042	0.084	0.322	1.00	U	U
Uranium 238	U-238	0.209	0.19	0.266	1.00	U	U
Plutonium 238	13981-16-3	0.035	0.34	0.270	1.00	U	PU
Plutonium 239/240	PU-239/240	0	0.071	0.270	1.00	U	PU
Potassium 40	13966-00-2	3.28	1.0	0.194			GAM
Cobalt 60	10198-40-0	U		0.020	0.050	U	GAM
Cesium 137	10045-97-3	0.076	0.017	0.020	0.100		GAM
Radium 226	13982-63-3	0.242	0.047	0.036	0.100		GAM
Radium 228	15262-20-1	0.379	0.092	0.079	0.200		GAM
Europium 152	14683-23-9	U		0.043	0.100	U	GAM
Europium 154	15585-10-1	U		0.060	0.100	U	GAM
Europium 155	14391-16-3	U		0.050	0.100	U	GAM
Thorium 228	14274-82-9	0.305	0.030	0.024			GAM
Thorium 232	TH-232	0.379	0.092	0.079			GAM
Uranium 235	15117-96-1	U		0.071		U	GAM
Uranium 238	U-238	U		2.36		U	GAM
Americium 241	14596-10-2	U		0.060		U	GAM
Beryllium 7	13966-02-4	U		0.146		U	GAM
Ruthenium 106	13967-48-1	U		0.356		U	GAM
Antimony 125	14234-35-6	U		0.042		U	GAM
Cesium 134	13967-70-9	U		0.025		U	GAM

ColumbiaRiverComp.ofRCBRA Sediment

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EBERLINE ANALYTICAL/RICHMOND

SAMPLE DELIVERY GROUP K1525

7299-009 J18177

DATA SHEET

SDG	7298	Client/Case no	Hanford SDG K1525
Contact	N. Joseph Verville	Contract	No. 600N235A00
Lab sample id	E902010-09	Client sample id	J18177
Dept sample id	7299-009	Location/Matrix	MBRA-48D SOLID
Received	02/05/09	Collected/Weight	02/03/09 10:05 2338 g
% solids	100.0	Custody/SAP No	RC-116-751 RC-116

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Carbon 14	14762-75-5	2.43	2.5	4.09	50.0	U J	C
Total Strontium	SR-RAD	0.021	0.16	0.125	1.00	U	SR
Technetium 99	14133-76-7	0.093	0.17	0.371	15.0	U	TC
Thorium 228	14274-82-9	0.617	0.14	0.167	1.00	J	TH
Thorium 230	14269-63-7	0.043	0.066	0.100	1.00	U	TH
Thorium 232	TH-232	0.512	0.11	0.052	1.00	J	TH
Uranium 233/234	U-233/234	0.493	0.27	0.251	1.00		U
Uranium 235	15117-96-1	0	0.080	0.304	1.00	U	U
Uranium 238	U-238	0.460	0.27	0.251	1.00		U
Plutonium 238	13981-16-3	0.061	0.18	0.335	1.00	U	PU
Plutonium 239/240	PU-239/240	0	0.061	0.232	1.00	U	PU
Potassium 40	13966-00-2	10.3	0.50	0.272			GAM
Cobalt 60	10198-40-0	U		0.023	0.050	U	GAM
Cesium 137	10045-97-3	0.084	0.030	0.030	0.100		GAM
Radium 226	13982-63-3	0.455	0.040	0.037	0.100		GAM
Radium 228	15262-20-1	0.610	0.11	0.117	0.200		GAM
Europium 152	14683-23-9	U		0.060	0.100	U	GAM
Europium 154	15585-10-1	U		0.084	0.100	U	GAM
Europium 155	14391-16-3	U		0.070	0.100	U	GAM
Thorium 228	14274-82-9	0.646	0.029	0.028			GAM
Thorium 232	TH 232	0.610	0.11	0.112			GAM
Uranium 235	15117-96-1	U		0.105		U	GAM
Uranium 238	U 238	U		2.88		U	GAM
Americium 241	14596-10-2	U		0.210		U	GAM
Beryllium 7	13966-02-4	U		0.176		U	GAM
Ruthenium 106	13967-48-1	U		0.168		U	GAM
Antimony 125	14234-35-6	U		0.051		U	GAM
Cesium 134	13967-70-9	U		0.045		U	GAM

ColumbiaRiverComp.ofRCBRA-Sediment

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SAMPLE DELIVERY GROUP K1525

7299-010

J18190

DATA SHEET

SDG	7299	Client/Case no	Hanford SDG_K1525
Contact	N. Joseph Verville	Contract	No. 500W335A00
Lab sample id	8902010-10	Client sample id	J18190
Dept sample id	7299-010	Location/Matrix	MDBR-65D SOLID
Received	02/05/09	Collected/Weight	02/03/09 14:40 2201 g
% solids	100.0	Custody/SAP No	RC-116-756 RC-116

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Carbon 14	14762-75-5	0.630	2.3	3.81	50.0	U J	C
Total Strontium	SR-RAD	0.059	0.15	0.296	1.00	U	SR
Technetium 99	14133-76-7	0.111	0.13	0.350	15.0	U	TC
Thorium 228	14274-82-9	0.509	0.10	0.110	1.00	J	TH
Thorium 230	14269-63-7	0.040	0.058	0.082	1.00	U	TH
Thorium 232	TH-232	0.483	0.088	0.035	1.00	J	TH
Uranium 233/234	U-233/234	0.456	0.23	0.290	1.00		U
Uranium 235	15117-96-1	0	0.092	0.352	1.00	U	U
Uranium 238	U-238	0.494	0.31	0.290	1.00		U
Plutonium 238	13981-16-3	0	0.067	0.257	1.00	U	PU
Plutonium 239/240	PU-239/240	0	0.067	0.257	1.00	U	PU
Potassium 40	13966-00-2	9.22	0.18	0.089			GAM
Cobalt 60	10198-40-0	U		0.019	0.050	U	GAM
Cesium 137	10045-97-3	0.125	0.007	0.007	0.100		GAM
Radium 226	13982-63-3	0.198	0.019	0.015	0.100		GAM
Radium 228	15262-20-1	0.586	0.040	0.036	0.200		GAM
Europium 152	14683-23-9	U		0.039	0.100	U	GAM
Europium 154	15585-10-1	U		0.024	0.100	U	GAM
Europium 155	14391-16-3	U		0.042	0.100	U	GAM
Thorium 228	14274-82-9	0.547	0.013	0.010			GAM
Thorium 232	TH-232	0.586	0.038	0.036			GAM
Uranium 235	15117-96-1	U		0.038		U	GAM
Uranium 238	U-238	U		0.892		U	GAM
Americium 241	14596-10-2	U		0.013		U	GAM
Beryllium 7	13966-02-4	U		0.057		U	GAM
Ruthenium 106	13967-48-1	U		0.061		U	GAM
Antimony 125	14234-35-6	U		0.017		U	GAM
Cesium 134	13967-70-9	U		0.011		U	GAM

ColumbiaRiverComp,ofRCBRA-Sediment

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SAMPLE DELIVERY GROUP K1525

7299-011 J18199

DATA SHEET

SDG	7299	Client/Case no	Hanford	SDG K1525
Contact	N. Joseph Verville	Contract	No. 500W335A00	
Lab sample id	R902010-11	Client sample id	J18199	
Dept sample id	7299-011	Location/Matrix	MDBR.4SD	SOLID
Received	02/05/09	Collected/Weight	02/03/09 13:40	2525 g
% solids	100.0	Custody/SAP No	RC 116-757	RC-116

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Carbon 14	14762-75-5	2.75	2.6	4.28	50.0	U J	C
Total Strontium	SR-RAD	-0.095	0.11	0.298	1.00	U	SR
Technetium 99	14133-76-7	0.025	0.18	0.379	15.0	U	TC
Thorium 228	14274-82-9	0.400	0.10	0.106	1.00	J	TH
Thorium 230	14269-63-7	0.194	0.083	0.085	1.00		TH
Thorium 232	TH-232	0.493	0.10	0.044	1.00	J	TH
Uranium 233/234	U-233/234	0.304	0.19	0.232	1.00		U
Uranium 235	15117-96-1	0	0.074	0.283	1.00	U	U
Uranium 238	U-238	0.164	0.19	0.232	1.00		U
Plutonium 238	13981-16-3	-0.033	0.065	0.249	1.00	U	PU
Plutonium 239/240	PU-239/240	0	0.065	0.249	1.00	U	PU
Potassium 40	13966-00-2	10.3	0.53	0.127			GAM
Cobalt 60	10198-40-0	U		0.014	0.050	U	GAM
Cesium 137	10045-97-3	0.048	0.017	0.015	0.100		GAM
Radium 226	13982-63-3	0.338	0.033	0.029	0.100		GAM
Radium 228	15262-20-1	0.508	0.063	0.060	0.200		GAM
Europium 152	14683-23-9	U		0.036	0.100	U	GAM
Europium 154	15585-10-1	U		0.045	0.100	U	GAM
Europium 155	14391-16-3	U		0.045	0.100	U	GAM
Thorium 228	14274-82-9	0.492	0.022	0.020			GAM
Thorium 232	TH-232	0.508	0.063	0.060			GAM
Uranium 235	15117-96-1	U		0.076		U	GAM
Uranium 238	U-238	U		1.61		U	GAM
Americium 241	14596-10-2	U		0.094		U	GAM
Beryllium 7	13966-02-4	U		0.111		U	GAM
Ruthenium 106	13967-48-1	U		0.108		U	GAM
Antimony 125	14234-35-6	U		0.033		U	GAM
Cesium 134	13967-70-9	U		0.018		U	GAM

ColumbiaRiverComp.ofRCBRA Sediment

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EBERLINE ANALYTICAL/RICHMOND

SAMPLE DELIVERY GROUP K1525

7299-012

J181B0

DATA SHEET

SDG	7299	Client/Case no	Hanford SDG K1525
Contact	N. Joseph Vorville	Contract	No. 800W235A00
Lab sample id	K902010-12	Client sample id	J181B0
Dept sample id	7299-012	Location/Matrix	MDBR-SED SOLID
Received	02/05/09	Collected/Weight	02/03/09 14:10 2170 g
% solids	100.0	Custody/SAF No	RC-116-758 RC-116

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Carbon 14	14762-75-5	1.54	2.4	3.96	50.0	U J	C
Total Strontium	SR-RAD	0.071	0.17	0.334	1.00	U	SR
Technetium 99	14133 76 7	0.054	0.14	0.348	15.0	U	TC
Thorium 228	14274-82-9	0.374	0.27	0.458	1.00	J	TH
Thorium 230	14269-63-7	0.158	0.16	0.202	1.00	U	TH
Thorium 232	TH-232	0.502	0.21	0.202	1.00	J	TH
Uranium 233/234	U-233/234	0.356	0.18	0.227	1.00		U
Uranium 235	15117-96-1	0.036	0.072	0.275	1.00	U	U
Uranium 238	U-238	0.248	0.18	0.227	1.00		U
Plutonium 238	13981 16 3	0	0.075	0.288	1.00	U	PU
Plutonium 239/240	PU-239/240	0	0.075	0.288	1.00	U	PU
Potassium 40	13966-00-2	8.44	0.70	0.074			GAM
Cobalt 60	10198-40-0	U		0.013	0.050	U	GAM
Cesium 137	10045-97-3	0.113	0.009	0.009	0.100		GAM
Radium 226	13982-63-3	0.379	0.026	0.013	0.100		GAM
Radium 228	15262-20-1	0.558	0.046	0.032	0.200		GAM
Europium 152	14683-23-9	U		0.033	0.100	U	GAM
Europium 154	15585-10-1	U		0.024	0.100	U	GAM
Europium 155	14391-16 3	U		0.031	0.100	U	GAM
Thorium 228	14274-82-9	0.559	0.016	0.010			GAM
Thorium 232	TH-232	0.558	0.046	0.032			GAM
Uranium 235	15117-96-1	U		0.038		U	GAM
Uranium 238	U-238	U		0.840		U	GAM
Americium 241	14596-10-2	U		0.046		U	GAM
Beryllium 7	13966-02-4	U		0.059		U	GAM
Ruthenium 106	13967-48-1	U		0.058		U	GAM
Antimony 125	14234-35-6	U		0.017		U	GAM
Cesium 134	13967-70-9	U		0.014		U	GAM

ColumbiaRiverComp.ofRCBRA-Sediment

11/20/09

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SAMPLE DELIVERY GROUP K1525

7299-013

J181B1

DATA SHEET

SDG 7299
Contact N. Joseph Verville
Client/Case no Hanford SDG_K1525
Contract No. 800W035A00

Lab sample id R902010-13
Dept sample id 7299-013
Received 02/05/09
% solids 100.0
Client sample id J181B1
Location/Matrix MDBR-1SD SOLID
Collected/Weight 02/03/09 11:10 1817 g
Custody/SAF No RC-116 759 RC 116

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALIFIERS	TEST
Carbon 14	14762-75-5	1.46	2.4	3.96	50.0	U J	C
Total Strontium	SR-RAD	0.010	0.15	0.321	1.00	U	SR
Technetium 99	14133-76-7	0.091	0.13	0.353	15.0	U	TC
Thorium 228	14274-82-9	0.411	0.10	0.095	1.00	J	TH
Thorium 230	14269-63-7	0.080	0.068	0.096	1.00	U	TH
Thorium 232	TH-232	0.334	0.077	0.032	1.00	J	TH
Uranium 233/234	U-233/234	0.565	0.26	0.240	1.00		U
Uranium 235	15117-96-1	0	0.076	0.291	1.00	U	U
Uranium 238	U-238	0.283	0.19	0.240	1.00		U
Plutonium 238	13981-16-3	0	0.041	0.157	1.00	U	PU
Plutonium 239/240	PU-239/240	0.020	0.041	0.157	1.00	U	PU
Potassium 40	13966-00-2	4.49	0.64	0.100			GAM
Cobalt 60	10198-40-0	U		0.009	0.050	U	GAM
Cesium 137	10045-97-3	0.110	0.014	0.012	0.100		GAM
Radium 226	13982-63-3	0.271	0.054	0.017	0.100		GAM
Radium 228	15262-20-1	0.364	0.056	0.039	0.200		GAM
Europium 152	14683-23-9	U		0.026	0.100	U	GAM
Europium 154	15585-10-1	U		0.030	0.100	U	GAM
Europium 155	14391-16-3	U		0.028	0.100	U	GAM
Thorium 228	14274-82-9	0.414	0.023	0.013			GAM
Thorium 232	TH-232	0.364	0.056	0.039			GAM
Uranium 235	15117-96-1	U		0.049		U	GAM
Uranium 238	U-238	U		1.16		U	GAM
Americium 241	14596-10-2	U		0.013		U	GAM
Beryllium 7	13966-02-4	U		0.080		U	GAM
Ruthenium 106	13967-48-1	U		0.077		U	GAM
Antimony 125	14234-35-6	U		0.022		U	GAM
Cesium 134	13967-70-9	U		0.013		U	GAM

ColumbiaRiverComp.ofRCBRA-Sediment

11/20/09

Lab id EBRLNE
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EBERLINE ANALYTICAL/RICHMOND

SAMPLE DELIVERY GROUP K1525

7299-014 J181B2

DATA SHEET

SDG 7299 Client/Case no Hanford SDG_K1525
Contact N. Joseph Verville Contract No. 200W235A00

Lab sample id E902010-14 Client sample id J181B2
Dept sample id 7299-014 Location/Matrix MOBR-25D SOLID
Received 02/05/09 Collected/Weight 02/03/09 11:50 1797 g.
% solids 100.0 Custody/SAF No RC-116-760 RC-116

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Carbon 14	14762-75-5	0.121	2.4	4.13	50.0	U J	C
Total Strontium	SR-RAD	-0.125	0.16	0.146	1.00	U	SR
Technetium 99	14133-76-7	0.056	0.15	0.345	15.0	U	TC
Thorium 228	14274-82-9	0.331	0.091	0.090	1.00	J	TH
Thorium 230	14269-63-7	0.108	0.077	0.086	1.00		TH
Thorium 232	TH-232	0.368	0.082	0.034	1.00	J	TH
Uranium 233/234	U-233/234	0.570	0.27	0.257	1.00		U
Uranium 235	15117-96-1	0.041	0.081	0.311	1.00	U	U
Uranium 238	U 238	0.470	0.27	0.257	1.00		U
Plutonium 238	13981-16-3	0.030	0.077	0.146	1.00	U	PU
Plutonium 239/240	PU-239/240	0.019	0.038	0.146	1.00	U	PU
Potassium 40	13966-00-2	4.97	0.15	0.040			GAM
Cobalt 60	10198-40-0	U		0.005	0.050	U	GAM
Cesium 137	10045-97-3	0.080	0.007	0.007	0.100		GAM
Radium 226	13982-63-3	0.273	0.016	0.012	0.100		GAM
Radium 228	15262-20-1	0.394	0.027	0.022	0.200		GAM
Europium 152	14683-23-9	U		0.018	0.100	U	GAM
Europium 154	15585-10-1	U		0.017	0.100	U	GAM
Europium 155	14391-16-3	U		0.026	0.100	U	GAM
Thorium 228	14274-82-9	0.392	0.011	0.009			GAM
Thorium 232	TH 232	0.394	0.027	0.022			GAM
Uranium 235	15117-96-1	U		0.062		U	GAM
Uranium 238	U-238	U		1.24		U	GAM
Americium 241	14596-10-2	U		0.027		U	GAM
Beryllium 7	13966-02-4	U		0.052		U	GAM
Ruthenium 106	13967-48-1	U		0.041		U	GAM
Antimony 125	14234-35-6	U		0.014		U	GAM
Cesium 134	13967-70-9	U		0.007		U	GAM

ColumbiaRiverComp.ofRCBRA Sediment

11/20/09

Lab id EBERLINE
Protocol Hanford1
Version Ver 1.0
Form DVD-DS
Version 1.06
Report date 03/18/09

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SUMMARY DATA SECTION
Page 28

EBERLINE ANALYTICAL/RICHMOND

SAMPLE DELIVERY GROUP K1525

7299-015 J101B3

DATA SHEET

SDG 7299	Client/Case no Hanford	SDG K1525	
Contact N. Joseph Verville	Contract No. 300W235A00		
Lab sample id R902010-15	Client sample id J101B3		
Dept sample id 7299-015	Location/Matrix MDBR-3SD	SOLID	
Received 02/05/09	Collected/Weight 02/04/09 13:00	1778 g	
% solids 100.0	Custody/SAF No RC 116 761	RC-116	

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Carbon 14	14762-75-5	-0.112	2.3	3.83	50.0	U J	C
Total Strontium	SR-RAD	0.050	0.13	0.292	1.00	U	SR
Technetium 99	14133-76-7	0.019	0.15	0.369	15.0	U	TC
Thorium 228	14274 82 9	0.487	0.12	0.129	1.00	J	TH
Thorium 230	14269-63-7	0.178	0.080	0.103	1.00		TH
Thorium 232	TH 232	0.305	0.080	0.049	1.00	J	TH
Uranium 233/234	U-233/234	0.417	0.24	0.228	1.00		U
Uranium 235	15117-96-1	0.072	0.072	0.276	1.00	U	U
Uranium 238	U-238	0.447	0.24	0.228	1.00		U
Plutonium 238	13981-16-3	0.024	0.095	0.228	1.00	U	PU
Plutonium 239/240	PU-239/240	-0.024	0.048	0.182	1.00	U	PU
Potassium 40	13966-00-2	4.90	0.20	0.092			GAM
Cobalt 60	10198 40 0	U		0.011	0.050	U	GAM
Cesium 137	10045-97-3	0.079	0.012	0.013	0.100		GAM
Radium 226	13982-63-3	0.283	0.022	0.020	0.100		GAM
Radium 228	15262-20-1	0.370	0.047	0.043	0.200		GAM
Europium 152	14683-23-9	U		0.030	0.100	U	GAM
Europium 154	15585 10 1	U		0.041	0.100	U	GAM
Europium 155	14391-16-3	U		0.031	0.100	U	GAM
Thorium 228	14274 82 9	0.378	0.015	0.014			GAM
Thorium 232	TH-232	0.370	0.047	0.043			GAM
Uranium 235	15117 96 1	U		0.054		U	GAM
Uranium 238	U-238	U		1.25		U	GAM
Americium 241	14596 10 2	U		0.095		U	GAM
Beryllium 7	13966-02-4	U		0.086		U	GAM
Ruthenium 106	13967-48-1	U		0.080		U	GAM
Antimony 125	14234-35-6	U		0.023		U	GAM
Cesium 134	13967 70 9	U		0.017		U	GAM

ColumbiaRiverComp.ofRCBRA-Sediment

11/20/09

Lab id	EBRLNE
Protocol	Hanford1
Version	Ver 1.0
Form	DVD-DS
Version	3.06
Report date	03/18/09

DATA SHEETS
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SUMMARY DATA SECTION
Page 29

Appendix 4

Laboratory Narrative and Chain-of-Custody Documentation

Eberline Analytical
W.O. No. R9-02-010-7299

Washington Closure Hanford
SDG K1525

Case Narrative **Page 1 of 1**

1.0 GENERAL

Washington Closure Hanford (WCH) Sample Delivery Group K1525 was composed of fifteen solid (other solid) samples designated under SAF No. RC-116 with a Project Designation of: Columbia River Component of the RCBRA – Sediment

The samples were received as stated on the Chain-of-Custody documents. Any discrepancies are noted on the Eberline Analytical Sample Receipt Checklist. The results were sent to WCH via e-mail March 11, 2009.

2.0 ANALYSIS NOTES

2.1 Carbon-14 Analysis

No problems were encountered during the course of the analyses.

2.2 Strontium-90 Analysis

No problems were encountered during the course of the analyses.

2.3 Technetium-99 Analysis

No problems were encountered during the course of the analyses.

2.4 Isotopic Thorium Analysis

No problems were encountered during the course of the analyses.

2.5 Isotopic Uranium Analysis

No problems were encountered during the course of the analyses.

2.6 Isotopic Plutonium Analysis

No problems were encountered during the course of the analyses.

2.7 Gamma Spectroscopy

No problems were encountered during the course of the analyses

3.0 Case Narrative Certification Statement

"I certify that this data package is in compliance with the SOW, both technically and for completeness, for other than the conditions detailed above. Release of the data obtained in this hard copy data package has been authorized by the Laboratory Manager or a designee, as verified by the following signature."

3/11/09

N. Joseph Verville
Senior Program Manager

Date

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-116-9 | Page 1 of 2

Collector BM	**Company Contact** JOAN KESSNER	**Telephone No.** 375-4688	**Project Coordinator** WEISS, RL
Project Designation Columbia River Component of the RCBRA - Sediment	**Sampling Location** WP-15D K1525 (7209)		**SAF No.** RC-116
Ice Chest No. WCH-08-048	**Field Logbook No.** EL-1631-1	**COA** BESCRC6510	**Method of Shipment** FED EX
Shipped To EBERLINE SERVICES OAKVILLE	**Offsite Property No.** N/A		**Bill of Lading/Air Bill No.** 7973 0901958

Price Code 9N/N

Data Turnaround 45 Days

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

0100027

			Preservation	None	None	None	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C
			Type of Container	G/P	G/P	G/P	G/P	G/P	G/P	aG	aG	aG	G
			No. of Container(s)	1	1	1	1	1	1	1	1	1	1
			Volume	1500g	100g	100g	10g	10g	250g	250g	120g	250g	250g
SAMPLE ANALYSIS				See item (1) in Special Instructions	Carbon-14	~~Tritium - H3~~	Technetium-99	See item (2) in Special Instructions	See item (3) in Special Instructions	PCBs - 8082	Pesticides - 8081	Semi-VOA - 8270A (TCL)	See item (4) in Special Instructions
Sample No.	**Matrix ***	**Sample Date**	**Sample Time**										
J17V87	OTHER SOLID	2/3/09	945	X	X		X	X					

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
[illegible]	2/3/09 [illegible]	Eric A	2/3/09 1700
Eric A	2/4/09 0630	D Heddelberg	2/4/09 0630
D Heddelberg	2/4/09 1130	FedEx	2/4/09 1130
FED EX		E. E. [illegible]	02/05/09 09:

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) (Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238)
(2) Strontium-89,90 - Total Sr; Isotopic Thorium (Thorium-232); Isotopic Uranium (Uranium-233/234, Uranium-235, Uranium-238); Isotopic Plutonium
(3) ICP Metals - 6010 (Full List) (Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc); Mercury - 7471 - (CV)
(4) VOA - 8260A (TCL) (1,1,1-Trichloroethane, 1,1,2,2-Tetrachloroethane, 1,1,2-Trichloroethane, 1,1-Dichloroethane, 1,1-Dichloroethene, 1,2-Dichloroethane, 1,2-Dichloropropane, 2-Butanone, 2-Hexanone, 4-Methyl-2-Pentanone, Acetone, Benzene, Bromodichloromethane, Bromoform, Bromomethane, Carbon disulfide, Carbon tetrachloride, Chlorobenzene, Chloroethane, Chloroform, Chloromethane, cis-1,2-Dichloroethylene, cis-1,3-Dichloropropene, Dibromochloromethane,

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-116-10 | Page 1 of 2

Collector BM	**Company Contact** JOAN KESSNER	**Telephone No.** 375-4688	**Project Coordinator** WEISS, RL
Project Designation Columbia River Component of the RCBRA - Sediment	**Sampling Location** WP-25D K1525 (7299)		**SAF No.** RC-116
Ice Chest No. WCH-08-048	**Field Logbook No.** EL-1631/A-1	**COA** BESCRC6520	**Method of Shipment** FED EX
Shipped To EBERLINE SERVICES LIONVILLE	**Offsite Property No.** N/A		**Bill of Lading/Air Bill No.** 777509019 58

Price Code 9K N

Data Turnaround 45 Days

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

0000228

Preservation	None	None	None	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C
Type of Container	G/P	G/P	G/P	G/P	G/P	G/P	aG	aG	aG	G
No. of Container(s)	1	1	1	1	1	1	1	1	1	1
Volume	1500g	100g	100g	10g	10g	250g	250g	120g	250g	250g
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Tritium - H3	Technetium-99	See item (2) in Special Instructions	See item (3) in Special Instructions	PCBs - 8082	Pesticides - 8081	Semi VOA - 8270A (TCL)	See item (4) in Special Instructions

Mistake

Sample No.	Matrix *	Sample Date	Sample Time										
J17V88	OTHER SOLID	2/2/09	1115	X	X		X	X					

CHAIN OF POSSESSION Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
BM	2/2/09 1200	Fr A	2/2/09 1200
Fr A	2/4/09 0830	DHeckelberg	2/4/09 0830
DHeckelberg	2/4/09 1130	FedEx	2/4/09 1130
FED EX		R. E. HATAWAY	02/05/09 09:15

Samples unavailable to remove samples from controlled storage. Shipper removed samples from storage location likely collected samples for shipment to lab.

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) (Americium-241, Antimony-125, Beryllium-7, Cerium-144, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238)
(2) Strontium-89,90 – Total Sr, Isotopic Thorium (Thorium-232), Isotopic Uranium (Uranium-233/234, Uranium-235, Uranium-238); Isotopic Plutonium
(3) ICP Metals - 6010 (Full List) (Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc); Mercury - 7471 - (CV)
(4) VOA - 8260A (TCL) (1,1,1-Trichloroethane, 1,1,2,2-Tetrachloroethane, 1,1,2-Trichloroethane, 1,1-Dichloroethane, 1,1-Dichloroethene, 1,2-Dichloroethane, 1,2-Dichloropropane, 2-Butanone, 2-Hexanone, 4-Methyl-2-Pentanone, Acetone, Benzene, Bromodichloromethane, Bromoform, Bromomethane, Carbon disulfide, Carbon tetrachloride, Chlorobenzene, Chloroethane, Chloroform, Chloromethane, cis-1,2-Dichloroethylene, cis-1,3-Dichloropropene, Dibromochloromethane, Ethylbenzene, Methylenechloride, Styrene, Tetrachloroethene, Toluene, trans-1,3-Dichloropropene

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Washington Closure Hanford	**CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST**		RC-116-11	Page 1 of 1
Collector BM	Company Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator WEISS, RL	Price Code ~~9K~~ N Data Turnaround 45 Days
Project Designation Columbia River Component of the RCBRA - Sediment	Sampling Location WP-35D K1525 (7299)		SAF No. RC-116	
Ice Chest No. WCH-08-046	Field Logbook No. EL-1631-1	COA BESCRC6520	Method of Shipment FED EX	
Shipped To EBERLINE SERVICES LIONVILLE	Offsite Property No. N/A		Bill of Lading/Air Bill No. 7973 0990 1958	

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

00000129

			Preservation	None	None	None	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C
			Type of Container	G/P	G/P	G/P	G/P	G/P	G/P	aG	aG	aG	G
			No. of Container(s)	1	1	1	1	1	1	1	1	1	1
			Volume	1500g	100g	100g	10g	10g	250g	250g	120g	250g	250g
SAMPLE ANALYSIS				See item (1) in Special Instructions	Carbon-14	~~Tritium - H3~~	Technetium-99	See item (2) in Special Instructions	See item (3) in Special Instructions	PCBs - 8082	Pesticides - 8081	Semi-VOA - 8270A (TCL)	See item (4) in Special Instructions
Sample No	Matrix *	Sample Date	Sample Time										
J17VB9	OTHER SOLID	2/3/09	~~1230~~ 1315	X	X		X	X					

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab.

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
BM [illegible]	2/3/09 [illegible]	Frig A	2/3/09 1700
Frig A	2/4/09 0850	D. Heidelberg	2/4/09 0850
D. Heidelberg	2/4/09 1150	FedEx	2/4/09 1130
FED EX		N.E. Ma[illegible]	02/05/09 11:15

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) [Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238]

(2) Strontium-89,90 – Total Sr; Isotopic Thorium [Thorium-232], Isotopic Uranium [Uranium-233/234, Uranium-235, Uranium-238]; Isotopic Plutonium

(3) ICP Metals - 6010 (Full List) [Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc]; Mercury - 7471 - (CV)

(4) VOA - 8260A (TCL) [1,1,1-Trichloroethane, 1,1,2,2-Tetrachloroethane, 1,1,2-Trichloroethane, 1,1-Dichloroethane, 1,1-Dichloroethene, 1,2-Dichloroethane, 1,2-Dichloropropane, 2-Butanone, 2-Hexanone, 4-Methyl-2-Pentanone, Acetone, Benzene, Bromodichloromethane, Bromoform, Bromomethane, Carbon disulfide, Carbon tetrachloride, Chlorobenzene, Chloroethane, Chloroform, Chloromethane, cis-1,2-Dichloroethylene, cis-1,3-Dichloropropene, Dibromochloromethane, Ethylbenzene, Methylene chloride, Styrene, Tetrachloroethene, Toluene, trans-1,2-Dichloroethylene

Matrix *

S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-116-12

Page 1 of 2

Collector BM	Company Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator WEISS, RL
Project Designation Columbia River Component of the RCBRA - Sediment	Sampling Location WP-4SD K1525 (7299)		SAF No. RC-116
Ice Chest No. WCH-08-048	Field Logbook No. EL-1631-1	COA BK5CRC6520	Method of Shipment FED EX
Shipped To [✓ EBERLINE SERVICES] LIONVILLE	Offsite Property No. N/A		Bill of Lading/Air Bill No. 797309901958

Price Code 9K N

Data Turnaround 45 Days

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

0000030

Preservation	None	None	None	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C
Type of Container	G/P	G/P	G/P	G/P	G/P	G/P	aG	aG	aG	G
No. of Container(s)	1	1	1	1	1	1	1	1	1	1
Volume	1500g	100g	100g	10g	10g	250g	250g	120g	250g	250g
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Tritium (H3)	Technetium-99	See item (2) in Special Instructions	See item (3) in Special Instructions	PCBs - 8082	Pesticides - 8081	Semi-VOA - 8270A (TCL)	See item (4) in Special Instructions

Sample No.	Matrix *	Sample Date	Sample Time										
J17V90	OTHER SOLID	2/3/09	1230	X	X	~~X~~	X	X					

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab.

CHAIN OF POSSESSION

Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
B Ray Le Barre	2/5/09 1200	Fry A	2/5/09 1700
Fry A	2/4/09 0830	Dieselberg E D	2/4/09 0830
Dieselberg E D	2/4/09 1130	FedEx	2/4/09 1130
Fed Ex		A. E. McFaddin	02/05/09 09:15

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) (Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238);
(2) Strontium-89,90 – Total Sr; Isotopic Thorium (Thorium-232); Isotopic Uranium (Uranium-233/234, Uranium-235, Uranium-238); Isotopic Plutonium
(3) ICP Metals - 6010 (Full List) (Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc); Mercury - 7471 - (CV)
(4) VOA - 8260A (TCL) (1,1,1-Trichloroethane, 1,1,2,2-Tetrachloroethane, 1,1,2-Trichloroethane, 1,1-Dichloroethane, 1,1-Dichloroethene, 1,2-Dichloroethane, 1,2-Dichloropropane, 2-Butanone, 2-Hexanone, 4-Methyl-2-Pentanone, Acetone, Benzene, Bromodichloromethane, Bromoform, Bromomethane, Carbon disulfide, Carbon tetrachloride, Chlorobenzene, Chloroethane, Chloroform, Chloromethane, cis-1,2-Dichloroethylene, cis-1,3-Dichloropropene, Dibromochloromethane, Ethylbenzene, Methylene chloride, Styrene, Tetrachloroethene, Toluene, trans-1,2-Dichloroethylene

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Washington Closure Hanford	**CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST**	RC-116-13	Page 1 of 2
Collector BM	**Company Contact** JOAN KESSNER **Telephone No.** 375-4688	**Project Coordinator** WEISS, RL	**Price Code** 9K N **Data Turnaround** 45 Days
Project Designation Columbia River Component of the RCBRA - Sediment	**Sampling Location** WP-55D K1525 (7299)	**SAF No.** RC-116	
Ice Chest No. WCH-08-078	**Field Logbook No.** EL-1631/-1 **COA** BESCRC6520	**Method of Shipment** FED EX	
Shipped To EBERLINE SERVICES / LIONVILLE	**Offsite Property No.** N/A	**Bill of Lading/Air Bill No.** 797309901958	

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

000031

			Preservation	None	None	None	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C
			Type of Container	G/P	G/P	G/P	G/P	G/P	G/P	aG	aG	aG	G
			No. of Container(s)	[illegible]	1	1	1	1	1	1	1	1	1
			Volume	[illegible]g	100g	100g	10g	10g	250g	250g	120g	250g	250g
SAMPLE ANALYSIS				See item (1) in Special Instructions	Carbon-14	Tritium - H3	Technetium-99	See item (2) in Special Instructions	See item (3) in Special Instructions	PCBs - 8082	Pesticides - 8081	Semi-VOA - 8270A (TCL)	See item (4) in Special Instructions
Sample No.	**Matrix ***	**Sample Date**	**Sample Time**										
J17V91	OTHER SOLID	2/3/09	1400	X	X		X	X					

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
B Myl[illegible] Brett ML	2/3/09 1700	T[illegible] A	2/3/09 1700
Eric A	2/4/09 0830	D. Heidelberg	2/4/09 0830
D. Heidelberg	2/4/09 1130	FedEx	2/4/09 1130
Fed EX		L.E. HATAWAY[illegible]	02/05/09 09:15

SPECIAL INSTRUCTIONS

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab.

(1) Gamma Spec - (Full List) (Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238)

(2) Strontium-89,90 – Total Sr; Isotopic Thorium (Thorium-232); Isotopic Uranium (Uranium-233/234, Uranium-235, Uranium-238); Isotopic Plutonium

(3) ICP Metals - 6010 (Full List) (Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc); Mercury - 7471 - (CV)

(4) VOA - 8260A (TCL) (1,1,1-Trichloroethane, 1,1,2,2-Tetrachloroethane, 1,1,2-Trichloroethane, 1,1-Dichloroethane, 1,1-Dichloroethene, 1,2-Dichloroethane, 1,2-Dichloropropane, 2-Butanone, 2-Hexanone, 4-Methyl-2-Pentanone, Acetone, Benzene, Bromodichloromethane, Bromoform, Bromomethane, Carbon disulfide, Carbon tetrachloride, Chlorobenzene, Chloroethane, Chloroform, Chloromethane, cis-1,2-Dichloroethylene, cis-1,3-Dichloropropene, Dibromochloromethane, Ethylbenzene, Methylene chloride, Styrene, Tetrachloroethene, Toluene, trans-1,2-Dichloroethylene

Matrix *

S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-116-14

Page 1 of 2

Collector	BM
Company Contact	JOAN KESSNER
Telephone No.	375-4688
Project Coordinator	WEISS, RL
Price Code	~~9K~~ N
Data Turnaround	45 Days
Project Designation	Columbia River Component of the RCBRA - Sediment
Sampling Location	WP-650 K1525 (7299)
SAF No.	RC-116
Ice Chest No.	WCH-08-048
Field Logbook No.	EL-1634-1
COA	BESCRC6520
Method of Shipment	FED EX
Shipped To	EBERLINE SERVICES LIONVILLE
Offsite Property No.	N/A
Bill of Lading/Air Bill No.	~~WCH-0599~~ 797309098958

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

Preservation	None	None	None	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C
Type of Container	G/P	G/P	G/P	G/P	G/P	G/P	aG	aG	aG	G
No. of Container(s)	1	1	1	1	1	1	1	1	1	1
Volume	1500g	300g	100g	10g	10g	250g	250g	250g	250g	250g
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Tritium (H3)	Technetium-99	See item (2) in Special Instructions	See item (3) in Special Instructions	PCBs - 8082	Pesticides - 8081	Semi-VOA - 8270A (TCL)	See item (4) in Special Instructions

Sample No.	Matrix *	Sample Date	Sample Time										
J17V92	OTHER SOLID	2/3/09	1430	X	X		X	X					

Sample unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab

CHAIN OF POSSESSION	Date/Time	Sign/Print Names	Date/Time
Relinquished By/Removed From B Mangle	2/3/09 1700	Received By/Stored In Frig A	2/3/09 1700
Relinquished By/Removed From Frig A	2/4/09 0830	Received By/Stored In D. Heidelberg	2/4/09 0830
Relinquished By/Removed From D. Heidelberg	2/4/09 1130	Received By/Stored In Fedex	2/4/09 1130
Relinquished By/Removed From Fed EX		Received By/Stored In B.E. [illegible]	2/5/09 09:15
Relinquished By/Removed From		Received By/Stored In	
Relinquished By/Removed From		Received By/Stored In	

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) (Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238)

(2) Strontium-89,90 - Total Sr; Isotopic Thorium (Thorium-232); Isotopic Uranium (Uranium-233/234, Uranium-235, Uranium-238); Isotopic Plutonium

(3) ICP Metals - 6010 (Full List) (Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc); Mercury - 7471 - (CV)

(4) VOA - 8260A (TCL) (1,1,1-Trichloroethane, 1,1,2,2-Tetrachloroethane, 1,1,2-Trichloroethane, 1,1-Dichloroethane, 1,1-Dichloroethene, 1,2-Dichloroethane, 1,2-Dichloropropane, 2-Butanone, 2-Hexanone, 4-Methyl-2-Pentanone, Acetone, Benzene, Bromodichloromethane, Bromoform, Bromomethane, Carbon disulfide, Carbon tetrachloride, Chlorobenzene, Chloroethane, Chloroform, Chloromethane, cis-1,2-Dichloroethylene, cis-1,3-Dichloropropene, Dibromochloromethane, Ethylbenzene, Methylene chloride, Styrene, Tetrachloroethene, Toluene, trans-1,2-Dichloroethylene

Matrix *

S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

Washington Closure Hanford	**CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST**		RC-116-81	Page 1 of 1
Collector LStratton	Company Contact JOAN KESSNER	Telephone No. 373-4688	Project Coordinator WEISS, RL	Price Code 9K N Data Turnaround 45 Days
Project Designation Columbia River Component of the RCBRA - Sediment	Sampling Location ABRA - 450 K1525 (7299)		SAF No. RC-116	
Ice Chest No. WCH-08-048	Field Logbook No. EL-1631/-1	COA BESCRC6520	Method of Shipment FED EX	
Shipped To EBERLINE SERVICES LIONVILLE	Offsite Property No. N/A		Bill of Lading/Air Bill No. 797309909958	

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

1110023

Preservation	None	None	None	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C
Type of Container	G/P	G/P	G/P	G/P	G/P	G/P	aG	aG	aG	G
No. of Container(s)	1	1	1	1	1	1	1	1	1	1
Volume	1500g	100g	100g	10g	10g	250g	250g	120g	250g	250g
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Tritium - H3	Technetium-99	See item (2) in Special Instructions	See item (3) in Special Instructions	PCBs - 8082	Pesticides - 8081	Semi-VOA - 8270A (TCL)	See item (4) in Special Instructions

Sample No.	Matrix *	Sample Date	Sample Time										
J17VP0	OTHER SOLID	2/3/09	1030	X	X	~~X~~	X	X					

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab.

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
LStratton	2-3-09 / 1630	RB	2-3-09 / 1630
RB	2/4/09 0830	D. Hedelberg	2/4/09 0830
D. Hedelberg	2/4/09 1130	Fedex	2/4/09 1130
FED EX		M.E. Hathaway	2/5/09 09:15

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) {Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238}
(2) Strontium-89/90 – Total Sr, Isotopic Thorium {Thorium-232}, Isotopic Uranium {Uranium-233/234, Uranium-235, Uranium-238}, Isotopic Plutonium
(3) ICP Metals - 6010 (Full List) {Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc}; Mercury - 7471 - (CV)
(4) VOA - 8260A (TCL) {1,1,1-Trichloroethane, 1,1,2,2-Tetrachloroethane, 1,1,2-Trichloroethane, 1,1-Dichloroethane, 1,1-Dichloroethene, 1,2-Dichloroethane, 1,2-Dichloropropane, 2-Butanone, 2-Hexanone, 4-Methyl-2-Pentanone, Acetone, Benzene, Bromodichloromethane, Bromoform, Bromomethane, Carbon disulfide, Carbon tetrachloride, Chlorobenzene, Chloroethane, Chloroform, Chloromethane, cis-1,2-Dichloroethylene, cis-1,3-Dichloropropene, Dibromochloromethane, [illegible]

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-116-87

Page 1 of 1

Collector Bm	Company Contact JOAN KESSNER	Telephone No. 373-4688 K1525	Project Coordinator WEISS, RL
Project Designation Columbia River Component of the RCBRA - Sediment	Sampling Location ~~[illegible]~~ 2/3 WP-15D (7299)		SAF No. RC-116
Ice Chest No. WCH-08-048	Field Logbook No. EL-1631-1	COA BESCRC6330	Method of Shipment FED EX
Shipped To EBERLINE SERVICES LIONVILLE	Offsite Property No. N/A		Bill of Lading/Air Bill No. 797308901958

Price Code ~~9K~~ N

Data Turnaround 45 Days

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

			Preservation	None	None	None	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C
			Type of Container	G/P	G/P	G/P	G/P	G/P	G/P	aG	aG	aG	G
			No. of Container(s)	1	1	1	1	1	1	1	1	1	1
			Volume	1500g	100g	100g	10g	10g	250g	250g	120g	250g	250g
SAMPLE ANALYSIS				See item (1) in Special Instructions	Carbon-14	Tritium - H3	Technetium-99	See item (2) in Special Instructions	See item (3) in Special Instructions	PCBs - 8082	Pesticides - 8081	Semi-VOA - 8270A (TCL)	See item (4) in Special Instructions
Sample No	Matrix *	Sample Date	Sample Time										
J17VP6	OTHER SOLID	2/3/09	~~0545~~ 1025	X	X		X	X					

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
B...	2/3/09 1200		2/3/09 1200
	2/4/09 0830	D. Hedberg	2/4/09 0830
D Hedberg	2/4/09 1130	FedEx 2/4/09	1130
Fed EX		L. E. [illegible]	02/05/09 09:15

Sampler unavailable to remove sampling from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) {Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238}
(2) Strontium-89,90 - Total Sr; Isotopic Thorium {Thorium-232}; Isotopic Uranium {Uranium-233/234, Uranium-235, Uranium-238}; Isotopic Plutonium
(3) ICP Metals - 6010 (Full List) {Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc}; Mercury - 7471 - (CV)
(4) VOA - 8260A (TCL) {1,1,1-Trichloroethane, 1,1,2,2-Tetrachloroethane, 1,1,2-Trichloroethane, 1,1-Dichloroethane, 1,1-Dichloroethene, 1,2-Dichloroethane, 1,2-Dichloropropane, 2-Butanone, 2-Hexanone, 4-Methyl-2-Pentanone, Acetone, Benzene, Bromodichloromethane, Bromoform, Bromomethane, Carbon disulfide, Carbon tetrachloride, Chlorobenzene, Chloroethane, Chloroform, Chloromethane, cis-1,2-Dichloroethylene, cis-1,3-Dichloropropene, Dibromochloromethane,

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-116-751	Page 1 of 2

Collector: L. Stratton

Company Contact: JOAN KESSNER — Telephone No.: 375-4688

Project Coordinator: WEISS, RL

Price Code: 9K N

Data Turnaround: 45 Days

Project Designation: Columbia River Component of the RCBRA - Sediment

Sampling Location: MBRA- 4 SD K1525 (7299)

SAF No.: RC-116

Ice Chest No.: WCH-08 #48

Field Logbook No.: EL-1631-1

COA: BESCRC6520

Method of Shipment: FED EX

Shipped To: EBERLINE SERVICES - LIONVILLE

Offsite Property No.: N/A

Bill of Lading/Air Bill No.: 797309901958

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

S:000

Preservation	None	None	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	None
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	aG	aG	G	-
No. of Container(s)	1	1	1	1	1	1	1	1	1	1
Volume	1500g	100g	10g	10g	250g	250g	125g	250g	250g	1"
SAMPLE ANALYSIS	See item (1) in Special Instructions.	Carbon-14	Technetium-99	See item (2) in Special Instructions.	See item (3) in Special Instructions.	PCBs - 8082	Pesticides - 8081	Semi-VOA 8270A (TCL)	See item (4) in Special Instructions.	-

Sample No.	Matrix *	Sample Date	Sample Time										
J18177	OTHER SOLID	2/3/09	1025	X	X	X	X						

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
	2-3-09 / 1630	RB	2-3-09 / 1630
R.f. B	2/4/09 0830	D Heidelberg	2/4/09 0830
D Heidelberg	2/4/09 1130	Fedex	2/4/09 1130
Fed Ex		R.F. Hutchins	2/05/09 09:15

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) [Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238]

(2) Strontium-89,90 – Total Sr, Isotopic Thorium [Thorium-232]; Isotopic Uranium [Uranium-233/234, Uranium-235, Uranium-238]; Isotopic Plutonium

(3) ICP Metals - 6010 (Full List) [Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc]; Mercury - 7471 - (CV)

(4) VOA - 8260A (TCL) [1,1,1-Trichloroethane, 1,1,2,2-Tetrachloroethane, 1,1,2-Trichloroethane, 1,1-Dichloroethane, 1,1-Dichloroethene, 1,2-Dichloroethane, 1,2-Dichloropropane, 2-Butanone, 2-Hexanone, 4-Methyl-2-Pentanone, Acetone, Benzene, Bromodichloromethane, Bromoform, Bromomethane, Carbon disulfide, Carbon tetrachloride, Chlorobenzene, Chloroethane, Chloroform, Chloromethane, cis-1,2-Dichloroethylene, cis-1,3-Dichloropropene, Dibromochloromethane, Ethylbenzene, Methylenechloride, Styrene, Tetrachloroethene, Toluene, trans-1,2-Dichloroethylene

Matrix *

S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Washington Closure Hanford	**CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST**	RC-116-756	Page 1 of 1
Collector: Stratton	Company Contact: JOAN KESSNER Telephone No. 375-4688	Project Coordinator: WEISS, RL	Price Code 9K N Data Turnaround 45 Days
Project Designation: Columbia River Component of the RCBRA - Sediment	Sampling Location: MDBR-6 SD K1525 (7299)	SAF No. RC-116	
Ice Chest No. WCH-09-048	Field Logbook No. EL-1631-1 COA BESCRO6520	Method of Shipment: FED EX	
Shipped To: EBERLINE SERVICES LIONVILLE	Offsite Property No. N/A	Bill of Lading/Air Bill No. 79730990R58	

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

000036

		Preservation		None	None	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	None
		Type of Container		G/P	G/P	G/P	G/P	G/P	aG	aG	aG	G	^
		No. of Container(s)		1	1	1	1	1	1	1	1	1	1
		Volume		1500g	100g	10g	10g	250g	250g	125g	250g	250g	1*
SAMPLE ANALYSIS				See item (1) in Special Instructions	Carbon-14	Technetium-99	See item (2) in Special Instructions	See item (3) in Special Instructions	PCBs - 8082	Pesticides - 8081	Semi VOA - 8270A (TCL)	See item (4) in Special Instructions	
Sample No.	Matrix *	Sample Date	Sample Time										
J18198	OTHER SOLID	2/3/09	1440	X	X	X	X						

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab

CHAIN OF POSSESSION	Date/Time	Sign/Print Names Received By/Stored In	Date/Time
Relinquished By/Removed From	2/3/09 / 1630	Received By/Stored In R.F.B	2/3/09 / 16.10
Relinquished By/Removed From R.F.B	2/4/09 0830	Received By/Stored In D. Heidelberg	2/4/09 0830
Relinquished By/Removed From D. Heidelberg	2/4/09 1130	Received By/Stored In FedEx	2/4/09 1130
Relinquished By/Removed From FED EX	Date/Time	Received By/Stored In R.F. [illegible]	2/5/09 09:15
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) [Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238]

(2) Strontium-89,90 – Total Sr, Isotopic Thorium (Thorium-232), Isotopic Uranium (Uranium-233/234, Uranium-235, Uranium-238); Isotopic Plutonium

(3) ICP Metals - 6010 (Full List) [Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc]; Mercury - 7471 - (CV)

(4) VOA - 8260A (TCL) [1,1,1-Trichloroethane, 1,1,2,2 Tetrachloroethane, 1,1,2-Trichloroethane, 1,1-Dichloroethane, 1,1-Dichloroethene, 1,2-Dichloroethane, 1,2-Dichloropropane, 2-Butanone, 2-Hexanone, 4-Methyl-2-Pentanone, Acetone, Benzene, Bromodichloromethane, Bromoform, Bromomethane, Carbon disulfide, Carbon tetrachloride, Chlorobenzene, Chloroethane, Chloroform, Chloromethane, cis-1,2-Dichloroethylene, cis-1,3-Dichloropropene, Dibromochloromethane, Ethylbenzene, Methylene chloride, Styrene, Tetrachloroethene, Toluene, trans-1,2-Dichloroethylene

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-116-757 Page 1 of 2

Collector: L Stratton

Company Contact: JOAN KESSNER

Telephone No.: 375-4688

Project Coordinator: WEISS, RL

Price Code: 8K N

Data Turnaround: 45 Days

Project Designation: Columbia River Component of the RCBRA - Sediment

Sampling Location: MDBR- 4 SD K1525 (7299)

SAF No.: RC-116

Ice Chest No.: WCH-08-048

Field Logbook No.: EL-1631-1

COA: BESCRC6520

Method of Shipment: FED EX

Shipped To: EBERLINE SERVICES LIONVILLE

Offsite Property No.: N/A

Bill of Lading/Air Bill No.: 797309901958

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

Preservation	None	None	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	None
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	aG	aG	G	*
No. of Container(s)	1	1	1	1	1	1	1	1	1	1
Volume	1500g	100g	10g	10g	250g	250g	125g	250g	250g	1"
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Technetium-99	See item (2) in Special Instructions	See item (3) in Special Instructions	PCBs - 8082	Pesticides - 8081	Semi VOA - 8270A (TCL)	See item (4) in Special Instructions	

Sample No	Matrix *	Sample Date	Sample Time										
J18189	OTHER SOLID	2/3/09	1340	X	X	X	X						

CHAIN OF POSSESSION	Date/Time	Sign/Print Names Received By/Stored In	Date/Time
Relinquished By/Removed From	2-3-09 / 1630	Received By/Stored In	2-3-09 1630
Relinquished By/Removed From BL B	2/4/09 0830	Received By/Stored In D. Heidelberg	2/4/09 0830
Relinquished By/Removed From D. Heidelberg	2/4/09 1130	Received By/Stored In FedEx	2/4/09 1130
Relinquished By/Removed From FedEx	Date/Time	Received By/Stored In	2/5/09 09:1
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab.

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) [Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238]
(2) Strontium-89,90 -- Total Sr; Isotopic Thorium (Thorium-232); Isotopic Uranium (Uranium-233/234, Uranium-235, Uranium-238); Isotopic Plutonium
(3) ICP Metals - 6010 (Full List) [Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc]; Mercury - 7471 - (CV)
(4) VOA - 8260A (TCL) [1,1,1-Trichloroethane, 1,1,2,2-Tetrachloroethane, 1,1,2-Trichloroethane, 1,1-Dichloroethane, 1,1-Dichloroethene, 1,2-Dichloroethane, 1,2-Dichloropropane, 2-Butanone, 2-Hexanone, 4-Methyl-2-Pentanone, Acetone, Benzene, Bromodichloromethane, Bromoform, Bromomethane, Carbon disulfide, Carbon tetrachloride, Chlorobenzene, Chloroethane, Chloroform, Chloromethane, cis-1,2-Dichloroethylene, cis-1,3-Dichloropropene, Dibromochloromethane,

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-116-758	Page 1 of 1

Collector Stratton

Company Contact JOAN KESSNER

Telephone No. 375-4688

Project Coordinator WEISS, RL

Price Code 9K N

Data Turnaround 45 Days

Project Designation Columbia River Component of the RCBRA - Sediment

Sampling Location MDBR-5 SD K1525 (7299)

SAP No. RC-116

Ice Chest No. WCH-08-048

Field Logbook No. EL-1631/-1

COA BESCRC6520

Method of Shipment FED EX

Shipped To EBERLINE SERVICES (RICHMOND) LIONVILLE

Offsite Property No. N/A

Bill of Lading/Air Bill No. 7973 0990 1958

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

R2:00K0

		Preservation	None	None	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	None
		Type of Container	G/P	G/P	G/P	G/P	G/P	aG	aG	aG	G	-
		No. of Container(s)	1	1	1	1	1	1	1	1	1	1
		Volume	1500g	100g	10g	10g	250g	250g	125g	250g	250g	1"
SAMPLE ANALYSIS			See item (1) in Special Instructions	Carbon-14	Technetium-99	See item (2) in Special Instructions	See item (3) in Special Instructions	PCBs - 8082	Pesticides - 8081	Semi-VOA - 8270A (TCL)	See item (4) in Special Instructions	-
Sample No.	Matrix *	Sample Date	Sample Time									
J18180	OTHER SOLID	2/3/09	1410	X	X	X	X					

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
	2-3-09 / 1630	Ley B	2/3/09 / 1630
B. B	2/4/09 0830	D. Hedberg	2/4/09 0830
D. Hedberg	2/4/09 1130	FedEx	2/4/09 1130
Fed EX		A.F. Hammond	02-05-09 9:15

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) {Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238}
(2) Strontium-89,90 -- Total Sr; Isotopic Thorium {Thorium-232}; Isotopic Uranium {Uranium-233/234, Uranium-235, Uranium-238}; Isotopic Plutonium
(3) ICP Metals - 6010 (Full List) {Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc}; Mercury - 7471 - (CV)
(4) VOA - 8260A (TCL) {1,1,1-Trichloroethane, 1,1,2,2-Tetrachloroethane, 1,1,2-Trichloroethane, 1,1-Dichloroethane, 1,1-Dichloroethene, 1,2-Dichloroethane, 1,2-Dichloropropane, 2-Butanone, 2-Hexanone, 4-Methyl-2-Pentanone, Acetone, Benzene, Bromodichloromethane, Bromoform, Bromomethane, Carbon disulfide, Carbon tetrachloride, Chlorobenzene, Chloroethane, Chloroform, Chloromethane, cis-1,2-Dichloroethylene, cis-1,3-Dichloropropene, Dibromochloromethane, Ethylbenzene, Methylenechloride, Styrene, Tetrachloroethene, Toluene, trans-1,2-Dichloroethylene

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST		RC-116-759	Page 1 of 2
Collector [illegible]	Company Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator WEISS, RL	Price Code 9K / N Data Turnaround 45 Days
Project Designation Columbia River Component of the RCBRA - Sediment	Sampling Location MDBR-1 SD K1525 (7299)		SAF No. RC-116	
Ice Chest No. WCH-08-045	Field Logbook No. EL-1631/-1	COA BESCRC6520	Method of Shipment FED EX	
Shipped To EBERLINE SERVICES LIONVILLE	Offsite Property No. N/A		Bill of Lading/Air Bill No. 8730990/958	

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

	Preservation	None	None	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	None
	Type of Container	G/P	G/P	G/P	G/P	G/P	aG	aG	aG	G	P
	No. of Container(s)	1	1	1	1	1	1	1	1	1	1
	Volume	1500g	100g	10g	10g	250g	250g	125g	250g	250g	1"
SAMPLE ANALYSIS		See item (1) in Special Instructions	Carbon 14	Technetium-99	See item (2) in Special Instructions	See item (3) in Special Instructions	PCBs - 8082	Pesticides - 8081	Semi VOA 8270A (TCL)	See item (4) in Special Instructions	

Sample No.	Matrix *	Sample Date	Sample Time										
J181B1	OTHER SOLID	2/3/09	1110	X	X	X	X						

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location [illegible] custody of [illegible] be changed in line.

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
[illegible]	2-3-09 / 1145	[illegible]	2-3-09 / 1630
Ref. B	2/4/09 0830	D. Heidelberg	2/4/09 0830
D. Heidelberg	2/4/09 1130	Fedex	2/4/09 1150
FedEx		[illegible]	02/05/09 09:15

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) (Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238)

(2) Strontium-89,90 – Total Sr; Isotopic Thorium (Thorium-232); Isotopic Uranium (Uranium-233/234, Uranium-235, Uranium-238); Isotopic Plutonium

(3) ICP Metals - 6010 (Full List) (Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc); Mercury - 7471 - (CV)

(4) VOA - 8260A (TCL) (1,1,1-Trichloroethane, 1,1,2,2-Tetrachloroethane, 1,1,2-Trichloroethane, 1,1-Dichloroethane, 1,1-Dichloroethene, 1,2-Dichloroethane, 1,2-Dichloropropane, 2-Butanone, 2-Hexanone, 4-Methyl-2-Pentanone, Acetone, Benzene, Bromodichloromethane, Bromoform, Bromomethane, Carbon disulfide, Carbon tetrachloride, Chlorobenzene, Chloroethane, Chloroform, Chloromethane, cis-1,2-Dichloroethylene, cis-1,3-Dichloropropene, Dibromochloromethane, Ethylbenzene, Methylenechloride, Styrene, Tetrachloroethene, Toluene, trans-1,2-Dichloroethylene

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By		Title		Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method		Disposed By		Date/Time

WCH-EE-011

Washington Closure Hanford	**CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST**	RC-116-760 · Page 1 of 2
Collector L Stratton	Company Contact JOAN KESSNER · Telephone No. 375-4684 · Project Coordinator WEISS, RL	Price Code 9K · Data Turnaround 45 Days
Project Designation Columbia River Component of the RCBRA - Sediment	Sampling Location MDBR-1 SD K1525 (7299) · SAF No. RC-116	
Ice Chest No. WCH-08-0448	Field Logbook No. EL-1631-1 · COA BESCRC6520 · Method of Shipment FED EX	
Shipped To [✓ EBERLINE SERVICES] LIONVILLE	Offsite Property No. N/A · Bill of Lading/Air Bill No. 7973 0590 1958	

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

Preservation	None	None	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	None
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	aG	aG	G	-
No. of Container(s)	1	1	1	1	1	1	1	1	1	1
Volume	1500g	100g	10g	10g	250g	250g	125g	250g	250g	1"
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Technetium-99	See item (2) in Special Instructions	See item (3) in Special Instructions	PCBs - 8082	Pesticides - 8081	Semi-VOA - 8270A (TCL)	See item (4) in Special Instructions	-

Sample No.	Matrix *	Sample Date	Sample Time										
J181B2	OTHER SOLID	2/3/09	1150	X	X	X	X						

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location today (date), of samples for shipment to lab.

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
	2-3-09 / 1610	Ref B	2-3-09 / 1610
Ref. B	2/4/09 0830	D. Heidelberg	2/4/09 0830
D Heidelberg	2/4/09 1130	FedEx 2/4/09	1130
Fed Ex		R.E. MATKOWSKI	02/05/09 09:15

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) {Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238}
(2) Strontium-89,90 -- Total Sr, Isotopic Thorium {Thorium-232}; Isotopic Uranium {Uranium-233/234, Uranium-235, Uranium-238}, Isotopic Plutonium
(3) ICP Metals - 6010 (Full List) {Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc}, Mercury - 7471 - (CV)
(4) VOA - 8260A (TCL) {1,1,1-Trichloroethane, 1,1,2,2-Tetrachloroethane, 1,1,2-Trichloroethane, 1,1-Dichloroethane, 1,1-Dichloroethene, 1,2-Dichloroethane, 1,2-Dichloropropane, 2-Butanone, 2-Hexanone, 4-Methyl-2-Pentanone, Acetone, Benzene, Bromodichloromethane, Bromoform, Bromomethane, Carbon disulfide, Carbon tetrachloride, Chlorobenzene, Chloroethane, Chloroform, Chloromethane, cis-1,2-Dichloroethylene, cis-1,3-Dichloropropene, Dibromochloromethane, Ethylbenzene, Methylenechloride, Styrene, Tetrachloroethene, Toluene, trans-1,2-Dichloroethylene

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-116-761

Page 1 of 1

Collector L Stratton	Company Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator WEISS, RL
Project Designation Columbia River Component of the RCBRA - Sediment	Sampling Location MDBR- 3 5D K1525 (7299)		SAF No. RC-116
Ice Chest No. WCH-08-048	Field Logbook No. EL-1631-1	COA BESCRC6520	Method of Shipment FED EX
Shipped To EBERLINE SERVICES LIONVILLE	Offsite Property No. N/A		Bill of Lading/Air Bill No. 7773 0990 1758

Price Code 9K N

Data Turnaround 45 Days

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

000041

Preservation	None	None	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	None
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	aG	aG	G	
No. of Container(s)	1	1	1	1	1	1	1	1	1	
Volume	1500g	100g	10g	10g	250g	250g	125g	250g	250g	
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Technetium-99	See item (2) in Special Instructions	See item (3) in Special Instructions	PCBs - 8082	Pesticides - 8081	Semi-VOA - 8270A (TCL)	See item (4) in Special Instructions	

Sample No.	Matrix *	Sample Date	Sample Time										
J18183	OTHER SOLID	2/3/09	1300	X	X	X	X						

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location using custody of samples for shipment to lab

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
	2-3-09 / 1610	Ref. B	2-3-09 / 1630
Ref. B	2/4/09 0830	D. Heidelberg	2/4/09 0830
D. Heidelberg	2/4/09 1130		2/4/09 1130
FED EX			02/05/09 0945

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) {Americium-241, Antimony-125, Beryllium-7, Cerium-144, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238}
(2) Strontium-89,90 – Total Sr; Isotopic Thorium {Thorium-232}, Isotopic Uranium {Uranium-233/234, Uranium-235, Uranium-238}, Isotopic Plutonium
(3) ICP Metals - 6010 (Full List) {Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc}, Mercury - 7471 - (CV)
(4) VOA - 8260A (TCL) {1,1,1-Trichloroethane, 1,1,2,2-Tetrachloroethane, 1,1,2-Trichloroethane, 1,1-Dichloroethane, 1,1-Dichloroethene, 1,2-Dichloroethane, 1,2-Dichloropropane, 2-Butanone, 2-Hexanone, 4-Methyl-2-Pentanone, Acetone, Benzene, Bromodichloromethane, Bromoform, Bromomethane, Carbon disulfide, Carbon tetrachloride, Chlorobenzene, Chloroethane, Chloroform, Chloromethane, cis-1,2-Dichloroethylene, cis-1,3-Dichloropropene, Dibromochloromethane, Ethylbenzene, Methylene chloride, Styrene, Tetrachloroethene, Toluene, trans-1,2-Dic

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

Appendix 5

Data Validation Supporting Documentation

APPENDIX A
RADIOCHEMICAL DATA VALIDATION CHECKLIST

VALIDATION LEVEL:	A	B	[✓ C]	D	E

PROJECT: RCBRA
DATA PACKAGE: K1525
VALIDATOR: ELR
LAB: EB
DATE: 1/7/09
SDG: K1525

ANALYSES PERFORMED

Gross Alpha/Beta Total Uranium	☒ [illegible] Radium [illegible]	☒ [illegible] [illegible]	☒ Alpha Spectroscopy XC-14	☒ Gamma Spectroscopy	

SAMPLES/MATRIX

J17V87 J17V88 J17V89 J17V90 J17V91 J17V92
J17V80 J17V85 J18177 J18178 J18179 J18180 J18181
J18182 J18183

solid

1. Completeness ☐ N/A

Technical verification forms present? Yes [✓ No] N/A

Comments:

2. Initial Calibration (Levels D, E) [✓ N/A]

Instruments/detectors calibrated? Yes No N/A

Initial calibration acceptable? Yes No N/A

Standards NIST traceable? Yes No N/A

Standards Expired? Yes No N/A

Calculation check acceptable? Yes No N/A

Comments:

3. Continuing Calibration (Levels D, E) ☒ N/A

Calibration checked within required frequency? .... Yes No N/A

Calibration check acceptable? .... Yes No N/A

Calibration check standards traceable? .... Yes No N/A

Calibration check standards expired? .... Yes No N/A

Calculation check acceptable? .... Yes No N/A

Comments:

4. Background Counts (Levels D, E) .... ☒ N/A

Background Counts checked within required frequency? .... Yes No N/A

Background Counts acceptable? .... Yes No N/A

Calculation check acceptable? .... Yes No N/A

Comments:

5. Blanks (Levels B, C, D, E) ☐ N/A

Method blank analyzed within required frequency? [✓ Yes] No N/A

Method blank results acceptable? [✓ Yes] No N/A

Analytes detected in method blank? Yes [✓ No] N/A

Field blank(s) analyzed? Yes [✓ No] N/A

Field blank results acceptable? Yes No [✓ N/A]

Analytes detected in field blank(s)? Yes No [✓ N/A]

Transcription/Calculation Errors? (Levels D, E) Yes No [✓ N/A]

Comments: no FB

6. Laboratory Control Samples or Blank Spike Samples (Levels C, D, E) ☐ N/A

LCS /BSS analyzed within required frequency? [✓ Yes] No N/A

LCS/BSS recoveries acceptable? [✓ Yes] No N/A

LCS/BSS traceable? (Levels D,E) Yes No [✓ N/A]

LCS/BSS expired? (Levels D,E) Yes No [✓ N/A]

LCS/BSS levels correct? (Levels D,E) Yes No [✓ N/A]

Transcription/Calculation Errors? (Levels D, E) Yes No [✓ N/A]

Comments:
LCS - no th-229 or th 232 - aspec - J all

7. Chemical Carrier Recovery (Levels C, D, E) ☒ N/A

Chemical carrier added? Yes No N/A

Chemical recovery acceptable? Yes No N/A

Chemical carrier traceable? (Levels D, E) Yes No N/A

Chemical carrier expired? (Levels D, E) .... Yes No N/A

Transcription/Calculation errors? (Levels D, E) .... Yes No N/A

Comments:

8. Tracer Recovery (Levels C, D, E) .... ☐ N/A

Tracer added? .... [✓ Yes] No N/A

Tracer recovery acceptable? .... [✓ Yes] No N/A

Tracer traceable? (Levels D, E) .... Yes No [✓ N/A]

Tracer expired? (Levels D, E) .... Yes No [✓ N/A]

Transcription/Calculation errors? (Levels D, E) .... Yes No [✓ N/A]

Comments:

9. Matrix Spikes (Levels C, D, E) .... ☐ N/A

Matrix spike analyzed? .... Yes [✓ No] N/A

Spike recoveries acceptable? .... Yes No [✓ N/A]

Spike source traceable? (Levels D, E) .... Yes No [✓ N/A]

Spike source expired? Levels D, E) .... Yes No [✓ N/A]

Transcription/Calculation Errors? (Levels D, E) .... Yes No [✓ N/A]

Comments: NO MS - C-14 - I all

10. Duplicates (Levels C, D, E) .... ☐ N/A

Duplicates Analyzed at required frequency? .... [✓ Yes] No N/A

RPD Values Acceptable? .... [✓ Yes] No N/A

Transcription/Calculation Errors? (Levels D, E) .... Yes No [✓ N/A]

Comments:

11. Field QC Samples (Levels C, D, E) .... ☐ N/A

Field duplicate sample(s) analyzed? .... [✓ Yes] No N/A

Field duplicate RPD values acceptable? .... [✓ Yes] No N/A

Field split sample(s) analyzed? .... Yes [✓ No] N/A

Field split RPD values acceptable? .... Yes No [✓ N/A]

Performance audit sample(s) analyzed? .... Yes [✓ No] N/A

Performance audit sample results acceptable? .... Yes No [✓ N/A]

Comments: No FS or PAr

Po/77

12. Holding Times (All levels)

Are sample holding times acceptable? .... [✓ Yes] No N/A

Comments:

13. Results and Detection Limits (All Levels) .... ☐ N/A

Results reported for all required sample analyses? .... [✓ Yes] No N/A

Results supported in raw data? (Levels D, E) .... Yes No [✓ N/A]

Results Acceptable? (Levels D, E) .... Yes No [✓ N/A]

Transcription/Calculation errors? (Levels D, E) .... Yes No [✓ N/A]

MDA's meet required detection limits? .... [✓ Yes] No N/A

Transcription/calculation errors? (Levels D, E) .... Yes No [✓ N/A]

Comments:

Appendix 8

Additional Documentation Requested by Client

EBERLINE ANALYTICAL/RICHMOND

SAMPLE DELIVERY GROUP K1525

7299-017

Method Blank

METHOD BLANK

SDG	7299	Client/Case no	Hanford	SDG K1525
Contact	N. Joseph Verville	Contract	No. S00M215A00	
Lab sample id	R902010-17	Client sample id	Method Blank	
Dept sample id	7299.017	Material/Matrix		SOLID
		SAF No	RC-116	

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Carbon 14	14762-75-5	0.168	2.5	4.33	50.0	U	C
Total Strontium	SR-RAD	-0.111	0.11	0.309	1.00	U	SR
Technetium 99	14133-76-7	0.041	0.19	0.355	15.0	U	TC
Thorium 228	14274-82-9	0	0.26	0.620	1.00	U	TH
Thorium 230	14269-63-7	0.041	0.17	0.326	1.00	U	TH
Thorium 232	TH-232	0.043	0.085	0.326	1.00	U	TH
Uranium 233/234	U-233/234	0.025	0.051	0.191	1.00	U	U
Uranium 235	15117-96-1	0	0.061	0.234	1.00	U	U
Uranium 238	U-238	0	0.051	0.193	1.00	U	U
Plutonium 238	13981-16-3	0.017	0.13	0.242	1.00	U	PU
Plutonium 239/240	PU-239/240	-0.037	0.061	0.242	1.00	U	PU
Potassium 40	13966-00-2	U		0.050		U	GAM
Cobalt 60	10198-40-0	U		0.005	0.050	U	GAM
Cesium 137	10045-97-3	U		0.004	0.100	U	GAM
Radium 226	13982-63-3	U		0.008	0.100	U	GAM
Radium 228	15262-20-1	U		0.016	0.200	U	GAM
Europium 152	14683-23-9	U		0.011	0.100	U	GAM
Europium 154	15585-10-1	U		0.012	0.100	U	GAM
Europium 155	14391-16-3	U		0.008	0.100	U	GAM
Thorium 228	14274-82-9	U		0.006		U	GAM
Thorium 232	TH-232	U		0.010		U	GAM
Uranium 235	15117-96-1	U		0.014		U	GAM
Uranium 238	U-238	U		0.446		U	GAM
Americium 241	14596-10-2	U		0.005		U	GAM
Beryllium 7	13966-02-4	U		0.029		U	GAM
Ruthenium 106	13967-48-1	U		0.032		U	GAM
Antimony 125	14234-35-6	U		0.009		U	GAM
Cesium 134	13967-70-9	U		0.005		U	GAM

ColumbiaRiverComp.ofRCBRA-Sediment

Lab id	EBRLNE
Protocol	Hanford1
Version	Ver 1.0
Form	DVD-DS
Version	1.06
Report date	03/18/09

EBERLINE ANALYTICAL/RICHMOND

SAMPLE DELIVERY GROUP [illegible]

7299-016 Lab Control Sample

LAB CONTROL SAMPLE

SDG 7299
Contact N. Joseph Verville
Client/Case no Hanford SDG [illegible]
Contract No. [illegible]

Lab sample id [illegible]
Dept sample id 7299-016
Client sample id Lab Control Sample
Material/Matrix [illegible] SOLID
SAF No [illegible]

ANALYTE	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALIFIERS	TEST	ADDED pCi/g	2σ ERR pCi/g	REC %	3σ LMTS (TOTAL)	PROTOCOL LIMITS
Carbon 14	2020	19	4.40	50.0		C	1980	79	102	84-116	80-120
Total Strontium	10.0	0.54	0.254	1.00		SR	9.16	0.37	109	85-120	80-120
Technetium 99	161	1.4	0.354	15.0		TC	169	4.4	9[illegible]	81-119	80-120
Thorium 230	17.5	1.1	0.098	1.00		TH	17.6	1.5	99	86-114	80-120
Uranium 233/234	18.8	2.1	0.921	1.00		U	18.6	0.74	101	78-122	80-120
Uranium 235	15.2	1.8	0.222	1.00		U	15.1	0.60	101	78-122	80-120
Uranium 238	19.1	2.1	0.476	1.00		U	20.2	0.81	95	80-120	80-120
Plutonium 238	25.0	2.4	0.210	1.00		PU	26.2	0.91	95	80-120	80-120
Plutonium 239/240	25.5	2.6	0.210	1.00		PU	26.4	1.1	97	80-120	80-120
Cobalt 60	0.734	0.017	0.008	0.050		GAM	0.768	0.011	96	87-113	80-120
Cesium 137	0.187	0.012	0.009	0.100		GAM	0.171	0.015	108	87-113	80-120

[illegible] comp of [illegible] sediment

QC [illegible]

LAB CONTROL SAMPLES
Page 1
SUMMARY DATA SECTION
Page [illegible]

Lab id EBERLINE
Protocol Hanford
Version Ver 1.0
Form DVD-LCS
Version 3.06
Report date 01/14/99

EBERLINE ANALYTICAL/RICHMOND

[illegible]

[illegible]

DUPLICATE

[illegible]

SDG	[illegible]			Client/Case no	[illegible]
Contact	[illegible]			Contract	[illegible]
	DUPLICATE		ORIGINAL		
Lab sample id	[illegible]	Lab sample id	[illegible]	Client sample id	[illegible]
Dept sample id	[illegible]	Dept sample id	[illegible]	Location/Matrix	[illegible]
		Received	[illegible]	Collected/Weight	[illegible]
% solids	100.0	% solids	100.0	Custody/SAT No	[illegible]

ANALYTE	DUPLICATE pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST	ORIGINAL pCi/g	2σ ERR (COUNT)	MDA pCi/g	QUALI-FIERS	RPD %	3σ TOT	DER σ
Carbon 14	[illegible]	[illegible]	[illegible]	50.0	U	[illegible]	[illegible]	[illegible]	[illegible]	U	-		[illegible]
Total Strontium	[illegible]	[illegible]	0.507	1.00	U	SR	[illegible]	[illegible]	[illegible]	U			[illegible]
Technetium 99	[illegible]	[illegible]	[illegible]	15.0	U	TC	[illegible]	[illegible]	[illegible]	U			[illegible]
Thorium 228	[illegible]	[illegible]	0.460	1.00		TH	[illegible]	[illegible]	0.110		[illegible]	[illegible]	0.2
Thorium 230	[illegible]	[illegible]	[illegible]	1.00	U	TH	[illegible]	[illegible]	[illegible]	U	-		[illegible]
Thorium 232	[illegible]	[illegible]	0.242	1.00		TH	[illegible]	[illegible]	[illegible]		[illegible]	[illegible]	[illegible]
Uranium 233/234	[illegible]	[illegible]	[illegible]	1.00		U	[illegible]	[illegible]	[illegible]		[illegible]	[illegible]	[illegible]
Uranium 235	0	[illegible]	[illegible]	1.00	U	U	0	[illegible]	[illegible]	U	-		[illegible]
Uranium 238	[illegible]	[illegible]	[illegible]	1.00		U	[illegible]	[illegible]	[illegible]		[illegible]	[illegible]	[illegible]
Plutonium 238	0	[illegible]	[illegible]	1.00	U	PU	0	[illegible]	[illegible]	U			[illegible]
Plutonium 239/240	0	[illegible]	[illegible]	1.00	U	PU	0	[illegible]	[illegible]	U	-		[illegible]
Potassium 40	[illegible]	[illegible]	[illegible]			GAM	[illegible]	[illegible]	[illegible]		[illegible]	[illegible]	[illegible]
Cobalt 60	0		[illegible]	0.050	U	GAM	0		[illegible]	U			[illegible]
Cesium 137	[illegible]	0.004	0.006	0.100		GAM	[illegible]	[illegible]	[illegible]		7	[illegible]	[illegible]
Radium 226	[illegible]	[illegible]	[illegible]	0.100		GAM	[illegible]	[illegible]	[illegible]		[illegible]	[illegible]	[illegible]
Radium 228	[illegible]	[illegible]	[illegible]	0.200		GAM	[illegible]	[illegible]	[illegible]		4	[illegible]	[illegible]
Europium 152	0		[illegible]	0.100	U	GAM	0		[illegible]	U	-		[illegible]
Europium 154	0		[illegible]	0.100	U	GAM	0		[illegible]	U			[illegible]
Europium 155	0		[illegible]	0.100	U	GAM	0		[illegible]	U	-		[illegible]
Thorium 228	[illegible]	0.010	[illegible]			GAM	[illegible]	[illegible]	[illegible]		[illegible]	[illegible]	[illegible]
Thorium 232	[illegible]	[illegible]	[illegible]			GAM	[illegible]	[illegible]	[illegible]		4	[illegible]	[illegible]
Uranium 235	0		[illegible]		U	GAM	0		[illegible]	U			[illegible]
Uranium 238	0		[illegible]		U	GAM	0		[illegible]	U	-		[illegible]
Americium 241	0					GAM	0		[illegible]	U	[illegible]	[illegible]	[illegible]
Beryllium 7	0		[illegible]		U	GAM	0		[illegible]	U	-		[illegible]
Ruthenium 106	0		[illegible]		U	GAM	0		0.061	U			[illegible]
Antimony 125	0		[illegible]		U	GAM	0		[illegible]	U			[illegible]
Cesium 134	0		[illegible]		U	GAM	0		[illegible]	U			[illegible]

[illegible]

Lab id	[illegible]
Protocol	[illegible]
Version	[illegible]
Form	[illegible]
Version	[illegible]
Report date	[illegible]

DUPLICATES
Page 1
SUMMARY DATA SECTION
Page [illegible]

Date: 8 December 2009
To: Washington Closure Hanford (technical representative)
From: ELR Consultants
Project: Columbia River Component of the RCBRA - Sediment
Subject: PCB/Pesticide - Data Package No. K1525-LLI

INTRODUCTION

This memo presents the results of data validation on Data Package No. K1525 prepared by Lionville Laboratory Inc. (LLI). A list of samples validated along with the analyses reported and the method of analysis is provided in the following table.

Sample ID	Sample Date	Media	Validation	Anaysis
J18157-A	2/2/09	Solid	C	See note 1
J18158-A	2/2/09	Solid	C	See note 1
J18159-A	2/2/09	Solid	C	See note 1
J18160-A	2/2/09	Solid	C	See note 1
J18177	2/3/09	Solid	C	See note 1 & 2
J18198	2/3/09	Solid	C	See note 1 & 2
J18199	2/3/09	Solid	C	See note 1 & 2
J181B0	2/3/09	Solid	C	See note 1 & 2
J181B1	2/3/09	Solid	C	See note 1 & 2
J181B2	2/3/09	Solid	C	See note 1 & 2
J181B3	2/3/09	Solid	C	See note 1 & 2
J17V87	2/3/09	Solid	C	See note 1 & 2
J17V88	2/3/09	Solid	C	See note 1 & 2
J17V89	2/3/09	Solid	C	See note 1 & 2
J17V90	2/3/09	Solid	C	See note 1 & 2
J17V91	2/3/09	Solid	C	See note 1 & 2
J17V92	2/3/09	Solid	C	See note 1 & 2
J17VP0	2/3/09	Solid	C	See note 1 & 2
J17VP5	2/3/09	Solid	C	See note 1 & 2
J180W8-A	2/2/09	Solid	C	See note 1 & 2
J180W9-A	2/2/09	Solid	C	See note 1 & 2

1 – PCBs by 8082 and
2 - Pesticides by 8081A.

Data validation was conducted in accordance with the Washington Closure Hanford (WCH) validation statement of work and the Remedial Investigation Work Plan for Hanford Site Releases to the Columbia River (DOE/RL-2008-11, Rev. 0, September 2008). Appendices 1 through 6 provide the following information as indicated below:

Appendix 1. Glossary of Data Reporting Qualifiers
Appendix 2. Summary of Data Qualification
Appendix 3. Qualified Data Summary and Annotated Laboratory Reports
Appendix 4. Laboratory Narrative and Chain-of-Custody Documentation
Appendix 5. Data Validation Supporting Documentation
Appendix 6. Additional Data Requested by Client

DATA QUALITY OBJECTIVES

- **Holding Times & Sample Preservation**

Sample data were assessed to ascertain whether the holding time requirements were met by the laboratory. The holding time requirements are as follows: Soil samples must be extracted within 14 days of the date of sample collection and analyzed within 40 days from the date of extraction.

If holding times are exceeded by less than or equal to twice times the limit, all associated sample results are qualified as estimates and flagged "J" for detects and "UJ" for non-detects. If holding times are exceeded by greater than two times the limit, all associated detected sample results are qualified as estimates and flagged "J" and all non-detects are rejected and flagged "UR".

All holding times were acceptable.

- **Method Blank**

Method blank analyses are performed to determine the extent of laboratory contamination introduced through sampling, sample preparation or analysis. At least one method blank analysis must be conducted for every 20 samples. Method blanks should not contain target compounds at a concentration greater than required quantitation limit (RQL). If target compounds are present, sample results less than five times the blank concentration are qualified as undetected and flagged "U". If the sample result is less than five times the blank concentration and less than RQL, the result is qualified as undetected and elevated to the RQL.

All method blank results were acceptable.

Field Blanks

No field blanks were submitted for analysis

- **Accuracy**

Matrix Spike & Laboratory Control Sample

Matrix spike (MS) and laboratory control sample (LCS) analyses are used to assess the analytical accuracy of the reported data. The matrix spike is used to assess the effect of the matrix on the ability to accurately quantify sample concentrations. Recoveries must fall within the range of 50% to 150%. If spike recoveries are outside control limits, detected sample results less than five times the spike concentration are qualified as estimates and flagged "J". Non-detected sample results with spike recoveries outside control limits are qualified as estimates and flagged "UJ". Sample results greater than five times the spike concentration require no qualification.

Due to the lack of a matrix spike, matrix spike duplicate and LCS analysis, all toxaphene results were qualified as estimates and flagged "J".

All accuracy results were acceptable.

Surrogate Recovery

The analysis of surrogate compounds provides a measure of performance for individual samples. Matrix-specific surrogate compound recovery control windows have been established by the laboratory. When a surrogate compound recovery is outside the control window, all positively identified target compounds associated with the unacceptable surrogate recoveries are qualified as estimates and flagged "J". Non-detected compounds with surrogate recoveries less than the lower control limit are qualified as having an estimated detection limit and flagged "UJ". Non-detected compounds with surrogate recoveries above the upper control limit require no qualification.

Due to surrogate recoveries outside QC limits (175% & 142%), the aroclor-1260 result in sample J18157-A was qualified as an estimate and flagged "J".

All other surrogate results were acceptable.

- **Precision**

Matrix Spike/Matrix Spike Duplicate Samples

Matrix spike/matrix spike duplicate results provide matrix-specific information on the precision of the method for specific target compound classes. Precision is expressed as the relative percent difference (RPD) between the recoveries of duplicate matrix spike analyses performed on a sample. For soil samples, results must be within RPD limits of plus/minus 30%. If RPD values are out of specification and the sample concentration is less than five times the spike concentration, all associated detected sample results are qualified as estimates and flagged "J". If RPD values are out of specification and the sample concentration is greater than five times the spike concentration, no qualification is required.

Due to RPDs outside QC limits, the endosulfan II (45%) and 4,4-DDD (34%) results in sample J180W9-A were qualified as estimates and flagged "J".

Due to the lack of a matrix spike and matrix spike duplicate analysis, all toxaphene results were qualified as estimates and flagged "J".

All other precision results were acceptable.

Field Duplicate Samples

One set of field duplicates (J18177/J17VP0) were submitted for analysis. Field duplicates are compared using the same criteria as for laboratory duplicates. All field duplicates results were acceptable.

- **Analytical Detection Levels**

Reported analytical detection levels are compared against the project specific RQLs to ensure that laboratory detection levels meet the required criteria. All analytes met the RQL.

- **Completeness**

Data Package No. K1525 was submitted for validation and verified for completeness. Completeness is based on the percentage of data determined to be valid (i.e., not rejected). The completion percentage was 0%.

MAJOR DEFICIENCIES

None found.

MINOR DEFICIENCIES

The following minor deficiencies were noted:

- Due to the lack of a matrix spike, matrix spike duplicate and LCS analysis, all toxaphene results were qualified as estimates and flagged "J".
- Due to surrogate recoveries outside QC limits (175% & 142%), the aroclor-1260 result in sample J18157-A was qualified as an estimate and flagged "J".
- Due to RPDs outside QC limits, the endosulfan II (45%) and 4,4-DDD (34%) results in sample J180W9-A were qualified as estimates and flagged "J".

Data flagged "J" indicates that the associated concentration is an estimate, but under the WCH statement of work, the data may be usable for decision-making purposes. All other validated results are considered accurate within the standard error associated with the methods.

REFERENCES

Washington Closure Hanford Contract #S00W307A00 (March 2008), *Data Validation Services*.

DOE/RL-2008-11, Rev.0, *Remedial Investigation Work Plan for Hanford Site Releases to the Columbia River*, September 2008.

Appendix 1

Glossary of Data Reporting Qualifiers

Qualifiers which may be applied by data validators in compliance with the procedures herein are as follows:

U - Indicates the compound or analyte was analyzed for and not detected in the sample. The value reported is the sample quantitation limit corrected for sample dilution and moisture content by the laboratory.

UJ - Indicates the compound or analyte was analyzed for and not detected in the sample. Due to a minor QC deficiency identified during the data validation, the associated quantitation limit is an estimate.

J - Indicates the compound or analyte was analyzed for and detected. Due to a minor QC deficiency identified during the data validation, the associated quantitation limit is an estimate.

R - Indicates the compound or analyte was analyzed for, detected, and due to an identified major QC deficiency, the data are unusable.

UR - Indicates the compound or analyte was analyzed for and not detected in the sample. Additionally, the data is unusable due to an identified major QC deficiency.

NJ - Indicates presumptive evidence of a compound at an estimated value. The data may not be valid for some specific applications (i.e., usable for decision-making purposes).

N - Indicates presumptive evidence of a compound. The data may not be valid for some specific applications (i.e., usable for decision-making purposes).

Appendix 2

Summary of Data Qualification

PCB/PESTICIDE DATA QUALIFICATION SUMMARY*

SDG: K1525	**REVIEWER: ELR**	**Project: RCBRA**	**QC Issue**
COMPOUND	QUALIFIER	SAMPLES AFFECTED	REASON
Endosulfan II 4,4-DDD	J	J180W9-A	RPD
Aroclor-1016	J	J18157-A	Surrogate recovery
Toxaphene	J	All	No MS, MSD or LCS analysis

* - The Qualified Data Summary Table includes laboratory applied "U" qualifiers not specifically identified here. The laboratory applied "U" qualifiers are included to minimize misinterpretation of results contained in the table.

Appendix 3

Qualified Data Summary and Annotated Laboratory Reports

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

WC-Hanford, Inc.
2620 Fermi Avenue
Richland WA, 99354

Project: RC-116
Project Number: K1525
Project Manager: John Kessner

Reported:
10/10/2009 12:52

J18157-A
0902012-01 (Solid)

12/7/09

Analyte	Result and Qualifier	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Lionville Laboratory								
Polychlorinated Biphenyls by SW846 8082								
Aroclor 1016	13.3 U	13.3	ug/kg	1	L902089	02/12/2009	02/24/2009	8082
Aroclor 1221	13.3 U	13.3	ug/kg	1	L902089	02/12/2009	02/24/2009	8082
Aroclor 1232	13.3 U	13.3	ug/kg	1	L902089	02/12/2009	02/24/2009	8082
Aroclor 1242	13.3 U	13.3	ug/kg	1	L902089	02/12/2009	02/24/2009	8082
Aroclor 1248	13.3 U	13.3	ug/kg	1	L902089	02/12/2009	02/24/2009	8082
Aroclor 1254	13.3 U	13.3	ug/kg	1	L902089	02/12/2009	02/24/2009	8082
Aroclor 1260	**4.07** J	13.3	ug/kg	1	L902089	02/12/2009	02/24/2009	8082
Surrogate: Decachlorobiphenyl	*175 % **	*43-144*	ug/kg	1	L902089	02/12/2009	02/24/2009	8082
Surrogate: Tetrachloro-meta-xylene	*142 % **	*55-141*			*L902089*	*02/12/2009*	*02/24/2009*	*8082*
					L902089	*02/12/2009*	*02/24/2009*	*8082*

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208 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

WC-Hanford, Inc	Project: RC-116	
2620 Fermi Avenue	Project Number: K1525	Reported:
Richland WA, 99354	Project Manager: Joan Kessner	03/10/2009 12:52

J18158-A

0902012-02 (Solid)

12/7/09

Analyte	Result and Qualifier	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method

Lionville Laboratory

Polychlorinated Biphenyls by SW846 8082

Analyte	Result and Qualifier	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Aroclor 1016	13.3 U	13.3	ug/kg	1	L902089	02/12/2009	02/24/2009	8082
Aroclor 1221	13.3 U	13.3	ug/kg	1	L902089	02/12/2009	02/24/2009	8082
Aroclor 1232	13.3 U	13.3	ug/kg	1	L902089	02/12/2009	02/24/2009	8082
Aroclor 1242	13.3 U	13.3	ug/kg	1	L902089	02/12/2009	02/24/2009	8082
Aroclor 1248	13.3 U	13.3	ug/kg	1	L902089	02/12/2009	02/24/2009	8082
Aroclor 1254	13.3 U	13.3	ug/kg	1	L902089	02/12/2009	02/24/2009	8082
Aroclor 1260	13.3 U	13.3	ug/kg	1	L902089	02/12/2009	02/24/2009	8082
Surrogate: Decachlorobiphenyl	*118 %*	*43-144*			*L902089*	*02/12/2009*	*02/24/2009*	*8082*
Surrogate: Tetrachloro-meta-xylene	*103 %*	*52-141*			*L902089*	*02/12/2009*	*02/24/2009*	*8082*

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764 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

WC-Hanford, Inc
2620 Fermi Avenue
Richland WA, 99354

Project: RC-116
Project Number: K1525
Project Manager: Joan Kessner

Reported:
10/10/2009 12:52

J18159-A
0902012-03 (Solid)

V 12/7/09

Analyte	Result and Qualifier	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Lionville Laboratory								
Polychlorinated Biphenyls by SW846 8082								
Aroclor 1016	13.3 U	13.3	ug/kg	1	L902089	02/12/2009	02/24/2009	8082
Aroclor 1221	13.3 U	13.3	ug/kg	1	L902089	02/12/2009	02/24/2009	8082
Aroclor 1232	13.3 U	13.3	ug/kg	1	L902089	02/12/2009	02/24/2009	8082
Aroclor 1242	13.3 U	13.3	ug/kg	1	L902089	02/12/2009	02/24/2009	8082
Aroclor 1248	13.3 U	13.3	ug/kg	1	L902089	02/12/2009	02/24/2009	8082
Aroclor 1254	13.3 U	13.3	ug/kg	1	L902089	02/12/2009	02/24/2009	8082
Aroclor 1260	13.3 U	13.3	ug/kg	1	L902089	02/12/2009	02/24/2009	8082
Surrogate: Decachlorobiphenyl	*97 %*	*41-144*			*L902089*	*02/12/2009*	*02/24/2009*	*8082*
Surrogate: Tetrachloro-meta-xylene	*84 %*	*52-141*			*L902089*	*02/12/2009*	*02/24/2009*	*8082*

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264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

WC Hanford, Inc
2620 Fermi Avenue
Richland WA, 99354

Project: RC-116
Project Number: K1525
Project Manager: Joan Kessner

Reported:
10/30/2009 12:52

J18160-A
0902012-04 (Solid)

12/7/09

Analyte	Result and Qualifier	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Lionville Laboratory								
Polychlorinated Biphenyls by SW846 8082								
Aroclor 1016	13.3 U	13.3	ug/kg	1	L902089	02/12/2009	02/24/2009	8082
Aroclor 1221	13.3 U	13.3	ug/kg	1	L902089	02/12/2009	02/24/2009	8082
Aroclor 1232	13.3 U	13.3	ug/kg	1	L902089	02/12/2009	02/24/2009	8082
Aroclor 1242	13.3 U	13.3	ug/kg	1	L902089	02/12/2009	02/24/2009	8082
Aroclor 1248	13.3 U	13.3	ug/kg	1	L902089	02/12/2009	02/24/2009	8082
Aroclor 1254	13.3 U	13.3	ug/kg	1	L902089	02/12/2009	02/24/2009	8082
Aroclor 1260	13.3 U	13.3	ug/kg	1	L902089	02/12/2009	02/24/2009	8082
Surrogate: Decachlorobiphenyl	*95 %*	*33-144*			*L902089*	*02/12/2009*	*02/24/2009*	*8082*
Surrogate: Tetrachloro-meta-xylene	*84 %*	*52-141*			*L902089*	*02/12/2009*	*02/24/2009*	*8082*

9

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

WC Hanford, Inc
2620 Fermi Avenue
Richland WA 99354

Project: RC3-116
Project Number: K1525
Project Manager: Joan Kessner

Reported:
04/08/2009 06:56

J18177
0902012-05 (Solid)

12/2/09

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
			Lionville Laboratory						
Polychlorinated Biphenyls by SW846 8082									
Aroclor 1016	ND	13.3	ug/kg wet	1	I907089	02/12/2009	02/24/2009	8082	U
Aroclor 1221	ND	13.3	"	"	"	"	"	"	U
Aroclor 1232	ND	13.3	"	"	"	"	"	"	U
Aroclor 1242	ND	13.3	"	"	"	"	"	"	U
Aroclor 1248	ND	13.3	"	"	"	"	"	"	U
Aroclor 1254	ND	13.3	"	"	"	"	"	"	U
Aroclor 1260	ND	13.3	"	"	"	"	"	"	U
Surrogate: Decachlorobiphenyl		*104 %*	*35-144*		"	"	"	"	
Surrogate: Tetrachloro-meta-xylene		*87 %*	*52-147*		"	"	"	"	

364 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3042

WC-Hanford, Inc.
2620 Fermi Avenue
Richland WA, 99354

Project: RC 116
Project Number: K1525
Project Manager: Joan Kessner

Reported:
04/08/2009 09:56

J18198
0902012-06 (Solid)

12/7/09

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Lionville Laboratory									
Polychlorinated Biphenyls by SW846 8082									
Aroclor 1016	ND	13.3	ug/kg wet	1	1902089	02/12/2009	02/24/2009	8082	U
Aroclor 1221	ND	13.3	"	"	"	"	"	"	U
Aroclor 1232	ND	13.3	"	"	"	"	"	"	U
Aroclor 1242	ND	13.3	"	"	"	"	"	"	U
Aroclor 1248	ND	13.3	"	"	"	"	"	"	U
Aroclor 1254	ND	13.3	"	"	"	"	"	"	U
Aroclor 1260	**13.3**	13.3	"	"	"	"	"	"	J
Surrogate: Decachlorobiphenyl		*111 %*	*45-144*		"	"	"	"	
Surrogate: Tetrachloro-meta-xylene		*90.8 %*	*52-141*		"	"	"	"	

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

WC Hanford, Inc 2620 Fermi Avenue Richland WA, 99354	Project: RC-110 Project Number: K1525 Project Manager: Joan Kessner	**Reported:** 04/08/2009 00:56

J18199

0902012-07 (Solid)

12/7/09

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
			Lionville Laboratory						
Polychlorinated Biphenyls by SW846 8082									
Aroclor 1016	ND	13.3	ug/kg wet	1	L902089	02/12/2009	02/24/2009	8082	U
Aroclor 1221	ND	13.3	"	"	"	"	"	"	U
Aroclor 1232	ND	13.3	"	"	"	"	"	"	U
Aroclor 1242	ND	13.3	"	"	"	"	"	"	U
Aroclor 1248	ND	13.3	"	"	"	"	"	"	U
Aroclor 1254	ND	13.3	"	"	"	"	"	"	U
Aroclor 1260	ND	13.3	"	"	"	"	"	"	U
Surrogate: Decachlorobiphenyl		*94 %*	*41-134*		"	"	"	"	
Surrogate: Tetrachloro-meta-xylene		*81 %*	*52-141*		"	"	"	"	

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Phone: 610-280-3000
Fax: 610 280-3041

WC Hanford, Inc.
2620 Fermi Avenue
Richland WA, 99354

Project: RCV116
Project Number: K1525
Project Manager: John Kessner

Reported:
04/08/2009 00:56

J181H0
0902012-08 (Solid)

Vr 12/7/09

Lionville Laboratory

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Polychlorinated Biphenyls by SW846 8082									
Aroclor 1016	ND	13.3	ug/kg wet	1	1902089	02/12/2009	02/24/2009	8082	U
Aroclor 1221	ND	13.3	"	"	"	"	"	"	U
Aroclor 1232	ND	13.3	"	"	"	"	"	"	U
Aroclor 1242	ND	13.3	"	"	"	"	"	"	U
Aroclor 1248	ND	13.3	"	"	"	"	"	"	U
Aroclor 1254	ND	13.3	"	"	"	"	"	"	U
Aroclor 1260	**10.5**	13.3	"	"	"	"	"	"	J
Surrogate: Decachlorobiphenyl		*102 %*	*43-144*		"	"	"	"	
Surrogate: Tetrachloro-meta-xylene		*95 %*	*52-141*		"	"	"	"	

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

WC-Hanford, Inc
2620 Fermi Avenue
Richland WA, 99354

Project: RC-116
Project Number: K1525
Project Manager: Joan Kessner

Reported:
03/08/2009 00:56

J181B1
0902012-09 (Solid)

Vc 12/7/09

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Lionville Laboratory									
Polychlorinated Biphenyls by SW846 8082									
Aroclor 1016	ND	13.3	ug/kg wet	1	1902089	02/12/2009	02/25/2009	8082	U
Aroclor 1221	ND	13.3	"	"	"	"	"	"	U
Aroclor 1232	ND	13.3	"	"	"	"	"	"	U
Aroclor 1242	ND	13.3	"	"	"	"	"	"	U
Aroclor 1248	ND	13.3	"	"	"	"	"	"	U
Aroclor 1254	ND	13.3	"	"	"	"	"	"	U
Aroclor 1260	ND	13.3	"	"	"	"	"	"	U
Surrogate: Decachlorobiphenyl		82 %	*43-144*		"	"	"	"	
Surrogate: Tetrachloro-meta-xylene		75 %	*52-141*		"	"	"	"	

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Phone: 610-280-3000
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WC Hanford, Inc. 2620 Fermi Avenue Richland WA, 99354	Project: RC-116 Project Number: X1525 Project Manager: Joan Kessner	Reported: 04/08/2009 00:56

J181B2

0902012-10 (Solid)

K 12/7/09

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Lionville Laboratory									
Polychlorinated Biphenyls by SW846 8082									
Aroclor 1016	ND	13.3	ug/kg wet	1	L902089	02/12/2009	02/25/2009	8082	U
Aroclor 1221	ND	13.3	"	"	"	"	"	"	U
Aroclor 1232	ND	13.3	"	"	"	"	"	"	U
Aroclor 1242	ND	13.3	"	"	"	"	"	"	U
Aroclor 1248	ND	13.3	"	"	"	"	"	"	U
Aroclor 1254	ND	13.3	"	"	"	"	"	"	U
Aroclor 1260	ND	13.3	"	"	"	"	"	"	U
Surrogate: Decachlorobiphenyl		*96 %*	*43-144*		"	"	"	"	
Surrogate: Tetrachloro-meta-xylene		*85 %*	*32-141*		"	"	"	"	

WC Hanford, Inc 2620 Fermi Avenue Richland WA, 99354	Project: RC 116 Project Number: K1525 Project Manager: Joan Kessner	Reported: 03/08/2009 08:56

J181B3

0902012-11 (Solid)

JK 12/7/09

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Lionville Laboratory									
Polychlorinated Biphenyls by SW846 8082									
Aroclor 1016	ND	13.3	ug/kg wet	1	L902089	02/12/2009	02/24/2009	8082	U
Aroclor 1221	ND	13.3	"	"	"	"	"	"	U
Aroclor 1232	ND	13.3	"	"	"	"	"	"	U
Aroclor 1242	ND	13.3	"	"	"	"	"	"	U
Aroclor 1248	ND	13.3	"	"	"	"	"	"	U
Aroclor 1254	ND	13.3	"	"	"	"	"	"	U
Aroclor 1260	ND	13.3	"	"	"	"	"	"	U
Surrogate: Decachlorobiphenyl		*91 %*	*43-144*		"	"	"	"	
Surrogate: Tetrachloro-meta-xylene		*82 %*	*32-141*		"	"	"	"	

264 Welsh Pool Road
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Fax: 610-280-3041

WC Hanford, Inc	Project: RC-116	
2620 Fermi Avenue	Project Number: K1525	Reported:
Richland WA, 99354	Project Manager: Joan Kessner	04/08/2009 00:56

J17VB7
0902012-12 (Solid)

V 12/7/09

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes

Lionville Laboratory

Polychlorinated Biphenyls by SW846 8082

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Aroclor 1016	ND	13.3	ug/kg wet	1	1902089	02/12/2009	02/25/2009	8082	U
Aroclor 1221	ND	13.3	"	"	"	"	"	"	U
Aroclor 1232	ND	13.3	"	"	"	"	"	"	U
Aroclor 1242	ND	13.3	"	"	"	"	"	"	U
Aroclor 1248	ND	13.3	"	"	"	"	"	"	U
Aroclor 1254	ND	13.3	"	"	"	"	"	"	U
Aroclor 1260	ND	13.3	"	"	"	"	"	"	U
Surrogate: Decachlorobiphenyl		*118 %*	*33-144*		"	"	"	"	
Surrogate: Tetrachloro-meta-xylene		*99 %*	*52-147*		"	"	"	"	

WC Hanford, Inc	Project: BC-116	
2620 Fermi Avenue	Project Number: K1575	Reported:
Richland WA, 99354	Project Manager: Joan Kessner	04/08/2009 08:56

J17V88
0902012-13 (Solid)

KR 12/7/07

Lionville Laboratory

Polychlorinated Biphenyls by SW846 8082

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Aroclor 1016	ND	13.3	ug/kg wet	1	1902009	02/12/2009	02/25/2009	8082	U
Aroclor 1221	ND	13.3	"	"	"	"	"	"	U
Aroclor 1232	ND	13.3	"	"	"	"	"	"	U
Aroclor 1242	ND	13.3	"	"	"	"	"	"	U
Aroclor 1248	ND	13.3	"	"	"	"	"	"	U
Aroclor 1254	ND	13.3	"	"	"	"	"	"	U
Aroclor 1260	ND	13.3	"	"	"	"	"	"	U
Surrogate: Decachlorobiphenyl		*106 %*	*43-144*		"	"	"	"	
Surrogate: Tetrachloro-meta-xylene		*94 %*	*42-141*		"	"	"	"	

204 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

WC Hanford, Inc.
2620 Fermi Avenue
Richland WA, 99354

Project: RCS116
Project Number: K1525
Project Manager: Todd Kessner

Reported:
04/08/2009 09:56

J17V89

0902012-14 (Solid)

4/7/09

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Lionville Laboratory									
Polychlorinated Biphenyls by SW846 8082									
Aroclor 1016	ND	13.3	ug/kg wet	1	1902089	02/12/2009	02/25/2009	8082	U
Aroclor 1221	ND	13.3	"	"	"	"	"	"	U
Aroclor 1232	ND	13.3	"	"	"	"	"	"	U
Aroclor 1242	ND	13.3	"	"	"	"	"	"	U
Aroclor 1248	ND	13.3	"	"	"	"	"	"	U
Aroclor 1254	ND	13.3	"	"	"	"	"	"	U
Aroclor 1260	ND	13.3	"	"	"	"	"	"	U
Surrogate: Decachlorobiphenyl		*101 %*	*44-134*		"	"	"	"	
Surrogate: Tetrachloro-meta-xylene		*91 %*	*35-141*		"	"	"	"	

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

WC-Hanford, Inc 2620 Fermi Avenue Richland WA, 99354	Project: RC-116 Project Number: K1525 Project Manager: Joan Kessner	**Reported:** 03/08/2009 09:56

J17V90

0902012-15 (Solid)

V 12/7/07

Lionville Laboratory

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Polychlorinated Biphenyls by SW846 8082									
Aroclor 1016	ND	13.3	ug/kg wet	1	L902009	02/12/2009	02/25/2009	8082	U
Aroclor 1221	ND	13.3	"	"	"	"	"	"	U
Aroclor 1232	ND	13.3	"	"	"	"	"	"	U
Aroclor 1242	ND	13.3	"	"	"	"	"	"	U
Aroclor 1248	ND	13.3	"	"	"	"	"	"	U
Aroclor 1254	ND	13.3	"	"	"	"	"	"	U
Aroclor 1260	ND	13.3	"	"	"	"	"	"	U
Surrogate: Decachlorobiphenyl		88 %	*43-144*		"	"	"	"	
Surrogate: Tetrachloro-meta-xylene		[illegible] %	*52-141*		"	"	"	"	

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

WC Hanford Inc 2620 Fermi Avenue Richland WA, 99354	Project: RC-116 Project Number: K4525 Project Manager: Joan Kessner	Reported: 04/08/2009 00:56

J17V91

0902012-16 (Solid)

Kr 4/1/09

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
			Lionville Laboratory						
Polychlorinated Biphenyls by SW846 8082									
Aroclor 1016	ND	13.3	ug/kg wet	1	L902089	02/12/2009	02/23/2009	8082	U
Aroclor 1221	ND	13.3	"	"	"	"	"	"	U
Aroclor 1232	ND	13.3	"	"	"	"	"	"	U
Aroclor 1242	ND	13.3	"	"	"	"	"	"	U
Aroclor 1248	ND	13.3	"	"	"	"	"	"	U
Aroclor 1254	ND	13.3	"	"	"	"	"	"	U
Aroclor 1260	ND	13.3	"	"	"	"	"	"	U
Surrogate: Decachlorobiphenyl		*87.3 %*	*44-144*		"	"	"	"	
Surrogate: Tetrachloro-meta-xylene		*81 %*	*55-141*		"	"	"	"	

264 Welsh Pool Road
Exton, PA 19341
Phone: 610 280 3000
Fax: 610 280-3041

WCH Hanford, Inc.
2620 Fermi Avenue
Richland WA, 99354

Project: RC-116
Project Number: K1525
Project Manager: Joan Kessner

Reported:
04/08/2009 09:56

J17V92
0902012-17 (Solid)

W 12/7/09

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Lionville Laboratory									
Polychlorinated Biphenyls by SW846 8082									
Aroclor 1016	ND	13.3	ug/kg wet	1	1902089	02/12/2009	02/25/2009	8082	U
Aroclor 1221	ND	13.3	"	"	"	"	"	"	U
Aroclor 1232	ND	13.3	"	"	"	"	"	"	U
Aroclor 1242	ND	13.3	"	"	"	"	"	"	U
Aroclor 1248	ND	13.3	"	"	"	"	"	"	U
Aroclor 1254	ND	13.3	"	"	"	"	"	"	U
Aroclor 1260	ND	13.3	"	"	"	"	"	"	U
Surrogate: Decachlorobiphenyl		*98 %*	*43-144*		"	"	"	"	
Surrogate: Tetrachloro-meta-xylene		*83.3 %*	*52-141*		"	"	"	"	

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

WC Hanford, Inc 2620 Fermi Avenue Richland WA 99354	Project: RC-136 Project Number: K1523 Project Manager: Joan Kessner	**Reported:** 04/08/2009 00:56

J17VP0
0902012-18 (Solid)

V 12/7/07

Lionville Laboratory

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Polychlorinated Biphenyls by SW846 8082									
Aroclor 1016	ND	13.3	ug/kg wet	1	L902089	02/12/2009	02/25/2009	8082	U
Aroclor 1221	ND	13.3	"	"	"	"	"	"	U
Aroclor 1232	ND	13.3	"	"	"	"	"	"	U
Aroclor 1242	ND	13.3	"	"	"	"	"	"	U
Aroclor 1248	ND	13.3	"	"	"	"	"	"	U
Aroclor 1254	ND	13.3	"	"	"	"	"	"	U
Aroclor 1260	ND	13.3	"	"	"	"	"	"	U
Surrogate: Decachlorobiphenyl		*92 %*	*33-144*		"	"	"	"	
Surrogate: Tetrachloro-meta-xylene		*82 %*	*32-141*		"	"	"	"	

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

WC Hanford, Inc	Project: KC-116	
2620 Fermi Avenue	Project Number: K1525	**Reported:**
Richland WA, 99354	Project Manager: Joan Kessner	03/08/2009 08:56

J17VP5
0902012-19 (Solid)

12/7/09

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes

Lionville Laboratory

Polychlorinated Biphenyls by SW846 8082

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Aroclor 1016	ND	13.3	ug/kg wet	1	1902089	02/12/2009	02/25/2009	8082	U
Aroclor 1221	ND	13.3	"	"	"	"	"	"	U
Aroclor 1232	ND	13.3	"	"	"	"	"	"	U
Aroclor 1242	ND	13.3	"	"	"	"	"	"	U
Aroclor 1248	ND	13.3	"	"	"	"	"	"	U
Aroclor 1254	ND	13.3	"	"	"	"	"	"	U
Aroclor 1260	ND	13.3	"	"	"	"	"	"	U
Surrogate: Decachlorobiphenyl		*108 %*	*43-144*		"	"	"	"	
Surrogate: Tetrachloro-meta-xylene		*90 %*	*52-141*		"	"	"	"	

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

WC-Hanford, Inc 2620 Fermi Avenue Richland WA, 99354	Project: RC-116 Project Number: K1523 Project Manager: Joan Kessner	Reported: 10/10/2009 12:52

J180W8-A
0902012-20 (Solid)

12/7/09

Analyte	Result and Qualifier	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method

Lionville Laboratory

Polychlorinated Biphenyls by SW846 8082

Analyte	Result and Qualifier	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Aroclor 1016	13.3 U	13.3	ug/kg	1	L902089	02/12/2009	02/25/2009	8082
Aroclor 1221	13.3 U	13.3	ug/kg	1	L902089	02/12/2009	02/25/2009	8082
Aroclor 1232	13.3 U	13.3	ug/kg	1	L902089	02/12/2009	02/25/2009	8082
Aroclor 1242	13.3 U	13.3	ug/kg	1	L902089	02/12/2009	02/25/2009	8082
Aroclor 1248	13.3 U	13.3	ug/kg	1	L902089	02/12/2009	02/25/2009	8082
Aroclor 1254	13.3 U	13.3	ug/kg	1	L902089	02/12/2009	02/25/2009	8082
Aroclor 1260	13.3 U	13.3	ug/kg	1	L902089	02/12/2009	02/25/2009	8082
Surrogate: Decachlorobiphenyl	*114 %*	*43-144*			*L902089*	*02/12/2009*	*02/25/2009*	*8082*
Surrogate: Tetrachloro-meta-xylene	*92 %*	*32-141*			*L902089*	*02/12/2009*	*02/25/2009*	*8082*

25

WC-Hanford, Inc	Project: RC-116	
2620 Fermi Avenue	Project Number: K1525	Reported:
Richland WA, 99354	Project Manager: Joan Kessner	10/10/2009 12:52

J180W9-A
0902012-21 (Solid)

12/2/09

Analyte	Result and Qualifier	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method

Lionville Laboratory

Polychlorinated Biphenyls by SW846 8082

Analyte	Result and Qualifier	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Aroclor 1016	13.3 U	13.3	ug/kg	1	L902088	02/12/2009	02/24/2009	8082
Aroclor 1221	13.3 U	13.3	ug/kg	1	L902088	02/12/2009	02/24/2009	8082
Aroclor 1232	13.3 U	13.3	ug/kg	1	L902088	02/12/2009	02/24/2009	8082
Aroclor 1242	13.3 U	13.3	ug/kg	1	L902088	02/12/2009	02/24/2009	8082
Aroclor 1248	13.3 U	13.3	ug/kg	1	L902088	02/12/2009	02/24/2009	8082
Aroclor 1254	13.3 U	13.3	ug/kg	1	L902088	02/12/2009	02/24/2009	8082
Aroclor 1260	13.3 U	13.3	ug/kg	1	L902088	02/12/2009	02/24/2009	8082
Surrogate: Decachlorobiphenyl	*98 %*	*31-144*			*L902088*	*02/12/2009*	*02/24/2009*	*8082*
Surrogate: Tetrachloro-meta-xylene	*87 %*	*52-141*			*L902088*	*02/12/2009*	*02/24/2009*	*8082*

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264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

WCH Hanford, Inc 2620 Fermi Avenue Richland WA, 99354	Project: RC116 Project Number: K1525 Project Manager: Joan Kessner	**Reported:** 03/08/2009 10:13

J18177
0902012-05 (Solid)

✓ 12/7/09

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
			Lionville Laboratory						
Organochlorine Pesticides by SW846 8081A									
alpha-BHC	ND	3.33	ug/kg wet	10	L902089	02/12/2009	03/07/2009	8081A	U
gamma-BHC	ND	3.33	"	"	"	"	"	"	U
beta-BHC	ND	3.33	"	"	"	"	"	"	U
delta-BHC	ND	3.33	"	"	"	"	"	"	U
Heptachlor	ND	3.33	"	"	"	"	"	"	U
Aldrin	ND	3.33	"	"	"	"	"	"	U
Heptachlor epoxide	ND	3.33	"	"	"	"	"	"	U
gamma-Chlordane	ND	3.33	"	"	"	"	"	"	U
alpha-Chlordane	ND	3.33	"	"	"	"	"	"	U
Endosulfan I	ND	3.33	"	"	"	"	"	"	U
4,4'-DDE	ND	3.33	"	"	"	"	"	"	U
Dieldrin	ND	3.33	"	"	"	"	"	"	U
Endrin	ND	3.33	"	"	"	"	"	"	U
4,4'-DDD	ND	3.33	"	"	"	"	"	"	U
Endosulfan II	ND	3.33	"	"	"	"	"	"	U
4,4'-DDT	ND	3.33	"	"	"	"	"	"	U
Endrin aldehyde	ND	3.33	"	"	"	"	"	"	U
Endosulfan sulfate	ND	3.33	"	"	"	"	"	"	U
Methoxychlor	ND	3.33	"	"	"	"	"	"	U
Endrin ketone	ND	3.33	"	"	"	"	"	"	U
Toxaphene	ND J	50.0	"	"	"	"	"	"	U
Surrogate: Tetrachloro-meta-xylene		*65.1 %*	*35-166*		"	"	"	"	
Surrogate: Decachlorobiphenyl		*105 %*	*41-153*		"	"	"	"	

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Phone. 610-280-3000
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WC-Hanford, Inc
2620 Fermi Avenue
Richland WA, 99354

Project: RC-116
Project Number: K1525
Project Manager: Joan Kessner

Reported:
03/08/2009 10:12

J18198
0902012-06 (Solid)

K 12/7/09

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes

Lionville Laboratory

Organochlorine Pesticides by SW846 8081A

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
alpha-BHC	ND	3.33	ug/kg wet	10	1902089	02/12/2009	03/07/2009	8081A	U
gamma-BHC	ND	3.33	"	"	"	"	"	"	U
beta-BHC	ND	3.33	"	"	"	"	"	"	U
delta-BHC	ND	3.33	"	"	"	"	"	"	U
Heptachlor	ND	3.33	"	"	"	"	"	"	U
Aldrin	ND	3.33	"	"	"	"	"	"	U
Heptachlor epoxide	ND	3.33	"	"	"	"	"	"	U
gamma-Chlordane	ND	3.33	"	"	"	"	"	"	U
alpha-Chlordane	ND	3.33	"	"	"	"	"	"	U
Endosulfan I	ND	3.33	"	"	"	"	"	"	U
4,4'-DDE	ND	3.33	"	"	"	"	"	"	U
Dieldrin	ND	3.33	"	"	"	"	"	"	U
Endrin	ND	3.33	"	"	"	"	"	"	U
4,4'-DDD	ND	3.33	"	"	"	"	"	"	U
Endosulfan II	ND	3.33	"	"	"	"	"	"	U
4,4'-DDT	ND	3.33	"	"	"	"	"	"	U
Endrin aldehyde	ND	3.33	"	"	"	"	"	"	U
Endosulfan sulfate	ND	3.33	"	"	"	"	"	"	U
Methoxychlor	ND	3.33	"	"	"	"	"	"	U
Endrin ketone	ND	3.33	"	"	"	"	"	"	U
Toxaphene	ND J	50.0	"	"	"	"	"	"	U
Surrogate: Tetrachloro-meta-xylene		*89.6 %*	*28-166*		"	"	"	"	
Surrogate: Decachlorobiphenyl		*99.5 %*	*37-153*		"	"	"	"	

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WC Hanford, Inc
2620 Fermi Avenue
Richland WA, 99354

Project: RC-116
Project Number: K1525
Project Manager: Joan Kessner

Reported:
04/08/2009 10:12

J18199
0902012-07 (Solid)

W 12/7/09

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Lionville Laboratory							
Organochlorine Pesticides by SW846 8081A									
alpha-BHC	ND	3.33	ug/kg wet	10	1902080	02/12/2009	03/07/2009	8081A	U
gamma-BHC	ND	3.33	"	"	"	"	"	"	U
beta-BHC	ND	3.33	"	"	"	"	"	"	U
delta-BHC	ND	3.33	"	"	"	"	"	"	U
Heptachlor	ND	3.33	"	"	"	"	"	"	U
Aldrin	ND	3.33	"	"	"	"	"	"	U
Heptachlor epoxide	ND	3.33	"	"	"	"	"	"	U
gamma-Chlordane	ND	3.33	"	"	"	"	"	"	U
alpha-Chlordane	ND	3.33	"	"	"	"	"	"	U
Endosulfan I	ND	3.33	"	"	"	"	"	"	U
4,4'-DDE	ND	3.33	"	"	"	"	"	"	U
Dieldrin	ND	3.33	"	"	"	"	"	"	U
Endrin	ND	3.33	"	"	"	"	"	"	U
4,4'-DDD	ND	3.33	"	"	"	"	"	"	U
Endosulfan II	ND	3.33	"	"	"	"	"	"	U
4,4'-DDT	ND	3.33	"	"	"	"	"	"	U
Endrin aldehyde	ND	3.33	"	"	"	"	"	"	U
Endosulfan sulfate	ND	3.33	"	"	"	"	"	"	U
Methoxychlor	ND	3.33	"	"	"	"	"	"	U
Endrin ketone	ND	3.33	"	"	"	"	"	"	U
Toxaphene	ND J	50.0	"	"	"	"	"	"	U
Surrogate: Tetrachloro-meta-xylene		*56.9 %*	*38-166*		"	"	"	"	
Surrogate: Decachlorobiphenyl		*72.2 %*	*37-153*		"	"	"	"	

WC-Hanford, Inc	Project: RC-116	
2620 Fermi Avenue	Project Number: K1525	Reported:
Richland WA, 99354	Project Manager: Joan Kessner	04/08/2009 10:12

J181B0

0902012-08 (Solid)

K 12/7/09

Lionville Laboratory

Organochlorine Pesticides by SW846 8081A

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
alpha-BHC	ND	3.33	ug/kg wet	10	L902089	02/17/2009	03/07/2009	8081A	U
gamma-BHC	ND	3.33	"	"	"	"	"	"	U
beta-BHC	ND	3.33	"	"	"	"	"	"	U
delta-BHC	ND	3.33	"	"	"	"	"	"	U
Heptachlor	ND	3.33	"	"	"	"	"	"	U
Aldrin	ND	3.33	"	"	"	"	"	"	U
Heptachlor epoxide	ND	3.33	"	"	"	"	"	"	U
gamma-Chlordane	ND	3.33	"	"	"	"	"	"	U
alpha-Chlordane	ND	3.33	"	"	"	"	"	"	U
Endosulfan I	ND	3.33	"	"	"	"	"	"	U
4,4'-DDE	ND	3.33	"	"	"	"	"	"	U
Dieldrin	ND	3.33	"	"	"	"	"	"	U
Endrin	ND	3.33	"	"	"	"	"	"	U
4,4'-DDD	ND	3.33	"	"	"	"	"	"	U
Endosulfan II	ND	3.33	"	"	"	"	"	"	U
4,4'-DDT	ND	3.33	"	"	"	"	"	"	U
Endrin aldehyde	ND	3.33	"	"	"	"	"	"	U
Endosulfan sulfate	ND	3.33	"	"	"	"	"	"	U
Methoxychlor	ND	3.33	"	"	"	"	"	"	U
Endrin ketone	ND	3.33	"	"	"	"	"	"	U
Toxaphene	ND J	50.0	"	"	"	"	"	"	U
Surrogate: Tetrachloro-meta-xylene		*73.1 %*	*28-166*		"	"	"	"	
Surrogate: Decachlorobiphenyl		*100 %*	*37-153*		"	"	"	"	

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WC Hanford, Inc 2620 Fermi Avenue Richland WA, 99354	Project: RI-116 Project Number: K1525 Project Manager: Joan Kessner	Reported: 04/08/2009 10:12

J181B1
0902012-09 (Solid)

K 12/7/09

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes

Lionville Laboratory

Organochlorine Pesticides by SW846 8081A

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
alpha-BHC	ND	3.33	ug/kg wet	10	[illegible]	02/12/2009	03/07/2009	8081A	U
gamma-BHC	ND	3.33	"	"	"	"	"	"	U
beta-BHC	ND	3.33	"	"	"	"	"	"	U
delta-BHC	ND	3.33	"	"	"	"	"	"	U
Heptachlor	ND	3.33	"	"	"	"	"	"	U
Aldrin	ND	3.33	"	"	"	"	"	"	U
Heptachlor epoxide	ND	3.33	"	"	"	"	"	"	U
gamma-Chlordane	ND	3.33	"	"	"	"	"	"	U
alpha-Chlordane	ND	3.33	"	"	"	"	"	"	U
Endosulfan I	ND	3.33	"	"	"	"	"	"	U
4,4'-DDE	ND	3.33	"	"	"	"	"	"	U
Dieldrin	ND	3.33	"	"	"	"	"	"	U
Endrin	ND	3.33	"	"	"	"	"	"	U
4,4'-DDD	ND	3.33	"	"	"	"	"	"	U
Endosulfan II	ND	3.33	"	"	"	"	"	"	U
4,4'-DDT	ND	3.33	"	"	"	"	"	"	U
Endrin aldehyde	ND	3.33	"	"	"	"	"	"	U
Endosulfan sulfate	ND	3.33	"	"	"	"	"	"	U
Methoxychlor	ND	3.33	"	"	"	"	"	"	U
Endrin ketone	ND	3.33	"	"	"	"	"	"	U
Toxaphene	ND J	50.0	"	"	"	"	"	"	U
Surrogate: Tetrachloro-meta-xylene		*96.0 %*	*28-166*		"	"	"	"	
Surrogate: Decachlorobiphenyl		*67.2 %*	*37-133*		"	"	"	"	

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WC-Hanford, Inc	Project: RC-116	
2620 Fermi Avenue	Project Number: K1525	**Reported:**
Richland WA, 99354	Project Manager: Joan Kessner	04/08/2009 10:12

J181B2

0902012-10 (Solid)

K 4/7/09

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes

Lionville Laboratory

Organochlorine Pesticides by SW846 8081A

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
alpha-BHC	ND	3.33	ug/kg wet	10	1902089	02/17/2009	03/07/2009	8081A	U
gamma-BHC	ND	3.33	"	"	"	"	"	"	U
beta-BHC	ND	3.33	"	"	"	"	"	"	U
delta-BHC	ND	3.33	"	"	"	"	"	"	U
Heptachlor	ND	3.33	"	"	"	"	"	"	U
Aldrin	ND	3.33	"	"	"	"	"	"	U
Heptachlor epoxide	ND	3.33	"	"	"	"	"	"	U
gamma-Chlordane	ND	3.33	"	"	"	"	"	"	U
alpha-Chlordane	ND	3.33	"	"	"	"	"	"	U
Endosulfan I	ND	3.33	"	"	"	"	"	"	U
4,4'-DDE	ND	3.33	"	"	"	"	"	"	U
Dieldrin	ND	3.33	"	"	"	"	"	"	U
Endrin	ND	3.33	"	"	"	"	"	"	U
4,4'-DDD	ND	3.33	"	"	"	"	"	"	U
Endosulfan II	ND	3.33	"	"	"	"	"	"	U
4,4'-DDT	ND	3.33	"	"	"	"	"	"	U
Endrin aldehyde	ND	3.33	"	"	"	"	"	"	U
Endosulfan sulfate	ND	3.33	"	"	"	"	"	"	U
Methoxychlor	ND	3.33	"	"	"	"	"	"	U
Endrin ketone	ND	3.33	"	"	"	"	"	"	U
Toxaphene	ND J	50.0	"	"	"	"	"	"	U
Surrogate: Tetrachloro-meta-xylene		*39.8 %*	*38-166*		"	"	"	"	
Surrogate: Decachlorobiphenyl		*67.0 %*	*35-151*		"	"	"	"	

264 Welsh Pool Road
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WC-Hanford, Inc.
2620 Fermi Avenue
Richland WA, 99354

Project: RC-116
Project Number: K1525
Project Manager: Joan Kessner

Reported:
04/08/2009 10:12

J181B3
0902012-11 (Solid)

12/2/09

Lionville Laboratory

Organochlorine Pesticides by SW846 8081A

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
alpha-BHC	ND	3.33	ug/kg wet	10	1902099	02/12/2009	03/03/2009	8081A	U
gamma-BHC	ND	3.33	"	"	"	"	"	"	U
beta-BHC	ND	3.33	"	"	"	"	"	"	U
delta-BHC	ND	3.33	"	"	"	"	"	"	U
Heptachlor	ND	3.33	"	"	"	"	"	"	U
Aldrin	ND	3.33	"	"	"	"	"	"	U
Heptachlor epoxide	ND	3.33	"	"	"	"	"	"	U
gamma-Chlordane	ND	3.33	"	"	"	"	"	"	U
alpha-Chlordane	ND	3.33	"	"	"	"	"	"	U
Endosulfan I	ND	3.33	"	"	"	"	"	"	U
4,4'-DDE	ND	3.33	"	"	"	"	"	"	U
Dieldrin	ND	3.33	"	"	"	"	"	"	U
Endrin	ND	3.33	"	"	"	"	"	"	U
4,4'-DDD	ND	3.33	"	"	"	"	"	"	U
Endosulfan II	ND	3.33	"	"	"	"	"	"	U
4,4'-DDT	ND	3.33	"	"	"	"	"	"	U
Endrin aldehyde	ND	3.33	"	"	"	"	"	"	U
Endosulfan sulfate	ND	3.33	"	"	"	"	"	"	U
Methoxychlor	ND	3.33	"	"	"	"	"	"	U
Endrin ketone	ND	3.33	"	"	"	"	"	"	U
Toxaphene	ND J	50.0	"	"	"	"	"	"	U
Surrogate: Tetrachloro-meta-xylene		*97.0 %*	*38-166*		"	"	"	"	
Surrogate: Decachlorobiphenyl		*68.2 %*	*37-153*		"	"	"	"	

0000038

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Exton, PA 19341
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WCH Hanford, Inc. 2620 Fermi Avenue Richland WA, 99354	Project: RC-116 Project Number: K1525 Project Manager: Joan Kessner	Reported: 04/08/2009 10:12

J17V87
0902012-12 (Solid)

W 12/7/09

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Lionville Laboratory									
Organochlorine Pesticides by SW846 8081A									
alpha-BHC	ND	3.33	ug/kg wet	10	0902089	02/13/2009	03/07/2009	8081A	U
gamma-BHC	ND	3.33	"	"	"	"	"	"	U
beta-BHC	ND	3.33	"	"	"	"	"	"	U
delta-BHC	ND	3.33	"	"	"	"	"	"	U
Heptachlor	ND	3.33	"	"	"	"	"	"	U
Aldrin	ND	3.33	"	"	"	"	"	"	U
Heptachlor epoxide	ND	3.33	"	"	"	"	"	"	U
gamma-Chlordane	ND	3.33	"	"	"	"	"	"	U
alpha-Chlordane	ND	3.33	"	"	"	"	"	"	U
Endosulfan I	ND	3.33	"	"	"	"	"	"	U
4,4'-DDE	ND	3.33	"	"	"	"	"	"	U
Dieldrin	ND	3.33	"	"	"	"	"	"	U
Endrin	ND	3.33	"	"	"	"	"	"	U
4,4'-DDD	ND	3.33	"	"	"	"	"	"	U
Endosulfan II	ND	3.33	"	"	"	"	"	"	U
4,4'-DDT	ND	3.33	"	"	"	"	"	"	U
Endrin aldehyde	ND	3.33	"	"	"	"	"	"	U
Endosulfan sulfate	ND	3.33	"	"	"	"	"	"	U
Methoxychlor	ND	3.33	"	"	"	"	"	"	U
Endrin ketone	ND	3.33	"	"	"	"	"	"	U
Toxaphene	ND J	50.0	"	"	"	"	"	"	U
Surrogate: Tetrachloro-meta-xylene		*76.5 %*	*28-166*		"	"	"	"	
Surrogate: Decachlorobiphenyl		*102 %*	*37-131*		"	"	"	"	

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WC-Hanford, Inc.	Project: 300-116	
2620 Fermi Avenue	Project Number: K1525	**Reported:**
Richland WA, 99354	Project Manager: Joan Kessner	04/08/2009 10:12

J17V88

0902012-13 (Solid)

12/7/09

Lionville Laboratory

Organochlorine Pesticides by SW846 8081A

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
alpha-BHC	ND	3.33	ug/kg wet	1	0902089	02/12/2009	03/09/2009	8081A	U
gamma-BHC	ND	3.33	"	"	"	"	"	"	U
beta-BHC	ND	3.33	"	"	"	"	"	"	U
delta-BHC	ND	3.33	"	"	"	"	"	"	U
Heptachlor	ND	3.33	"	"	"	"	"	"	U
Aldrin	ND	3.33	"	"	"	"	"	"	U
Heptachlor epoxide	ND	3.33	"	"	"	"	"	"	U
gamma-Chlordane	ND	3.33	"	"	"	"	"	"	U
alpha-Chlordane	ND	3.33	"	"	"	"	"	"	U
Endosulfan I	ND	3.33	"	"	"	"	"	"	U
4,4'-DDE	ND	3.33	"	"	"	"	"	"	U
Dieldrin	ND	3.33	"	"	"	"	"	"	U
Endrin	ND	3.33	"	"	"	"	"	"	U
4,4'-DDD	ND	3.33	"	"	"	"	"	"	U
Endosulfan II	ND	3.33	"	"	"	"	"	"	U
4,4'-DDT	ND	3.33	"	"	"	"	"	"	U
Endrin aldehyde	ND	3.33	"	"	"	"	"	"	U
Endosulfan sulfate	ND	3.33	"	"	"	"	"	"	U
Methoxychlor	ND	3.33	"	"	"	"	"	"	U
Endrin ketone	ND	3.33	"	"	"	"	"	"	U
Toxaphene	ND J	50.0	"	"	"	"	"	"	U
Surrogate: Tetrachloro-meta-xylene		*70.7 %*	*28-166*		"	"	"	"	
Surrogate: Decachlorobiphenyl		*86.1 %*	*37-153*		"	"	"	"	

208 Welsh Pool Road
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WC Hanford, Inc
2620 Fermi Avenue
Richland WA, 99354

Project RC-116
Project Number K1525
Project Manager Joan Kessner

Reported:
03/08/2009 10:12

J17V89
0902012-14 (Solid)

12/7/09

Lionville Laboratory

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Organochlorine Pesticides by SW846 8081A									
alpha-BHC	ND	3.33	ug/kg wet	10	1902089	02/12/2009	03/12/2009	8081A	U
gamma-BHC	ND	3.33	"	"	"	"	"	"	U
beta-BHC	ND	3.33	"	"	"	"	"	"	U
delta-BHC	ND	3.33	"	"	"	"	"	"	U
Heptachlor	ND	3.33	"	"	"	"	"	"	U
Aldrin	ND	3.33	"	"	"	"	"	"	U
Heptachlor epoxide	ND	3.33	"	"	"	"	"	"	U
gamma-Chlordane	ND	3.33	"	"	"	"	"	"	U
alpha-Chlordane	ND	3.33	"	"	"	"	"	"	U
Endosulfan I	ND	3.33	"	"	"	"	"	"	U
4,4'-DDE	ND	3.33	"	"	"	"	"	"	U
Dieldrin	ND	3.33	"	"	"	"	"	"	U
Endrin	ND	3.33	"	"	"	"	"	"	U
4,4'-DDD	ND	3.33	"	"	"	"	"	"	U
Endosulfan II	ND	3.33	"	"	"	"	"	"	U
4,4'-DDT	ND	3.33	"	"	"	"	"	"	U
Endrin aldehyde	ND	3.33	"	"	"	"	"	"	U
Endosulfan sulfate	ND	3.33	"	"	"	"	"	"	U
Methoxychlor	ND	3.33	"	"	"	"	"	"	U
Endrin ketone	ND	3.33	"	"	"	"	"	"	U
Toxaphene	ND J	50.0	"	"	"	"	"	"	
Surrogate: Tetrachloro-meta-xylene		*114 %*	*28-166*		"	"	"	"	
Surrogate: Decachlorobiphenyl		*80.0 %*	*17-133*		"	"	"	"	

000041

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

WC-Hanford, Inc	Project: RC-116	
2620 Fermi Avenue	Project Number: K1524	Reported:
Richland WA 99354	Project Manager: Joan Kessner	03/08/2009 10:13

J17V90

0902012-15 (Solid)

12/1/09

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Lionville Laboratory									
Organochlorine Pesticides by SW846 8081A									
alpha-BHC	ND	3.33	ug/kg wet	10	1902089	02/12/2009	02/12/2009	8081A	U
gamma-BHC	ND	3.33	"	"	"	"	"	"	U
beta-BHC	ND	3.33	"	"	"	"	"	"	U
delta-BHC	ND	3.33	"	"	"	"	"	"	U
Heptachlor	ND	3.33	"	"	"	"	"	"	U
Aldrin	ND	3.33	"	"	"	"	"	"	U
Heptachlor epoxide	ND	3.33	"	"	"	"	"	"	U
gamma-Chlordane	ND	3.33	"	"	"	"	"	"	U
alpha-Chlordane	ND	3.33	"	"	"	"	"	"	U
Endosulfan I	ND	3.33	"	"	"	"	"	"	U
4,4'-DDE	ND	3.33	"	"	"	"	"	"	U
Dieldrin	ND	3.33	"	"	"	"	"	"	U
Endrin	ND	3.33	"	"	"	"	"	"	U
4,4'-DDD	ND	3.33	"	"	"	"	"	"	U
Endosulfan II	ND	3.33	"	"	"	"	"	"	U
4,4'-DDT	ND	3.33	"	"	"	"	"	"	U
Endrin aldehyde	ND	3.33	"	"	"	"	"	"	U
Endosulfan sulfate	ND	3.33	"	"	"	"	"	"	U
Methoxychlor	ND	3.33	"	"	"	"	"	"	U
Endrin ketone	ND	3.33	"	"	"	"	"	"	U
Toxaphene	ND	50.0	"	"	"	"	"	"	U
Surrogate: Tetrachloro-meta-xylene		*99.0 %*	*28-166*		"	"	"	"	
Surrogate: Decachlorobiphenyl		*63.0 %*	*37-153*		"	"	"	"	

WC - Hanford, Inc 2620 Fermi Avenue Richland WA, 99354	Project: RC-116 Project Number: K1525 Project Manager: Joan Kessner	Reported: 04/08/2009 10:12

J17V91
0902012-16 (Solid)

K 12/7/09

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
			Lionville Laboratory						
Organochlorine Pesticides by SW846 8081A									
alpha-BHC	ND	3.33	ug/kg wet	10	1902089	02/12/2009	03/12/2009	8081A	U
gamma-BHC	ND	3.33	"	"	"	"	"	"	U
beta-BHC	ND	3.33	"	"	"	"	"	"	U
delta-BHC	ND	3.33	"	"	"	"	"	"	U
Heptachlor	ND	3.33	"	"	"	"	"	"	U
Aldrin	ND	3.33	"	"	"	"	"	"	U
Heptachlor epoxide	ND	3.33	"	"	"	"	"	"	U
gamma-Chlordane	ND	3.33	"	"	"	"	"	"	U
alpha-Chlordane	ND	3.33	"	"	"	"	"	"	U
Endosulfan I	ND	3.33	"	"	"	"	"	"	U
4,4'-DDE	ND	3.33	"	"	"	"	"	"	U
Dieldrin	ND	3.33	"	"	"	"	"	"	U
Endrin	ND	3.33	"	"	"	"	"	"	U
4,4'-DDD	ND	3.33	"	"	"	"	"	"	U
Endosulfan II	ND	3.33	"	"	"	"	"	"	U
4,4'-DDT	ND	3.33	"	"	"	"	"	"	U
Endrin aldehyde	ND	3.33	"	"	"	"	"	"	U
Endosulfan sulfate	ND	3.33	"	"	"	"	"	"	U
Methoxychlor	ND	3.33	"	"	"	"	"	"	U
Endrin ketone	ND J	3.33	"	"	"	"	"	"	U
Toxaphene	ND J	50.0	"	"	"	"	"	"	U
Surrogate: Tetrachloro-meta-xylene		*94.4 %*	*28-166*		"	"	"	"	
Surrogate: Decachlorobiphenyl		*54.0 %*	*17-153*		"	"	"	"	

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WC-Hanford, Inc
2620 Fermi Avenue
Richland WA 99354

Project: RC 116
Project Number: K1525
Project Manager: Joan Kessner

Reported:
03/08/2009 10:12

J17V92
0902012-17 (Solid)

12/7/09

Lionville Laboratory

Organochlorine Pesticides by SW846 8081A

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
alpha-BHC	ND	3.33	ug/kg wet	10	0902089	02/12/2009	02/12/2009	8081A	U
gamma-BHC	ND	3.33	"	"	"	"	"	"	U
beta-BHC	ND	3.33	"	"	"	"	"	"	U
delta-BHC	ND	3.33	"	"	"	"	"	"	U
Heptachlor	ND	3.33	"	"	"	"	"	"	U
Aldrin	ND	3.33	"	"	"	"	"	"	U
Heptachlor epoxide	ND	3.33	"	"	"	"	"	"	U
gamma-Chlordane	ND	3.33	"	"	"	"	"	"	U
alpha-Chlordane	ND	3.33	"	"	"	"	"	"	U
Endosulfan I	ND	3.33	"	"	"	"	"	"	U
4,4'-DDE	ND	3.33	"	"	"	"	"	"	U
Dieldrin	ND	3.33	"	"	"	"	"	"	U
Endrin	ND	3.33	"	"	"	"	"	"	U
4,4'-DDD	ND	3.33	"	"	"	"	"	"	U
Endosulfan II	ND	3.33	"	"	"	"	"	"	U
4,4'-DDT	ND	3.33	"	"	"	"	"	"	U
Endrin aldehyde	ND	3.33	"	"	"	"	"	"	U
Endosulfan sulfate	ND	3.33	"	"	"	"	"	"	U
Methoxychlor	ND	3.33	"	"	"	"	"	"	U
Endrin ketone	ND	3.33	"	"	"	"	"	"	U
Toxaphene	ND J	50.0	"	"	"	"	"	"	U
Surrogate: Tetrachloro-meta-xylene		*106 %*	*28-166*		"	"	"	"	
Surrogate: Decachlorobiphenyl		*76.0 %*	*47-153*		"	"	"	"	

WC Hanford, Inc	Project: RC-116	
2620 Fermi Avenue	Project Number: K1573	**Reported:**
Richland WA, 99354	Project Manager: Joan Kessner	04/08/2009 10:12

J17VP0
0902012-18 (Solid)

✓ 12/7/09

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes

Lionville Laboratory

Organochlorine Pesticides by SW846 8081A

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
alpha-BHC	ND	3.33	ug/kg wet	10	9B02089	02/13/2009	03/12/2009	8081A	U
gamma-BHC	ND	3.33	"	"	"	"	"	"	U
beta-BHC	ND	3.33	"	"	"	"	"	"	U
delta-BHC	ND	3.33	"	"	"	"	"	"	U
Heptachlor	ND	3.33	"	"	"	"	"	"	U
Aldrin	ND	3.33	"	"	"	"	"	"	U
Heptachlor epoxide	ND	3.33	"	"	"	"	"	"	U
gamma-Chlordane	ND	3.33	"	"	"	"	"	"	U
alpha-Chlordane	ND	3.33	"	"	"	"	"	"	U
Endosulfan I	ND	3.33	"	"	"	"	"	"	U
4,4'-DDE	ND	3.33	"	"	"	"	"	"	U
Dieldrin	ND	3.33	"	"	"	"	"	"	U
Endrin	ND	3.33	"	"	"	"	"	"	U
4,4'-DDD	ND	3.33	"	"	"	"	"	"	U
Endosulfan II	ND	3.33	"	"	"	"	"	"	U
4,4'-DDT	ND	3.33	"	"	"	"	"	"	U
Endrin aldehyde	ND	3.33	"	"	"	"	"	"	U
Endosulfan sulfate	ND	3.33	"	"	"	"	"	"	U
Methoxychlor	ND	3.33	"	"	"	"	"	"	U
Endrin ketone	ND	3.33	"	"	"	"	"	"	U
Toxaphene	ND J	50.0	"	"	"	"	"	"	U
Surrogate: Tetrachloro-meta-xylene		*112 %*	*28-166*		"	"	"	"	
Surrogate: Decachlorobiphenyl		*50.0 %*	*17-153*		"	"	"	"	

WC Hanford, Inc	Project: RC-116	
2620 Fermi Avenue	Project Number: K4525	**Reported:**
Richland WA, 99354	Project Manager: Joan Kessner	03/08/2009 10:12

J17VP5
0902012-19 (Solid)

V 12/7/09

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes

Lionville Laboratory

Organochlorine Pesticides by SW846 8081A

alpha-BHC	ND	3.33	ug/kg wet	10	1902089	02/12/2009	02/12/2009	8081A	U
gamma-BHC	ND	3.33	"	"	"	"	"	"	U
beta-BHC	ND	3.33	"	"	"	"	"	"	U
delta-BHC	ND	3.33	"	"	"	"	"	"	U
Heptachlor	ND	3.33	"	"	"	"	"	"	U
Aldrin	ND	3.33	"	"	"	"	"	"	U
Heptachlor epoxide	ND	3.33	"	"	"	"	"	"	U
gamma-Chlordane	ND	3.33	"	"	"	"	"	"	U
alpha-Chlordane	ND	3.33	"	"	"	"	"	"	U
Endosulfan I	ND	3.33	"	"	"	"	"	"	U
4,4'-DDE	ND	3.33	"	"	"	"	"	"	U
Dieldrin	ND	3.33	"	"	"	"	"	"	U
Endrin	ND	3.33	"	"	"	"	"	"	U
4,4'-DDD	ND	3.33	"	"	"	"	"	"	U
Endosulfan II	ND	3.33	"	"	"	"	"	"	U
4,4'-DDT	ND	3.33	"	"	"	"	"	"	U
Endrin aldehyde	ND	3.33	"	"	"	"	"	"	U
Endosulfan sulfate	ND	3.33	"	"	"	"	"	"	U
Methoxychlor	ND	3.33	"	"	"	"	"	"	U
Endrin ketone	ND	3.33	"	"	"	"	"	"	U
Toxaphene	ND J	50.0	"	"	"	"	"	"	U
Surrogate: Tetrachloro-meta-xylene		*113 %*	*28-166*		"	"	"	"	
Surrogate: Decachlorobiphenyl		*80.0 %*	*41-153*		"	"	"	"	

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WC Hanford, Inc 2620 Fermi Avenue Richland WA, 99354	Project: RC-116 Project Number: K1525 Project Manager: Joan Kessner	Reported: 10/10/2009 12:51

J180W8-A
0902012-20 (Solid)

12/7/09

Analyte	Result and Qual/Rec	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method

Lionville Laboratory

Organochlorine Pesticides by SW846 8081A

Analyte	Result and Qual/Rec	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
alpha-BHC	3.33 U	3.33	ug/kg	10	L902089	02/12/2009	03/12/2009	8081A
gamma-BHC	3.33 U	3.33	ug/kg	10	L902089	02/12/2009	03/12/2009	8081A
beta-BHC	3.33 U	3.33	ug/kg	10	L902089	02/12/2009	03/12/2009	8081A
delta-BHC	3.33 U	3.33	ug/kg	10	L902089	02/12/2009	03/12/2009	8081A
Heptachlor	3.33 U	3.33	ug/kg	10	L902089	02/12/2009	03/12/2009	8081A
Aldrin	3.33 U	3.33	ug/kg	10	L902089	02/12/2009	03/12/2009	8081A
Heptachlor epoxide	3.33 U	3.33	ug/kg	10	L902089	02/12/2009	03/12/2009	8081A
gamma-Chlordane	3.33 U	3.33	ug/kg	10	L902089	02/12/2009	03/12/2009	8081A
alpha-Chlordane	3.33 U	3.33	ug/kg	10	L902089	02/12/2009	03/12/2009	8081A
Endosulfan I	3.33 U	3.33	ug/kg	10	L902089	02/12/2009	03/12/2009	8081A
4,4'-DDE	3.33 U	3.33	ug/kg	10	L902089	02/12/2009	03/12/2009	8081A
Dieldrin	3.33 U	3.33	ug/kg	10	L902089	02/12/2009	03/12/2009	8081A
Endrin	3.33 U	3.33	ug/kg	10	L902089	02/12/2009	03/12/2009	8081A
4,4'-DDD	3.33 U	3.33	ug/kg	10	L902089	02/12/2009	03/12/2009	8081A
Endosulfan II	3.33 U	3.33	ug/kg	10	L902089	02/12/2009	03/12/2009	8081A
4,4'-DDT	3.33 U	3.33	ug/kg	10	L902089	02/12/2009	03/12/2009	8081A
Endrin aldehyde	3.33 U	3.33	ug/kg	10	L902089	02/12/2009	03/12/2009	8081A
Endosulfan sulfate	3.33 U	3.33	ug/kg	10	L902089	02/12/2009	03/12/2009	8081A
Methoxychlor	3.33 U	3.33	ug/kg	10	L902089	02/12/2009	03/12/2009	8081A
Endrin ketone	3.33 U	3.33	ug/kg	10	L902089	02/12/2009	03/12/2009	8081A
Toxaphene	50.0 U J	50.0	ug/kg	10	L902089	02/12/2009	03/12/2009	8081A
Surrogate: Tetrachloro-meta-xylene	*95.9 %*	*28-166*			*L902089*	*02/12/2009*	*03/12/2009*	*8081A*
Surrogate: Decachlorobiphenyl	*74.0 %*	*37-153*			*L902089*	*02/12/2009*	*03/12/2009*	*8081A*

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WC Hanford, Inc	Project: RC-116	
2620 Fermi Avenue	Project Number: K1525	Reported:
Richland WA, 99354	Project Manager: Joan Kessner	10/10/2009 12:51

J180W9-A
0902012-21 (Solid)

V— 12/7/09

Lionville Laboratory

Organochlorine Pesticides by SW846 8081A

Analyte	Result and Qualifier	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
alpha-BHC	3.33 U	3.33	ug/kg	10	L902088	02/12/2009	03/12/2009	8081A
gamma-BHC	3.33 U	3.33	ug/kg	10	L902088	02/12/2009	03/12/2009	8081A
beta-BHC	3.33 U	3.33	ug/kg	10	L902088	02/12/2009	03/12/2009	8081A
delta-BHC	3.33 U	3.33	ug/kg	10	L902088	02/12/2009	03/12/2009	8081A
Heptachlor	3.33 U	3.33	ug/kg	10	L902088	02/12/2009	03/12/2009	8081A
Aldrin	3.33 U	3.33	ug/kg	10	L902088	02/12/2009	03/12/2009	8081A
Heptachlor epoxide	3.33 U	3.33	ug/kg	10	L902088	02/12/2009	03/12/2009	8081A
gamma-Chlordane	3.33 U	3.33	ug/kg	10	L902088	02/12/2009	03/12/2009	8081A
alpha-Chlordane	3.33 U	3.33	ug/kg	10	L902088	02/12/2009	03/12/2009	8081A
Endosulfan I	3.33 U	3.33	ug/kg	10	L902088	02/12/2009	03/12/2009	8081A
4,4'-DDE	3.33 U	3.33	ug/kg	10	L902088	02/12/2009	03/12/2009	8081A
Dieldrin	3.33 U	3.33	ug/kg	10	L902088	02/12/2009	03/12/2009	8081A
Endrin	3.33 U	3.33	ug/kg	10	L902088	02/12/2009	03/12/2009	8081A
4,4'-DDD	3.33 U J	3.33	ug/kg	10	L902088	02/12/2009	03/12/2009	8081A
Endosulfan II	3.33 U J	3.33	ug/kg	10	L902088	02/12/2009	03/12/2009	8081A
4,4'-DDT	3.33 U	3.33	ug/kg	10	L902088	02/12/2009	03/12/2009	8081A
Endrin aldehyde	3.33 U	3.33	ug/kg	10	L902088	02/12/2009	03/12/2009	8081A
Endosulfan sulfate	3.33 U	3.33	ug/kg	10	L902088	02/12/2009	03/12/2009	8081A
Methoxychlor	3.33 U	3.33	ug/kg	10	L902088	02/12/2009	03/12/2009	8081A
Endrin ketone	3.33 U	3.33	ug/kg	10	L902088	02/12/2009	03/12/2009	8081A
Toxaphene	50.0 U J	50.0	ug/kg	10	L902088	02/12/2009	03/12/2009	8081A
Surrogate: Tetrachloro-meta-xylene	*110 %*	*28-160*			*L902088*	*02/12/2009*	*03/12/2009*	*8081A*
Surrogate: Decachlorobiphenyl	*90.0 %*	*37-153*			*L902088*	*02/12/2009*	*03/12/2009*	*8081A*

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Appendix 4

Laboratory Narrative and Chain-of-Custody Documentation

LVL
LIONVILLE LABORATORY

264 Welsh Pool Road
Exton, Pennsylvania 19341
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Fax (610) 280-3041

Case Narrative
*****REVISION*****

This narrative is issued to revise item 5, where matrix QC is associated with client SDG# K1524.

Client: WC HANFORD RC-116
LVL #: 0902012
SDG/SAF # K1525 / RC-116

W.O. #: 60049-001-001-0001-00
Date Received: 02-05-2009

PCBs

Twenty-one (21) solid samples were collected on 02-02,03-2009.

The samples and associated QC samples were extracted on 02-12-2009 and analyzed according to Lionville Laboratory SOPs based on SW846, 3rd Edition procedure on 02-24,25-2009. The extraction procedure was based on method 3540C and the extracts were analyzed based on method 8082.

All soil samples are reported on a dry weight basis unless requested by the client, required by the method, or noted otherwise. The following is a summary of the QC results accompanying the sample results. Lionville Laboratory (LVL) certifies that all test results meet the requirements of NELAC except as noted below:

1. All required holding times for extraction and analysis have been met.
2. The samples and their associated QC samples received Copper-Sulfur and Sulfuric Acid cleanups according to Lionville Laboratory SOPs based on SW846 methods 3660A and 3665A respectively.
3. The method blanks were below the reporting limits for all target compounds.
4. Two (2) of fifty (50) surrogate recoveries were outside acceptance criteria. A copy of the Sample Discrepancy Report (SDR# 09GC023) has been enclosed.
5. All blank spike recoveries were within acceptance criteria.
6. Matrix QC analyses are associated with WCH SDG# K1524 (LVL# 0902010).
7. All initial calibrations associated with this data set were within acceptance criteria.
8. All continuing calibration standards analyzed prior to sample extracts were within acceptance criteria.

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Lionville Laboratory Sample Discrepancy Report (SDR)

SDR #: 0909C-023

Initiator: C.AR
Date: 03/08/09
Client: WC Hanford

Batch: 0902012
Samples: 001
Method: SW846/MCAWW/CLP

Parameter: PCB
Matrix: Solid
Prep Batch: L0902089

1. Reason for SDR

a. COC Discrepancy
Tech Profile Error
__ Transcription Error
__ Client Request
Wrong Test Code
Sampler Error on C-O-C
__ Other __________

b. General Discrepancy
__ Missing Sample/Extract*
__ Hold Time Exceeded
__ Improper Bottle Type
__ Container Broken
__ Insufficient Sample*
Not Amenable to Analysis
__ Wrong Sample Pulled
Preservation Wrong
__ Label ID's Illegible
__ Received Past Hold

Note* Verified by [Log-in] or [Prep Group] (circle). signature/date __________

c. Problem (include all relevant specific results, attach data if necessary)

both surrogate recoveries are high

2. Known or Probable Causes(s)

3. Discussion and Proposed Action
__ Re-log
Entire Batch
__ Following Samples: ______
Re-leach
__ Re-extract
Re-digest
__ Revise EDD
Change Test Code to ______
__ Place On/Take Off Hold (circle)

Other Description:
No hits above Reporting Limit
Narrate.

4. Project Manager Instructions signature/date 4/9/09
✓ Concur with Proposed Action
__ Disagree with Proposed Action, See Instruction
Include in Case Narrative
__ Client Contacted:
Date/Person ______
__ Add
__ Cancel

5. Final Action signature/date 4/13/09
Verified re-[log][leach][extract][digest][analysis] (circle)
✓ Included in Case Narrative
Hard Copy COC Revised
Electronic COC Revised
EDD Corrections Completed

Other Explanation:

When Final Action has been recorded, forward original to QA for diposition.

Route
__ Lab Manager Daniels
__ Project Mgr (circle). Johnson / Stone
__ Sample Prep (circle) Ford
__ Log-in King

Route
__ Metals. Welsh / ______
Inorganic Perrone / ______
__ GC/LC Carey / ______
MS VOA Rubino / ______
__ MS BNA Carden / ______
__ Other ______

QA-130-A-0203

LVL
LIONVILLE LABORATORY
[illegible]

264 Welsh Pool Road
Exton, Pennsylvania 19341
Phone (610) 280-3000
Fax (610) 280-3041

Case Narrative

REVISION

This narrative is issued to revise item 5, where matrix QC is associated with client SDG# K1524.

Client: WC HANFORD RC-116
LVL #: 0902012
SDG/SAF # K1525 /RC-116

W.O. #: 60049-001-001-0001-00
Date Received: 02-05-2009

CHLORINATED PESTICIDES

Seventeen (17) solid samples were collected on 02-02,03-2009.

The samples and their associated QC samples were extracted on 02-12-2009 and analyzed according to Lionville Laboratory SOPs based on SW846, 3rd Edition procedure on 02-27-2009 and 03-06,07,12-2009. The extraction procedure was based on method 3540C and the extracts were analyzed based on method 8081A.

All soil samples are reported on a dry weight basis unless requested by the client, required by the method, or noted otherwise. The following is a summary of the QC results accompanying the sample results. Lionville Laboratory (LvL) certifies that all test results meet the requirements of NELAC except as noted below:

1. All required holding times for extraction and analysis have been met.
2. The method blanks were below the reporting limits for all target compounds.
3. All obtainable surrogate recoveries were within acceptance criteria.
4. One (1) of forty (40) blank spike recoveries was outside acceptance criteria. A copy of the Sample Discrepancy Report (SDR# 09GC045) has been enclosed.
5. Matrix QC analyses are associated with WCH SDG# K1524 (LVL# 0902010).
6. All samples required a 10-fold instrument dilution due to matrix.
7. All initial calibrations associated with this data set were within acceptance criteria.
8. All continuing calibration standards analyzed prior to sample extracts were within acceptance criteria.

[illegible]

Lionville Laboratory Sample Discrepancy Report (SDR)

SDR #: 0960015

Initiator: [illegible]
Date: 10/09/09
Client: [illegible]
Batch: 090P013
Samples: All
Method: SW846/MCAWW/CLP
Parameter: Pest
Matrix: Solid
Prep Batch: 0960089

1. Reason for SDR

a. COC Discrepancy
- __ Tech Profile Error
- __ Transcription Error
- Client Request
- __ Wrong Test Code
- __ Sampler Error on C-O-C
- __ Other

b. General Discrepancy
- Missing Sample/Extract*
- __ Hold Time Exceeded
- __ Improper Bottle Type
- __ Container Broken
- __ Insufficient Sample*
- Not Amenable to Analysis
- __ Wrong Sample Pulled
- Preservation Wrong
- __ Label ID's Illegible
- __ Received Past Hold

Note* Verified by (Log-In) or (Prep Group) (circle) signature/date

c. Problem (Include all relevant specific results; attach data if necessary)

Recovery of Beta-BHC is high in the LCS

2. Known or Probable Causes(s)

3. Discussion and Proposed Action
- __ Re-log
  - _ Entire Batch
  - _ Following Samples
- Re-leach
- __ Re-extract
- Re-digest
- __ Revise EDD
- Change Test Code to
- __ Place On/Take Off Hold (circle)

Other Description:

Narrate

No Beta BHC in any sample.

4. Project Manager Instructions signature/date 11/13/09
- ✓ Concur with Proposed Action
- __ Disagree with Proposed Action; See Instruction
- ✓ Include in Case Narrative
- __ Client Contacted:
- Date/Person
- __ Add
- Cancel

5. Final Action signature/date 11/13/09
- __ Verified re-(log)(leach)(extract)(digest)(analysis) (circle)
- ✓ Included in Case Narrative
- Hard Copy COC Revised
- __ Electronic COC Revised
- EDD Corrections Completed

Other Explanation

When Final Action has been recorded, forward original to QA for diposition.

Route
- __ Lab Manager: Daniels
- __ Project Mgr (circle) Johnson / Stone
- Sample Prep (circle): Ford
- Log-in: King

Route
- __ Metals: Welsh /
- __ Inorganic: Perrone /
- __ GC/LC: Carey /
- __ MS VOA: Rubino /
- __ MS SNA: Carden /
- __ Other

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-116-732	Page 1 of 1		
Collector [illegible]	Company Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator WEISS, RL
Price Code 9K	Data Turnaround 45 Days		
Project Designation Columbia River Component of the RCBRA - Sediment	Sampling Location WB-7 SO		SAF No. RC-116
Ice Chest No. WCH08-012, 034653	Field Logbook No. EL-1631-1	COA BESCRC6530	Method of Shipment FED EX
Shipped To EBERLINE SERVICES (LIONVILLE)	Offsite Property No. N/A		Bill of Lading/Air Bill No. 796313456383

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

Preservation	None	None	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	None
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	aG	aG	G/P
No. of Container(s)	1	1	1	1	1	1	1	1	1
Volume	1500g	100g	10g	10g	350g	250g	250g	125g	1000g
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Technetium-99	See item (2) in Special Instructions	See item (3) in Special Instructions	PCBs - 8082	Semi-VOA 8270A (TCL)	TOC - 415.1	Particle Size (Dry Sieve) D422

Sample No.	Matrix *	Sample Date	Sample Time									
48157	OTHER SOLID	2/2/09	1430					X	X	X	X	X

CHAIN OF POSSESSION Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Scott Mayer	2/4/09 1715	Fog A	2/4/09 1715
Fog A	2/4/09 0830	D Heidelberg	2/4/09 0830
D Heidelberg	2/4/09 1130	FedEx	2/4/09 1130
FedEx	2-5-09 0915		2-5-09 0915

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) (Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238)
(2) Strontium-89,90 -- Total Sr; Isotopic Thorium (Thorium-232); Isotopic Uranium (Uranium-233/234, Uranium-235, Uranium-238); Isotopic Plutonium
(3) ICP Metals - 6010 (Full List) (Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc), Mercury - 7471 - (CV)

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab.

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-116-733

Page 1 of 1

llector BM	Company Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator WEISS, RL
oject Designation Columbia River Component of the RCBRA - Sediment	Sampling Location WB-1 SD		SAF No. RC-116
e Chest No. WCH-08-012, 634653	Field Logbook No. EL-1631-1	COA BESCRC6320	Method of Shipment FED EX
ipped To EBERLINE SERVICES [✓ LIONVILLE]	Offsite Property No. N/A		Bill of Lading/Air Bill No. 796313456383

Price Code 9K

Data Turnaround 45 Days

OSSIBLE SAMPLE HAZARDS/REMARKS

pecial Handling and/or Storage

Preservation	None	None	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	None
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	aG	aG	G/P
No. of Container(s)	1	1	1	1	1	1	1	1	1
Volume	1500g	100g	10g	10g	250g	250g	250g	125g	1000g
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Technetium-99	See item (2) in Special Instructions	See item (3) in Special Instructions	PCBs - 8082	Semi-VOAs - 8270A (TCL)	TOC - 9060	Particle Size (Dry Sieve) - D422

Sample No.	Matrix *	Sample Date	Sample Time									
8158	OTHER SOLID	2/2/09	1310					X	X	X	X	X

CHAIN OF POSSESSION

Sign/Print Names

nquished By/Removed From	Date/Time 2/2/09 1715	Received By/Stored In	Date/Time 2/2/09 1715
nquished By/Removed From	Date/Time 2/4/09 0850	Received By/Stored In	Date/Time 2/4/09 0850
nquished By/Removed From	Date/Time 2/4/09 1100	Received By/Stored In	2/4/09 Date/Time 1150
nquished By/Removed From	Date/Time 2-5-09 0935	Received By/Stored In	Date/Time 2-5-09 0935
nquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
nquished By/Removed From	Date/Time	Received By/Stored In	Date/Time

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) (Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238)
(2) Strontium-89,90 - Total Sr; Isotopic Thorium (Thorium-232); Isotopic Uranium (Uranium-233/234, Uranium-235, Uranium-238); Isotopic Plutonium
(3) ICP Metals - 6010 (Full List) (Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc); Mercury - 7471 - (CV)

Sample unavailable to remove samples
from connected storage. Shipper removed
samples from storage location taking custody
of samples for shipment to lab

Matrix *

S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

BORATORY SECTION	Received By	Title	Date/Time
NAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

H-EE-011

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-116-734

Page 1 of 1

Collector 15	Company Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator WEISS, RL
Project Designation Columbia River Component of the RCBRA - Sediment	Sampling Location WB-3 SD		SAP No. RC-116
Ice Chest No. 2014-08-012,034,053	Field Logbook No. EL-1610-1	COA BESCRCAS20	Method of Shipment FED EX
Shipped To EBERLINE SERVICES/ [✓ LIONVILLE]	Offsite Property No. N/A		Bill of Lading/Air Bill No. 7902134563383

Price Code 9K

Data Turnaround **45 Days**

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

9500056

Preservation	None	None	None	None	Cool 4C	Cool 4C	Cool 4C	None		
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	aG	G/P		
No. of Container(s)	1	1	1	1	1	1	1	1		
Volume	1500g	100g	10g	10g	250g	250g	125g	1000g		
SAMPLE ANALYSIS	See Item (1) in Special Instructions	Carbon-14	Technetium-99	See item (2) in Special Instructions	See item (3) in Special Instructions	PCBs - 8082	TOC - 415.1	Particle Size (Dry Sieve) - D422		

Sample No.	Matrix *	Sample Date	Sample Time										
18159	OTHER SOLID	2/12/09	1600					X	X	X	X		

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Brett Mayhew	2/12/09 1715	Eric A	2/12/09 1715
Eric A	2/4/09 0830	D. Heidelberg	2/4/09 0830
D. Heidelberg	2/4/09 1130	Fedex	2/4/09 1130
Fed Ex	2-5-09 0915		2-5-09 0915

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) {Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238}
(2) Strontium-89,90 -- Total Sr; Isotopic Thorium {Thorium-232}; Isotopic Uranium {Uranium-233/234, Uranium-235, Uranium-238}; Isotopic Plutonium
(3) ICP Metals - 6010 (Full List) {Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc}, Mercury - 7471 - (CV)

Sampler unavailable to remove samples
from controlled storage. Shipper removed
samples from storage location taking custody
of samples for shipment to lab

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-116-735 | Page 1 of 1

Collector: [illegible]

Company Contact: JOAN KESSNER | Telephone No.: 375-4688

Project Coordinator: WEISS, RL

Price Code: 9K

Data Turnaround: 45 Days

Project Designation: Columbia River Component of the RCBRA - Sediment

Sampling Location: WB-4-SD

SAF No.: RC-116

Ice Chest No.: WCH-06-012,034,053

Field Logbook No.: EL-1631-1

COA: HESCRC6520

Method of Shipment: FED EX

Shipped To: EBERLINE SERVICES [✓ LIONVILLE]

Offsite Property No.: N/A

Bill of Lading/Air Bill No.: 796313456383

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

Preservation	None	None	None	None	Cool 4C	Cool 4C	Cool 4C	None		
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	aG	G/P		
No. of Container(s)	1	1	1	1	1	1	1	1		
Volume	1500g	100g	10g	50g	250g	250g	125g	1000g		
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Technetium-99	See item (2) in Special Instructions	See item (3) in Special Instructions	PCBs - 8082	TOC - 415.1	Particle Size (Dry Sieve - D422)		

Sample No.	Matrix *	Sample Date	Sample Time										
J18160	OTHER SOLID	2/2/09	1530					X	X	X	X		

CHAIN OF POSSESSION

Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
[illegible]	2/2 1715	Eric A	2/2/09 1715
Eric A	2/4/09 0830	D. Heidelberg	2/4/09 0830
D. Heidelberg	2/4/09 1130	FedEx	2/4/09 1130
Fed Ex	2-5-09 0915	[illegible]	2-5-09 0915

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full Lsit) (Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238)
(2) Strontium-89,90 - Total Sr; Isotopic Thorium (Thorium-232); Isotopic Uranium (Uranium-233/234, Uranium-235, Uranium-238); Isotopic Plutonium
(3) ICP Metals - 6010 (Full List) (Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc); Mercury - 7471 - (CV)

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION | Received By | Title | Date/Time

FINAL SAMPLE DISPOSITION | Disposal Method | Disposed By | Date/Time

Washington Closure Hanford	**CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST**	RC-116-751	Page 1 of 2

Collector L Stratton	Company Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator WEISS, RJ.
Project Designation Columbia River Component of the RCBRA - Sediment	Sampling Location MDRA- 4 SD		SAF No. RC-116
Ice Chest No. WCH-08-012,034,053	Field Logbook No. EL-1631-1	COA BESCRC6520	Method of Shipment FED EX
Shipped To EBERLINE SERVICES LIONVILLE	Offsite Property No. N/A		Bill of Lading/Air Bill No. 796313456383

Price Code 9K

Data Turnaround 45 Days

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

8500040

Preservation	None	None	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	None
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	aG	aG	G	-
No. of Container(s)	1	1	1	1	1	1	1	1	1	1
Volume	1500g	100g	10g	10g	250g	250g	125g	250g	250g	1"
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Technetium-99	See item (2) in Special Instructions	See item (3) in Special Instructions	PCBs - 8082	Pesticides - 8081	Semi-VOA - 8270A (TCL)	See item (4) in Special Instructions	-

Sample No.	Matrix *	Sample Date	Sample Time										
J10177	OTHER SOLID	2/3/09	1025					X	X	X	X	X	

CHAIN OF POSSESSION Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
	2-3-09 1630	Ref B	2-3-09 1630
Ref B	2/4/09 0830	BWoodward	2/4/09 0830
BWoodward	2/4/09 1130	FedEx	2/4/09 1130
FedEx	2-5-09 0915		2-5-09 0915

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab.

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) {Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238}

(2) Strontium-89,90 -- Total Sr; Isotopic Thorium {Thorium-232}; Isotopic Uranium {Uranium-233/234, Uranium-235, Uranium-238}; Isotopic Plutonium

(3) ICP Metals - 6010 (Full List) {Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc}; Mercury - 7471 - (CV)

(4) VOA - 8260A (TCL) {1,1,1-Trichloroethane, 1,1,2,2-Tetrachloroethane, 1,1,2-Trichloroethane, 1,1-Dichloroethane, 1,1-Dichloroethene, 1,2-Dichloroethane, 1,2-Dichloropropane, 2-Butanone, 2-Hexanone, 4-Methyl-2-Pentanone, Acetone, Benzene, Bromodichloromethane, Bromoform, Bromomethane, Carbon disulfide, Carbon tetrachloride, Chlorobenzene, Chloroethane, Chloroform, Chloromethane, cis-1,2-Dichloroethylene, cis-1,3-Dichloropropene, Dibromochloromethane,

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Washington Closure Hanford	**CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST**	RC-116-756	Page 1 of 2
ollector LStratton	Customer Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator WEISS, RL
roject Designation Columbia River Component of the RCBRA - Sediment	Sampling Location MDBR- 6 ; SD		SAF No. RC-116
Price Code 9K	Data Turnaround 45 Days		
e Chest No. WCH-08-012, 034, 053	Field Logbook No. EL-1631-1	COA BFSCRC6120	Method of Shipment FED EX
hipped To EBERLINE SERVICES [✓ LIONVILLE]	Offsite Property No. N/A		Bill of Lading/Air Bill No. 796313456383

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

			Preservation	None	None	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	None
			Type of Container	G/P	G/P	G/P	G/P	G/P	aG	aG	aG	G	-
			No. of Container(s)	1	1	1	1	1	1	1	1	1	1
			Volume	1500g	400g	10g	10g	750g	150g	125g	150g	150g	1
SAMPLE ANALYSIS				See item (1) in Special Instructions	Carbon-14	Technetium-99	See item (2) in Special Instructions	See item (3) in Special Instructions	PCBs - 8082	Pesticides 8081	Semi-VOA - 8270A (TCL)	See item (4) in Special Instructions	-
Sample No.	Matrix *	Sample Date	Sample Time										
18198	OTHER SOLID	2/3/09	1400					X	X	X	X	X	

Sample unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab

CHAIN OF POSSESSION

Sign/Print Names

nquished By/Removed From	Date/Time 2-3-09/1630	Received By/Stored In Ref B	Date/Time 2-3-09/1630
nquished By/Removed From Ref B 2/4/09	Date/Time 0830	Received By/Stored In BWoodward 2/4/09	Date/Time 0830
nquished By/Removed From BWoodward 2/4/09	Date/Time 1130	Received By/Stored In Fed Ex 2/4/09	Date/Time 1130
nquished By/Removed From 2-5-09	Date/Time 0915	Received By/Stored In 2-5-09	Date/Time 0915
nquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
nquished By/Removed From	Date/Time	Received By/Stored In	Date/Time

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) [Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238]
(2) Strontium-89,90 -- Total Sr, Isotopic Thorium (Thorium-212), Isotopic Uranium (Uranium-233/234, Uranium-235, Uranium-238), Isotopic Plutonium
(3) ICP Metals - 6010 (Full List) [Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc]; Mercury - 7471 - (CV)
(4) VOA - 8260A (TCL) (1,1,1-Trichloroethane, 1,1,2,2-Tetrachloroethane, 1,1,2-Trichloroethane, 1,1-Dichloroethane, 1,1-Dichloroethene, 1,2-Dichloroethane, 1,2-Dichloropropane, 2-Butanone, 2-Hexanone, 4-Methyl-2-Pentanone, Acetone, Benzene, Bromodichloromethane, Bromoform, Bromomethane, Carbon disulfide, Carbon tetrachloride, Chlorobenzene, Chloroethane, Chloroform, Chloromethane, cis-1,2-Dichloroethylene, cis-1,3-Dichloropropene, Dibromochloromethane, [illegible]

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

BORATORY SECTION	Received By	Title	Date/Time
NAL SAMPLE ISPOSITION	Disposal Method	Disposed By	Date/Time

H-EE-011

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-116-757 Page 1 of 1

Collector L Stratton	Company Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator WEISS, RL
Project Designation Columbia River Component of the RCBRA - Sediment	Sampling Location MDBR- 4 SD		SAF No. RC-136
Ice Chest No. WCH-08-012,034,053	Field Logbook No. EL-1036-1	COA BESCRC6520	Method of Shipment FED EX
Shipped To EBERLINE SERVICES [✓ LIONVILLE]	Offsite Property No. N/A		Bill of Lading/Air Bill No. 796313456383

Price Code 9K

Data Turnaround 45 Days

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

0900060

Preservation	None	None	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	None
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	aG	aG	G	[illegible]
No. of Container(s)	1	1	1	1	1	1	1	1	1	1
Volume	1500g	100g	10g	10g	250g	250g	125g	250g	250g	1?
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	[illegible]	See item (2) in Special Instructions	See item (3) in Special Instructions	PCBs - 8082	Pesticides - 8081	Semi-VOA - 8270A (TCL)	See item (4) in Special Instructions	

Sample No.	Matrix *	Sample Date	Sample Time										
J18159	OTHER SOLID	2/3/09	1340					X	X	X	X	X	

Samples unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab.

CHAIN OF POSSESSION Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
	2-3-09 / 1630	RES R	2-3-09 / 1630
R.t B	2/4/09 0830	B Woodward	2/4/09 0830
B Woodward	2/4/09 1130	Fed Ex	2/4/09 1130
Fed Ex	2-5-09 0915		2-5-09 0915

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) (Americium-241, Antimony-125, Beryllium-7, Cerium-144, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238)

(2) Strontium-89,90 -- Total Sr; Isotopic Thorium (Thorium 232); Isotopic Uranium (Uranium 233/234, Uranium 235, Uranium 238); Isotopic Plutonium

(3) ICP Metals - 6010 (Full List) (Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc); Mercury - 7471 - (CV)

(4) VOA - 8260A (TCL) (1,1,1-Trichloroethane, 1,1,2,2-Tetrachloroethane, 1,1,2-Trichloroethane, 1,1-Dichloroethane, 1,1-Dichloroethene, 1,2-Dichloroethane, 1,2-Dichloropropane, 2-Butanone, 2-Hexanone, 4-Methyl-2-Pentanone, Acetone, Benzene, Bromodichloromethane, Bromoform, Bromomethane, Carbon disulfide, Carbon tetrachloride, Chlorobenzene, Chloroethane, Chloroform, Chloromethane, cis-1,2-Dichloroethylene, cis-1,3-Dichloropropene, Dibromochloromethane, Ethylbenzene, Methylene chloride, Styrene, Tetrachloroethene, Toluene, trans-1,2-Dichloroethylene

Matrix *

S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

3655553343

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-116-758 | Page 1 of 2

ollector: S. Hattur	Company Contact: JOAN KESSNER	Telephone No.: 375-4688	Project Coordinator: WEISS, RL
roject Designation: Columbia River Component of the RCBRA - Sediment	Sampling Location: MDBR- 5 SD		SAF No.: RC-116
e Client No.: WCH-08-012,034,053	Field Logbook No.: EL-1631-1	COA: BESCRC6520	Method of Shipment: FED EX
hipped To: EBERLINE SERVICES [✓ LIONVILLE]	Offsite Property No.: N/A		Bill of Lading/Air Bill No.: 796313456383

Price Code 9K

Data Turnaround 45 Days

OSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

Preservation	None	None	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	None
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	aG	aG	G	-
No. of Container(s)	1	1	1	1	1	1	1	1	1	1
Volume	1500g	100g	10g	10g	250g	250g	125g	250g	250g	1
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Technetium-99	See item (2) in Special Instructions	See item (3) in Special Instructions	PCBs - 8082	Pesticides - 8081	Semi-VOA - 8270A (TCL)	See item (4) in Special Instructions	-

Sample No.	Matrix *	Sample Date	Sample Time										
16160	OTHER SOLID	2/3/09	1410					X	X	X	X	X	

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
	2-3-09 / 1630	RLB	2-3-08 / 1630
RLB	2/4/09 0830	B. Redmond	2/4/09 0830
S. Redmond	2/4/09 1130	FedEx	2/4/09 1130
Fed Ex	2-5-09 0915		2-5-09 0915

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) {Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238}

(2) Strontium-89,90 – Total Sr; Isotopic Thorium {Thorium-232}, Isotopic Uranium {Uranium-233/234, Uranium-235, Uranium-238}; Isotopic Plutonium

(3) ICP Metals - 6010 (Full List) {Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc}; Mercury - 7471 - (CV)

(4) VOA - 8260A (TCL) {1,1,1-Trichloroethane, 1,1,2,2-Tetrachloroethane, 1,1,2-Trichloroethane, 1,1-Dichloroethane, 1,1-Dichloroethene, 1,2-Dichloroethane, 1,2-Dichloropropane, 2-Butanone, 2-Hexanone, 4-Methyl-2-Pentanone, Acetone, Benzene, Bromodichloromethane, Bromoform, Bromomethane, Carbon disulfide, Carbon tetrachloride, Chlorobenzene, Chloroethane, Chloroform, Chloromethane, cis-1,2-Dichloroethylene, cis-1,3-Dichloropropene, Dibromochloromethane, Ethylbenzene, Methylene chloride, Styrene, Tetrachloroethene, Toluene, trans-1,2-Dichloroethylene

Matrix *

S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

ABORATORY SECTION	Received By	Title	Date/Time
INAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

CH-EE-014

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-116-759

Page 1 of 2

Collector L Hanford

Company Contact JOAN KESSNER

Telephone No. 375-4688

Project Coordinator WEISS, RL

Price Code 9K

Data Turnaround 45 Days

Project Designation Columbia River Component of the RCBRA - Sediment

Sampling Location MOBR- / SD

SAF No. RC-116

Ice Chest No. HCH-08-012, 634, 653

Field Logbook No. EL-1631-1

COA BESCRC6520

Method of Shipment FED EX

Shipped To EBERLINE SERVICES [✓ LIONVILLE]

Offsite Property No. N/A

Bill of Lading/Air Bill No. 796313456383

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

Preservation	None	None	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	None
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	aG	aG	G	*
No. of Container(s)	1	1	1	1	1	1	1	1	1	1
Volume	1500g	100g	10g	10g	250g	150g	125g	250g	250g	1*
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Technetium-99	See item (2) in Special Instructions	See item (3) in Special Instructions	PCBs - 8082	Pesticides - 8081	Semi-VOA - 8270A (TCL)	See item (4) in Special Instructions	*

Sample No.	Matrix *	Sample Date	Sample Time										
J181A1	OTHER SOLID	2/3/09	1110					X	X	X	X	X	

CHAIN OF POSSESSION

Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
	2-3-09 1630	Ref B	2-3-09/1630
Ref B	2/4/09 0830	BW Woodward	2/4/09 0830
BW Woodward	2/4/09 1130	Fed Ex	2/4/09 1130
Fed Ex	2-5-09 0515		2-5-09 0515

SPECIAL INSTRUCTIONS

Samples unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab.

(1) Gamma Spec - (Full List) (Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238)
(2) Strontium-89,90 – Total Sr; Isotopic Thorium (Thorium-232); Isotopic Uranium (Uranium-233/234, Uranium-235, Uranium-238); Isotopic Plutonium
(3) ICP Metals - 6010 (Full List) (Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc); Mercury - 7471; (CV)
(4) VOA - 8260A (TCL) (1,1,1-Trichloroethane, 1,1,2,2-Tetrachloroethane, 1,1,2-Trichloroethane, 1,1-Dichloroethane, 1,1-Dichloroethene, 1,2-Dichloroethane, 1,2-Dichloropropane, 2-Butanone, 2-Hexanone, 4-Methyl-2-Pentanone, Acetone, Benzene, Bromodichloromethane, Bromoform, Bromomethane, Carbon disulfide, Carbon tetrachloride, Chlorobenzene, Chloroethane, Chloroform, Chloromethane, cis-1,2-Dichloroethylene, cis-1,3-Dichloropropene, Dibromochloromethane,

Matrix *

LABORATORY SECTION	Received By Title Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method Disposed By Date/Time

WCH-EE-011

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-116-760 Page 1 of 1

ollector: L Stratton

Company Contact: JOAN KESSNER — Telephone No. 375-4600

Project Coordinator: WEISS, RL

Price Code: 9K

Data Turnaround: 45 Days

roject Designation: Columbia River Component of the RCBRA - Sediment

Sampling Location: MDBR- 4 SD

SAP No.: RC-116

e Chest No.: WH-08-612,034,053

Field Logbook No.: EL-1631-1

COA: BESCRC6520

Method of Shipment: FED EX

hipped To: EBERLINE SERVICES (LIONVILLE)

Offsite Property No.: N/A

Bill of Lading/Air Bill No.: 796313456383

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

E530000

			Preservation	None	None	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	None
			Type of Container	G/P	G/P	G/P	G/P	G/P	aG	aG	aG	G	*
			No. of Container(s)	1	1	1	1	1	1	1	1	1	1
			Volume	1500g	100g	10g	10g	250g	250g	125g	250g	250g	1?
SAMPLE ANALYSIS				See item (1) in Special Instructions	Carbon 14	Technetium 99	See item (2) in Special Instructions	See item (3) in Special Instructions	PCBs - 8082	Pesticides - 8081	Semi-VOA - 8270A (TCL)	See item (4) in Special Instructions	-
Sample No.	Matrix *	Sample Date	Sample Time										
18182	OTHER SOLID	2/3/09	1150					X	X	X	X	X	

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab.

CHAIN OF POSSESSION — Sign/Print Names

elinquished By/Removed From	Date/Time 2-3-09 / 1630	Received By/Stored In	Date/Time 2-3-09 / 1630
elinquished By/Removed From K.E.B.	Date/Time 2/4/09 0830	Received By/Stored In B Woodward	Date/Time 2/4/09 0830
elinquished By/Removed From B Woodward	Date/Time 2/4/09 1130	Received By/Stored In FedEx	Date/Time 2/4/09 1130
elinquished By/Removed From FedEx	Date/Time 2-5-09 0915	Received By/Stored In	Date/Time 2-5-09 0915
elinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
elinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) {Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238}

(2) Strontium-89,90 -- Total Sr; Isotopic Thorium {Thorium-232}; Isotopic Uranium {Uranium-233/234, Uranium-235, Uranium-238}; Isotopic Plutonium

(3) ICP Metals - 6010 (Full List) {Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc}; Mercury - 7471 - (CV)

(4) VOA - 8260A (TCL) {1,1,1-Trichloroethane, 1,1,2,2-Tetrachloroethane, 1,1,2-Trichloroethane, 1,1-Dichloroethane, 1,1-Dichloroethene, 1,2-Dichloroethane, 1,2-Dichloropropane, 2-Butanone, 2-Hexanone, 4-Methyl-2-Pentanone, Acetone, Benzene, Bromodichloromethane, Bromoform, Bromomethane, Carbon disulfide, Carbon tetrachloride, Chlorobenzene, Chloroethane, Chloroform, Chloromethane, cis-1,2-Dichloroethylene, cis-1,3-Dichloropropene, Dibromochloromethane,

Matrix *

S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-116-761

Page 1 of 2

llector LS Hatton	Company Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator WEISS, RL
oject Designation Columbia River Component of the RCBRA - Sediment	Sampling Location MDBR- ? SD		SAF No. RC-116
e Chest No. WCH-08-012,034,053	Field Logbook No. EL-1631-5	COA BESCRC5520	Method of Shipment FED EX
ipped To EBERLINE SERVICES/LIONVILLE	Offsite Property No. N/A		Bill of Lading/Air Bill No. 796313456383

Price Code 9K

Data Turnaround 45 Days

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

000064

Preservation	None	None	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	None
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	aG	aG	G	-
No. of Container(s)	1	1	1	1	1	1	1	1	1	1
Volume	1500g	100g	10g	10g	250g	250g	125g	250g	250g	[illegible]
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Technetium-99	See item (2) in Special Instructions	See item (3) in Special Instructions	PCBs - 8081	Pesticides - 8081	Semi-VOA - 8270A (TCL)	See item (4) in Special Instructions	-

Sample No.	Matrix *	Sample Date	Sample Time										
18183	OTHER SOLID	2/3/09	1300					X	X	X	X	X	

Sample unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab.

CHAIN OF POSSESSION

Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
	2-3-09 1630	RFB	2-3-09/1630
RFB	2/4/09 0830	BL Woodward	2/4/09 0830
BL Woodward	2/4/09 1130	FedEx	2/4/09 1130
FedEx	02-5-09 0915		2-5-09 0915

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) (Americium-241, Antimony-125, Beryllium-7, Cerium-144, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238)

(2) Strontium-89,90 – Total Sr; Isotopic Thorium (Thorium-232); Isotopic Uranium (Uranium-233/234, Uranium-235, Uranium-238); Isotopic Plutonium

(3) ICP Metals - 6010 (Full List) (Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc); Mercury - 7471 - (CV)

(4) VOA - 8260A (TCL) (1,1,1-Trichloroethane, 1,1,2,2-Tetrachloroethane, 1,1,2-Trichloroethane, 1,1-Dichloroethane, 1,1-Dichloroethene, 1,2-Dichloroethane, 1,2-Dichloropropane, 2-Butanone, 2-Hexanone, 4-Methyl-2-Pentanone, Acetone, Benzene, Bromodichloromethane, Bromoform, Bromomethane, Carbon disulfide, Carbon tetrachloride, Chlorobenzene, Chloroethane, Chloroform, Chloromethane, cis-1,2-Dichloroethylene, cis-1,3-Dichloropropene, Dibromochloromethane,

Matrix *

S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-116-9

Page 1 of 1

Collector: JBM

Company Contact: JOAN KESSNER

Telephone No.: 375-4688

Project Coordinator: WEISS, RL

Price Code: 9K

Data Turnaround: 45 Days

Project Designation: Columbia River Component of the RCBRA - Sediment

Sampling Location: WP-ISD

SAF No.: RC-116

Ice Chest No.: WCH-08-012, 034, 053

Field Logbook No.: EL-1631/-1

COA: BFSCRC6520

Method of Shipment: FED EX

Shipped To: EBERLINE SERVICES [✓ LIONVILLE]

Offsite Property No.: N/A

Bill of Lading/Air Bill No.: 796313456383

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

0001165

			Preservation	None	None	None	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C
			Type of Container	G/P	G/P	G/P	G/P	G/P	G/P	aG	aG	aG	G
			No. of Container(s)	1	1	1	1	1	1	1	1	1	1
			Volume	1500g	100g	100g	10g	10g	150g	250g	120g	150g	150g
SAMPLE ANALYSIS				See item (1) in Special Instructions	Carbon-14	Tritium - H3	Technetium-99	See item (2) in Special Instructions	See item (3) in Special Instructions	PCBs - 8082	Pesticides - 8081	Semi-VOA - 8270A (TCL)	See item (4) in Special Instructions
Sample No.	Matrix *	Sample Date	Sample Time										
J17V87	OTHER SOLID	2/3/09	0945						X	X	X	X	X

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab.

CHAIN OF POSSESSION	Date/Time	Sign/Print Names Received By/Stored In	Date/Time
Relinquished By/Removed From Michael L. Bradley	2/3/09 1700	Received By/Stored In Fr A	2/3/09 1700
Relinquished By/Removed From Fr A	2/4/09 0830	Received By/Stored In B Woodward	2/4/09 0830
Relinquished By/Removed From B Woodward	2/4/09 1130	Received By/Stored In FedEx	2/4/09 1130
Relinquished By/Removed From Fed Ex	2-5-09 0915	Received By/Stored In	2-5-09 0915
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) {Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238}
(2) Strontium-89,90 – Total Sr; Isotopic Thorium {Thorium-232}; Isotopic Uranium {Uranium-233/234, Uranium-235, Uranium-238}; Isotopic Plutonium
(3) ICP Metals - 6010 (Full List) {Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc}; Mercury - 7471 - {CV}
(4) VOA - 8260A (TCL) {1,1,1-Trichloroethane, 1,1,2,2-Tetrachloroethane, 1,1,2-Trichloroethane, 1,1-Dichloroethane, 1,1-Dichloroethene, 1,2-Dichloroethane, 1,2-Dichloropropane, 2-Butanone, 2-Hexanone, 4-Methyl-2-Pentanone, Acetone, Benzene, Bromodichloromethane, Bromoform, Bromomethane, Carbon disulfide, Carbon tetrachloride, Chlorobenzene, Chloroethane, Chloroform, Chloromethane, cis-1,2-Dichloroethylene, cis-1,3-Dichloropropene, Dibromochloromethane, Ethylbenzene, Methylene chloride, Styrene, Tetrachloroethene, Toluene, trans-1,2-Dichloroethylene

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION — Received By: / Title: / Date/Time:

FINAL SAMPLE DISPOSITION — Disposal Method: / Disposed By: / Date/Time:

WCH-EE-011

Washington Closure Hanford	**CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST**	RC-116-9	Page 2 of 2
Collector BM	Company Contact JOAN KESSNER Telephone No. 375-4688	Project Coordinator WEISS, RL	Price Code 9K Data Turnaround 45 Days
Project Designation Columbia River Component of the RCBRA - Sediment	Sampling Location WP-ISD	SAF No. RC-116	
Ice Chest No. WXH-BR-017, 034, 053	Field Logbook No. EL-1631/…	COA BESCRC6320	Method of Shipment FED EX
Shipped To EBERLINE SERVICES/LIONVILLE	Offsite Property No. N/A		Bill of Lading/Air Bill No. 796313456383

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

9300006

Preservation	Cool 4C	Cool 4C	Cool 4C
Type of Container	G	aG	G/P
No. of Container(s)	1	1	1
Volume	125g 5	125mL	1000g
SAMPLE ANALYSIS	See attached for Special Instructions	TOC - 415.1	Particle Size (Dry Sieve) [illegible]

Sample No.	Matrix *	Sample Date	Sample Time			
J17V87	OTHER SOLID	2/3/09	545	X	X	X

CHAIN OF POSSESSION Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
B… B…	2/3/09 1700		2/3/09 1700
R. A	2/4/09 0830	B Woodward	2/4/09 0830
B Woodward	2/4/09 1130	FedEx	2/4/09 1130
FedEx	2-5-09 0915		2-5-09 0915

SPECIAL INSTRUCTIONS

5 [illegible]

(1) TPH-Diesel Range - WTPH-D+ (Total petroleum hydrocarbons - diesel range, Total petroleum hydrocarbons - motor oil (high boiling))

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

3668565

Washington Closure Hanford	**CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST**	RC-116-10	Page 1 of 2
Collector BM	Company Contact JOAN KESSNER Telephone No. 375-4688	Project Coordinator WEISS, RL	Price Code 9K Data Turnaround 45 Days
Project Designation Columbia River Component of the RCBRA - Sediment	Sampling Location WP-7SD	SAF No. RC-116	
Ice Chest No. WCH-08-012, 034, 053	Field Logbook No. EL-1630-1 COA BESCRC6520	Method of Shipment FED EX	
Shipped To EBERLINE SERVICES [✓ LIONVILLE]	Offsite Property No. N/A	Bill of Lading/Air Bill No. 796313456383	

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

290000

			Preservation	None	None	None	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C
			Type of Container	G/P	G/P	G/P	G/P	G/P	G/P	aG	aG	aG	G
			No. of Container(s)	1	1	1	1	1	1	1	1	1	1
			Volume	1500g	100g	100g	10g	50g	250g	250g	120g	250g	250g
SAMPLE ANALYSIS				See item (1) in Special Instructions	Carbon-14	Tritium - H3	Technetium-99	See item (2) in Special Instructions	See item (3) in Special Instructions	PCBs - 8082	Pesticides - 8081	Semi-VOA - 8270A (TCL)	See item (4) in Special Instructions
Sample No.	Matrix *	Sample Date	Sample Time										
J17V88	OTHER SOLID	2/3/09	1115						X	X	X	X	X

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples to be shipped to lab.

CHAIN OF POSSESSION		Sign/Print Names	
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
BM for BA 4,6	2/3/09 1120	E. A	2/3/09 1120
R. A	2/4/09 0830	B. Woodward	2/4/09 0830
B. Woodward	2/4/09 1130	Fed Ex	2/4/09 1130
Fed Ex	2-5-09 0915		2-5-09 0915

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) {Americium-241, Antimony-125, Beryllium-7, Cerium-144, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238}

(2) Strontium-89,90 – Total Sr; Isotopic Thorium {Thorium-232}; Isotopic Uranium {Uranium-233/234, Uranium-235, Uranium-238}; Isotopic Plutonium

(3) ICP Metals - 6010 (Full List) {Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc}; Mercury - 7471 - (CV)

(4) VOA - 8260A (TCL) {1,1,1-Trichloroethane, 1,1,2,2-Tetrachloroethane, 1,1,2-Trichloroethane, 1,1-Dichloroethane, 1,1-Dichloroethene, 1,2-Dichloroethane, 1,2-Dichloropropane, 2-Butanone, 2-Hexanone, 4-Methyl-2-Pentanone, Acetone, Benzene, Bromodichloromethane, Bromoform, Bromomethane, Carbon disulfide, Carbon tetrachloride, Chlorobenzene, Chloroethane, Chloroform, Chloromethane, cis-1,2-Dichloroethylene, cis-1,3-Dichloropropene, Dibromochloromethane, Ethylbenzene, Methylene chloride, Styrene, Tetrachloroethene, Toluene, trans-1,2-Dichloroethylene

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-116-11

Page 1 of 2

Collector: BM	Company Contact: JOAN KESSNER	Telephone No.: 375-4688	Project Coordinator: WEISS, RL
Project Designation: Columbia River Component of the RCBRA - Sediment	Sampling Location: WP-15D		SAF No.: RC-116
Ice Chest No.: WCH-08-012, 034, 053	Field Logbook No.: EL-1631-1	COA: BESCRC6520	Method of Shipment: FED EX
Shipped To: EBERLINE SERVICES [✓ OAKVILLE]	Offsite Property No.: N/A		Bill of Lading/Air Bill No.: 796313456383

Price Code: 9K

Data Turnaround: 45 Days

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

Preservation	None	None	None	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C
Type of Container	G/P	G/P	G/P	G/P	G/P	G/P	aG	aG	aG	G
No. of Container(s)	1	1	1	1	1	1	1	1	1	1
Volume	1500g	100g	100g	10g	10g	250g	250g	120g	250g	250g
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Tritium - H3	Technetium-99	See item (2) in Special Instructions	See item (3) in Special Instructions	PCBs - 8082	Pesticides - 8081	Semi-VOA - 8270A (TCL)	See item (4) in Special Instructions

Sample No.	Matrix *	Sample Date	Sample Time										
J17V89	OTHER SOLID	2/3/09	~~1230~~ 1315						X	X	X	X	X

Sample unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
B M	2/3/09 1700	Fr A	2/3/09 1700
R f A	2/4/09 0830	B Woodward	2/4/09 0830
B Woodward	2/4/09 1130	FedEx	2/4/09 1130
Ed E	2-5-09 0915		2-5-09 0915

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (PaS List) {Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238}

(2) Strontium-89,90 -- Total Sr; Isotopic Thorium {Thorium-232}; Isotopic Uranium {Uranium-233/234, Uranium-235, Uranium-238}; Isotopic Plutonium

(3) ICP Metals - 6010 (PaS List) {Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc}; Mercury - 7471 - (CV)

(4) VOA - 8260A (TCL) {1,1,1-Trichloroethane, 1,1,2,2-Tetrachloroethane, 1,1,2-Trichloroethane, 1,1-Dichloroethane, 1,1-Dichloroethene, 1,2-Dichloroethane, 1,2-Dichloropropane, 2-Butanone, 2-Hexanone, 4-Methyl-2-Pentanone, Acetone, Benzene, Bromodichloromethane, Bromoform, Bromomethane, Carbon disulfide, Carbon tetrachloride, Chlorobenzene, Chloroethane, Chloroform, Chloromethane, cis-1,2-Dichloroethylene, cis-1,3-Dichloropropene, Dibromochloromethane,

Matrix *

S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

Washington Closure Hanford | **CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST** | RC-116-12 | Page 1 of 2

Collector: BM	Company Contact: JOAN KESSNER Telephone No.: 375-4688	Project Coordinator: WEISS, RL	Price Code: 9K Data Turnaround: 45 Days
Project Designation: Columbia River Component of the RCBRA - Sediment	Sampling Location: WP-4SD	SAF No.: RC-116	
Ice Chest No.: WCH 08-034, 012, 053	Field Logbook No.: EL-1631/4 COA: BESCRC6520	Method of Shipment: FED EX	
Shipped To: EBERLINE SERVICES ([✓ LIONVILLE])	Offsite Property No.: N/A	Bill of Lading/Air Bill No.: 796313456383	

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

6900000

Preservation	None	None	None	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C
Type of Container	G/P	G/P	G/P	G/P	G/P	G/P	aG	aG	aG	G
No. of Container(s)	1	1	1	1	1	1	1	1	1	1
Volume	1500g	100g	300g	10g	10g	250g	250g	120g	250g	250g
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Tritium - H3	Technetium-99	See item (2) in Special Instructions	See item (3) in Special Instructions	PCBs - 8082	Pesticides - 8081	Semi-VOA - 8270A (TCL)	See item (4) in Special Instructions

Sample No.	Matrix *	Sample Date	Sample Time										
J17V80	OTHER SOLID	2/3/09	1230						X	X	X	X	X

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab.

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
BM / L Bitty	2/3/09 1700	Fac A	2/3/09 1700
Fac A	2/4/09 0830	B Woodward	2/4/09 0850
B Woodward	2/4/09 1130	Fed Ex	2/4/09 1130
Fed Ex	2-5-09 0915		2-5-09 0915

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (EPA 901.1) {Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238}
(2) Strontium-89,90 - Total Sr; Isotopic Thorium {Thorium-232}; Isotopic Uranium {Uranium-233/234, Uranium-235, Uranium-238}; Isotopic Plutonium
(3) ICP Metals - 6010 (Full List) {Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc}; Mercury - 7471 - (CV)
(4) VOA - 8260A (TCL) {1,1,1-Trichloroethane, 1,1,2,2-Tetrachloroethane, 1,1,2-Trichloroethane, 1,1-Dichloroethane, 1,1-Dichloroethene, 1,2-Dichloroethane, 1,2-Dichloropropane, 2-Butanone, 2-Hexanone, 4-Methyl-2-Pentanone, Acetone, Benzene, Bromodichloromethane, Bromoform, Bromomethane, Carbon disulfide, Carbon tetrachloride, Chlorobenzene, Chloroethane, Chloroform, Chloromethane, cis-1,2-Dichloroethylene, cis-1,3-Dichloropropene, Dibromochloromethane, Ethylbenzene, Methylene chloride, Styrene, Tetrachloroethene, Toluene, trans-1,2-Dichloroethylene

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

3660555353

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-116-13

Page 1 of 2

Collector: RM	Company Contact: JOAN KESSNER	Telephone No.: 375-4688	Project Coordinator: WEISS, RL
Project Designation: Columbia River Component of the RCBRA - Sediment	Sampling Location: WP-35D		SAF No.: RC-116
Ice Chest No.: WCH-08-012,034,053	Field Logbook No.: EL-1631-1	COA: RESCRC6520	Method of Shipment: FED EX
Shipped To: EBERLINE SERVICES [✓ LIONVILLE]	Offsite Property No.: N/A		Bill of Lading/Air Bill No.: 7963 3456383

Price Code: 9K

Data Turnaround: 45 Days

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

0200000

			Preservation	None	None	None	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C
			Type of Container	G/P	G/P	G/P	G/P	G/P	G/P	aG	aG	aG	G
			No. of Container(s)	1	1	1	1	1	1	1	1	1	1
			Volume	1500g	100g	100g	10g	10g	250g	250g	120g	150g	150g
SAMPLE ANALYSIS				See item (1) in Special Instructions	Carbon-14	Tritium - H3	Technetium-99	See item (2) in Special Instructions	See item (3) in Special Instructions	PCBs - 8082	Pesticides - 8081	Semi-VOA - 8270A (TCL)	See item (4) in Special Instructions
Sample No.	Matrix *	Sample Date	Sample Time										
J17V91	OTHER SOLID	2/3/09	1400						X	X	X	X	X

Sample unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab

CHAIN OF POSSESSION	Date/Time	Sign/Print Names	Date/Time
Relinquished By/Removed From: Brian Baker	2/3/09 1700	Received By/Stored In: Fix A	2/3/09 1700
Relinquished By/Removed From: Fix A	2/4/09 0830	Received By/Stored In: Bi Woodward	2/4/09 0830
Relinquished By/Removed From: Bi Woodward	2/4/09 1130	Received By/Stored In: FedEx	2/4/09 1130
Relinquished By/Removed From: FedEx	2-5-09 0915	Received By/Stored In:	2-5-09 0915
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) (Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238)
(2) Strontium-89,90 - Total Sr, Isotopic Thorium (Thorium-232), Isotopic Uranium (Uranium-233/234, Uranium-235, Uranium-238), Isotopic Plutonium
(3) ICP Metals - 6010 (Full List) (Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc); Mercury - 7471 - (CV)
(4) VOA - 8260A (TCL) (1,1,1-Trichloroethane, 1,1,2,2-Tetrachloroethane, 1,1,2-Trichloroethane, 1,1-Dichloroethane, 1,1-Dichloroethene, 1,2-Dichloroethane, 1,2-Dichloropropane, 2-Butanone, 2-Hexanone, 4-Methyl-2-Pentanone, Acetone, Benzene, Bromodichloromethane, Bromoform, Bromomethane, Carbon disulfide, Carbon tetrachloride, Chlorobenzene, Chloroethane, Chloroform, Chloromethane, cis-1,2-Dichloroethylene, cis-1,3-Dichloropropene, Dibromochloromethane,

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-116-14

Page 1 of 1

Collector B-?	Company Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator WEISS, RL
Project Designation Columbia River Component of the RCBRA - Sediment	Sampling Location WP-ASD		SAF No. RC-116
Ice Chest No. WCH-08-012, 034, 053	Field Logbook No. EL-1631-1	COA 085CRC6520	Method of Shipment FED EX
Shipped To EBERLINE SERVICES/ LIONVILLE	Offsite Property No. N/A		Bill of Lading/Air Bill No. 796313456383

Price Code 9K

Data Turnaround 45 Days

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

T200000

		Preservation		None	None	None	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C
		Type of Container		G/P	G/P	G/P	G/P	G/P	G/P	aG	aG	aG	G
		No. of Container(s)		1	1	1	1	1	1	1	1	1	1
		Volume		1500g	100g	100g	10g	10g	250g	250g	120g	250g	250g
SAMPLE ANALYSIS				See item (1) in Special Instructions	Carbon-14	Tritium - H3	Technetium-99	See item (2) in Special Instructions	See item (3) in Special Instructions	PCBs - 8082	Pesticides - 8081	Semi-VOA - 8270A (TCL)	See item (4) in Special Instructions
Sample No.	Matrix *	Sample Date	Sample Time										
J17VB7	OTHER SOLID	2/3/09	1430						X	X	X	X	X

Sample unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab.

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
B. Taylor B. Taylor	2/3/09 1700	Fr A	2/3/09 1700
Ref A	2/4/09 0830	B Woodward	2/4/09 0830
B Woodward	2/4/09 1130	Fed Ex	2/4/09 1130
Fed Ex	2-5-09 0915		2-5-09 0915

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) {Americium-241, Antimony-125, Beryllium-7, Cerium-144, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238}
(2) Strontium-89/90 - Total Sr, Isotopic Thorium {Thorium-232}, Isotopic Uranium {Uranium-233/234, Uranium-235, Uranium-238}, Isotopic Plutonium
(3) ICP Metals - 6010 (Full List) {Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Titanium, Vanadium, Zinc}; Mercury - 7471 - (CV)
(4) VOA - 8260A (TCL) {1,1,1-Trichloroethane, 1,1,2,2-Tetrachloroethane, 1,1,2-Trichloroethane, 1,1-Dichloroethane, 1,1-Dichloroethene, 1,2-Dichloroethane, 1,2-Dichloropropane, 2-Butanone, 2-Hexanone, 4-Methyl-2-Pentanone, Acetone, Benzene, Bromodichloromethane, Bromoform, Bromomethane, Carbon disulfide, Carbon tetrachloride, Chlorobenzene, Chloroethane, Chloroform, Chloromethane, cis-1,2-Dichloroethylene, cis-1,3-Dichloropropene, Dibromochloromethane, Ethylbenzene, Methylenechloride, Styrene, Tetrachloroethene, Toluene, trans-1,2-Dichloroethylene

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-116-82

Page 1 of 1

ollector:	Company Contact: JOAN KESSNER	Telephone No.: 375-4688	Project Coordinator: WEISS, RL
roject Designation: Columbia River Component of the RCBRA - Sediment	Sampling Location: MBCH-450		SAF No.: RC-116
e Chest No.: WCH-08-012,034,053	Field Logbook No.: EL-1631/-1	COA: BESCRC6520	Method of Shipment: FED EX
hipped To: EBERLINE SERVICES (OAKVILLE)	Offsite Property No.: N/A		Bill of Lading/Air Bill No.: 796313456383

Price Code 9K

Data Turnaround: 45 Days

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

Preservation	None	None	None	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C
Type of Container	G/P	G/P	G/P	G/P	G/P	G/P	aG	aG	aG	G
No. of Container(s)	1	1	1	1	1	1	1	1	1	1
Volume	1500g	100g	100g	10g	10g	250g	250g	120g	250g	250g
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Tritium - H3	Technetium-99	See item (2) in Special Instructions	See item (3) in Special Instructions	PCBs - 8082	Pesticides - 8081	Semi VOA - 8270A (TCL)	See item (4) in Special Instructions

Sample No.	Matrix *	Sample Date	Sample Time										
J17VP0	OTHER SOLID	2/3/09	1030						X	X	X	X	X

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab

CHAIN OF POSSESSION	Date/Time	Sign/Print Names	Date/Time
Relinquished By/Removed From	2-3-09 / 1630	Received By/Stored In: Ref B	2-3-09 1650
Relinquished By/Removed From: Ref B	2/4/09 0830	Received By/Stored In: BLWoodward	2/4/09 0830
Relinquished By/Removed From: BLWoodward	2/4/09 1130	Received By/Stored In: FedEx	2/4/09 1130
Relinquished By/Removed From	2-5-09 0915	Received By/Stored In	2-5-09 0915
Relinquished By/Removed From		Received By/Stored In	
Relinquished By/Removed From		Received By/Stored In	

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) {Americium-241, Antimony-125, Beryllium-7, Cerium-144, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238}

(2) Strontium-89,90 -- Total Sr, Isotopic Thorium {Thorium-232}; Isotopic Uranium {Uranium-233/234, Uranium-235, Uranium-238}; Isotopic Plutonium

(3) ICP Metals - 6010 (Full List) {Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc}; Mercury - 7471 - (CV)

(4) VOA - 8260A (TCL) {1,1,1-Trichloroethane, 1,1,2,2-Tetrachloroethane, 1,1,2-Trichloroethane, 1,1-Dichloroethane, 1,1-Dichloroethene, 1,2-Dichloroethane, 1,2-Dichloropropane, 2-Butanone, 2-Hexanone, 4-Methyl-2-Pentanone, Acetone, Benzene, Bromodichloromethane, Bromoform, Bromomethane, Carbon disulfide, Carbon tetrachloride, Chlorobenzene, Chloroethane, Chloroform, Chloromethane, cis-1,2-Dichloroethylene, cis-1,3-Dichloropropene, Dibromochloromethane, Ethylbenzene, Methylene chloride, Styrene, Tetrachloroethene, Toluene, trans-1,2-Dichloroethylene

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Washington Closure Hanford	**CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST**	RC-116-87	Page 1 of 2
Collector: BM	Company Contact: JOAN KESSNER; Telephone No. 375-4688	Project Coordinator: WEISS, RL	Price Code 9K; Data Turnaround 45 Days
Project Designation: Columbia River Component of the RCBRA - Sediment	Sampling Location: ~~BM~~ ~~15D~~ WP-15D	SAF No. RC-116	
Ice Chest No. WCH-DR-012,024,053	Field Logbook No. EL-1631-1; COA BESCRC6320	Method of Shipment: FED EX	
Shipped To: EBERLINE SERVICES / LIONVILLE	Offsite Property No. N/A	Bill of Lading/Air Bill No. 796313456383	

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

Preservation	None	None	None	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C
Type of Container	G/P	G/P	G/P	G/P	G/P	G/P	aG	aG	aG	G
No. of Container(s)	1	1	1	1	1	1	1	1	1	1
Volume	1500g	100g	100g	10g	10g	250g	250g	120g	250g	250g
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Tritium - H3	Technetium-99	See item (2) in Special Instructions	See item (3) in Special Instructions	TOC - 9060	Tributyltin - 8B1	Semi-VOA 8270A (TCL)	See item (4) in Special Instructions

Sample No.	Matrix *	Sample Date	Sample Time										
J17VP5	OTHER SOLID	2/3/09	~~945~~ 1025						X	X	X	X	X

CHAIN OF POSSESSION	Date/Time	Sign/Print Names Received By/Stored In	Date/Time
Relinquished By/Removed From: B M L BAHL	2/3/09 1720	Received By/Stored In: Ref A	2/3/09 1720
Relinquished By/Removed From: Ref A	2/4/09 0830	Received By/Stored In: BWoolwind	2/4/09 0830
Relinquished By/Removed From: BWoolwind	2/4/09 1130	Received By/Stored In: FedEx	2/4/09 1130
Relinquished By/Removed From: FedEx	2-5-09 0915	Received By/Stored In:	2-5-09 0915
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab.

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) (Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238)
(2) Strontium-89,90 – Total Sr, Isotopic Thorium (Thorium-232), Isotopic Uranium (Uranium-233/234, Uranium-235, Uranium-238); Isotopic Plutonium
(3) ICP Metals - 6010 (Full List) (Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc), Mercury - 7471 - (CV)
(4) VOA - 8260A (TCL) (1,1,1-Trichloroethane, 1,1,2,2-Tetrachloroethane, 1,1,2-Trichloroethane, 1,1-Dichloroethene, 1,1-Dichloroethane, 1,2-Dichloroethane, 1,2 Dichloropropane, 2-Butanone, 2 Hexanone, 4-Methyl-2-Pentanone, Acetone, Benzene, Bromodichloromethane, Bromoform, Bromomethane, Carbon disulfide, Carbon tetrachloride, Chlorobenzene, Chloroethane, Chloroform, Chloromethane, cis-1,2-Dichloroethylene, cis-1,3-Dichloropropene, Dibromochloromethane, Ethylbenzene, Methylene chloride, Styrene, Tetrachloroethene, Toluene, trans-1,2-Dichloroethylene

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-FE-011

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-116-720

Page 1 of 2

Collector BM	Company Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator WEISS, RL
Project Designation Columbia River Component of the RCBRA - Sediment	Sampling Location PM-SD		SAF No. RC-116
Ice Chest No. WCH-08-012, 034, 053	Field Logbook No. EL-1603-4	COA BESCRCA520	Method of Shipment FED EX
Shipped To EBERLINE SERVICES (LIONVILLE)	Offsite Property No. NA		Bill of Lading/Air Bill No. 796313456383

Price Code 9K

Data Turnaround 45 Days

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

Preservation	None	None	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	None
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	aG	aG	G	-
No. of Container(s)	1	1	1	1	1	1	1	1	1	1
Volume	1500g	500g	10g	10g	250g	250g	125g	250g	250g	1L
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Technetium-99	See item (2) in Special Instructions	See item (3) in Special Instructions	PCBs - 8082	Pesticides - 8081	Semi-VOA - 8270A (TCL)	See item (4) in Special Instructions	-

Sample No.	Matrix *	Sample Date	Sample Time										
J180W8	OTHER SOLID	2/2/09	1130					X	X	X	X	X	

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
B Bay	2/2/09 175		2/2/09 175
ECS A	2/4/09 0830	D Heiblers ESI	2/4/09 0830
D Heiblers ESI	2/4/09 1130	FedEx	2/4/09 1130
Fed Ex	2-5-09 0915		2-5-09 0915

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List (Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238))
(2) Strontium-89,90 -- Total Sr; Isotopic Thorium (Thorium-232); Isotopic Uranium (Uranium-233/234, Uranium-235, Uranium-238); Isotopic Plutonium
(3) ICP Metals - 6010 (Full List) (Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc); Mercury - 7471 - (CV)
(4) VOA - 8260A (TCL) (1,1,1-Trichloroethane, 1,1,2,2-Tetrachloroethane, 1,1,2-Trichloroethane, 1,1-Dichloroethane, 1,1-Dichloroethene, 1,2-Dichloroethane, 1,2-Dichloropropane, 2-Butanone, 2-Hexanone, 4-Methyl-2-Pentanone, Acetone, Benzene, Bromodichloromethane, Bromoform, Bromomethane, Carbon disulfide, Carbon tetrachloride, Chlorobenzene, Chloroethane, Chloroform, Chloromethane, cis-1,2-Dichloroethylene, cis-1,3-Dichloropropene, Dibromochloromethane, Ethylbenzene, Methylene chloride, Styrene, Tetrachloroethene, Toluene, trans-1,2-Dichloroethylene

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-116-721 | Page 1 of 2

llector BM	Company Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator WEISS, RL
oject Designation Columbia River Component of the RCBRA - Sediment	Sampling Location PM- 2 50		SAF No. RC-116
: Chest No. WCH-08-012,039,053	Field Logbook No. EL-1631-1	COA BESCRC6520	Method of Shipment FED EX
ipped To EBERLINE SERVICES [✓ LIONVILLE]	Offsite Property No. N/A		Bill of Lading/Air Bill No. 7963 1345 6383

Price Code 9K

Data Turnaround 45 Days

OSSIBLE SAMPLE HAZARDS/REMARKS

pecial Handling and/or Storage

Preservation	None	None	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	None
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	aG	aG	G	[illegible]
No. of Container(s)	1	1	1	1	1	1	1	1	1	1
Volume	1500g	100g	15g	10g	250g	250g	125g	250g	250g	[illegible]
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Technetium-99	See item (2) in Special Instructions	See item (3) in Special Instructions	PCBs - 8082	Pesticides - 8081	Semi-VOA - 8270A (TCL)	See item (4) in Special Instructions	-

Sample No.	Matrix *	Sample Date	Sample Time										
180W9	OTHER SOLID	2/2/09	1230					X	X	X	X	X	

Sample transferred to remove samples from controlled storage. Samples removed samples from storage location [illegible] 5 samples for shipment to lab

CHAIN OF POSSESSION — Sign/Print Names

elinquished By/Removed From	Date/Time 2/2/09 1135	Received By/Stored In Eric A	Date/Time 2/2/09 1135
elinquished By/Removed From Eric A	Date/Time 2/4/09 0830	Received By/Stored In D. Hellberg	Date/Time 2/4/09 0830
elinquished By/Removed From D. Hellberg	Date/Time 2/4/09 1130	Received By/Stored In Fedex	Date/Time 2/4/09 1130
elinquished By/Removed From FedEx	Date/Time 2-5-09 0915	Received By/Stored In	Date/Time 2-5-09 09-15
elinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
elinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) {Americium-241, Antimony-125, Beryllium-7, Cerium-144, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238}; (2) Strontium-89,90 -- Total Sr; Isotopic Thorium {Thorium-232}; Isotopic Uranium {Uranium-233/234, Uranium-235, Uranium-238}; Isotopic Plutonium (3) ICP Metals - 6010 (Full List) {Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc}; Mercury - 7471 - (CV) (4) VOA - 8260A (TCL) {1,1,1-Trichloroethane, 1,1,2,2-Tetrachloroethane, 1,1,2-Trichloroethane, 1,1-Dichloroethane, 1,1-Dichloroethene, 1,2-Dichloroethane, 1,2-Dichloropropane, 2-Butanone, 2-Hexanone, 4-Methyl-2-Pentanone, Acetone, Benzene, Bromodichloromethane, Bromoform, Bromomethane, Carbon disulfide, Carbon tetrachloride, Chlorobenzene, Chloroethane, Chloroform, Chloromethane, cis-1,2-Dichloroethylene, cis-1,3-Dichloropropene, Dibromochloromethane, [illegible]

Matrix *

S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Appendix 5

Data Validation Supporting Documentation

PCB DATA VALIDATION CHECKLIST

VALIDATION LEVEL:	A	B	[✓ C]	D	E

PROJECT: RCBRA

DATA PACKAGE: K1525

VALIDATOR: ELR

LAB: LLI

DATE: 11/16/01

SDG: K1525

ANALYSES PERFORMED

[✓ SW-846 8081]	SW-846 8081 (TCLP)	[✓ SW-846 8082]	SW-846 8081 (TCLP)		

SAMPLES/MATRIX

J18177 J18178 J18179 J18180 J18181 J18182 J18183

J17V87 J17V88 J17V89 J17V90 J17V91 J17V92

J17V80 J17V85 J180W9-A J180W5-A

solid

1. DATA PACKAGE COMPLETENESS AND CASE NARRATIVE

Technical verification documentation present? .... Yes [✓ No] N/A

Comments: ____________________

2. INSTRUMENT PERFORMANCE AND CALIBRATIONS (Levels D and E)

Initial calibrations acceptable? .... Yes No [✓ N/A]

Continuing calibrations acceptable? .... Yes No [✓ N/A]

Standards traceable? .... Yes No [✓ N/A]

Standards expired? .... Yes No [✓ N/A]

Calculation check acceptable? .... Yes No [✓ N/A]

DDT and endrin breakdowns acceptable? .... Yes No [✓ N/A]

Comments: ____________________

PCB DATA VALIDATION CHECKLIST

3. BLANKS (Levels B, C, D, and E)

Calibration blanks analyzed? (Levels D, E) .... Yes No [✓ N/A]

Calibration blank results acceptable? (Levels D, E) .... Yes No [✓ N/A]

Laboratory blanks analyzed? .... [✓ Yes] No N/A

Laboratory blank results acceptable? .... [✓ Yes] No N/A

Field/trip blanks analyzed? (Levels C, D, E) .... Yes [✓ No] N/A

Field/trip blank results acceptable? (Levels C, D, E) .... Yes No [✓ N/A]

Transcription/calculation errors? (Levels D, E) .... Yes No [✓ N/A]

Comments: No FB

4. ACCURACY (Levels C, D, and E)

Surrogates analyzed? .... [✓ Yes] No N/A

Surrogate recoveries acceptable? .... Yes [✓ No] N/A

Surrogates traceable? (Levels D, E) .... Yes No [✓ N/A]

Surrogates expired? (Levels D, E) .... Yes No [✓ N/A]

MS/MSD samples analyzed? .... [✓ Yes] No N/A

MS/MSD results acceptable? .... [✓ Yes] No N/A

MS/MSD standards NIST traceable? (Levels D, E) .... Yes No [✓ N/A]

MS/MSD standards expired? (Levels D, E) .... Yes No [✓ N/A]

LCS/BSS samples analyzed? .... [✓ Yes] No N/A

LCS/BSS results acceptable? .... [✓ Yes] No N/A

Standards traceable? (Levels D, E) .... Yes No [✓ N/A]

Standards expired? (Levels D, E) .... Yes No [✓ N/A]

Transcription/calculation errors? (Levels D, E) .... Yes No [✓ N/A]

Performance audit sample(s) analyzed? .... Yes [✓ No] N/A

Performance audit sample results acceptable? .... Yes No [✓ N/A]

Comments: [illegible] - 1200 - 3 (surrogate) 57%

no [illegible] MS, MSD or LCS

[illegible]

PCB DATA VALIDATION CHECKLIST

5. PRECISION (Levels C, D, and E)

Duplicate RPD values acceptable? .... Yes [✓ No] N/A
Duplicate results acceptable? .... Yes [✓ No] N/A
MS/MSD standards NIST traceable? (Levels D, E) .... Yes No [✓ N/A]
MS/MSD standards expired? (Levels D, E) .... Yes No [✓ N/A]
Field duplicate RPD values acceptable? .... [✓ Yes] No N/A
Field split RPD values acceptable? .... Yes No [✓ N/A]
Transcription/calculation errors? (Levels D, E) .... Yes No [✓ N/A]

Comments: J1E127 [illegible] = 4,4-DDD = 115% > J both J1E5[illegible]
Endosulfan II = 37%
no exception MS/MSD = J all

6. SYSTEM PERFORMANCE (Levels D and E)

Chromatographic performance acceptable? .... Yes No [✓ N/A]
Positive results resolved acceptably? .... Yes No [✓ N/A]

Comments:

7. HOLDING TIMES (all levels)

Samples properly preserved? .... [✓ Yes] No N/A
Sample holding times acceptable? .... [✓ Yes] No N/A

Comments:

PCB DATA VALIDATION CHECKLIST

8. COMPOUND IDENTIFICATION, QUANTITATION, AND DETECTION LIMITS (all levels)

Compound identification acceptable? (Levels D, E) ... Yes No [✓ N/A]

Compound quantitation acceptable? (Levels D, E) ... Yes No [✓ N/A]

Results reported for all requested analyses? ... [✓ Yes] No N/A

Results supported in the raw data? (Levels D, E) ... Yes No [✓ N/A]

Samples properly prepared? (Levels D, E) ... ~~Yes~~ No [✓ N/A]

Detection limits meet RDL? ... [✓ Yes] No N/A

Transcription/calculation errors? (Levels D, E) ... Yes No [✓ N/A]

Comments:

9. SAMPLE CLEANUP (Levels D and E)

Florisil ® (or other absorbent) cleanup performed? ... Yes No [✓ N/A]

Lot check performed? ... Yes No [✓ N/A]

Check recoveries acceptable? ... Yes No [✓ N/A]

GPC cleanup performed? ... Yes No [✓ N/A]

GPC check performed? ... Yes No [✓ N/A]

GPC check recoveries acceptable? ... Yes No [✓ N/A]

GPC calibration performed? ... Yes No [✓ N/A]

GPC calibration check performed? ... Yes No [✓ N/A]

GPC calibration check retention times acceptable? ... Yes No [✓ N/A]

Check/calibration materials traceable? ... Yes No [✓ N/A]

Check/calibration materials Expired? ... Yes No [✓ N/A]

Analytical batch QC given similar cleanup? ... Yes No [✓ N/A]

Transcription/Calculation Errors? ... Yes No [✓ N/A]

Comments

Appendix 6

Additional Documentation Requested by Client

264 Welsh Pool R
Exton, PA 19
Phone: 610-280-3
Fax: 610-280-3

WC-Hanford, Inc
2620 Fermi Avenue
Richland WA, 99354

Project: RC-116
Project Number: [none]
Project Manager: Joan Kessner

Reported:
03/09/2009 12:36

Polychlorinated Biphenyls by SW846 8082 - Quality Control
Lionville Laboratory

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch L902088 - SW 3540C										
Blank (L902088-BLK2)				Prepared: 02/12/2009 Analyzed: 02/24/2009						
Aroclor 1016	ND	13.3	ug/kg wet							
Aroclor 1221	ND	13.3	"							
Aroclor 1232	ND	13.3	"							
Aroclor 1242	ND	13.3	"							
Aroclor 1248	ND	13.3	"							
Aroclor 1254	ND	13.3	"							
Aroclor 1260	ND	13.3	"							
Surrogate: Decachlorobiphenyl	*33.3*		"	*33.333*		*100*	*43-144*			
Surrogate: Tetrachloro-meta-xylene	*29.6*		"	*33.337*		*89*	*32-141*			
LCS (L902088-BS2)				Prepared: 02/12/2009 Analyzed: 02/24/2009						
Aroclor 1016	128	13.3	ug/kg wet	166.67		77	50-138			
Aroclor 1260	148	13.3	"	166.67		89	50-148			
Surrogate: Decachlorobiphenyl	*32.6*		"	*33.333*		*98*	*43-144*			
Surrogate: Tetrachloro-meta-xylene	*29.0*		"	*33.337*		*87*	*32-141*			
Matrix Spike (L902088-MS2)		Source: 0902010-02		Prepared: 02/12/2009 Analyzed: 02/25/2009						
Aroclor 1016	133	13.3	ug/kg wet	166.67	ND	80	50-138			
Aroclor 1260	160	13.3	"	166.67	ND	96	50-148			
Surrogate: Decachlorobiphenyl	*34.0*		"	*33.333*		*102*	*43-144*			
Surrogate: Tetrachloro-meta-xylene	*31.1*		"	*33.337*		*93*	*32-141*			
Matrix Spike Dup (L902088-MSD2)		Source: 0902010-02		Prepared: 02/12/2009 Analyzed: 02/25/2009						
Aroclor 1016	134	13.3	ug/kg wet	166.67	ND	80	50-138	0.3	40	
Aroclor 1260	160	13.3	"	166.67	ND	96	50-148	0.6	40	
Surrogate: Decachlorobiphenyl	*34.9*		"	*33.333*		*105*	*43-144*			
Surrogate: Tetrachloro-meta-xylene	*30.3*		"	*33.337*		*91*	*32-141*			

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

WC-Hanford Inc.	Project: RC 116	
2620 Fermi Avenue	Project Number: K1525	Reported:
Richland WA, 99354	Project Manager: Joan Kessner	04/08/2009 09:56

Polychlorinated Biphenyls by SW846 8082 - Quality Control

Lionville Laboratory

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch L902088 - SW 3540C										
Blank (L902088-BLK2)				Prepared: 02/12/2009 Analyzed: 02/24/2009						
Aroclor 1016	ND	13.3	ug/kg wet							U
Aroclor 1221	ND	13.3	"							U
Aroclor 1232	ND	13.3	"							U
Aroclor 1242	ND	13.3	"							U
Aroclor 1248	ND	13.3	"							U
Aroclor 1254	ND	13.3	"							U
Aroclor 1260	ND	13.3	"							U
Surrogate: Decachlorobiphenyl	*33.2*		"	*33.333*		*100*	*43-144*			
Surrogate: Tetrachloro-meta-xylene	*29.6*		"	*33.333*		*89*	*32-141*			
LCS (L902088-BS2)				Prepared: 02/12/2009 Analyzed: 02/24/2009						
Aroclor 1016	128	13.3	ug/kg wet	166.67		77	50-138			
Aroclor 1260	148	13.3	"	166.67		89	50-148			
Surrogate: Decachlorobiphenyl	*32.8*		"	*33.333*		*98*	*43-144*			
Surrogate: Tetrachloro-meta-xylene	*29.0*		"	*33.333*		*87*	*32-141*			
Batch L902089 - SW 3540C										
Blank (L902089-BLK2)				Prepared: 02/12/2009 Analyzed: 02/24/2009						
Aroclor 1016	ND	13.3	ug/kg wet							U
Aroclor 1221	ND	13.3	"							U
Aroclor 1232	ND	13.3	"							U
Aroclor 1242	ND	13.3	"							U
Aroclor 1248	ND	13.3	"							U
Aroclor 1254	ND	13.3	"							U
Aroclor 1260	ND	13.3	"							U
Surrogate: Decachlorobiphenyl	*25.1*		"	*33.333*		*75*	*43-144*			
Surrogate: Tetrachloro-meta-xylene	*27.3*		"	*33.333*		*82*	*32-141*			

WCH-Hanford, Inc 2620 Fermi Avenue Richland WA, 99354	Project: RCS-116 Project Number: K1525 Project Manager: Joan Kessner	**Reported:** 04/08/2009 08:56

Polychlorinated Biphenyls by SW846 8082 - Quality Control

Lionville Laboratory

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch L902089 - SW 3540C										
LCS (L902089-BS2)				Prepared: 02/12/2009 Analyzed: 02/24/2009						
Aroclor 1016	123	13.3	ug/kg wet	166.67		74	50-138			
Aroclor 1260	148	13.3	"	166.67		89	50-148			
Surrogate: Decachlorobiphenyl	*28.7*		"	*33.333*		*86*	*43-144*			
Surrogate: Tetrachloro-meta-xylene	*26.1*		"	*33.333*		*78*	*32-147*			
Matrix Spike (L902089-MS2)	Source: 0902012-05			Prepared: 02/12/2009 Analyzed: 02/24/2009						
Aroclor 1016	113	13.3	ug/kg wet	166.67	ND	68	50-138			
Aroclor 1260	138	13.3	"	166.67	ND	83	50-148			
Surrogate: Decachlorobiphenyl	*28.3*		"	*33.333*		*85*	*43-144*			
Surrogate: Tetrachloro-meta-xylene	*26.1*		"	*33.333*		*78*	*32-147*			
Matrix Spike Dup (L902089-MSD2)	Source: 0902012-05			Prepared: 02/12/2009 Analyzed: 02/24/2009						
Aroclor 1016	120	13.3	ug/kg wet	166.67	ND	72	50-138	6	40	
Aroclor 1260	148	13.3	"	166.67	ND	89	50-148	7	40	
Surrogate: Decachlorobiphenyl	*35.0*		"	*33.333*		*105*	*43-144*			
Surrogate: Tetrachloro-meta-xylene	*30.0*		"	*33.333*		*90*	*32-147*			

Organochlorine Pesticides by SW846 8081A - Quality Control

Lionville Laboratory

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch L902088 - SW 3540C										
Blank (L902088-BLK1)				Prepared: 02/17/2009 Analyzed: 03/06/2009						
alpha-BHC	ND	0.333	ug/kg wet							U
gamma-BHC	ND	0.333	"							U
beta-BHC	ND	0.333	"							U
delta-BHC	ND	0.333	"							U
Heptachlor	ND	0.333	"							U
Aldrin	ND	0.333	"							U
Heptachlor epoxide	ND	0.333	"							U
gamma-Chlordane	ND	0.333	"							U
alpha-Chlordane	ND	0.333	"							U
Endosulfan I	ND	0.333	"							U
4,4'-DDE	ND	0.333	"							U
Dieldrin	ND	0.333	"							U
Endrin	ND	0.333	"							U
4,4'-DDD	ND	0.333	"							U
Endosulfan II	ND	0.333	"							U
4,4'-DDT	ND	0.333	"							U
Endrin aldehyde	ND	0.333	"							U
Endosulfan sulfate	ND	0.333	"							U
Methoxychlor	ND	0.333	"							U
Endrin ketone	ND	0.333	"							U
Toxaphene	ND	1.00	"							U
Surrogate: Tetrachloro-meta-xylene	*29.6*		"	*33.3*		*88.8*	*38-166*			
Surrogate: Decachlorobiphenyl	*47.8*		"	*33.3*		*95.1*	*47-155*			
LCS (L902088-BS1)				Prepared: 02/17/2009 Analyzed: 03/06/2009						
alpha-BHC	29.6	0.333	ug/kg wet	33.3		88.8	61-142			
gamma-BHC	30.5	0.333	"	33.3		91.4	65-142			
beta-BHC	34.3	0.333	"	33.3		103	71-134			
delta-BHC	23.1	0.333	"	33.3		69.4	51-149			
Heptachlor	34.3	0.333	"	33.3		103	70-138			
Aldrin	29.6	0.333	"	33.3		88.8	70-143			
Heptachlor epoxide	30.7	0.333	"	33.3		92.2	72-110			
gamma-Chlordane	31.2	0.333	"	33.3		93.6	71-140			
alpha-Chlordane	30.7	0.333	"	33.3		92.0	74-138			
Endosulfan I	30.8	0.333	"	33.3		92.5	61-141			
4,4'-DDE	32.9	0.333	"	33.3		98.8	82-135			
Dieldrin	30.8	0.333	"	33.3		92.5	90-144			
Endrin	33.6	0.333	"	33.3		101	73-147			

WCHanford Inc	Project: RC-116	
2620 Fermi Avenue	Project Number: [none]	Reported:
Richland WA 99354	Project Manager: Joan Kessner	03/03/2009 09:14

Organochlorine Pesticides by SW846 8081A - Quality Control

Lionville Laboratory

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch L902088 - SW 3540C										
LCS (L902088-BS1)				Prepared: 02/12/2009 Analyzed: 03/06/2009						
4,4'-DDD	34.0	0.333	ug/kg wet	33.333		102	77-148			
Endosulfan II	32.1	0.333	"	33.333		96.2	80-140			
4,4'-DDT	31.8	0.333	"	33.333		95.5	82-142			
Endrin aldehyde	30.2	0.333	"	33.333		90.6	59-153			
Endosulfan sulfate	28.4	0.333	"	33.333		85.2	77-135			
Methoxychlor	31.4	0.333	"	33.333		94.1	77-136			
Endrin ketone	32.1	0.333	"	33.333		96.3	85-134			
Surrogate: Tetrachloro-meta-xylene	*31.7*		"	*33.333*		*95.0*	*58-166*			
Surrogate: Decachlorobiphenyl	*33.9*		"	*33.333*		*102*	*47-151*			
Matrix Spike (L902088-MS1)		**Source: 0902010-02**		Prepared: 02/12/2009 Analyzed: 03/07/2009						
alpha-BHC	26.0	3.33	ug/kg wet	33.333	ND	78.0	61-142			D
gamma-BHC	28.0	3.33	"	33.333	ND	84.0	65-142			D
beta-BHC	19.3	3.33	"	33.333	ND	57.8	71-136			D
delta-BHC	17.7	3.33	"	33.333	ND	53.0	53-144			D
Heptachlor	22.0	3.33	"	33.333	ND	66.1	70-138			D
Aldrin	28.1	3.33	"	33.333	ND	84.4	70-143			D
Heptachlor epoxide	35.3	3.33	"	33.333	ND	106	72-140			D
gamma-Chlordane	31.3	3.33	"	33.333	ND	94.0	74-140			D
alpha-Chlordane	31.0	3.33	"	33.333	ND	93.0	74-138			D
Endosulfan I	29.7	3.33	"	33.333	ND	89.0	81-141			D
4,4'-DDE	29.9	3.33	"	33.333	ND	90.2	82-135			D
Dieldrin	27.7	3.33	"	33.333	ND	83.0	79-144			D
Endrin	30.3	3.33	"	33.333	ND	91.0	73-147			D
4,4'-DDD	20.4	3.33	"	33.333	ND	61.3	77-148			D
Endosulfan II	24.3	3.33	"	33.333	ND	73.0	80-140			D
4,4'-DDT	29.0	3.33	"	33.333	ND	87.0	82-142			D
Endrin aldehyde	31.7	3.33	"	33.333	ND	95.0	59-153			D
Endosulfan sulfate	27.7	3.33	"	33.333	ND	83.0	77-135			D
Methoxychlor	34.3	3.33	"	33.333	ND	103	77-136			D
Endrin ketone	29.3	3.33	"	33.333	ND	88.0	85-134			D
Surrogate: Tetrachloro-meta-xylene	*18.9*		"	*33.333*		*56.7*	*58-166*			
Surrogate: Decachlorobiphenyl	*31.3*		"	*33.333*		*93.9*	*47-151*			

WCH Hanford, Inc. 2620 Fermi Avenue Richland WA 99354	Project: RS 116 Project Number: [none] Project Manager: Joan Kessner	Reported: 03/02/2009 09:11

Organochlorine Pesticides by SW846 8081A - Quality Control

Lionville Laboratory

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch L902088 - SW 3540C										
Matrix Spike Dup (L902088-MSD1)		**Source: 0902080-02**		Prepared: 02/12/2009 Analyzed: 02/27/2009						
alpha-BHC	[illegible]	[illegible]	ug/kg wet	[illegible]	ND	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
gamma-BHC	[illegible]	[illegible]	"	[illegible]	ND	95.0	[illegible]	[illegible]	[illegible]	[illegible]
beta-BHC	[illegible]	[illegible]	"	[illegible]	ND	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
delta-BHC	[illegible]	[illegible]	"	[illegible]	ND	[illegible]	[illegible]	[illegible]	40	[illegible]
Heptachlor	[illegible]	[illegible]	"	[illegible]	ND	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Aldrin	[illegible]	[illegible]	"	[illegible]	ND	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Heptachlor epoxide	[illegible]	[illegible]	"	[illegible]	ND	93.7	[illegible]	[illegible]	40	[illegible]
gamma-Chlordane	[illegible]	[illegible]	"	[illegible]	ND	107	[illegible]	[illegible]	[illegible]	[illegible]
alpha-Chlordane	[illegible]	[illegible]	"	[illegible]	ND	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Endosulfan I	[illegible]	[illegible]	"	[illegible]	ND	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
4,4'-DDE	[illegible]	[illegible]	"	[illegible]	ND	[illegible]	[illegible]	[illegible]	40	[illegible]
Dieldrin	[illegible]	[illegible]	"	[illegible]	ND	99.0	[illegible]	[illegible]	40	[illegible]
Endrin	[illegible]	[illegible]	"	[illegible]	ND	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
4,4'-DDD	[illegible]	[illegible]	"	[illegible]	ND	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Endosulfan II	[illegible]	[illegible]	"	[illegible]	ND	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
4,4'-DDT	[illegible]	[illegible]	"	[illegible]	ND	[illegible]	80-140	[illegible]	40	[illegible]
Endrin aldehyde	[illegible]	[illegible]	"	[illegible]	ND	[illegible]	[illegible]	[illegible]	40	[illegible]
Endosulfan sulfate	[illegible]	[illegible]	"	[illegible]	ND	99.0	[illegible]	[illegible]	[illegible]	[illegible]
Methoxychlor	[illegible]	[illegible]	"	[illegible]	ND	92.0	[illegible]	[illegible]	40	[illegible]
Endrin ketone	[illegible]	[illegible]	"	[illegible]	ND	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Surrogate: Tetrachloro-meta-xylene	[illegible]		"	[illegible]		82.1	[illegible]			
Surrogate: Decachlorobiphenyl	[illegible]		"	[illegible]		89.9	[illegible]			

WCH Hanford, Inc 2620 Fermi Avenue Richland WA 99354	Project: RC-216 Project Number: K1525 Project Manager: Joan Kessner	**Reported:** 04/08/2009 10:12

Organochlorine Pesticides by SW846 8081A - Quality Control

Lionville Laboratory

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch L902088 - SW 3540C										
LCS (L902088-BS1)				Prepared: 02/12/2009 Analyzed: 03/06/2009						
4,4'-DDD	34.0	0.333	ug/kg wet	33.333		102	77-148			
Endosulfan II	32.1	0.333	"	33.333		96.2	80-140			
4,4'-DDT	31.8	0.333	"	33.333		95.5	82-142			
Endrin aldehyde	30.2	0.333	"	33.333		90.6	59-133			
Endosulfan sulfate	28.4	0.333	"	33.333		85.2	77-135			
Methoxychlor	31.4	0.333	"	33.333		94.3	77-136			
Endrin ketone	32.1	0.333	"	33.333		96.3	85-134			
Surrogate: Tetrachloro-meta-xylene	*31.7*		"	*33.333*		*95.0*	*28-166*			
Surrogate: Decachlorobiphenyl	*33.9*		"	*33.333*		*102*	*17-151*			
Batch L902089 - SW 3540C										
Blank (L902089-BLK1)				Prepared: 02/12/2009 Analyzed: 02/27/2009						
alpha-BHC	ND	0.333	ug/kg wet							U
gamma-BHC	ND	0.333	"							U
beta-BHC	ND	0.333	"							U
delta-BHC	ND	0.333	"							U
Heptachlor	ND	0.333	"							U
Aldrin	0.567	0.333	"							J
Heptachlor epoxide	ND	0.333	"							U
gamma-Chlordane	ND	0.333	"							U
alpha-Chlordane	ND	0.333	"							U
Endosulfan I	ND	0.333	"							U
4,4'-DDE	ND	0.333	"							U
Dieldrin	ND	0.333	"							U
Endrin	ND	0.333	"							U
4,4'-DDD	ND	0.333	"							U
Endosulfan II	ND	0.333	"							U
4,4'-DDT	ND	0.333	"							U
Endrin aldehyde	ND	0.333	"							U
Endosulfan sulfate	ND	0.333	"							U
Methoxychlor	ND	0.333	"							U
Endrin ketone	ND	0.333	"							U
Toxaphene	ND	5.00	"							U
Surrogate: Tetrachloro-meta-xylene	*40.3*		"	*33.333*		*121*	*28-166*			
Surrogate: Decachlorobiphenyl	*30.3*		"	*33.333*		*91.0*	*17-151*			

JD
4/15/09

Organochlorine Pesticides by SW846 8081A - Quality Control

Lionville Laboratory

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch L902089 - SW 3540C										
LCS (L902089-BS3)				Prepared: 02/12/2009 Analyzed: 02/27/2009						
alpha-BHC	41.7	0.333	ug/kg wet	33.333		125	61-142			
gamma-BHC	41.3	0.333	"	33.333		124	65-142			
beta BHC	47.0	0.333	"	33.333		*141	71-134			
delta-BHC	30.3	0.333	"	33.333		91.0	50-144			
Heptachlor	40.0	0.333	"	33.333		120	70-138			
Aldrin	40.7	0.333	"	33.333		122	70-143			B
Heptachlor epoxide	39.3	0.333	"	33.333		118	72-140			
gamma-Chlordane	39.3	0.333	"	33.333		118	74-140			
alpha-Chlordane	39.0	0.333	"	33.333		117	74-138			
Endosulfan I	39.7	0.333	"	33.333		119	81-141			
4,4'-DDE	42.0	0.333	"	33.333		126	82-145			
Dieldrin	40.3	0.333	"	33.333		121	79-144			
Endrin	43.3	0.333	"	33.333		130	73-142			
4,4'-DDD	46.7	0.333	"	33.333		140	77-148			
Endosulfan II	42.3	0.333	"	33.333		127	80-140			
4,4'-DDT	40.0	0.333	"	33.333		120	82-142			
Endrin aldehyde	35.7	0.333	"	33.333		107	59-133			
Endosulfan sulfate	36.3	0.333	"	33.333		109	77-135			
Methoxychlor	38.0	0.333	"	33.333		114	77-136			
Endrin ketone	38.7	0.333	"	33.333		116	85-134			
Surrogate: Tetrachloro-meta-xylene	*40.3*		"	*33.333*		*121*	*23-166*			
Surrogate: Decachlorobiphenyl	*36.3*		"	*33.333*		*109*	*37-153*			
Matrix Spike (L902089-MS1)		Source: 0902012-05		Prepared: 02/12/2009 Analyzed: 03/07/2009						
alpha-BHC	32.3	3.33	ug/kg wet	33.333	ND	97.0	61-142			D
gamma-BHC	34.3	3.33	"	33.333	ND	103	65-142			D
beta-BHC	28.8	3.33	"	33.333	ND	86.5	71-134			D
delta-BHC	20.7	3.33	"	33.333	ND	62.0	50-144			D
Heptachlor	32.7	3.33	"	33.333	ND	98.2	70-138			D
Aldrin	33.4	3.33	"	33.333	ND	100	70-143			D, B
Heptachlor epoxide	35.0	3.33	"	33.333	ND	105	72-140			D
gamma-Chlordane	38.0	3.33	"	33.333	ND	114	74-140			D
alpha-Chlordane	37.0	3.33	"	33.333	ND	111	74-138			D
Endosulfan I	36.0	3.33	"	33.333	ND	108	81-141			D
4,4'-DDE	35.6	3.33	"	33.333	ND	107	82-145			D
Dieldrin	33.3	3.33	"	33.333	ND	100	79-144			D
Endrin	36.3	3.33	"	33.333	ND	109	73-142			D
4,4'-DDD	33.2	3.33	"	33.333	ND	99.7	77-148			D

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Organochlorine Pesticides by SW846 8081A - Quality Control

Lionville Laboratory

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch L902089 - SW 3540C										
Matrix Spike (L902089-MS1)	Source: 0902012-05			Prepared: 02/12/2009 Analyzed: 03/07/2009						
Endosulfan II	36.0	3.33	ug/kg wet	33.333	ND	108	80-140			D
4,4'-DDT	33.2	3.33	"	33.333	ND	99.5	82-142			D
Endrin aldehyde	34.3	3.33	"	33.333	ND	103	59-133			D
Endosulfan sulfate	32.0	3.33	"	33.333	ND	96.0	77-135			D
Methoxychlor	39.7	3.33	"	33.333	ND	119	77-136			D
Endrin ketone	34.7	3.33	"	33.333	ND	104	85-134			D
Surrogate: Tetrachloro-meta-xylene	*23.8*		"	*33.333*		*71.4*	*29-166*			
Surrogate: Decachlorobiphenyl	*31.8*		"	*33.333*		*95.4*	*37-153*			
Matrix Spike Dup (L902089-MSD1)	Source: 0902012-05			Prepared: 02/12/2009 Analyzed: 03/07/2009						
alpha-BHC	31.3	3.33	ug/kg wet	33.333	ND	94.0	61-142	3.14	40	D
gamma-BHC	33.7	3.33	"	33.333	ND	101	65-142	1.96	40	D
beta-BHC	28.1	3.33	"	33.333	ND	84.4	71-134	2.46	40	D
delta-BHC	20.7	3.33	"	33.333	ND	62.0	53-144	0.00	40	D
Heptachlor	27.1	3.33	"	33.333	ND	81.2	70-118	16.5	40	D
Aldrin	34.1	3.33	"	33.333	ND	102	70-143	1.88	40	B D
Heptachlor epoxide	42.2	3.33	"	33.333	ND	126	72-140	18.6	40	D
gamma-Chlordane	36.7	3.33	"	33.333	ND	110	71-140	3.37	40	D
alpha-Chlordane	36.3	3.33	"	33.333	ND	109	74-138	1.82	40	D
Endosulfan I	35.7	3.33	"	33.333	ND	107	81-141	0.930	40	D
4,4'-DDE	35.8	3.33	"	33.333	ND	107	82-145	0.467	40	D
Dieldrin	33.0	3.33	"	33.333	ND	99.0	70-144	1.01	40	D
Endrin	35.3	3.33	"	33.333	ND	106	73-147	2.79	40	D
4,4'-DDD	34.7	3.33	"	33.333	ND	104	72-148	4.22	40	D
Endosulfan II	35.7	3.33	"	33.333	ND	107	80-140	0.930	40	D
4,4'-DDT	32.3	3.33	"	33.333	ND	97.0	82-142	2.54	40	D
Endrin aldehyde	32.3	3.33	"	33.333	ND	97.0	59-133	6.00	40	D
Endosulfan sulfate	31.3	3.33	"	33.333	ND	94.0	77-135	2.11	40	D
Methoxychlor	39.3	3.33	"	33.333	ND	118	77-136	0.844	40	D
Endrin ketone	33.7	3.33	"	33.333	ND	101	85-134	2.93	40	D
Surrogate: Tetrachloro-meta-xylene	*24.9*		"	*33.333*		*74.6*	*29-166*			
Surrogate: Decachlorobiphenyl	*32.1*		"	*33.333*		*96.4*	*37-153*			

F.1.2.7 SDG K1540

SAF-RC-116
Columbia River Component of the RCBRA – Sediment
FINAL VALIDATION PACKAGE

COMPLETE COPY OF VALIDATION PACKAGE TO:

Kathy Wendt H4-21

COMMENTS:

SDG K1540 **SAF-RC-116**

Date: 7 December 2009
To: Washington Closure Hanford (technical representative)
From: ELR Consultants
Project: Columbia River Component of the RCBRA - Sediment
Subject: Semivolatile/DRO - Data Package No. K1540-LLI

INTRODUCTION

This memo presents the results of data validation on Data Package No. K1540 prepared by Lionville Laboratory Inc. (LLI). A list of samples validated along with the analyses reported and the method of analysis is provided in the following table.

Sample ID	Sample Date	Media	Validation	Anaysis
J18610	2/12/09	Solid	C	See note 1
J18794	2/12/09	Solid	C	See note 1
J18795	2/12/09	Solid	C	See note 1
J18796	2/12/09	Solid	C	See note 1
J18797	2/12/09	Solid	C	See note 1
J187D2	2/12/09	Solid	C	See note 1
J187D4	2/12/09	Solid	C	See note 1
J187D5	2/12/09	Solid	C	See note 1
J187K6	2/12/09	Solid	C	See note 1
J187K7	2/12/09	Solid	C	See note 1
J17X03	2/12/09	Solid	C	See note 1
J187Y2	2/12/09	Solid	C	See note 1

1 - Semivolatiles by 8270 & diesel range organics by 8015B.

Data validation was conducted in accordance with the Washington Closure Hanford (WCH) validation statement of work and the Remedial Investigation Work Plan for Hanford Site Releases to the Columbia River (DOE/RL-2008-11, Rev. 0, September 2008). Appendices 1 through 6 provide the following information as indicated below:

Appendix 1. Glossary of Data Reporting Qualifiers
Appendix 2. Summary of Data Qualification
Appendix 3. Qualified Data Summary and Annotated Laboratory Reports
Appendix 4. Laboratory Narrative and Chain-of-Custody Documentation
Appendix 5. Data Validation Supporting Documentation
Appendix 6. Additional Data Requested by Client

DATA QUALITY OBJECTIVES

Holding Times & Sample Preservation

Analytical holding times were assessed to ascertain whether the holding time requirements were met by the laboratory. The holding time requirements are as follows: Samples must be extracted within 14 days of the date of sample collection and analyzed within 40 days from the date of extraction

If holding times are exceeded, but not by greater than two times the limit, all associated sample results are qualified as estimates and flagged "J" for detects and "UJ" for non-detects. If holding times are exceeded by greater than two times the limit, all associated detectable sample results are qualified as estimates and flagged "J" and all non-detects are rejected and flagged "UR".

Due to the holding time being exceeded by less than twice the limit, all motor oil and diesel range organic results were qualified as estimates and flagged "J".

All other holding times were acceptable.

- **Method Blanks**

Method blank analyses are conducted to determine the extent of laboratory contamination introduced through sampling, sample preparation and analysis. At least one acceptable method blank analysis must be conducted for every 20 samples. No contaminants should be present in the method blank Analytical results for analytes present in any sample at less than five times the concentration of that analyte found in the associated blank are qualified as non-detects and flagged "U". Common laboratory contaminants present in samples at less than ten times the concentration of that analyte found in the associated blank are qualified as non-detects. If a sample result is less than the CRQL and is less than five times (or less than ten times for lab contaminants) the highest associated blank result, the sample result value is raised to the CRQL level and qualified as undetected "U".

Due to method blank contamination, all motor oil results were qualified as undetected and flagged "U".

All other method blank results were acceptable.

Field Blanks

No field blanks were submitted for analysis.

- **Accuracy**

Matrix Spike/Matrix Spike Duplicate & Blank Spike Recoveries

Matrix spike/matrix spike duplicate analyses are used to assess the analytical accuracy of the reported data and the effect of the matrix on the ability to accurately quantify sample concentrations. Matrix spike/matrix spike duplicate analyses are performed in duplicate using five compounds for which percent recoveries must be within a range of 50-150% or within laboratory control limits. If spike recoveries are outside control limits, detected sample results less than five times the spike concentration are qualified as estimates and flagged "J". Undetected sample results with spike recoveries below control limits are qualified as estimates and flagged "UJ". Undetected sample results are not qualified if the spike recovery is above control limits. Sample results greater than five times the spike concentration require no qualification.

Due to the lack of a matrix spike, matrix spike duplicate and LCS analysis, all motor oil results were qualified as estimates and flagged "J".

Due to matrix spike recoveries outside QC limits, all semivolatile results (except 4-chloro-3-methylphenol, 4-nitrophenol, butyl benzyl phthalate and di-n-octyl phthalate) results were qualified as estimates and flagged "J"

Due to matrix spike duplicate recoveries outside QC limits, all bis(2-chloroethyl)ether (46%), 1,3-dichlorobenzene (45%), 1,4-dichlorobenzene (40%), 1,2-dichlorobenzene (40%), bis(2-chloroisopropyl)ether (43%), hexachloroethane (41%), isophorone (44%), 2,4-dimethylphenol (48%), 1,2,4-trichlorobenzene (48%), naphthalene (48%), 4-chloroanaline (32%), hexachlorocyclopentadiene (22%), n-nitrosodiphenylamine (49%), 3,3-dichlorobenzidine (17%), ideno(1,2,3-cd)pyrene (49%) and benzo(g,h,i)perylene (46%) results were qualified as estimates and flagged "J".

Due to an LCS recovery outside QC limits, all 2,4-dinitrophenol (32%), pyrene (44%), nitrobenzene (46%), isophorone (45%), 2-nitrophenol (47%), 2,4-dimethylphenol (42%), 1,2,4-trichlorobenzene (48%), naphthalene (49%), 4-chloroanaline (37%) and hexachlorocyclopentadiene (26%) results were qualified as estimates and flagged "J".

All other accuracy results were acceptable.

Surrogate Recovery

The analyses of surrogate compounds provide a measure of performance for individual samples. Matrix-specific surrogate compound recovery control windows have been established by the EPA CLP program. If two surrogates of the same class of compounds (base/neutral or acid) are out of control limits, all associated sample results greater than the contract required quantitation limit (CRQL) are qualified as estimates and flagged "J". Sample results less than the CRQL and below the lower control limit are qualified as estimates and flagged "UJ". Sample results less than the CRQL with recoveries above the upper control limit require no qualification. If a surrogate recovery is less than 10%, detects are qualified as estimates and flagged "J" and nondetects are rejected and flagged "UR".

Due to surrogate recoveries outside QC limits, all semivolatile results in sample J187Y2 (except naphthalene, acenaphthylene, acenaphthene, fluorene, phenanthrene, anthracene, fluoranthene, pyrene, benzo(a)anthracene, chrysene, benzo(b)fluoranthrene, benzo(*k*)fluoranthene, benzo(a)pyrene, indeno(1,2,3-c,*d*)pyrene and benzo(g,h,i)perylene) were qualified as estimates and flagged "J" All other surrogate results were acceptable.

- Precision

Matrix Spike/Matrix Spike Duplicate Samples

Matrix spike (MS)/matrix spike duplicate (MSD) results provide matrix-specific information on the precision of the method for specific target compound classes. Precision is expressed by the relative percent difference (RPD) between the recoveries of duplicate matrix spike analyses performed on a sample. Samples results must be within RPD limits of +/-30%. If RPD values are out of specification and the sample concentration is less than five times the spike concentration, all associated detected sample results are qualified as estimates and flagged "J". If RPD values are out of specification and the sample concentration is greater than five times the spike concentration, no qualification is required.

Due to RPDs outside QC limits, all semivolatile results (except bis(2-chloroethyl)ether, bis(2-chloroisopropyl)ether, *n*-nitrosodi-n-propylamine, 2,4-dimethylphenol and pyrene) were qualified as estimates and flagged "J".

Due to the lack of a matrix spike and matrix spike duplicate analysis, all motor oil results were qualified as estimates and flagged "J".

All other precision results were acceptable.

Field Duplicate Samples

One set of field duplicates (J18610/J18795) were submitted for analysis. Field duplicates are compared using the same criteria as for laboratory duplicates. All field duplicates results were acceptable

- **Analytical Detection Levels**

Reported analytical detection levels are compared against the required quantitation limits (RQL's) to ensure that laboratory detection levels meet the required criteria. Four-hundred twenty-six semivolatile analytes exceeded the RQL. Under the WCH statement of work, no qualification is required.

Completeness

Data package No. K1540 was submitted for validation and verified for completeness. Completeness is based on the percentage of data determined to be valid (i.e., not rejected). The completion percentage was 100%.

MAJOR DEFICIENCIES

None found.

MINOR DEFICIENCIES

The following minor deficiencies were noted:

- Due to the holding time being exceeded by less than twice the limit, all motor oil and diesel range organic results were qualified as estimates and flagged "J".
- Due to method blank contamination, all motor oil results were qualified as undetected and flagged "U".
- Due to the lack of a matrix spike, matrix spike duplicate and LCS analysis, all motor oil results were qualified as estimates and flagged "J".
- Due to matrix spike recoveries outside QC limits, all semivolatile results (except 4-chloro-3-methylphenol, 4-nitrophenol, butyl benzyl phthalate and di-n-octyl phthalate) results were qualified as estimates and flagged "J".
- Due to matrix spike duplicate recoveries outside QC limits, all bis(2-chloroethyl)ether (46%), 1,3-dichlorobenzene (45%), 1,4-dichlorobenzene (40%), 1,2-dichlorobenzene (40%), bis(2-chloroisopropyl)ether (43%), hexachloroethane (41%), isophorone (44%), 2,4-dimethylphenol (48%), 1,2,4-trichlorobenzene (48%), naphthalene (48%), 4-chloroanaline (32%), hexachlorocyclopentadiene (22%), n-nitrosodiphenylamine (49%), 3,3-dichlorobenzidine (17%), ideno(1,2,3-cd)pyrene (49%) and benzo(g,h,i)perylene (46%) results were qualified as estimates and flagged "J".
- Due to an LCS recovery outside QC limits, all 2,4-dinitrophenol (32%), pyrene (44%), nitrobenzene (46%), isophorone (45%), 2-nitrophenol (47%), 2,4-dimethylphenol (42%), 1,2,4-trichlorobenzene (48%), naphthalene (49%), 4-chloroanaline (37%) and hexachlorocyclopentadiene (26%) results were qualified as estimates and flagged "J".
- Due to surrogate recoveries outside QC limits, all semivolatile results in sample J187Y2 (except naphthalene, acenaphthylene, acenaphthene, fluorene,

phenanthrene, anthracene, fluoranthene, pyrene, benzo(a)anthracene, chrysene, benzo(b)fluoranthrene, benzo(k)fluoranthene, benzo(a)pyrene, indeno(1,2,3-c,d)pyrene and benzo(g,h,i)perylene) were qualified as estimates and flagged "J".

- Due to RPDs outside QC limits, all semivolatile results (except bis(2-chloroethyl)ether, bis(2-chloroisopropyl)ether, n-nitrosodi-n-propylamine, 2,4-dimethylphenol and pyrene) were qualified as estimates and flagged "J".

Data flagged "J" indicates that the associated concentration is an estimate, but under the WCH statement of work, the data may be usable for decision-making purposes. All other validated results are considered accurate within the standard error associated with the methods.

Four-hundred twenty-six semivolatile analytes exceeded the RQL. Under the WCH statement of work, no qualification is required.

REFERENCES

Washington Closure Hanford Contract #S00W307A00 (March 2008), *Data Validation Services*.

DOE/RL-2008-11, Rev.0, *Remedial Investigation Work Plan for Hanford Site Releases to the Columbia River*, September 2008.

Appendix 1

Glossary of Data Reporting Qualifiers

Qualifiers which may be applied by data validators in compliance with the WCH validation SOW are as follows:

U - Indicates the compound or analyte was analyzed for and not detected in the sample. The value reported is the same quantitation limit corrected for sample dilution and moisture content by the laboratory.

UJ - Indicates the compound or analyte was analyzed for and not detected in the sample. Due to a minor QC deficiency identified during the data validation, the associated quantitation limit is an estimate.

J - Indicates the compound or analyte was analyzed for and detected. Due to a minor QC deficiency identified during the data validation, the associated quantitation limit is an estimate.

R - Indicates the compound or analyte was analyzed for, detected, and due to an identified major QC deficiency, the data are unusable.

UR - Indicates the compound or analyte was analyzed for and not detected in the sample. Additionally, the data is unusable due to an identified major QC deficiency.

NJ - Indicates presumptive evidence of a compound at an estimated value. The data may not be valid for some specific applications (i.e., usable for decision-making purposes).

N - Indicates presumptive evidence of a compound. The data may not be valid for some specific applications usable for decision-making purposes).

Appendix 2

Summary of Data Qualification

SEMIVOLATILE/DRO ORGANIC DATA QUALIFICATION SUMMARY*

SDG: K1540	**REVIEWER: ELR**	**Project: RCBRA**	**QC Issue**
COMPOUND	QUALIFIER	SAMPLES AFFECTED	REASON
Motor oil	U	All	Method blank contamination
Motor oil	J	All	No MS, MSD or LCS analysis
Motor oil Diesel range organics	J	All	Hold time
all semivolatile results (except 4-chloro3-methylphenol, 4-nitrophenol, butyl benzyl phthalate and di-n-octyl phthalate)	J	All	MS recovery
bis(2-chloroethyl)ether 1,3-dichlorobenzene 1,4-dichlorobenzene 1,2-dichlorobenzene bis(2-chloroisopropyl)ether hexachloroethane isophorone 2,4-dimethylphenol 1,2,4-trichlorobenzene naphthalene 4-chloroanaline hexachlorocyclopentadiene n-nitrosodiphenylamine 3,3-dichlorobenzidine ideno(1,2,3-cd)pyrene benzo(g,h,i)perylene	J	All	MSD recovery
2,4-dinitrophenol pyrene nitrobenzene isophorone 2-nitrophenol 2,4-dimethylphenol 1,2,4-trichlorobenzene naphthalene 4-chloroanaline hexachlorocyclopentadiene	J	All	LCS recovery
All (except naphthalene, acenaphthylene, acenaphthene, fluorene, phenanthrene, anthracene,	J	J187Y2	Surrogate recovery

SEMIVOLATILE/DRO ORGANIC DATA QUALIFICATION SUMMARY*

SDG: K1540	REVIEWER: ELR	Project: RCBRA	QC Issue
fluoranthene, pyrene, benzo(a)anthracene, chrysene, benzo(b)fluoranthrene, benzo(k)fluoranthene, benzo(a)pyrene, indeno(1,2,3-c,d)pyrene and benzo(g,h,i)perylene)			
all semivolatile results (except bis(2-chloroethyl)ether, bis(2-chloroisopropyl)ether, n-nitrosodi-n-propylamine, 2,4-dimethylphenol and pyrene)	J	All	RPD

* - The Qualified Data Summary Table includes laboratory applied "U" qualifiers not specifically identified here. The laboratory applied "U" qualifiers are included to minimize misinterpretation of results contained in the table.

Appendix 3

Qualified Data Summary and Annotated Laboratory Reports

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

WC-Hanford, Inc. 2620 Fermi Avenue Richland WA, 99354	Project: RC-116 Project Number: [none] Project Manager: Joan Kessner	Reported: 04/14/2009 14:20

J18610
0902047-01 (Solid)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Lionville Laboratory									
Semivolatile Organic Compounds by SW846 8270C									
Phenol	ND	330	ug/kg wet	1	1902172	02/24/2009	03/03/2009	8270C	U
Bis(2-chloroethyl) ether	ND	330	"	"	"	"	"	"	U
2-Chlorophenol	ND	330	"	"	"	"	"	"	U
1,3-Dichlorobenzene	ND	330	"	"	"	"	"	"	U
1,4-Dichlorobenzene	ND	330	"	"	"	"	"	"	U
1,2-Dichlorobenzene	ND	330	"	"	"	"	"	"	U
2-Methylphenol	ND	330	"	"	"	"	"	"	U
Bis(2-chloroisopropyl) ether	ND	330	"	"	"	"	"	"	U
4-Methylphenol	ND	330	"	"	"	"	"	"	U
N-Nitrosodi-n-propylamine	ND	330	"	"	"	"	"	"	U
Hexachloroethane	ND	330	"	"	"	"	"	"	U
Nitrobenzene	ND	330	"	"	"	"	"	"	U
Isophorone	ND	330	"	"	"	"	"	"	U
2-Nitrophenol	ND	330	"	"	"	"	"	"	U
2,4-Dimethylphenol	ND	330	"	"	"	"	"	"	U
Bis(2-chloroethoxy) methane	ND	330	"	"	"	"	"	"	U
2,4-Dichlorophenol	ND	330	"	"	"	"	"	"	U
1,2,4-Trichlorobenzene	ND	330	"	"	"	"	"	"	U
Naphthalene	ND	330	"	"	"	"	"	"	U
4-Chloroaniline	ND	330	"	"	"	"	"	"	U
Hexachlorobutadiene	ND	330	"	"	"	"	"	"	U
4-Chloro-3-methylphenol	ND	330	"	"	"	"	"	"	U
2-Methylnaphthalene	ND	330	"	"	"	"	"	"	U
Hexachlorocyclopentadiene	ND	330	"	"	"	"	"	"	U
2,4,6-Trichlorophenol	ND	330	"	"	"	"	"	"	U
2,4,5-Trichlorophenol	ND	330	"	"	"	"	"	"	U
2-Chloronaphthalene	ND	330	"	"	"	"	"	"	U
2-Nitroaniline	ND	1650	"	"	"	"	"	"	U
Dimethyl Phthalate	ND	330	"	"	"	"	"	"	U
2,6-Dinitrotoluene	ND	330	"	"	"	"	"	"	U
Acenaphthylene	ND	330	"	"	"	"	"	"	U
3-Nitroaniline	ND	1650	"	"	"	"	"	"	U
Acenaphthene	ND	330	"	"	"	"	"	"	U
2,4-Dinitrophenol	ND	1650	"	"	"	"	"	"	U
4-Nitrophenol	ND	1650	"	"	"	"	"	"	U
Dibenzofuran	ND	330	"	"	"	"	"	"	U
2,4-Dinitrotoluene	ND	330	"	"	"	"	"	"	U
Diethyl Phthalate	ND	330	"	"	"	"	"	"	U
4-Chlorophenyl Phenyl Ether	ND	330	"	"	"	"	"	"	U
								"	U

W 11/3/09

WC Hanford, Inc
2620 Fermi Avenue
Richland WA, 99354

Project: RC-116
Project Number: [none]
Project Manager: Joan Kessner

Reported:
04/14/2009 14:20

J18610
0902047-01 (Solid)

VL 4/3/05

Lionville Laboratory

Semivolatile Organic Compounds by SW846 8270C

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Fluorene	ND	330	ug/kg wet	1	L902172	02/24/2009	03/01/2009	8270C	U
4-Nitroaniline	ND	1650	"	"	"	"	"	"	U
4,6-Dinitro-2-methylphenol	ND	330	"	"	"	"	"	"	U
N-Nitrosodiphenylamine	ND	330	"	"	"	"	"	"	U
4-Bromophenyl Phenyl Ether	ND	330	"	"	"	"	"	"	U
Hexachlorobenzene	ND	330	"	"	"	"	"	"	U
Pentachlorophenol	ND	1650	"	"	"	"	"	"	U
Phenanthrene	ND	330	"	"	"	"	"	"	U
Anthracene	ND	330	"	"	"	"	"	"	U
Carbazole	ND	330	"	"	"	"	"	"	U
Di-n-butyl Phthalate	ND	330	"	"	"	"	"	"	U
Fluoranthene	ND	330	"	"	"	"	"	"	U
Pyrene	ND	330	"	"	"	"	"	"	U
Butyl Benzyl Phthalate	ND	330	"	"	"	"	"	"	U
bis(2-ethylhexyl) phthalate	ND	330	"	"	"	"	"	"	U
3,3'-Dichlorobenzidine	ND	660	"	"	"	"	"	"	U
Benz[a]anthracene	ND	330	"	"	"	"	"	"	U
Chrysene	ND	330	"	"	"	"	"	"	U
Di-n-octyl Phthalate	ND	330	"	"	"	"	"	"	U
Benzo[b] fluoranthene	ND	330	"	"	"	"	"	"	U
Benzo[k] fluoranthene	ND	330	"	"	"	"	"	"	U
Benzo[a] pyrene	ND	330	"	"	"	"	"	"	U
Indeno[1,2,3-cd]pyrene	ND	330	"	"	"	"	"	"	U
Dibenz[a,h]anthracene	ND	330	"	"	"	"	"	"	U
Benzo[g,h,i] perylene	ND	330	"	"	"	"	"	"	U
TIC:Unknown 4	**784**		"	"	"	"	"	"	B, J
TIC:Unknown 3	**709**		"	"	"	"	"	"	J
TIC:Unknown 2	**46300**		"	"	"	"	"	"	B, J
TIC:Unknown 1	**837**		"	"	"	"	"	"	J
TIC: Alkane 1	**455**		"	"	"	"	"	"	J
Surrogate: 2-Fluorophenol		*53 %*	*25-121*		"	"	"	"	
Surrogate: Phenol-d5		*96 %*	*24-113*		"	"	"	"	
Surrogate: Nitrobenzene-d5		*78 %*	*23-120*		"	"	"	"	
Surrogate: 2-Fluorobiphenyl		*89 %*	*30-115*		"	"	"	"	
Surrogate: 2,4,6-Tribromophenol		*79 %*	*19-122*		"	"	"	"	
Surrogate: p-Terphenyl-d14		*92 %*	*18-137*		"	"	"	"	

LVL
LIONVILLE LABORATORY

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610 280-3041

WC-Hanford, Inc. 2620 Fermi Avenue Richland WA, 99354	Project: RC-116 Project Number: [none] Project Manager: Joan Kessner	Reported: 04/14/2009 14:20

J18794
0902047 05 (Solid)

11/30/05

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes

Lionville Laboratory

Semivolatile Organic Compounds by SW846 8270C

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Phenol	ND	330	ug/kg wet	1	1902172	02/24/2009	03/01/2009	8270C	U
Bis(2-chloroethyl) ether	ND	330	"	"	"	"	"	"	U
2-Chlorophenol	ND	330	"	"	"	"	"	"	U
1,3-Dichlorobenzene	ND	330	"	"	"	"	"	"	U
1,4-Dichlorobenzene	ND	330	"	"	"	"	"	"	U
1,2-Dichlorobenzene	ND	330	"	"	"	"	"	"	U
2-Methylphenol	ND	330	"	"	"	"	"	"	U
Bis(2-chloroisopropyl) ether	ND	330	"	"	"	"	"	"	U
4-Methylphenol	ND	330	"	"	"	"	"	"	U
N-Nitrosodi-n-propylamine	ND	330	"	"	"	"	"	"	U
Hexachloroethane	ND	330	"	"	"	"	"	"	U
Nitrobenzene	ND	330	"	"	"	"	"	"	U
Isophorone	ND	330	"	"	"	"	"	"	U
2-Nitrophenol	ND	330	"	"	"	"	"	"	U
2,4-Dimethylphenol	ND	330	"	"	"	"	"	"	U
Bis(2-chloroethoxy) methane	ND	330	"	"	"	"	"	"	U
2,4-Dichlorophenol	ND	330	"	"	"	"	"	"	U
1,2,4-Trichlorobenzene	ND	330	"	"	"	"	"	"	U
Naphthalene	ND	330	"	"	"	"	"	"	U
4-Chloroaniline	ND	330	"	"	"	"	"	"	U
Hexachlorobutadiene	ND	330	"	"	"	"	"	"	U
4-Chloro-3-methylphenol	ND	330	"	"	"	"	"	"	U
2-Methylnaphthalene	ND	330	"	"	"	"	"	"	U
Hexachlorocyclopentadiene	ND	330	"	"	"	"	"	"	U
2,4,6-Trichlorophenol	ND	330	"	"	"	"	"	"	U
2,4,5-Trichlorophenol	ND	330	"	"	"	"	"	"	U
2-Chloronaphthalene	ND	330	"	"	"	"	"	"	U
2-Nitroaniline	ND	1650	"	"	"	"	"	"	U
Dimethyl Phthalate	ND	330	"	"	"	"	"	"	U
2,6-Dinitrotoluene	ND	330	"	"	"	"	"	"	U
Acenaphthylene	ND	330	"	"	"	"	"	"	U
3-Nitroaniline	ND	1650	"	"	"	"	"	"	U
Acenaphthene	ND	330	"	"	"	"	"	"	U
2,4-Dinitrophenol	ND	1650	"	"	"	"	"	"	U
4-Nitrophenol	ND	1650	"	"	"	"	"	"	U
Dibenzofuran	ND	330	"	"	"	"	"	"	U
2,4-Dinitrotoluene	ND	330	"	"	"	"	"	"	U
Diethyl Phthalate	ND	330	"	"	"	"	"	"	U
4-Chlorophenyl Phenyl Ether	ND	330	"	"	"	"	"	"	U

LIONVILLE LABORATORY

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Phone: 610-280-3000
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WC-Hanford, Inc. 2620 Fermi Avenue Richland WA, 99354	Project: RC-116 Project Number: [none] Project Manager: Joan Kessner	Reported: 04/14/2009 14:20

J18794

0902047-05 (Solid)

VK 11/30/09

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes

Lionville Laboratory

Semivolatile Organic Compounds by SW846 8270C

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Fluorene	ND	330	ug/kg wet	1	L902172	02/24/2009	03/01/2009	8270C	U
4-Nitroaniline	ND	1650	"	"	"	"	"	"	U
4,6-Dinitro-2-methylphenol	ND	330	"	"	"	"	"	"	U
N-Nitrosodiphenylamine	ND	330	"	"	"	"	"	"	U
4-Bromophenyl Phenyl Ether	ND	330	"	"	"	"	"	"	U
Hexachlorobenzene	ND	330	"	"	"	"	"	"	U
Pentachlorophenol	ND	1650	"	"	"	"	"	"	U
Phenanthrene	ND	330	"	"	"	"	"	"	U
Anthracene	ND	330	"	"	"	"	"	"	U
Carbazole	ND	330	"	"	"	"	"	"	U
Di-n-butyl Phthalate	ND	330	"	"	"	"	"	"	U
Fluoranthene	ND	330	"	"	"	"	"	"	U
Pyrene	ND	330	"	"	"	"	"	"	U
Butyl Benzyl Phthalate	ND	330	"	"	"	"	"	"	U
Bis(2-ethylhexyl) phthalate	ND	330	"	"	"	"	"	"	U
3,3'-Dichlorobenzidine	ND	660	"	"	"	"	"	"	U
Benz(a)anthracene	ND	330	"	"	"	"	"	"	U
Chrysene	ND	330	"	"	"	"	"	"	U
Di-n-octyl Phthalate	ND	330	"	"	"	"	"	"	U
Benzo[b] fluoranthene	ND	330	"	"	"	"	"	"	U
Benzo[k] fluoranthene	ND	330	"	"	"	"	"	"	U
Benzo[a] pyrene	ND	330	"	"	"	"	"	"	U
Indeno[1,2,3-cd]pyrene	ND	330	"	"	"	"	"	"	U
Dibenz(a,h)anthracene	ND	330	"	"	"	"	"	"	U
Benzo[g,h,i] perylene	ND	330	"	"	"	"	"	"	U
TIC: Unknown 3	3940		"	"	"	"	"	"	B, J
TIC: Unknown 2	2530		"	"	"	"	"	"	B, J
TIC: Unknown 1	45500		"	"	"	"	"	"	B, J
TIC: Alkane 1	1500		"	"	"	"	"	"	B, J
TIC: Unknown 4	2360		"	"	"	"	"	"	J
Surrogate: 2-Fluorophenol		*80 %*	*25-121*		"	"	"	"	
Surrogate: Phenol-d5		*96 %*	*24-113*		"	"	"	"	
Surrogate: Nitrobenzene-d5		*79 %*	*23-120*		"	"	"	"	
Surrogate: 2-Fluorobiphenyl		*98 %*	*30-115*		"	"	"	"	
Surrogate: 2,4,6-Tribromophenol		*46 %*	*19-122*		"	"	"	"	
Surrogate: p-Terphenyl-d14		*84 %*	*18-137*		"	"	"	"	

208 Welsh Pool Road
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Phone: 610-280-3000
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WC-Hanford, Inc 2620 Fermi Avenue Richland WA, 99354	Project: RC-116 Project Number: [none] Project Manager: Joan Kessner	Reported: 04/14/2009 14:20

J18795
0902047-06 (Solid)

JW 11/30/09

Lionville Laboratory

Semivolatile Organic Compounds by SW846 8270C

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Phenol	ND	330	ug/kg wet	1	1902172	02/24/2009	03/01/2009	8270C	U
Bis(2-chloroethyl) ether	ND	330	"	"	"	"	"	"	U
2-Chlorophenol	ND	330	"	"	"	"	"	"	U
1,3-Dichlorobenzene	ND	330	"	"	"	"	"	"	U
1,4-Dichlorobenzene	ND	330	"	"	"	"	"	"	U
1,2-Dichlorobenzene	ND	330	"	"	"	"	"	"	U
2-Methylphenol	ND	330	"	"	"	"	"	"	U
Bis(2-chloroisopropyl) ether	ND	330	"	"	"	"	"	"	U
4-Methylphenol	ND	330	"	"	"	"	"	"	U
N-Nitrosodi-n-propylamine	ND	330	"	"	"	"	"	"	U
Hexachloroethane	ND	330	"	"	"	"	"	"	U
Nitrobenzene	ND	330	"	"	"	"	"	"	U
Isophorone	ND	330	"	"	"	"	"	"	U
2-Nitrophenol	ND	330	"	"	"	"	"	"	U
2,4-Dimethylphenol	ND	330	"	"	"	"	"	"	U
Bis(2-chloroethoxy) methane	ND	330	"	"	"	"	"	"	U
2,4-Dichlorophenol	ND	330	"	"	"	"	"	"	U
1,2,4-Trichlorobenzene	ND	330	"	"	"	"	"	"	U
Naphthalene	ND	330	"	"	"	"	"	"	U
4-Chloroaniline	ND	330	"	"	"	"	"	"	U
Hexachlorobutadiene	ND	330	"	"	"	"	"	"	U
4-Chloro-3-methylphenol	ND	330	"	"	"	"	"	"	U
2-Methylnaphthalene	ND	330	"	"	"	"	"	"	U
Hexachlorocyclopentadiene	ND	330	"	"	"	"	"	"	U
2,4,6-Trichlorophenol	ND	330	"	"	"	"	"	"	U
2,4,5-Trichlorophenol	ND	330	"	"	"	"	"	"	U
2-Chloronaphthalene	ND	330	"	"	"	"	"	"	U
2-Nitroaniline	ND	1650	"	"	"	"	"	"	U
Dimethyl Phthalate	ND	330	"	"	"	"	"	"	U
2,6-Dinitrotoluene	ND	330	"	"	"	"	"	"	U
Acenaphthylene	ND	330	"	"	"	"	"	"	U
3-Nitroaniline	ND	1650	"	"	"	"	"	"	U
Acenaphthene	ND	330	"	"	"	"	"	"	U
2,4-Dinitrophenol	ND	1650	"	"	"	"	"	"	U
4-Nitrophenol	ND	1650	"	"	"	"	"	"	U
Dibenzofuran	ND	330	"	"	"	"	"	"	U
2,4-Dinitrotoluene	ND	330	"	"	"	"	"	"	U
Diethyl Phthalate	ND	330	"	"	"	"	"	"	U
4-Chlorophenyl Phenyl Ether	ND	330	"	"	"	"	"	"	U

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WC-Hanford, Inc. 2620 Fermi Avenue Richland WA, 99354	Project: RC-116 Project Number: [none] Project Manager: Joan Kessner	Reported: 04/14/2009 14:20

J18795
0902047-06 (Solid)

11/30/09

Lionville Laboratory

Semivolatile Organic Compounds by SW846 8270C

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Fluorene	ND	330	ug/kg wet	1	L902177	02/24/2009	03/01/2009	8270C	U
4-Nitroaniline	ND	1650	"	"	"	"	"	"	U
4,6-Dinitro-2-methylphenol	ND	330	"	"	"	"	"	"	U
N-Nitrosodiphenylamine	ND	330	"	"	"	"	"	"	U
4-Bromophenyl Phenyl Ether	ND	330	"	"	"	"	"	"	U
Hexachlorobenzene	ND	330	"	"	"	"	"	"	U
Pentachlorophenol	ND	1650	"	"	"	"	"	"	U
Phenanthrene	ND	330	"	"	"	"	"	"	U
Anthracene	ND	330	"	"	"	"	"	"	U
Carbazole	ND	330	"	"	"	"	"	"	U
Di-n-butyl Phthalate	ND	330	"	"	"	"	"	"	U
Fluoranthene	ND	330	"	"	"	"	"	"	U
Pyrene	ND	330	"	"	"	"	"	"	U
Butyl Benzyl Phthalate	ND	330	"	"	"	"	"	"	U
Bis(2-ethylhexyl) phthalate	ND	330	"	"	"	"	"	"	U
3,3'-Dichlorobenzidine	ND	660	"	"	"	"	"	"	U
Benz[a]anthracene	ND	330	"	"	"	"	"	"	U
Chrysene	ND	330	"	"	"	"	"	"	U
Di-n-octyl Phthalate	ND	330	"	"	"	"	"	"	U
Benzo[b] fluoranthene	ND	330	"	"	"	"	"	"	U
Benzo[k] fluoranthene	ND	330	"	"	"	"	"	"	U
Benzo[a] pyrene	ND	330	"	"	"	"	"	"	U
Indeno[1,2,3-cd]pyrene	ND	330	"	"	"	"	"	"	U
Dibenz[a,h]anthracene	ND	330	"	"	"	"	"	"	U
Benzo[g,h,i] perylene	ND	330	"	"	"	"	"	"	U
TIC: Unknown 5	3370		"	"	"	"	"	"	J
TIC: Unknown 2	2060		"	"	"	"	"	"	B, J
TIC: Unknown 3	4910		"	"	"	"	"	"	B, J
TIC: Unknown 1	32600		"	"	"	"	"	"	B, J
TIC: Unknown 4	3690		"	"	"	"	"	"	B, J
Surrogate: 2-Fluorophenol		*83 %*	*25-121*		"	"	"	"	[illegible]
Surrogate: Phenol-d5		*90 %*	*24-113*		"	"	"	"	
Surrogate: Nitrobenzene-d5		*87 %*	*23-120*		"	"	"	"	
Surrogate: 2-Fluorobiphenyl		*94 %*	*30-115*		"	"	"	"	
Surrogate: 2,4,6-Tribromophenol		*80 %*	*19-122*		"	"	"	"	
Surrogate: p-Terphenyl-d14		*88 %*	*18-137*		"	"	"	"	

WC-Hanford, Inc. 2620 Fermi Avenue Richland WA, 99354	Project: RC-116 Project Number: [none] Project Manager: Joan Kessner	**Reported:** 04/14/2009 14:20

J18796
0902047-07 (Solid)

Vn 11/30/09

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes

Lionville Laboratory

Semivolatile Organic Compounds by SW846 8270C

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Phenol	ND	660	ug/kg wet	2	1902172	02/24/2009	03/01/2009	8270C	U
Bis(2-chloroethyl) ether	ND	660	"	"	"	"	"	&	U
2-Chlorophenol	ND	660	"	"	"	"	"	&	U
1,3-Dichlorobenzene	ND	660	"	"	"	"	"	&	U
1,4-Dichlorobenzene	ND	660	"	"	"	"	"	&	U
1,2-Dichlorobenzene	ND	660	"	"	"	"	"	&	U
2-Methylphenol	ND	660	"	"	"	"	"	&	U
Bis(2-chloroisopropyl) ether	ND	660	"	"	"	"	"	&	U
4-Methylphenol	ND	660	"	"	"	"	"	&	U
N-Nitrosodi-n-propylamine	ND	660	"	"	"	"	"	&	U
Hexachloroethane	ND	660	"	"	"	"	"	&	U
Nitrobenzene	ND	660	"	"	"	"	"	&	U
Isophorone	ND	660	"	"	"	"	"	&	U
2-Nitrophenol	ND	660	"	"	"	"	"	&	U
2,4-Dimethylphenol	ND	660	"	"	"	"	"	&	U
Bis(2-chloroethoxy) methane	ND	660	"	"	"	"	"	&	U
2,4-Dichlorophenol	ND	660	"	"	"	"	"	&	U
1,2,4-Trichlorobenzene	ND	660	"	"	"	"	"	&	U
Naphthalene	ND	660	"	"	"	"	"	&	U
4-Chloroaniline	ND	660	"	"	"	"	"	&	U
Hexachlorobutadiene	ND	660	"	"	"	"	"	&	U
4-Chloro-3-methylphenol	ND	660	"	"	"	"	"	&	U
2-Methylnaphthalene	ND	660	"	"	"	"	"	&	U
Hexachlorocyclopentadiene	ND	660	"	"	"	"	"	&	U
2,4,6-Trichlorophenol	ND	660	"	"	"	"	"	&	U
2,4,5-Trichlorophenol	ND	660	"	"	"	"	"	&	U
2-Chloronaphthalene	ND	660	"	"	"	"	"	&	U
2-Nitroaniline	ND	3300	"	"	"	"	"	&	U
Dimethyl Phthalate	ND	660	"	"	"	"	"	&	U
2,6-Dinitrotoluene	ND	660	"	"	"	"	"	&	U
Acenaphthylene	ND	660	"	"	"	"	"	&	U
3-Nitroaniline	ND	3300	"	"	"	"	"	&	U
Acenaphthene	ND	660	"	"	"	"	"	&	U
2,4-Dinitrophenol	ND	3300	"	"	"	"	"	&	U
4-Nitrophenol	ND	3300	"	"	"	"	"	&	U
Dibenzofuran	ND	660	"	"	"	"	"	&	U
2,4-Dinitrotoluene	ND	660	"	"	"	"	"	&	U
Diethyl Phthalate	ND	660	"	"	"	"	"	&	U
4-Chlorophenyl Phenyl Ether	ND	660	"	"	"	"	"	&	U

LVL
Lionville Laboratory

264 Welsh Pool Road
Exton, PA 19341
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WC-Hanford, Inc. 2620 Fermi Avenue Richland WA, 99354	Project: RC-116 Project Number: [none] Project Manager: Joan Kessner	**Reported:** 04/14/2009 14:20

J18796
0902047-07 (Solid)

VL 11/30/09

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes

Lionville Laboratory

Semivolatile Organic Compounds by SW846 8270C

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Fluorene	ND J	660	ug/kg wet	2	L902172	02/24/2009	03/01/2009	8270C	U
4-Nitroaniline	ND	3300	"	"	"	"	"	"	U
4,6-Dinitro-2-methylphenol	ND	660	"	"	"	"	"	"	U
N-Nitrosodiphenylamine	ND	660	"	"	"	"	"	"	U
4-Bromophenyl Phenyl Ether	ND	660	"	"	"	"	"	"	U
Hexachlorobenzene	ND	660	"	"	"	"	"	"	U
Pentachlorophenol	ND	3300	"	"	"	"	"	"	U
Phenanthrene	ND	660	"	"	"	"	"	"	U
Anthracene	ND	660	"	"	"	"	"	"	U
Carbazole	ND	660	"	"	"	"	"	"	U
Di-n-butyl Phthalate	ND	660	"	"	"	"	"	"	U
Fluoranthene	ND	660	"	"	"	"	"	"	U
Pyrene	ND	660	"	"	"	"	"	"	U
Butyl Benzyl Phthalate	ND	660	"	"	"	"	"	"	U
Bis(2-ethylhexyl) phthalate	ND	660	"	"	"	"	"	"	U
3,3'-Dichlorobenzidine	ND	1320	"	"	"	"	"	"	U
Benz[a]anthracene	ND	660	"	"	"	"	"	"	U
Chrysene	ND	660	"	"	"	"	"	"	U
Di-n-octyl Phthalate	ND	660	"	"	"	"	"	"	U
Benzo[b] fluoranthene	ND	660	"	"	"	"	"	"	U
Benzo[k] fluoranthene	ND	660	"	"	"	"	"	"	U
Benzo[a] pyrene	ND	660	"	"	"	"	"	"	U
Indeno[1,2,3-cd]pyrene	ND	660	"	"	"	"	"	"	U
Dibenz[a,h]anthracene	ND	660	"	"	"	"	"	"	U
Benzo[g,h,i] perylene	ND	660	"	"	"	"	"	"	U
TIC: Unknown 3	**4510**		"	"	"	"	"	"	D, J, ~~B~~
TIC: Unknown 2	**3900**		"	"	"	"	"	"	B, D, J
TIC: Unknown 1	**35900**		"	"	"	"	"	"	B, D, J
TIC: Alkane 2	**3260**		"	"	"	"	"	"	J, D
TIC: Alkane 1	**8720**		"	"	"	"	"	"	J, D
Surrogate: 2-Fluorophenol		*79 %*	*25-121*		"	"	"	"	[illegible]
Surrogate: Phenol-d5		*83 %*	*24-113*		"	"	"	"	
Surrogate: Nitrobenzene-d5		*81 %*	*23-120*		"	"	"	"	
Surrogate: 2-Fluorobiphenyl		*96 %*	*30-115*		"	"	"	"	
Surrogate: 2,4,6-Tribromophenol		*108 %*	*19-122*		"	"	"	"	
Surrogate: p-Terphenyl-d14		*92 %*	*18-137*		"	"	"	"	

LVL
Lionville Laboratory

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WC-Hanford, Inc. 2620 Fermi Avenue Richland WA, 99354	Project: RC-116 Project Number: [none] Project Manager: Joan Kessner	Reported: 04/14/2009 14:20

J18797
0902047-08 (Solid)

Vr 11/30/09

Lionville Laboratory

Semivolatile Organic Compounds by SW846 8270C

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Phenol	ND	660	ug/kg wet	2	L902172	02/24/2009	03/01/2009	8270C	U
Bis(2-chloroethyl) ether	ND	660	"	"	"	"	"	"	U
2-Chlorophenol	ND	660	"	"	"	"	"	"	U
1,3-Dichlorobenzene	ND	660	"	"	"	"	"	"	U
1,4-Dichlorobenzene	ND	660	"	"	"	"	"	"	U
1,2-Dichlorobenzene	ND	660	"	"	"	"	"	"	U
2-Methylphenol	ND	660	"	"	"	"	"	"	U
Bis(2-chloroisopropyl) ether	ND	660	"	"	"	"	"	"	U
4-Methylphenol	ND	660	"	"	"	"	"	"	U
N-Nitrosodi-n-propylamine	ND	660	"	"	"	"	"	"	U
Hexachloroethane	ND	660	"	"	"	"	"	"	U
Nitrobenzene	ND	660	"	"	"	"	"	"	U
Isophorone	ND	660	"	"	"	"	"	"	U
2-Nitrophenol	ND	660	"	"	"	"	"	"	U
2,4-Dimethylphenol	ND	660	"	"	"	"	"	"	U
Bis(2-chloroethoxy) methane	ND	660	"	"	"	"	"	"	U
2,4-Dichlorophenol	ND	660	"	"	"	"	"	"	U
1,2,4-Trichlorobenzene	ND	660	"	"	"	"	"	"	U
Naphthalene	ND	660	"	"	"	"	"	"	U
4-Chloroaniline	ND	660	"	"	"	"	"	"	U
Hexachlorobutadiene	ND	660	"	"	"	"	"	"	U
4-Chloro-3-methylphenol	ND	660	"	"	"	"	"	"	U
2-Methylnaphthalene	ND	660	"	"	"	"	"	"	U
Hexachlorocyclopentadiene	ND	660	"	"	"	"	"	"	U
2,4,6-Trichlorophenol	ND	660	"	"	"	"	"	"	U
2,4,5-Trichlorophenol	ND	660	"	"	"	"	"	"	U
2-Chloronaphthalene	ND	660	"	"	"	"	"	"	U
2-Nitroaniline	ND	3300	"	"	"	"	"	"	U
Dimethyl Phthalate	ND	660	"	"	"	"	"	"	U
2,6-Dinitrotoluene	ND	660	"	"	"	"	"	"	U
Acenaphthylene	ND	660	"	"	"	"	"	"	U
3-Nitroaniline	ND	3300	"	"	"	"	"	"	U
Acenaphthene	ND	660	"	"	"	"	"	"	U
2,4-Dinitrophenol	ND	3300	"	"	"	"	"	"	U
4-Nitrophenol	ND	3300	"	"	"	"	"	"	U
Dibenzofuran	ND	660	"	"	"	"	"	"	U
2,4-Dinitrotoluene	ND	660	"	"	"	"	"	"	U
Diethyl Phthalate	ND	660	"	"	"	"	"	"	U
4-Chlorophenyl Phenyl Ether	ND	660	"	"	"	"	"	"	U

LIONVILLE LABORATORY

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WC-Hanford, Inc.
2620 Fermi Avenue
Richland WA, 99354

Project: RC-116
Project Number: [none]
Project Manager: Joan Kessner

Reported:
04/14/2009 14:20

J18797
0902047-08 (Solid)

11/30/07

Lionville Laboratory

Semivolatile Organic Compounds by SW846 8270C

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Fluorene	ND	660	ug/kg wet	2	L902172	02/24/2009	03/01/2009	8270C	U
4-Nitroaniline	ND	1300	"	"	"	"	"	"	U
4,6-Dinitro-2-methylphenol	ND	660	"	"	"	"	"	"	U
N-Nitrosodiphenylamine	ND	660	"	"	"	"	"	"	U
4-Bromophenyl Phenyl Ether	ND	660	"	"	"	"	"	"	U
Hexachlorobenzene	ND	660	"	"	"	"	"	"	U
Pentachlorophenol	ND	3300	"	"	"	"	"	"	U
Phenanthrene	ND	660	"	"	"	"	"	"	U
Anthracene	ND	660	"	"	"	"	"	"	U
Carbazole	ND	660	"	"	"	"	"	"	U
Di-n-butyl Phthalate	ND	660	"	"	"	"	"	"	U
Fluoranthene	ND	660	"	"	"	"	"	"	U
Pyrene	ND	660	"	"	"	"	"	"	U
Butyl Benzyl Phthalate	ND	660	"	"	"	"	"	"	U
Bis(2-ethylhexyl) phthalate	ND	660	"	"	"	"	"	"	U
3,3'-Dichlorobenzidine	ND	1320	"	"	"	"	"	"	U
Benz[a]anthracene	ND	660	"	"	"	"	"	"	U
Chrysene	ND	660	"	"	"	"	"	"	U
Di-n-octyl Phthalate	ND	660	"	"	"	"	"	"	U
Benzo[b] fluoranthene	ND	660	"	"	"	"	"	"	U
Benzo[k] fluoranthene	ND	660	"	"	"	"	"	"	U
Benzo[a] pyrene	ND	660	"	"	"	"	"	"	U
Indeno[1,2,3-cd]pyrene	ND	660	"	"	"	"	"	"	U
Dibenz[a,h]anthracene	ND	660	"	"	"	"	"	"	U
Benzo[g,h,i] perylene	ND	660	"	"	"	"	"	"	U
TIC: Unknown 2	1870		"	"	"	"	"	"	J, D, M
TIC: Alkene 1	993		"	"	"	"	"	"	J, D
TIC: Alkane 1	962		"	"	"	"	"	"	D, J
TIC: Unknown 1	38400		"	"	"	"	"	"	R, J, D
TIC: Unknown 3	1450		"	"	"	"	"	"	J, D, M
Surrogate: 2-Fluorophenol		*62 %*	*23-121*		"	"	"	"	
Surrogate: Phenol-d5		*73 %*	*24-113*		"	"	"	"	04-14-09
Surrogate: Nitrobenzene-d5		*64 %*	*23-120*		"	"	"	"	
Surrogate: 2-Fluorobiphenyl		*87 %*	*30-115*		"	"	"	"	
Surrogate: 2,4,6-Tribromophenol		*87 %*	*19-122*		"	"	"	"	
Surrogate: p-Terphenyl-d14		*85 %*	*18-137*		"	"	"	"	

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WC-Hanford, Inc.
2620 Fermi Avenue
Richland WA, 99354

Project: RC-116
Project Number: [none]
Project Manager: Joan Kessner

Reported:
04/14/2009 14:20

3187D2
0902047-12 (Solid)

11/30/09

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Lionville Laboratory									
Semivolatile Organic Compounds by SW846 8270C									
Phenol	ND	990	ug/kg wet	1	1902172	02/24/2009	03/12/2009	8270C	U
Bis(2-chloroethyl) ether	ND	990	"	"	"	"	"	"	U
2-Chlorophenol	ND	990	"	"	"	"	"	"	U
1,3-Dichlorobenzene	ND	990	"	"	"	"	"	"	U
1,4-Dichlorobenzene	ND	990	"	"	"	"	"	"	U
1,2-Dichlorobenzene	ND	990	"	"	"	"	"	"	U
2-Methylphenol	ND	990	"	"	"	"	"	"	U
Bis(2-chloroisopropyl) ether	ND	990	"	"	"	"	"	"	U
4-Methylphenol	ND	990	"	"	"	"	"	"	U
N-Nitrosodi-n-propylamine	ND	990	"	"	"	"	"	"	U
Hexachloroethane	ND	990	"	"	"	"	"	"	U
Nitrobenzene	ND	990	"	"	"	"	"	"	U
Isophorone	ND	990	"	"	"	"	"	"	U
2-Nitrophenol	ND	990	"	"	"	"	"	"	U
2,4-Dimethylphenol	ND	990	"	"	"	"	"	"	U
Bis(2-chloroethoxy) methane	ND	990	"	"	"	"	"	"	U
2,4-Dichlorophenol	ND	990	"	"	"	"	"	"	U
1,2,4-Trichlorobenzene	ND	990	"	"	"	"	"	"	U
Naphthalene	ND	990	"	"	"	"	"	"	U
4-Chloroaniline	ND	990	"	"	"	"	"	"	U
Hexachlorobutadiene	ND	990	"	"	"	"	"	"	U
4-Chloro-3-methylphenol	ND	990	"	"	"	"	"	"	U
2-Methylnaphthalene	ND	990	"	"	"	"	"	"	U
Hexachlorocyclopentadiene	ND	990	"	"	"	"	"	"	U
2,4,6-Trichlorophenol	ND	990	"	"	"	"	"	"	U
2,4,5-Trichlorophenol	ND	990	"	"	"	"	"	"	U
2-Chloronaphthalene	ND	990	"	"	"	"	"	"	U
2-Nitroaniline	ND	4950	"	"	"	"	"	"	U
Dimethyl Phthalate	ND	990	"	"	"	"	"	"	U
2,6-Dinitrotoluene	ND	990	"	"	"	"	"	"	U
Acenaphthylene	ND	990	"	"	"	"	"	"	U
3-Nitroaniline	ND	4950	"	"	"	"	"	"	U
Acenaphthene	ND	990	"	"	"	"	"	"	U
2,4-Dinitrophenol	ND	4950	"	"	"	"	"	"	U
4-Nitrophenol	ND	4950	"	"	"	"	"	"	U
Dibenzofuran	ND	990	"	"	"	"	"	"	U
2,4-Dinitrotoluene	ND	990	"	"	"	"	"	"	U
Diethyl Phthalate	ND	990	"	"	"	"	"	"	U
4-Chlorophenyl Phenyl Ether	ND	990	"	"	"	"	"	"	U
								"	U

000023

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

WC-Hanford, Inc. 2620 Fermi Avenue Richland WA, 99354	Project: RC-116 Project Number: [none] Project Manager: Joan Kessner	**Reported:** 04/14/2009 14:20

J187D2
0902047-12 (Solid)

11/30/09

Lionville Laboratory

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Semivolatile Organic Compounds by SW846 8270C									
Fluorene	ND	990	ug/kg wet	1	1902172	02/24/2009	03/12/2009	8270C	U
4-Nitroaniline	ND	4950	"	"	"	"	"	"	U
4,6-Dinitro-2-methylphenol	ND	990	"	"	"	"	"	"	U
N-Nitrosodiphenylamine	ND	990	"	"	"	"	"	"	U
4-Bromophenyl Phenyl Ether	ND	990	"	"	"	"	"	"	U
Hexachlorobenzene	ND	990	"	"	"	"	"	"	U
Pentachlorophenol	ND	4950	"	"	"	"	"	"	U
Phenanthrene	ND	990	"	"	"	"	"	"	U
Anthracene	ND	990	"	"	"	"	"	"	U
Carbazole	ND	990	"	"	"	"	"	"	U
Di-n-butyl Phthalate	ND	990	"	"	"	"	"	"	U
Fluoranthene	ND	990	"	"	"	"	"	"	U
Pyrene	ND	990	"	"	"	"	"	"	U
Butyl Benzyl Phthalate	ND	990	"	"	"	"	"	"	U
Bis(2-ethylhexyl) phthalate	ND	990	"	"	"	"	"	"	U
3,3'-Dichlorobenzidine	ND	1980	"	"	"	"	"	"	U
Benz[a]anthracene	ND	990	"	"	"	"	"	"	U
Chrysene	ND	990	"	"	"	"	"	"	U
Di-n-octyl Phthalate	ND	990	"	"	"	"	"	"	U
Benzo[b] fluoranthene	ND	990	"	"	"	"	"	"	U
Benzo[k] fluoranthene	ND	990	"	"	"	"	"	"	U
Benzo[a] pyrene	ND	990	"	"	"	"	"	"	U
Indeno[1,2,3-cd]pyrene	ND	990	"	"	"	"	"	"	U
Dibenz[a,h]anthracene	ND	990	"	"	"	"	"	"	U
Benzo[g,h,i] perylene	ND	990	"	"	"	"	"	"	U
TIC: Unknown 1	16800		"	"	"	"	"	"	B, J, D
Surrogate: 2-Fluorophenol		*30 %*	*25-121*		"	"	"	"	
Surrogate: Phenol-d5		*45 %*	*24-113*		"	"	"	"	
Surrogate: Nitrobenzene-d5		*55 %*	*23-120*		"	"	"	"	
Surrogate: 2-Fluorobiphenyl		*58 %*	*30-115*		"	"	"	"	
Surrogate: 2,4,6-Tribromophenol		*43 %*	*19-122*		"	"	"	"	
Surrogate: p-Terphenyl-d14		*76 %*	*18-137*		"	"	"	"	

LVL
LIONVILLE LABORATORY

264 Welsh Pool Road
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WC-Hanford, Inc. 2620 Fermi Avenue Richland WA 99354	Project: RC-116 Project Number: [none] Project Manager: Joan Kessner	Reported: 04/14/2009 14:20

J187D4
0902047-13 (Solid)

W 11/30/09

Lionville Laboratory

Semivolatile Organic Compounds by SW846 8270C

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Phenol	ND J	990	ug/kg wet	1	0902172	02/24/2009	03/12/2009	8270C	U
Bis(2-chloroethyl) ether	ND	990	"	"	"	"	"	"	U
2-Chlorophenol	ND	990	"	"	"	"	"	"	U
1,3-Dichlorobenzene	ND	990	"	"	"	"	"	"	U
1,4-Dichlorobenzene	ND	990	"	"	"	"	"	"	U
1,2-Dichlorobenzene	ND	990	"	"	"	"	"	"	U
2-Methylphenol	ND	990	"	"	"	"	"	"	U
Bis(2-chloroisopropyl) ether	ND	990	"	"	"	"	"	"	U
4-Methylphenol	ND	990	"	"	"	"	"	"	U
N-Nitrosodi-n-propylamine	ND	990	"	"	"	"	"	"	U
Hexachloroethane	ND	990	"	"	"	"	"	"	U
Nitrobenzene	ND	990	"	"	"	"	"	"	U
Isophorone	ND	990	"	"	"	"	"	"	U
2-Nitrophenol	ND	990	"	"	"	"	"	"	U
2,4-Dimethylphenol	ND	990	"	"	"	"	"	"	U
Bis(2-chloroethoxy) methane	ND	990	"	"	"	"	"	"	U
2,4-Dichlorophenol	ND	990	"	"	"	"	"	"	U
1,2,4-Trichlorobenzene	ND	990	"	"	"	"	"	"	U
Naphthalene	ND	990	"	"	"	"	"	"	U
4-Chloroaniline	ND	990	"	"	"	"	"	"	U
Hexachlorobutadiene	ND	990	"	"	"	"	"	"	U
4-Chloro-3-methylphenol	ND	990	"	"	"	"	"	"	U
2-Methylnaphthalene	ND	990	"	"	"	"	"	"	U
Hexachlorocyclopentadiene	ND	990	"	"	"	"	"	"	U
2,4,6-Trichlorophenol	ND	990	"	"	"	"	"	"	U
2,4,5-Trichlorophenol	ND	990	"	"	"	"	"	"	U
2-Chloronaphthalene	ND	990	"	"	"	"	"	"	U
2-Nitroaniline	ND	4950	"	"	"	"	"	"	U
Dimethyl Phthalate	ND	990	"	"	"	"	"	"	U
2,6-Dinitrotoluene	ND	990	"	"	"	"	"	"	U
Acenaphthylene	ND	990	"	"	"	"	"	"	U
3-Nitroaniline	ND	4950	"	"	"	"	"	"	U
Acenaphthene	ND	990	"	"	"	"	"	"	U
2,4-Dinitrophenol	ND	4950	"	"	"	"	"	"	U
4-Nitrophenol	ND	4950	"	"	"	"	"	"	U
Dibenzofuran	ND	990	"	"	"	"	"	"	U
2,4-Dinitrotoluene	ND	990	"	"	"	"	"	"	U
Diethyl Phthalate	ND	990	"	"	"	"	"	"	U
4-Chlorophenyl Phenyl Ether	ND	990	"	"	"	"	"	"	U

764 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
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WC-Hanford, Inc
2620 Fermi Avenue
Richland WA, 99354

Project: RC-116
Project Number: [none]
Project Manager: Joan Kessner

Reported:
04/14/2009 14:20

J187D4
0902047-13 (Solid)

W 11/30/09

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Lionville Laboratory									
Semivolatile Organic Compounds by SW846 8270C									
Fluorene	ND J	990	ug/kg wet	1	L902172	03/24/2009	03/12/2009	8270C	U
4-Nitroaniline	ND	4950	"	"	"	"	"	"	U
4,6-Dinitro-2-methylphenol	ND	990	"	"	"	"	"	"	U
N-Nitrosodiphenylamine	ND	990	"	"	"	"	"	"	U
4-Bromophenyl Phenyl Ether	ND	990	"	"	"	"	"	"	U
Hexachlorobenzene	ND	990	"	"	"	"	"	"	U
Pentachlorophenol	ND	4950	"	"	"	"	"	"	U
Phenanthrene	ND	990	"	"	"	"	"	"	U
Anthracene	ND	990	"	"	"	"	"	"	U
Carbazole	ND	990	"	"	"	"	"	"	U
Di-n-butyl Phthalate	ND	990	"	"	"	"	"	"	U
Fluoranthene	ND	990	"	"	"	"	"	"	U
Pyrene	ND	990	"	"	"	"	"	"	U
Butyl Benzyl Phthalate	ND	990	"	"	"	"	"	"	U
Bis(2-ethylhexyl) phthalate	ND	990	"	"	"	"	"	"	U
3,3'-Dichlorobenzidine	ND	1980	"	"	"	"	"	"	U
Benz[a]anthracene	ND	990	"	"	"	"	"	"	U
Chrysene	ND	990	"	"	"	"	"	"	U
Di-n-octyl Phthalate	ND	990	"	"	"	"	"	"	U
Benzo[b] fluoranthene	ND	990	"	"	"	"	"	"	U
Benzo[k] fluoranthene	ND	990	"	"	"	"	"	"	U
Benzo[a] pyrene	ND	990	"	"	"	"	"	"	U
Indeno[1,2,3-cd]pyrene	ND	990	"	"	"	"	"	"	U
Dibenz[a,h]anthracene	ND	990	"	"	"	"	"	"	U
Benzo[g,h,i] perylene	ND	990	"	"	"	"	"	"	U
TIC: Unknown 1	**1840**		"	"	"	"	"	"	U
TIC: Unknown 1	**22600**		"	"	"	"	"	"	I, D, B
Surrogate: 2-Fluorophenol		*48 %*	*23-121*		"	"	"	"	B, J, O
Surrogate: Phenol-d5		*30 %*	*24-113*		"	"	"	"	4-14-09
Surrogate: Nitrobenzene-d5		*68 %*	*23-120*		"	"	"	"	
Surrogate: 2-Fluorobiphenyl		*68 %*	*30-115*		"	"	"	"	
Surrogate: 2,4,6-Tribromophenol		*66 %*	*19-122*		"	"	"	"	
Surrogate: p-Terphenyl-d14		*93 %*	*18-137*		"	"	"	"	

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WC-Hanford, Inc. 2620 Fermi Avenue Richland WA, 99354	Project: RC-116 Project Number: [none] Project Manager: Joan Kessner	Reported: 04/14/2009 14:20

J187D5
0902047-14 (Solid)

11/30/09

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes

Lionville Laboratory

Semivolatile Organic Compounds by SW846 8270C

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Phenol	ND J	990	ug/kg wet	1	L902172	02/24/2009	03/20/2009	8270C	U
Bis(2-chloroethyl) ether	ND	990	"	"	"	"	"	"	U
2-Chlorophenol	ND	990	"	"	"	"	"	"	U
1,3-Dichlorobenzene	ND	990	"	"	"	"	"	"	U
1,4-Dichlorobenzene	ND	990	"	"	"	"	"	"	U
1,2-Dichlorobenzene	ND	990	"	"	"	"	"	"	U
2-Methylphenol	ND	990	"	"	"	"	"	"	U
Bis(2-chloroisopropyl) ether	ND	990	"	"	"	"	"	"	U
4-Methylphenol	ND	990	"	"	"	"	"	"	U
N-Nitrosodi-n-propylamine	ND	990	"	"	"	"	"	"	U
Hexachloroethane	ND	990	"	"	"	"	"	"	U
Nitrobenzene	ND	990	"	"	"	"	"	"	U
Isophorone	ND	990	"	"	"	"	"	"	U
2-Nitrophenol	ND	990	"	"	"	"	"	"	U
2,4-Dimethylphenol	ND	990	"	"	"	"	"	"	U
Bis(2-chloroethoxy) methane	ND	990	"	"	"	"	"	"	U
2,4-Dichlorophenol	ND	990	"	"	"	"	"	"	U
1,2,4-Trichlorobenzene	ND	990	"	"	"	"	"	"	U
Naphthalene	ND	990	"	"	"	"	"	"	U
4-Chloroaniline	ND	990	"	"	"	"	"	"	U
Hexachlorobutadiene	ND	990	"	"	"	"	"	"	U
4-Chloro-3-methylphenol	ND	990	"	"	"	"	"	"	U
2-Methylnaphthalene	ND	990	"	"	"	"	"	"	U
Hexachlorocyclopentadiene	ND	990	"	"	"	"	"	"	U
2,4,6-Trichlorophenol	ND	990	"	"	"	"	"	"	U
2,4,5-Trichlorophenol	ND	990	"	"	"	"	"	"	U
2-Chloronaphthalene	ND	990	"	"	"	"	"	"	U
2-Nitroaniline	ND	4950	"	"	"	"	"	"	U
Dimethyl Phthalate	ND	990	"	"	"	"	"	"	U
2,6-Dinitrotoluene	ND	990	"	"	"	"	"	"	U
Acenaphthylene	ND	990	"	"	"	"	"	"	U
3-Nitroaniline	ND	4950	"	"	"	"	"	"	U
Acenaphthene	ND	990	"	"	"	"	"	"	U
2,4-Dinitrophenol	ND	4950	"	"	"	"	"	"	U
4-Nitrophenol	ND	4950	"	"	"	"	"	"	U
Dibenzofuran	ND	990	"	"	"	"	"	"	U
2,4-Dinitrotoluene	ND	990	"	"	"	"	"	"	U
Diethyl Phthalate	ND	990	"	"	"	"	"	"	U
4-Chlorophenyl Phenyl Ether	ND	990	"	"	"	"	"	"	U

LVL

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
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WC-Hanford, Inc.
2620 Fermi Avenue
Richland WA, 99354

Project: RC-116
Project Number: [none]
Project Manager: Joan Kessner

Reported:
04/14/2009 14:20

J187D5

0902047-14 (Solid) V 6/30/09

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes

Lionville Laboratory

Semivolatile Organic Compounds by SW846 8270C

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Fluorene	ND J	990	ug/kg wet	1	1902172	02/24/2009	03/20/2009	8270C	U
4-Nitroaniline	ND	4950	"	"	"	"	"	"	U
4,6-Dinitro-2-methylphenol	ND	990	"	"	"	"	"	"	U
N-Nitrosodiphenylamine	ND	990	"	"	"	"	"	"	U
4-Bromophenyl Phenyl Ether	ND	990	"	"	"	"	"	"	U
Hexachlorobenzene	ND	990	"	"	"	"	"	"	U
Pentachlorophenol	ND	4950	"	"	"	"	"	"	U
Phenanthrene	ND	990	"	"	"	"	"	"	U
Anthracene	ND	990	"	"	"	"	"	"	U
Carbazole	ND	990	"	"	"	"	"	"	U
Di-n-butyl Phthalate	ND	990	"	"	"	"	"	"	U
Fluoranthene	ND	990	"	"	"	"	"	"	U
Pyrene	ND	990	"	"	"	"	"	"	U
Butyl Benzyl Phthalate	ND	990	"	"	"	"	"	"	U
Bis(2-ethylhexyl) phthalate	ND	990	"	"	"	"	"	"	U
3,3'-Dichlorobenzidine	ND	1980	"	"	"	"	"	"	U
Benz[a]anthracene	ND	990	"	"	"	"	"	"	U
Chrysene	ND	990	"	"	"	"	"	"	U
Di-n-octyl Phthalate	ND	990	"	"	"	"	"	"	U
Benzo[b] fluoranthene	ND	990	"	"	"	"	"	"	U
Benzo[k] fluoranthene	ND	990	"	"	"	"	"	"	U
Benzo[a] pyrene	ND	990	"	"	"	"	"	"	U
Indeno[1,2,3-cd]pyrene	ND	990	"	"	"	"	"	"	U
Dibenz[a,h]anthracene	ND	990	"	"	"	"	"	"	U
Benzo[g,h,i] perylene	ND	990	"	"	"	"	"	"	U
TIC: Unknown 2	57100		"	"	"	"	"	"	H, J, D
TIC: Unknown 1	1210		"	"	"	"	"	"	J, D, ✓
TIC: Alkane 3	732		"	"	"	"	"	"	J, D
TIC: Alkane 2	571		"	"	"	"	"	"	J, D
TIC: Alkane 1	557		"	"	"	"	"	"	J, D
Surrogate: 2-Fluorophenol		95 %	25-121		"	"	"	"	
Surrogate: Phenol-d5		98 %	24-113		"	"	"	"	MW-14 Q's
Surrogate: Nitrobenzene-d5		81 %	23-120		"	"	"	"	
Surrogate: 2-Fluorobiphenyl		97 %	30-115		"	"	"	"	
Surrogate: 2,4,6-Tribromophenol		50 %	19-122		"	"	"	"	
Surrogate: p-Terphenyl-d14		130 %	18-137		"	"	"	"	

LVL
LIONVILLE LABORATORY

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WC-Hanford, Inc. 2620 Fermi Avenue Richland WA, 99354	Project: RC-116 Project Number: [none] Project Manager: Joan Kessner	Reported: 04/14/2009 14:20

J187K6
B902047-21 (Solid)

11/30/09

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes

Lionville Laboratory

Semivolatile Organic Compounds by SW846 8270C

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Phenol	ND	330	ug/kg wet	1	B902172	02/24/2009	03/12/2009	8270C	U
Bis(2-chloroethyl) ether	ND	330	"	"	"	"	"	"	U
2-Chlorophenol	ND	330	"	"	"	"	"	"	U
1,3-Dichlorobenzene	ND	330	"	"	"	"	"	"	U
1,4-Dichlorobenzene	ND	330	"	"	"	"	"	"	U
1,2-Dichlorobenzene	ND	330	"	"	"	"	"	"	U
2-Methylphenol	ND	330	"	"	"	"	"	"	U
Bis(2-chloroisopropyl) ether	ND	330	"	"	"	"	"	"	U
4-Methylphenol	ND	330	"	"	"	"	"	"	U
N-Nitrosodi-n-propylamine	ND	330	"	"	"	"	"	"	U
Hexachloroethane	ND	330	"	"	"	"	"	"	U
Nitrobenzene	ND	330	"	"	"	"	"	"	U
Isophorone	ND	330	"	"	"	"	"	"	U
2-Nitrophenol	ND	330	"	"	"	"	"	"	U
2,4-Dimethylphenol	ND	330	"	"	"	"	"	"	U
Bis(2-chloroethoxy) methane	ND	330	"	"	"	"	"	"	U
2,4-Dichlorophenol	ND	330	"	"	"	"	"	"	U
1,2,4-Trichlorobenzene	ND	330	"	"	"	"	"	"	U
Naphthalene	ND	330	"	"	"	"	"	"	U
4-Chloroaniline	ND	330	"	"	"	"	"	"	U
Hexachlorobutadiene	ND	330	"	"	"	"	"	"	U
4-Chloro-3-methylphenol	ND	330	"	"	"	"	"	"	U
2-Methylnaphthalene	ND	330	"	"	"	"	"	"	U
Hexachlorocyclopentadiene	ND	330	"	"	"	"	"	"	U
2,4,6-Trichlorophenol	ND	330	"	"	"	"	"	"	U
2,4,5-Trichlorophenol	ND	330	"	"	"	"	"	"	U
2-Chloronaphthalene	ND	330	"	"	"	"	"	"	U
2-Nitroaniline	ND	1650	"	"	"	"	"	"	U
Dimethyl Phthalate	ND	330	"	"	"	"	"	"	U
2,6-Dinitrotoluene	ND	330	"	"	"	"	"	"	U
Acenaphthylene	ND	330	"	"	"	"	"	"	U
3-Nitroaniline	ND	1650	"	"	"	"	"	"	U
Acenaphthene	ND	330	"	"	"	"	"	"	U
2,4-Dinitrophenol	ND	1650	"	"	"	"	"	"	U
4-Nitrophenol	ND	1650	"	"	"	"	"	"	U
Dibenzofuran	ND	330	"	"	"	"	"	"	U
2,4-Dinitrotoluene	ND	330	"	"	"	"	"	"	U
Diethyl Phthalate	ND	330	"	"	"	"	"	"	U
4-Chlorophenyl Phenyl Ether	ND	330	"	"	"	"	"	"	U

LVL
LIONVILLE LABORATORY

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

WC-Hanford, Inc
2620 Fermi Avenue
Richland WA, 99354

Project: RC-116
Project Number: [none]
Project Manager: Joan Kessner

Reported:
04/14/2009 14:20

J187K6
0902047-21 (Solid)

11/30/09

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Lionville Laboratory									
Semivolatile Organic Compounds by SW846 8270C									
Fluorene	ND	330	ug/kg wet	1	0902172	02/24/2009	03/12/2009	8270C	U
4-Nitroaniline	ND	1650	"	"	"	"	"	"	U
4,6-Dinitro-2-methylphenol	ND	330	"	"	"	"	"	"	U
N-Nitrosodiphenylamine	ND	330	"	"	"	"	"	"	U
4-Bromophenyl Phenyl Ether	ND	330	"	"	"	"	"	"	U
Hexachlorobenzene	ND	330	"	"	"	"	"	"	U
Pentachlorophenol	ND	1650	"	"	"	"	"	"	U
Phenanthrene	ND	330	"	"	"	"	"	"	U
Anthracene	ND	330	"	"	"	"	"	"	U
Carbazole	ND	330	"	"	"	"	"	"	U
Di-n-butyl Phthalate	ND	330	"	"	"	"	"	"	U
Fluoranthene	ND	330	"	"	"	"	"	"	U
Pyrene	ND	330	"	"	"	"	"	"	U
Butyl Benzyl Phthalate	ND	330	"	"	"	"	"	"	U
Bis(2-ethylhexyl) phthalate	ND	330	"	"	"	"	"	"	U
3,3'-Dichlorobenzidine	ND	660	"	"	"	"	"	"	U
Benz[a]anthracene	ND	330	"	"	"	"	"	"	U
Chrysene	ND	330	"	"	"	"	"	"	U
Di-n-octyl Phthalate	ND	330	"	"	"	"	"	"	U
Benzo[b] fluoranthene	ND	330	"	"	"	"	"	"	U
Benzo[k] fluoranthene	ND	330	"	"	"	"	"	"	U
Benzo[a] pyrene	ND	330	"	"	"	"	"	"	U
Indeno[1,2,3-cd]pyrene	ND	330	"	"	"	"	"	"	U
Dibenz[a,h]anthracene	ND	330	"	"	"	"	"	"	U
Benzo[g,h,i] perylene	ND	330	"	"	"	"	"	"	U
TIC: Unknown 1	**186**		"	"	"	"	"	"	U
TIC: Unknown 2	**51000**		"	"	"	"	"	"	J, JK
Surrogate: 2-Fluorophenol		41 %	25-121		"	"	"	"	D, J
Surrogate: Phenol-d5		53 %	24-113		"	"	"	"	[illegible]
Surrogate: Nitrobenzene-d5		49 %	23-120		"	"	"	"	
Surrogate: 2-Fluorobiphenyl		51 %	30-115		"	"	"	"	
Surrogate: 2,4,6-Tribromophenol		67 %	19-122		"	"	"	"	
Surrogate: p-Terphenyl-d14		84 %	18-137		"	"	"	"	

264 Welsh Pool Road
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WC-Hanford, Inc. 2620 Fermi Avenue Richland WA, 99354	Project: RC-116 Project Number: [none] Project Manager: Joan Kessner	Reported: 04/14/2009 14:20

J187K7
0902047-22 (Solid)

V 11/21/09

Lionville Laboratory

Semivolatile Organic Compounds by SW846 8270C

Analyte	Result		Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Phenol	ND	J ↓	330	ug/kg wet	1	1903172	02/24/2009	03/12/2009	8270C	U
Bis(2-chloroethyl) ether	ND		330	"	"	"	"	"	"	U
2-Chlorophenol	ND		330	"	"	"	"	"	"	U
1,3-Dichlorobenzene	ND		330	"	"	"	"	"	"	U
1,4-Dichlorobenzene	ND		330	"	"	"	"	"	"	U
1,2-Dichlorobenzene	ND		330	"	"	"	"	"	"	U
2-Methylphenol	ND		330	"	"	"	"	"	"	U
Bis(2-chloroisopropyl) ether	ND		330	"	"	"	"	"	"	U
4-Methylphenol	ND		330	"	"	"	"	"	"	U
N-Nitrosodi-n-propylamine	ND		330	"	"	"	"	"	"	U
Hexachloroethane	ND		330	"	"	"	"	"	"	U
Nitrobenzene	ND		330	"	"	"	"	"	"	U
Isophorone	ND		330	"	"	"	"	"	"	U
2-Nitrophenol	ND		330	"	"	"	"	"	"	U
2,4-Dimethylphenol	ND		330	"	"	"	"	"	"	U
Bis(2-chloroethoxy) methane	ND		330	"	"	"	"	"	"	U
2,4-Dichlorophenol	ND		330	"	"	"	"	"	"	U
1,2,4-Trichlorobenzene	ND		330	"	"	"	"	"	"	U
Naphthalene	ND		330	"	"	"	"	"	"	U
4-Chloroaniline	ND		330	"	"	"	"	"	"	U
Hexachlorobutadiene	ND		330	"	"	"	"	"	"	U
4-Chloro-3-methylphenol	ND		330	"	"	"	"	"	"	U
2-Methylnaphthalene	ND		330	"	"	"	"	"	"	U
Hexachlorocyclopentadiene	ND		330	"	"	"	"	"	"	U
2,4,6-Trichlorophenol	ND		330	"	"	"	"	"	"	U
2,4,5-Trichlorophenol	ND		330	"	"	"	"	"	"	U
2-Chloronaphthalene	ND		330	"	"	"	"	"	"	U
2-Nitroaniline	ND		1650	"	"	"	"	"	"	U
Dimethyl Phthalate	ND		330	"	"	"	"	"	"	U
2,6-Dinitrotoluene	ND		330	"	"	"	"	"	"	U
Acenaphthylene	ND		330	"	"	"	"	"	"	U
3-Nitroaniline	ND		1650	"	"	"	"	"	"	U
Acenaphthene	ND		330	"	"	"	"	"	"	U
2,4-Dinitrophenol	ND		1650	"	"	"	"	"	"	U
4-Nitrophenol	ND		1650	"	"	"	"	"	"	U
Dibenzofuran	ND		330	"	"	"	"	"	"	U
2,4-Dinitrotoluene	ND		330	"	"	"	"	"	"	U
Diethyl Phthalate	ND		330	"	"	"	"	"	"	U
4-Chlorophenyl Phenyl Ether	ND		330	"	"	"	"	"	"	U

LVL
LIONVILLE LABORATORY

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WC-Hanford, Inc.
2620 Fermi Avenue
Richland WA, 99354

Project: RC-116
Project Number: [none]
Project Manager: Joan Kessner

Reported
09/14/2009 14:20

J187K7
0902047-22 (Solid)

11/30/09

Lionville Laboratory

Semivolatile Organic Compounds by SW846 8270C

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Fluorene	ND	330	ug/kg wet	1	L902172	02/24/2009	03/12/2009	8270C	U
4-Nitroaniline	ND	1650	"	"	"	"	"	"	U
4,6-Dinitro-2-methylphenol	ND	330	"	"	"	"	"	"	U
N-Nitrosodiphenylamine	ND	330	"	"	"	"	"	"	U
4-Bromophenyl Phenyl Ether	ND	330	"	"	"	"	"	"	U
Hexachlorobenzene	ND	330	"	"	"	"	"	"	U
Pentachlorophenol	ND	1650	"	"	"	"	"	"	U
Phenanthrene	ND	330	"	"	"	"	"	"	U
Anthracene	ND	330	"	"	"	"	"	"	U
Carbazole	ND	330	"	"	"	"	"	"	U
Di-n-butyl Phthalate	ND	330	"	"	"	"	"	"	U
Fluoranthene	ND	330	"	"	"	"	"	"	U
Pyrene	ND	330	"	"	"	"	"	"	U
Butyl Benzyl Phthalate	ND	330	"	"	"	"	"	"	U
Bis(2-ethylhexyl) phthalate	ND	330	"	"	"	"	"	"	U
3,3'-Dichlorobenzidine	ND	660	"	"	"	"	"	"	U
Benz[a]anthracene	ND	330	"	"	"	"	"	"	U
Chrysene	ND	330	"	"	"	"	"	"	U
Di-n-octyl Phthalate	ND	330	"	"	"	"	"	"	U
Benzo[b] fluoranthene	ND	330	"	"	"	"	"	"	U
Benzo[k] fluoranthene	ND	330	"	"	"	"	"	"	U
Benzo[a] pyrene	ND	330	"	"	"	"	"	"	U
Indeno[1,2,3-cd]pyrene	ND	330	"	"	"	"	"	"	U
Dibenz[a,h]anthracene	ND	330	"	"	"	"	"	"	U
Benzo[g,h,i] perylene	ND	330	"	"	"	"	"	"	U
TIC: Unknown 5	1410		"	"	"	"	"	"	U
TIC: Unknown 4	440		"	"	"	"	"	"	J, N
TIC: Unknown 2	294000		"	"	"	"	"	"	J, N
TIC: Unknown 1	550		"	"	"	"	"	"	J, N
TIC: Unknown 3	160000		"	"	"	"	"	"	J, N
Surrogate: 2-Fluorophenol		45 %	25-121		"	"	"	"	[illegible]
Surrogate: Phenol-d5		60 %	24-113		"	"	"	"	[illegible]
Surrogate: Nitrobenzene-d5		66 %	23-120		"	"	"	"	
Surrogate: 2-Fluorobiphenyl		77 %	30-115		"	"	"	"	
Surrogate: 2,4,6-Tribromophenol		74 %	19-122		"	"	"	"	
Surrogate: p-Terphenyl-d14		87 %	18-137		"	"	"	"	

LVL
LIONVILLE LABORATORY

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WC-Hanford, Inc. 2620 Fermi Avenue Richland WA, 99354	Project: RC-116 Project Number: [none] Project Manager: Joan Kessner	Reported: 04/14/2009 14:20

J17X03
0902047-27 (Solid) ✓ 11/30/09

Lionville Laboratory

Semivolatile Organic Compounds by SW846 8270C

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Phenol	ND J	990	ug/kg wet	3	0902172	02/24/2009	03/12/2009	8270C	U
Bis(2-chloroethyl) ether	ND	990	"	"	"	"	"	"	U
2-Chlorophenol	ND	990	"	"	"	"	"	"	U
1,3-Dichlorobenzene	ND	990	"	"	"	"	"	"	U
1,4-Dichlorobenzene	ND	990	"	"	"	"	"	"	U
1,2-Dichlorobenzene	ND	990	"	"	"	"	"	"	U
2-Methylphenol	ND	990	"	"	"	"	"	"	U
Bis(2-chloroisopropyl) ether	ND	990	"	"	"	"	"	"	U
4-Methylphenol	ND	990	"	"	"	"	"	"	U
N-Nitrosodi-n-propylamine	ND	990	"	"	"	"	"	"	U
Hexachloroethane	ND	990	"	"	"	"	"	"	U
Nitrobenzene	ND	990	"	"	"	"	"	"	U
Isophorone	ND	990	"	"	"	"	"	"	U
2-Nitrophenol	ND	990	"	"	"	"	"	"	U
2,4-Dimethylphenol	ND	990	"	"	"	"	"	"	U
Bis(2-chloroethoxy) methane	ND	990	"	"	"	"	"	"	U
2,4-Dichlorophenol	ND	990	"	"	"	"	"	"	U
1,2,4-Trichlorobenzene	ND	990	"	"	"	"	"	"	U
Naphthalene	ND	990	"	"	"	"	"	"	U
4-Chloroaniline	ND	990	"	"	"	"	"	"	U
Hexachlorobutadiene	ND	990	"	"	"	"	"	"	U
4-Chloro-3-methylphenol	ND	990	"	"	"	"	"	"	U
2-Methylnaphthalene	ND	990	"	"	"	"	"	"	U
Hexachlorocyclopentadiene	ND	990	"	"	"	"	"	"	U
2,4,6-Trichlorophenol	ND	990	"	"	"	"	"	"	U
2,4,5-Trichlorophenol	ND	990	"	"	"	"	"	"	U
2-Chloronaphthalene	ND	990	"	"	"	"	"	"	U
2-Nitroaniline	ND	4950	"	"	"	"	"	"	U
Dimethyl Phthalate	ND	990	"	"	"	"	"	"	U
2,6-Dinitrotoluene	ND	990	"	"	"	"	"	"	U
Acenaphthylene	ND	990	"	"	"	"	"	"	U
3-Nitroaniline	ND	4950	"	"	"	"	"	"	U
Acenaphthene	ND	990	"	"	"	"	"	"	U
2,4-Dinitrophenol	ND	4950	"	"	"	"	"	"	U
4-Nitrophenol	ND	4950	"	"	"	"	"	"	U
Dibenzofuran	ND	990	"	"	"	"	"	"	U
2,4-Dinitrotoluene	ND	990	"	"	"	"	"	"	U
Diethyl Phthalate	ND	990	"	"	"	"	"	"	U
4-Chlorophenyl Phenyl Ether	ND	990	"	"	"	"	"	"	U

Lionville Laboratory

264 Welsh Pool Road
Exton, PA 19341
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WC-Hanford, Inc
2620 Fermi Avenue
Richland WA, 99354

Project: RC-116
Project Number: [none]
Project Manager: Joan Kessner

Reported:
04/14/2009 14:20

J17X03
0902047-27 (Solid)

K 11/30/09

Lionville Laboratory

Semivolatile Organic Compounds by SW846 8270C

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Fluorene	ND	990	ug/kg wet	1	1902172	02/24/2009	03/12/2009	8270C	U
4-Nitroaniline	ND	4950	"	"	"	"	"	"	U
4,6-Dinitro-2-methylphenol	ND	990	"	"	"	"	"	"	U
N-Nitrosodiphenylamine	ND	990	"	"	"	"	"	"	U
4-Bromophenyl Phenyl Ether	ND	990	"	"	"	"	"	"	U
Hexachlorobenzene	ND	990	"	"	"	"	"	"	U
Pentachlorophenol	ND	4950	"	"	"	"	"	"	U
Phenanthrene	ND	990	"	"	"	"	"	"	U
Anthracene	ND	990	"	"	"	"	"	"	U
Carbazole	ND	990	"	"	"	"	"	"	U
Di-n-butyl Phthalate	ND	990	"	"	"	"	"	"	U
Fluoranthene	ND	990	"	"	"	"	"	"	U
Pyrene	ND	990	"	"	"	"	"	"	U
Butyl Benzyl Phthalate	ND	990	"	"	"	"	"	"	U
Bis(2-ethylhexyl) phthalate	ND	990	"	"	"	"	"	"	U
3,3'-Dichlorobenzidine	ND	1980	"	"	"	"	"	"	U
Benz[a]anthracene	ND	990	"	"	"	"	"	"	U
Chrysene	ND	990	"	"	"	"	"	"	U
Di-n-octyl Phthalate	ND	990	"	"	"	"	"	"	U
Benzo[b] fluoranthene	ND	990	"	"	"	"	"	"	U
Benzo[k] fluoranthene	ND	990	"	"	"	"	"	"	U
Benzo[a] pyrene	ND	990	"	"	"	"	"	"	U
Indeno[1,2,3-cd]pyrene	ND	990	"	"	"	"	"	"	U
Dibenz[a,h]anthracene	ND	990	"	"	"	"	"	"	U
Benzo[g,h,i] perylene	ND	990	"	"	"	"	"	"	U
TIC: Unknown 3	780		"	"	"	"	"	"	J, D, M
TIC: Unknown 2	180000		"	"	"	"	"	"	B, J, D
TIC: Alkane 2	3490		"	"	"	"	"	"	J, D
TIC: Alkane 1	464		"	"	"	"	"	"	J, D
TIC: Unknown 1	1140		"	"	"	"	"	"	J, D, M
Surrogate: 2-Fluorophenol		*40 %*	*25-121*		"	"	"	"	
Surrogate: Phenol-d5		*50 %*	*24-113*		"	"	"	"	[illegible]
Surrogate: Nitrobenzene-d5		*56 %*	*23-120*		"	"	"	"	
Surrogate: 2-Fluorobiphenyl		*61 %*	*30-115*		"	"	"	"	
Surrogate: 2,4,6-Tribromophenol		*43 %*	*19-122*		"	"	"	"	
Surrogate: p-Terphenyl-d14		*87 %*	*18-137*		"	"	"	"	

264 Welsh Pool Road
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WC-Hanford, Inc. 2620 Fermi Avenue Richland WA, 99354	Project: RC-116 Project Number: [none] Project Manager: Joan Kessner	Reported: 04/14/2009 14:20

J187YZ
0902047-28 (Solid)

K 11/30/09

Lionville Laboratory

Semivolatile Organic Compounds by SW846 8270C

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Phenol	ND	330	ug/kg wet	1	L902177	02/24/2009	03/20/2009	8270C	U
Bis(2-chloroethyl) ether	ND	330	"	"	"	"	"	"	U
2-Chlorophenol	ND	330	"	"	"	"	"	"	U
1,3-Dichlorobenzene	ND	330	"	"	"	"	"	"	U
1,4-Dichlorobenzene	ND	330	"	"	"	"	"	"	U
1,2-Dichlorobenzene	ND	330	"	"	"	"	"	"	U
2-Methylphenol	ND	330	"	"	"	"	"	"	U
Bis(2-chloroisopropyl) ether	ND	330	"	"	"	"	"	"	U
4-Methylphenol	ND	330	"	"	"	"	"	"	U
N-Nitrosodi-n-propylamine	ND	330	"	"	"	"	"	"	U
Hexachloroethane	ND	330	"	"	"	"	"	"	U
Nitrobenzene	ND	330	"	"	"	"	"	"	U
Isophorone	ND	330	"	"	"	"	"	"	U
2-Nitrophenol	ND	330	"	"	"	"	"	"	U
2,4-Dimethylphenol	ND	330	"	"	"	"	"	"	U
Bis(2-chloroethoxy) methane	ND	330	"	"	"	"	"	"	U
2,4-Dichlorophenol	ND	330	"	"	"	"	"	"	U
1,2,4-Trichlorobenzene	ND	330	"	"	"	"	"	"	U
Naphthalene	ND	330	"	"	"	"	"	"	U
4-Chloroaniline	ND	330	"	"	"	"	"	"	U
Hexachlorobutadiene	ND	330	"	"	"	"	"	"	U
4-Chloro-3-methylphenol	ND	330	"	"	"	"	"	"	U
2-Methylnaphthalene	ND	330	"	"	"	"	"	"	U
Hexachlorocyclopentadiene	ND	330	"	"	"	"	"	"	U
2,4,6-Trichlorophenol	ND	330	"	"	"	"	"	"	U
2,4,5-Trichlorophenol	ND	330	"	"	"	"	"	"	U
2-Chloronaphthalene	ND	330	"	"	"	"	"	"	U
2-Nitroaniline	ND	1650	"	"	"	"	"	"	U
Dimethyl Phthalate	ND	330	"	"	"	"	"	"	U
2,6-Dinitrotoluene	ND	330	"	"	"	"	"	"	U
Acenaphthylene	ND	330	"	"	"	"	"	"	U
3-Nitroaniline	ND	1650	"	"	"	"	"	"	U
Acenaphthene	ND	330	"	"	"	"	"	"	U
2,4-Dinitrophenol	ND	1650	"	"	"	"	"	"	U
4-Nitrophenol	ND	1650	"	"	"	"	"	"	U
Dibenzofuran	ND	330	"	"	"	"	"	"	U
2,4-Dinitrotoluene	ND	330	"	"	"	"	"	"	U
Diethyl Phthalate	ND	330	"	"	"	"	"	"	U
4-Chlorophenyl Phenyl Ether	ND	330	"	"	"	"	"	"	U
								"	U

LVL
Lionville Laboratory

264 Welsh Pool Road
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WC-Hanford, Inc.
2620 Fermi Avenue
Richland WA, 99354

Project: KC-116
Project Number: [none]
Project Manager: John Kessner

Reported:
04/14/2009 14:20

J187Y2
0902047-28 (Solid)

K 11/30/09

Lionville Laboratory

Semivolatile Organic Compounds by SW846 8270C

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Fluorene	ND J	330	ug/kg wet	1	0902172	03/24/2009	03/20/2009	8270C	U
4-Nitroaniline	ND	1650	"	"	"	"	"	&	U
4,6-Dinitro-2-methylphenol	ND	330	"	"	"	"	"	&	U
N-Nitrosodiphenylamine	ND	330	"	"	"	"	"	&	U
4-Bromophenyl Phenyl Ether	ND	330	"	"	"	"	"	&	U
Hexachlorobenzene	ND	330	"	"	"	"	"	&	U
Pentachlorophenol	ND	1650	"	"	"	"	"	&	U
Phenanthrene	ND	330	"	"	"	"	"	&	U
Anthracene	ND	330	"	"	"	"	"	&	U
Carbazole	ND	330	"	"	"	"	"	&	U
Di-n-butyl Phthalate	ND	330	"	"	"	"	"	&	U
Fluoranthene	ND	330	"	"	"	"	"	&	U
Pyrene	ND	330	"	"	"	"	"	&	U
Butyl Benzyl Phthalate	ND	330	"	"	"	"	"	&	U
Bis(2-ethylhexyl) phthalate	ND	330	"	"	"	"	"	&	U
3,3'-Dichlorobenzidine	ND	660	"	"	"	"	"	&	U
Benz[a]anthracene	ND	330	"	"	"	"	"	&	U
Chrysene	ND	330	"	"	"	"	"	&	U
Di-n-octyl Phthalate	ND	330	"	"	"	"	"	&	U
Benzo[b] fluoranthene	ND	330	"	"	"	"	"	&	U
Benzo[k] fluoranthene	ND	330	"	"	"	"	"	&	U
Benzo[a] pyrene	ND	330	"	"	"	"	"	&	U
Indeno[1,2,3-cd]pyrene	ND	330	"	"	"	"	"	&	U
Dibenz[a,h]anthracene	ND	330	"	"	"	"	"	&	U
Benzo[g,h,i] perylene	ND	330	"	"	"	"	"	&	U
TIC: Unknown 2	13700		"	"	"	"	"	&	B, J
TIC: Alkane 2	177		"	"	"	"	"	&	J
TIC: Alkane 1	342		"	"	"	"	"	&	J
TIC: Unknown 1	265		"	"	"	"	"	&	J, H
TIC: Unknown 3	266		"	"	"	"	"	&	J, B
Surrogate: 2-Fluorophenol		*24 %*	*25-121*		"	"	"	&	
Surrogate: Phenol-d5		*22 %*	*24-113*		"	"	"	&	
Surrogate: Nitrobenzene-d5		*20 %*	*23-120*		"	"	"	&	
Surrogate: 2-Fluorobiphenyl		*24 %*	*30-115*		"	"	"	&	
Surrogate: 2,4,6-Tribromophenol		*10 %*	*19-122*		"	"	"	&	
Surrogate: p-Terphenyl-d14		*32 %*	*18-137*		"	"	"	&	

[illegible] 4-14-09

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

WC-Hanford, Inc. 2620 Fermi Avenue Richland WA, 99354	Project: RC-116 Project Number: [none] Project Manager: John Kessner	Reported: 04/27/2009 13:18

J18610
0902047-01 (Solid)

11/30/09

Analyte	Result	Reporting Limit	Qualifier	Units	Dilution	Batch	Prepared	Analyzed	Method
Lionville Laboratory									
Extractable Petroleum Hydrocarbons by SW846 8015									
Diesel Range Organics	3300	3300	U J	ug/kg wet	1	0907206	02/27/2009	03/05/2009	SW846 8015M
Motor Oil	**36100**	10000	~~Z~~ UJ	-	-	-	-	-	-
Surrogate: p-Terphenyl		*103 %*		*50-150*		"	-	-	-

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

WC-Hanford, Inc. 2620 Fermi Avenue Richland WA, 99354	Project: RC-116 Project Number: [none] Project Manager: Joan Kessner	**Reported:** 04/27/2009 14:48

J18779

0902047-04 (Solid)

K 10/30/09

Analyte	Result	Reporting Limit	Qualifier	Units	Dilution	Batch	Prepared	Analyzed	Method
			Lionville Laboratory						
Extractable Petroleum Hydrocarbons by SW846 8015									
Diesel Range Organics	3300	3300	U J	ug/kg wet	1	1902206	02/27/2009	03/05/2009	SW846 8015M
Motor Oil	**56800**	10000	UJ	-	-	-	-	-	-
Surrogate: p-Terphenyl		92 %			50-150	-	-	-	-

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

WC-Hanford, Inc. 2620 Fermi Avenue Richland WA, 99354	Project: RC-116 Project Number: [none] Project Manager: Joan Kessner	**Reported:** 04/27/2009 11:48

J18794

0902047-05 (Solid)

pc 11/30/09

Analyte	Result	Reporting Limit	Qualifier	Units	Dilution	Batch	Prepared	Analyzed	Method
			Lionville Laboratory						
Extractable Petroleum Hydrocarbons by SW846 8015									
Diesel Range Organics	3300	3300	U J	ug/kg wet	1	L902206	02/27/2009	03/05/2009	SW846 8015M
Motor Oil	**30800**	10000	UJ	"	"	"	"	"	"
Surrogate: p-Terphenyl		76 %	50-150	"		"	"	"	"

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

WC-Hanford, Inc
2620 Fermi Avenue
Richland WA, 99354

Project: RC-116
Project Number: [none]
Project Manager: Joan Kessner

Reported:
04/27/2009 14:48

J18795
0902047-06 (Solid)

11/30/09

Analyte	Result	Reporting Limit	Qualifier	Units	Dilution	Batch	Prepared	Analyzed	Method
Lionville Laboratory									
Extractable Petroleum Hydrocarbons by SW846 8015									
Diesel Range Organics	3300	3300	U J	ug/kg wet	1	1902206	02/27/2009	03/06/2009	SW846 8015M
Motor Oil	**37400**	10000	UJ	"	"	"	"	"	"
Surrogate: p-Terphenyl		*100 %*			*50-150*	"	"	"	"

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

WC Hanford, Inc 2620 Fermi Avenue Richland WA, 99354	Project: RC 116 Project Number: [none] Project Manager: Joan Kessner	Reported: 03/27/2009 14:48

J18796
0902047-07 (Solid) yh 11/30/09

Analyte	Result	Reporting Limit	Qualifier	Units	Dilution	Batch	Prepared	Analyzed	Method
			Lionville Laboratory						
Extractable Petroleum Hydrocarbons by SW846 8015									
Diesel Range Organics	3300	3300	U J	ug/kg wet	1	0902206	02/27/2009	03/06/2009	SW846 8015M
Motor Oil	**52600**	10000	~~U~~ UJ	"	"	"	"	"	"
Surrogate: p-Terphenyl		*109 %*			*50-150*	"	"	"	"

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

WC-Hanford, Inc.	Project: RC-116	
2620 Fermi Avenue	Project Number: [none]	Reported:
Richland WA, 99354	Project Manager: Joan Kessner	04/27/2009 14:48

J18797

0902047-08 (Solid)

11/30/09

Analyte	Result	Reporting Limit	Qualifier	Units	Dilution	Batch	Prepared	Analyzed	Method

Lionville Laboratory

Extractable Petroleum Hydrocarbons by SW846 8015

Analyte	Result	Reporting Limit	Qualifier	Units	Dilution	Batch	Prepared	Analyzed	Method
Diesel Range Organics	3300	3300	U J	ug/kg wet	1	1902206	02/27/2009	03/06/2009	SW846 8015M
Motor Oil	**45300**	10000	UJ	"	"	"	"	"	"
Surrogate: p-Terphenyl		*83 %*			*50-150*	"	"	"	"

000042

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

WC Hanford, Inc 2620 Fermi Avenue Richland WA, 99354	Project: RC-116 Project Number: [none] Project Manager: Joan Kessner	Reported: 04/27/2009 14:48

J187D2

0902047-12 (Solid)

10/20/09

Analyte	Result	Reporting Limit	Qualifier	Units	Dilution	Batch	Prepared	Analyzed	Method
			Lionville Laboratory						
Extractable Petroleum Hydrocarbons by SW846 8015									
Diesel Range Organics	3300	3300	U J	ug/kg wet	1	0902206	02/27/2009	03/06/2009	SW846 8015M
Motor Oil	**38800**	10000	[illegible] UJ	"	"	"	"	"	"
Surrogate: p-Terphenyl		*85 %*			*50-150*	"	"	"	"

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

WC-Hanford, Inc. 2620 Fermi Avenue Richland WA, 99354	Project: RC-116 Project Number: [none] Project Manager: Joan Kessner	**Reported:** 03/27/2009 14:48

J187D4

0902047-13 (Solid) 10/30/09

Analyte	Result	Reporting Limit	Qualifier	Units	Dilution	Batch	Prepared	Analyzed	Method

Lionville Laboratory

Extractable Petroleum Hydrocarbons by SW846 8015

Diesel Range Organics	3300	3300	U J	ug/kg wet	1	1907206	02/27/2009	03/06/2009	SW846 8015M
Motor Oil	**51600**	10000	Z UJ	"	"	"	"	"	"
Surrogate: o-Terphenyl		*80 %*			*50-150*	"	"	"	"

WC-Hanford, Inc	Project: RL-116	
2620 Fermi Avenue	Project Number: [none]	Reported:
Richland WA, 99354	Project Manager: Joan Kessner	04/27/2009 14:48

J187D5
0902047-14 (Solid)

Vh 11/30/09

Lionville Laboratory

Extractable Petroleum Hydrocarbons by SW846 8015

Analyte	Result	Reporting Limit	Qualifier	Units	Dilution	Batch	Prepared	Analyzed	Method
Diesel Range Organics	3300	3300	U J	ug/kg wet	1	0902206	02/27/2009	03/06/2009	SW846 8015M
Motor Oil	38500	10000	UJ	"	"	"	"	"	"
Surrogate: p-Terphenyl		*110 %*			*50-150*	"	"	"	"

WC Hanford, Inc
2620 Fermi Avenue
Richland WA, 99354

Project: BC-116
Project Number: [none]
Project Manager: Joan Kessner

Reported:
04/27/2009 14:48

J187K6
0902047-21 (Solid)

11/20/09

Analyte	Result	Reporting Limit	Qualifier	Units	Dilution	Batch	Prepared	Analyzed	Method
Lionville Laboratory									
Extractable Petroleum Hydrocarbons by SW846 8015									
Diesel Range Organics	3300	3300	U J	ug/kg wet	1	0902206	02/27/2009	03/06/2009	SW846 8015M
Motor Oil	**42500**	10000	Z UJ	"	"	"	"	"	"
Surrogate: p-Terphenyl		*92 %*			*50-150*	"	"	"	"

WC-Hanford, Inc	Project: RC-116	
2620 Fermi Avenue	Project Number: [none]	Reported:
Richland WA, 99354	Project Manager: Joan Kessner	04/27/2009 14:48

J187K7

0902047-22 (Solid)

11/30/09

Analyte	Result	Reporting Limit	Qualifier	Units	Dilution	Batch	Prepared	Analyzed	Method
			Lionville Laboratory						
Extractable Petroleum Hydrocarbons by SW846 8015									
Diesel Range Organics	3300	3300	U J	ug/kg wet	1	1902206	02/27/2009	03/06/2009	SW846 8015M
Motor Oil	**40100**	10000	J5	"	"	"	"	"	"
Surrogate: p-Terphenyl		91 %			50-150	"	"	"	"

J187Y2

0902047-28 (Solid)

11/30/09

Analyte	Result	Reporting Limit	Qualifier	Units	Dilution	Batch	Prepared	Analyzed	Method
			Lionville Laboratory						
Extractable Petroleum Hydrocarbons by SW846 8015									
Diesel Range Organics	3300	3300	U J	ug/kg wet	1	1902706	02/27/2009	03/06/2009	SW846 8015M
Motor Oil	65800	10000	UJ	"	"	"	"	"	"
Surrogate: o-Terphenyl		*94 %*			*50-150*	"	"	"	"

Appendix 4

Laboratory Narrative and Chain-of-Custody Documentation

264 Welsh Pool Road
Exton, Pennsylvania 19341
Phone (610) 280-3000
Fax (610) 280-3041

Case Narrative

Client: WC-HANFORD RC-116
LVL #: 0902047
SDG# K1540 **SAF#** RC-116

W.O. #: 60049-001-001-0001-00
Date Received: 02-14-2009

SEMIVOLATILE

Twelve (12) solid samples were collected on 02-12-2009.

The samples and their associated QC samples were extracted according to Lionville Laboratory SOPs based on SW 846 method 3540C on 02-24-2009 and analyzed according to criteria set forth in Lionville Laboratory SOPs based on SW 846 Method 8270C for TCL Semivolatile target compounds on 03-01,12,20-2009.

All solid samples are reported on a wet weight basis. The following is a summary of QC results accompanying the sample results. Lionville Laboratory (LVL) certifies that all test results meet the requirements of NELAC except as noted below:

1. All results presented in this report are derived from samples that met LvL's sample acceptance policy.
2. Samples were extracted and analyzed within the recommended holding time.
3. Non-target compounds were detected in these samples.
4. Samples J18796 and J18797 required a 2-fold dilution, and samples J187D2, J187D4, J187D5, J17X03 required a 3-fold instrument dilution due to matrix. Reporting limits have been adjusted to reflect the necessary dilutions.
5. Six (6) of seventy-eight (78) surrogate recoveries were outside acceptance criteria. However, surrogate recovery acceptance criteria were met (i.e., no more than one outlier per fraction {acid and base neutral} and no recoveries less than 10%). The surrogate recovery criteria were not met for sample J187Y2. A copy of the Sample Discrepancy Report (SDR# 09MS074) has been enclosed.
6. Seventy-eight (78) of one hundred twenty-eight (128) matrix spike recoveries were outside acceptance criteria. A copy of the Sample Discrepancy Report (SDR# 09MS074) has been enclosed.
7. Seventeen (17) of sixty-four (64) blank spike recoveries were outside acceptance criteria. A copy of the Sample Discrepancy Report (SDR#09MS074) has been enclosed.
8. The method blank was below the reporting limit for all target compounds.
9. All initial calibrations associated with this data set were within acceptance criteria.

10. All continuing calibration standards analyzed prior to sample extracts were within acceptance criteria.

11. Internal standard area and retention time criteria were met.

12. Manual integrations are performed according to SOP QA-125 to produce quality data with the utmost integrity. All manual integrations are required to be technically valid and properly documented. Appropriate technical flags are defined in the Glossary ("Technical Flags For Manual Integration").

13. LVL is NELAP accredited by the State of Pennsylvania. For a complete listing of accrediting authorities and the corresponding analytes/methods, please contact your Project Manager.

14 I certify that this sample data package is in compliance with SOW requirements, both technically and for completeness, other than the conditions detailed above. Release of the data contained in this hard-copy data package has been authorized by the Laboratory Manager or a designee as verified by the following signature.

Iain Daniels
Laboratory Manager
Lionville Laboratory

4/13/05
Date

Lionville Laboratory Sample Discrepancy Report (SDR)

SDR #: 04M5024

Initiator: Robert Carden
Date: 9/9/04
Client: W. Hanford Rets
Batch: 0404117
Samples: BS/MS/MSD / J147Y2
Method: [✓ SW846]/MCAWW/CLP
Parameter: 0651H
Matrix: Solid
Prep Batch: C4J0172

1. Reason for SDR

a. COC Discrepancy
- Tech Profile Error
- Transcription Error
- Client Request
- Wrong Test Code
- Sampler Error on C-O-C
- Other

b. General Discrepancy
- Missing Sample/Extract*
- Hold Time Exceeded
- Improper Bottle Type
- Container Broken
- Insufficient Sample*
- Not Amenable to Analysis
- Wrong Sample Pulled
- Preservation Wrong
- Label ID's Illegible
- Received Past Hold

Note*: Verified by [Log-In] or [Prep Group] (circle) signature/date:

c. Problem (include all relevant specific results; attach data if necessary)

(1) Several spike recoveries outside QC acceptance criteria in BS/MS/MSD. Several spikes biased high in MSD
(2) 5 surrogates outside acceptance criteria in sample J147Y2 (A4 > 10%)

2. Known or Probable Cause(s)

(1) [illegible] phenomenon of [illegible] chromatographic behavior typically [illegible] the GC system [illegible] [illegible] (2) [illegible] during sample [illegible] J147Y2 and MS/MSD. [illegible]

3. Discussion and Proposed Action

Other Description:

[illegible]

- Re-log
  - Entire Batch
  - Following Samples:
- Re-leach
- Re-extract
- Re-digest
- Revise EDD
- Change Test Code to
- Place On/Take Off Hold (circle)

4. Project Manager Instructions

signature/date: 9/14/04

- Concur with Proposed Action
- Disagree with Proposed Action; See Instruction
- Include in Case Narrative
- Client Contacted:
  Date/Person
- Add
- Cancel

5. Final Action

signature/date: 9-14-04

- Verified re-[log][leach][extract][digest][analysis] (circle)
- ✓ Included in Case Narrative
- Hard Copy COC Revised
- Electronic COC Revised
- EDD Corrections Completed

Other Explanation.

When Final Action has been recorded, forward original to QA for disposition.

Route
- Lab Manager: Daniels
- ✓ Project Mgr (circle): [✓ Johnson] / Stone
- Sample Prep (circle): Ford
- Log-in: King

Route
- Metals: Welsh /
- Inorganic: Perrone /
- GC/LC: Carey /
- MS VOA: Rubino /
- ✓ MS BNA: [✓ Carden] /
- Other:

QA-139-A-02/98

264 Welsh Pool Road
Exton, Pennsylvania 19341
Phone (610) 280-3000
Fax (610) 280-3041

Case Narrative

Client: WC-HANFORD RC-116
LVL #: 0902047
SDG/SAF # K1540 / RC-116

W.O. #: 60049-001-001-0001-00
Date Received: 02-14-2009

DIESEL RANGE ORGANICS

Twelve (12) other solid samples were collected on 02-12-2009.

The samples and their associated QC samples were extracted on 02-27-2009 and analyzed according to Lionville Laboratory SOPs based on SW846, 3rd Edition procedure on 03 05,06-2009. The extraction procedure was based on method 3540C and the extracts were analyzed based on method 8015B for DRO.

All soil samples are reported on a dry weight basis unless requested by the client, required by the method, or noted otherwise. The following is a summary of QC results accompanying the sample results. Lionville Laboratory Inc (LvL) certifies that all test results meet the requirements of NELAC except as noted below:

1. The samples were extracted one day outside of recommended hold time.

2. The method blank contained Motor Oil Range Organics (MRO) at a level above the Quantitation limit. Samples contained MRO in the range of 1 to 2 times the level seen in the blank, and with a similar pattern to the peaks seen in the blank. The contamination in the blank for MRO was greater than the lab PQL, although no client MRL exists for this analyte. Lab contamination of these samples should be suspected, and the data user should consider the sample values to be maximum values.

3. All obtainable surrogate recoveries were within acceptance criteria.

4. All blank spike recoveries were within acceptance criteria.

5. All matrix spike recoveries were within acceptance criteria.

6. All initial calibrations associated with this data set were within acceptance criteria.

7. All continuing calibration standards analyzed prior to sample extracts were within acceptance criteria.

8. LvL is NELAP accredited by the State of Pennsylvania. For a complete listing of accrediting authorities and the corresponding analytes/methods, please contact your Project Manager.

[illegible]

9. I certify that this sample data package is in compliance with SOW requirements, both technically and for completeness, other than the conditions detailed above. Release of the data contained in this hard-copy data package has been authorized by the laboratory Manager or a designee, as verified by the following signature.

for Iain Daniels
Laboratory Manager
Lionville Laboratory

5/4/09
Date

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-116-779 | Page 1 of 2

ollector: [illegible]

Company Contact: JOAN KESSNER | Telephone No.: 375-4688

Project Coordinator: WEISS, RL

Price Code: 9K | Data Turnaround: 45 Days

roject Designation: Columbia River Component of the RCBRA - Sediment

Sampling Location: [illegible] SSD DUPLICATE

SAF No.: RC-116

e Chest No.: WCH-08-0016,053,036

Field Logbook No.: EL-1601-1

COA: 0F5CRC6520

Method of Shipment: FEDEX

hipped To: EBERLINE SERVICES (LIONVILLE)

Offsite Property No.: N/A

Bill of Lading/Air Bill No.: 796342246060

OSSIBLE SAMPLE HAZARDS/REMARKS

pecial Handling and/or Storage

SS10000

Preservation	None	None	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	None
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	aG	aG	G	-
No. of Container(s)	1	1	1	1	1	1	1	1	1	1
Volume	1500g	100g	10g	10g	250g	250g	125g	250g	250g	1L
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Technetium-99	See item (2) in Special Instructions	See item (3) in Special Instructions	PCBs - 8082	Pesticides 8081	Semi-VOA 8270A (TCL)	See item (4) in Special Instructions	

Sample No.	Matrix *	Sample Date	Sample Time										
18610	OTHER SOLID	2/12/09	1445					X	X	X	X	X	

Samples were placed in controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab.

CHAIN OF POSSESSION

Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
[illegible]	2-12-09 1315	[illegible]	2-12-09 / 1915
[illegible]	2/13/09 0800	D. Hellberg [illegible]	2/13/09 0800
D. Hellberg [illegible]	2/13/09 1200	Fedex	2/13/09 1200
[illegible]	2-14-09 1125	[illegible]	2-14-09 1125

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) (Americium-241, Antimony-125, Beryllium-7, Cerium-144, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238);
(2) Strontium-89,90 - Total Sr; Isotopic Thorium (Thorium-232); Isotopic Uranium (Uranium-233/234, Uranium-235, Uranium-238); Isotopic Plutonium
(3) ICP Metals - 6010 (Full List) (Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc); Mercury - 7471 - (CV)
(4) VOA - 8260A (TCL) (1,1,1-Trichloroethane, 1,1,2,2-Tetrachloroethane, 1,1,2-Trichloroethane, 1,1-Dichloroethane, 1,1-Dichloroethene, 1,2-Dichloroethane, 1,2-Dichloropropane, 2-Butanone, 2-Hexanone, 4-Methyl-2-Pentanone, Acetone, Benzene, Bromodichloromethane, Bromoform, Bromomethane, Carbon disulfide, Carbon tetrachloride, Chlorobenzene, Chloroethane, Chloroform, Chloromethane, cis-1,2-Dichloroethylene, cis-1,3-Dichloropropene, Dibromochloromethane, [illegible]

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

CH-EF-011

0960945

Washington Closure Hanford | **CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST** | RC-116-779 | Page 1 of 1

ollector: L Stratton	Company Contact: JOAN KESSNER	Telephone No.: 375-4688	Project Coordinator: WEISS, RL
roject Designation: Columbia River Component of the RCBRA - Sediment	Sampling Location: WSF - 12 SSD Duplicate		SAF No.: RC-116
ce Chest No.: WCH-08-006054036	Field Logbook No.: EL-1611-1	COA: DESCRC6570	Method of Shipment: FED EX
hipped To: ENERGY SERVICES (CONVERSE)	Offsite Property No.: N/A		Bill of Lading/Air Bill No.: 796347246660

Price Code: 9K

Data Turnaround: 45 Days

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

Preservation	Cool 4C	Cool 4C	None
Type of Container	G	aG	G/P
No. of Container(s)	1	1	1
Volume	125mL 5	125g	1000g
SAMPLE ANALYSIS	See sample Special Instructions	8015 - 418.1	Particle Size (Dry Sieve) - D422

Sample No.	Matrix *	Sample Date	Sample Time			
16659	OTHER SOLID	2/10/09	1245	X	X	X

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Stratton	2-12-09 / 1715	Ref B	2-12-09 / 1915
Raf. B	2/13/09 0800	D. Hedberg	2/13/09 0800
D. Hedberg	2/13/09 1200	Fedex	2/13/09 1200
	2-15-09 1125		2-16-09 1125

SPECIAL INSTRUCTIONS
5 A/A 2 13 08
(1) TPH-Diesel Range - WTPH D + (Total petroleum hydrocarbons - diesel range - Total petroleum hydrocarbons - motor oil (high boiling))

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab.

Matrix *
S = Soil
SE = Sediment
SO = Solid
SL = Sludge
W = Water
O = Oil
A = Air
DS = Drum Solids
DL = Drum Liquids
T = Tissue
WI = Wipe
L = Liquid
V = Vegetation
X = Other

LABORATORY SECTION | Received By | Title | Date/Time

FINAL SAMPLE DISPOSITION | Disposal Method | Disposed By | Date/Time

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-116-979

Page 1 of 1

Collector: BM

Company Contact: JOAN KESSNER

Telephone No.: 375-4634

Project Coordinator: WEISS, RL

Price Code: 9K

Data Turnaround: 45 Days

Project Designation: Columbia River Component of the RCBRA - Sediment

Sampling Location: 100-H SND

SAF No.: RC-116

Ice Chest No.: WCH-06-006, 051, 036

Field Logbook No.: EL-1630-1

COA: BUSCRC6520

Method of Shipment: FED EX

Shipped To: EBERLINE SERVICES (LIONVILLE)

Offsite Property No.: N/A

Bill of Lading/Air Bill No.: 796342246660

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

Preservation	None	None	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	None
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	aG	G	aG	G/P
No. of Container(s)	1	1	1	1	1	1	1	1	1	1
Volume	1500g	400g	10g	10g	250g	250g	125g	125mL	125g	1000g
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	[illegible]	See item (2) in Special Instructions	See item (3) in Special Instructions	PCBs - 8082	Pesticides 8081	See item (4) in Special Instructions	SVOA - 8270	Particle Size (Dry Sieve) - [illegible]

Sample No.	Matrix *	Sample Date	Sample Time										
J00779	OTHER SOLID	2/12/09	1315					X	X	X	X	X	X

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
B [illegible]	2/12/09 1715	Fr [illegible]	2/12/09 1715
[illegible]	2/13/09 0800	D. Hellberg [illegible]	2/13/09 0800
[illegible] Hellberg [illegible]	2/13/09 1200	FedEx 2/13/09	1200
[illegible]	2-14-09 1125	[illegible]	2-14-09 1125

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) [Americium-241, Antimony-125, Beryllium-7, Cerium-144, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238]

(2) Strontium-89,90 - Total Sr; Isotopic Thorium {Thorium-232}; Isotopic Uranium {Uranium-233/234, Uranium-235, Uranium-238}; Isotopic Plutonium

(3) ICP Metals - 6010 (full List) [Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc]; Mercury - 7471 - (CV)

(4) TPH-Diesel Range - WTPH [TPH - Total petroleum hydrocarbons - diesel range; Total petroleum hydrocarbons - motor oil (high boiling)]

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location using custody of samples for shipment to lab

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION — Received By: — Title: — Date/Time:

FINAL SAMPLE DISPOSITION — Disposal Method: — Disposed By: — Date/Time:

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST		RC-136-983	Page 1 of 2
Collector	Company Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator WEISS, RL	Price Code 9K
Project Designation Columbia River Component of the RCBRA - Sediment	Sampling Location WBT-9 SSD		SAF No. RC-116	Data Turnaround 45 Days
Ice Chest No. WCH-08-004, 051, 036	Field Logbook No. EL-1631-1	COA HESCRC6520	Method of Shipment FED EX	
Shipped To EBERLINE SERVICES (LIONVILLE)	Offsite Property No. N/A		Bill of Lading/Air Bill No. 796342246660	

8500000

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

Preservation	None	None	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	None
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	aG	aG	G	
No. of Container(s)	1	1	1	1	1	1	1	1	1	1
Volume	1500g	100g	10g	10g	250g	250g	125g	250g	250g	1
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Technetium-99	See item (2) in Special Instructions	See item (3) in Special Instructions	PCBs - 8082	Pesticides 8081	Semi-VOA 8270A (TCL)	See item (4) in Special Instructions	

Sample No.	Matrix *	Sample Date	Sample Time										
18794	OTHER SOLID	2/12/09	1125					X	X	X	X	X	

Samples unavailable to remove samples from controlled storage at time of transfer. Relinquish samples from storage location using custody of samples not shipped to lab

CHAIN OF POSSESSION	Date/Time	Sign/Print Names	Date/Time
Relinquished By/Removed From	2-12-09 / 1715	Received By/Stored In Ref B	2-12-09 / 1715
Relinquished By/Removed From Ref B 2/13/09	0800	Received By/Stored In B Woodward	02/13/09 0800
Relinquished By/Removed From B Woodward	2/13/09 1200	Received By/Stored In Fed Ex	2/13/09 1200
Relinquished By/Removed From	2-14-09 1125	Received By/Stored In	2-14-09 1125
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) {Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238}

(2) Strontium-89,90 - Total Sr; Isotopic Thorium {Thorium-232}; Isotopic Uranium {Uranium-233/234, Uranium-235, Uranium-238}; Isotopic Plutonium

(3) ICP Metals - 6010 (Full List) {Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc}; Mercury - 7471 - (CV)

(4) VOA - 8260A (TCL) {1,1,1-Trichloroethane, 1,1,2,2-Tetrachloroethane, 1,1,2-Trichloroethane, 1,1-Dichloroethane, 1,1-Dichloroethene, 1,2-Dichloroethane, 1,2-Dichloropropane, 2-Butanone, 2-Hexanone, 4-Methyl-2-Pentanone, Acetone, Benzene, Bromodichloromethane, Bromoform, Bromomethane, Carbon disulfide, Carbon tetrachloride, Chlorobenzene, Chloroethane, Chloroform, Chloromethane, cis-1,2-Dichloroethylene, cis-1,3-Dichloropropene, Dibromochloromethane, Ethylbenzene, Methylene chloride, Styrene, Tetrachloroethene, Toluene, trans-1,2-Dichloroethylene

Matrix *
S = Soil
SE = Sediment
SO = Solid
SL = Sludge
W = Water
O = Oil
A = Air
DS = Drum Solids
DL = Drum Liquids
T = Tissue
WI = Wipe
L = Liquid
V = Vegetation
X = Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-116-983 | Page 2 of 2

llector [illegible]	Company Contact JOAN KESSNER	Telephone No. 375 4688	Project Coordinator WEISS, RL
oject Designation Columbia River Component of the RCBRA - Sediment	Sampling Location WBT-12 SSD		SAF No. RC-116
e Chest No. WCH-08-006, 051, 036	Field Logbook No. EL-1631-1	COA BESCRC6520	Method of Shipment FED EX
ipped To EBERLINE SERVICES [✓ LIONVILLE]	Offsite Property No. N/A		Bill of Lading/Air Bill No. 7963 4224 6660

Price Code 9K

Data Turnaround 45 Days

OSSIBLE SAMPLE HAZARDS/REMARKS

pecial Handling and/or Storage

Preservation	Cool 4C	Cool 4C	None
Type of Container	aG	aG	G/P
No. of Container(s)	1	1	1
Volume	125mL	175g	1000g
SAMPLE ANALYSIS	See item (1) in Special Instructions 5	TOC - 415.1	Particle Size (Dry Sieve) - D422

B5:0000

Sample No.	Matrix *	Sample Date	Sample Time			
B794	OTHER SOLID	2/12/09	1125	X	X	X

CHAIN OF POSSESSION

Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
	2-12-09 / 1715		2-12-09 / 1715
[illegible] 2/13/09	0800	B Buckland 2/13/09	0800
B Buckland 2-13-09	1200	FedEx 2/13/09	1200
[illegible] 2-14-09	1125		2-14-09 1135

SPECIAL INSTRUCTIONS

5, [illegible] 1/13/09

(1) TPH-Diesel Range - WTPH-D - {Total petroleum hydrocarbons - diesel range, Total petroleum hydrocarbons - motor oil (high boiling)}

Sampler unavailable to remove samples
from controlled storage. Shipper removed
samples from storage location taking custody
of samples for shipment to lab

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

CHEF 011

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-116-984 | Page 1 of 1

Collector: [illegible]

Company Contact: JOAN KESSNER | Telephone No.: 375-4688

Project Coordinator: WEISS, RL

Price Code: 9K

Data Turnaround: 45 Days

Project Designation: Columbia River Component of the RCBRA - Sediment

Sampling Location: WBT - 7 - SSD

SAF No.: RC-116

Ice Chest No.: 1000H-08-006,051,036

Field Logbook No.: EL-1631-1

COA: DESCRC6520

Method of Shipment: FED EX

Shipped To: EBERLINE SERVICES [✓ RICHMOND]

Offsite Property No.: N/A

Bill of Lading/Air Bill No.: 796342246660

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

0900060

Preservation	None	None	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	None
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	aG	aG	G	*
No. of Container(s)	1	1	1	1	1	1	1	1	1	1
Volume	1500g	100g	10g	10g	250g	250g	125g	250g	250g	1*
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Technetium-99	See item (2) in Special Instructions	See item (3) in Special Instructions	PCBs - 8082	Pesticides - 8081	Semi-VOA - 8270A (TCL)	See item (4) in Special Instructions	-

Sample No.	Matrix *	Sample Date	Sample Time										
B1J795	OTHER SOLID	2/12/09	[illegible]					X	X	X	X	X	

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab.

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
[illegible]	2-12-09/1715	[illegible]	2-12-09 1715
[illegible]	2/13/09 0800	D. Hettelberg [illegible]	2/13/09 0800
D. Hettelberg [illegible]	2/13/09 1200	FedEx	2/13/09 1200
[illegible]	2-14-09 1125	[illegible]	2-14-09 1125

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) {Americium-241, Antimony-125, Beryllium-7, Cerium-144, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238}
(2) Strontium-89,90 -- Total Sr, Isotopic Thorium {Thorium-232}, Isotopic Uranium {Uranium-233/234, Uranium-235, Uranium-238}, Isotopic Plutonium
(3) ICP Metals - 6010 (Full List) {Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc}; Mercury - 7471 - (CV)
(4) VOA - 8260A (TCL) {1,1,1-Trichloroethane, 1,1,2,2-Tetrachloroethane, 1,1,2-Trichloroethane, 1,1-Dichloroethane, 1,4-Dichlorobenzene, 1,2-Dichloroethane, 1,2-Dichloropropane, 2-Butanone, 2-Hexanone, 4-Methyl-2-Pentanone, Acetone, Benzene, Bromodichloromethane, Bromoform, Bromomethane, Carbon disulfide, Carbon tetrachloride, Chlorobenzene, Chloroethane, Chloroform, Chloromethane, cis-1,2-Dichloroethylene, cis-1,3-Dichloropropene, Dibromochloromethane, Ethylbenzene, Methylene chloride, Styrene, Tetrachloroethene, Toluene, trans-1,2-Dichloroethylene

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION | Received By | Title | Date/Time

FINAL SAMPLE DISPOSITION | Disposal Method | Disposed By | Date/Time

BC-1-E-011

Washington Closure Hanford	**CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST**	RC-116-984	Page 2 of 2

ollector

Company Contact: JOAN KESSNER

Telephone No.: 375-4688

Project Coordinator: WEISS, RL

Price Code: 9K

Data Turnaround: 45 Days

roject Designation: Columbia River Component of the RCBRA - Sediment

Sampling Location: WOT-7/6 SSD

SAF No.: RC-116

e Chest No.: 0084-08-0026,051,0346

Field Logbook No.: EL-1637-1

COA: RESCRC6520

Method of Shipment: FED EX

hipped To: LIONVILLE

Offsite Property No.: N/A

Bill of Lading/Air Bill No.: 7963422 + 66660

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

Preservation	Cool 4C	Cool 4C	None
Type of Container	G	aG	G/P
No. of Container(s)	1	1	1
Volume	125mL 5	125g	1000g
SAMPLE ANALYSIS	Semivolatiles - Special Parameters	NWTPH-Dx	Particle Size (Dry Sieve - Field)

Sample No.	Matrix *	Sample Date	Sample Time			
0795	OTHER SOLID	[illegible]	[illegible]	X	X	X

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
	2-12-09 / 1915	Ref A	2-12-09 / 1915
	2/13/09 0800	Dhelleberg	2/13/09 0800
Dhelleberg	2/13/09 1200	FedEx	2/13/09 1200
	2-14-09 1105		2-14-09 1105

SPECIAL INSTRUCTIONS

5 444 / 1909

(4) TPH Diesel Range - NWTPH-D + (Total petroleum hydrocarbons - diesel range, Total petroleum hydrocarbons - motor oil (high boiling))

Sample unavailable to retrieve samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab.

Matrix *

LABORATORY SECTION — Received By — Title — Date/Time

FINAL SAMPLE DISPOSITION — Disposal Method — Disposed By — Date/Time

BEC 011

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-116-985

Page 1 of 1

ollector

Company Contact: JOAN KESSNER

Telephone No.: 375-4688

Project Coordinator: WEISS, RL

Price Code: 9K

Data Turnaround: **45 Days**

roject Designation: Columbia River Component of the RCBRA - Sediment

Sampling Location: WBT- / SSD

SAF No.: RC-116

ce Chest No.: WCH-08-006, 051, 026

Field Logbook No.: EL-1637-1

COA: BESRCA520

Method of Shipment: FED EX

hipped To: EBERLINE SERVICES [✓ LIONVILLE]

Offsite Property No.: N/A

Bill of Lading/Air Bill No.: 796342246660

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

290000

Preservation	None	None	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	None
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	aG	aG	G	
No. of Container(s)	1	1	1	1	1	1	1	1	1	
Volume	1500g	100g	30g	10g	250g	250g	125g	250g	250g	
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Technetium-99	See item (2) in Special Instructions	See item (3) in Special Instructions	PCBs - 8082	Pesticides 8081	Semi VOA - 8270A (TCL)	See item (4) in Special Instructions	

Sample No.	Matrix *	Sample Date	Sample Time										
18766	OTHER SOLID	[illegible]	[illegible]					X	X	X	X	X	

Samples available to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
	2-11-09 / 1915		2-11-09 / 1915
	2/13/09 0800	B. Woodward	2/13/09 0800
Woodward	2/13/09 1200	Fed Ex	2/13/09 1200
	2-14-09 1125		2-14-09 1125

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) (Americium-241, Antimony-125, Beryllium-7, Cerium-144, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238)
(2) Strontium-89,90 -- Total Sr; Isotopic Thorium (Thorium-232); Isotopic Uranium (Uranium-233/234, Uranium-235, Uranium-238); Isotopic Plutonium
(3) ICP Metals - 6010 (Full List) (Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc); Mercury - 7471 - (CV)
(4) VOA - 8260A (TCL) (1,1,1-Trichloroethane, 1,1,2,2-Tetrachloroethane, 1,1,2-Trichloroethane, 1,1-Dichloroethane, 1,1-Dichloroethene, 1,2-Dichloroethane, 1,2-Dichloropropane, 2-Butanone, 2-Hexanone, 4-Methyl-2-Pentanone, Acetone, Benzene, Bromodichloromethane, Bromoform, Bromomethane, Carbon disulfide, Carbon tetrachloride, Chlorobenzene, Chloroethane, Chloroform, Chloromethane, cis-1,2-Dichloroethylene, cis-1,3-Dichloropropene, Dibromochloromethane, Ethylbenzene, Methylene chloride, Styrene, Tetrachloroethene, Toluene, trans-1,2-Dichloroet

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

ABORATORY SECTION — Received By — Title — Date/Time

INAL SAMPLE DISPOSITION — Disposal Method — Disposed By — Date/Time

CH-CF-011

Washington Closure Hanford	**CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST**	RC-116-985	Page 2 of 2
Collector [illegible]	Company Contact JOAN KESSNER Telephone No. 375-4644	Project Coordinator WEISS, RL	Price Code 9K Data Turnaround 45 Days
Project Designation Columbia River Component of the RCBRA - Sediment	Sampling Location WBT- , SSD	SAF No. RC-116	
Ice Chest No. WH-082-0020, 051, 036	Field Logbook No. EL-1631P-1 COA DESCRC6520	Method of Shipment FED EX	
Shipped To EBERLINE SERVICES (RICHMOND / [✓ OAK RIDGE]) — [illegible]	Offsite Property No. N/A	Bill of Lading/Air Bill No. 7963422466 60	

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

E3011000

	Preservation	Cool 4C	Cool 4C	None
	Type of Container	G	aG	G/P
	No. of Container(s)	2	1	1
	Volume	125mL 5	125g	1000g
SAMPLE ANALYSIS		See sample/ Special Instructions	TOC - 415.1	Particle Size (Dry Sieve) D422

Sample No.	Matrix *	Sample Date	Sample Time			
J18706	OTHER SOLID	2/12/09	1520	X	X	X

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
[illegible]	2-12-09 1715	[illegible]	2-12-09 1715
[illegible]	2/13/09 0800	B Woodward	2/13/09 0800
B Woodward	2/13/09 1200	Fed Ex	2/13/09 1200
Fed Ex	2/14/09 1125	[illegible]	2-14-09 1125

SPECIAL INSTRUCTIONS

5 AM 0509

(1) TPH-Diesel Range - WTPH-D = {Total petroleum hydrocarbons - diesel range; Total petroleum hydrocarbons - motor oil (high boiling)}

Sampler unavailable to retrieve samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab

Matrix *
S = Soil
SE = Sediment
SO = Solid
SL = Sludge
W = Water
O = Oil
A = Air
DS = Drum Solids
DL = Drum Liquids
T = Tissue
WI = Wipe
L = Liquid
V = Vegetation
X = Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-014

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-116-986 Page 1 of 1

Collector [illegible]	Company Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator WEISS, RL
Project Designation Columbia River Component of the RCBRA - Sediment	Sampling Location WBTs 72 SSD		SAF No. RC-116
Ice Chest No. WCH-08-0065 1696	Field Logbook No. EL-1631-1	COA BESCRC6520	Method of Shipment FED EX
Shipped To LIONLINE SERVICES (IONVILLE)	Offsite Property No. N/A		Bill of Lading/Air Bill No. 7963 4224 6660

Price Code 9K

Data Turnaround 45 Days

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

490000

Preservation	None	None	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	None
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	aG	aG	G	P
No. of Container(s)	1	1	1	1	1	5	1	1	1	1
Volume	1500g	100g	10g	10g	250g	250g	125g	250g	250g	1L
SAMPLE ANALYSIS	See item (1) in Special Instructions	Strontium-[illegible]	[illegible]	See item (2) in Special Instructions	See item (3) in Special Instructions	PCBs - 8082	Pesticides 8081	Semi-VOA 8270A (TCL)	See item (4) in Special Instructions	-

Sample No.	Matrix *	Sample Date	Sample Time										
J16707	OTHER SOLID	2/12/09	1220					X	X	X	X	X	

Sampler unavailable to secure samples from controlled storage. Shipper removed samples from storage location (dated 2-12-09) of samples for shipment to lab.

CHAIN OF POSSESSION Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
	2-12-09/1715		2-12-09/1715
Kit G	2/13/09 0800	BWoodward	2/13/09 0800
BWoodward	2/13/09 1200	Fed Ex	2/13/09 1200
	2-14-09 1125		2-14-09 1125
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List (Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238)
(2) Strontium-89,90 – Total Sr, Isotopic Thorium (Thorium-232), Isotopic Uranium (Uranium-233/234, Uranium-235, Uranium-238), Isotopic Plutonium
(3) ICP Metals - 6010 (Full List) (Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc); Mercury - 7471 - (CV)
(4) VOA - 8260A (TCL) (1,1,1-Trichloroethane, 1,1,2,2-Tetrachloroethane, 1,1,2-Trichloroethane, 1,1-Dichloroethane, 1,1-Dichloroethene, 1,2-Dichloroethane, 1,2-Dichloropropane, 2-Butanone, 2-Hexanone, 4-Methyl-2-Pentanone, Acetone, Benzene, Bromodichloromethane, Bromoform, Bromomethane, Carbon disulfide, Carbon tetrachloride, Chlorobenzene, Chloroethane, Chloroform, Chloromethane, cis-1,2-Dichloroethylene, cis-1,3-Dichloropropene, Dibromochloromethane, Ethylbenzene, Methylene chloride, Styrene, Tetrachloroethene, Toluene, trans-1,2-Dichloroethylene

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-116-986 | Page 2 of 2

ollector
[illegible]

Company Contact
JOAN KESSNER

Telephone No.
373-4688

Project Coordinator
WEISS, RL

Price Code 9K

Data Turnaround
45 Days

roject Designation
Columbia River Component of the RCBRA - Sediment

Sampling Location
WHT- 2 SSD

SAF No.
RC-116

ce Chest No.
[illegible] - 06-006, 031, 036

Field Logbook No.
EL 1631-1

COA
DESCRC6520

Method of Shipment
FED EX

hipped To
EBERLINE SERVICES (LIONVILLE)

Offsite Property No.
N/A

Bill of Lading/Air Bill No. 796342246660

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

S90000

SAMPLE ANALYSIS

Preservation			Cool 4C	Cool 4C	None	
Type of Container			G	aG	GP	
No. of Container(s)			4	1	1	
Volume			125mL	125g	1000g	
SAMPLE ANALYSIS			~~See item (1) in Special Instructions~~ 5	TOC - 415.1	Particle Size (Dry Sieve) - D422	
Sample No.	Matrix *	Sample Date	Sample Time			
18797	OTHER SOLID	2/11/09	1410	X	X	X

CHAIN OF POSSESSION

Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
[illegible]	2-11-09 / 1915	[illegible]	2-12-09 / 1915
[illegible] 2/13/09	0800	[illegible]	2/13/09 0800
[illegible]	2/13/09 1200	Fed Ex	2/13/09 1200
[illegible]	2-14-09 1125	[illegible]	2-14-09 1125

SPECIAL INSTRUCTIONS

5 1/30/09

(1) TPH Diesel Range - WTPH-D + (Total petroleum hydrocarbons - diesel range, Total petroleum hydrocarbons - motor oil (high boiling));

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage. [illegible] of samples for shipment to lab.

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

ABORATORY SECTION | Received By | Title | Date/Time

NAL SAMPLE DISPOSITION | Disposal Method | Disposed By | Date/Time

JEEE-011

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-116-1011 | Page 1 of 1

Collector: BM

Company Contact: JOAN KESSNER | Telephone No.: 375-4688

Project Coordinator: WEISS, RL

Price Code: 9K | Data Turnaround: 45 Days

Project Designation: Columbia River Component of the RCBRA - Sediment

Sampling Location: RH- 3 SSD

SAF No.: RC-116

Ice Chest No.: WCH-08-CCC, 051, 036

Field Logbook No.: EL-1637-1

COA: BFSCRC6520

Method of Shipment: FED EX

Shipped To: LIONVILLE

Offsite Property No.: N/A

Bill of Lading/Air Bill No.: 796342246660

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

9900066

Preservation	None	None	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	None
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	aG	aG	G	-
No. of Container(s)	1	1	1	1	1	1	1	1	1	1
Volume	1500g	100g	10g	10g	250g	250g	125g	250g	250g	1*
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	[illegible]	See item (2) in Special Instructions	See item (3) in Special Instructions	PCBs - 8082	[illegible]	[illegible]	See item (4) in Special Instructions	

Sample No.	Matrix *	Sample Date	Sample Time										
J187D2	OTHER SOLID	2/12/09	1015						X	X	X	X	X

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location using custody of samples for shipment to lab

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
BM	2/12/09 1715	Ery A	2/12/09 1725
[illegible]	2/13/09 0800	D Heidelberg	2/13/09 0800
D Heidelberg	2/13/09 1200	FedEx	2/13/09 1200
[illegible]	2-14-09 1125	[illegible]	2-14-09 1125
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (GEA List) {Americium-241, Antimony-125, Beryllium-7, Cerium-144, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238}

(2) Strontium-89,90 - Total Sr, Isotopic Thorium {Thorium-232}, Isotopic Uranium {Uranium-233/234, Uranium-235, Uranium-238}, Isotopic Plutonium

(3) ICP Metals - 6010 (Full List) {Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc}, Mercury - 7471 - (CV)

(4) VOA - 8260A (TCL) {1,1,1-Trichloroethane, 1,1,2,2-Tetrachloroethane, 1,1,2-Trichloroethane, 1,1-Dichloroethane, 1,1-Dichloroethene, 1,2-Dichloroethane, 1,2-Dichloropropane, 2-Butanone, 2-Hexanone, 4-Methyl-2-Pentanone, Acetone, Benzene, Bromodichloromethane, Bromoform, Bromomethane, Carbon disulfide, Carbon tetrachloride, Chlorobenzene, Chloroethane, Chloroform, Chloromethane, cis-1,2-Dichloroethylene, cis-1,3-Dichloropropene, Dibromochloromethane, Ethylbenzene, Methylene chloride, Styrene, Tetrachloroethene, Toluene,

Matrix *
S = Soil
SE = Sediment
SO = Solid
SL = Sludge
W = Water
O = Oil
A = Air
DS = Drum Solids
DL = Drum Liquids
T = Tissue
WI = Wipe
L = Liquid
V = Vegetation
X = Other

LABORATORY SECTION | Received By | Title | Date/Time

FINAL SAMPLE DISPOSITION | Disposal Method | Disposed By | Date/Time

WCH-EE-011

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-116-1011

Page 1 of 1

Collector: B [illegible]

Company Contact JOAN KESSNER

Telephone No. 375-4688

Project Coordinator WEISS, RL

Price Code 9K

Data Turnaround 45 Days

Project Designation Columbia River Component of the RCBRA - Sediment

Sampling Location RH-5 SSD

SAF No. RC-116

Ice Chest No. WCH-08-006, 051, 036

Field Logbook No. EL-1631-1

COA BESCRC6520

Method of Shipment FED EX

Shipped To EBERLINE SERVICES / (RICHMOND) [illegible]

Offsite Property No. N/A

Bill of Lading/Air Bill No. 796342246660

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

2900067

Preservation	Cool 4C	Cool 4C	None
Type of Container	G	aG	G/P
No. of Container(s)	1	1	1
Volume	125mL 5	125g	400g
SAMPLE ANALYSIS	See item (1) in Special Instructions	TPH - 418.1	Metals 6010 (by Series 6010)

Sample No.	Matrix *	Sample Date	Sample Time			
J19762	OTHER SOLID	2/12/09	1015	X	X	X

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
B Mayhew [illegible]	2/12/09 1215	Eric A	2/12/09 1215
~~D. Heidelberg [illegible]~~	~~2/13/09 0800~~	D [illegible] 2/13/09	
Eric A	2/13/09 0800	D. Heidelberg [illegible]	2/13/09 0800
D. Heidelberg [illegible]	2/19/09 1200	FedEx	2/19/09 1200
[illegible]	2-19-09 1125	[illegible]	2-19-09 1125

SPECIAL INSTRUCTIONS

5 2/14/09

(1) TPH-Diesel Range - WTPH-D+ (Total petroleum hydrocarbons - diesel range; Total petroleum hydrocarbons - motor oil (high boiling))

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab.

Matrix *

S = Soil
SE = Sediment
SO = Solid
SL = Sludge
W = Water
O = Oil
A = Air
DS = Drum Solids
DL = Drum Liquids
T = Tissue
WI = Wipe
L = Liquid
V = Vegetation
X = Other

LABORATORY SECTION Received By | Title | Date/Time

FINAL SAMPLE DISPOSITION Disposal Method | Disposed By | Date/Time

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-116-1013	Page 1 of 2

Collector [illegible]	Company Contact JOAN KESSNER	Telephone No. 371-4648	Project Coordinator WEISS, BJ.
Project Designation Columbia River Component of the RCBRA - Sediment	Sampling Location RH- 4 / SSD		SAF No. RC-116
Ice Chest No. WCH-08-006,051,036	Field Logbook No. EL 1631/-1	COA BESCRC652D	Method of Shipment FEDEX
Shipped To EBERLINE SERVICES (LIONVILLE)	Offsite Property No. N/A		Bill of Lading/Air Bill No. 796347246660

Price Code 9K

Data Turnaround 45 Days

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

8SHJ000

Preservation	None	None	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	None
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	aG	aG	G	P
No. of Container(s)	1	1	1	1	1	1	1	1	1	1
Volume	1500g	100g	10g	10g	250g	250g	125g	250g	250g	1
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Technetium-99	See item (2) in Special Instructions	See item (3) in Special Instructions	PCBs - 8082	Pesticides 8081	Semi-VOAs 8270	See item (4) in Special Instructions	

Sample No.	Matrix *	Sample Date	Sample Time										
J16704	OTHER SOLID	2/12/09	0955					X	X	X	X	X	

Shipper unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
	2/12/09 1715		2/12/09 1715
	2/13/09 0800	D. Hesselberg	2/13/09 0800
D. Hesselberg	2/13/09 1200	Fedex	2/13/09 1200
	2-14-09 1125		2-14-09 1125

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (GEA) {Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238}

(2) Strontium-89,90 -- Total Sr, Isotopic Thorium {Thorium-232}, Isotopic Uranium {Uranium-233/234, Uranium-235, Uranium-238}, Isotopic Plutonium

(3) ICP Metals - 6010 (TAL) {Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc}, Mercury - 7471 - (CV)

(4) VOA - 8260A (TCL) {1,1,1-Trichloroethane, 1,1,2,2-Tetrachloroethane, 1,1,2-Trichloroethane, 1,1-Dichloroethane, 1,1-Dichloroethene, 1,2-Dichloroethane, 1,2-Dichloropropane, 2-Butanone, 2-Hexanone, 4-Methyl-2-Pentanone, Acetone, Benzene, Bromodichloromethane, Bromoform, Bromomethane, Carbon disulfide, Carbon tetrachloride, Chlorobenzene, Chloroethane, Chloroform, Chloromethane, cis-1,2-Dichloroethylene, cis-1,3-Dichloropropene, Dibromochloromethane,

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Date	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH EF 011

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-116-10t3 | Page 2 of 2

Collector BC	Company Contact JOAN KESSNER	Telephone No. 375 4688	Project Coordinator WEISS, RL
Project Designation Columbia River Component of the RCBRA - Sediment	Sampling Location RH- 4 SSD		SAF No. RC-116
Ice Chest No. WCHOX-006,051,036	Field Logbook No. EL-1611-1	COA BESCRL6520	Method of Shipment FEDEX
Shipped To EBERLINE SERVICES [✓ LIONVILLE]	Offsite Property No. N/A		Bill of Lading/Air Bill No. 790342246660

Price Code 9K

Data Turnaround 45 Days

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

Preservation	Cool 6C	Cool 6C	None
Type of Container	G	aG	G/P
No. of Container(s)	1	1	1
Volume	125ml	125g	1000g
SAMPLE ANALYSIS	See item (5) in Special Instructions	TPH - 418.1	Particle Size (Dry Sieve) D422

Sample No.	Matrix *	Sample Date	Sample Time			
J187D4	OTHER SOLID	2/12/09	945	X	X	X

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
B Naylor	2/12/09 1715	Frz A	2/12/09 1715
Frz A	2/13/09 0800	D Hollenberg	2/13/09 0800
D Hollenberg	2/13/09 1200	FedEx	2/13/09 1200
FedEx	2-14-09 1125		2-14-09 1125

SPECIAL INSTRUCTIONS

5 4/0 [illegible]

(5) TPH-Diesel Range - WTPH-D = (Total petroleum hydrocarbons - diesel range, Total petroleum hydrocarbons - motor oil (high boiling))

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION | Received By | Title | Date/Time

FINAL SAMPLE DISPOSITION | Disposal Method | Disposed By | Date/Time

Washington Closure Hanford	**CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST**	RC-116-1014	Page 1 of 2

Collector B-?	Company Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator WEISS, RL	Price Code 9K
Project Designation Columbia River Component of the RCBRA - Sediment	Sampling Location RH- SSD		SAF No RC-116	Data Turnaround 45 Days
Ice Chest No. WCH-08-006, 051, 034	Field Logbook No. EL-1631-1	COA BESCRC6520	Method of Shipment FEDEX	
Shipped To EBERLINE SERVICES (LIONVILLE)	Offsite Property No. N/A		Bill of Lading/Air Bill No. 796342246660	

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

Preservation	None	None	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	None
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	aG	aG	G	-
No. of Container(s)	1	1	1	2	1	1	1	1	1	1
Volume	1500g	100g	10g	10g	250g	250g	125g	250g	250g	1
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Technetium-99	See item (2) in Special Instructions	See item (3) in Special Instructions	PCBs - 8082	Pesticides 8081	Semi-VOA - 8270A (TCL)	See item (4) in Special Instructions	-

Sample No.	Matrix *	Sample Date	Sample Time										
[illegible]	OTHER SOLID	2/12/09	1032					X	X	X	X	X	

Sampler unable to remove samples from controlled storage. Shipper removed samples from storage location using custody of samples for shipment to lab.

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
B. ? ... Rtt ...	2/12/09 1715	Fcc A	2/12/09 1715
	2/13/09 0800	D. Hedelberg	2/13/09 0800
S. Hedelberg	2/13/09 1200	FedEx	2/13/09 1200
	2-14-09 1125		2-14-09 1125

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) (Americium-241, Antimony-125, Beryllium-7, Cerium-144, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238)
(2) Strontium-89,90 -- Total Sr; Isotopic Thorium (Thorium-232); Isotopic Uranium (Uranium-233/234, Uranium-235, Uranium-238); Isotopic Plutonium
(3) ICP Metals - 6010 (Full List) (Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc); Mercury - 7471 - (CV)
(4) VOA - 8260A (TCL) (1,1,1-Trichloroethane, 1,1,2,2-Tetrachloroethane, 1,1,2-Trichloroethane, 1,1-Dichloroethane, 1,1-Dichloroethene, 1,2-Dichloroethane, 1,2-Dichloropropane, 2-Butanone, 2-Hexanone, 4-Methyl-2-Pentanone, Acetone, Benzene, Bromodichloromethane, Bromoform, Bromomethane, Carbon disulfide, Carbon tetrachloride, Chlorobenzene, Chloroethane, Chloroform, Chloromethane, cis-1,2-Dichloroethylene, cis-1,3-Dichloropropene, Dibromochloromethane, Ethylbenzene, Methylene chloride, Styrene, Tetrachloroethene, Toluene, trans-1,2-Dichloroethylene

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-116-1014

Page 2 of 2

Collector: B M

Company Contact: JOAN KESSNER

Telephone No.: 375-4688

Project Coordinator: WEISS, RL

Price Code: 9K

Data Turnaround: 45 Days

Project Designation: Columbia River Component of the RCBRA - Sediment

Sampling Location: RH- 49 SSD

SAF No.: RC-116

Ice Chest No.: WCH-08-0026,0054,0036

Field Logbook No.: EL-1631-1

COA: RCSCRC6320

Method of Shipment: FEDEX

Shipped To: EBERLINE SERVICES [✓ [illegible]]

Offsite Property No.: N/A

Bill of Lading/Air Bill No.: 796342246660

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

120000

SAMPLE ANALYSIS

Preservation	Cool 4C	Cool 4C	None
Type of Container	G	aG	G/P
No. of Container(s)	1	1	1
Volume	125mL 5	125g	1000g
SAMPLE ANALYSIS	See item (1) in Special Instructions	TPH - 418.1	Particle Size (Dry Sieve) D422

Sample No.	Matrix *	Sample Date	Sample Time			
J18795	OTHER SOLID	2/12/09	1032	X	X	X

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
B M	2/12/09 1705	Frz A	2/12/09 1715
Frz A	2/13/09 0800	D Heidelberg	2/13/09 0800
D Heidelberg	2/13/09 1200	Fedex	2/13/09 1200
Fedex	2-14-09 1125		2-14-09 1125

SPECIAL INSTRUCTIONS

5 11901

(1) TPH-Diesel Range - WTPH-Dx (Total petroleum hydrocarbons - diesel range, Total petroleum hydrocarbons - motor oil (high boiling))

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab.

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION — Received By: — Title: — Date/Time:

FINAL SAMPLE DISPOSITION — Disposal Method: — Disposed By: — Date/Time:

WCH-EL-011

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-116-1031 Page 1 of 2

Collector	Company Contact JOAN KESSNER	Telephone No. 375-4648	Project Coordinator WEISS, RL
Project Designation Columbia River Component of the RCBRA - Sediment	Sampling Location RPLS-3-SSD		SAF No. RC-116
Ice Chest No. WCH-06-0605/636	Field Logbook No. EL-1631-3	COA BESCRC6520	Method of Shipment FEDEX
Shipped To EBERLINE SERVICES [✓ OAK RIDGE]	Offsite Property No. N/A		Bill of Lading/Air Bill No. 796342246660

Price Code 9K

Data Turnaround 45 Days

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

Preservation	None	None	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	None
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	aG	aG	G	-
No. of Container(s)	1	1	1	1	1	1	1	1	1	1
Volume	1500g	100g	10g	10g	250g	250g	125g	250g	250g	1
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Technetium-99	See item (2) in Special Instructions	See item (3) in Special Instructions	PCBs - 8082	Pesticides 8081	Semi-VOA - 8270A (TCL)	See item (4) in Special Instructions	-

Sample No.	Matrix *	Sample Date	Sample Time										
J197K6	OTHER SOLID	[illegible]	[illegible]					X	X	X	X	X	

Sampler delegated to remove samples from controlled storage. Sampler removed samples from storage for shipping custody or shipment to laboratory.

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Y Frigge	2-12-09 / 1315	R B	2-12-09 / 1315
R B	2/13/09 0800	D. Heidelberg DH	2/13/09 0800
D. Heidelberg DH	2/13/09 1200	Fedex	2/13/09 1200
Fedex	2/16/09 1125	[illegible]	2-16-09 1125

SPECIAL INSTRUCTIONS

(1) Gamma Spec - {HASL-300} {Americium-241, Antimony-125, Beryllium-7, Cerium-144, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Thorium-232, Uranium-235};
(2) Strontium-89/90 - Total Sr; Isotopic Thorium {Thorium-228}; Isotopic Uranium {Uranium-233/234, Uranium-235, Uranium-238}; Isotopic Plutonium;
(3) ICP Metals - 6010 {TAL} {Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Titanium, Vanadium, Zinc}; Mercury - 7471 - (CV);
(4) VOA - 8260A (TCL) {1,1,1-Trichloroethane, 1,1,2,2-Tetrachloroethane, 1,1,2-Trichloroethane, 1,1-Dichloroethane, 1,1-Dichloroethene, 1,2-Dichloroethane, 1,2-Dichloropropane, 2-Butanone, 2-Hexanone, 4-Methyl-2-Pentanone, Acetone, Benzene, Bromodichloromethane, Bromoform, Bromomethane, Carbon disulfide, Carbon tetrachloride, Chlorobenzene, Chloroethane, Chloroform, Chloromethane, cis-1,2-Dichloroethylene, cis-1,3-Dichloropropene, Dibromochloromethane, [illegible]

Matrix *
S = Soil
SE = Sediment
SO = Solid
SL = Sludge
W = Water
O = Oil
A = Air
DS = Drum Solids
DL = Drum Liquids
T = Tissue
WI = Wipe
L = Liquid
V = Vegetation
X = Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-116-1031

Page 2 of 2

Collector [illegible]

Company Contact
JOAN KESSNER

Telephone No.
375-4688

Project Coordinator
WEISS, RL

Price Code 9K

Data Turnaround
45 Days

Project Designation
Columbia River Component of the RCBRA - Sediment

Sampling Location
RFLS-2-SSD

SAF No.
RC-116

Ice Chest No. WCH-08-006, 051[illegible]

Field Logbook No.
EL-1631-1

COA
BESCRC6520

Method of Shipment
FEDEX

Shipped To
EBERLINE SERVICES (RICHMOND) [✓ EOSVILLE]

Offsite Property No.
N/A

Bill of Lading/Air Bill No. 796342246660

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

Preservation	Cool 4C	Cool 4C	None	
Type of Container	G	aG	G/P	
No. of Container(s)	1	1	1	
Volume	125mL 5	125g	200g	
SAMPLE ANALYSIS	[illegible]	[illegible]	Particle Size (Dry Sieve only)	

Sample No.	Matrix *	Sample Date	Sample Time			
J18JK6	OTHER SOLID	[illegible]	15[illegible]	X	X	X

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
L Stud[illegible]	2-12-09 / 1715	Ref B	2-12-09 / 1715
Ref B 2/13/09	0800	D. Heidelberg [illegible]	2/13/09 0800
D Heidelberg [illegible]	2/13/09 1200	Fedex 2/13/09	1200
[illegible]	2-14-09 1125	[illegible]	2-14-09 1125

SPECIAL INSTRUCTIONS
5 4/13/11 [illegible]
(1) TPH-Diesel Range - WTPH-D - Total petroleum hydrocarbons - diesel range; Total petroleum hydrocarbons - motor oil (high boiling)

Samples unavailable to retrieve samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab.

Matrix *

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-116-1032

Page 1 of 4

Collector BKM	Company Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator WEISS, RL
Project Designation Columbia River Component of the RCBRA - Sediment	Sampling Location RFLS / SSD		SAF No. RC-116
Ice Chest No. WCH-08-006,05/036	Field Logbook No. EL-1651-1	COA HESTRC0520	Method of Shipment FEDEX
Shipped To EBERLINE SERVICES (ROSVILLE)	Offsite Property No. N/A		Bill of Lading/Air Bill No. 796342246660

Price Code 9K

Data Turnaround 45 Days

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

Preservation	None	None	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	None
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	aG	aG	G	
No. of Container(s)	1	1	1	1	1	1	1	1	1	1
Volume	1500g	10g	10g	10g	250g	250g	125g	250g	250g	[illegible]
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	[illegible]	See item (2) in Special Instructions	See item (3) in Special Instructions	PCBs - 8082	Percent Moisture	Semi-VOA - 8270A (TCL)	See item (4) in Special Instructions	

Sample No.	Matrix *	Sample Date	Sample Time										
J18767	OTHER SOLID	2/12/09	1510					X	X	X	X	X	

Sampler unavailable to remove samples from secured storage. Shipper removed samples from storage location taking custody of samples for shipment to lab.

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
B. Maybe BKM	2/12/09 1715	Frig A	2/12/09 1725
Frig A 2/13/09	0820	D Heidelberg	2/13/09 0820
D Heidelberg	2/13/09 1200	Fedex 2/13/09	1200
Fedex	2/14/09 1125		2/14/09 1125

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) {Americium-241, Antimony-125, Beryllium-7, Cerium-144, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238}

(2) Strontium-89,90 - Total Sr; Isotopic Thorium {Thorium-232}; Isotopic Uranium {Uranium-233/234, Uranium-235, Uranium-238}; Isotopic Plutonium

(3) ICP Metals - 6010 (Full List) {Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Titanium, Vanadium, Zinc}; Mercury - 7471 - (CVAA)

(4) VOA - 8260A (TCL) {1,1,1-Trichloroethane, 1,1,2,2-Tetrachloroethane, 1,1,2-Trichloroethane, 1,1-Dichloroethane, 1,1-Dichloroethene, 1,2-Dichloroethane, 1,2-Dichloropropane, 2-Butanone, 2-Hexanone, 4-Methyl-2-Pentanone, Acetone, Benzene, Bromodichloromethane, Bromoform, Bromomethane, Carbon disulfide, Carbon tetrachloride, Chlorobenzene, Chloroethane, Chloroform, Chloromethane, cis-1,2-Dichloroethylene, cis-1,3-Dichloropropene, Dibromochloromethane, [illegible]

Matrix *

S = Soil
SE = Sediment
SO = Solid
SL = Sludge
W = Water
O = Oil
A = Air
DS = Drum Solids
DL = Drum Liquids
T = Tissue
WI = Wipe
L = Liquid
V = Vegetation
X = Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-033

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-116-1032 | Page 1 of 1

Collector Bay	Company Contact JOAN KESSNER	Telephone No. 375-4688
Project Designation Columbia River Component of the RCBRA - Sediment	Sampling Location RCUS- / SSD	Project Coordinator WEISS, RL
Ice Chest No. WCH-08 0060310360	Field Logbook No. EL-1631-4	COA BESCRC6520
Shipped To EBERLINE SERVICES LIONVILLE	Offsite Property No. N/A	SAF No. RC-116

Price Code 9K

Data Turnaround 45 Days

Method of Shipment: FED EX

Bill of Lading/Air Bill No. 796342246660

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

S210000

Preservation	Cool 4C	Cool 4C	None
Type of Container	G	aG	G/P
No. of Container(s)	1	1	1
Volume	125mL 5	125g	1000g
SAMPLE ANALYSIS	Semivolatiles (Plus Special Instructions)	TOC - 9060	Particle Size (Dry Sieve) D422

Sample No.	Matrix *	Sample Date	Sample Time			
J182K7	OTHER SOLID	2/12/09	1530	X	X	X

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
B Clayton Bay	2/12/09 1725	Eric A	2/12/09 1725
Eric A	2/13/09 0800	D Heidelberg	2/13/09 0800
D Heidelberg	2/13/09 1200	Fedex	2/13/09 1200
	2/14/09 1125		2-14-09 1125

SPECIAL INSTRUCTIONS

5 AM 2/13/09

TPH-Diesel Range - WTPH-D - (Total petroleum hydrocarbons - diesel range, Total petroleum hydrocarbons - motor oil (high boiling))

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab.

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION — Received By — Title — Date/Time

FINAL SAMPLE DISPOSITION — Disposal Method — Disposed By — Date/Time

WCH-ES-011

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-116-1884	Page 1 of 2		
Collector: [illegible]	Company Contact: JOAN KESSNER	Telephone No.: 375-4686	Project Coordinator: KESSNER, JH
Project Designation: Columbia River Component of the RCBRA - Sediment	Sampling Location: RI- 1 SSD		SAF No.: RC-116
Ice Chest No.: WCH08-066, 051, 036	Field Logbook No.: EL-1631-1	COA: R1SCRC0570	Method of Shipment: FEDEX
Shipped To: EBERLINE SERVICES [illegible]	Offsite Property No.: N/A		Bill of Lading/Air Bill No.: 796342246660
Price Code: 9K	Data Turnaround: 45 Days		

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

Preservation	None	None	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	None
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	aG	aG	G	
No. of Container(s)	1	1	1	1	1	1	1	1	1	1
Volume	1500g	100g	10g	10g	250g	250g	125g	250g	250g	1
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Technetium-99	See item (2) in Special Instructions	See item (3) in Special Instructions	PCBs - 8082	Pesticides - 8081	Semi-VOA - 8270A (TCL)	See item (4) in Special Instructions	

Sample No.	Matrix *	Sample Date	Sample Time										
J187Y2	OTHER SOLID	2/11/09	1350					X	X	X	X	X	

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab.

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
[illegible]	2-12-09 / 1315	R/B	2-12-09 / 1315
R/B	2/13/09 0800	D Heidelberg	2/13/09 0800
D Heidelberg	2/13/09 1200	FedEx	2/13/09 1200
[illegible]	2-14-09 1125	[illegible]	2-14-09 1125
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time

SPECIAL INSTRUCTIONS

(1) Gamma Spec - Full List (Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238)

(2) Strontium-89,90 - Total Sr; Isotopic Thorium (Thorium-232); Isotopic Uranium (Uranium-233/234, Uranium-235, Uranium-238); Isotopic Plutonium

(3) ICP Metals - 6010 (Full List) (Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Titanium, Vanadium, Zinc); Mercury - 7471 - (CVAA)

(4) VOA - 8260A (TCL) (1,1,1-Trichloroethane, 1,1,2,2-Tetrachloroethane, 1,1,2-Trichloroethane, 1,1-Dichloroethane, 1,1-Dichloroethene, 1,2-Dichloroethane, 1,2-Dichloropropane, 2-Butanone, 2-Hexanone, 4-Methyl-2-Pentanone, Acetone, Benzene, Bromodichloromethane, Bromoform, Bromomethane, Carbon disulfide, Carbon tetrachloride, Chlorobenzene, Chloroethane, Chloroform, Chloromethane, cis-1,2-Dichloroethylene, cis-1,3-Dichloropropene, Dibromochloromethane, [illegible]

Matrix *

S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Date/Time	
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EF-011

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-116-1084 Page 1 of 1

Collector: [illegible]

Company Contact: JOAN KESSNER

Telephone No.: 375-4668

Project Coordinator: KESSNER, JH

Price Code: 9K

Data Turnaround: 45 Days

Project Designation: Columbia River Component of the RCBRA - Sediment

Sampling Location: [illegible] SSD

SAF No.: RC-116

Ice Chest No.: [illegible]-08-006651/036

Field Logbook No.: [illegible]

COA: [illegible]

Method of Shipment: FED EX

Shipped To: [illegible] SERVICES (DONVIEL)

Offsite Property No.: N/A

Bill of Lading/Air Bill No.: 796342246660

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

2200000

Preservation	[illegible]	[illegible]	None
Type of Container	G	aG	CcP
No. of Container(s)	4	1	1
Volume	125 ml 5	125g	1000g
SAMPLE ANALYSIS	See item (1) in Special Instructions	TOC - 9060	Particle Size (Dry Sieve) - [illegible]

Sample No.	Matrix *	Sample Date	Sample Time			
J18Y72	OTHER SOLID	2/[illegible]	[illegible]	X	X	X

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
[illegible]	2-12-09 / 1715	[illegible]	2-12-09 1715
[illegible]	2/13/09 0800	D Heidelberg	2/13/09 0800
D Heidelberg	2/13/09 1200	FedEx	2/13/09 1200
FedEx	2/14/09 1025	[illegible]	2-14-09 1025

SPECIAL INSTRUCTIONS
5 4/6 /2609
(1) TPH-Diesel Range - WTPH-Dx {Total petroleum hydrocarbons - diesel range - [illegible]} [illegible]

Sampler [illegible] samples [illegible] controlled storage. Shipper removed samples from storage location, taking custody of samples for shipment to lab.

Matrix *
[illegible]

LABORATORY SECTION — Received By — Title — Date/Time

FINAL SAMPLE DISPOSITION — Disposal Method — Disposed By — Date/Time

Appendix 5

Data Validation Supporting Documentation

GC/MS ORGANIC DATA VALIDATION CHECKLIST

VALIDATION LEVEL	A	B	[✓ C]	D	E
PROJECT	RCBRA		DATA PACKAGE:	K1590	
VALIDATOR: ELR		LAB: LLI		DATE: 11/21/09	
			SDG:	K1590	
ANALYSES PERFORMED					
SW-846 8260		SW-846 8260 (TCLP)	[✓ SW-846 8270]	[✓ 8015B]	SW-846 8270 (TCLP)

SAMPLES/MATRIX

J18W10	J18779	J18794	J18795	J18796	J18797
J187D	J187D4	J187D5	J187K6	J187K7	J187Y2

solid

1. DATA PACKAGE COMPLETENESS AND CASE NARRATIVE

Technical verification documentation present? .... Yes [✓ No] N/A

Comments:

2. INSTRUMENT TUNING AND CALIBRATION (Levels D and E)

GC/MS tuning/performance check acceptable? .... Yes No [✓ N/A]

Initial calibrations acceptable? .... Yes No [✓ N/A]

Continuing calibrations acceptable? .... Yes No [✓ N/A]

Standards traceable? .... Yes No [✓ N/A]

Standards expired? .... Yes No [✓ N/A]

Calculation check acceptable? .... Yes No [✓ N/A]

Comments:

GC/MS ORGANIC DATA VALIDATION CHECKLIST

3. BLANKS (Levels B, C, D, and E)

Calibration blanks analyzed? (Levels D, E) .... Yes No [✓ N/A]

Calibration blank results acceptable? (Levels D, E) .... Yes No [✓ N/A]

Laboratory blanks analyzed? .... [✓ Yes] No N/A

Laboratory blank results acceptable? .... Yes [✓ No] N/A

Field/trip blanks analyzed? (Levels C, D, E) .... Yes [✓ No] N/A

Field/trip blank results acceptable? (Levels C, D, E) .... Yes No [✓ N/A]

Transcription/calculation errors? (Levels D, E) .... Yes No [✓ N/A]

Comments: MO - U all No FB

4. ACCURACY (Levels C, D, and E)

Surrogates/system monitoring compounds analyzed? .... [✓ Yes] No N/A

Surrogate/system monitoring compound recoveries acceptable? .... Yes [✓ No] N/A

Surrogates traceable? (Levels D, E) .... Yes No [✓ N/A]

Surrogates expired? (Levels D, E) .... Yes No [✓ N/A]

MS/MSD samples analyzed? .... [✓ Yes] No N/A

MS/MSD results acceptable? .... Yes [✓ No] N/A

MS/MSD standards NIST traceable? (Levels D, E) .... Yes No [✓ N/A]

MS/MSD standards? (Levels D, E) .... Yes No [✓ N/A]

LCS/BSS samples analyzed? .... [✓ Yes] No N/A

LCS/BSS results acceptable? .... Yes [✓ No] N/A

Standards traceable? (Levels D, E) .... Yes No [✓ N/A]

Standards expired? (Levels D, E) .... Yes No [✓ N/A]

Transcription/calculation errors? (Levels D, E) .... Yes No [✓ N/A]

Performance audit sample(s) analyzed? .... Yes [✓ No] N/A

Performance audit sample results acceptable? .... Yes No [✓ N/A]

Comments: surr - SV - 42 - all out but terphyl - J all [illegible]

MS - 41+15 = 60 out MSD - 12+3 = 15 out - J all

LCS - SV - 13+4 out - 17 out - J

no MO LCS/MS or MSD - J all No PAs

GC/MS ORGANIC DATA VALIDATION CHECKLIST

5. PRECISION (Levels C, D, and E)

MS/MSD samples analyzed? .... [✓ Yes] No N/A
MS/MSD RPD values acceptable? .... Yes [✓ No] N/A
MS/MSD standards NIST traceable? (Levels D, E) .... Yes No [✓ N/A]
MS/MSD standards expired? (Levels D, E) .... Yes No [✓ N/A]
Field duplicate RPD values acceptable? .... [✓ Yes] No N/A
Field split RPD values acceptable? .... Yes No [✓ N/A]
Transcription/calculation errors? (Levels D, E) .... Yes No [✓ N/A]
Comments:

[illegible] - 37 + [illegible] ± 54 [illegible] J all

6. SYSTEM PERFORMANCE (Levels D and E)

Internal standards analyzed? .... Yes No [✓ N/A]
Internal standard areas acceptable? .... Yes No [✓ N/A]
Internal standard retention times acceptable? .... Yes No [✓ N/A]
Standards traceable? .... Yes No [✓ N/A]
Standards expired? .... Yes No [✓ N/A]
Transcription/calculation errors? .... Yes No [✓ N/A]
Comments:

7. HOLDING TIMES (all levels)

Samples properly preserved? .... [✓ Yes] No N/A
Sample holding times acceptable? .... Yes [✓ No] N/A
Comments: DRO + MO — 1 day post prep hold — J all

GC/MS ORGANIC DATA VALIDATION CHECKLIST

8. COMPOUND IDENTIFICATION, QUANTITATION, AND DETECTION LIMITS (all levels)

Compound identification acceptable? (Levels D, E) .... Yes No [✓ N/A]
Compound quantitation acceptable? (Levels D, E) .... Yes No [✓ N/A]
Results reported for all requested analyses? .... [✓ Yes] No N/A
Results supported in the raw data? (Levels D, E) .... Yes No [✓ N/A]
Samples properly prepared? (Levels D, E) .... Yes No [✓ N/A]
Laboratory properly identified and coded all TICs? (Levels D, E) .... Yes No [✓ N/A]
Detection limits meet RDL? .... Yes [✓ No] N/A
Transcription/calculation errors? (Levels D, E) .... Yes No [✓ N/A]
Comments: 426 ms

9. SAMPLE CLEANUP (Levels D and E)

GPC cleanup performed? .... Yes No [✓ N/A]
GPC check performed? .... Yes No [✓ N/A]
GPC check recoveries acceptable? .... Yes No [✓ N/A]
GPC calibration performed? .... Yes No [✓ N/A]
GPC calibration check performed? .... Yes No [✓ N/A]
GPC calibration check retention times acceptable? .... Yes No [✓ N/A]
Check/calibration materials traceable? .... Yes No [✓ N/A]
Check/calibration materials Expired? .... Yes No [✓ N/A]
Analytical batch QC given similar cleanup? .... Yes No [✓ N/A]
Transcription/Calculation Errors? .... Yes No [✓ N/A]
Comments:

Appendix 8

Additional Documentation Requested by Client

WC-Hanford, Inc.	Project: RC-116	
2620 Fermi Avenue	Project Number: [none]	**Reported:**
Richland WA, 99354	Project Manager: Joan Kessner	04/14/2009 14:20

Semivolatile Organic Compounds by SW846 8270C - Quality Control

Lionville Laboratory

Batch L902172 - SW 3540C

Blank (L902172-BLK1) Prepared: 02/24/2009 Analyzed: 03/01/2009

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Phenol	ND	330	ug/kg wet							U
Bis(2-chloroethyl) ether	ND	330	"							U
2-Chlorophenol	ND	330	"							U
1,3-Dichlorobenzene	ND	330	"							U
1,4-Dichlorobenzene	ND	330	"							U
1,2-Dichlorobenzene	ND	330	"							U
2-Methylphenol	ND	330	"							U
Bis(2-chloroisopropyl) ether	ND	330	"							U
4-Methylphenol	ND	330	"							U
N-Nitrosodi-n-propylamine	ND	330	"							U
Hexachloroethane	ND	330	"							U
Nitrobenzene	ND	330	"							U
Isophorone	ND	330	"							U
2-Nitrophenol	ND	330	"							U
2,4-Dimethylphenol	ND	330	"							U
Bis(2-chloroethoxy) methane	ND	330	"							U
2,4-Dichlorophenol	ND	330	"							U
1,2,4-Trichlorobenzene	ND	330	"							U
Naphthalene	ND	330	"							U
4-Chloroaniline	ND	330	"							U
Hexachlorobutadiene	ND	330	"							U
4-Chloro-3-methylphenol	ND	330	"							U
2-Methylnaphthalene	ND	330	"							U
Hexachlorocyclopentadiene	ND	330	"							U
2,4,6-Trichlorophenol	ND	330	"							U
2,4,5-Trichlorophenol	ND	330	"							U
2-Chloronaphthalene	ND	330	"							U
2-Nitroaniline	ND	1650	"							U
Dimethyl Phthalate	ND	330	"							U
2,6-Dinitrotoluene	ND	330	"							U
Acenaphthylene	ND	330	"							U
3-Nitroaniline	ND	1650	"							U
Acenaphthene	ND	330	"							U
2,4-Dinitrophenol	ND	1650	"							U
4-Nitrophenol	ND	1650	"							U
Dibenzofuran	ND	330	"							U
2,4-Dinitrotoluene	ND	330	"							U
Diethyl Phthalate	ND	330	"							U
4-Chlorophenyl Phenyl Ether	ND	330	"							U
Fluorene	ND	330	"							U
4-Nitroaniline	ND	1650	"							U
4,6-Dinitro-2-methylphenol	ND	330	"							U
N-Nitrosodiphenylamine	ND	330	"							U

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WC-Hanford, Inc.	Project: RC-116	
2620 Fermi Avenue	Project Number: [none]	**Reported:**
Richland WA, 99354	Project Manager: Joan Kessner	04/14/2009 14:20

Semivolatile Organic Compounds by SW846 8270C - Quality Control

Lionville Laboratory

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch L902172 - SW 3540C										
Blank (L902172-BLK1)				Prepared: 02/24/2009 Analyzed: 03/01/2009						
4-Bromophenyl Phenyl Ether	ND	330	ug/kg wet							U
Hexachlorobenzene	ND	330	"							U
Pentachlorophenol	ND	1650	"							U
Phenanthrene	ND	330	"							U
Anthracene	ND	330	"							U
Carbazole	ND	330	"							U
Di-n-butyl Phthalate	ND	330	"							U
Fluoranthene	ND	330	"							U
Pyrene	ND	330	"							U
Butyl Benzyl Phthalate	ND	330	"							U
Bis(2-ethylhexyl) phthalate	ND	330	"							U
3,3'-Dichlorobenzidine	ND	660	"							U
Benz[a]anthracene	ND	330	"							U
Chrysene	ND	330	"							U
Di-n-octyl Phthalate	ND	330	"							U
Benzo[b] fluoranthene	ND	330	"							U
Benzo[k] fluoranthene	ND	330	"							U
Benzo[a] pyrene	ND	330	"							U
Indeno[1,2,3-cd]pyrene	ND	330	"							U
Dibenz[a,h]anthracene	ND	330	"							U
Benzo[g,h,i] perylene	ND	330	"							U
TIC: Unknown 5	2280		"							J
TIC: Unknown 4	1970		"							J
TIC: Unknown 3	1710		"							J
TIC: Unknown 2	2800		"							J
TIC: Unknown 1	61900		"							J
Surrogate: 2-Fluorophenol	*1460*		"	*2500.0*		*58*	*25-121*			
Surrogate: Phenol-d5	*1570*		"	*2500.0*		*63*	*24-113*			
Surrogate: Nitrobenzene-d5	*1050*		"	*1666.7*		*63*	*23-120*			
Surrogate: 2-Fluorobiphenyl	*1080*		"	*1666.7*		*65*	*30-115*			
Surrogate: 2,4,6-Tribromophenol	*1360*		"	*2500.0*		*54*	*19-122*			
Surrogate: p-Terphenyl-d14	*918*		"	*1666.7*		*55*	*18-137*			

Semivolatile Organic Compounds by SW846 8270C - Quality Control

Lionville Laboratory

Batch L902172 - SW 3540C

LCS (L902172-BS1) Prepared: 02/24/2009 Analyzed: 03/01/2009

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
N-Nitrosodimethylamine	1080	330	ug/kg wet	2000.0		54	0-200			
Pyridine	740	330	"	2000.0		37	0-200			
Phenol	1180	330	"	2000.0		59	50-130			
Aniline	698	330	"	2000.0		35	0-200			
Bis(2-chloroethyl) ether	1160	330	"	2000.0		58	50-130			
2-Chlorophenol	1100	330	"	2000.0		55	50-130			
1,3-Dichlorobenzene	1040	330	"	2000.0		52	50-110			
1,4-Dichlorobenzene	1030	330	"	2000.0		52	50-120			
Benzyl alcohol	1250	330	"	2000.0		63	0-200			
1,2-Dichlorobenzene	1080	330	"	2000.0		54	50-110			
2-Methylphenol	1100	330	"	2000.0		55	60-120			
Bis(2-chloroisopropyl) ether	1210	330	"	2000.0		60	50-120			
4-Methylphenol	1160	330	"	2000.0		58	60-130			
N-Nitroso-di-n-propylamine	1220	330	"	2000.0		61	50-130			
Acetophenone	982	330	"	2000.0		49	0-200			
Hexachloroethane	1010	330	"	2000.0		50	50-110			
Nitrobenzene	923	330	"	2000.0		46	50-110			
Isophorone	906	330	"	2000.0		45	60-120			
2-Nitrophenol	946	330	"	2000.0		47	50-130			
2,4-Dimethylphenol	834	330	"	2000.0		42	50-120			
Benzoic Acid	105	1650	"	2000.0		5	0-200			J
Bis(2-chloroethoxy) methane	1060	330	"	2000.0		53	40-140			
2,4-Dichlorophenol	1020	330	"	2000.0		51	45-110			
1,2,4-Trichlorobenzene	964	330	"	2000.0		48	60-120			
Naphthalene	987	330	"	2000.0		49	40-130			
4-Chloroaniline	737	330	"	2000.0		37	70-120			
Hexachlorobutadiene	1070	330	"	2000.0		53	40-130			
4-Chloro-3-methylphenol	1080	330	"	2000.0		54	60-130			
2-Methylnaphthalene	1030	330	"	2000.0		52	60-100			
1-Methylnaphthalene	975	NT	"	2000.0		49	0-200	[illegible] 4-14-09		
Hexachlorocyclopentadiene	511	330	"	2000.0		26	20-100			
2,4,6-Trichlorophenol	1240	330	"	2000.0		62	50-110			
2,4,5-Trichlorophenol	1230	330	"	2000.0		62	50-110			
2-Chloronaphthalene	1140	330	"	2000.0		57	50-130			
2-Nitroaniline	1240	1650	"	2000.0		62	60-130			J
1,4-Dinitrobenzene	1310	330	"	2000.0		65	0-200			
Dimethyl Phthalate	1300	330	"	2000.0		65	50-140			
2,6-Dinitrotoluene	1190	330	"	2000.0		60	50-140			
Acenaphthylene	1180	330	"	2000.0		59	60-110			
3-Nitroaniline	1210	1650	"	2000.0		60	40-130			J
1,3-Dinitrobenzene	1360	330	"	2000.0		68	0-200			
1,2-Dinitrobenzene	1290	NT	"	2000.0		65	0-200			
Acenaphthene	1140	330	"	2000.0		57	60-130			

WC-Hanford, Inc.	Project: RC-116	
2620 Fermi Avenue	Project Number: [none]	Reported:
Richland WA, 99354	Project Manager: Joan Kessner	04/14/2009 14:20

Semivolatile Organic Compounds by SW846 8270C - Quality Control

Lionville Laboratory

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch L902172 - SW 3540C										
LCS (L902172-BS1)				Prepared: 02/24/2009 Analyzed: 03/01/2009						
2,4-Dinitrophenol	647	1650	ug/kg wet	2000.0		32	20-120			J
4-Nitrophenol	1670	1650	"	2000.0		84	40-140			
Dibenzofuran	1200	330	"	2000.0		60	60-130			
2,4-Dinitrotoluene	1260	330	"	2000.0		63	60-130	MT 4-14-09		
2,3,5,6-Tetrachlorophenol	1270	MT	"	2000.0		64	50-110			
2,3,4,6-Tetrachlorophenol	1240	330	"	2000.0		62	50-110			
Diethyl Phthalate	1360	330	"	2000.0		68	50-130			
4-Chlorophenyl Phenyl Ether	1330	330	"	2000.0		67	50-120			
Fluorene	1220	330	"	2000.0		61	60-130			
4-Nitroaniline	1300	1650	"	2000.0		65	50-120			J
4,6-Dinitro-2-methylphenol	1140	330	"	2000.0		57	40-140			
N-Nitrosodiphenylamine	1000	330	"	2000.0		50	50-130			
1,2-Diphenylhydrazine	1030	330	"	2000.0		52	0-200			
4-Bromophenyl Phenyl Ether	1120	330	"	2000.0		56	50-120			
Hexachlorobenzene	1160	330	"	2000.0		58	60-130			
Pentachlorophenol	1340	1650	"	2000.0		67	30-130			J
Phenanthrene	1150	330	"	2000.0		58	60-130			
Anthracene	1170	330	"	2000.0		58	60-130			
Carbazole	1160	330	"	2000.0		58	60-120			
Di-n-butyl Phthalate	1280	330	"	2000.0		64	40-150			
Fluoranthene	1290	330	"	2000.0		65	50-130			
Benzidine	ND	1650	"	2000.0			0-200			U
Pyrene	879	330	"	2000.0		44	50-140			
Butyl Benzyl Phthalate	1050	330	"	2000.0		52	50-150			
Bis(2-ethylhexyl) adipate	860	330	"	2000.0		43	40-140			
Bis(2-ethylhexyl) phthalate	1170	330	"	2000.0		58	50-150			
3,3'-Dichlorobenzidine	1090	660	"	2000.0		55	20-140			
Benz[a]anthracene	1120	330	"	2000.0		56	50-130			
Chrysene	1150	330	"	2000.0		58	50-140			
Di-n-octyl Phthalate	1020	330	"	2000.0		51	50-150			
Benzo[b] fluoranthene	1050	330	"	2000.0		53	60-130			
Benzo[k] fluoranthene	1060	330	"	2000.0		53	50-130			
Benzo[a] pyrene	1120	330	"	2000.0		56	50-130			
Indeno[1,2,3-cd]pyrene	1220	330	"	2000.0		61	60-140			
Dibenz[a,h]anthracene	1290	330	"	2000.0		65	50-140			
Benzo[g,h,i] perylene	1200	330	"	2000.0		60	60-140			
Surrogate: 2-Fluorophenol	*1430*		"	*2500.0*		*57*	*25-121*			
Surrogate: Phenol-d5	*1460*		"	*2500.0*		*58*	*24-113*			
Surrogate: Nitrobenzene-d5	*808*		"	*1666.7*		*48*	*23-120*			
Surrogate: 2-Fluorobiphenyl	*1020*		"	*1666.7*		*61*	*30-115*			
Surrogate: 2,4,6-Tribromophenol	*1660*		"	*2500.0*		*66*	*19-122*			
Surrogate: p-Terphenyl-d14	*831*		"	*1666.7*		*50*	*18-137*			

WC-Hanford, Inc. 2620 Fermi Avenue Richland WA, 99354	Project: RC-116 Project Number: [none] Project Manager: Joan Kessner	Reported: 04/14/2009 14:20

Semivolatile Organic Compounds by SW846 8270C - Quality Control

Lionville Laboratory

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch L902172 - SW 3540C										
Matrix Spike (L902172-MS2)		Source: 0902047-08		Prepared: 02/24/2009	Analyzed: 03/12/2009					
Phenol	734	330	ug/kg wet	2000.0	ND	37	50-130			
Bis(2-chloroethyl) ether	691	330	"	2000.0	ND	35	50-130			
2-Chlorophenol	821	330	"	2000.0	ND	41	50-130			
1,3-Dichlorobenzene	506	330	"	2000.0	ND	25	50-110			
1,4-Dichlorobenzene	509	330	"	2000.0	ND	25	50-120			
1,2-Dichlorobenzene	574	330	"	2000.0	ND	29	50-110			
2-Methylphenol	728	330	"	2000.0	ND	36	60-120			
Bis(2-chloroisopropyl) ether	679	330	"	2000.0	ND	34	50-120			
4-Methylphenol	738	330	"	2000.0	ND	37	60-130			
N-Nitrosodi-n-propylamine	844	330	"	2000.0	ND	42	50-130			
Hexachloroethane	509	330	"	2000.0	ND	25	50-110			
Nitrobenzene	651	330	"	2000.0	ND	33	50-130			
Isophorone	791	330	"	2000.0	ND	40	60-120			
2-Nitrophenol	763	330	"	2000.0	ND	38	50-130			
2,4-Dimethylphenol	716	330	"	2000.0	ND	36	50-120			
Bis(2-chloroethoxy) methane	773	330	"	2000.0	ND	39	40-140			
2,4-Dichlorophenol	837	330	"	2000.0	ND	42	45-130			
1,2,4-Trichlorobenzene	622	330	"	2000.0	ND	31	60-120			
Naphthalene	640	330	"	2000.0	ND	32	40-130			
4-Chloroaniline	384	330	"	2000.0	ND	19	20-120			
Hexachlorobutadiene	748	330	"	2000.0	ND	37	40-130			
4-Chloro-3-methylphenol	995	330	"	2000.0	ND	50	60-130			
2-Methylnaphthalene	785	330	"	2000.0	ND	39	60-100			
Hexachlorocyclopentadiene	173	330	"	2000.0	ND	9	20-100			J
2,4,6-Trichlorophenol	867	330	"	2000.0	ND	43	50-110			
2,4,5-Trichlorophenol	906	330	"	2000.0	ND	45	50-110			
2-Chloronaphthalene	758	330	"	2000.0	ND	38	50-130			
2-Nitroaniline	822	1650	"	2000.0	ND	41	60-130			J
Dimethyl Phthalate	910	330	"	2000.0	ND	45	50-140			
2,6-Dinitrotoluene	849	330	"	2000.0	ND	42	50-140			
Acenaphthylene	754	330	"	2000.0	ND	38	60-110			
3-Nitroaniline	690	1650	"	2000.0	ND	35	40-130			J
Acenaphthene	760	330	"	2000.0	ND	38	60-130			
2,4-Dinitrophenol	979	1650	"	2000.0	ND	49	20-120			J
4-Nitrophenol	1240	1650	"	2000.0	ND	62	40-140			J
Dibenzofuran	782	330	"	2000.0	ND	39	60-130			
2,4-Dinitrotoluene	910	330	"	2000.0	ND	46	60-130			
Diethyl Phthalate	914	330	"	2000.0	ND	46	50-130			
4-Chlorophenyl Phenyl Ether	913	330	"	2000.0	ND	46	50-120			
Fluorene	806	330	"	2000.0	ND	40	60-110			
4-Nitroaniline	777	1650	"	2000.0	ND	39	50-120			J
4,6-Dinitro-2-methylphenol	874	330	"	2000.0	ND	44	40-140			
N-Nitrosodiphenylamine	671	330	"	2000.0	ND	34	50-130			

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WC-Hanford, Inc	Project: RC-116	
2620 Fermi Avenue	Project Number: [none]	**Reported:**
Richland WA, 99354	Project Manager: Joan Kessner	04/14/2009 14:20

Semivolatile Organic Compounds by SW846 8270C - Quality Control

Lionville Laboratory

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch L902172 - SW 3540C										
Matrix Spike (L902172-MS7)		**Source: 0902047-08**		Prepared: 02/24/2009 Analyzed: 03/12/2009						
4-Bromophenyl Phenyl Ether	813	330	ug/kg wet	2000.0	ND	41	50-120			
Hexachlorobenzene	943	330	"	2000.0	ND	47	60-130			
Pentachlorophenol	762	1650	"	2000.0	ND	38	30-130			I
Phenanthrene	821	330	"	2000.0	ND	41	60-130			
Anthracene	844	330	"	2000.0	ND	42	60-130			
Carbazole	681	330	"	2000.0	ND	34	60-120			
Di-n-butyl Phthalate	951	330	"	2000.0	ND	48	40-150			
Fluoranthene	900	330	"	2000.0	ND	45	50-130			
Pyrene	853	330	"	2000.0	ND	43	50-140			
Butyl Benzyl Phthalate	1020	330	"	2000.0	ND	51	50-150			
Bis(2-ethylhexyl) phthalate	981	330	"	2000.0	ND	49	50-150			
3,3'-Dichlorobenzidine	163	660	"	2000.0	ND	8	20-140			I
Benz[a]anthracene	837	330	"	2000.0	ND	42	50-130			
Chrysene	829	330	"	2000.0	ND	41	50-130			
Di-n-octyl Phthalate	1020	330	"	2000.0	ND	51	50-150			
Benzo[b] fluoranthene	823	330	"	2000.0	ND	41	60-130			
Benzo[k] fluoranthene	851	330	"	2000.0	ND	43	50-130			
Benzo[a] pyrene	772	330	"	2000.0	ND	39	50-130			
Indeno[1,2,3-cd]pyrene	623	330	"	2000.0	ND	31	60-140			
Dibenz[a,h]anthracene	677	330	"	2000.0	ND	34	50-140			
Benzo[g,h,i] perylene	631	330	"	2000.0	ND	32	60-140			
Surrogate: 2-Fluorophenol	*847*		"	*2500.0*		*34*	*25-121*			
Surrogate: Phenol-d5	*938*		"	*2500.0*		*38*	*24-113*			
Surrogate: Nitrobenzene-d5	*574*		"	*1666.7*		*34*	*23-120*			
Surrogate: 2-Fluorobiphenyl	*574*		"	*1666.7*		*34*	*30-115*			
Surrogate: 2,4,6-Tribromophenol	*1480*		"	*2500.0*		*59*	*19-122*			
Surrogate: p-Terphenyl-d14	*846*		"	*1666.7*		*51*	*18-137*			

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WC-Hanford, Inc 2620 Fermi Avenue Richland WA, 99354	Project: RC-116 Project Number: [none] Project Manager: Joan Kessner	Reported: 04/14/2009 14:20

Semivolatile Organic Compounds by SW846 8270C - Quality Control

Lionville Laboratory

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch L902172 - SW 3540C										
Matrix Spike Dup (L902172-MSD2)	Source: 0902047-08			Prepared: 02/24/2009 Analyzed: 03/12/2009						
Phenol	1100	330	ug/kg wet	2000.0	ND	55	50-130	40	40	
Bis(2-chloroethyl) ether	917	330	"	2000.0	ND	46	50-130	28	40	
2-Chlorophenol	1160	330	"	2000.0	ND	58	50-130	14	40	
1,3-Dichlorobenzene	786	330	"	2000.0	ND	39	50-110	45	40	
1,4-Dichlorobenzene	799	330	"	2000.0	ND	40	50-120	34	40	
1,2-Dichlorobenzene	859	330	"	2000.0	ND	43	50-110	40	40	
2-Methylphenol	1090	330	"	2000.0	ND	54	60-120	39	40	
Bis(2-chloroisopropyl) ether	862	330	"	2000.0	ND	43	50-120	24	40	
4-Methylphenol	1080	330	"	2000.0	ND	54	60-110	38	40	
N-Nitroso-di-n-propylamine	1120	330	"	2000.0	ND	56	50-130	28	40	
Hexachloroethane	811	330	"	2000.0	ND	41	50-110	46	40	
Nitrobenzene	1010	330	"	2000.0	ND	50	50-110	43	40	
Isophorone	880	330	"	2000.0	ND	44	60-120	39	40	
2-Nitrophenol	1200	330	"	2000.0	ND	60	50-110	15	40	
2,4-Dimethylphenol	968	330	"	2000.0	ND	48	50-120	30	40	
Bis(2-chloroethoxy) methane	1190	330	"	2000.0	ND	60	40-140	43	40	
2,4-Dichlorophenol	1380	330	"	2000.0	ND	69	45-110	49	40	
1,2,4-Trichlorobenzene	951	330	"	2000.0	ND	48	60-120	42	40	
Naphthalene	961	330	"	2000.0	ND	48	40-130	40	40	
4-Chloroaniline	631	330	"	2000.0	ND	32	20-120	44	40	
Hexachlorobutadiene	1100	330	"	2000.0	ND	55	40-130	38	40	
4-Chloro-3-methylphenol	1420	330	"	2000.0	ND	71	60-130	15	40	
2-Methylnaphthalene	1080	330	"	2000.0	ND	54	60-100	31	40	
Hexachlorocyclopentadiene	434	330	"	2000.0	ND	22	20-100	86	40	
2,4,6-Trichlorophenol	1350	330	"	2000.0	ND	68	50-110	44	40	
2,4,5-Trichlorophenol	1370	330	"	2000.0	ND	69	50-110	43	40	
2-Chloronaphthalene	1090	330	"	2000.0	ND	55	50-130	36	40	
2-Nitroaniline	1280	1650	"	2000.0	ND	64	60-130	44	40	J
Dimethyl Phthalate	1320	330	"	2000.0	ND	66	50-140	17	40	
2,6-Dinitrotoluene	1250	330	"	2000.0	ND	63	50-140	38	40	
Acenaphthylene	1100	330	"	2000.0	ND	55	60-110	37	40	
3-Nitroaniline	1100	1650	"	2000.0	ND	55	40-130	46	40	J
Acenaphthene	1100	330	"	2000.0	ND	55	60-130	17	40	
2,4-Dinitrophenol	1770	1650	"	2000.0	ND	88	20-120	57	40	
4-Nitrophenol	2050	1650	"	2000.0	ND	107	40-140	49	40	
Dibenzofuran	1150	330	"	2000.0	ND	57	60-130	38	40	
2,4-Dinitrotoluene	1370	330	"	2000.0	ND	69	60-130	41	40	
Diethyl Phthalate	1330	330	"	2000.0	ND	66	50-130	37	40	
4-Chlorophenyl Phenyl Ether	1380	330	"	2000.0	ND	69	50-120	31	40	
Fluorene	1160	330	"	2000.0	ND	58	60-130	16	40	
4-Nitroaniline	1230	1650	"	2000.0	ND	61	50-120	45	40	J
4,6-Dinitro-2-methylphenol	1510	330	"	2000.0	ND	76	40-140	53	40	
N-Nitrosodiphenylamine	971	330	"	2000.0	ND	49	50-110	36	40	

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WC-Hanford, Inc.
2620 Fermi Avenue
Richland WA, 99354

Project: RC-116
Project Number: [none]
Project Manager: Joan Kessner

Reported:
04/14/2009 14:20

Semivolatile Organic Compounds by SW846 8270C - Quality Control
Lionville Laboratory

Batch L902172 - SW 3540C

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Matrix Spike Dup (L902172-MSD2)	Source: 0902047-08			Prepared: 02/24/2009 Analyzed: 03/12/2009						
4-Bromophenyl Phenyl Ether	1270	330	ug/kg wet	2000.0	ND	64	50-130	44	40	
Hexachlorobenzene	1540	330	"	2000.0	ND	77	60-130	48	40	
Pentachlorophenol	1340	1650	"	2000.0	ND	67	30-130	55	40	J
Phenanthrene	1190	330	"	2000.0	ND	60	60-130	37	40	
Anthracene	1240	330	"	2000.0	ND	62	60-130	38	40	
Carbazole	1150	330	"	2000.0	ND	57	60-120	51	40	
Di-n-butyl Phthalate	1400	330	"	2000.0	ND	70	40-150	38	40	
Fluoranthene	1390	330	"	2000.0	ND	70	50-130	43	40	
Pyrene	1140	330	"	2000.0	ND	57	30-140	29	40	
Butyl Benzyl Phthalate	1400	330	"	2000.0	ND	70	50-150	41	40	
Bis(2-ethylhexyl) phthalate	1420	330	"	2000.0	ND	71	50-150	47	40	
3,3'-Dichlorobenzidine	153	660	"	2000.0	ND	17	20-140	68	40	J
Benz[a]anthracene	1270	330	"	2000.0	ND	61	50-130	18	40	
Chrysene	1190	330	"	2000.0	ND	60	40-140	16	40	
Di-n-octyl Phthalate	1600	330	"	2000.0	ND	80	50-150	44	40	
Benzo[b] fluoranthene	1280	330	"	2000.0	ND	64	60-130	43	20	
Benzo[k] fluoranthene	1260	330	"	2000.0	ND	63	50-130	39	20	
Benzo[a] pyrene	1170	330	"	2000.0	ND	58	50-130	41	20	
Indeno[1,2,3-cd]pyrene	986	330	"	2000.0	ND	49	60-140	45	40	
Dibenz[a,h]anthracene	1050	330	"	2000.0	ND	57	50-140	43	40	
Benzo[g,h,i] perylene	910	330	"	2000.0	ND	46	60-140	36	20	
Surrogate: 2-Fluorophenol	*1030*		"	*2500.0*		*41*	*25-121*			
Surrogate: Phenol-d5	*1380*		"	*2500.0*		*55*	*24-113*			
Surrogate: Nitrobenzene-d5	*855*		"	*1666.7*		*51*	*23-120*			
Surrogate: 2-Fluorobiphenyl	*831*		"	*1666.7*		*50*	*30-115*			
Surrogate: 2,4,6-Tribromophenol	*2560*		"	*2500.0*		*102*	*19-122*			
Surrogate: p-Terphenyl-d14	*1230*		"	*1666.7*		*74*	*18-137*			

Extractable Petroleum Hydrocarbons by SW846 8015 - Quality Control

Lionville Laboratory

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch L902206 - SW 3540C										
Blank (L902206-BLK1)				Prepared: 02/27/2009 Analyzed: 03/05/2009						
Diesel Range Organics	ND	3300	ug/kg wet							U
Motor Oil	40400	10000	"							
Surrogate: p-Terphenyl	*6650*		"	*6666.7*		*99*	*50-150*			
LCS (L902206-BS1)				Prepared: 02/27/2009 Analyzed: 03/05/2009						
Diesel Range Organics	59900	3300	ug/kg wet	66667		90	50-150			
Surrogate: p-Terphenyl	*5710*		"	*6666.7*		*86*	*50-150*			
Matrix Spike (L902206-MS2)		Source: 0902047-01		Prepared: 02/27/2009 Analyzed: 03/05/2009						
Diesel Range Organics	77500	3300	ug/kg wet	66667	ND	116	50-150			
Surrogate: p-Terphenyl	*6910*		"	*6666.7*		*104*	*50-150*			
Matrix Spike Dup (L902206-MSD2)		Source: 0902047-01		Prepared: 02/27/2009 Analyzed: 03/05/2009						
Diesel Range Organics	70100	3300	ug/kg wet	66667	ND	105	50-150	10	40	
Surrogate: p-Terphenyl	*6550*		"	*6666.7*		*98*	*50-150*			

Date: 7 December 2009
To: Washington Closure Hanford Inc. (technical representative)
From: ELR Consulting
Project: Columbia River Component of the RCBRA – Sediment
Subject: Wet Chemistry - Data Package No. K1540-LLI

INTRODUCTION

This memo presents the results of data validation on Data Package No. K1540 prepared by Lionville Laboratory Inc. (LLI). A list of samples validated along with the analyses reported and the method of analysis is provided in the following table.

Sample ID	Sample Date	Media	Validation	Analysis
J18610	2/12/09	Solid	C	See note 1
J18764-A	2/12/09	Solid	C	See note 1
J18779	2/12/09	Solid	C	See note 1
J18794	2/12/09	Solid	C	See note 1
J18795	2/12/09	Solid	C	See note 1
J18796	2/12/09	Solid	C	See note 1
J18797	2/12/09	Solid	C	See note 1
J18798	2/12/09	Solid	C	See note 1
J18799	2/12/09	Solid	C	See note 1
J187B0	2/12/09	Solid	C	See note 1
J187D2	2/12/09	Solid	C	See note 1
J187D4	2/12/09	Solid	C	See note 1
J187D5	2/12/09	Solid	C	See note 1
J187D6	2/12/09	Solid	C	See note 1
J187D8	2/12/09	Solid	C	See note 1
J187D7	2/12/09	Solid	C	See note 1
J187D9	2/12/09	Solid	C	See note 1
J187F0	2/12/09	Solid	C	See note 1
J187F1	2/12/09	Solid	C	See note 1
J187K6	2/12/09	Solid	C	See note 1
J187K7	2/12/09	Solid	C	See note 1
J187K8	2/12/09	Solid	C	See note 1
J187K9	2/12/09	Solid	C	See note 1
J187L0	2/12/09	Solid	C	See note 1
J17X03	2/12/09	Solid	C	See note 1
J187Y2	2/12/09	Solid	C	See note 1
J187Y5	2/12/09	Solid	C	See note 1

1 Total organic carbon (TOC) by 415.1.

Appendix 1. Glossary of Data Reporting Qualifiers
Appendix 2. Summary of Data Qualification
Appendix 3. Qualified Data Summary and Annotated Laboratory Reports
Appendix 4. Laboratory Narrative and Chain-of-Custody Documentation
Appendix 5. Data Validation Supporting Documentation
Appendix 6. Additional Documentation Requested by Client

DATA QUALITY PARAMETERS

- **Holding Times**

Analytical holding times for metals are assessed to ascertain whether the holding time requirements were met by the laboratory. The holding time requirements are as follows: Soil samples must be analyzed within 28 days for total organic carbon.

If holding times are exceeded, but not by greater than two times the limit, all associated sample results are qualified as estimates and flagged "J" for detects and "UJ" for non-detects. If holding times are exceeded by greater than two times the limit, all associated detectable sample results are qualified as estimates and flagged "J" and all non-detects are rejected and flagged "UR".

All holding times were acceptable.

- **Method Blanks**

Method Blanks

Method blank analyses are performed to determine the extent of laboratory contamination introduced through sampling, sample preparation and analysis. At least one acceptable method blank analysis must be conducted for every 20 samples. No contaminants should be present in the method blank. All blank results must fall below the contract required detection limit (CRQL) to be acceptable.

All method blank results were acceptable.

Field (Equipment) Blank

No field blanks were submitted for analysis.

- **Accuracy**

Matrix Spike and Laboratory Control Sample

Matrix spike (MS) and laboratory control sample (LCS) analyses are used to assess the analytical accuracy of the reported data. The matrix spike is used to assess the effect of the matrix on the ability to accurately quantify sample concentrations. Recoveries must fall within the range of 70% to 130%. Samples with a recovery of less than 30% and a sample result below the IDL are rejected and flagged "UR". Samples with a recovery of 30% to 69% and a sample result less than the IDL are qualified "UJ". Samples with a recovery of greater than 130% or less than 70% and a sample result greater than the IDL are qualified as estimates and flagged "J". Finally, for samples with a recovery greater than 130% and a sample result less than the IDL, no qualification is required.

All accuracy results were acceptable.

- **Precision**

Laboratory Duplicate Samples

Analytical precision is expressed by the relative percent differences (RPD) between the recoveries of matrix spike duplicate (MSD) analyses performed on a sample in the analytical batch. Precision may alternatively be assessed using unspiked duplicate analyses performed on a sample in the analytical batch. If both sample and replicate activities (concentrations) are greater than five times the CRDL and the RPD is less than 30%, no qualification is required. If either activity (concentration) is less than five times the CRDL, the RPD control limit is less than or equal to two times the CRDL. If the RPD is outside the applicable control limit, associated results are qualified as estimated detects or estimated non-detects.

All laboratory duplicate results were acceptable.

Field Duplicate

One set of field duplicates (J18610/J18795) was submitted for analysis. Field duplicates are compared using the same criteria as for laboratory duplicates. All field duplicates results were acceptable.

- **Analytical Detection Levels**

Reported analytical detection levels are compared against the required quantitation limits (RQLs) to ensure that laboratory detection levels meet the required criteria. All analytes met the RQL.

- **Completeness**

Data package No. K1540 was submitted for validation and verified for completeness. Completeness is based on the percentage of data determined to be valid (i.e., not rejected). The completion percentage was 100%.

MAJOR DEFICIENCIES

None found.

MINOR DEFICIENCIES

None found.

REFERENCES

Washington Closure Hanford Contract #S00W307A00 (March 2008), *Data Validation Services.*

DOE/RL-2008-11, Rev.0, *Remedial Investigation Work Plan for Hanford Site Releases to the Columbia River*, September 2008.

Appendix 1

Glossary of Data Reporting Qualifiers

Qualifiers which may be applied by data validators in compliance with WCH validation SOW are as follows:

U - Indicates the compound or analyte was analyzed for and not detected in the 134sample. The value reported is the sample quantitation limit corrected for sample dilution and moisture content by the laboratory.

UJ - Indicates the compound or analyte was analyzed for and not detected in the sample. Due to a minor QC deficiency identified during the data validation, the associated quantitation limit is an estimate.

J - Indicates the compound or analyte was analyzed for and detected. Due to a minor QC deficiency identified during the data validation, the associated concentration is an estimate, but the data are usable for decision-making purposes.

BJ - Applied to inorganic analyses only. Indicates the analyte concentration was greater than the IDL but less than the CRDL and is considered an estimated value.

R - Indicates the compound or analyte was analyzed for, detected, and due to an identified major QC deficiency, the data are unusable.

UR - Indicates the compound or analyte was analyzed for and not detected in the sample. Additionally, the data is unusable due to an identified major QC deficiency.

NJ - Indicates presumptive evidence of a compound at an estimated value. The data may not be valid for some specific applications (i.e., usable for decision-making purposes).

N - Indicates presumptive evidence of a compound. The data may not be valid for some specific applications (i.e., usable for decision-making purposes).

Appendix 2

Summary of Data Qualification

WET CHEMISTRY DATA QUALIFICATION SUMMARY*

SDG: K1540	**REVIEWER: ELR**	**Project: RCBRA**	**PAGE 1 OF 1**

COMMENTS: No qualifiers assigned

* - The Qualified Data Summary Table includes laboratory applied "U" qualifiers not specifically identified here. The laboratory applied "U" qualifiers are included to minimize misinterpretation of results contained in the table.

Appendix 3

Qualified Data Summary and Annotated Laboratory Reports

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

WC Hanford, Inc 2620 Fermi Avenue Richland WA, 99354	Project: RC-116 Project Number: K1540 Project Manager: Joan Kessner	Reported: 10/10/2009 13:26

Wet Chemistry
Lionville Laboratory

Analyte	Result and Qualifier	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
J18610 (0902047-01) Other Solid								
Total Organic Carbon	7170	20.0	mg/kg	1	L902193	02/26/2009	02/26/2009	EPA 415.1
J18764-A (0902047-03) Other Solid								
Total Organic Carbon	11000 D	200	mg/kg	10	L902193	02/26/2009	02/26/2009	EPA 415.1
J18779 (0902047-04) Other Solid								
Total Organic Carbon	7740 D	200	mg/kg	10	L902193	02/26/2009	02/26/2009	EPA 415.1
J18794 (0902047-05) Other Solid								
Total Organic Carbon	17200 D	200	mg/kg	10	L902193	02/26/2009	02/26/2009	EPA 415.1
J18795 (0902047-06) Other Solid								
Total Organic Carbon	1690 D	200	mg/kg	10	L902193	02/26/2009	02/26/2009	EPA 415.1
J18796 (0902047-07) Other Solid								
Total Organic Carbon	7280 D	200	mg/kg	10	L902193	02/26/2009	02/26/2009	EPA 415.1
J18797 (0902047-08) Other Solid								
Total Organic Carbon	9970 D	200	mg/kg	10	L902193	02/26/2009	02/26/2009	EPA 415.1
J18798 (0902047-09) Other Solid								
Total Organic Carbon	5460 D	200	mg/kg	10	L902193	02/26/2009	02/26/2009	EPA 415.1
J18799 (0902047-10) Other Solid								
Total Organic Carbon	6780 D	200	mg/kg	10	L902193	02/26/2009	02/26/2009	EPA 415.1

12/3/09

5

208 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

WC Hanford, Inc 2620 Fermi Avenue Richland WA, 99354	Project: RC-116 Project Number: [none] Project Manager: Joan Kessner	Reported: 04/24/2009 17:02

Wet Chemistry
Lionville Laboratory

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
J187D0 (0902047-11) Solid	**Sampled: 02/12/2009 12:00**	**Received: 02/14/2009 11:25**							
Total Organic Carbon	11620	200.00	mg/kg	10	L902193	02/26/200	02/26/200	EPA 415.1	
J187D2 (0902047-12) Solid	**Sampled: 02/12/2009 10:15**	**Received: 02/14/2009 11:25**							
Total Organic Carbon	6890.8	200.00	mg/kg	10	L902193	02/26/200	02/26/200	EPA 415.1	
J187D4 (0902047-13) Solid	**Sampled: 02/12/2009 09:45**	**Received: 02/14/2009 11:25**							
Total Organic Carbon	8459.6	200.00	mg/kg	10	L902193	02/26/200	02/26/200	EPA 415.1	
J187D5 (0902047-14) Solid	**Sampled: 02/12/2009 10:32**	**Received: 02/14/2009 11:25**							
Total Organic Carbon	7490.8	200.00	mg/kg	10	L902193	02/26/200	02/26/200	EPA 415.1	
J187D6 (0902047-15) Solid	**Sampled: 02/12/2009 14:05**	**Received: 02/14/2009 11:25**							
Total Organic Carbon	2227.1	200.00	mg/kg	10	L902193	02/26/200	02/26/200	EPA 415.1	
J187D8 (0902047-16) Solid	**Sampled: 02/12/2009 11:35**	**Received: 02/14/2009 11:25**							
Total Organic Carbon	6551.5	200.00	mg/kg	10	L902193	02/26/200	02/26/200	EPA 415.1	
J187D7 (0902047-17) Solid	**Sampled: 02/12/2009 14:20**	**Received: 02/14/2009 11:25**							
Total Organic Carbon	8196.7	200.00	mg/kg	10	L902193	02/26/200	02/26/200	EPA 415.1	
J187D9 (0902047-18) Solid	**Sampled: 02/12/2009 14:00**	**Received: 02/14/2009 11:25**							
Total Organic Carbon	910.78	20.00	mg/kg	1	L903192	03/05/200	03/05/200	EPA 415.1	
J187F0 (0902047-19) Solid	**Sampled: 02/12/2009 11:20**	**Received: 02/14/2009 11:25**							
Total Organic Carbon	857.92	20.00	mg/kg	1	L903192	03/05/200	03/05/200	EPA 415.1	

12/1/09

Lionville Laboratory

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Nicki Perrone For Orlette Johnson, Project Manager

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

WC-Hanford, Inc.	Project: RC-116	
2620 Fermi Avenue	Project Number: [none]	Reported:
Richland WA, 99354	Project Manager: Joan Kessner	04/24/2009 12:02

Wet Chemistry
Lionville Laboratory

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
J187F1 (0902047-20) Solid Sampled: 02/12/2009 02:00 Received: 02/14/2009 11:25									
Total Organic Carbon	4244.3	200.00	mg/kg	10	1903192	03/05/200	03/05/200	EPA 415.1	
J187K6 (0902047-21) Solid Sampled: 02/12/2009 15:20 Received: 02/14/2009 11:25									
Total Organic Carbon	1581.4	200.00	mg/kg	10	1903192	03/05/200	03/05/200	EPA 415.1	
J187K7 (0902047-22) Solid Sampled: 02/12/2009 15:10 Received: 02/14/2009 11:25									
Total Organic Carbon	200.74	20.00	mg/kg	1	1903192	03/05/200	03/05/200	EPA 415.1	
J187K8 (0902047-23) Solid Sampled: 02/12/2009 16:00 Received: 02/14/2009 11:25									
Total Organic Carbon	352.39	20.00	mg/kg	1	1903192	03/05/200	03/05/200	EPA 415.1	
J187K9 (0902047-24) Solid Sampled: 02/12/2009 15:45 Received: 02/14/2009 11:25									
Total Organic Carbon	[illegible]	20.00	mg/kg	1	1903192	03/05/200	03/05/200	EPA 415.1	
J187L0 (0902047-25) Solid Sampled: 02/12/2009 15:40 Received: 02/14/2009 11:25									
Total Organic Carbon	1043.1	20.00	mg/kg	1	1903192	03/05/200	03/05/200	EPA 415.1	
J17N03 (0902047-27) Solid Sampled: 02/12/2009 09:40 Received: 02/14/2009 11:25									
Total Organic Carbon	9770.2	200.00	mg/kg	10	1903192	03/05/200	03/05/200	EPA 415.1	
J187Y2 (0902047-28) Solid Sampled: 02/12/2009 13:50 Received: 02/14/2009 11:25									
Total Organic Carbon	19687	200.00	mg/kg	10	1903192	03/05/200	03/05/200	EPA 415.1	
J187Y5 (0902047-29) Solid Sampled: 02/12/2009 14:05 Received: 02/14/2009 11:25									
Total Organic Carbon	5209.3	200.00	mg/kg	10	1903192	03/05/200	03/05/200	EPA 415.1	

12/3/09

Lionville Laboratory

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

000012

Nicki Perrone For Odette Johnson, Project Manager

Appendix 4

Laboratory Narrative and Chain-of-Custody Documentation

284 Welsh Pool Road
Exton, Pennsylvania 19341
Phone (610) 280-3000
Fax (610) 280-3041

Case Narrative
REVISION

This narrative is issued to revise item 7, where matrix QC is associated with client SDG# K1542.

Client: WC-HANFORD RC-116 K1540
LVL#: 0902047

W.O.#: 60049-001-001-0001-00
Date Received: 02-14-09

INORGANIC NARRATIVE

1. This narrative covers the analysis of 27 solid samples.

2. The samples were prepared and analyzed in accordance with the method indicated on the data summary report.

   Lionville Lab (LvL) is NELAP accredited by the State of Pennsylvania. For a complete list of accrediting authorities and the corresponding analytes/methods, please contact your Project Manager. LvL certifies that all test results meet the requirements of NELAC with any exception noted in the following statements.

3. Sample holding times as required by the method and/or contract were met.

4. The results presented in this report are derived from samples that met LvL's sample acceptance policy.

5. The method blanks were within the method criteria.

6. The Laboratory Control Samples (LCS) were within the laboratory control limits.

7. The matrix spike recovery was within the 75-125% control limits. Matrix QC for prep batch L903193 is associated with SDG# K1542 (LVL# 0902058).

8. The replicate analysis was within the 20% Relative Percent Difference (RPD) control limit.

9. Total Organic Carbon samples are dried prior to analysis.

10. I certify that this sample data package is in compliance with SOW requirements, both technically and for completeness, other than the conditions detailed above. Release of the data contained in this hard copy package has been authorized by the Laboratory Manager or a designee, as verified by the following signature.

Ian Daniels
Laboratory Manager
Lionville Laboratory

12/1/09
Date

ngn02-047

3

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-116-779 Page 2 of 2

Collector L S Pratten	Company Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator WEISS, RI
Project Designation Columbia River Component of the RI/ERA - Sediment	Sampling Location WBT - JL SSD DUPLICATE		SAF No. RC-116
Ice Chest No. WCH-08-006054036	Field Logbook No. EL-1631-1	COA BESCRC6S20	Method of Shipment FED EX
Shipped To EBERLINE SERVICES (RICHMOND)	Offsite Property No. N/A		Bill of Lading/Air Bill No. 796347224660

Price Code 9K

Data Turnaround 45 Days

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

S00015

Preservation	Cool 4C	Cool 4C	None	
Type of Container	G	aG	G/P	
No. of Container(s)	1	1	1	
Volume	125mL 5	125g	1000g	
SAMPLE ANALYSIS	Semivolatiles - Special Parameters	NW - TPH-Dx	Particle Size - Dry Sieve (ASTM)	

Sample No.	Matrix *	Sample Date	Sample Time			
J16610	OTHER SOLID	2/12/09	1240	X	X	X

CHAIN OF POSSESSION

Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
	2-12-09/1715		2-12-09 1915
	2/13/09 0800	D. Heidelberg	2/13/09 0800
D. Heidelberg	2/13/09 1200	Fedex	2/13/09 1200
	2-15-09 1125		2-14-09 1125

SPECIAL INSTRUCTIONS

5 AA / 2 2 3 = 5

(4) TPH-Diesel Range - WTPH-D+ (Total petroleum hydrocarbons - diesel range - Liquid petroleum hydrocarbons - motor oil (high boiling))

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location during custody of samples for shipment to lab.

Matrix *

S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION Received By Title Date/Time

FINAL SAMPLE DISPOSITION Disposal Method Disposed By Date/Time

WCH-EE-011

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-116-964

Page 1 of 1

ollector BM	Company Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator WEISS, RL
roject Designation Columbia River Component of the RCBRA - Sediment	Sampling Location RDD- 8' SSD		SAF No. RC-116
e Chest No. WCH-08-002-2	Field Logbook No. EL-1631-1	COA DRSCRC6320	Method of Shipment FED EX
hipped To EBERLINE SERVICES (LIONVILLE)	Offsite Property No. N/A		Bill of Lading/Air Bill No. 796337822140

Price Code 9K

Data Turnaround 45 Days

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

Preservation	None	None	None	None	Cool 4C	Cool 4C	None			
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	G/P			
No. of Container(s)	1	1	1	1	1	1	1			
Volume	1500g	100g	10g	10g	250g	125g	1000g			
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Technetium-99	See item (2) in Special Instructions	See item (3) in Special Instructions	TOC - 415.1	Particle Size (Dry Sieve) - D422			

Sample No.	Matrix *	Sample Date	Sample Time										
J18764	OTHER SOLID	2/11/05	1720					X	X	X			

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
B...	2/11/05 1600	B...	2/11/05 1600
Ref A	2/12/09 0800	BWoodward	2/12/09 0800
BWoodward	2/12/09 0930	FedEx	2/12/09 0930
	2-14-09 1125		2-14-09 1125

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) {Americium-241, Antimony-125, Beryllium-7, Cerium-144, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238}
(2) Strontium-89,90 -- Total Sr, Isotopic Thorium {Thorium-232}, Isotopic Uranium {Uranium-233/234, Uranium-235, Uranium-238}, Isotopic Plutonium
(3) ICP Metals - 6010 (Full List) {Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc}; Mercury - 7471 - (CV)

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab.

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

* Original Chain of Custody mailed 2/12/09, samples mailed 2/13/09.

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-116-979 | Page 1 of 1

llector BM	Company Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator WEISS, RL
oject Designation Columbia River Component of the RCBRA - Sediment	Sampling Location LI-11 SSD		SAF No. RC-116
e Chest No. WCH-08-006, 051, 036	Field Logbook No. EL-1631-1	COA RLSCRI 6300	Method of Shipment FED EX
ipped To EBERLINE SERVICES ([illegible])	Offsite Property No. N/A		Bill of Lading/Air Bill No. 796342246660

Price Code 9K

Data Turnaround 45 Days

OSSIBLE SAMPLE HAZARDS/REMARKS

pecial Handling and/or Storage

Preservation	None	None	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	None
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	aG	G	aG	G/P
No. of Container(s)	1	1	1	1	1	1	1	1	1	1
Volume	1500g	100g	15g	10g	250g	250g	125g	125mL	125g	1000g
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Technetium-99	See item (2) in Special Instructions	See item (3) in Special Instructions	PCBs - 8082	Pesticides - 8081	See item (4) in Special Instructions	TOC - [illegible]	Particle Size (Dry Sieve) - D422

Sample No.	Matrix *	Sample Date	Sample Time										
18779	OTHER SOLID	2/12/09	1215					X	X	X	X	X	X

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
B Anderson	2/12/09 1715	Eric	2/12/09 1715
Eric H	2/13/09 0800	D Hellberg	2/13/09 0800
D Hellberg	2/13/09 1200	FedEx 2/13/09	1200
	2-14-09 1125		2-14-09/1125

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) {Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238}

(2) Strontium-89,90 - Total Sr; Isotopic Thorium {Thorium-232}; Isotopic Uranium {Uranium-233/234, Uranium-235, Uranium-238}; Isotopic Plutonium

(3) ICP Metals - 6010 [illegible] {Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc}; Mercury - 7471 - (CV)

(4) TPH-Diesel Range - WTPH D+ {Total petroleum hydrocarbons - diesel range; Total petroleum hydrocarbons - motor oil (high boiling)}

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab.

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

ABORATORY SECTION	Received By	Title	Date/Time
INAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

CH-EF-011

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-116-983 Page 2 of 2

Collector [illegible]	Company Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator WEISS, RL	Price Code 9K
Project Designation Columbia River Component of the RCBRA - Sediment	Sampling Location WCH - [illegible] SSD		SAF No. RC-116	Data Turnaround 45 Days
Ice Chest No. WCH-08-006, 051, 036	Field Logbook No. EL-1610-1	COA DESCRC6520	Method of Shipment FEDEX	
Shipped To FIRELINE SERVICES [✓ LIONVILLE]	Offsite Property No. N/A		Bill of Lading/Air Bill No. 796342246060	

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

Preservation	Cool 4C	Cool 4C	None
Type of Container	G	aG	G/P
No. of Container(s)	1	1	1
Volume	125ml	125g	1000g
SAMPLE ANALYSIS	5 See item (1) in Special Instructions	[illegible]	Particle Size (Dry Sieve) [illegible]

Sample No.	Matrix *	Sample Date	Sample Time			
J18794	OTHER SOLID	2/11/09	1115	X	X	X

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
[illegible]	2-11-09 / 1715	[illegible]	2-11-09 1715
[illegible]	2/13/09 0800	B L Blackwood	2/13/09 0800
B L Blackwood	2/13/09 1200	FedEx	2/13/09 1200
[illegible]	2-14-09 1125	[illegible]	2-14-09 1125

SPECIAL INSTRUCTIONS

5 [illegible] 1/13/09

(1) TPH-Diesel Range - WTPH-D = (Total petroleum hydrocarbons - diesel range, Total petroleum hydrocarbons - motor oil (high boiling)).

Sampler unavailable to remove samples from controlled storage. Shipper removing samples from storage location taking custody of samples for shipment to lab.

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-116-984

Page 2 of 2

Collector: [illegible]

Company Contact: JOAN KESSNER

Telephone No.: 375-6688

Project Coordinator: WEISS, RL

Price Code: 9K

Data Turnaround: 45 Days

Project Designation: Columbia River Component of the RCBRA - Sediment

Sampling Location: WB1- [illegible] SSD

SAF No.: RC-116

Ice Chest No.: WCH-08-006, 051, 036

Field Logbook No.: EL-1631-1

COA: DESCRC6520

Method of Shipment: FEDEX

Shipped To: TestAmerica SERVICES (LIONVILLE)

Offsite Property No.: N/A

Bill of Lading/Air Bill No.: 7963422 & 6660

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

Preservation	Cool 4C	Cool 4C	None
Type of Container	G	aG	G/P
No. of Container(s)	1	1	1
Volume	125mL	125g	100g
SAMPLE ANALYSIS	5 Semivolatile; Specific Ingredients	See 1441	Particle Size (Dry Sieve) 1422

Sample No.	Matrix *	Sample Date	Sample Time			
18795	OTHER SOLID	[illegible]	[illegible]	X	X	X

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
[illegible]	2/12-09 / 1715	[illegible]	2-12-09 / 1915
[illegible]	2/13/09 0800	D. Hellberg	2/13/09 0800
D. Hellberg	2/13/09 1200	FedEx	2/13/09 1200
[illegible]	2-14-09 1125	[illegible]	2-14-09 1125

SPECIAL INSTRUCTIONS

5 [illegible] 1/9/09

(1) TPH-Diesel Range - WTPH-D + Total petroleum hydrocarbons - diesel range; Total petroleum hydrocarbons - motor oil (high boiling)

Sampler unavailable to remove samples from cons. storage. Shipper removed samples from storage location taking custody of samples for shipment to lab.

Matrix *

LABORATORY SECTION — Received By — Title — Date/Time

FINAL SAMPLE DISPOSITION — Disposal Method — Disposed By — Date/Time

WCH-EE-011

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-116-985

Page 1 of 1

Collector [illegible]	Company Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator WEISS, RL
Project Designation Columbia River Component of the RCBRA - Sediment	Sampling Location WBT- , SSD		SAF No. RC-116
Ice Chest No. WCH-08-006, 051, 024	Field Logbook No. EL-1631-4	COA BESCRC6530	Method of Shipment FED EX
Shipped To EBERLINE SERVICES (LIONVILLE)	Offsite Property No. N/A		Bill of Lading/Air Bill No. 796342246660

Price Code 9K

Data Turnaround 45 Days

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

0000020

Preservation	Cool 4°C	Cool 4°C	None
Type of Container	G	aG	G/P
No. of Container(s)	1	1	1
Volume	125mL 5	125g	1000g
SAMPLE ANALYSIS	See item (1) in Special Instructions	[illegible]	Particle Size (Dry Sieve) D422

Sample No.	Matrix *	Sample Date	Sample Time			
J18796	OTHER SOLID	[illegible]	1920	X	X	X

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
	2-12-09 1715	Ref Bx	2-12-09 1915
Ref B	2/13/09 0800	B Woodward	2/13/09 0800
B Woodward	2/13/09 1200	Fed Ex	2/13/09 1200
Fed Ex	2/16/09 1125		2-16-09 1125

SPECIAL INSTRUCTIONS

5 [illegible] 0509

(1) TPH-Diesel Range - WTPH-D + (Total petroleum hydrocarbons - diesel range, Total petroleum hydrocarbons - motor oil (high boiling))

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab.

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-116-986

Page 2 of 2

ector L Winder

Company Contact JOAN KESSNER

Telephone No. 375-4688

Project Coordinator WEISS, RL

Price Code 9K

Data Turnaround 45 Days

ject Designation
Columbia River Component of the RC/BRA - Sediment

Sampling Location WDT - 2 - SSD

SAF No. RC-116

Chest No. IAR H-06-080, 051, 036

Field Logbook No. EL-1630-1

COA DESCRC6520

Method of Shipment FED EX

pped To
EBERLINE SERVICES LIONVILLE

Offsite Property No. N/A

Bill of Lading/Air Bill No. 796342246660

SSIBLE SAMPLE HAZARDS/REMARKS

pecial Handling and/or Storage

F20021

Preservation	Cool 4C	Cool 4C	None
Type of Container	G	aG	G/P
No. of Container(s)	1	1	1
Volume	125mL 5	125g	1000g
SAMPLE ANALYSIS	Semivolatiles in Special Analytes only	TOC - 415.1	Particle Size (Dry Sieve - Test)

Sample No	Matrix *	Sample Date	Sample Time			
18797	OTHER SOLID	2/12/09	1010	X	X	X

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
	2-11-09 / 1915		2-12-09 / 1915
	2/13/09 0800	B Dowland	2/13/09 0800
B Dowland	2/13/09 1200	FedEx	2/13/09 1200
	2-14-09 1125		2-14-09 1125

SPECIAL INSTRUCTIONS
5 1/30 40
(1) TPH-Diesel Range - WTPH-D = (Total petroleum hydrocarbons - diesel range; Total petroleum hydrocarbons - motor oil (high boiling))

Sampler unavailable to remove samples from controlled storage. Sampler removed samples from storage location during custody of samples for shipment to lab.

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION — Received By — Title — Date/Time

FINAL SAMPLE DISPOSITION — Disposal Method — Disposed By — Date/Time

WCH-EE-011

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-116-987 Page 1 of 1

Collector [illegible]	Company Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator WEISS, RL
Project Designation Columbia River Component of the RI/BRA - Sediment	Sampling Location WBT-3 SSD		SAF No. RC-116
Ice Chest No. WCH-09-006, 051, 056	Field Logbook No. EL 1610-1	COA RESCRC6520	Method of Shipment FEDEX
Shipped To EBERLINE SERVICES [✓ OAK RIDGE]	Offsite Property No. N/A		Bill of Lading/Air Bill No. 796342246660

Price Code 9K

Data Turnaround 45 Days

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

0090242

Preservation	None	None	None	None	Cool 4C	Cool 4C	None			
Type of Container	G/P	G/P	G/P	G/P	G/P	G/P	G/P			
No. of Container(s)	1	1	1	1	1	1	1			
Volume	1500g	100g	1g	1g	250g	125g	1000g			
SAMPLE ANALYSIS	See Special Instructions	Carbon-14	Technetium-99	See Special Instructions	See Special Instructions	TOC - 9060	Particle Size (Dry Sieve)			

Sample No.	Matrix *	Sample Date	Sample Time										
J18798	OTHER SOLID	2/12/09	1640					X	X	X			

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
[illegible]	2-12-09/1915	R F B	2-12-09 1915
R F B	2/13/09 0800	B Woodruff	2/13/09 0800
B Woodruff	2/13/09 1200	Fed Ex	2/13/09 1200
Fed Ex	2-14-09 1135	[illegible]	2-14-09 1135

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) {Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238}

(2) Strontium-89,90 - Total Sr; Isotopic Thorium {Thorium-232}; Isotopic Uranium {Uranium-233/234, Uranium-235, Uranium-238}; Isotopic Plutonium

(3) ICP Metals - 6010 (Full List) {Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc}; Mercury - 7471 - (CVAA)

Sampler unavailable to relinquish samples from controlled storage. Shipper removed samples from storage location during custody of samples for shipment. [illegible]

Matrix *

[illegible]

LABORATORY SECTION — Received By — Title — Date/Time

FINAL SAMPLE DISPOSITION — Disposal Method — Disposed By — Date/Time

CH EF-011

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-116-988 | Page 1 of 1

ctor [illegible]	Company Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator WEISS, RL
ect Designation umbia River Component of the RCBRA - Sediment	Sampling Location WBT-7 SSD		SAF No. RC 116
Chest No. 0[illegible]-002-0[illegible], 0[illegible], [illegible]	Field Logbook No. EL-1613-3	COA DESCRC6520	Method of Shipment FEDEX
ped To BERLINE SERVICES [✓ LIONVILLE]	Offsite Property No. N/A		Bill of Lading/Air Bill No. 7963 9234 6660

Price Code 9K

Data Turnaround 45 Days

SSIBLE SAMPLE HAZARDS/REMARKS

ecial Handling and/or Storage

0000223

Preservation	None	None	None	None	Cool 4C	Cool 4C	None			
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	G/P			
No. of Container(s)	1	1	1	1	1	1	1			
Volume	1500g	100g	10g	10g	250g	125g	1000g			
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Technetium-99	See item (2) in Special Instructions	See item (3) in Special Instructions	TOC - 415.1	Particle Size (Dry Sieve) [illegible]			

Sample No.	Matrix *	Sample Date	Sample Time										
B799	OTHER SOLID	2/[illegible]/09	[illegible]					X	X	X			

CHAIN OF POSSESSION	Date/Time	Sign/Print Names	Date/Time
Relinquished By/Removed From	2-11-09/1315	Received By/Stored In	2-11-09 /1415
Relinquished By/Removed From [illegible] 2/13/09	0800	Received By/Stored In Bluewood 2/13/09 0800	
Relinquished By/Removed From Bluewood 2/13/09 1200		Received By/Stored In FedEx 2/13/09 1200	
Relinquished By/Removed From FedEx 2-14-09 1125		Received By/Stored In	2-14-09 1125
Relinquished By/Removed From		Received By/Stored In	
Relinquished By/Removed From		Received By/Stored In	

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) [Americium-241, Antimony-125, Beryllium-7, Cerium-144, Cesium-134, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238]
(2) Strontium-89/90 - Total Sr, Isotopic Thorium (Thorium-232), Isotopic Uranium (Uranium-233/234, Uranium-235, Uranium-238), Isotopic Plutonium.
(3) ICP Metals - 6010 (Full List) (Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc), Mercury - 7471 - (CV)

Sample [illegible]
from controlled storage [illegible]
samples [illegible] storage [illegible]
of samples for shipment [illegible]

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-116-989

Page 1 of 1

ector [illegible]	Company Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator WEISS, RL
ect Designation Columbia River Component of the RCBRA - Sediment	Sampling Location WRT-1/ SSO		SAF No. RC-116
Ice Chest No. WCH-08-006051036	Field Logbook No. EL-1611-1	COA DESCRC6578	Method of Shipment FED EX
ped To ENERGY SERVICES (OAKVILLE)	Offsite Property No. N/A		Bill of Lading/Air Bill No. 796342246660

Price Code 9K

Data Turnaround 45 Days

SSIBLE SAMPLE HAZARDS/REMARKS

ecial Handling and/or Storage

0000243

Preservation	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Type of Container	G/P	G/P	G/P	G/P	G/P	n/a	G/P
No. of Container(s)	1	1	1	1	1	1	1
Volume	1500g	100g	10g	10g	250g	125g	1000g
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Technetium-99	See item (2) in Special Instructions	See item (3) in Special Instructions	TOC - 9060	Particle Size (Dry Sieve) - D421

Sample No.	Matrix *	Sample Date	Sample Time							
5700	OTHER SOLID	[illegible]	1200					X	X	X

CHAIN OF POSSESSION	Date/Time	Sign/Print Names	Date/Time
Relinquished By/Removed From [illegible]	2-12-09 1915	Received By/Stored In [illegible]	2-12-09 1915
Relinquished By/Removed From [illegible] 2/13/09	0800	Received By/Stored In [illegible]	2/13/09 0800
Relinquished By/Removed From [illegible]	2/13/09 1200	Received By/Stored In FedEx	2/13/09 1200
Relinquished By/Removed From [illegible]	2-14-09 1125	Received By/Stored In [illegible]	2-14-09 1125
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) {Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Thorium-228, Uranium-235}

(2) Strontium-89,90 -- Total Sr, Isotopic Thorium {Thorium-232}, Isotopic Uranium {Uranium-233/234, Uranium-235, Uranium-238}, Isotopic Plutonium

(3) ICP Metals - 6010 (Full List) {Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc}, Mercury - 7471 - (CV)

[illegible]
[illegible]
[illegible]
[illegible]

Matrix *

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-116-1011	Page 2 of 2

ollector B A	Company Contact JOAN KESSNER	Telephone No. 375-4686	Project Coordinator WEISS, RL
roject Designation Columbia River Component of the RCBRA - Sediment	Sampling Location HH 8 SSD		SAF No. RC-116
e Chest No. WH-08-024,051,036	Field Logbook No. EL-1631-1	COA R5541RCA570	Method of Shipment FEDEX
hipped To EBERLINE SERVICES - [illegible]	Offsite Property No. N/A		Bill of Lading/Air Bill No. 796342246660

Price Code 9K

Data Turnaround 45 Days

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

000025

Preservation	Cool 4°C	Cool 4°C	None
Type of Container	G	aG	G/P
No. of Container(s)	1	1	1
Volume	125mL 5	125g	100g
SAMPLE ANALYSIS	See item (1) in Special Instructions	[illegible]	[illegible]

Sample No.	Matrix *	Sample Date	Sample Time			
J197L2	OTHER SOLID	2/12/09	1015	X	X	X

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
B A	2/12/09 1715	Eric A	2/12/09 1715
D. Heidelberg	2/13/09 0800	D. [illegible] 2/13/09	
Eric A	2/13/09 0800	D. Heidelberg	2/13/09 0800
D. Heidelberg	2/13/09 1200	Fedex	2/13/09 1200
[illegible]	2-14-09 1135	[illegible]	2-14-09 1135

SPECIAL INSTRUCTIONS

5 AA 2/12/09

(1) TPH Diesel Range - WTPH D+ - Total petroleum hydrocarbons - diesel range, Total petroleum hydrocarbons - motor oil (high boiling)

Samples unavailable [illegible] samples from [illegible] storage. Shipper removed samples from storage location using custody [illegible] samples to be shipped to lab

Matrix *

S = Soil
SE = Sediment
SO = Solid
SL = Sludge
W = Water
O = Oil
A = Air
DS = Drum Solids
DL = Drum Liquids
T = Tissue
WI = Wipe
L = Liquid
V = Vegetation
X = Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH EE-011

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-116-1013

Page 1 of 2

Collector BM	Company Contact JOAN KESSNER	Telephone No. 375-4658	Project Coordinator WEISS, RI
Project Designation Columbia River Component of the RCBRA - Sediment	Sampling Location RIP- 4 SSD		SAF No. RC-116
Ice Chest No. WCH0X-006,057,036	Field Logbook No. EL-1631-1	COA BESRC0520	Method of Shipment FEDEX
Shipped To EBERLINE SERVICES (RICHMOND) [✓ OAKVILLE]	Offsite Property No. N/A		Bill of Lading/Air Bill No. 790342246660

Price Code 9K

Data Turnaround 45 Days

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

Preservation	Cool 4C	Cool 4C	None
Type of Container	G	aG	G/P
No. of Container(s)	1	1	1
Volume	125mL 5	125g	Bulk
SAMPLE ANALYSIS	See sample Special Instructions	TPH - DIESEL	Particle Size (Dry Sieve - ASTM)

Sample No.	Matrix *	Sample Date	Sample Time			
J187D4	OTHER SOLID	2/12/09	945	X	X	X

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
B Mayer Boyce	2/12/09 1715	Fed A	2/12/09 1715
Fed A	2/13/09 0800	D. Heidelberg	2/13/09 0800
D. Heidelberg	2/13/09 1200	Fedex	2/13/09 1200
Fed Ex	2/14/09 1125		2/14/09 1125

SPECIAL INSTRUCTIONS

5 dil max

9K TPH Diesel Range - WTPH-D + (Total petroleum hydrocarbons - diesel range, Total petroleum hydrocarbons - motor oil (high boiling))

Samples unavailable to released SAF/etc from controlled storage. Shipper retrieved samples from storage location, taking custody of samples for shipment to lab.

Matrix *

[illegible]

LABORATORY SECTION — Received By — Title — Date/Time

FINAL SAMPLE DISPOSITION — Disposal Method — Disposed By — Date/Time

WCH-EE-011

Yashington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-116-1014

Page 2 of 2

for BM	Company Contact SOAN KESSNER	Telephone No. 373-4688	Project Coordinator WEISS, RL
ct Designation [illegible] of the 99 ORA - Sediment	Sampling Location RIL- 49 SSD		SAF No. RC-316
Ice Chest No. WCH-08-006,054,036	Field Logbook No. EL-1631-01	COA HESRC6320	Method of Shipment FEDEX
ped To [illegible] SERVICES [✓ (HONVILLE)]	Offsite Property No. N/A		Bill of Lading/Air Bill No. 7963422466460

Price Code 9K

Data Turnaround
45 Days

SSIBLE SAMPLE HAZARDS/REMARKS

cial Handling and/or Storage

Preservation	[illegible]	[illegible]	[illegible]
Type of Container	[illegible]	[illegible]	G-P
No. of Container(s)	1	1	1
Volume	125mL 5	125g	1000g
SAMPLE ANALYSIS	[illegible]	[illegible]	[illegible] DHI

Sample No.	Matrix *	Sample Date	Sample Time			
[illegible]RHS	OTHER SOLID	2/12/07	1032	X	X	X

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
[illegible]	2/12/07 1715	Frog [illegible]	2/12/07 1715
[illegible]	2/13/07 0800	D Hellberg [illegible]	2/13/09 0800
Hellberg [illegible]	2/13/09 1200	Fedex	2/13/09 1200
[illegible]	2-14-09 1125	[illegible]	2-14-09 1125

SPECIAL INSTRUCTIONS

5 [illegible]

(1) TPH Diesel Range - WTPH-D+ ; Total petroleum hydrocarbons - diesel range; Total petroleum hydrocarbons - motor oil (high boiling) ;

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab.

Matrix *
[illegible]

LABORATORY SECTION — Received By — Title — Date/Time

FINAL SAMPLE DISPOSITION — Disposal Method — Disposed By — Date/Time

GHEF-011

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-116-1015 Page 1 of 1

Collector	B[illegible]
Company Contact	JOAN KESSNER
Telephone No.	375-4688
Project Coordinator	WEISS, RL
Price Code	9K
Data Turnaround	45 Days
Project Designation	[illegible] Component of the RI/FS - Sediment
Sampling Location	RBI 5 SSD
SAF No.	RC [illegible]
Ice Chest No.	WCH-08-006, 051, 036
Field Logbook No.	EL-1641-1
COA	[illegible]
Method of Shipment	FEDEX
Shipped To	[illegible] SERVICES (GRANVILLE)
Offsite Property No.	N/A
Bill of Lading/Air Bill No.	7963 4224 6680

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

00028

Preservation		None	None	None	None	Cool 4C	Cool 4C	None		
Type of Container		G/P	G/P	G/P	G/P	G/P	aG	G/P		
No. of Container(s)			1	1	1	1	1	1		
Volume		1500g	10g	40g	10g	250g	125g	100g		
SAMPLE ANALYSIS		[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]		
Sample No.	**Matrix ***	**Sample Date**	**Sample Time**							
[illegible]	OTHER SOLID	2/12/09	1405				X	X	X	

CHAIN OF POSSESSION	Date/Time	Sign/Print Names	Date/Time
Relinquished By/Removed From		Received By/Stored In	
[illegible]	2/12/09 1705	[illegible]	2/12/09 1705
Relinquished By/Removed From		Received By/Stored In	
[illegible] 2/13/09	0800	[illegible]	2/13/09 0800
Relinquished By/Removed From		Received By/Stored In	
[illegible]	2/13/09 1200	FedEx 2/13/09	1200
Relinquished By/Removed From		Received By/Stored In	
[illegible] 2-14-09	1125	[illegible]	2-14-09 1125
Relinquished By/Removed From		Received By/Stored In	
Relinquished By/Removed From		Received By/Stored In	

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (GEA) Add-on (Americium-241, Antimony-125, Beryllium-7, Cerium-144, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Thorium-228, Uranium-235) [illegible]
(2) Strontium-89,90 - Total Sr; Isotopic Thorium (Thorium-228, [illegible]); Isotopic Uranium (Uranium-233/234, Uranium-235, Uranium-238); Isotopic Plutonium
(3) ICP Metals - 6010 (Add-on) (Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Titanium, Vanadium, Zinc); Mercury - 7471 - (CV)

Samples [illegible]
[illegible]
[illegible]
[illegible]

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION Received By Title Date/Time

FINAL SAMPLE DISPOSITION Disposal Method Disposed By Date/Time

Washington Closure Hanford	**CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST**	RC-116-1017	Page 1 of 1
Collector BM	Company Contact KIAN KESSNER · Telephone No. 375-4688	Project Coordinator WEISS, RI	Price Code 9K · Data Turnaround 45 Days
Project Designation Columbia River Component [illegible] RCRA - Sediment	Sampling Location RIF 4 SSD	SAF No. RC-116	
Ice Chest No. (OH-08-006 051036	Field Logbook No. EL-1651-1 · COA HESURC6570	Method of Shipment FEDEX	
Shipped To EBERLINE SERVICES (RICHMOND)	Offsite Property No. N/A	Bill of Lading/Air Bill No. 796342246660	

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

Preservation	None	None	None	None	Cool 4C	Cool 4C	None			
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	G/P			
No. of Container(s)	1	1	1	1	1	1	1			
Volume	1500g	100g	10g	10g	250g	125g	250g			
SAMPLE ANALYSIS	See Special Instructions	Carbon-14	Technetium-99	See Special Instructions	See Special Instructions	[illegible]	Metals - [illegible] (Hg)			

Sample No.	Matrix *	Sample Date	Sample Time										
0B709	OTHER SOLID	2/12/09	1125					X	X	X			

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Brooke Bell	2/12/09 1715	Fridge 4	2/12/09 1715
[illegible]	2/13/09 0800	D. Heidelberg	2/13/09 0800
[illegible]	2/13/09 1200	Fedex	2/13/09 1200
[illegible]	2-14-09 1145	[illegible]	2-14-09 1145

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) Americium-241, Antimony-125, Beryllium-7, Cerium-144, Cesium-134, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238

(2) Strontium-89,90 - Total Sr; Isotopic Thorium (Thorium-228, Thorium-230, Thorium-232); Isotopic Uranium (Uranium-233/234, Uranium-235, Uranium-238); Isotopic Plutonium

(3) ICP Metals - 6010 (Full List) (Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Titanium, Vanadium, Zinc); Mercury - 7471 (CV)

Sample unavailable (? recvd sample) from unsecured storage. Sample removed samples from storage location taking custody of samples for shipment to lab.

Matrix *: S=Soil, SE=Sediment, SO=Solid, SL=Sludge, W=Water, O=Oil, A=Air, DS=Drum Solids, DL=Drum Liquids, T=Tissue, WI=Wipe, L=Liquid, V=Vegetation, X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

0000029

Vashington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-116-1016 | Page 1 of 1

llector: BA	Company Contact: JOAN KESSNER	Telephone No.: 375-4688	Project Coordinator: WEISS, RL
Price Code: 9K	Data Turnaround: 45 Days		SAF No.: RC-117
ct Designation: Fondra River Component of the RCBRA - Sediment	Sampling Location: RIB-7 SSD		
Chest No.: WCH-08-0026, 051, 036	Field Logbook No.: EL-1631-1	COA: RL5CRC6520	Method of Shipment: FED EX
ped To: [illegible] SERVICES / LIONVILLE	Offsite Property No.: N/A		Bill of Lading/Air Bill No.: 796342246660

SSIBLE SAMPLE HAZARDS/REMARKS

ecial Handling and/or Storage

0000030

Preservation	None	None	None	None	Cool 4C	Cool 4C	None
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	G/P
No. of Container(s)	2	1	1	1	1	1	1
Volume	1500g	100g	15g	10g	250g	125g	1500g
SAMPLE ANALYSIS	Special Gamma Spec (see Special Instructions)	[illegible]	[illegible]	Special [illegible] (see Special Instructions)	[illegible] (see Special Instructions)	[illegible]	Particle Size [illegible]

Sample No.	Matrix *	Sample Date	Sample Time							
[illegible]07	OTHER SOLID	2/2/09	1420					X	X	X

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
[illegible]	2/2/09 1515	[illegible]	2/2/09 1515
[illegible]	2/13/09 0800	D H [illegible]	2/13/09 0800
[illegible]	2/13/09 1200	FedEx	2/13/09 1200
[illegible]	2/14/09 1135	[illegible]	2/14/09 1135

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Add-on) [Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238]
(2) Strontium-89,90 - Total Sr, Isotopic Thorium {Thorium-232}, Isotopic Uranium {Uranium-233/234, Uranium-235, Uranium-238}, Isotopic Plutonium
(3) ICP Metals - 6010 (Full List) [Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Titanium, Vanadium, Zinc]; Mercury - 7471 - (CVAA)

Samples unavailable to remove samples
from controlled storage. Samples removed
samples from storage location during custody
of samples for shipment to lab

Matrix *
S = Soil
SE = Sediment
SO = Solid
SL = Sludge
W = Water
O = Oil
A = Air
DS = Drum Solids
DL = Drum Liquids
T = Tissue
WI = Wipe
L = Liquid
V = Vegetation
X = Other

LABORATORY SECTION | Received By | Title | Date/Time

FINAL SAMPLE DISPOSITION | Disposal Method | Disposed By | Date/Time

WCH-EF-011

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-116-1018

Page 1 of 1

ctor RM

Company Contact
JOAN KESSNER

Telephone No.
375-4655

Project Coordinator
WEISS, RI

Price Code 9K

Data Turnaround
45 Days

ct Designation
umbia River Component of the RCBRA - Sediment

Sampling Location
RB- 6 SSO

SAF No.
RC-116

hest No. WCH-08-016,051,080

Field Logbook No.
EL-1651-1

COA
[illegible]

Method of Shipment
FEDEX

pped To
[illegible] SERVICES (ONSITE)

Offsite Property No.
N/A

Bill of Lading/Air Bill No. 746342246660

ssible Sample Hazards/Remarks

ecial Handling and/or Storage

1300800

Preservation	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]			
Type of Container	G/P	G/P	G/P	G/P	G/P	[illegible]	G/P			
No. of Container(s)	1	1	1	1	1	1	1			
Volume	1500g	100g	1kg	1kg	750g	125g	1500g			
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Technetium-99	See item (2) in Special Instructions	See item (3) in Special Instructions	[illegible]	[illegible]			

Sample No.	Matrix *	Sample Date	Sample Time										
B2H20	OTHER SOLID	2/12/09	1400					X	X	X			

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
[illegible]	2/12/09 1315	[illegible]	2/12/09 1315
[illegible]	2/13/09 0800	[illegible]	2/13/09 0800
[illegible]	2/13/09 1200	FedEx	2/13/09 1200
FedEx	2-14-09 1125	[illegible]	2-14-09 1125

SPECIAL INSTRUCTIONS

(1) Gamma Spec - {Full List} {Americium-241, Antimony-125, Beryllium-7, Cerium-144, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238}
(2) Strontium-89,90 - Total Sr; Isotopic Thorium {Thorium-232}; Isotopic Uranium {Uranium-233/234, Uranium-235, Uranium-238}; Isotopic Plutonium
(3) ICP Metals - 6010 {TAL List} {Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Titanium, Vanadium, Zinc}; Mercury - 7471 - [illegible]

Samples are available to be moved to [illegible] non-controlled storage. Sign for removal of samples from storage location taking custody of samples for shipment to lab.

Matrix *
S = Soil
SE = Sediment
SO = Solid
SL = Sludge
W = Water
O = Oil
A = Air
DS = Drum Solids
DL = Drum Liquids
T = Tissue
WI = Wipe
L = Liquid
V = Vegetation
X = Other

LABORATORY SECTION — Received By — Title — Date/Time

FINAL SAMPLE DISPOSITION — Disposal Method — Disposed By — Date/Time

WCH-EE-031

Washington Closure Hanford	**CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST**	**RC-116-1019**	Page 1 of 1

Collector: BA

Company Contact: JOAN KESSNER

Telephone No.: 375-4688

Project Coordinator: WEISS, RL

Price Code: 9K

Data Turnaround: 45 Days

Project Designation: Columbia River Component of the RC RRA - Sediment

Sampling Location: RH- 2 SSD

SAF No.: RC-116

Ice Chest No.: MH-08006,051,036

Field Logbook No.: EL-1653-F

COA: BESRC0682D

Method of Shipment: FEDEX

Shipped To: GENERAL ENGINEERING SERVICES (GEL) CONVICTED

Offsite Property No.: N/A

Bill of Lading/Air Bill No.: 796594224660

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

Preservation	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]			
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	G/P			
No. of Container(s)	1	1	1	1	1	1	1			
Volume	250g	600g	10g	10g	250g	125g	1500g			
SAMPLE ANALYSIS	See item (1) in Special Instructions	[illegible]	[illegible]	See item (2) in Special Instructions	See item (3) in Special Instructions	TOC - 9060	Particle Size Dry Sieve			

Sample No.	Matrix *	Sample Date	Sample Time										
J17C0	OTHER SOLID	2/12/09	1120					X	X	X			

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
[illegible]	2/12/09 0815	[illegible]	2/12/09 0815
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
[illegible]	2-13-09 0800	D. Hellberg	2/13/09 0800
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
D. Hellberg	2/13/09 1200	FedEx 2/13/09	1200
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
FedEx	2-14-09 1115	[illegible]	2-14-09 1115
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time

SPECIAL INSTRUCTIONS

(1) Gamma Spec - GEA Gamma (Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238)
(2) Strontium-89/90 - Total Sr; Isotopic Thorium (Thorium-232); Isotopic Uranium (Uranium-233/234, Uranium-235, Uranium-238); Isotopic Plutonium
(3) ICP Metals - 6010 (Full List) (Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Titanium, Vanadium, Zinc); Mercury - 7471 - (CV)

Sample analyses using archive samples from controlled storage. [illegible] removed samples from storage location, [illegible] custody of samples for shipment to lab.

Matrix *

LABORATORY SECTION — Received By — Title — Date/Time

FINAL SAMPLE DISPOSITION — Disposal Method — Disposed By — Date/Time

ashington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-116-1020 | Page 1 of 1

er: BA

Company Contact: JOAN KESSNER | Telephone No.: 375-4698

Project Coordinator: WEISS, RL

Price Code: 9K | Data Turnaround: 45 Days

Sampling Location: RIL 10 SSD

SAF No.: RC-116

Designation: Inside River Component of the RCBRA - Sediment

Field Logbook No.: EL-1651-1

COA: RESCRC6520

Method of Shipment: FEDEX

ice No.: WCH-08-000,051,0536

Offsite Property No.: N/A

Bill of Lading/Air Bill No.: 796342246660

ed To: ELLINE SERVICE [✓ OTONVILLE]

SIBLE SAMPLE HAZARDS/REMARKS

cial Handling and/or Storage

B30000

Preservation	None	None	None	None	Cool 4C	Cool 4C	None			
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	G/P			
No. of Container(s)	1	1	1	1	1	1	1			
Volume	150g	500g	10g	10g	250g	125g	1000g			
SAMPLE ANALYSIS	See item (1) in Special Instructions	[illegible]	[illegible]	See item (2) in Special Instructions	See item (3) in Special Instructions	TOC - 9060	Particle Size (Dry Sieve) D422			

Sample No.	Matrix *	Sample Date	Sample Time										
71 1	OTHER SOLID	2/12/09	1200					X	X	X			

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
[illegible]	2/12/09 915	[illegible]	2/12/09 1715
[illegible] 2/13/09	0800	D. [illegible]	2/13/09 0800
[illegible]	2/13/09 1200	FedEx	2/13/09 1200
[illegible] 2-14-09	1125	[illegible]	2-14-09 1125

SPECIAL INSTRUCTIONS

(1) Gamma Spec - GEA [Americium-241, Antimony-125, Beryllium-7, Cerium-144, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Thorium-228, Uranium-235]
(2) Strontium-89,90 - Total Sr; Isotopic Thorium [Thorium-230]; Isotopic Uranium [Uranium-233/234, Uranium-235, Uranium-238]; Isotopic Plutonium
(3) ICP Metals - 6010 (Full List) [Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc]; Mercury - 7471 - (CVAA)

Samples used [illegible] removed from controlled storage. Sample returned samples from storage location [illegible] of samples for shipment [illegible]

Matrix *

Date/Time

Date/Time

LABORATORY SECTION | Received By | Title

FINAL SAMPLE DISPOSITION | Disposal Method | Disposed By

WCH-EF 011

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-116-1031 | Page 5 of [illegible]

Collector [illegible]	Company Contact JOAN KESSNER	Telephone No [illegible]	Project Coordinator WEISS, RI
Project Designation Columbia River Component of the RCBRA - Sediment	Sampling Location RFI S-[illegible] SSD		SAF No RC-116
Ice Chest No WCH 08-006,051,[illegible]	Field Logbook No [illegible]	COA [illegible]	Method of Shipment FEDEX
Shipped To [illegible] (LIONVILLE)	Offsite Property No. N/A		Bill of Lading/Air Bill No 796342246660

Price Code 9K

Data Turnaround 45 Days

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

Preservation	[illegible]	[illegible]	[illegible]
Type of Container	[illegible]	[illegible]	[illegible]
No. of Container(s)	1	1	1
Volume	[illegible] 5	[illegible]	10mg
SAMPLE ANALYSIS	[illegible]	[illegible]	[illegible]

Sample No.	Matrix *	Sample Date	Sample Time			
[illegible]	OTHER SOLID	[illegible]	[illegible]	X	X	X

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
L Strak[illegible]	2-12-09 / 1715	Ref B	2-12-09 / 1715
Ref B	2/13/09 0800	D. Hellberg	2/13/09 0800
[illegible]	2/13/09 1200	Fedex 2/13/09	1200
[illegible]	2-14-09 1125	[illegible]	2-14-09 1125

SPECIAL INSTRUCTIONS

[illegible] 2/11/09

[illegible]

[illegible]

Matrix *

[illegible]

LABORATORY SECTION — Received By — Title — Date/Time

FINAL SAMPLE DISPOSITION — Disposal Method — Disposed By — Date/Time

[illegible]

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-116-1032 Page 2 of 4

ector: B M	Company Contact: JOAN KESSNER	Telephone No.: 373-4699	Project Coordinator: WEISS, RJ
			Price Code: 9K
			Data Turnaround: 45 Days
ect Designation: olumbia River Component of the RI/BRA - Section 6	Sampling Location: RTLS / SSID		SAF No.: RC116
hest No.: WCH-08-000605/0826	Field Logbook No.: EL-1631-1	COA: BESCR1-6520	Method of Shipment: FEDEX
pped To: EBERLINE SERVICES LIONVILLE	Offsite Property No.: N/A		Bill of Lading/Air Bill No.: 796342246660

OSSIBLE SAMPLE HAZARDS/REMARKS

pecial Handling and/or Storage

0000035

		Preservation	Cool 4C	Cool 4C	None	
		Type of Container	G	aG	G/P	
		No. of Container(s)	1	1	1	
		Volume	125mL 5	125g	100g	
SAMPLE ANALYSIS			Semivolatiles - Special Equipment	TPH - NWT	Particle Size (Dry Sieve) PSD	
Sample No.	Matrix *	Sample Date	Sample Time			
J1B7X1	OTHER SOLID	2/12/09	1510	X	X	X

CHAIN OF POSSESSION

Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
B Mayhew	2/12/09 1715		2/12/09 1715
	2/13/09 0800	D Heidelberg	2/13/09 0800
D Heidelberg	2/13/09 1200	FedEx	2/13/09 1200
	2-14-09 1125		2-14-09 1125
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time

SPECIAL INSTRUCTIONS

TPH-Diesel Range - WTPH-Dx [illegible]

Samples [illegible] samples [illegible] storage [illegible] samples for shipment [illegible]

Matrix *

[illegible]

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-051

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-110-1033 | Page 1 of 1

Collector [illegible]	Company Contact JOAN KESSNER	Telephone No. 375-[illegible]	Project Coordinator WEISS, RE
Sample Designation [illegible] River Composites of the [illegible] - Sediment	Sampling Location [illegible] 5 SSD		SAF No. RC-110
Ice Chest No. WH-06-0005-4036	Field Logbook No. EL-1651-1	COA [illegible] RC0520	Method of Shipment FEDEX
Shipped To [illegible] SERVICES (ONSITE)	Offsite Property No. N/A		Bill of Lading/Air Bill No. 7963 4224 6660

Price Code 9K

Data Turnaround 45 Days

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

Preservation	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]			
Type of Container	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]			
No. of Container(s)	1	1	1	[illegible]	[illegible]	1	[illegible]			
Volume	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	125g	[illegible]			
SAMPLE ANALYSIS	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]			

Sample No.	Matrix *	Sample Date	Sample Time										
16768	OTHER SOLID	[illegible]	[illegible]					X	X	X			

CHAIN OF POSSESSION

Sign/Print Names

Relinquished By/Removed From	Date/Time 2-12-09 / 1715	Received By/Stored In	Date/Time 2-12-09 / 1715
Relinquished By/Removed From	Date/Time 2/13/09 0800	Received By/Stored In	Date/Time 2/13/09 0800
Relinquished By/Removed From	Date/Time 2/13/09 1200	Received By/Stored In Fedex 2/13/09	Date/Time 1200
Relinquished By/Removed From	Date/Time 2/19/09 1125	Received By/Stored In	Date/Time 2/19/09 1125
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time

SPECIAL INSTRUCTIONS

(1) Gamma Spec - [illegible] 241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, [illegible] Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238}; (2) Strontium-89,90 - Total Sr; Isotopic Thorium; Isotopic Uranium {Uranium-233/234, Uranium-235, Uranium-238}; Isotopic Plutonium; (3) ICP Metals - 6010 (all list) {Aluminum, Antimony, Arsenic, Barium, Beryllium, [illegible] Calcium, Chromium, Cobalt, Copper, [illegible] Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, [illegible] Silver, Sodium, [illegible] Tin, [illegible] Vanadium, Zinc}; Mercury - 7471 [illegible]

Samples [illegible]
[illegible] storage [illegible] shipped
samples from storage [illegible]
2 samples [illegible]

Matrix *
[illegible]

LABORATORY SECTION	Received By [illegible] Title [illegible] Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method [illegible] Disposed By [illegible] Date/Time

WCH-EE-011

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-116-1034 Page 1 of 1

Collector	Company Contact JOAN KESSNER	Telephone No. 375-4648	Project Coordinator WEISS, RL
Project Designation Columbia River Component of the RCBRA - Sediment	Sampling Location RELS-7 SSD		SAF No. RC-116
Ice Chest No. 10CH-08-004/051/B16	Field Logbook No. EL-1631-1	COA I1LSCRC6520	Method of Shipment FEDEX
Shipped To LOCKHEED SERVICES ~~[illegible]~~ EBERLINE	Offsite Property No. N/A		Bill of Lading/Air Bill No. 796342246660

Price Code 9K

Data Turnaround
45 Days

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

Preservation	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]			
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	G/P			
No. of Container(s)	1	1	1	1	-	1	1			
Volume	1500g	100g	10g	1g	250g	125g	1000g			
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Technetium-99	See item (2) in Special Instructions	See item (3) in Special Instructions	TOC - 9060	Particle Size (Dry Sieve) Hyd			

Sample No.	Matrix *	Sample Date	Sample Time										
J187K0	OTHER SOLID	[illegible]	1545					X	X	X			

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From L Smith	Date/Time 2/12-09 /1715	Received By/Stored In Kel B	Date/Time 2-12-09 /1715
Relinquished By/Removed From Kel B 2/13/09	Date/Time	Received By/Stored In D Hellberg	Date/Time 2/13/09 0800
Relinquished By/Removed From D Hellberg	Date/Time 2/13/09 1200	Received By/Stored In Fedex 2/13/09	Date/Time 1200
Relinquished By/Removed From [illegible] 2-14-09	Date/Time 1125	Received By/Stored In [illegible] 2-14-09	Date/Time 1125
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time

SPECIAL INSTRUCTIONS

(1) Gamma Spec - [illegible] {Americium-241, Antimony-125, Beryllium-7, Cerium-144, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Thorium-228, Uranium-235}

(2) Strontium-89/90 - Total Sr; Isotopic Uranium {Uranium-233/234, Uranium-235, Uranium-238}; Isotopic Plutonium

(3) ICP Metals - 6010 (Add-on) {Aluminum, Antimony, Arsenic, Barium, Beryllium, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc}; Mercury - 7471 (CVAA)

Samples withdrawn to remove samples
from controlled storage. Shipper removed
samples from storage location, chain of custody
of samples for shipment to lab

Matrix *
S = Soil
SE = Sediment
SO = Solid
SL = Sludge
W = Water
O = Oil
A = Air
DS = Drum Solids
DL = Drum Liquids
T = Tissue
WI = Wipe
L = Liquid
V = Vegetation
X = Other

LABORATORY SECTION	Received By	Title Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By Date/Time

WCH-EE-015

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST			RC-116-1035	Page 1 of 1
Collector B [illegible]	Company Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator WEISS, RL	Price Code 9K	Data Turnaround 45 Days
Project Designation [illegible] Component of the RCBRA - Sediment	Sampling Location RFLS 3 SSD		SAF No. RC-136		
Ice Chest No. WCH-08006, 05/036	Field Logbook No. EL-1631-1	COA RESCRC6520	Method of Shipment FED EX		
Shipped To [illegible] SERVICES [illegible]	Offsite Property No. N/A		Bill of Lading/Air Bill No. 796342246660		

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

Preservation	None	None	None	None	Cool 4C	Cool 4C	None			
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	G/P			
No. of Container(s)	1	1	1	3	1	1	1			
Volume	1500g	500g	0g	0g	250g	175g	1000g			
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Technetium-99	See item (2) in Special Instructions	See item (3) in Special Instructions	TOC - 9060	Particle Size (Dry Sieve) D422			

Sample No.	Matrix *	Sample Date	Sample Time										
[illegible]	OTHER SOLID	2/12/09	1540					X	X	X			

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
B [illegible] B4 [illegible]	2/12/09 1715	[illegible]	2/12/09 1715
[illegible]	2/13/09 0800	D. Hesselberg [illegible]	2/13/09 0800
D. Hesselberg [illegible]	2/13/09 1200	FedEx	2/13/09 1200
[illegible]	2-14-09 1125	[illegible]	2-14-09 1125

SPECIAL INSTRUCTIONS

(1) Gamma Spec - all (Add-on) (Americium-241, Antimony-125, Neptunium-237, Cerium-144, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238;
(2) Strontium-89,90 - Total Sr; Isotopic Thorium (Thorium-212? Isotopic Uranium (Uranium-233/234, Uranium-235, Uranium-238); Isotopic Plutonium
(3) ICP Metals - 6010 (Full List) (Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Titanium, Vanadium, Zinc); Mercury - 7471 [illegible]

Samples transferred to refrigerated storage from controlled storage. Shipper retrieved samples from storage location using custody of samples for shipment to lab.

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

[illegible]

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-116-306

Page 1 of 1

ector Lindley	Company Contact JOAN KESSNER	Telephone No. 375-4658	Project Coordinator WEISS, RL
ect Designation Columbia River Component of the RCBRA - Sediment	Sampling Location WBT. 75.5D		SAF No. RC-116
Chest No. WCH-08-006,051,086	Field Logbook No. EL-1651-1	COA HESTRC6520	Method of Shipment FED EX
pped To -TEDLINE SERVICES (CONVERT)	Offsite Property No. N/A		Bill of Lading/Air Bill No. 796342246660

Price Code 9K

Data Turnaround 45 Days

SSIBLE SAMPLE HAZARDS/REMARKS

ecial Handling and/or Storage

Preservation	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	None
Type of Container	G/P	aG	aG	aG	G	aG	G/P
No. of Container(s)	1	1	1	1	1	1	1
Volume	250g	250g	125g	250g	250g	125g	500g
SAMPLE ANALYSIS	See Special Instructions	[illegible]	[illegible]	Semi-VOA - 8270 (TCL)	See Special Instructions	[illegible]	Percent Solids (Dry Sieve) [illegible]

Sample No.	Matrix *	Sample Date	Sample Time							
J7X03	OTHER SOLID	1/1/09	0910	X	X	X	X	X	X	X

CHAIN OF POSSESSION

Sign/Print Names

	Date/Time		Date/Time
Relinquished By/Removed From	2-12-09 / 1215	Received By/Stored In	2-12-09 / 1215
Relinquished By/Removed From 2/13/09	0800	Received By/Stored In	2/13/09 1200
Relinquished By/Removed From	2/13/09 1200	Received By/Stored In FedEx	2/13/09 1200
Relinquished By/Removed From	2-14-09 1125	Received By/Stored In	2-14-09 1125
Relinquished By/Removed From	2-14-09 1125	Received By/Stored In	2-14-09 1125
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time

SPECIAL INSTRUCTIONS

(1) ICP Metals - 6010 (TAL List): Aluminum, Antimony, Arsenic, Barium, Beryllium, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc; Mercury - 7471 - (CVAA)

(2) VOA - 8260B (TCL) (1,1,1-Trichloroethane, 1,1,2,2-Tetrachloroethane, 1,1,2-Trichloroethane, 1,1-Dichloroethane, 1,1-Dichloroethene, 1,2-Dichloroethane, 1,2-Dichloropropane, 2-Butanone, 2-Hexanone, 4-Methyl-2-Pentanone, Acetone, Benzene, Bromodichloromethane, Bromoform, Bromomethane, Carbon disulfide, Carbon tetrachloride, Chlorobenzene, Chloroethane, Chloroform, Chloromethane, cis-1,2-Dichloroethylene, cis-1,3-Dichloropropene, Dibromochloromethane, Ethylbenzene, Methylene chloride, Styrene, Tetrachloroethene, Toluene, trans-1,2-Dichloroethylene, trans-1,3-Dichloropropene, Trichloroethene, Vinyl chloride, Xylenes (total))

Sample custodian to remove samples from controlled storage. Sampler removed samples from storage on after taking custody of samples for shipment to lab.

Matrix *

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-116-1084 Page [illegible] of [illegible]

Collector: [illegible]

Company Contact: JOAN KESSNER

Telephone No: 373-4088

Project Coordinator: KESSNER, JD

Price Code: 9K

Data Turnaround: 45 Days

Project Designation: [illegible]

Sampling Location: [illegible]

SAF No: RC-116

Ice Chest No: [illegible]-08-000-051,036

Field Logbook No: [illegible]

COA: RESCROSS[illegible]

Method of Shipment: FED EX

Shipped To: [illegible] (circled: [illegible])

Offsite Property No: N/A

Bill of Lading/Air Bill No: 796394224660

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

0900040

Preservation	[illegible]	[illegible]	None	
Type of Container	G	[illegible]	G/P	
No. of Container(s)	1	1	1	
Volume	[illegible] 5	[illegible]	1 Kg	
SAMPLE ANALYSIS	[illegible]	[illegible]	[illegible]	

Sample No.	Matrix *	Sample Date	Sample Time			
J18YN2	OTHER SOLID	[illegible]	[illegible]	X	X	X

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
[illegible]	2-12-09 / 1715	[illegible]	2-12-09 / 1915
[illegible]	2/13/09 0800	D. Hedelberg [illegible]	2/13/09 0800
D. Hedelberg [illegible]	2/13/09 1200	Fed Ex	2/13/09 1200
[illegible]	2-14-09 1125	[illegible]	2-14-09 1125

SPECIAL INSTRUCTIONS

5 [illegible]

[illegible]

Matrix *

LABORATORY SECTION — Received By — Title — Date/Time

FINAL SAMPLE DISPOSITION — Disposal Method — Disposed By — Date/Time

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-116-1087	Page 1 of 1

Collector [illegible]	Company Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator KESSNER, JH
			Price Code 9K
			Data Turnaround 45 Days
Project Designation [illegible] River Component of the RCBRA - Soil[illegible]	Sampling Location [illegible] SSD		SAF No. RC-116
Ice Chest No. WCH-08-006, 051, 036	Field Logbook No. [illegible]	COA [illegible]SCRC6520	Method of Shipment FEDEX
Ship To [illegible] ([illegible])	Offsite Property No. N/A		Bill of Lading/Air Bill No. 796342246660

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

Preservation	None	None	None	None	Cool 4C	Cool 4C	None			
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	G/P			
No. of Container(s)	1	[illegible]	1	1		1	[illegible]			
Volume	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]			
SAMPLE ANALYSIS	See Special Instructions	Carbon-14	Technetium-99	See Special Instructions	See Special Instructions	[illegible]	[illegible]			

Sample No.	Matrix *	Sample Date	Sample Time										
[illegible]	OTHER SOLID	[illegible]	1405					X	X	X			

CHAIN OF POSSESSION	Date/Time	Sign/Print Names	Date/Time
Relinquished By/Removed From [illegible]	2-10-09/1715	Received By/Stored In [illegible]	2-10-09/1715
Relinquished By/Removed From [illegible]	2/13/09 0800	Received By/Stored In [illegible]	2/13/09 0800
Relinquished By/Removed From [illegible]	2/13/09 1200	Received By/Stored In FedEx	2/13/09 1200
Relinquished By/Removed From [illegible]	[illegible] 1025	Received By/Stored In [illegible]	2-14-09 1025
Relinquished By/Removed From		Received By/Stored In	
Relinquished By/Removed From		Received By/Stored In	

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (GEA) [illegible] Americium-241, Antimony-125, [illegible] Cesium-137, [illegible] Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238}; (2) Strontium-89,90 - Total Sr; Isotopic Thorium {Thorium-228, Thorium-230, Thorium-232}; Isotopic Uranium {Uranium-233/234, Uranium-235, Uranium-238}; Isotopic Plutonium; (3) ICP Metals - 6010 (Full List) {Aluminum, Antimony, Arsenic, Barium, Beryllium, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc}; Mercury - 7471 (CVAA)

Samples were [illegible] sampled
from controlled storage. Shipper removed
samples from storage to [illegible] sealed,
all samples for shipment to lab.

Matrix *
[illegible]

LABORATORY SECTION	Received By	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

000041

WCH-EF-[illegible]

Appendix 5

Data Validation Supporting Documentation

GENERAL CHEMISTRY ANALYSIS DATA VALIDATION CHECKLIST

VALIDATION LEVEL:	A	B	[✓ C]	D	E
PROJECT: RCBRA			DATA PACKAGE: K1540		
VALIDATOR: ELR	LAB: LLI			DATE: 11/24/03	
			SDG: K1540		

ANALYSES PERFORMED

Anions/IC	[✓ TOC]	TOX	TPH-418.1	Oil and Grease	Alkalinity
Ammonia	BOD/COD	Chloride	Chromium VI	pH	NO_3/NO_2
Sulfate	TDS	TKN	Phosphate		

SAMPLES/MATRIX

J19L10	J18678-A	J18779	J18794	J18795	J18796	J18797
J18798	J18799	J18700	J18702	J18704	J18705	J18706
J18707	J18708	J18709	J187F0	J187F1	J187K6	J187K7
J187K8	J187K9	J18720	J18X03	J187Y2	J187Y5	~~J187~~
						solid

1. DATA PACKAGE COMPLETENESS AND CASE NARRATIVE

Technical verification documentation present? .... Yes [✓ No] N/A

Comments

2. INSTRUMENT PERFORMANCE AND CALIBRATIONS (Levels D and E)

Initial calibrations performed on all instruments? .... Yes No [✓ N/A]

Initial calibrations acceptable? .... Yes No [✓ N/A]

ICV and CCV checks performed on all instruments? .... Yes No [✓ N/A]

ICV and CCV checks acceptable? .... Yes No [✓ N/A]

Standards traceable? .... Yes No [✓ N/A]

Standards expired? .... Yes No [✓ N/A]

Calculation check acceptable? .... Yes No [✓ N/A]

Comments

GENERAL CHEMISTRY ANALYSIS DATA VALIDATION CHECKLIST

3. BLANKS (Levels B, C, D, and E)

ICB and CCB checks performed for all applicable analyses? (Levels D, E) ... Yes No [✓ N/A]

ICB and CCB results acceptable? (Levels D, E) ... Yes No [✓ N/A]

Laboratory blanks analyzed? ... [✓ Yes] No N/A

Laboratory blank results acceptable? ... [✓ Yes] No N/A

Field blanks analyzed? (Levels C, D, E) ... Yes [✓ No] N/A

Field blank results acceptable? (Levels C, D, E) ... Yes No [✓ N/A]

Transcription/calculation errors? (Levels D, E) ... Yes No [✓ N/A]

Comments: no FB.

4. ACCURACY (Levels C, D, and E)

Spike samples analyzed? ... [✓ Yes] No N/A

Spike recoveries acceptable? ... [✓ Yes] No N/A

Sike standards NIST traceable? (Levels D, E) ... Yes No [✓ N/A]

Spike standards expired? (Levels D, E) ... Yes No [✓ N/A]

LCS/BSS samples analyzed? ... [✓ Yes] No N/A

LCS/BSS results acceptable? ... [✓ Yes] No N/A

Standards traceable? (Levels D, E) ... Yes No [✓ N/A]

Standards expired? (Levels D, E) ... Yes No [✓ N/A]

Transcription/calculation errors? (Levels D, E) ... Yes No [✓ N/A]

Performance audit sample(s) analyzed? ... Yes [✓ No] N/A

Performance audit sample results acceptable? ... Yes No [✓ N/A]

Comments: no PAS.

GENERAL CHEMISTRY ANALYSIS DATA VALIDATION CHECKLIST

5. PRECISION (Levels C, D, and E)

Duplicate RPD values acceptable? [✓ Yes] No N/A
Duplicate results acceptable? [✓ Yes] No N/A
MS/MSD standards NIST traceable? (Levels D, E) Yes No [✓ N/A]
MS/MSD standards expired? (Levels D, E) Yes No [✓ N/A]
Field duplicate RPD values acceptable? [✓ Yes] No N/A
Field split RPD values acceptable? Yes No [✓ N/A]
Transcription/calculation errors? (Levels D, E) Yes No [✓ N/A]
Comments:

6. HOLDING TIMES (all levels)

Samples properly preserved? [✓ Yes] No N/A
Sample holding times acceptable? [✓ Yes] No N/A
Comments:

GENERAL CHEMISTRY ANALYSIS DATA VALIDATION CHECKLIST

7. RESULT QUANTITATION AND DETECTION LIMITS (all levels)

Results reported for all requested analyses? .... [✓ Yes] No N/A

Results supported in the raw data? (Levels D, E) .... Yes No [✓ N/A]

Samples properly prepared? (Levels D, E) .... Yes No [✓ N/A]

Detection limits meet RDL? .... [✓ Yes] No N/A

Transcription/calculation errors? (Levels D, E) .... Yes No [✓ N/A]

Comments:

Appendix 6

Additional Documentation Requested by Client

Wet Chemistry - Quality Control

Lionville Laboratory

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch L902193 - Default Prep GenChem										
Blank (L902193-BLK1)				Prepared & Analyzed: 02/26/2009						
Total Organic Carbon	7.12 U	20.00	mg/kg							
LCS (L902193-BS1)				Prepared & Analyzed: 02/26/2009						
Total Organic Carbon	372.33	20.00	mg/kg	400.00		93.1	80-120			
Duplicate (L902193-DUP2)		Source: 0902047-17		Prepared & Analyzed: 02/26/2009						
Total Organic Carbon	9852.8	200.00	mg/kg		8106.7			19.3	20	
Matrix Spike (L902193-MS2)		Source: 0902047-17		Prepared & Analyzed: 02/26/2009						
Total Organic Carbon	13690	500.00	mg/kg	5566	8106.7	100	75-125			
Batch L903192 - Default Prep GenChem										
Blank (L903192-BLK1)				Prepared & Analyzed: 03/05/2009						
Total Organic Carbon	~~2.47~~ 1.2 U	20.00	mg/kg							
LCS (L903192-BS1)				Prepared & Analyzed: 03/05/2009						
Total Organic Carbon	380.10	20.00	mg/kg	400.00		95.0	80-120			

Nicki Perrone For Odette Johnson, Project Manager

204 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
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WCH Hanford, Inc. 2620 Fermi Avenue Richland WA, 99354	Project: RCF116 Project Number: [none] Project Manager: Joan Kessner	**Reported:** 04/24/2009 12:01

Wet Chemistry - Quality Control

Lionville Laboratory

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch L903192 - Default Prep GenChem										
Blank (L903192-BLK1)				Prepared & Analyzed: 03/05/2009						
Total Organic Carbon	[illegible]	20.00	mg/kg							
LCS (L903192-BS1)				Prepared & Analyzed: 03/05/2009						
Total Organic Carbon	190.10	20.00	mg/kg	200.00		95.0	80-120			
Duplicate (L903192-DUP1)		Source: 0902058-02		Prepared & Analyzed: 03/05/2009						
Total Organic Carbon	3370.6	200.00	mg/kg		3129.0			7.46	20	
Matrix Spike (L903192-MS1)		Source: 0902058-02		Prepared & Analyzed: 03/05/2009						
Total Organic Carbon	3367.1	200.00	mg/kg	3316	3129.0	100	75-125			
Batch L903194 - Default Prep GenChem										
Blank (L903194-BLK1)				Prepared & Analyzed: 03/06/2009						
Total Organic Carbon	5.32	20.00	mg/kg							
LCS (L903194-BS1)				Prepared & Analyzed: 03/06/2009						
Total Organic Carbon	197.64	20.00	mg/kg	400.00		96.9	80-120			
Duplicate (L903194-DUP1)		Source: 0902058-09		Prepared & Analyzed: 03/06/2009						
Total Organic Carbon	2991.1	200.00	mg/kg		3419.1			13.9	20	
Matrix Spike (L903194-MS1)		Source: 0902058-09		Prepared & Analyzed: 03/06/2009						
Total Organic Carbon	7951.8	200.00	mg/kg	7692.3	3419.1	98.9	75-125			

Date: 7 December 2009
To: Washington Closure Hanford Inc. (technical representative)
From: ELR Consulting
Project: Columbia River Component of the RCBRA – Sediment
Subject: Metals - Data Package No. K1540-LLI

INTRODUCTION

This memo presents the results of data validation on Data Package No. K1540 prepared by Lionville Laboratories Inc. (LLI). A list of samples validated along with the analyses reported and the method of analysis is provided in the following table.

Sample ID	Sample Date	Media	Validation	Analysis
J18610	2/12/09	Solid	C	See note 1
J18764-A	2/12/09	Solid	C	See note 1
J18779	2/12/09	Solid	C	See note 1
J18794	2/12/09	Solid	C	See note 1
J18795	2/12/09	Solid	C	See note 1
J18796	2/12/09	Solid	C	See note 1
J18797	2/12/09	Solid	C	See note 1
J18798	2/12/09	Solid	C	See note 1
J18799	2/12/09	Solid	C	See note 1
J187B0	2/12/09	Solid	C	See note 1
J187D2	2/12/09	Solid	C	See note 1
J187D4	2/12/09	Solid	C	See note 1
J187D5	2/12/09	Solid	C	See note 1
J187D6	2/12/09	Solid	C	See note 1
J187D8	2/12/09	Solid	C	See note 1
J187D7	2/12/09	Solid	C	See note 1
J187D9	2/12/09	Solid	C	See note 1
J187F0	2/12/09	Solid	C	See note 1
J187F1	2/12/09	Solid	C	See note 1
J187K6	2/12/09	Solid	C	See note 1
J187K7	2/12/09	Solid	C	See note 1
J187K8	2/12/09	Solid	C	See note 1
J187K9	2/12/09	Solid	C	See note 1
J187L0	2/12/09	Solid	C	See note 1
J17X03	2/12/09	Solid	C	See note 1
J187Y2	2/12/09	Solid	C	See note 1
J187Y5	2/12/09	Solid	C	See note 1

1 – ICP metals by 6010B and mercury by 7471A.

Data validation was conducted in accordance with the Washington Closure Hanford (WCH) validation statement of work and the Remedial Investigation Work Plan for Hanford Site Releases to the Columbia River (DOE/RL-2008-11, Rev. 0, September 2008). Appendices 1 through 6 provide the following information as indicated below:

Appendix 1. Glossary of Data Reporting Qualifiers
Appendix 2. Summary of Data Qualification
Appendix 3. Qualified Data Summary and Annotated Laboratory Reports
Appendix 4. Laboratory Narrative and Chain-of-Custody Documentation
Appendix 5. Data Validation Supporting Documentation
Appendix 6. Additional Documentation Requested by Client

DATA QUALITY PARAMETERS

- **Holding Times**

Analytical holding times for metals are assessed to ascertain whether the holding time requirements were met by the laboratory. The holding time requirements are as follows. Soil samples must be analyzed within 6 months for ICP metals and 28 days for mercury.

All holding times were acceptable.

- **Preparation (Method) Blanks**

Preparation Blanks

At least one preparation blank, consisting of deionized distilled water processed through each sample preparation and analysis procedure, must be prepared and analyzed with every sample delivery group. In the case of positive blank results, samples with digestate concentrations less than five times the preparation blank value have had their associated values qualified as non detected and flagged "U". Samples with concentrations of greater than five times the highest blank concentration do not require qualification.

In the case of negative blank results, if the absolute value exceeds the contract required detection limit (CRDL), all nondetects are rejected and flagged "UR" and all detects that are less than ten times the absolute value of the associated preparation blank result are qualified as estimates and flagged "J". If the absolute value of the negative preparation blank is greater than the instrument detection limit (IDL) and less than or equal to the CRDL, all nondetects are qualified as estimates and flagged "UJ" and all detects less than ten times the absolute value of the blank are qualified as estimates and flagged "J". If the sample results are greater than ten times the absolute value of the preparation blank, no qualification is necessary.

Due to method blank contamination, all tin results were qualified as undetected and flagged "UJ".

All other preparation blank results were acceptable.

Field (Equipment) Blank

No field blanks were submitted for analysis.

Accuracy

Matrix Spike and Laboratory Control Sample

Matrix spike (MS) and laboratory control sample (LCS) analyses are used to assess the analytical accuracy of the reported data. The matrix spike is used to assess the effect of the matrix on the ability to accurately quantify sample concentrations. Recoveries must fall within the range of 70% to 130%. Samples with a recovery of less than 30% and a sample result below the IDL are rejected and flagged "UR". Samples with a recovery of 30% to 69% and a sample result less than the IDL are qualified "UJ". Samples with a recovery of greater than 130% or less than 70% and a sample result greater than the IDL are qualified as estimates and flagged "J". Finally, for samples with a recovery greater than 130% and a sample result less than the IDL, no qualification is required.

Due to matrix spike recoveries outside QC limits (51%), all zinc results in samples J187D8, J187D7, J187D9, J187F0, J187F1, J187K6, J187K7, J187K8, J187K9, J187L0, J17X03, J187Y2 and J187Y5 were qualified as estimates and flagged "J".

Due to an LCS recovery outside QC limits, all detected antimony (168% & 170%), arsenic (195% & 195%), iron (148% & 133%), vanadium (208% & 181%) and thallium (0% & 0%) results were qualified as estimates and flagged "J".

Due to LCS recoveries outside QC limits, the calcium (151%) and magnesium (168%) result in samples J18610, J18764-A, J18779, J18794, J18795, J18796, J18797, J18798, J18799, J187B0, J187D2, J187D4 and J187D6 were qualified as estimates and flagged "J".

All other accuracy results were acceptable.

Precision

Laboratory Duplicate Samples

Analytical precision is expressed by the relative percent differences (RPD) between the recoveries of matrix spike duplicate (MSD) analyses performed on a sample in the analytical batch. Precision may alternatively be assessed using unspiked duplicate analyses performed on a sample in the analytical batch. If both sample and replicate activities (concentrations) are greater than five times the CRDL and the RPD is less than 30%, no qualification is required. If either activity (concentration) is less than five times the CRDL, the RPD control limit is less than or equal to two times the CRDL. If the RPD is outside the applicable control limit, associated results are qualified as estimated detects or estimated non-detects.

All laboratory duplicate results were acceptable.

Field Duplicate

One set of field duplicates (J18610/J18795) was submitted for analysis. Field duplicates are compared using the same criteria as for laboratory duplicates. All field duplicates results were acceptable.

- **Analytical Detection Levels**

Reported analytical detection levels are compared against the project RQLs to ensure that laboratory detection levels meet the required criteria. All results met the RQL.

- **Completeness**

Data package No. K1540 was submitted for validation and verified for completeness. Completeness is based on the percentage of data determined to be valid (i.e., not rejected). The completion percentage was 100%.

MAJOR DEFICIENCIES

None found.

MINOR DEFICIENCIES

The following minor deficiencies were noted:

- Due to method blank contamination, all tin results were qualified as undetected and flagged "UJ"
- Due to matrix spike recoveries outside QC limits (51%), all zinc results in samples J187D8, J187D7, J187D9, J187F0, J187F1, J187K6, J187K7, J187K8, J187K9, J187L0, J17X03, J187Y2 and J187Y5 were qualified as estimates and flagged "J".
- Due to an LCS recovery outside QC limits, all detected antimony (168% & 170%), arsenic (195% & 195%), iron (148% & 133%), vanadium (208% & 181%) and thallium (0% & 0%) results were qualified as estimates and flagged "J".
- Due to LCS recoveries outside QC limits, the calcium (151%) and magnesium (168%) result in samples J18610, J18784-A, J18779, J18794, J18795, J18796, J18797, J18798, J18799, J187B0, J187D2, J187D4 and J187D6 were qualified as estimates and flagged "J".

Data flagged "J" indicates that the associated concentration is an estimate, but under the WCH statement of work, the data may be usable for decision-making purposes. All other validated results are considered accurate within the standard error associated with the methods.

REFERENCES

Washington Closure Hanford Contract #S00W307A00 (March 2008), *Data Validation Services*.

DOE/RL-2008-11, Rev.0, *Remedial Investigation Work Plan for Hanford Site Releases to the Columbia River*, September 2008.

Appendix 1

Glossary of Data Reporting Qualifiers

Qualifiers which may be applied by data validators in compliance with WCH validation SOW are as follows:

U - Indicates the compound or analyte was analyzed for and not detected in the sample. The value reported is the sample quantitation limit corrected for sample dilution and moisture content by the laboratory.

UJ - Indicates the compound or analyte was analyzed for and not detected in the sample. Due to a minor QC deficiency identified during the data validation, the associated quantitation limit is an estimate.

J - Indicates the compound or analyte was analyzed for and detected. Due to a minor QC deficiency identified during the data validation, the associated concentration is an estimate, but the data are usable for decision-making purposes.

BJ - Applied to inorganic analyses only. Indicates the analyte concentration was greater than the IDL but less than the CRDL and is considered an estimated value.

R - Indicates the compound or analyte was analyzed for, detected, and due to an identified major QC deficiency, the data are unusable

UR - Indicates the compound or analyte was analyzed for and not detected in the sample. Additionally, the data is unusable due to an identified major QC deficiency

NJ - Indicates presumptive evidence of a compound at an estimated value. The data may not be valid for some specific applications (i.e., usable for decision-making purposes).

N - Indicates presumptive evidence of a compound. The data may not be valid for some specific applications (i.e., usable for decision-making purposes).

Appendix 2

Summary of Data Qualification

METALS ORGANIC DATA QUALIFICATION SUMMARY*

SDG: K1540	**REVIEWER: ELR**	**Project: RCBRA**	**QC Issue**
COMPOUND	QUALIFIER	SAMPLES AFFECTED	REASON
Tin	UJ	All	Method blank contamination
Zinc	J	J187D8, J187D7 J187D9, J187F0 J187F1, J187K6 J187K7, J187K8 J187K9, J187L0 J17X03, J187Y2 J187Y5	MS recovery
Antimony Arsenic Iron Vanadium Thallium	J	All	LCS recovery
Calcium Magnesium	J	J18610, J18764 J18779, J18794 J18795, J18796 J18797, J18798 J18799, J187B0 J187D2, J187D4 J187D6	LCS recovery

* - The Qualified Data Summary Table includes laboratory applied "U" qualifiers not specifically identified here. The laboratory applied "U" qualifiers are included to minimize misinterpretation of results contained in the table.

Appendix 3

Qualified Data Summary and Annotated Laboratory Reports

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WC Hanford, Inc 2620 Fermi Avenue Richland WA, 99354	Project: RC-116 Project Number: (none) Project Manager: Joan Kessner	**Reported:** 04/27/2009 11:00

J18610

0902847-01 (Solid)

Lionville Laboratory

Metals by SW846 6000/7000 series

Analyte	Result	Reporting Limit	Qualifier	Units	Dilution	Batch	Prepared	Analyzed	Method
Aluminum	4530	4.72		mg/kg	1	1904016	04/03/2009	04/03/2009	6010B
Antimony	0.566	0.566	U J	"	"	"	"	"	"
Arsenic	2.14	0.943	J	"	"	"	"	"	"
Barium	40.5	0.472		"	"	"	"	"	"
Beryllium	0.136	0.189	B	"	"	"	"	"	"
Bismuth	9.43	9.43	U	"	"	"	"	"	"
Boron	0.736	1.89	B	"	"	"	"	"	"
Cadmium	0.155	0.189	B	"	"	"	"	"	"
Calcium	2290	94.3	J	"	"	"	"	"	"
Chromium	11.1	0.189		"	"	"	"	"	"
Cobalt	3.17	1.89		"	"	"	"	"	"
Copper	5.05	0.943		"	"	"	"	"	"
Iron	12900	18.9	J	"	"	"	"	"	"
Lead	3.47	0.472		"	"	"	"	"	"
Lithium	5.38	2.36		"	"	"	"	"	"
Magnesium	2760	70.8	J	"	"	"	"	"	"
Manganese	128	4.72		"	"	"	"	"	"
Molybdenum	1.89	1.89	U	"	"	"	"	"	"
Nickel	7.40	3.77		"	"	"	"	"	"
Phosphorus	401	47.2		"	"	"	"	"	"
Potassium	596	177		"	"	"	"	"	"
Selenium	0.943	0.943	U	"	"	"	"	"	"
Silicon	700	1.89		"	"	"	"	"	"
Silver	0.189	0.189	U	"	"	"	"	"	"
Sodium	86.0	47.2		"	"	"	"	"	"
Strontium	12.6	0.943		"	"	"	"	"	"
Thallium	0.472	0.472	U J	"	"	"	"	"	"
Tin	1.36	9.43	~~B~~ UJ	"	"	"	"	"	"
Uranium	18.9	18.9	U	"	"	"	"	"	"
Vanadium	33.1	2.36	J	"	"	"	"	"	"
Zinc	33.4	9.43		"	"	"	"	"	"
Mercury	0.0265	0.0265	U	mg/kg wet	"	1903074	03/10/2009	03/10/2009	7471A

11/29/09

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
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WC Hanford, Inc
2620 Fermi Avenue
Richland WA, 99354

Project: RC-126
Project Number: K1340
Project Manager: Joan Kessner

Reported:
04/10/2009 11:27

J18764-A

0902047-03 (Other Solid)

Lionville Laboratory

Metals by SW846 6000/7000 series

Analyte	Result and Qualifier	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Aluminum	6020	4.90	mg/kg	1	L904016	04/03/2009	04/04/2009	6010B
Antimony	0.720 J	0.588	mg/kg	1	L904016	04/03/2009	04/04/2009	6010B
Arsenic	3.81 J	0.980	mg/kg	1	L904016	04/03/2009	04/04/2009	6010B
Barium	44.0	0.490	mg/kg	1	L904016	04/03/2009	04/04/2009	6010B
Beryllium	0.136 B	0.196	mg/kg	1	L904016	04/03/2009	04/04/2009	6010B
Bismuth	9.80 U	9.80	mg/kg	1	L904016	04/03/2009	04/04/2009	6010B
Boron	1.58 B	1.96	mg/kg	1	L904016	04/03/2009	04/04/2009	6010B
Cadmium	0.578	0.196	mg/kg	1	L904016	04/03/2009	04/04/2009	6010B
Calcium	3500 J	98.0	mg/kg	1	L904016	04/03/2009	04/04/2009	6010B
Chromium	19.4	0.196	mg/kg	1	L904016	04/03/2009	04/04/2009	6010B
Cobalt	5.08	1.96	mg/kg	1	L904016	04/03/2009	04/04/2009	6010B
Copper	15.5	0.980	mg/kg	1	L904016	04/03/2009	04/04/2009	6010B
Iron	22000 J	19.6	mg/kg	1	L904016	04/03/2009	04/04/2009	6010B
Lead	20.4	0.490	mg/kg	1	L904016	04/03/2009	04/04/2009	6010B
Lithium	5.75	2.45	mg/kg	1	L904016	04/03/2009	04/04/2009	6010B
Magnesium	3140 J	73.5	mg/kg	1	L904016	04/03/2009	04/04/2009	6010B
Manganese	236	4.90	mg/kg	1	L904016	04/03/2009	04/04/2009	6010B
Molybdenum	0.298 B	1.96	mg/kg	1	L904016	04/03/2009	04/04/2009	6010B
Nickel	12.0	3.92	mg/kg	1	L904016	04/03/2009	04/04/2009	6010B
Phosphorus	464	49.0	mg/kg	1	L904016	04/03/2009	04/04/2009	6010B
Potassium	602	192	mg/kg	1	L904016	04/03/2009	04/04/2009	6010B
Selenium	0.980 U	0.980	mg/kg	1	L904016	04/03/2009	04/04/2009	6010B
Silicon	868	1.96	mg/kg	1	L904016	04/03/2009	04/04/2009	6010B
Silver	0.196 U	0.196	mg/kg	1	L904016	04/03/2009	04/04/2009	6010B
Sodium	192	49.0	mg/kg	1	L904016	04/03/2009	04/04/2009	6010B
Strontium	19.1	0.980	mg/kg	1	L904016	04/03/2009	04/04/2009	6010B
Thallium	0.490 UJ	0.490	mg/kg	1	L904016	04/03/2009	04/04/2009	6010B
Tin	1.52 ~~B~~ UJ	9.80	mg/kg	1	L904016	04/03/2009	04/04/2009	6010B
Titanium	19.6 U	19.6	mg/kg	1	L904016	04/03/2009	04/04/2009	6010B
Vanadium	60.4 J	2.45	mg/kg	1	L904016	04/03/2009	04/04/2009	6010B
Zinc	165	9.80	mg/kg	1	L904016	04/03/2009	04/04/2009	6010B
Mercury	0.0188 B	0.0265	mg/kg	1	L903074	03/10/2009	03/10/2009	7471A

11/24/09

17

208 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

WCH Hanford, Inc
2620 Fermi Avenue
Richland WA, 99354

Project: RC-116
Project Number: [none]
Project Manager: Joan Kessner

Reported:
04/27/2009 11:00

J18779
0902047 04 (Solid)

Analyte	Result	Reporting Limit	Qualifier	Units	Dilution	Batch	Prepared	Analyzed	Method
Lionville Laboratory									
Metals by SW846 6010/7000 series									
Aluminum	**5660**	3.47		mg/kg	1	0904016	04/03/2009	04/04/2009	6010B
Antimony	**0.903**	0.417	J	"	"	"	"	"	"
Arsenic	**3.84**	0.694	J	"	"	"	"	"	"
Barium	**43.7**	0.347		"	"	"	"	"	"
Beryllium	**0.134**	0.139	B	"	"	"	"	"	"
Bismuth	6.94	6.94	U	"	"	"	"	"	"
Boron	**0.865**	1.39	B	"	"	"	"	"	"
Cadmium	**0.365**	0.139		"	"	"	"	"	"
Calcium	**3070**	69.4	J	"	"	"	"	"	"
Chromium	**21.7**	0.139		"	"	"	"	"	"
Cobalt	**5.88**	1.39		"	"	"	"	"	"
Copper	**9.22**	0.694		"	"	"	"	"	"
Iron	**23200**	11.9	J	"	"	"	"	"	"
Lead	**10.8**	0.347		"	"	"	"	"	"
Lithium	**7.09**	1.74		"	"	"	"	"	"
Magnesium	**3390**	52.1	J	"	"	"	"	"	"
Manganese	**174**	3.47		"	"	"	"	"	"
Molybdenum	**0.193**	1.39	B	"	"	"	"	"	"
Nickel	**12.0**	2.78		"	"	"	"	"	"
Phosphorus	**597**	34.7		"	"	"	"	"	"
Potassium	**606**	278		"	"	"	"	"	"
Selenium	0.694	0.694	U	"	"	"	"	"	"
Silicon	**610**	1.39		"	"	"	"	"	"
Silver	0.139	0.139	U	"	"	"	"	"	"
Sodium	**122**	34.7		"	"	"	"	"	"
Strontium	**20.2**	0.694		"	"	"	"	"	"
Thallium	0.347	0.347	U J	"	"	"	"	"	"
Tin	**1.19**	6.94	Z05	"	"	"	"	"	"
Uranium	13.9	13.9	U	"	"	"	"	"	"
Vanadium	**56.9**	1.74	J	"	"	"	"	"	"
Zinc	**90.1**	6.94		"	"	"	"	"	"
Mercury	0.0281	0.0281	U	mg/kg wet	"	L903074	03/10/2009	03/10/2009	7471A

11/24/09

264 Welsh Pool Road
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WC-Hanford, Inc
2620 Fermi Avenue
Richland WA 99354

Project: RC-116
Project Number: [none]
Project Manager: Joan Kessner

Reported:
04/27/2009 11:00

J18794
0902047-05 (Solid)

Lionville Laboratory

Metals by SW846 6000/7000 series

Analyte	Result	Reporting Limit	Qualifier	Units	Dilution	Batch	Prepared	Analyzed	Method
Aluminum	10900	3.57		mg/kg	1	1904016	04/01/2009	04/04/2009	6010B
Antimony	0.429	0.429	U J	"	"	"	"	"	"
Arsenic	3.82	0.714	J	"	"	"	"	"	"
Barium	94.7	0.357		"	"	"	"	"	"
Beryllium	0.427	0.143		"	"	"	"	"	"
Bismuth	7.14	7.14	U	"	"	"	"	"	"
Boron	1.32	1.43	B	"	"	"	"	"	"
Cadmium	0.249	0.143		"	"	"	"	"	"
Calcium	4020	71.4	J	"	"	"	"	"	"
Chromium	15.3	0.143		"	"	"	"	"	"
Cobalt	5.39	1.43		"	"	"	"	"	"
Copper	11.5	0.714		"	"	"	"	"	"
Iron	17400	14.3	J	"	"	"	"	"	"
Lead	7.64	0.357		"	"	"	"	"	"
Lithium	9.49	1.79		"	"	"	"	"	"
Magnesium	3980	57.6	J	"	"	"	"	"	"
Manganese	128	3.57		"	"	"	"	"	"
Molybdenum	0.307	1.43	B	"	"	"	"	"	"
Nickel	10.6	2.86		"	"	"	"	"	"
Phosphorus	357	35.7		"	"	"	"	"	"
Potassium	1130	286		"	"	"	"	"	"
Selenium	0.714	0.714	U	"	"	"	"	"	"
Silicon	916	1.43		"	"	"	"	"	"
Silver	0.143	0.143	U	"	"	"	"	"	"
Sodium	108	35.7		"	"	"	"	"	"
Strontium	26.5	0.714		"	"	"	"	"	"
Thallium	0.357	0.357	U J	"	"	"	"	"	"
Tin	1.26	7.14	2 UJ	"	"	"	"	"	"
Uranium	14.3	14.3	U	"	"	"	"	"	"
Vanadium	36.5	1.79	J	"	"	"	"	"	"
Zinc	57.6	7.14		"	"	"	"	"	"
Mercury	0.0231	0.0231	U	mg/kg wet	1	1903074	03/10/2009	03/10/2009	7471A

11/29/09

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

WC-Hanford, Inc
2620 Fermi Avenue
Richland WA, 99354

Project: RCI116
Project Number: [none]
Project Manager: Joan Kessner

Reported:
04/27/2009 11:00

J18795

0902047-06 (Solid)

Analyte	Result	Reporting Limit	Qualifier	Units	Dilution	Batch	Prepared	Analyzed	Method
			Lionville Laboratory						
Metals by SW846 6000/7000 series									
Aluminum	4150	4.17		mg/kg	1	L904016	04/01/2009	04/04/2009	6010B
Antimony	0.452	0.500	U J	"	"	"	"	"	"
Arsenic	2.08	0.833	J	"	"	"	"	"	"
Barium	24.7	0.417		"	"	"	"	"	"
Beryllium	0.120	0.167	B	"	"	"	"	"	"
Bismuth	8.33	8.33	U	"	"	"	"	"	"
Boron	0.671	1.67	B	"	"	"	"	"	"
Cadmium	0.125	0.167	B	"	"	"	"	"	"
Calcium	2170	83.3	J	"	"	"	"	"	"
Chromium	10.4	0.167		"	"	"	"	"	"
Cobalt	2.81	1.67		"	"	"	"	"	"
Copper	4.24	0.833		"	"	"	"	"	"
Iron	11300	16.7	J	"	"	"	"	"	"
Lead	2.77	0.417		"	"	"	"	"	"
Lithium	5.04	2.08		"	"	"	"	"	"
Magnesium	2510	62.5	J	"	"	"	"	"	"
Manganese	116	4.17		"	"	"	"	"	"
Molybdenum	1.67	1.67	U	"	"	"	"	"	"
Nickel	6.74	3.33		"	"	"	"	"	"
Phosphorus	400	41.7		"	"	"	"	"	"
Potassium	540	333		"	"	"	"	"	"
Selenium	0.833	0.833	U	"	"	"	"	"	"
Silicon	674	1.67		"	"	"	"	"	"
Silver	0.167	0.167	U	"	"	"	"	"	"
Sodium	84.6	41.7		"	"	"	"	"	"
Strontium	12.5	0.833		"	"	"	"	"	"
Thallium	0.417	0.417	U J	"	"	"	"	"	"
Tin	1.15	8.33	~~B~~ U J	"	"	"	"	"	"
Uranium	16.7	16.7	U	"	"	"	"	"	"
Vanadium	29.0	2.08	J	"	"	"	"	"	"
Zinc	31.2	8.33		"	"	"	"	"	"
Mercury	0.0225	0.0225	U	mg/kg wet	"	L903074	03/10/2009	03/10/2009	7471A

11/29/05

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

WC Hanford, Inc 2620 Fermi Avenue Richland WA 99354	Project: RC 11b Project Number: [none] Project Manager: Joan Kessner	Reported: 04/27/2009 11:00

J18796
0982047-07 (Solid)

Analyte	Result	Reporting Limit	Qualifier	Units	Dilution	Batch	Prepared	Analyzed	Method
Lionville Laboratory									
Metals by SW846 6000/7000 series									
Aluminum	11700	3.62		mg/kg	1	1904016	04/01/2009	04/08/2009	6010B
Antimony	0.515	0.435	J	"	"	"	"	"	"
Arsenic	4.89	0.725	J	"	"	"	"	"	"
Barium	90.4	0.362		"	"	"	"	"	"
Beryllium	0.560	0.145		"	"	"	"	"	"
Bismuth	7.25	7.25	U	"	"	"	"	"	"
Boron	1.66	1.45		"	"	"	"	"	"
Cadmium	0.420	0.145		"	"	"	"	"	"
Calcium	3780	72.5	J	"	"	"	"	"	"
Chromium	15.3	0.145		"	"	"	"	"	"
Cobalt	5.49	1.45		"	"	"	"	"	"
Copper	14.4	0.725		"	"	"	"	"	"
Iron	16300	14.5	J	"	"	"	"	"	"
Lead	9.54	0.362		"	"	"	"	"	"
Lithium	10.5	1.81		"	"	"	"	"	"
Magnesium	4240	54.1	J	"	"	"	"	"	"
Manganese	271	3.62		"	"	"	"	"	"
Molybdenum	0.270	1.45	B	"	"	"	"	"	"
Nickel	11.7	2.90		"	"	"	"	"	"
Phosphorus	388	36.2		"	"	"	"	"	"
Potassium	1300	290		"	"	"	"	"	"
Selenium	0.725	0.725	U	"	"	"	"	"	"
Silicon	859	1.45		"	"	"	"	"	"
Silver	0.145	0.145	U	"	"	"	"	"	"
Sodium	129	36.2		"	"	"	"	"	"
Strontium	31.5	0.725		"	"	"	"	"	"
Thallium	0.362	0.362	U J	"	"	"	"	"	"
Tin	1.26	7.25	B UJ	"	"	"	"	"	"
Uranium	14.5	14.5	U	"	"	"	"	"	"
Vanadium	31.3	1.81	J	"	"	"	"	"	"
Zinc	75.4	7.25		"	"	"	"	"	"
Mercury	0.0132	0.0273	B	mg/kg wet	1	1904074	04/10/2009	04/10/2009	7471A

11/24/09

264 Welsh Pool Road
Exton, PA 19341
Phone: 610 280-3000
Fax: 610-280-3041

WC Hanford, Inc
2620 Fermi Avenue
Richland WA, 99354

Project: RC-116
Project Number: [none]
Project Manager: Joan Kessner

Reported:
04/27/2009 11:08

J18797
0902047-08 (Solid)

Analyte	Result	Reporting Limit	Qualifier	Units	Dilution	Batch	Prepared	Analyzed	Method
Lionville Laboratory									
Metals by SW846 6000/7000 series									
Aluminum	11100	4.39		mg/kg	1	0904016	04/01/2009	04/04/2009	6010B
Antimony	0.583	0.526	J	"	"	"	"	"	"
Arsenic	3.96	0.877	J	"	"	"	"	"	"
Barium	84.1	0.439		"	"	"	"	"	"
Beryllium	0.426	0.175		"	"	"	"	"	"
Bismuth	8.77	8.77	U	"	"	"	"	"	"
Boron	1.49	1.75	B	"	"	"	"	"	"
Cadmium	0.318	0.175		"	"	"	"	"	"
Calcium	3630	87.7	J	"	"	"	"	"	"
Chromium	15.1	0.175		"	"	"	"	"	"
Cobalt	5.39	1.75		"	"	"	"	"	"
Copper	12.1	0.877		"	"	"	"	"	"
Iron	16600	17.5	J	"	"	"	"	"	"
Lead	8.18	0.439		"	"	"	"	"	"
Lithium	9.54	2.19		"	"	"	"	"	"
Magnesium	3990	65.8	J	"	"	"	"	"	"
Manganese	219	4.39		"	"	"	"	"	"
Molybdenum	0.216	1.75	B	"	"	"	"	"	"
Nickel	11.2	3.51		"	"	"	"	"	"
Phosphorus	381	13.9		"	"	"	"	"	"
Potassium	1200	351		"	"	"	"	"	"
Selenium	0.877	0.877	U	"	"	"	"	"	"
Silicon	692	1.75		"	"	"	"	"	"
Silver	0.175	0.175	U	"	"	"	"	"	"
Sodium	113	13.9		"	"	"	"	"	"
Strontium	46.1	0.877		"	"	"	"	"	"
Thallium	0.439	0.439	U J	"	"	"	"	"	"
Tin	1.45	8.77	~~B~~ uJ	"	"	"	"	"	"
Uranium	17.5	17.5	U	"	"	"	"	"	"
Vanadium	31.4	2.19	J	"	"	"	"	"	"
Zinc	65.8	8.77		"	"	"	"	"	"
Mercury	0.0250	0.0250	U	mg/kg wet	1	9033074	03/10/2009	03/10/2009	7471A

11/25/09

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610 280-3041

WC Hanford, Inc 2620 Fermi Avenue Richland WA, 99354	Project: RC-116 Project Number: [none] Project Manager: Joan Kessner	Reported: 04/27/2009 11:00

J18798

0902047-09 (Solid)

Lionville Laboratory

Metals by SW846 6000/7000 series

Analyte	Result	Reporting Limit	Qualifier	Units	Dilution	Batch	Prepared	Analyzed	Method
Aluminum	10400	3.91		mg/kg	1	0904016	04/03/2009	04/08/2009	6010B
Antimony	0.459	0.469	U J	"	"	"	"	"	"
Arsenic	3.54	0.781	J	"	"	"	"	"	"
Barium	82.2	0.391		"	"	"	"	"	"
Beryllium	0.493	0.156		"	"	"	"	"	"
Bismuth	7.81	7.81	U	"	"	"	"	"	"
Boron	1.69	1.56		"	"	"	"	"	"
Cadmium	0.362	0.156		"	"	"	"	"	"
Calcium	3670	78.1	J	"	"	"	"	"	"
Chromium	13.5	0.156		"	"	"	"	"	"
Cobalt	4.87	1.56		"	"	"	"	"	"
Copper	14.6	0.781		"	"	"	"	"	"
Iron	14500	15.6	J	"	"	"	"	"	"
Lead	8.14	0.391		"	"	"	"	"	"
Lithium	9.02	1.95		"	"	"	"	"	"
Magnesium	3670	58.6	J	"	"	"	"	"	"
Manganese	212	3.91		"	"	"	"	"	"
Molybdenum	0.209	1.56	U	"	"	"	"	"	"
Nickel	10.3	3.12		"	"	"	"	"	"
Phosphorus	353	39.1		"	"	"	"	"	"
Potassium	1100	312		"	"	"	"	"	"
Selenium	0.781	0.781	U	"	"	"	"	"	"
Silicon	865	1.56		"	"	"	"	"	"
Silver	0.156	0.156	U	"	"	"	"	"	"
Sodium	109	39.1		"	"	"	"	"	"
Strontium	26.7	0.781		"	"	"	"	"	"
Thallium	0.391	0.391	U J	"	"	"	"	"	"
Tin	1.28	7.81	~~B~~ UJ	"	"	"	"	"	"
Uranium	15.6	15.6	U	"	"	"	"	"	"
Vanadium	28.5	1.95	J	"	"	"	"	"	"
Zinc	63.0	7.81		"	"	"	"	"	"
Mercury	0.0108	0.0231	B	mg/kg wet	1	0903074	03/10/2009	03/10/2009	7471A

W 11/29/09

244 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

WCH Hanford, Inc
2620 Fermi Avenue
Richland WA, 99354

Project: RC-116
Project Number: [none]
Project Manager: Joan Kessner

Reported:
04/27/2009 11:00

J18799

0902047-10 (Solid)

Analyte	Result	Reporting Limit	Qualifier	Units	Dilution	Batch	Prepared	Analyzed	Method
Lionville Laboratory									
Metals by SW846 6000/7000 series									
Aluminum	11600	4.17		mg/kg	1	1904016	04/01/2009	04/04/2009	6010B
Antimony	0.500	0.500	U J	"	"	"	"	"	"
Arsenic	4.71	0.833	J	"	"	"	"	"	"
Barium	92.1	0.417		"	"	"	"	"	"
Beryllium	0.564	0.167		"	"	"	"	"	"
Bismuth	8.33	8.33	U	"	"	"	"	"	"
Boron	1.50	1.67	B	"	"	"	"	"	"
Cadmium	0.344	0.167		"	"	"	"	"	"
Calcium	3750	83.3	J	"	"	"	"	"	"
Chromium	15.3	0.167		"	"	"	"	"	"
Cobalt	5.75	1.67		"	"	"	"	"	"
Copper	14.4	0.833		"	"	"	"	"	"
Iron	16500	16.7	J	"	"	"	"	"	"
Lead	9.06	0.417		"	"	"	"	"	"
Lithium	9.85	2.08		"	"	"	"	"	"
Magnesium	4000	62.5	J	"	"	"	"	"	"
Manganese	249	4.17		"	"	"	"	"	"
Molybdenum	0.253	1.67	B	"	"	"	"	"	"
Nickel	13.7	3.33		"	"	"	"	"	"
Phosphorus	357	41.7		"	"	"	"	"	"
Potassium	1260	333		"	"	"	"	"	"
Selenium	0.833	0.833	U	"	"	"	"	"	"
Silicon	908	1.67		"	"	"	"	"	"
Silver	0.167	0.167	U	"	"	"	"	"	"
Sodium	114	41.7		"	"	"	"	"	"
Strontium	28.6	0.833		"	"	"	"	"	"
Thallium	0.417	0.417	U J	"	"	"	"	"	"
Tin	1.34	8.33	~~B~~ UJ	"	"	"	"	"	"
Uranium	16.7	16.7	U	"	"	"	"	"	"
Vanadium	32.2	2.08	J	"	"	"	"	"	"
Zinc	65.8	8.33		"	"	"	"	"	"
Mercury	0.0128	0.0265	U	mg/kg wet	1	1904074	04/10/2009	04/10/2009	7471A

11/24/09

208 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

WC Hanford, Inc 2620 Fermi Avenue Richland WA, 99354	Project: RC-116 Project Number: [none] Project Manager: Joan Kessner	Reported: 04/27/2009 11:08

J187B0
0902047-11 (Solid)

Analyte	Result	Reporting Limit	Qualifier	Units	Dilution	Batch	Prepared	Analyzed	Method

Lionville Laboratory

Metals by SW846 6000/7000 series

Analyte	Result	Reporting Limit	Qualifier	Units	Dilution	Batch	Prepared	Analyzed	Method
Aluminum	**10200**	3.52		mg/kg	1	I904016	04/03/2009	04/04/2009	6010B
Antimony	**0.476**	0.423	J	"	"	"	"	"	"
Arsenic	**3.71**	0.704	J	"	"	"	"	"	"
Barium	**86.2**	0.352		"	"	"	"	"	"
Beryllium	**0.485**	0.141		"	"	"	"	"	"
Bismuth	7.04	7.04	U	"	"	"	"	"	"
Boron	**1.25**	1.41	B	"	"	"	"	"	"
Cadmium	**0.375**	0.141		"	"	"	"	"	"
Calcium	**3540**	70.4	J	"	"	"	"	"	"
Chromium	**14.4**	0.141		"	"	"	"	"	"
Cobalt	**4.92**	1.41		"	"	"	"	"	"
Copper	**12.5**	0.704		"	"	"	"	"	"
Iron	**15900**	14.1	J	"	"	"	"	"	"
Lead	**7.85**	0.352		"	"	"	"	"	"
Lithium	**9.12**	1.76		"	"	"	"	"	"
Magnesium	**3740**	52.8	J	"	"	"	"	"	"
Manganese	**194**	3.52		"	"	"	"	"	"
Molybdenum	**0.216**	1.41	B	"	"	"	"	"	"
Nickel	**10.2**	2.82		"	"	"	"	"	"
Phosphorus	**371**	35.2		"	"	"	"	"	"
Potassium	**1030**	282		"	"	"	"	"	"
Selenium	0.704	0.704	U	"	"	"	"	"	"
Silicon	**829**	1.41		"	"	"	"	"	"
Silver	0.141	0.141	U	"	"	"	"	"	"
Sodium	**119**	35.2		"	"	"	"	"	"
Strontium	**25.3**	0.704		"	"	"	"	"	"
Thallium	0.352	0.352	U J	"	"	"	"	"	"
Tin	**1.17**	7.04	~~B~~ UJ	"	"	"	"	"	"
Uranium	14.1	14.1	U	"	"	"	"	"	"
Vanadium	**32.6**	1.76	J	"	"	"	"	"	"
Zinc	**65.2**	7.04		"	"	"	"	"	"
Mercury	**0.0122**	0.0265	B	mg/kg wet	1	I903084	03/11/2009	03/11/2009	7471A

11/24/09

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

WC Hanford Inc 2620 Fermi Avenue Richland WA, 99354	Project: RC-216 Project Number: [none] Project Manager: Joan Kessner	**Reported:** 04/27/2009 11:00

J187D2

0902047-12 (Solid)

Analyte	Result	Reporting Limit	Qualifier	Units	Dilution	Batch	Prepared	Analyzed	Method
			Lionville Laboratory						
Metals by SW846 6000/7000 series									
Aluminum	6870	3.33		mg/kg	1	9D04016	04/03/2009	04/04/2009	6010B
Antimony	0.597	0.400	J	"	"	"	"	"	"
Arsenic	3.21	0.667	J	"	"	"	"	"	"
Barium	53.7	0.333		"	"	"	"	"	"
Beryllium	0.213	0.133		"	"	"	"	"	"
Bismuth	6.67	6.67	U	"	"	"	"	"	"
Boron	1.00	1.33	B	"	"	"	"	"	"
Cadmium	0.964	0.133		"	"	"	"	"	"
Calcium	2940	66.7	J	"	"	"	"	"	"
Chromium	13.5	0.133		"	"	"	"	"	"
Cobalt	3.96	1.33		"	"	"	"	"	"
Copper	14.3	0.667		"	"	"	"	"	"
Iron	14600	13.3	J	"	"	"	"	"	"
Lead	15.7	0.133		"	"	"	"	"	"
Lithium	5.98	1.67		"	"	"	"	"	"
Magnesium	3070	50.0	J	"	"	"	"	"	"
Manganese	309	1.33		"	"	"	"	"	"
Molybdenum	0.250	1.33	B	"	"	"	"	"	"
Nickel	10.8	2.67		"	"	"	"	"	"
Phosphorus	383	33.3		"	"	"	"	"	"
Potassium	628	267		"	"	"	"	"	"
Selenium	0.667	0.667	U	"	"	"	"	"	"
Silicon	848	1.33		"	"	"	"	"	"
Silver	0.133	0.133	U	"	"	"	"	"	"
Sodium	147	33.3		"	"	"	"	"	"
Strontium	19.9	0.667		"	"	"	"	"	"
Thallium	0.333	0.133		"	"	"	"	"	"
Tin	1.15	6.67	B J	"	"	"	"	"	"
Uranium	13.3	13.3	~~B~~ U UJ	"	"	"	"	"	"
Vanadium	33.9	1.67		"	"	"	"	"	"
Zinc	147	6.67	J	"	"	"	"	"	"
Mercury	0.0248	0.0281	B	mg/kg wet	"	9C11084	03/11/2009	03/11/2009	7471A

11/24/09

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

WC Hanford Inc 2620 Fermi Avenue Richland WA 99354	Project: RC-116 Project Number: [none] Project Manager: Joan Kessner	**Reported** 04/27/2009 11:00

J187D4
0902047-13 (Solid)

Lionville Laboratory

Metals by SW846 6000/7000 series

Analyte	Result	Reporting Limit	Qualifier	Units	Dilution	Batch	Prepared	Analyzed	Method
Aluminum	**4960**	4.55		mg/kg	1	9040116	04/03/2009	04/04/2009	6010B
Antimony	**0.492**	0.545	B J	"	"	"	"	"	"
Arsenic	**2.40**	0.909	J	"	"	"	"	"	"
Barium	**37.2**	0.455		"	"	"	"	"	"
Beryllium	**0.135**	0.182	B	"	"	"	"	"	"
Bismuth	9.09	9.09	U	"	"	"	"	"	"
Boron	**1.05**	1.82	B	"	"	"	"	"	"
Cadmium	**0.458**	0.182		"	"	"	"	"	"
Calcium	**2860**	90.9	J	"	"	"	"	"	"
Chromium	**11.8**	0.182		"	"	"	"	"	"
Cobalt	**2.76**	1.82		"	"	"	"	"	"
Copper	**13.7**	0.909		"	"	"	"	"	"
Iron	**12600**	18.2	J	"	"	"	"	"	"
Lead	**13.5**	0.455		"	"	"	"	"	"
Lithium	**5.01**	2.27		"	"	"	"	"	"
Magnesium	**2500**	68.2	J	"	"	"	"	"	"
Manganese	**105**	4.55		"	"	"	"	"	"
Molybdenum	**0.293**	1.82	B	"	"	"	"	"	"
Nickel	**7.79**	3.64		"	"	"	"	"	"
Phosphorus	**345**	45.5		"	"	"	"	"	"
Potassium	**553**	364		"	"	"	"	"	"
Selenium	0.909	0.909	U	"	"	"	"	"	"
Silicon	**976**	1.82		"	"	"	"	"	"
Silver	0.182	0.182	U	"	"	"	"	"	"
Sodium	**159**	45.5		"	"	"	"	"	"
Strontium	**16.4**	0.909		"	"	"	"	"	"
Thallium	0.455	0.455	U J	"	"	"	"	"	"
Tin	**1.39**	9.09	B UJ	"	"	"	"	"	"
Uranium	**18.2**	18.2	U	"	"	"	"	"	"
Vanadium	**30.5**	2.27	J	"	"	"	"	"	"
Zinc	**118**	9.09		"	"	"	"	"	"
Mercury	0.0265	0.0265	U	mg/kg wet	1	9010084	03/11/2009	03/11/2009	7471A

11/24/09

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

WCH-Hanford, Inc
2620 Fermi Avenue
Richland WA, 99354

Project: RC 116
Project Number: [none]
Project Manager: Joan Kessner

Reported:
04/22/2009 11:00

J187D5

0902047-14 (Solid)

Analyte	Result	Reporting Limit	Qualifier	Units	Dilution	Batch	Prepared	Analyzed	Method
			Lionville Laboratory						
Metals by SW846 6000/7000 Series									
Aluminum	**6480**	3.62		mg/kg	1	1904016	04/01/2009	04/04/2009	6010B
Antimony	**0.422**	0.435	B J	"	"	"	"	"	"
Arsenic	**3.38**	0.725	J	"	"	"	"	"	"
Barium	**53.8**	0.362		"	"	"	"	"	"
Beryllium	**0.204**	0.145		"	"	"	"	"	"
Bismuth	7.25	7.25	U	"	"	"	"	"	"
Boron	**1.14**	1.45	B	"	"	"	"	"	"
Cadmium	**0.521**	0.145		"	"	"	"	"	"
Calcium	**2740**	72.5	J	"	"	"	"	"	"
Chromium	**13.2**	0.145		"	"	"	"	"	"
Cobalt	**3.84**	1.45		"	"	"	"	"	"
Copper	**14.4**	0.725		"	"	"	"	"	"
Iron	**13500**	14.5	J	"	"	"	"	"	"
Lead	**11.1**	0.362		"	"	"	"	"	"
Lithium	**5.75**	1.81		"	"	"	"	"	"
Magnesium	**3050**	54.3	J	"	"	"	"	"	"
Manganese	**265**	3.62		"	"	"	"	"	"
Molybdenum	**0.285**	1.45	B	"	"	"	"	"	"
Nickel	**11.3**	2.90		"	"	"	"	"	"
Phosphorus	**365**	36.2		"	"	"	"	"	"
Potassium	**710**	290		"	"	"	"	"	"
Selenium	0.725	0.725	U	"	"	"	"	"	"
Silicon	**844**	1.45		"	"	"	"	"	"
Silver	0.145	0.145	U	"	"	"	"	"	"
Sodium	**156**	36.2		"	"	"	"	"	"
Strontium	**18.0**	0.725		"	"	"	"	"	"
Thallium	0.362	0.362	U J	"	"	"	"	"	"
Tin	**1.12**	7.25	~~B~~ UJ	"	"	"	"	"	"
Uranium	14.5	14.5	U	"	"	"	"	"	"
Vanadium	**30.4**	1.81	J	"	"	"	"	"	"
Zinc	**118**	7.25		"	"	"	"	"	"
Mercury	**0.0706**	0.0257	U	mg/kg wet	"	1903084	03/11/2009	03/11/2009	7471A

11/24/09

208 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

WC Hanford, Inc 2620 Fermi Avenue Richland WA 99354	Project: RC 116 Project Number: [none] Project Manager: Joan Kessner	Reported: 04/27/2009 11:00

J187D6
0902047-15 (Solid)

Lionville Laboratory

Metals by SW846 6000/7000 series

Analyte	Result	Reporting Limit	Qualifier	Units	Dilution	Batch	Prepared	Analyzed	Method
Aluminum	4770	1.46		mg/kg	1	0904016	04/01/2009	04/04/2009	6010B
Antimony	0.536	0.536	U J	"	"	"	"	"	"
Arsenic	2.82	0.893	J	"	"	"	"	"	"
Barium	38.1	0.446		"	"	"	"	"	"
Beryllium	0.166	0.179	B	"	"	"	"	"	"
Bismuth	8.93	8.93	U	"	"	"	"	"	"
Boron	0.929	1.79	B	"	"	"	"	"	"
Cadmium	0.320	0.179		"	"	"	"	"	"
Calcium	2710	89.3	J	"	"	"	"	"	"
Chromium	7.04	0.179		"	"	"	"	"	"
Cobalt	2.69	1.79		"	"	"	"	"	"
Copper	8.46	0.893		"	"	"	"	"	"
Iron	10100	17.9	J	"	"	"	"	"	"
Lead	15.0	0.446		"	"	"	"	"	"
Lithium	5.78	2.23		"	"	"	"	"	"
Magnesium	2790	67.0	J	"	"	"	"	"	"
Manganese	149	4.46		"	"	"	"	"	"
Molybdenum	0.137	1.79	B	"	"	"	"	"	"
Nickel	8.30	1.57		"	"	"	"	"	"
Phosphorus	394	44.6		"	"	"	"	"	"
Potassium	516	357		"	"	"	"	"	"
Selenium	0.893	0.893	U	"	"	"	"	"	"
Silicon	706	1.79		"	"	"	"	"	"
Silver	0.179	0.179	U	"	"	"	"	"	"
Sodium	115	44.6		"	"	"	"	"	"
Strontium	17.9	0.893		"	"	"	"	"	"
Thallium	0.446	0.446	U J	"	"	"	"	"	"
Tin	1.25	8.93	~~B~~ UJ	"	"	"	"	"	"
Uranium	17.9	17.9	U	"	"	"	"	"	"
Vanadium	21.4	2.23	J	"	"	"	"	"	"
Zinc	91.7	8.93		"	"	"	"	"	"
Mercury	0.0225	0.0225	U	mg/kg wet	"	0903084	03/11/2009	03/11/2009	7471A

11/24/09

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

WC Hanford Inc 2620 Fermi Avenue Richland WA, 99354	Project: RC 116 Project Number: [none] Project Manager: Joan Kessner	Reported: 04/27/2009 11:00

J187D8

0902047-16 (Solid)

Lionville Laboratory

Metals by SW846 6000/7000 series

Analyte	Result	Reporting Limit	Qualifier	Units	Dilution	Batch	Prepared	Analyzed	Method
Aluminum	**5600**	3.29		mg/kg	1	1904017	04/03/2009	04/04/2009	6010B
Antimony	**0.658**	0.395	J	"	"	"	"	"	"
Arsenic	**3.02**	0.658	J	"	"	"	"	"	"
Barium	**41.2**	0.329		"	"	"	"	"	"
Beryllium	**0.140**	0.132		"	"	"	"	"	"
Bismuth	6.58	6.58	U	"	"	"	"	"	"
Boron	**1.02**	1.32	B	"	"	"	"	"	"
Cadmium	**0.568**	0.132		"	"	"	"	"	"
Calcium	**2710**	65.8		"	"	"	"	"	"
Chromium	**14.3**	0.132		"	"	"	"	"	"
Cobalt	**3.48**	1.32		"	"	"	"	"	"
Copper	**13.8**	0.658		"	"	"	"	"	"
Iron	**15000**	13.2	J	"	"	"	"	"	"
Lead	**13.1**	0.329		"	"	"	"	"	"
Lithium	**5.58**	1.64		"	"	"	"	"	"
Magnesium	**2850**	19.7		"	"	"	"	"	"
Manganese	**156**	3.29		"	"	"	"	"	"
Molybdenum	**0.290**	1.32	B	"	"	"	"	"	"
Nickel	**10.4**	2.63		"	"	"	"	"	"
Phosphorus	**364**	32.9		"	"	"	"	"	"
Potassium	**542**	263		"	"	"	"	"	"
Selenium	0.658	0.658	U	"	"	"	"	"	"
Silicon	**623**	1.32		"	"	"	"	"	"
Silver	0.132	0.132	U	"	"	"	"	"	"
Sodium	**156**	32.9		"	"	"	"	"	"
Strontium	**17.3**	0.658		"	"	"	"	"	"
Thallium	0.329	0.329	U J	"	"	"	"	"	"
Tin	**1.12**	6.58	B UJ	"	"	"	"	"	"
Uranium	13.2	13.2	U	"	"	"	"	"	"
Vanadium	**38.6**	1.64	J	"	"	"	"	"	"
Zinc	**128**	6.58	J	"	"	"	"	"	"
Mercury	0.0257	0.0257	U	mg/kg wet	1	1903084	03/11/2009	03/11/2009	7471A

11/24/09

364 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

WC Hanford, Inc
2620 Fermi Avenue
Richland WA, 99354

Project: RCS-116
Project Number: [none]
Project Manager: Joan Kessner

Reported:
04/27/2009 11:08

J187D7

0902047-17 (Solid)

Analyte	Result	Reporting Limit	Qualifier	Units	Dilution	Batch	Prepared	Analyzed	Method

Lionville Laboratory

Metals by SW846 6000/7000 series

Analyte	Result	Reporting Limit	Qualifier	Units	Dilution	Batch	Prepared	Analyzed	Method
Aluminum	4400	3.29		mg/kg	1	0904017	04/03/2009	04/04/2009	6010B
Antimony	0.465	0.395	J	"	"	"	"	"	"
Arsenic	2.61	0.658	J	"	"	"	"	"	"
Barium	29.9	0.329		"	"	"	"	"	"
Beryllium	0.0947	0.132	B	"	"	"	"	"	"
Bismuth	6.58	6.58	U	"	"	"	"	"	"
Boron	0.772	1.32	B	"	"	"	"	"	"
Cadmium	0.271	0.132		"	"	"	"	"	"
Calcium	2840	65.8		"	"	"	"	"	"
Chromium	12.7	0.132		"	"	"	"	"	"
Cobalt	2.77	1.32		"	"	"	"	"	"
Copper	15.4	0.658		"	"	"	"	"	"
Iron	14300	13.2	J	"	"	"	"	"	"
Lead	14.1	0.329		"	"	"	"	"	"
Lithium	4.74	1.64		"	"	"	"	"	"
Magnesium	2530	49.3		"	"	"	"	"	"
Manganese	118	3.29		"	"	"	"	"	"
Molybdenum	0.430	1.32	B	"	"	"	"	"	"
Nickel	8.07	2.63		"	"	"	"	"	"
Phosphorus	329	32.9		"	"	"	"	"	"
Potassium	404	263		"	"	"	"	"	"
Selenium	0.658	0.658	U	"	"	"	"	"	"
Silicon	504	1.32		"	"	"	"	"	"
Silver	0.132	0.132	U	"	"	"	"	"	"
Sodium	185	32.9		"	"	"	"	"	"
Strontium	13.1	0.658		"	"	"	"	"	"
Thallium	0.329	0.329	U J	"	"	"	"	"	"
Tin	1.08	6.58	UJ	"	"	"	"	"	"
Titanium	132	13.2		"	"	"	"	"	"
Vanadium	35.6	1.64	J	"	"	"	"	"	"
Zinc	106	6.58	J	"	"	"	"	"	"
Mercury	0.0265	0.0265	U	mg/kg wet	1	0903084	03/11/2009	03/11/2009	7471A

11/27/09

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

WC Hanford, Inc. 2620 Fermi Avenue Richland WA, 99354	Project: RI-116 Project Number: [None] Project Manager: Joan Kessner	**Reported:** 04/27/2009 11:08

J187D9

0902047-18 (Solid)

Analyte	Result	Reporting Limit	Qualifier	Units	Dilution	Batch	Prepared	Analyzed	Method
			Lionville Laboratory						
Metals by SW846 6000/7000 series									
Aluminum	**4990**	1.97		mg/kg	1	9D03017	04/03/2009	04/07/2009	6010B
Antimony	**0.631**	0.476	J	"	"	"	"	"	"
Arsenic	**3.35**	0.794	J	"	"	"	"	"	"
Barium	**38.8**	0.397		"	"	"	"	"	"
Beryllium	**0.129**	0.159	B	"	"	"	"	"	"
Bismuth	7.94	7.94	U	"	"	"	"	"	"
Boron	**0.850**	1.59	B	"	"	"	"	"	"
Cadmium	**0.299**	0.159		"	"	"	"	"	"
Calcium	**2500**	79.4		"	"	"	"	"	"
Chromium	**20.1**	0.159		"	"	"	"	"	"
Cobalt	**3.36**	1.59		"	"	"	"	"	"
Copper	**9.16**	0.794		"	"	"	"	"	"
Iron	**20100**	15.9	J	"	"	"	"	"	"
Lead	**8.90**	0.397		"	"	"	"	"	"
Lithium	**6.29**	1.98		"	"	"	"	"	"
Magnesium	**3030**	59.5		"	"	"	"	"	"
Manganese	**161**	3.97		"	"	"	"	"	"
Molybdenum	**0.161**	1.59	B	"	"	"	"	"	"
Nickel	**12.9**	3.17		"	"	"	"	"	"
Phosphorus	**470**	19.7		"	"	"	"	"	"
Potassium	**570**	117		"	"	"	"	"	"
Selenium	0.794	0.794	U	"	"	"	"	"	"
Silicon	**530**	1.59		"	"	"	"	"	"
Silver	0.159	0.159	U	"	"	"	"	"	"
Sodium	**99.4**	39.7		"	"	"	"	"	"
Strontium	**17.5**	0.794		"	"	"	"	"	"
Thallium	0.397	0.397	U J	"	"	"	"	"	"
Tin	**1.19**	7.94	~~B~~ U J	"	"	"	"	"	"
Uranium	15.9	15.9	U	"	"	"	"	"	"
Vanadium	**48.5**	1.98	J	"	"	"	"	"	"
Zinc	**65.5**	7.94	J	"	"	"	"	"	"
Mercury	0.0250	0.0250	U	mg/kg wet	"	9D08084	04/11/2009	04/11/2009	7471A

11/24/09

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

WC Hanford, Inc.
2620 Fermi Avenue
Richland WA, 99354

Project: RC-116
Project Number: [none]
Project Manager: Joan Kessner

Reported:
03/27/2009 11:00

J187F0
0902047-49 (Solid)

Analyte	Result	Reporting Limit	Qualifier	Units	Dilution	Batch	Prepared	Analyzed	Method
Lionville Laboratory									
Metals by SW846 6000/7000 series									
Aluminum	4780	1.12		mg/kg	1	9C04017	03/03/2009	03/04/2009	6010B
Antimony	0.458	0.411	J	"	"	"	"	"	"
Arsenic	3.02	0.685	J	"	"	"	"	"	"
Barium	32.4	0.342		"	"	"	"	"	"
Beryllium	0.124	0.137	B	"	"	"	"	"	"
Bismuth	6.85	6.85	U	"	"	"	"	"	"
Boron	0.887	1.37	B	"	"	"	"	"	"
Cadmium	0.378	0.137		"	"	"	"	"	"
Calcium	2830	68.5		"	"	"	"	"	"
Chromium	10.7	0.137		"	"	"	"	"	"
Cobalt	3.15	1.37		"	"	"	"	"	"
Copper	17.8	0.685		"	"	"	"	"	"
Iron	12700	13.7	J	"	"	"	"	"	"
Lead	16.5	0.342		"	"	"	"	"	"
Lithium	5.20	1.71		"	"	"	"	"	"
Magnesium	2630	51.4		"	"	"	"	"	"
Manganese	117	1.42		"	"	"	"	"	"
Molybdenum	0.392	1.37	B	"	"	"	"	"	"
Nickel	7.08	2.74		"	"	"	"	"	"
Phosphorus	348	34.2		"	"	"	"	"	"
Potassium	548	274		"	"	"	"	"	"
Selenium	0.685	0.685	U	"	"	"	"	"	"
Silicon	603	1.37		"	"	"	"	"	"
Silver	0.137	0.137	U	"	"	"	"	"	"
Sodium	171	34.2		"	"	"	"	"	"
Strontium	15.0	0.685		"	"	"	"	"	"
Thallium	0.342	0.342	B J	"	"	"	"	"	"
Tin	1.11	6.85	~~B~~ UJ	"	"	"	"	"	"
Uranium	13.7	13.7	U	"	"	"	"	"	"
Vanadium	19.4	1.71	J	"	"	"	"	"	"
Zinc	126	6.85	J	"	"	"	"	"	"
Mercury	0.0237	0.0237	U	mg/kg wet	1	9C03084	03/11/2009	03/11/2009	7471A

11/29/09

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

WCH-Hanford, Inc
2620 Fermi Avenue
Richland WA, 99354

Project: RCS-116
Project Number: [none]
Project Manager: John Kessner

Reported:
04/22/2009 11:00

J187F1
0902047-20 (Solid)

Lionville Laboratory

Metals by SW846 6000/7000 series

Analyte	Result	Reporting Limit	Qualifier	Units	Dilution	Batch	Prepared	Analyzed	Method
Aluminum	5490	4.63		mg/kg	1	1904017	04/03/2009	04/04/2009	6010B
Antimony	0.484	0.556	B J	"	"	"	"	"	"
Arsenic	3.40	0.926	J	"	"	"	"	"	"
Barium	43.2	0.463		"	"	"	"	"	"
Beryllium	0.147	0.185	B	"	"	"	"	"	"
Bismuth	9.26	9.26	U	"	"	"	"	"	"
Boron	1.05	1.85	B	"	"	"	"	"	"
Cadmium	0.487	0.185		"	"	"	"	"	"
Calcium	2740	92.6		"	"	"	"	"	"
Chromium	14.3	0.185		"	"	"	"	"	"
Cobalt	3.66	1.85		"	"	"	"	"	"
Copper	13.8	0.926		"	"	"	"	"	"
Iron	15800	18.5	J	"	"	"	"	"	"
Lead	14.5	0.463		"	"	"	"	"	"
Lithium	5.77	2.31		"	"	"	"	"	"
Magnesium	2890	69.4		"	"	"	"	"	"
Manganese	154	4.63		"	"	"	"	"	"
Molybdenum	0.196	1.85	B	"	"	"	"	"	"
Nickel	9.64	3.70		"	"	"	"	"	"
Phosphorus	364	46.3		"	"	"	"	"	"
Potassium	601	170		"	"	"	"	"	"
Selenium	0.926	0.926	U	"	"	"	"	"	"
Silicon	894	1.85		"	"	"	"	"	"
Silver	0.185	0.185	U	"	"	"	"	"	"
Sodium	151	46.3		"	"	"	"	"	"
Strontium	17.4	0.926		"	"	"	"	"	"
Thallium	0.463	0.463	U J	"	"	"	"	"	"
Tin	1.51	9.26	~~B~~ UJ	"	"	"	"	"	"
Uranium	18.5	18.5	U	"	"	"	"	"	"
Vanadium	39.0	2.31	J	"	"	"	"	"	"
Zinc	133	9.26	J	"	"	"	"	"	"
Mercury	0.0101	0.0231	B	mg/kg wet	"	1903080	03/13/2009	03/13/2009	7471A

11/24/09

264 Welsh Pool Road
Exton, PA 19341
Phone: 610.280.3000
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WCH Hanford, Inc 2620 Fermi Avenue Richland WA, 99354	Project: RC 116 Project Number: [none] Project Manager: Joan Kessner	**Reported:** 04/27/2009 11:00

J187K6
0902047-21 (Solid)

Analyte	Result	Reporting Limit	Qualifier	Units	Dilution	Batch	Prepared	Analyzed	Method
Lionville Laboratory									
Metals by SW846 6000/7000 series									
Aluminum	9680	1.03		mg/kg	1	1904017	04/01/2009	04/06/2009	6010B
Antimony	0.736	0.484	J	"	"	"	"	"	"
Arsenic	3.60	0.806	J	"	"	"	"	"	"
Barium	58.6	0.403		"	"	"	"	"	"
Beryllium	0.483	0.161		"	"	"	"	"	"
Bismuth	8.06	8.06	U	"	"	"	"	"	"
Boron	1.12	1.61	B	"	"	"	"	"	"
Cadmium	0.294	0.161		"	"	"	"	"	"
Calcium	3170	80.6		"	"	"	"	"	"
Chromium	12.0	0.161		"	"	"	"	"	"
Cobalt	4.85	1.61		"	"	"	"	"	"
Copper	10.7	0.806		"	"	"	"	"	"
Iron	13900	16.1	J	"	"	"	"	"	"
Lead	7.04	0.403		"	"	"	"	"	"
Lithium	8.04	2.02		"	"	"	"	"	"
Magnesium	3300	60.5		"	"	"	"	"	"
Manganese	178	1.03		"	"	"	"	"	"
Molybdenum	0.167	1.61	B	"	"	"	"	"	"
Nickel	9.08	1.73		"	"	"	"	"	"
Phosphorus	247	40.3		"	"	"	"	"	"
Potassium	1030	121		"	"	"	"	"	"
Selenium	0.806	0.806	U	"	"	"	"	"	"
Silicon	801	1.61		"	"	"	"	"	"
Silver	0.161	0.161	U	"	"	"	"	"	"
Sodium	90.8	40.3		"	"	"	"	"	"
Strontium	22.5	0.806		"	"	"	"	"	"
Thallium	0.403	0.403	U J	"	"	"	"	"	"
Tin	1.34	8.06	~~B~~ UJ	"	"	"	"	"	"
Uranium	16.1	16.1	U	"	"	"	"	"	"
Vanadium	27.0	2.02	J	"	"	"	"	"	"
Zinc	60.2	8.06	J	"	"	"	"	"	"
Mercury	0.0250	0.0250	U	mg/kg wet	1	9031084	03/11/2009	03/11/2009	7471A

11/24/09

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

WC Hanford, Inc 2620 Fermi Avenue Richland WA, 99354	Project: RC-116 Project Number: [none] Project Manager: Joan Kessner	Reported: 04/27/2009 11:00

J187K7
0902047-22 (Solid)

Lionville Laboratory

Metals by SW846 6000/7000 series

Analyte	Result	Reporting Limit	Qualifier	Units	Dilution	Batch	Prepared	Analyzed	Method
Aluminum	6440	3.57		mg/kg	1	L904017	04/01/2009	04/04/2009	6010B
Antimony	0.430	0.429	J	"	"	"	"	"	"
Arsenic	2.96	0.714	J	"	"	"	"	"	"
Barium	90.0	0.357		"	"	"	"	"	"
Beryllium	0.210	0.143		"	"	"	"	"	"
Bismuth	7.14	7.14	U	"	"	"	"	"	"
Boron	0.775	1.43	B	"	"	"	"	"	"
Cadmium	0.118	0.143	B	"	"	"	"	"	"
Calcium	2830	71.4		"	"	"	"	"	"
Chromium	12.8	0.143		"	"	"	"	"	"
Cobalt	3.43	1.43		"	"	"	"	"	"
Copper	7.66	0.714		"	"	"	"	"	"
Iron	12600	14.3	J	"	"	"	"	"	"
Lead	3.30	0.357		"	"	"	"	"	"
Lithium	8.14	1.79		"	"	"	"	"	"
Magnesium	3970	35.6		"	"	"	"	"	"
Manganese	176	3.57		"	"	"	"	"	"
Molybdenum	0.120	1.43	B	"	"	"	"	"	"
Nickel	11.4	2.86		"	"	"	"	"	"
Phosphorus	395	35.7		"	"	"	"	"	"
Potassium	686	286		"	"	"	"	"	"
Selenium	0.714	0.714	U	"	"	"	"	"	"
Silicon	951	1.43		"	"	"	"	"	"
Silver	0.143	0.143	U	"	"	"	"	"	"
Sodium	105	35.7		"	"	"	"	"	"
Strontium	25.2	0.714		"	"	"	"	"	"
Thallium	0.357	0.357	U J	"	"	"	"	"	"
Tin	1.15	7.14	~~B~~ UJ	"	"	"	"	"	"
Uranium	14.3	14.3	U	"	"	"	"	"	"
Vanadium	25.3	1.79	J	"	"	"	"	"	"
Zinc	29.4	7.14	J	"	"	"	"	"	"
Mercury	0.0250	0.0250	U	mg/kg wet	"	L903084	03/11/2009	03/13/2009	7471A

11/24/09

208 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

[illegible] Hanford, Inc 2620 Fermi Avenue Richland WA 99354	Project: RC-116 Project Number: [none] Project Manager: Joan Kessner	**Reported:** 04/22/2009 11:00

J187K8
0902047-23 (Solid)

Lionville Laboratory

Metals by SW846 6000/7000 series

Analyte	Result	Reporting Limit	Qualifier	Units	Dilution	Batch	Prepared	Analyzed	Method
Aluminum	13600	3.16		mg/kg	1	9B04017	02/03/2009	02/04/2009	6010B
Antimony	0.584	0.380	J	"	"	"	"	"	"
Arsenic	4.41	0.633	J	"	"	"	"	"	"
Barium	107	0.316		"	"	"	"	"	"
Beryllium	0.794	0.127		"	"	"	"	"	"
Bismuth	6.33	6.33	U	"	"	"	"	"	"
Boron	1.26	1.27	B	"	"	"	"	"	"
Cadmium	0.176	0.127		"	"	"	"	"	"
Calcium	4670	63.3		"	"	"	"	"	"
Chromium	15.4	0.127		"	"	"	"	"	"
Cobalt	5.71	1.27		"	"	"	"	"	"
Copper	15.2	0.633		"	"	"	"	"	"
Iron	17500	12.7	J	"	"	"	"	"	"
Lead	8.65	0.316		"	"	"	"	"	"
Lithium	10.1	1.58		"	"	"	"	"	"
Magnesium	3920	47.5		"	"	"	"	"	"
Manganese	272	3.16		"	"	"	"	"	"
Molybdenum	0.389	1.27	B	"	"	"	"	"	"
Nickel	10.8	2.53		"	"	"	"	"	"
Phosphorus	322	31.6		"	"	"	"	"	"
Potassium	1170	253		"	"	"	"	"	"
Selenium	0.633	0.633	U	"	"	"	"	"	"
Silicon	474	1.27		"	"	"	"	"	"
Silver	0.127	0.127	U	"	"	"	"	"	"
Sodium	118	31.6		"	"	"	"	"	"
Strontium	45.2	0.633		"	"	"	"	"	"
Thallium	0.316	0.316	U J	"	"	"	"	"	"
Tin	1.30	6.33	~~B~~ UJ	"	"	"	"	"	"
Titanium	12.7	12.7	U	"	"	"	"	"	"
Vanadium	33.5	1.58	J	"	"	"	"	"	"
Zinc	46.9	6.33	J	"	"	"	"	"	"
Mercury	0.0133	0.0232	B	mg/kg wet	-	9C11084	03/11/2009	03/11/2009	7471A

11/25/07

208 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

WC Hanford, Inc 2620 Fermi Avenue Richland WA, 99354	Project: RC 116 Project Number: [none] Project Manager: Joan Kessner	Reported: 04/22/2009 11:00

J187K9
0902047-24 (Solid)

Lionville Laboratory

Metals by SW846 6000/7000 series

Analyte	Result	Reporting Limit	Qualifier	Units	Dilution	Batch	Prepared	Analyzed	Method
Aluminum	**9460**	3.42		mg/kg	1	9D04017	04/03/2009	04/07/2009	6010B
Antimony	**0.497**	0.411	J	"	"	"	"	"	"
Arsenic	**3.32**	0.685	J	"	"	"	"	"	"
Barium	**74.0**	0.342		"	"	"	"	"	"
Beryllium	**0.347**	0.137		"	"	"	"	"	"
Bismuth	6.85	6.85	U	"	"	"	"	"	"
Boron	**3.04**	1.37	B	"	"	"	"	"	"
Cadmium	**0.162**	0.137		"	"	"	"	"	"
Calcium	**9060**	68.5		"	"	"	"	"	"
Chromium	**12.8**	0.137		"	"	"	"	"	"
Cobalt	**4.84**	1.37		"	"	"	"	"	"
Copper	**10.9**	0.685		"	"	"	"	"	"
Iron	**15700**	13.7	J	"	"	"	"	"	"
Lead	**4.92**	0.342		"	"	"	"	"	"
Lithium	**9.29**	1.71		"	"	"	"	"	"
Magnesium	**4810**	34.2		"	"	"	"	"	"
Manganese	**234**	3.42		"	"	"	"	"	"
Molybdenum	**0.155**	1.37	B	"	"	"	"	"	"
Nickel	**10.7**	2.74		"	"	"	"	"	"
Phosphorus	**421**	34.2		"	"	"	"	"	"
Potassium	**1120**	274		"	"	"	"	"	"
Selenium	0.685	0.685	U	"	"	"	"	"	"
Silicon	**1040**	1.37		"	"	"	"	"	"
Silver	0.137	0.137	U	"	"	"	"	"	"
Sodium	**110**	34.2		"	"	"	"	"	"
Strontium	**33.6**	0.685		"	"	"	"	"	"
Thallium	0.342	0.342	U J	"	"	"	"	"	"
Tin	**1.23**	6.85	~~B~~ UJ	"	"	"	"	"	"
Uranium	13.7	13.7	U	"	"	"	"	"	"
Vanadium	**33.3**	1.71	J	"	"	"	"	"	"
Zinc	**39.3**	6.85	J	"	"	"	"	"	"
Mercury	0.0290	0.0290	U	mg/kg wet	1	9C03084	03/17/2009	03/17/2009	7471A

11/24/09

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

WCH Hanford, Inc 2620 Fermi Avenue Richland WA, 99354	Project: RC 116 Project Number: [none] Project Manager: Joan Kessner	Reported: 04/23/2009 11:00

J187L0
0902047-25 (Solid)

Analyte	Result	Reporting Limit	Qualifier	Units	Dilution	Batch	Prepared	Analyzed	Method

Lionville Laboratory

Metals by SW846 6000/7000 series

Analyte	Result	Reporting Limit	Qualifier	Units	Dilution	Batch	Prepared	Analyzed	Method
Aluminum	10000	3.97		mg/kg	1	1904017	04/01/2009	04/04/2009	6010B
Antimony	0.513	0.476	J	"	"	"	"	"	"
Arsenic	3.82	0.794	J	"	"	"	"	"	"
Barium	68.3	0.397		"	"	"	"	"	"
Beryllium	0.531	0.159		"	"	"	"	"	"
Bismuth	7.94	7.94	U	"	"	"	"	"	"
Boron	1.21	1.59	B	"	"	"	"	"	"
Cadmium	0.350	0.159		"	"	"	"	"	"
Calcium	3560	79.4		"	"	"	"	"	"
Chromium	13.0	0.159		"	"	"	"	"	"
Cobalt	5.06	1.59		"	"	"	"	"	"
Copper	12.5	0.794		"	"	"	"	"	"
Iron	14300	15.9	J	"	"	"	"	"	"
Lead	8.58	0.397		"	"	"	"	"	"
Lithium	8.42	1.98		"	"	"	"	"	"
Magnesium	3510	39.5		"	"	"	"	"	"
Manganese	223	3.97		"	"	"	"	"	"
Molybdenum	0.197	1.59	B	"	"	"	"	"	"
Nickel	10.3	3.17		"	"	"	"	"	"
Phosphorus	295	39.5		"	"	"	"	"	"
Potassium	1070	317		"	"	"	"	"	"
Selenium	0.794	0.794	U	"	"	"	"	"	"
Silicon	790	1.59		"	"	"	"	"	"
Silver	0.159	0.159	U	"	"	"	"	"	"
Sodium	88.7	39.7		"	"	"	"	"	"
Strontium	25.5	0.794		"	"	"	"	"	"
Thallium	0.397	0.397	U J	"	"	"	"	"	"
Tin	2.31	7.94	~~B~~ U J	"	"	"	"	"	"
Titanium	15.9	15.9	U	"	"	"	"	"	"
Vanadium	27.1	1.98	J	"	"	"	"	"	"
Zinc	71.6	7.94	J	"	"	"	"	"	"
Mercury	0.0114	0.0250	B	mg/kg wet	1	1903084	03/11/2009	03/11/2009	7471A

11/25/09

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

WC-Hanford, Inc 2620 Fermi Avenue Richland WA, 99354	Project: RC 136 Project Number: [none] Project Manager: Joan Kessner	Reported: 04/27/2009 11:00

J17X03

0902047-27 (Solid)

Analyte	Result	Reporting Limit	Qualifier	Units	Dilution	Batch	Prepared	Analyzed	Method

Lionville Laboratory

Metals by SW846 6000/7000 series

Analyte	Result	Reporting Limit	Qualifier	Units	Dilution	Batch	Prepared	Analyzed	Method
Aluminum	11400	4.72		mg/kg	1	1904017	04/03/2009	04/04/2009	6010B
Antimony	0.669	0.566	J	"	"	"	"	"	"
Arsenic	4.13	0.943	J	"	"	"	"	"	"
Barium	120	0.472		"	"	"	"	"	"
Beryllium	0.523	0.189		"	"	"	"	"	"
Bismuth	9.43	9.43	U	"	"	"	"	"	"
Boron	2.17	1.89		"	"	"	"	"	"
Cadmium	0.387	0.189		"	"	"	"	"	"
Calcium	6040	94.3		"	"	"	"	"	"
Chromium	15.7	0.189		"	"	"	"	"	"
Cobalt	5.62	1.89		"	"	"	"	"	"
Copper	15.0	0.943		"	"	"	"	"	"
Iron	18700	18.9	J	"	"	"	"	"	"
Lead	8.83	0.472		"	"	"	"	"	"
Lithium	9.96	2.36		"	"	"	"	"	"
Magnesium	4990	70.8		"	"	"	"	"	"
Manganese	304	4.72		"	"	"	"	"	"
Molybdenum	0.293	1.89	B	"	"	"	"	"	"
Nickel	11.8	3.77		"	"	"	"	"	"
Phosphorus	493	47.2		"	"	"	"	"	"
Potassium	1420	377		"	"	"	"	"	"
Selenium	0.943	0.943	U	"	"	"	"	"	"
Silicon	1180	1.89		"	"	"	"	"	"
Silver	0.189	0.189	U	"	"	"	"	"	"
Sodium	231	47.2		"	"	"	"	"	"
Strontium	37.6	0.943		"	"	"	"	"	"
Thallium	0.472	0.472	U J	"	"	"	"	"	"
Tin	1.90	9.43	~~B~~ UJ	"	"	"	"	"	"
Uranium	18.9	18.9	U	"	"	"	"	"	"
Vanadium	40.6	2.36	J	"	"	"	"	"	"
Zinc	65.2	9.43		"	"	"	"	"	"
Mercury	0.0102	0.0273	B J	mg/kg wet	"	L904084	04/11/2009	04/11/2009	7471A

11/29/09

WC Hanford, Inc	Project: RC-116	
2620 Fermi Avenue	Project Number: [none]	Reported:
Richland WA, 99354	Project Manager: Joan Kessner	04/27/2009 11:00

J187Y2

0902047-28 (Solid)

Analyte	Result	Reporting Limit	Qualifier	Units	Dilution	Batch	Prepared	Analyzed	Method

Lionville Laboratory

Metals by SW846 6000/7000 series

Analyte	Result	Reporting Limit	Qualifier	Units	Dilution	Batch	Prepared	Analyzed	Method
Aluminum	**5380**	3.57		mg/kg	1	1901017	03/03/2009	03/04/2009	6010B
Antimony	**0.726**	0.429	J	"	"	"	"	"	"
Arsenic	**4.29**	0.714	J	"	"	"	"	"	"
Barium	**39.9**	0.357		"	"	"	"	"	"
Beryllium	**0.148**	0.143		"	"	"	"	"	"
Bismuth	7.14	7.14	U	"	"	"	"	"	"
Boron	**0.803**	1.43	B	"	"	"	"	"	"
Cadmium	**0.298**	0.143		"	"	"	"	"	"
Calcium	**2880**	71.4		"	"	"	"	"	"
Chromium	**14.1**	0.143		"	"	"	"	"	"
Cobalt	**3.10**	1.43		"	"	"	"	"	"
Copper	**14.4**	0.714		"	"	"	"	"	"
Iron	**14100**	14.3	J	"	"	"	"	"	"
Lead	**33.4**	0.357		"	"	"	"	"	"
Lithium	**5.91**	1.79		"	"	"	"	"	"
Magnesium	**2750**	35.7		"	"	"	"	"	"
Manganese	**117**	3.57		"	"	"	"	"	"
Molybdenum	**0.265**	1.43	B	"	"	"	"	"	"
Nickel	**9.03**	2.86		"	"	"	"	"	"
Phosphorus	**463**	35.7		"	"	"	"	"	"
Potassium	**588**	286		"	"	"	"	"	"
Selenium	0.714	0.714	U	"	"	"	"	"	"
Silicon	**857**	1.43		"	"	"	"	"	"
Silver	0.143	0.143	U	"	"	"	"	"	"
Sodium	**134**	35.7		"	"	"	"	"	"
Strontium	**17.7**	0.714		"	"	"	"	"	"
Thallium	0.357	0.357	U J	"	"	"	"	"	"
Tin	**1.56**	7.14	~~B~~ UJ	"	"	"	"	"	"
Uranium	14.3	14.3	U	"	"	"	"	"	"
Vanadium	**33.8**	1.79	J	"	"	"	"	"	"
Zinc	**212**	7.14	J	"	"	"	"	"	"
Mercury	**0.0375**	0.0250		mg/kg wet	"	1903084	03/11/2009	03/11/2009	7471A

11/24/09

WCHanford, Inc 2620 Fermi Avenue Richland WA, 99354	Project: RC-116 Project Number: [none] Project Manager: Joan Kessner	Reported: 04/27/2009 11:30

J187Y5

0902047-29 (Solid)

Lionville Laboratory

Metals by SW846 6000/7000 series

Analyte	Result	Reporting Limit	Qualifier	Units	Dilution	Batch	Prepared	Analyzed	Method
Aluminum	**5710**	3.62		mg/kg	1	0904017	04/03/2009	04/04/2009	6010B
Antimony	**0.378**	0.435	B J	"	"	"	"	"	"
Arsenic	**3.04**	0.725	J	"	"	"	"	"	"
Barium	**48.5**	0.362		"	"	"	"	"	"
Beryllium	**0.171**	0.145		"	"	"	"	"	"
Bismuth	7.25	7.25	U	"	"	"	"	"	"
Boron	**0.741**	1.45	B	"	"	"	"	"	"
Cadmium	**0.357**	0.145		"	"	"	"	"	"
Calcium	**2790**	72.5		"	"	"	"	"	"
Chromium	**13.8**	0.145		"	"	"	"	"	"
Cobalt	**3.40**	1.45		"	"	"	"	"	"
Copper	**10.2**	0.725		"	"	"	"	"	"
Iron	**12100**	14.5	J	"	"	"	"	"	"
Lead	**11.2**	0.362		"	"	"	"	"	"
Lithium	**6.79**	1.81		"	"	"	"	"	"
Magnesium	**3090**	54.3		"	"	"	"	"	"
Manganese	**121**	3.62		"	"	"	"	"	"
Molybdenum	**0.167**	1.45	B	"	"	"	"	"	"
Nickel	**10.8**	2.90		"	"	"	"	"	"
Phosphorus	**508**	36.2		"	"	"	"	"	"
Potassium	**576**	290		"	"	"	"	"	"
Selenium	0.725	0.725	U	"	"	"	"	"	"
Silicon	**785**	1.45		"	"	"	"	"	"
Silver	0.145	0.145	U	"	"	"	"	"	"
Sodium	**111**	36.2		"	"	"	"	"	"
Strontium	**19.0**	0.725		"	"	"	"	"	"
Thallium	0.362	0.362	U J	"	"	"	"	"	"
Tin	**7.25**	7.25	~~U~~ UJ	"	"	"	"	"	"
Titanium	14.5	14.5	U	"	"	"	"	"	"
Vanadium	**27.5**	1.81	J	"	"	"	"	"	"
Zinc	**76.0**	7.25	J	"	"	"	"	"	"
Mercury	0.0243	0.0243	U	mg/kg wet	1	0903094	03/11/2009	03/11/2009	7471A

11/24/09

Appendix 4

Laboratory Narrative and Chain-of-Custody Documentation

Case Narrative

Client: WC-HANFORD RC-116
LVL#: 0902047-40
SDG/SAF#: K15/RC-116

W.O.#: 60049-001-001-0001-00
Date Received: 02-14-09

METALS

The following is a summary of the QC results accompanying the sample results. Lionville Laboratory (LvL) certifies that all test results meet the requirements of NELAC except as noted below.

All soil samples are reported on a dry weight basis unless requested by the client, required by the method, or noted otherwise.

1. This narrative covers the analyses of 27 soil samples. The samples are reported on a wet weight, 'as-received' basis.

2. The samples were prepared and analyzed in accordance with methods checked on the attached glossary.

3. All analyses were performed within the required holding times.

4. Please refer to the Sample Receipt Check List for sample discrepancies in LvLI's sample acceptance policy.

5. All Initial and Continuing Calibration Verifications (ICV/CCVs) were within the 90-110% control limits.

6. All Initial and Continuing Calibration Blanks (ICB/CCBs) were within control limits (less than the LOQ).

7. All preparation/method blanks (MB) were within method criteria (less than the Limit of Quantitation (3-10X the LOD), or samples greater than 20X MB value).

8. All ICP Interference Check Standards were within control limits.

9. The Standard Reference Material results (SRM) were within the Prediction Intervals supplied by the SRM manufacturer with the exception of L904016-SRM1 for Calcium at 151% (129.9% maximum). The samples digested in batch L904016 may be biased slightly high for Calcium.

10. The matrix spike (MS) recoveries for 5 analytes were outside the 75-125% control limits

[illegible]

The results presented in this report relate only to the analytical testing and conditions of the samples at receipt and during storage. All pages of this report are integral parts of the analytical data. Therefore, this report should only be reproduced in its entirety of [illegible] pages.

11. For analytes where the ICP MS is out-of control, a post-digestion MS (PDS) and serial dilution are performed. A PDS was prepared at meaningful concentration level for the following analytes:

Sample ID	Element	PDS Concentration (ppb)	PDS % Recovery
J18610	Aluminum	22,000	102.5
	Iron	42,000	97.3
	Manganese	1,000	93.7
J187D8	Aluminum	22,000	97.0
	Iron	42,000	92.8
	Silicon	5,100	93.6
	Zinc	1,100	100.8

12. The duplicate analyses for 3 analytes on sample J18610, and for 7 analytes on sample J187D8, were outside the 20% Relative Percent Difference (RPD) control limits.

13. For the purposes of this report, the data has been reported to the Limit of Detection (LOD). Values between the LOD and the Limit of Quantitation (LOQ) are acquired in a region of less-certain quantification.

14. LvL is NELAP accredited by the State of Pennsylvania. For a complete listing of accrediting authorities and the corresponding analytes/methods, please contact your Project Manager.

15. I certify that this sample data package is in compliance with SOW requirements, both technically and for completeness, other than the conditions detailed above. Release of the data contained in this hard-copy data package has been authorized by the Laboratory Manager or a designee, as verified by the following signature.

Iain Daniels
Laboratory Manager
Lionville Laboratory

5/11/04
Date

[illegible]02-047

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-116-779	Page 1 of 1

Collector L. Stegen	Company Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator WEISS, RL
Project Designation Columbia River Component of the RCBRA - Sediment	Sampling Location [illegible] SSD Duplicate		SAF No. RC-116
Ice Chest No. WCH-08-006, 051, 036	Field Logbook No. EL-1551-1	COA BESCRC6520	Method of Shipment FEDEX
Shipped To GENERAL ENGINEERING ~~SERVICES~~ LABS (GEL)	Offsite Property No. N/A		Bill of Lading/Air Bill No. 796342246660

Price Code 9K

Data Turnaround 45 Days

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

1400011

Preservation	None	None	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	None
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	aG	aG	G	
No. of Container(s)	1	1	1	1	1	1	1	1	1	1
Volume	1500g	100g	15g	40g	250g	250g	125g	25g	250g	1
SAMPLE ANALYSIS	See attached Special Instructions	Carbon-14	Technetium-99	[illegible] Special Instructions	[illegible] Special Instructions	PCBs - 8082	Pesticides 8081	Semi-VOA 8270A (TCL)	[illegible] Special Instructions	

Sample No.	Matrix *	Sample Date	Sample Time										
J16610	OTHER SOLID	2/12/09	1245					X	X	X	X	X	

* Shipper unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
L. Stegen	2-12-09 1715	R.L. B	2-12-09 / 1915
R.L. B	2/13/09 0820	D. Helberg	2/13/09 0820
D. Helberg	2/13/09 1200	FedEx	2/13/09 1200
	2-14-09 1125		2-14-09 1125

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) {Americium-241, Antimony-125, Beryllium-7, Cerium-144, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238}
(2) Strontium-89,90 -- Total Sr, Isotopic Thorium {Thorium-232}, Isotopic Uranium {Uranium-233/234, Uranium-235, Uranium-238}, Isotopic Plutonium
(3) ICP Metals - 6010 (Full List) {Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc}, Mercury - 7471 - (CV)
(4) VOA - 8260A (TCL) {1,1,1-Trichloroethane, 1,1,2,2-Tetrachloroethane, 1,1,2-Trichloroethane, 1,1-Dichloroethane, 1,1-Dichloroethene, 1,2-Dichloroethane, 1,2-Dichloropropane, 2-Butanone, 2-Hexanone, 4-Methyl-2-Pentanone, Acetone, Benzene, Bromodichloromethane, Bromoform, Bromomethane, Carbon disulfide, Carbon tetrachloride, Chlorobenzene, Chloroethane, Chloroform, Chloromethane, cis-1,2-Dichloroethylene, cis-1,3-Dichloropropene, Dibromochloromethane, Ethylbenzene, Methylene chloride, Styrene, Tetrachloroethene, Toluene, trans-1,2-Dichloro [illegible]

Matrix *

S = Soil
SE = Sediment
SO = Solid
SL = Sludge
W = Water
O = Oil
A = Air
DS = Drum Solids
DL = Drum Liquids
T = Tissue
WI = Wipe
L = Liquid
V = Vegetation
X = Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-116-964

Page 1 of 1

ector [illegible]

ect Designation
Columbia River Component of the RCBRA - Sediment

Chest No WCH-06-002-2

pped To
ERLINE SERVICES [✓ LIONVILLE]

Company Contact
JOAN KESSNER

Telephone No.
375-4688

Project Coordinator
WEISS, RL

Price Code 9K

Data Turnaround
45 Days

Sampling Location
RDD - 8 SSD

SAF No.
RC-116

Field Logbook No.
EL-1637-1

COA
BESURC6320

Method of Shipment
FEDEX

Offsite Property No.
N/A

Bill of Lading/Air Bill No. 776337322140

OSSIBLE SAMPLE HAZARDS/REMARKS

pecial Handling and/or Storage

	Preservation	None	None	None	None	Cool 4C	Cool 4C	None		
	Type of Container	G/P	G/P	G/P	G/P	G/P	aG	G/P		
	No. of Container(s)	1	1	1	1	1	1	1		
	Volume	1500g	100g	10g	10g	250g	125g	1000g		
SAMPLE ANALYSIS		See item (1) in Special Instructions	Carbon-14	Technetium-99	See item (2) in Special Instructions	See item (3) in Special Instructions	TOC - [illegible]	Particle Size (Dry Sieve) - D422		

Sample No.	Matrix *	Sample Date	Sample Time										
J18764	OTHER SOLID	2/11/05	1220					X	X	X			

CHAIN OF POSSESSION

Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
[illegible]	2/11/09 1600	[illegible]	2/11/09 1600
[illegible] 2/12/09	0800	[illegible] 2/12/09	0800
[illegible] 2/12/09	0930	FedEx 2/12/09	0930
[illegible] 2-13-09	1125	[illegible] 2-13-09	1125

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) (Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238)
(2) Strontium-89,90 -- Total Sr, Isotopic Thorium (Thorium-232), Isotopic Uranium (Uranium-233/234, Uranium-235, Uranium-238), Isotopic Plutonium
(3) ICP Metals - 6010 (Full List) (Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc), Mercury - 7471 - (CV)

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment in lieu.

Matrix *

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

[illegible] mailed 2/12/09, samples mailed 2/13/09.

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-116-979 | Page 1 of 2

Collector BM	Company Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator WEISS, RS
Project Designation Columbia River Component of the RCBRA - Sediment	Sampling Location LE-11 SSD		SAF No. RC-116
Ice Chest No. WB4-08-006, 051, 036	Field Logbook No. EL-1631-1	COA RESCRCA920	Method of Shipment FED EX
Shipped To [illegible] SERVICES (ONSITE)	Offsite Property No. N/A		Bill of Lading/Air Bill No. 796342246660

Price Code 9K

Data Turnaround 45 Days

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

Preservation	None	None	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	None
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	aG	aG	aG	G/P
No. of Container(s)	1	1	1	1	1	1	1	1	1	1
Volume	1500g	100g	1kg	10g	250g	250g	125g	125ml	125g	1000g
SAMPLE ANALYSIS	[illegible] (1) See Special Instructions	Carbon-14	Technetium-99	[illegible] (2) See Special Instructions	[illegible] (3) See Special Instructions	PCBs - 8082	Pesticides - 8081	[illegible] (4) See Special Instructions	TOC - [illegible]	Particle Size - Dry Sieve [illegible]

Sample No.	Matrix *	Sample Date	Sample Time										
J18779	OTHER SOLID	2/12/09	1315					X	X	X	X	X	X

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
B [illegible]	2/12/09 1315	Eric [illegible]	2/12/09 1315
Eric H	2/13/09 0800	D [illegible] Dahlberg	2/13/09 0800
Dale Dahlberg	2/13/09 1200	FedEx 2/13/09	1200
[illegible]	2/14/09 1125	[illegible]	2-14-09 1125

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) [Americium-241, Antimony-125, Beryllium-7, Cerium-144, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238]
(2) Strontium-89,90 - Total Sr, Isotopic Thorium [Thorium-232], Isotopic Uranium [Uranium-233/234, Uranium-235, Uranium-238], Isotopic Plutonium
(3) ICP Metals - 6010 (Full List) [Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Titanium, Vanadium, Zinc], Mercury - 7471 - (CV)
(4) TPH/Diesel Range - WTPH-D + [Total petroleum hydrocarbons - diesel range, Total petroleum hydrocarbons - motor oil (high boiling)]

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EF-011

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-116-983 Page 1 of 1

Collector [illegible]	Company Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator WEISS, RL
Project Designation [illegible] Components of the RCBRA - Sediment	Sampling Location WIDS - 6 SSD		SAF No. RC-116
Ice Chest No. WCH-08-0049, 051, 052	Field Logbook No. EL-1631-1	COA HESTRC6520	Method of Shipment FEDEX
Shipped To EBERLINE SERVICES [illegible]	Offsite Property No. N/A		Bill of Lading/Air Bill No. 796342246660

Price Code 9K

Data Turnaround 45 Days

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

Preservation	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	aG	aG	G	-
No. of Container(s)	1	1	1	1	1	1	1	1	1	1
Volume	1500g	100g	10g	10g	250g	250g	125g	250g	250g	1L
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Technetium-99	See item (2) in Special Instructions	See item (3) in Special Instructions	PCBs - 8082	Pesticides 8081	Semi-VOA 8270A (TCL)	See item (4) in Special Instructions	

Sample No.	Matrix *	Sample Date	Sample Time										
J1D254	OTHER SOLID	[illegible]	1125					X	X	X	X	X	

Sample unavailable to remove samples from container storage. Shipped received samples from storage location being custody of samples for shipment to lab

CHAIN OF POSSESSION	Date/Time	Sign/Print Names Received By/Stored In	Date/Time
Relinquished By/Removed From	2-12-09 / 1715	Ref B	2-12-09 / 1715
Relinquished By/Removed From Ref B	2/13/09 0800	Received By/Stored In B Wood	2/13/09 0800
Relinquished By/Removed From B Wood	2/13/09 1200	Received By/Stored In Fed Ex	2/13/09 1200
Relinquished By/Removed From [illegible]	2-14-09 1135	Received By/Stored In [illegible]	2-14-09 1135
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time

SPECIAL INSTRUCTIONS

(1) Gamma Spec - {Full List} {Americium-241, Antimony-125, Beryllium-7, Cerium-144, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238}

(2) Strontium-89,90 - Total Sr, Isotopic Thorium {Thorium-232}, Isotopic Uranium {Uranium-233/234, Uranium-235, Uranium-238}, Isotopic Plutonium

(3) ICP Metals - 6010 {Full List} {Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Titanium, Vanadium, Zinc}, Mercury - 7471 - (CV)

(4) VOA - 8260A (TCL) {1,1,1-Trichloroethane, 1,1,2,2-Tetrachloroethane, 1,1,2-Trichloroethane, 1,1-Dichloroethane, 1,1-Dichloroethene, 1,2-Dichloroethane, 1,2-Dichloropropane, 2-Butanone, 2-Hexanone, 4-Methyl-2-Pentanone, Acetone, Benzene, Bromodichloromethane, Bromoform, Bromomethane, Carbon disulfide, Carbon tetrachloride, Chlorobenzene, Chloroethane, Chloroform, Chloromethane, cis-1,2-Dichloroethylene, cis-1,3-Dichloropropene, Dibromochloromethane, [illegible]

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-018

Washington Closure Hanford	**CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST**	RC-116-984	Page 1 of 2
Collector	Company Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator WEISS, RL
Project Designation Columbia River Component of the RCBRA - Sediment	Sampling Location WBT- / - SSD		SAF No. RC-116
Ice Chest No. WCH-08-006,051,036	Field Logbook No. EL-1631-1	COA RESCRC6520	Method of Shipment FED EX
Shipped To EBERLINE SERVICES (RICHMOND)	Offsite Property No. N/A		Bill of Lading/Air Bill No. 796342246660

Price Code 9K

Data Turnaround 45 Days

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

Preservation	None	None	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	None
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	aG	aG	G	-
No. of Container(s)	1	1	1	1	1	1	1	1	1	1
Volume	1500g	100g	10g	10g	250g	250g	125g	250g	250g	40
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Technetium-99	See item (2) in Special Instructions	See item (3) in Special Instructions	PCBs - 8082	Pesticides - 8081	Semi-VOA 8270	See item (4) in Special Instructions	-

Sample No.	Matrix *	Sample Date	Sample Time										
J18795	OTHER SOLID	2/12/09	1230					X	X	X	X	X	

Sample: Standard storage of the samples for uncontrolled storage. Support removal samples from storage location taking custody of samples for shipment to lab.

CHAIN OF POSSESSION		Sign/Print Names	
Relinquished By/Removed From	Date/Time 2-12-09 / 1715	Received By/Stored In	Date/Time 2-12-09 / 1715
Relinquished By/Removed From	Date/Time 2/13/09 0800	Received By/Stored In D. Heidelberg	Date/Time 2/13/09 0800
Relinquished By/Removed From D. Heidelberg	Date/Time 2/13/09 1200	Received By/Stored In FedEx 2/13/09	Date/Time 1200
Relinquished By/Removed From	Date/Time 2-14-09 1125	Received By/Stored In	Date/Time 2-14-09 1125
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) {Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238}

(2) Strontium-89,90 - Total Sr; Isotopic Thorium {Thorium-232}; Isotopic Uranium {Uranium-233/234, Uranium-235, Uranium-238}; Isotopic Plutonium

(3) ICP Metals - 6010 (Full List) {Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Titanium, Vanadium, Zinc}; Mercury - 7471 - (CV)

(4) VOA - 8260A (TCL) {1,1,1-Trichloroethane, 1,1,2,2-Tetrachloroethane, 1,1,2-Trichloroethane, 1,1-Dichloroethane, 1,1-Dichloroethene, 1,2-Dichloroethane, 1,2-Dichloropropane, 2-Butanone, 2-Hexanone, 4-Methyl-2-Pentanone, Acetone, Benzene, Bromodichloromethane, Bromoform, Bromomethane, Carbon disulfide, Carbon tetrachloride, Chlorobenzene, Chloroethane, Chloroform, Chloromethane, cis-1,2-Dichloroethylene, cis-1,3-Dichloropropene, Dibromochloromethane, Ethylbenzene, Methylene chloride, Styrene, Tetrachloroethene, Toluene, trans-1,2-Dichloroethylene

Matrix *

S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-116-985

Page 1 of 2

Collector	[illegible]
Project Designation	Columbia River Component of the RCBRA - Sediment
Ice Chest No.	WCH-[illegible] 024, 034, 026
Shipped To	EBERLINE SERVICES (RICHMOND)
Company Contact	JOAN KESSNER
Telephone No.	375-4648
Sampling Location	WBT-1 SSD
Field Logbook No	EL-1463[illegible]
COA	BFSCRC6570
Offsite Property No.	N/A
Project Coordinator	WEISS, RL
SAF No.	RC-116
Price Code	9K
Data Turnaround	45 Days
Method of Shipment	FED EX
Bill of Lading/Air Bill No.	796342246660

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

Preservation	None	None	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	None
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	aG	aG	G	[illegible]
No. of Container(s)	1	1	1	1	1	1	1	1	1	1
Volume	1500g	100g	10g	10g	250g	250g	125g	250g	150g	[illegible]
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Technetium-99	See item (2) in Special Instructions	See item (3) in Special Instructions	[illegible]	Pesticides - [illegible]	Semi-VOA - 8270A (TCL)	See item (4) in Special Instructions	

Sample No.	Matrix *	Sample Date	Sample Time										
J18796	OTHER SOLID	[illegible]	[illegible]					X	X	X	X	X	

Sample [illegible] unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab.

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
[illegible]	2-12-09 / 1915	[illegible]	2-12-09 / 1915
[illegible]	2/13/09 0800	B[illegible]	2/13/09 0800
B[illegible]	2/13/09 1200	Fed Ex	2/13/09 1200
Fed Ex	2-14-09 1125	[illegible]	2-14-09 1125

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full Scan) {Americium-241, Antimony-125, Beryllium-7, Cerium-144, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238};
(2) Strontium-89,90 - Total Sr; Isotopic Thorium {Thorium-232}; Isotopic Uranium {Uranium-233/234, Uranium-235, Uranium-238}; Isotopic Plutonium
(3) ICP Metals - 6010 (Full List) {Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc}; Mercury - 7471 - (CV)
(4) VOA - 8260A (TCL) {1,1,1-Trichloroethane, 1,1,2,2-Tetrachloroethane, 1,1,2-Trichloroethane, 1,1-Dichloroethane, 1,1-Dichloroethene, 1,2-Dichloroethane, 1,2-Dichloropropane, 2-Butanone, 2-Hexanone, 4-Methyl-2-Pentanone, Acetone, Benzene, Bromodichloromethane, Bromoform, Bromomethane, Carbon disulfide, Carbon tetrachloride, Chlorobenzene, Chloroethane, Chloroform, Chloromethane, cis-1,2-Dichloroethylene, cis-1,3-Dichloropropene, Dibromochloromethane, [illegible]

Matrix *

[illegible]

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-116-986 | Page 1 of 1

ector [illegible]	Company Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator WEISS, RC
ect Designation olumbia River Component of the RCBRA - Sediment	Sampling Location WIFL-2-SSD		SAF No. RC-116
Chest No. WCH-08-000[illegible]	Field Logbook No. EL-1651-1	COA BESCRCG570	Method of Shipment FED EX
pped To BERLINE SERVICES (KNOXVILLE)	Offsite Property No. N/A		Bill of Lading/Air Bill No. 796342246660

Price Code 9K

Data Turnaround 45 Days

SSIBLE SAMPLE HAZARDS/REMARKS

pecial Handling and/or Storage

Preservation	None	None	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	None
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	aG	aG	G	
No. of Container(s)	1	1	1	1	1	1	1	1	1	1
Volume	1500g	100g	10g	10g	250g	250g	125g	250g	250g	[illegible]
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Technetium-99	See item (2) in Special Instructions	See item (3) in Special Instructions	PCBs - 8082	Pesticides - 8081	Semi-VOA - 8270A (TCL)	See item (4) in Special Instructions	

Sample No.	Matrix *	Sample Date	Sample Time										
18797	OTHER SOLID	2/11/09	[illegible]					X	X	X	X	X	

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
[illegible]	2-11-09/1215	[illegible]	2-11-09/1215
[illegible]	2/13/09 0800	[illegible]	2/13/09 0800
[illegible]	2/13/09 1200	Fed Ex	2/13/09 1200
[illegible]	[illegible]	[illegible]	2-14-09 1125

SPECIAL INSTRUCTIONS

Samples unavailable [illegible] retrieved samples from controlled storage. Shipper removed samples from storage location, taking custody of samples for shipment to lab

(1) Gamma Spec - (Full List) {Americium-241, Antimony-125, Beryllium-7, Cerium-144, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238}
(2) Strontium-89,90 – Total Sr, Isotopic Thorium {Thorium-232}, Isotopic Uranium {Uranium-233/234, Uranium-235, Uranium-238}; Isotopic Plutonium
(3) ICP Metals - 6010 (Full List) {Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc}; Mercury - 7471 - (CV)
(4) VOA - 8260A (TCL) {1,1,1-Trichloroethane, 1,1,2,2-Tetrachloroethane, 1,1,2-Trichloroethane, 1,1-Dichloroethane, 1,1-Dichloroethene, 1,2-Dichloroethane, 1,2-Dichloropropane, 2-Butanone, 2-Hexanone, 4-Methyl-2-Pentanone, Acetone, Benzene, Bromodichloromethane, Bromoform, Bromomethane, Carbon disulfide, Carbon tetrachloride, Chlorobenzene, Chloroethane, Chloroform, Chloromethane, cis-1,2-Dichloroethylene, cis-1,3-Dichloropropene, Dibromochloromethane, [illegible]

Matrix *
S = Soil
SE = Sediment
SO = Solid
SL = Sludge
W = Water
O = Oil
A = Air
DS = Drum Solids
DL = Drum Liquids
T = Tissue
WI = Wipe
L = Liquid
V = Vegetation
X = Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-116-987

Page 1 of 1

Collector	Company Contact JOAN KESSNER	Telephone No. 375-4668	Project Coordinator WEISS, RL
Project Designation Columbia River Component of the RCBRA - Sediment	Sampling Location WD2-2 SSD		SAF No. RC-116
Ice Chest No. WCH-08-006, 051, 060	Field Logbook No. EL-1631-1	COA IESCRC6520	Method of Shipment FEDEX
Shipped To EBERLINE SERVICES (DENVER)	Offsite Property No. N/A		Bill of Lading/Air Bill No. 796342246660

Price Code 9K

Data Turnaround 45 Days

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

Preservation	None	None	None	None	Cool 4C	Cool 4C	None			
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	G/P			
No. of Container(s)	1	1	1	1	1	3	1			
Volume	1500g	100g	10g	10g	250g	125g	1000g			
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Technetium-99	See item (2) in Special Instructions	See item (3) in Special Instructions	Total [illegible]	Particle Size (Dry Sieve) D422			

Sample No.	Matrix *	Sample Date	Sample Time										
J16Y0P	OTHER SOLID	2/11/09	11:40					X	X	X			

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
	2-12-09/1715		2-12-09 1715
	2/13/09 0800	B Underwood	2/13/09 0800
B Underwood	2/13/09 1200	Fed Ex	2/13/09 1200
	2-14-09 1125		2-14-09 1125

SPECIAL INSTRUCTIONS

(1) Gamma Spec - GEA [Americium-241, Antimony-125, Beryllium-7, Cerium-144, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238]
(2) Strontium-89,90 - Total Sr; Isotopic Thorium [Thorium-232]; Isotopic Uranium [Uranium-233/234, Uranium-235, Uranium-238]; Isotopic Plutonium
(3) ICP Metals - 6010 (Full List) [Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc]; Mercury - 7471 - (CV)

Samples unavailable to remove samples
from controlled storage. Shipper removed
samples from storage location taking custody
of samples for shipment to lab

Matrix *
S = Soil
SE = Sediment
SO = Solid
SL = Sludge
W = Water
O = Oil
A = Air
DS = Drum Solids
DL = Drum Liquids
T = Tissue
WI = Wipe
L = Liquid
V = Vegetation
X = Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-116-988 | Page 1 of 1

Collector: [illegible]

Company Contact: JOAN KESSNER | Telephone No. 375-4658

Project Coordinator: WEISS, RL

Price Code: 9K | Data Turnaround: 45 Days

Project Designation: Columbia River Component of the RCBRA - Sediment

Sampling Location: WBT-7 SSD

SAF No. RC-116

Ice Chest No. [illegible]

Field Logbook No. EL-1631-1

COA: BESCRC6500

Method of Shipment: FED EX

Shipped To: EBERLINE SERVICES [✓ LIONVILLE]

Offsite Property No. N/A

Bill of Lading/Air Bill No. 796342746600

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

Preservation	None	None	None	None	Cool 4C	Cool 4C	None
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	G/P
No. of Container(s)	1	1	1	1	1	1	1
Volume	500g	100g	10g	10g	250g	125g	1000g
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Technetium-99	See item (2) in Special Instructions	See item (3) in Special Instructions	TOC - 415.1	Particle Size (Dry Sieve) D422

Sample No.	Matrix *	Sample Date	Sample Time							
[illegible]	OTHER SOLID	2/11/09	1100					X	X	X

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
[illegible]	2-11-09/1715	[illegible]	2-11-09/1715
[illegible]	2/13/09 0800	B Woodward	2/13/09 0800
B Woodward	2/13/09 1200	Fed Ex	2/13/09 1200
Fed Ex	2-14-09 1125	[illegible]	2-14-09 1125

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) {Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238}

(2) Strontium-89,90 - Total Sr; Isotopic Thorium {Thorium-232}; Isotopic Uranium {Uranium-233/234, Uranium-235, Uranium-238}; Isotopic Plutonium

(3) ICP Metals - 6010 (Full List) {Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc}; Mercury - 7471 - (CV)

Sampler maintained custody of samples from custody storage. Shipper removed samples from storage location taking custody of samples for shipment to lab

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION — Received By | Title | Date/Time

FINAL SAMPLE DISPOSITION — Disposal Method | Disposed By | Date/Time

WCH-EE-011

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-116-989 Page 1 of 1

Collector [illegible]	Company Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator WEISS, RL
Project Designation Columbia River Component of the RCBRA - Sediment	Sampling Location WBT- 17 SSD		SAF No. RC-116
Ice Chest No. WCH-08-006 DS/036	Field Logbook No. EL 1631-1	COA BESCRC6520	Method of Shipment FED EX
Shipped To EBERLINE SERVICES (DENVILLE)	Offsite Property No. N/A		Bill of Lading/Air Bill No. 796342246660

Price Code 9K

Data Turnaround 45 Days

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

0501050

	Preservation	None	None	None	None	Cool 4C	Cool 4C	None		
	Type of Container	G/P	G/P	G/P	G/P	G/P	aG	G/P		
	No. of Container(s)	1	1	1	1	1	1	1		
	Volume	1500g	100g	10g	10g	250g	125g	1000g		
SAMPLE ANALYSIS		See item (1) in Special Instructions	Carbon-14	Technetium-99	See item (2) in Special Instructions	See item (3) in Special Instructions	TOC - 415.1	Particle Size (Dry Sieve) - D422		

Sample No.	Matrix *	Sample Date	Sample Time									
J18780	OTHER SOLID	2/12/09	[illegible]					X	X	X		

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
[illegible]	2-12-09 1215	[illegible]	2-12-09 1215
[illegible]	2/13/09 0800	D Heidelberg	2/13/09 0800
D Heidelberg	2/13/09 1200	Geller	2/13/09 1200
[illegible]	2-4-09 1125	[illegible]	2-4-09 1125

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) (Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238)
(2) Strontium-89,90 -- Total Sr; Isotopic Thorium [Thorium-232]; Isotopic Uranium [Uranium-233/234, Uranium-235, Uranium-238]; Isotopic Plutonium
(3) ICP Metals - 6010 (Full List) [Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc]; Mercury - 7471 - (CV)

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of Samples for shipment to lab

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION — Received By — Title — Date/Time

FINAL SAMPLE DISPOSITION — Disposal Method — Disposed By — Date/Time

WCH-EE-011

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST		RC-116-1011	Page 1 of 1
Collector BM	Company Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator WEISS, RL	Price Code 9K
Project Designation Columbia River Component of the RCBRA - Sediment	Sampling Location [illegible] SSD		SAF No. RC-116	Data Turnaround 45 Days
Ice Chest No. WCH-08-006, 051, 036	Field Logbook No. EL-1670-1	COA DESCRC[illegible]	Method of Shipment FED EX	
Shipped To EBERLINE SERVICES (KNOXVILLE)	Offsite Property No. N/A		Bill of Lading/Air Bill No. 796342246660	

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

Preservation	None	None	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	-
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	aG	aG	G	-
No. of Container(s)	1	1	1	1	1	1	1	1	1	-
Volume	1500g	100g	10g	20g	250g	250g	125g	250g	250g	--
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	[illegible]	See item (2) in Special Instructions	See item (3) in Special Instructions	PCBs - 8082	Pesticides 8081	Semi-VOA - 8270	See item (4) in Special Instructions	-

Sample No.	Matrix *	Sample Date	Sample Time										
J187D3	OTHER SOLID	2/12/09	1015					X	X	X	X	X	

Samples unavailable to rec'd due sample(s) in cold storage. Shipper removed samples from storage location taking custody of samples for shipment to lab

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
B Meyer BM Meyer	2/12/09 1715	Fry A	2/12/05 1715
Fry A 2/13/09	0800	D Hebelberg	2/13/09 0800
D Hebelberg	2/13/09 1200	FedEx	2/13/09 1200
	2-14-09 1125		2-14-09 1125

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) {Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238}

(2) Strontium-89,90 - Total Sr; Isotopic Thorium {Thorium-232}; Isotopic Uranium {Uranium-233/234, Uranium-235, Uranium-238}; Isotopic Plutonium

(3) ICP Metals - 6010 (Full List) {Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc}; Mercury - 7471 - {CV}

(4) VOA - 8260A (TCL) {1,1,1-Trichloroethane, 1,1,2,2-Tetrachloroethane, 1,1,2-Trichloroethane, 1,1-Dichloroethane, 1,1-Dichloroethene, 1,2-Dichloroethane, 1,2-Dichloropropane, 2-Butanone, 2-Hexanone, 4-Methyl-2-Pentanone, Acetone, Benzene, Bromodichloromethane, Bromoform, Bromomethane, Carbon disulfide, Carbon tetrachloride, Chlorobenzene, Chloroethane, Chloroform, Chloromethane, cis-1,2-Dichloroethylene, cis-1,3-Dichloropropene, Dibromochloromethane, Ethylbenzene, Methylene chloride, Styrene, Tetrachloroethene, Toluene, [illegible]

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-116-1013 Page 2 of 2

Collector T. Ply	Company Contact JOAN KESSNER	Telephone No. 375-4698	Project Coordinator WEISS, RL
Project Designation Columbia River Component of the RCBRA - Sediment	Sampling Location REL 41 SSD		SAF No. RC-116
Ice Chest No. WCH-08-006, 051, 036	Field Logbook No. EL-1471-1	COA HESCRC6520	Method of Shipment FEDEX
Shipped To EBERLINE SERVICES (LIONVILLE)	Offsite Property No. N/A		Bill of Lading/Air Bill No. 796342246660

Price Code 9K

Data Turnaround 45 Days

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

Preservation	[illegible]	[illegible]	[illegible]	[illegible]	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	[illegible]
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	aG	aG	aG	P
No. of Container(s)	1	1	1	1	1	1	1	1	1	1
Volume	1500g	100g	10g	50g	250g	250g	125g	250g	250g	1?
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Technetium-99	See item (2) in Special Instructions	See item (3) in Special Instructions	PCBs - 8082	[illegible]	Semi-VOA - 8270	See item (4) in Special Instructions	

Sample No.	Matrix *	Sample Date	Sample Time										
J187D4	OTHER SOLID	2/12/09	945					X	X	X	X	X	

Sampler unavailable to remove samples from secured storage. Shipper removed samples from storage location taking custody of samples for shipment to lab.

CHAIN OF POSSESSION Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
B Mayhew	2/12/09 1715	Fay A	2/12/09 1715
Fay A	2/13/09 0800	D. Hesselberg	2/13/09 0800
D. Hesselberg	2/13/09 1200	Fedex	2/13/09 1200
	2-14-09 1145		2-14-09 1145

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) (Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238)
(2) Strontium-89,90 - Total Sr; Isotopic Thorium (Thorium-232); Isotopic Uranium (Uranium-233/234, Uranium-235, Uranium-238); Isotopic Plutonium
(3) ICP Metals - 6010 (TAL list) (Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc); Mercury - 7471 - (CV)
(4) VOA - 8260A (TCL) (1,1,1-Trichloroethane, 1,1,2,2-Tetrachloroethane, 1,1,2-Trichloroethane, 1,1-Dichloroethane, 1,1-Dichloroethene, 1,2-Dichloroethane, 1,2-Dichloropropane, 2-Butanone, 2-Hexanone, 4-Methyl-2-Pentanone, Acetone, Benzene, Bromodichloromethane, Bromoform, Bromomethane, Carbon disulfide, Carbon tetrachloride, Chlorobenzene, Chloroethane, Chloroform, Chloromethane, cis-1,2-Dichloroethylene, cis-1,3-Dichloropropene, Dibromochloromethane, Ethylbenzene, Methylene chloride, Styrene, Tetrachloroethene, Toluene, trans-1,2-Dichloroethylene

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Washington Closure Hanford	**CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST**	RC-116-1014
		Page 1 of 2

Collector BM	Company Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator WEISS, RL
Project Designation Columbia River Component of the RCBRA - Sediment	Sampling Location RB SSD		SAF No. RC-116
Ice Chest No. WH-08-006, 051, 036	Field Logbook No. EL-1670-1	COA BFSCRC6520	Method of Shipment FED EX
Shipped To EBERLINE SERVICES [✓ RICHMOND]	Offsite Property No. N/A		Bill of Lading/Air Bill No. 796342246060

Price Code 9K

Data Turnaround
45 Days

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

Preservation	None	None	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	None
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	aG	aG	G	[illegible]
No. of Container(s)	1	1	1	1	1	1	1	1	1	1
Volume	1500g	100g	10g	10g	250g	250g	125g	250g	250g	2[illegible]
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Technetium-99	See item (2) in Special Instructions	See item (3) in Special Instructions	PCBs - 8082	Pesticides 8081	Semi-VOA 8270A (TCL)	See item (4) in Special Instructions	

Sample No.	Matrix *	Sample Date	Sample Time										
J17TD5	OTHER SOLID	2/12/09	1032					X	X	X	X	X	

Sample unavailable to receive samples from controlled storage. Shipper removed samples from storage location, takes custody & samples for shipment to lab

CHAIN OF POSSESSION	Date/Time	Sign/Print Names	Date/Time
Relinquished By/Removed From B M[illegible] BH[illegible]	2/12/09 1715	Received By/Stored In Frz A	2/12/09 1715
Relinquished By/Removed From Frz A	2/13/09 0800	Received By/Stored In R Heidelberg [illegible]	2/13/09 0800
Relinquished By/Removed From D Heidelberg [illegible]	2/13/09 1200	Received By/Stored In Fedex	2/13/09 1200
Relinquished By/Removed From Fed Ex	2-14-09 1125	Received By/Stored In	2-14-09 1125
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (1-2L-hr) {Americium-241, Antimony-125, Beryllium-7, Cerium-144, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238}
(2) Strontium-89,90 - Total Sr; Isotopic Thorium {Thorium-232}; Isotopic Uranium {Uranium-233/234, Uranium-235, Uranium-238}; Isotopic Plutonium
(3) ICP Metals - 6010 (Full List) {Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc}; Mercury - 7471 - [CV]
(4) VOA - 8260A (TCL) {1,1,1-Trichloroethane, 1,1,2,2-Tetrachloroethane, 1,1,2-Trichloroethane, 1,1-Dichloroethane, 1,1-Dichloroethene, 1,2-Dichloroethane, 1,2-Dichloropropane, 2-Butanone, 2-Hexanone, 4-Methyl-2-Pentanone, Acetone, Benzene, Bromodichloromethane, Bromoform, Bromomethane, Carbon disulfide, Carbon tetrachloride, Chlorobenzene, Chloroethane, Chloroform, Chloromethane, cis-1,2-Dichloroethylene, cis-1,3-Dichloropropene, Dibromochloromethane, [illegible]

Matrix *
S = Soil
SE = Sediment
SO = Solid
SL = Sludge
W = Water
O = Oil
A = Air
DS = Drum Solids
DL = Drum Liquids
T = Tissue
WI = Wipe
L = Liquid
V = Vegetation
X = Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-416-1015

Page 1 of 1

ollector

Company Contact
JOAN KESSNER

Telephone No.
375-4688

Project Coordinator
WEISS, RL

Price Code 9K

Data Turnaround
45 Days

roject Designation
Columbia River Component of the RCBRA - Sediment

Sampling Location
BH- 5 SSD

SAF No.
RC-116

ce Chest No. WCH-08-006, 056, 036

Field Logbook No.
EL-1630-1

COA
BFSCRC6520

Method of Shipment
FED EX

hipped To
[illegible] SERVICES INC (KNOXVILLE)

Offsite Property No.
N/A

Bill of Lading/Air Bill No. 796342246680

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

Preservation	None	None	None	None	Cool 4C	Cool 4C	None			
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	G/P			
No. of Container(s)	1	1	1	1	1	1	1			
Volume	1500g	100g	10g	15g	150g	125g	100mg			
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Technetium-99	See item (2) in Special Instructions	See item (3) in Special Instructions	TPH - 418.1	Particle Size (Dry Sieve) - D422			

Sample No.	Matrix *	Sample Date	Sample Time										
J18YD6	OTHER SOLID	2/12/09	1405					X	X	X			

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
	2/12/09 1705		2/12/09 1705
2/13/09	0800		2/13/09 0800
	2/13/09 1200	FedEx 2/13/09	1200
	2-14-09 1125		2-14-09 1125

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) {Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238}
(2) Strontium-89,90 -- Total Sr; Isotopic Thorium {Thorium-232}; Isotopic Uranium {Uranium-233/234, Uranium-235, Uranium-238}; Isotopic Plutonium
(3) ICP Metals - 6010 (Full List) {Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc}; Mercury - 7471 {CV}

Sampler [illegible] to remove samples from controlled storage. Shipper removed samples from storage location [illegible] samples for shipment to lab

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION — Received By — Title — Date/Time

FINAL SAMPLE DISPOSITION — Disposal Method — Disposed By — Date/Time

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-116-1017 | Page 1 of 1

Collector BK	Company Contact JOAN KESSNER	Telephone No. 375-4688
Project Designation Columbia River Component of the RI/FS - Sediment	Sampling Location RH-3 SSD	
Ice Chest No. WCH-08-006 051,036	Field Logbook No. EL1601-1	COA [illegible]520
Shipped To EBERLINE SERVICES (OAK RIDGE)	Offsite Property No. N/A	

Project Coordinator: WEISS, RL

SAF No.: RC 116

Price Code: 9K

Data Turnaround: 45 Days

Method of Shipment: FEDEX

Bill of Lading/Air Bill No.: 796342246660

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

S500080

Preservation	None	None	None	None	Cool 4C	Cool 4C	None			
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	G/P			
No. of Container(s)	1	1	1		1	1	1			
Volume	1500g	100g	5g	10g	250g	125g	1000g			
SAMPLE ANALYSIS	See Special Instructions	[illegible]	[illegible]	See Special Instructions	See Special Instructions	[illegible]	Paint Filter (for Safety) [illegible]			

Sample No.	Matrix *	Sample Date	Sample Time										
[illegible]	OTHER SOLID	2/12/08	1125					X	X	X			

CHAIN OF POSSESSION	Date/Time	Sign/Print Names	Date/Time
Relinquished By/Removed From [illegible]	2/12/09 1715	Received By/Stored In [illegible]	2/12/09 1715
Relinquished By/Removed From [illegible]	2/13/09 0800	Received By/Stored In D. [illegible]	2/13/09 0800
Relinquished By/Removed From [illegible]	2/13/09 1200	Received By/Stored In Fedex	2/13/09 1200
Relinquished By/Removed From Fedex	2-14-09 1125	Received By/Stored In [illegible]	2-14-09 1125
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) [Americium-241, Antimony-125, Beryllium-7, Cerium-144, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238]
(2) Strontium-89,90 - Total Sr; Isotopic Thorium (Thorium-232); Isotopic Uranium (Uranium-233/234, Uranium-235, Uranium-238); Isotopic Plutonium
(3) ICP Metals - 6010 (Full List) [Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc], Mercury - 7471 [illegible]

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage & then taking custody of samples for shipment to lab

Matrix *
S = Soil
SE = Sediment
SO = Solid
SL = Sludge
W = Water
O = Oil
A = Air
DS = Drum Solids
DL = Drum Liquids
T = Tissue
WI = Wipe
L = Liquid
V = Vegetation
X = Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-116-1016 | Page 1 of 1

...lector: BM	Company Contact: JOAN KESSNER	Telephone No.: 375-4688	Project Coordinator: WEISS, RL
Project Designation: Columbia River Component of the RI/FS - Sediment	Sampling Location: RM 7 SSD		SAF No.: RC-116
Ice Chest No.: WCH-06-0010, 051, 036	Field Logbook No.: EL-1630-1	COA: DESCRC6520	Method of Shipment: FED EX
Shipped To: EBERLINE SERVICES (OAK RIDGE)	Offsite Property No.: N/A		Bill of Lading/Air Bill No.: 796342246660

Price Code: 9K

Data Turnaround: 45 Days

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

Preservation	None	None	None	None	Cool 4C	Cool 4C	None
Type of Container	GP	GP	GP	GP	GP	aG	GP
No. of Container(s)	1	1	1	1	1	1	1
Volume	1500g	150g	10g	10g	250g	125g	1000g
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Technetium-99	See item (2) in Special Instructions	See item (3) in Special Instructions	TOC - 9060	Particle Size (Dry Sieve) D422

Sample No.	Matrix *	Sample Date	Sample Time							
[illegible]07	OTHER SOLID	2/12/09	1420					X	X	X

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
B. Bush	2/12/09 1715	Fr. 4	2/12/09 1715
[illegible]	2/13/09 0800	D Heidelberg	2/13/09 0800
D Heidelberg	2/13/09 1200	FedEx	2/13/09 1200
[illegible]	2/14/09 1125	[illegible]	2/14/09 1125
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (GEA) [Americium-241, Antimony-125, Beryllium-7, Cerium-144, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Thorium-228, Uranium-238]

(2) Strontium-89,90 - Total Sr; Isotopic Thorium (Thorium-232); Isotopic Uranium (Uranium-233/234, Uranium-235, Uranium-238); Isotopic Plutonium

(3) ICP Metals - 6010 (Full List) (Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc); Mercury - 7471 - (CV)

Sampler unavailable to receive samples
from controlled storage. Sampler removed
samples from storage location taking custody
of samples for shipment to lab

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-F-033

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-116-1018

Page 1 of 1

Collector: RM	Company Contact: JOAN KESSNER	Telephone No.: 375-4688	Project Coordinator: WEISS, RE
Project Designation: Columbia River Component of the RCBRA - Sediment	Sampling Location: RIB to SSD		SAF No.: RC-116
Ice Chest No.: WCH-08-006, 251, 036	Field Logbook No.: EL-1463-1	COA: [illegible]	Method of Shipment: FEDEX
Shipped To: SEVERN TRENT SERVICES [✓ KNOXVILLE]	Offsite Property No.: N/A		Bill of Lading/Air Bill No.: 7961 5412 2466 60

Price Code: 9K

Data Turnaround: 45 Days

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

Preservation	[illegible]	[illegible]	[illegible]	[illegible]	Cool 4C	Cool 4C	[illegible]			
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	G/P			
No. of Container(s)	1	1	1	1	1	1	1			
Volume	1500g	100g	10g	10g	250g	125g	1000g			
SAMPLE ANALYSIS	[illegible] Special Instructions	Carbon-14	Technetium-99	[illegible] Special Instructions	[illegible] Special Instructions	[illegible] - 415.1	Particle Size (Dry Sieve) D422			

Sample No.	Matrix *	Sample Date	Sample Time										
[illegible]	OTHER SOLID	2/12/09	1400					X	X	X			

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
[illegible]	2/12/09 1515	[illegible]	2/12/09 1535
[illegible]	2/13/09 0800	[illegible]	2/13/09 0800
[illegible]	2/13/09 1200	FedEx	2/13/09 1200
[illegible]	2-14-09 1125	[illegible]	2-14-09 1125

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (PoCI List) [Americium-241, Antimony-125, Beryllium-7, Cerium-144, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238]
(2) Strontium-89,90 - Total Sr; Isotopic Thorium (Thorium-232); Isotopic Uranium (Uranium-233/234, Uranium-235, Uranium-238); Isotopic Plutonium
(3) ICP Metals - 6010 (PoCI List) [Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc]; Mercury - 7471 - (CVAA)

Sample [illegible] to [illegible] from controlled storage. [illegible] removed samples from storage location [illegible] of samples for shipment to lab.

Matrix *

LABORATORY SECTION — Received By — Title — Date/Time

FINAL SAMPLE DISPOSITION — Disposal Method — Disposed By — Date/Time

WCH-EE-041

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-116-1019

Page 1 of 1

Collector BH	Company Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator WEISS, RI
Project Designation Columbia River Component of the RCBRA - Sediment	Sampling Location RH-2 SSD		SAF No. RC-116
Ice Chest No. RCH-08-006, 051, 036	Field Logbook No. EL-1654-1	COA HPSCRC6520	Method of Shipment FED EX
Shipped To EBERLINE SERVICES (LIONVILLE)	Offsite Property No. N/A		Bill of Lading/Air Bill No. 79634224 6060

Price Code 9K

Data Turnaround 45 Days

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

850000

Preservation	None	None	None	None	Cool 4C	Cool 4C	None			
Type of Container	G/P	G/T	G/P	G/P	G/P	aG	G/P			
No. of Container(s)	1	1	1	1	1	1	1			
Volume	1500g	100g	10g	50g	250g	125g	1000g			
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Technetium-99	See item (2) in Special Instructions	See item (3) in Special Instructions	TOC - 415.1	Particle Size (Dry Sieve) - [illegible]			

Sample No.	Matrix *	Sample Date	Sample Time										
[illegible]	OTHER SOLID	2/12/07	1120					X	X	X			

CHAIN OF POSSESSION

Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
B. [illegible]	2/12/07 1215	[illegible]	2/12/07 1215
[illegible]	2/13/07 0800	D. Hellberg	2/13/07 0800
D. Hellberg	2/13/07 1200	FedEx	2/13/07 1200
[illegible]	2/14/07 1025	[illegible]	2-14-07 1025

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List (Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238)
(2) Strontium-89,90 - Total Sr, Isotopic Thorium (Thorium-234), Isotopic Uranium (Uranium-233/234, Uranium-235, Uranium-238), Isotopic Plutonium
(3) ICP Metals - 6010 (Full List (Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc), Mercury - 7471 - (CVAA)

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-116-1020 Page 1 of 1

Collector: B/[illegible]

Company Contact: JOAN KESSNER

Telephone No.: 375-4688

Project Coordinator: WEISS, RL

Price Code: 9K

Data Turnaround: 45 Days

Project Designation: [illegible] River Components of the RCBRA - Sediments

Sampling Location: RH- 10 SSD

SAF No.: RC-116

Ice Chest No.: WCH-08-CC6,051,636

Field Logbook No.: EL-1635-3

COA: BESCRC0520

Method of Shipment: FEDEX

Shipped To: [illegible] SERVICES (LIONVILLE)

Offsite Property No.: N/A

Bill of Lading/Air Bill No.: 796342246660

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

Preservation	None	None	None	None	Cool 4C	Cool 4C	None
Type of Container	G/P	G/P	G/P	G/P	[illegible]	aG	G/P
No. of Container(s)	1	1	1	1	1	1	1
Volume	1500g	100g	10g	10g	250g	125g	1000g
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Technetium-99	See item (2) in Special Instructions	See item (4) in Special Instructions	TOC - 415.1	Particle Size (Dry Sieve) Shell

Sample No.	Matrix *	Sample Date	Sample Time							
J18WT1	OTHER SOLID	2/12/09	1200					X	X	X

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
B. Taylor [illegible]	2/12/09 1715	Fed[illegible]	2/12/09 1715
F[illegible]	2/13/09 0800	D. Hellberg [illegible]	2-13-09 0800
D. Hellberg [illegible]	2/13/09 1200	Fedex	2/13/09 1200
Fedex	2-14-09 1125	[illegible]	2-14-09 1125

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) {Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238}

(2) Strontium-89,90 -- Total Sr; Isotopic Plutonium; Thorium-232; Isotopic Uranium {Uranium-233/234, Uranium-235, Uranium-238}; Isotopic Plutonium

(4) ICP Metals - 6010 (Full List) {Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc}; Mercury - 7471 - CVAA

Sampler unavailable to retrieve samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab.

Matrix *

LABORATORY SECTION — Received By — Title — Date/Time

FINAL SAMPLE DISPOSITION — Disposal Method — Disposed By — Date/Time

WCH-EE-011

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-116-1031 | Page 1 of 2

Collector [illegible]	Company Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator WEISS, RT
Project Designation [illegible] the RCBRA - Sediment	Sampling Location RTLS- 3- SSD		SAF No. RC-116
Ice Chest No. WCH-08-060/051/636	Field Logbook No. EL-1631-1	COA HESCRC0520	Method of Shipment FEDEX
Shipped To EBERLINE SERVICES ([illegible])	Offsite Property No. N/A		Bill of Lading/Air Bill No. 796342246660

Price Code 9K

Data Turnaround 45 Days

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

090100

Preservation	None	None	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	None
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	aG	aG	G	
No. of Container(s)	1	1	1	1	1	1	1	1	1	1
Volume	1500g	100g	15g	10g	250g	250g	125g	250g	250g	4
SAMPLE ANALYSIS	[illegible] Special Instructions	Carbon-14	Technetium-99	[illegible] Special Instructions	[illegible] Special Instructions	[illegible]	[illegible]	[illegible]	[illegible] Special Instructions	

Sample No.	Matrix *	Sample Date	Sample Time										
J18/K6	OTHER SOLID	[illegible]	[illegible]					X	X	X	X	X	

Sample [illegible] samples [illegible] storage. Sample [illegible] sample from storage location [illegible] of samples for [illegible]

CHAIN OF POSSESSION	Date/Time	Sign/Print Names	Date/Time
Relinquished By/Removed From [illegible]	2-12-09 / 1715	Received By/Stored In [illegible]	2-12-09 / 1715
Relinquished By/Removed From [illegible] 2/13/09	0800	Received By/Stored In D. Heidelberg	2/13/09 0800
Relinquished By/Removed From D. Heidelberg	2/13/09 1200	Received By/Stored In Fedex 2/13/09	1200
Relinquished By/Removed From [illegible] 2/14/09	1125	Received By/Stored In [illegible]	2/14/09 1125
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time

SPECIAL INSTRUCTIONS

(1) Gamma Spec - [illegible] Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238}

(2) Strontium-89/90 - Total Sr; Isotopic Thorium {Thorium-232, [illegible]}; Isotopic Uranium {Uranium-233/234, Uranium-235, Uranium-238}; Isotopic Plutonium

(3) ICP Metals - 6010 (Full List) {Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Titanium, Vanadium, Zinc}; Mercury - 7471 - (CV)

(4) VOA - 8260A (TCL) {1,1,1-Trichloroethane, 1,1,2,2-Tetrachloroethane, 1,1,2-Trichloroethane, 1,1-Dichloroethane, 1,1-Dichloroethene, 1,2-Dichloroethane, 1,2-Dichloropropane, 2-Butanone, 2-Hexanone, 4-Methyl-2-Pentanone, Acetone, Benzene, Bromodichloromethane, Bromoform, Bromomethane, Carbon disulfide, Carbon tetrachloride, Chlorobenzene, Chloroethane, Chloroform, Chloromethane, cis-1,2-Dichloroethylene, cis-1,3-Dichloropropene, Dibromochloromethane, [illegible]

Matrix *

[illegible]

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-051

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-116-1032 Page 1 of 2

Collector: RBH	Company Contact: JOAN KESSNER Telephone No: [illegible]-4688	Project Coordinator: WEISS, RL	Price Code: 9K Data Turnaround: 45 Days
Project Designation: [illegible]	Sampling Location: RFLS- / SSD	SAF No.: RC-116	
Ice Chest No.: WH-08-006/05/03/0	Field Logbook No.: [illegible] COA: [illegible]	Method of Shipment: FED EX	
Shipped To: [illegible]	Offsite Property No.: N/A	Bill of Lading/Air Bill No.: 796342246660	

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

[illegible]

Preservation	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	aG	aG	G	[illegible]
No. of Container(s)	1	1	1	1	1	1	1	1	1	1
Volume	1500g	100g	10g	10g	250g	250g	125g	250g	250g	[illegible]
SAMPLE ANALYSIS	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	

Sample No.	Matrix *	Sample Date	Sample Time										
[illegible]	OTHER SOLID	2/12/09	1510					X	X	X	X	X	

Sampler unavailable to relinquish samples from controlled storage. Shipper removed samples from storage location (entry custody). 4 samples for shipment to lab.

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
[illegible] RBH	2/12/09 1715	Fzr 1	2/12/09 1715
Fzr 1	2/13/09 0800	D Heidelberg	2/13/09 0800
D Heidelberg	2/13/09 1200	FedEx	2/13/09 1200
[illegible]	2-14-09 1125	[illegible]	2-14-09 1125

SPECIAL INSTRUCTIONS

(1) Gamma Spec - [Full List] (Americium 241, Antimony 125, Beryllium 7, [illegible], Cesium 137, Cobalt 60, Europium 152, Europium 154, Europium 155, Potassium 40, Radium 226, Radium 228, Ruthenium 106, Uranium 235, Uranium 238);

(2) Strontium-89,90 - Total Sr; Isotopic Thorium (Thorium-232); Isotopic Uranium (Uranium-233/234, Uranium-235, Uranium-238); Isotopic Plutonium;

(3) ICP Metals - 6010 [Full List] (Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc); Mercury - 7471 - (CV);

(4) VOA - 8260A (TCL) (1,1,1-Trichloroethane, 1,1,2,2-Tetrachloroethane, 1,1,2-Trichloroethane, 1,1-Dichloroethane, 1,1-Dichloroethene, 1,2-Dichloroethane, 1,2-Dichloropropane, 2-Butanone, 2-Hexanone, 4-Methyl-2-Pentanone, Acetone, Benzene, Bromodichloromethane, Bromoform, Bromomethane, Carbon disulfide, Carbon tetrachloride, Chlorobenzene, Chloroethane, Chloroform, Chloromethane, cis-1,2-Dichloroethylene, cis-1,3-Dichloropropene, Dibromochloromethane, [illegible]

Matrix *

[illegible]

LABORATORY SECTION — Received By: Date/Time:

FINAL SAMPLE DISPOSITION — Disposal Method: Disposed By: Date/Time:

[illegible]

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-116-1033

Page 1 of 1

ollector

roject Designation
Columbia River Component of the [illegible] - Sediment

e Chest No. WCH-06-006054,036

hipped To
[illegible] SERVICES [illegible]

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

Company Contact
JOAN KESSNER

Telephone No.
375-4688

Project Coordinator
WEISS, RL

Price Code 9K

Data Turnaround
45 Days

Sampling Location
RFLS- 5 SSD

SAF No.
RC-116

Field Logbook No.
EL-1634-1

COA
DESCRC0520

Method of Shipment
FED EX

Bill of Lading/Air Bill No. 796342246660

Offsite Property No.
N/A

Preservation	None	None	None	None	[illegible]	[illegible]	None		
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	G/P		
No. of Container(s)	1	1	1	1	1	1	1		
Volume	1500g	500g	10g	10g	250g	125g	1000g		
SAMPLE ANALYSIS	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]		

Sample No.	Matrix *	Sample Date	Sample Time									
J18766	OTHER SOLID	2/12/09	1100					X	X	X		

CHAIN OF POSSESSION

Sign/Print Names

Relinquished By/Removed From L [illegible]	Date/Time 2-12-09 / 1715	Received By/Stored In Ref B	Date/Time 2-12-09 / 1715
Relinquished By/Removed From [illegible]	Date/Time 2/13/09 0800	Received By/Stored In D. [illegible]	Date/Time 2/13/09 0800
Relinquished By/Removed From D. [illegible]	Date/Time 2/13/09 1200	Received By/Stored In Fedex 2/13/09	Date/Time 1200
Relinquished By/Removed From [illegible]	Date/Time 2/14/09 1125	Received By/Stored In [illegible] 2/14/09	Date/Time 1125
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time

SPECIAL INSTRUCTIONS

(1) Gamma Spec - [illegible] (Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238)
(2) Strontium-89,90 -- Total Sr; Isotopic Thorium {Thorium-232}; Isotopic Uranium {Uranium-233/234, Uranium-235, Uranium-238}; Isotopic Plutonium
(3) ICP Metals - 6010 [illegible] (Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Titanium, Vanadium, Zinc); Mercury - 7471 - (CV)

SM [illegible] unavailable to remove samples from controlled storage. Sampler removed samples from storage location using custody of samples for shipment [illegible]

Matrix *

LABORATORY SECTION | Received By

FINAL SAMPLE DISPOSITION | Disposal Method | Disposed By | Date/Time

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-116-1034

Page 1 of 1

Collector:

Company Contact: JOAN KESSNER

Telephone No.: 375-4688

Project Coordinator: WEISS, RL

Price Code: 9K

Data Turnaround: 45 Days

Project Designation: Columbia River Component of the RI/BRA - Sediment

Sampling Location: RELS-Y SSD

SAF No.: RC-116

Ice Chest No.: WCH-080609 051, 036

Field Logbook No.: EL-1619-1

COA: BENCRC632D

Method of Shipment: FED EX

Shipped To: EBERLINE SERVICES (LIONVILLE)

Offsite Property No.: N/A

Bill of Lading/Air Bill No.: 796342246660

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

Preservation	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]		
Type of Container	G/P	G/P	G/P	G/P	G/P	[illegible]	G/P		
No. of Container(s)	[illegible]	[illegible]	1	1	1	[illegible]	1		
Volume	1500g	100g	10g	10g	250g	125g	1000g		
SAMPLE ANALYSIS	[illegible] Special Instructions	[illegible]	[illegible]	[illegible] Special Instructions	[illegible] Special Instructions	[illegible]	Percent Solids (Dry Solids) [illegible]		

Sample No.	Matrix *	Sample Date	Sample Time									
J16789	OTHER SOLID	[illegible]	1545					X	X	X		

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
L Strah	2-12-09 / 1715	Ref B	2-12-09 / 1715
Ref B 2/13/09		D Heidelberg	2/13/09 0800
D Heidelberg	2/13/09 1200	Fedex 2/13/09	1200
	2-14-09 1125		2-14-09 1125

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) (Americium-241, Antimony-125, Beryllium-7, Cerium-144, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238)
(2) Strontium-89,90 - Total Sr, Isotopic Thorium (Thorium-232), Isotopic Uranium (Uranium-233/234, Uranium-235, Uranium-238), Isotopic Plutonium
(3) ICP Metals - 6010 (Full List) (Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Titanium, Vanadium, Zinc); Mercury - 7471 - (CVAA)

Sampler unavailable to remove samples
from controlled storage. Shipper removed
samples from storage location taking custody
of samples for shipment to lab.

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION — Received By: Title: Date/Time:

FINAL SAMPLE DISPOSITION — Disposal Method: Disposed By: Date/Time:

WCH-EE-011

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-116-1035 | Page 1 of 1

Collector: B [illegible]	Company Contact: JOAN KESSNER	Telephone No.: 375-4658	Project Coordinator: WEISS, RL
Project Designation: Columbia River Component of the RI/FS - Sediment	Sampling Location: RFTS 3 SSD		SAF No.: RC-116
Ice Chest No.: WCH-08-006, 056456	Field Logbook No.: EL-1550-1	COA: BESCRC6350	Method of Shipment: FEDEX
Shipped To: EBERLINE SERVICES (RICHMOND)	Offsite Property No.: N/A		Bill of Lading/Air Bill No.: 796342246600

Price Code: 9K

Data Turnaround: 45 Days

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

Preservation	None	None	None	None	Cool 4C	Cool 4C	None
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	G/P
No. of Container(s)	1	1	1	1	1	1	1
Volume	1000g	10g	10g	10g	250g	125g	1000g
SAMPLE ANALYSIS	See attached list Special Instructions	Carbon-14	Technetium-99	See attached list Special Instructions	See attached list Special Instructions	TOC - 415.1	Percent Solids (Dry Sieve) 1/4"

Sample No.	Matrix *	Sample Date	Sample Time							
J18FL0	OTHER SOLID	2/12/09	1540					X	X	X

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From: B [illegible]	Date/Time: 2/12/09 1715	Received By/Stored In: [illegible]	Date/Time: 2/12/09 1715
Relinquished By/Removed From: [illegible]	Date/Time: 2/13/09 0800	Received By/Stored In: D. Hedberg [illegible]	Date/Time: 2/13/09 0800
Relinquished By/Removed From: D. Hedberg [illegible]	Date/Time: 2/13/09 1200	Received By/Stored In: FedEx	Date/Time: 2/13/09 1200
Relinquished By/Removed From: FedEx	Date/Time: 2/14/09 1125	Received By/Stored In: [illegible]	Date/Time: 2/14/09 1125
Relinquished By/Removed From:	Date/Time:	Received By/Stored In:	Date/Time:
Relinquished By/Removed From:	Date/Time:	Received By/Stored In:	Date/Time:

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Add List: (Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238)) (2) Strontium-89,90 - Total Sr; Isotopic Thorium (Thorium-228, Thorium-230, Thorium-232); Isotopic Uranium (Uranium-233/234, Uranium-235, Uranium-238); Isotopic Plutonium (3) ICP Metals - 6010 (CLP list) (Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc); Mercury - 7471 - (CV)

Sampler unavailable to remove samples from controlled storage. Shipper retrieved samples from storage location taking custody of samples for shipment to lab

Matrix *

S = Soil
SE = Sediment
SO = Solid
SL = Sludge
W = Water
O = Oil
A = Air
DS = Drum Solids
DL = Drum Liquids
T = Tissue
WI = Wipe
L = Liquid
V = Vegetation
X = Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-021

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-116-306

Page 1 of 1

llector [illegible]	Company Contact JOAN KESSNER	Telephone No. 375-4688
oject Designation Columbia River Component of the RCBRA - Sediment	Sampling Location WHC 73 SD	
e Chest No. HGH-08-006,051,036	Field Logbook No. EL-1631-1	COA HESCRC6520
ipped To EBERLINE SERVICES (ONSITE)	Offsite Property No. N/A	

Project Coordinator: WEISS, RL

SAF No.: RC 116

Price Code: 9K

Data Turnaround: 45 Days

Method of Shipment: FED EX

Bill of Lading/Air Bill No. 796342246660

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

S900010

Preservation	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	None			
Type of Container	G/P	aG	aG	aG	G	aG	G/P			
No. of Container(s)	1	1	1	1	1	1	1			
Volume	250g	250g	125g	250g	250g	125g	1000g			
SAMPLE ANALYSIS	See item (1) in Special Instructions	PCBs - 8082	Pesticides 8081	Semi-VOA 8270A (TCL)	See item (2) in Special Instructions	TOX - 9023	Particle Size (Dry Sieve) D422			

Sample No.	Matrix *	Sample Date	Sample Time										
J17X00	OTHER SOLID	2/12/09	0940	X	X	X	X	X	X	X			

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
[illegible]	2-12-09 1715	[illegible]	2-12-09 1715
[illegible]	2/13/09 0800	[illegible]	2/13/09 0800
[illegible]	2/13/09 1200	FedEx	2/13/09 1200
[illegible]	2-14-09 1125	[illegible]	2-14-09 1125
[illegible]	2-14-09 1125	[illegible]	2-14-09 1125

SPECIAL INSTRUCTIONS

(1) ICP Metals - 6010 (Full List) {Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc}; Mercury - 7471 - (CV); 1,1,2,2-Tetrachloroethane, 1,1,2-Trichloroethane,
(2) VOA - 8260A (TCL) {1,1,1-Trichloroethane, 1,1-Dichloroethane, 1,1-Dichloroethene, 1,2-Dichloroethane, 1,2-Dichloropropane, 2-Butanone, 2-Hexanone, 4-Methyl-2-Pentanone, Acetone, Benzene, Bromodichloromethane, Bromoform, Bromomethane, Carbon disulfide, Carbon tetrachloride, Chlorobenzene, Chloroethane, Chloroform, Chloromethane, cis-1,2-Dichloroethylene, cis-1,3-Dichloropropene, Dibromochloromethane, Ethylbenzene, Methylene chloride, Styrene, Tetrachloroethene, Toluene, trans-1,2-Dichloroethylene, trans-1,3-Dichloropropene, Trichloroethene, Vinyl chloride, Xylenes (total)}

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab.

Date/Time

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EL-011

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-110-1084

Page 1 of 2

Washington Closure Hanford

Company Contact
JOAN KESSNER

Telephone No.
375-4686

Project Coordinator
KESSNER, JO

Price Code 9K

Data Turnaround
45 Days

SAF No.
RC-110

Project Description
Columbia River Component of the RCBRA - Sediment

Sampling Location
HT [illegible] SND

Method of Shipment
FEDEX

Ice Chest No. UCH-08-[illegible]

Field Logbook No.
EL-1631-1

COA
B1SCRC0V20

Bill of Lading/Air Bill No. 7963 4224 6660

Offsite Property No.
N/A

Shipped To
[illegible] (LIONVILLE)

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

SAMPLE ANALYSIS

Preservation	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	aG	aG	aG	[illegible]
No. of Container(s)	1	1	1	1	1	1	1	1	1	1
Volume	450g	10g	5g	10g	250g	250g	250g	250g	250g	[illegible]
	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	

Sample No.	Matrix *	Sample Date	Sample Time										
J1RXN2	OTHER SOLID	2/[illegible]	1550					X	X	X	X	X	

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab.

CHAIN OF POSSESSION	Date/Time	Sign/Print Names	Date/Time
Relinquished By/Removed From [illegible]	2-12-09 / 1915	Received By/Stored In R B	2-12-09 / 1915
Relinquished By/Removed From R B	2/13/09 0800	Received By/Stored In D [illegible]	2/13/09 0800
Relinquished By/Removed From D [illegible]	2/13/09 1200	Received By/Stored In FedEx	2/13/09 1200
Relinquished By/Removed From [illegible]	2-14-09 1125	Received By/Stored In [illegible]	2-14-09 1125
Relinquished By/Removed From		Received By/Stored In	
Relinquished By/Removed From		Received By/Stored In	

SPECIAL INSTRUCTIONS

(1) Gamma Spec - [illegible] (Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238); (2) Strontium-89,90 - Total Sr; Isotopic Thorium (Thorium-232), Isotopic Uranium (Uranium-233/234, Uranium-235, Uranium-238); Isotopic Plutonium; (3) ICP Metals - [illegible] (Aluminum, Antimony, Arsenic, Barium, Beryllium, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Titanium, Vanadium, Zinc); Mercury - 7471 - [illegible]; VOA - 8260A (1,1,1-Trichloroethane, 1,1,2,2-Tetrachloroethane, 1,1,2-Trichloroethane, 1,1-Dichloroethane, 1,1-Dichloroethene, 1,2-Dichloroethane, 1,2-Dichloropropane, 2-Butanone, 2-Hexanone, 4-Methyl-2-Pentanone, Acetone, Benzene, Bromodichloromethane, Bromoform, Bromomethane, Carbon disulfide, Carbon tetrachloride, Chlorobenzene, Chloroethane, Chloroform, Chloromethane, cis-1,2-Dichloroethylene, cis-1,3-Dichloropropene, Dibromochloromethane, [illegible]

Matrix *
[illegible]

Title

LABORATORY SECTION | Received By | Date/Time

FINAL SAMPLE DISPOSITION | Disposal Method | Disposed By | Date/Time

A-6003-618 (11/05)

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-116-1087 | Page 1 of 1

Collector [illegible]	Company Contact JOAN KESSNER	Telephone No. 375-4668	Project Coordinator KESSNER, JH
Project Designation [illegible] of the RCBRA - Sediment	Sampling Location RF-4 SSD		SAF No. RC-116
Ice Chest No. WCH-08-006, 051, 036	Field Logbook No. EL-1651-3	COA RESCR07520	Method of Shipment FEDEX
Shipped To [illegible]	Offsite Property No. N/A		Bill of Lading/Air Bill No. 796342246660

Price Code 9K

Data Turnaround 45 Days

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

23001.13

Preservation	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	G/P	
No. of Container(s)	1	[illegible]	3	1	1	1	1	
Volume	1500g	100g	10g	10g	250g	125g	100g	
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Technetium-99	See item (2) in Special Instructions	See item (3) in Special Instructions	[illegible]	[illegible]	

Sample No.	Matrix *	Sample Date	Sample Time							
J18705	OTHER SOLID	2/11/09	1405					X	X	X

CHAIN OF POSSESSION	Date/Time	Sign/Print Names	Date/Time
Relinquished By/Removed From [illegible]	2-11-09/1715	Received By/Stored In [illegible]	2-13-09/1715
Relinquished By/Removed From [illegible] 2/13/09	0800	Received By/Stored In [illegible]	2/13/09 0800
Relinquished By/Removed From [illegible]	2/13/09 1200	Received By/Stored In FedEx	2/13/09 1200
Relinquished By/Removed From [illegible]	2-14-09 1135	Received By/Stored In [illegible]	2-14-09 1135
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time

SPECIAL INSTRUCTIONS

(1) Gamma Spec - {Full List} {Americium-241, Antimony-125, Beryllium-7, Cerium-144, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238}

(2) Strontium-89,90 - Total Sr, Isotopic Thorium {Thorium-228, Thorium-230, Thorium-232}, Isotopic Uranium {Uranium-233/234, Uranium-235, Uranium-238}; Isotopic Plutonium

(3) ICP Metals - 6010 {Full List} {Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc}; Mercury - 7471 - (CVAA)

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab.

Matrix *

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

Appendix 5

Data Validation Supporting Documentation

INORGANIC ANALYSIS DATA VALIDATION CHECKLIST

VALIDATION LEVEL:	A	B	[✓ C]	D	E

PROJECT: RCBRA

DATA PACKAGE: K1540

VALIDATOR: ELR

LAB: LLI

DATE: 11/21/01

SDG: K1540

ANALYSES PERFORMED

[✓ SW-846/ICP]	SW-846/GFAA	[✓ SW-846/Hg]	SW-846 Cyanide		

SAMPLES/MATRIX

J18610	J18764-A	J18779	J18794	J18795	J18796
J18797	J18778	J18799	J187D0	J187D2	J187D4
J187D5	J187D6	J187D7	J187D8	J187D9	J187F0
J187F1	J187E6	J187K7	J187K8	J187K9	J187L0
J187Y0	J187Y2	J187Y5			Solid

1. DATA PACKAGE COMPLETENESS AND CASE NARRATIVE

Technical verification documentation present? .... Yes [✓ No] N/A

Comments:

2. INSTRUMENT PERFORMANCE AND CALIBRATIONS (Levels D and E)

Initial calibrations performed on all instruments? .... Yes No [✓ N/A]

Initial calibrations acceptable? .... Yes No [✓ N/A]

ICP interference checks acceptable? .... Yes No [✓ N/A]

ICV and CCV checks performed on all instruments? .... Yes No [✓ N/A]

ICV and CCV checks acceptable? .... Yes No [✓ N/A]

Standards traceable? .... Yes No [✓ N/A]

Standards expired? .... Yes No [✓ N/A]

Calculation check acceptable? .... Yes No [✓ N/A]

Comments:

INORGANIC ANALYSIS DATA VALIDATION CHECKLIST

3. BLANKS (Levels B, C, D, and E)

ICB and CCB checks performed for all applicable analyses? (Levels D, E) .... Yes No [✓ N/A]

ICB and CCB results acceptable? (Levels D, E) .... Yes No [✓ N/A]

Laboratory blanks analyzed? .... [✓ Yes] No N/A

Laboratory blank results acceptable? .... Yes [✓ No] N/A

Field blanks analyzed? (Levels C, D, E) .... Yes [✓ No] N/A

Field blank results acceptable? (Levels C, D, E) .... Yes No [✓ N/A]

Transcription/calculation errors? (Levels D, E) .... Yes No [✓ N/A]

Comments: tlm - UJ all no FB

4. ACCURACY (Levels C, D, and E)

MS/MSD samples analyzed? .... [✓ Yes] No N/A

MS/MSD results acceptable? .... [✓ Yes] No N/A

MS/MSD standards NIST traceable? (Levels D, E) .... Yes No [✓ N/A]

MS/MSD standards expired? (Levels D, E) .... Yes No [✓ N/A]

LCS/BSS samples analyzed? .... [✓ Yes] No N/A

LCS/BSS results acceptable? .... Yes [✓ No] N/A

Standards traceable? (Levels D, E) .... Yes No [✓ N/A]

Standards expired? (Levels D, E) .... Yes No [✓ N/A]

Transcription/calculation errors? (Levels D, E) .... Yes No [✓ N/A]

Performance audit sample(s) analyzed? .... Yes [✓ No] N/A

Performance audit sample results acceptable? .... Yes No [✓ N/A]

Comments: no PAS

~~MS - Silicon~~

LCS - J all detect antimony, arsenic, iron, thallium + vanadium

magnesium + calcium - 6010 - D6 - J all detects

zinc - MS - J - D8 - Y5

INORGANIC ANALYSIS DATA VALIDATION CHECKLIST

5. PRECISION (Levels C, D, and E)

Duplicate RPD values acceptable? .... [✓ Yes] No N/A

Duplicate results acceptable? .... [✓ Yes] No N/A

MS/MSD standards NIST traceable? (Levels D, E) .... Yes No [✓ N/A]

MS/MSD standards expired? (Levels D, E) .... Yes No [✓ N/A]

Field duplicate RPD values acceptable? .... [✓ Yes] No N/A

Field split RPD values acceptable? .... Yes No [✓ N/A]

Transcription/calculation errors? (Levels D, E) .... Yes No [✓ N/A]

Comments:

6. ICP QUALITY CONTROL (Levels D and E)

ICP serial dilution samples analyzed? .... Yes No [✓ N/A]

ICP serial dilution %D values acceptable? .... Yes No [✓ N/A]

ICP post digestion spike required? .... Yes No [✓ N/A]

ICP post digestion spike values acceptable? .... Yes No [✓ N/A]

Standards traceable? .... Yes No [✓ N/A]

Standards expired? .... Yes No [✓ N/A]

Transcription/calculation errors? .... Yes No [✓ N/A]

Comments:

INORGANIC ANALYSIS DATA VALIDATION CHECKLIST

7. FURNACE AA QUALITY CONTROL (Levels D and E)

Duplicate injections performed as required? .... Yes No [✓ N/A]
Duplicate injection %RSD values acceptable? .... Yes No [✓ N/A]
Analytical spikes performed as required? .... Yes No [✓ N/A]
Analytical spike recoveries acceptable? .... Yes No [✓ N/A]
Standards traceable? .... Yes No [✓ N/A]
Standards expired? .... Yes No [✓ N/A]
MSA performed as required? .... Yes No [✓ N/A]
MSA results acceptable? .... Yes No [✓ N/A]
Transcription/calculation errors? .... Yes No [✓ N/A]
Comments:

8. HOLDING TIMES (all levels)

Samples properly preserved? .... [✓ Yes] No N/A
Sample holding times acceptable? .... [✓ Yes] No N/A
Comments:

INORGANIC ANALYSIS DATA VALIDATION CHECKLIST

9. RESULT QUANTITATION AND DETECTION LIMITS (all levels)

Results reported for all requested analyses? .... [✓ Yes] No N/A

Results supported in the raw data? (Levels D, E) .... Yes No [✓ N/A]

Samples properly prepared? (Levels D, E) .... Yes No [✓ N/A]

Detection limits meet RDL? .... [✓ Yes] No N/A

Transcription/calculation errors? (Levels D, E) .... Yes No [✓ N/A]

Comments:

Appendix 6

Additional Documentation Requested by Client

WC-Hanford, Inc
2620 Fermi Avenue
Richland WA, 99354

Project: RC-116
Project Number: [none]
Project Manager: Joan Kessner

Reported:
04/27/2009 11:06

Metals by SW846 6000/7000 series - Quality Control

Lionville Laboratory

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch L903074 - SW 7471A Prep										
Blank (L903074-BLK1)				Prepared & Analyzed: 03/10/2009						
Mercury	ND	0.0400	mg/kg wet							U
Duplicate (L903074-DUP2)	Source: 0902047-01			Prepared & Analyzed: 03/10/2009						
Mercury	ND	0.0225	mg/kg wet		ND				20	U
Matrix Spike (L903074-MS2)	Source: 0902047-01			Prepared & Analyzed: 03/10/2009						
Mercury	0.149	0.0265	mg/kg wet	0.14706	ND	101	75-125			
Reference (L903074-SRM1)				Prepared & Analyzed: 03/10/2009						
Mercury	4.63	0.174	mg/kg wet	4.7000		98.4	80-120			
Batch L903084 - SW 7471A Prep										
Blank (L903084-BLK1)				Prepared & Analyzed: 03/11/2009						
Mercury	ND	0.0400	mg/kg wet							U
Duplicate (L903084-DUP1)	Source: 0902047-11			Prepared & Analyzed: 03/11/2009						
Mercury	ND	0.0273	mg/kg wet		0.0122				20	U
Matrix Spike (L903084-MS1)	Source: 0902047-11			Prepared & Analyzed: 03/11/2009						
Mercury	0.157	0.0265	mg/kg wet	0.14706	0.0122	98.2	75-125			
Reference (L903084-SRM1)				Prepared & Analyzed: 03/11/2009						
Mercury	4.66	0.180	mg/kg wet	4.7000		99.1	80-120			
Batch L904016 - SW 3050B										
Blank (L904016-BLK1)				Prepared: 04/03/2009 Analyzed: 04/04/2009						
Aluminum	ND	4.90	mg/kg							U
Antimony	ND	0.588	"							U
Arsenic	ND	0.980	"							U
Barium	ND	0.490	"							U
Beryllium	0.0234	0.196	"							U
Bismuth	ND	9.80	"							U
Boron	ND	1.96	"							U
Cadmium	ND	0.196	"							U
Calcium	ND	98.0	"							U
Chromium	ND	0.196	"							U
Cobalt	ND	1.96	"							U
Copper	ND	0.980	"							U
Iron	ND	19.6	"							U
Lead	ND	0.490	"							U
Lithium	ND	2.45	"							U
Magnesium	ND	24.5	"							U
Manganese	ND	4.90	"							U
Molybdenum	ND	1.96	"							U
Nickel	ND	1.96	"							U

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

WCH Hanford, Inc 2620 Fermi Avenue Richland WA 99354	Project: RC 116 Project Number: [none] Project Manager: Joan Kessner	Reported: 04/27/2009 14:00

Metals by SW846 6000/7000 series - Quality Control

Lionville Laboratory

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch L904016 - SW 3050B										
Blank (L904016-BLK1)				Prepared: 04/03/2009 Analyzed: 04/04/2009						
Phosphorus	ND	49.0	mg/kg							U
Potassium	ND	102	"							U
Selenium	ND	0.980	"							U
Silicon	ND	1.96	"							U
Silver	ND	0.196	"							U
Sodium	ND	49.0	"							U
Strontium	ND	0.980	"							U
Thallium	ND	0.490	"							U
Tin	1.17	9.80	"							B
Uranium	ND	19.6	"							U
Vanadium	ND	2.45	"							U
Zinc	ND	9.80	"							U
Duplicate (L904016-DUP1)		Source: 0902047-01		Prepared: 04/03/2009 Analyzed: 04/04/2009						
Aluminum	4010	4.63	mg/kg		4530			12	20	
Antimony	0.470	0.556	"		ND				20	B
Arsenic	1.99	0.926	"		2.14			7	20	
Barium	25.8	0.463	"		30.5			17	20	
Beryllium	0.114	0.185	"		0.136			17	20	U
Bismuth	ND	9.26	"		ND				20	U
Boron	0.686	1.85	"		0.736			7	20	B
Cadmium	0.116	0.185	"		0.155			28	20	B
Calcium	2010	92.6	"		2290			13	20	
Chromium	9.51	0.185	"		11.1			16	20	
Cobalt	7.67	1.85	"		5.12			17	20	
Copper	4.90	0.926	"		5.05			26	20	
Iron	10500	18.5	"		12900			21	20	
Lead	2.89	0.463	"		3.47			28	20	
Lithium	4.64	2.31	"		5.38			13	20	
Magnesium	2310	69.4	"		2760			17	20	
Manganese	110	4.63	"		128			15	20	
Molybdenum	ND	1.85	"		ND				20	U
Nickel	6.14	3.70	"		7.10			19	20	
Phosphorus	349	46.3	"		401			14	20	
Potassium	515	176	"		596			15	20	
Selenium	ND	0.926	"		ND				20	U
Silicon	685	1.85	"		700			2	20	
Silver	ND	0.185	"		ND				20	U
Sodium	99.4	46.3	"		86.0			8	20	
Strontium	11.8	0.926	"		12.6			6	20	
Thallium	ND	0.463	"		ND				20	U
Tin	1.26	9.26	"		1.36			8	20	B
Uranium	ND	18.5	"		ND				20	U
Vanadium	27.9	2.31	"		33.1			17	20	
Zinc	28.5	9.26	"		34.4			16	20	

WC-Hanford, Inc.	Project: RC-116	
2620 Fermi Avenue	Project Number: [none]	Reported:
Richland WA, 99354	Project Manager: Joan Kessner	04/27/2009 11:00

Metals by SW846 6000/7000 series - Quality Control

Lionville Laboratory

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch L904016 - SW 3050B										
Matrix Spike (L904016-MS1)		**Source: 0902047-01**		**Prepared: 04/03/2009 Analyzed: 04/04/2009**						
Aluminum	4570	1.46	mg/kg	178.57	4530	37	75-125			
Antimony	39.6	0.536	"	44.643	ND	89	75-125			
Arsenic	172	0.893	"	178.57	2.14	95	75-125			
Barium	203	0.446	"	178.57	30.5	97	75-125			
Beryllium	4.41	0.179	"	4.4643	0.136	96	75-125			
Bismuth	427	8.93	"	446.43	ND	96	75-125			
Boron	81.9	1.79	"	89.286	0.736	91	75-125			
Cadmium	4.32	0.179	"	4.4643	0.155	93	75-125			
Calcium	4220	89.3	"	2232.1	2290	86	75-125			
Chromium	26.4	0.179	"	17.857	11.1	85	75-125			
Cobalt	44.8	1.79	"	44.643	3.17	93	75-125			
Copper	24.6	0.893	"	22.321	5.05	87	75-125			
Iron	10000	17.9	"	89.286	12000	NR	75-125			
Lead	44.7	0.446	"	44.643	3.47	92	75-125			
Lithium	89.5	7.73	"	89.286	5.18	94	75-125			
Magnesium	4730	67.0	"	2232.1	2760	89	75-125			
Manganese	161	4.46	"	44.643	128	74	75-125			
Molybdenum	85.7	1.79	"	89.286	ND	96	75-125			
Nickel	48.8	3.57	"	44.643	7.40	93	75-125			
Phosphorus	748	44.6	"	446.43	401	78	75-125			
Potassium	2680	357	"	2232.1	596	93	75-125			
Selenium	165	0.893	"	178.57	ND	93	75-125			
Silicon	772	1.79	"	89.286	700	81	75-125			
Silver	4.12	0.179	"	4.4643	ND	92	75-125			
Sodium	2200	44.6	"	2232.1	86.0	95	75-125			
Strontium	97.6	0.893	"	89.286	12.6	95	75-125			
Thallium	165	0.446	"	178.57	ND	92	75-125			
Tin	84.8	8.93	"	89.286	1.36	93	75-125			
Uranium	431	17.9	"	446.43	ND	97	75-125			
Vanadium	70.8	2.23	"	44.643	33.1	84	75-125			
Zinc	73.7	8.93	"	44.643	33.4	90	75-125			

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208 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

WCH Hanford, Inc 2620 Fermi Avenue Richland WA, 99354	Project: RC-116 Project Number: [none] Project Manager: Joan Kessner	Reported: 04/27/2009 11:00

Metals by SW846 6000/7000 series - Quality Control

Lionville Laboratory

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch L904016 - SW 3050B										
Reference (L904016-SRM1)				Prepared: 04/03/2009 Analyzed: 04/04/2009						
Aluminum	3000	4.90	mg/kg	2775.2		109	50.8-169.3			
Antimony	8340	29.2	"	7954.8		105	0-204.8			
Arsenic	48.5	0.980	"	24.800		195	0-205.6			
Barium	617	0.490	"	586.40		105	83.9-116.1			
Cadmium	1.47	0.196	"	1.2500		118	0.83-183			
Calcium	8220	98.0	"	5426.5		151	70.1-129.9			
Chromium	12.0	0.196	"	10.700		112	0-205.6			
Cobalt	2.52	1.96	"	2.7000		93	0-1000			
Copper	1460	47.1	"	1592.4		92	52.7-147.8			
Iron	9490	19.6	"	6481.4		146	15.8-184.5			
Lead	96400	24.5	"	144740		67	0-1000			
Magnesium	9960	24.5	"	2367.4		167	0-1000			
Manganese	191	4.90	"	174.20		110	63.1-136.6			
Nickel	13.0	4.92	"	12.600		103	63.8-136.4			
Potassium	1100	192	"	1005.8		109	62.1-137.8			
Silver	7.27	0.196	"	6.5000		112	56.9-169.3			
Sodium	126	49.0	"	146.00		86	25-175			
Thallium	ND	0.490	"	0.60000			0-1000			U
Tin	584	9.80	"	464.10		126	0-1000			
Vanadium	18.1	2.45	"	8.7000		208	0-1000			
Zinc	630	9.80	"	546.40		115	64.6-135.4			
Batch L904017 - SW 3050B										
Blank (L904017-BLK1)				Prepared: 04/03/2009 Analyzed: 04/04/2009						
Aluminum	ND	5.00	mg/kg							U
Antimony	ND	0.600	"							U
Arsenic	ND	1.00	"							U
Barium	ND	0.500	"							U
Beryllium	0.0148	0.200	"							B
Bismuth	ND	1.00	"							U
Boron	ND	2.00	"							U
Cadmium	ND	0.200	"							U
Calcium	ND	100	"							U
Chromium	ND	0.200	"							U
Cobalt	ND	2.00	"							U
Copper	ND	1.00	"							U
Iron	ND	20.0	"							U
Lead	ND	0.500	"							U
Lithium	ND	2.50	"							U
Magnesium	ND	25.0	"							U
Manganese	ND	5.00	"							U
Molybdenum	ND	2.00	"							U
Nickel	ND	4.00	"							U
Phosphorus	ND	50.0	"							U

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WC Hanford, Inc	Project: RC-116	
2620 Fermi Avenue	Project Number: [none]	Reported:
Richland WA, 99354	Project Manager: Joan Kessner	04/27/2009 11:00

Metals by SW846 6000/7000 series - Quality Control

Lionville Laboratory

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch L904017 - SW 3050B										
Blank (L904017-BLK1)				Prepared: 04/03/2009 Analyzed: 04/04/2009						
Potassium	ND	400	mg/kg							U
Selenium	ND	1.00	"							U
Silicon	2.16	2.00	"							
Silver	ND	0.200	"							U
Sodium	ND	50.0	"							U
Strontium	ND	1.00	"							U
Thallium	ND	0.500	"							U
Tin	0.953	10.0	"							B
Uranium	ND	20.0	"							U
Vanadium	ND	2.50	"							U
Zinc	ND	10.0	"							U
Duplicate (L904017-DUP1)		**Source: 0902047-16**		Prepared: 04/03/2009 Analyzed: 04/04/2009						
Aluminum	4850	3.25	mg/kg		5600			14	20	
Antimony	0.584	0.390	"		0.658			12	20	
Arsenic	2.78	0.649	"		3.02			8	20	
Barium	35.2	0.325	"		41.2			16	20	
Beryllium	0.132	0.130	"		0.140			6	20	
Bismuth	ND	6.49	"		ND				20	U
Boron	0.834	1.30	"		1.02			20	20	B
Cadmium	0.454	0.130	"		0.568			22	20	
Calcium	2470	64.9	"		2710			9	20	
Chromium	11.3	0.130	"		14.3			24	20	
Cobalt	2.93	1.30	"		3.48			17	20	
Copper	11.2	0.649	"		13.8			21	20	
Iron	13100	13.0	"		15000			14	20	
Lead	10.6	0.325	"		13.1			21	20	
Lithium	4.69	1.62	"		5.58			17	20	
Magnesium	2420	48.7	"		2850			16	20	
Manganese	142	3.25	"		156			9	20	
Molybdenum	0.205	1.30	"		0.290			34	20	B
Nickel	8.36	2.60	"		10.4			22	20	
Phosphorus	341	32.5	"		364			6	20	
Potassium	476	260	"		542			13	20	
Selenium	ND	0.649	"		ND				20	U
Silicon	655	1.30	"		621			5	20	
Silver	ND	0.130	"		ND				20	U
Sodium	149	32.5	"		156			5	20	
Strontium	15.1	0.649	"		17.1			12	20	
Thallium	ND	0.325	"		ND				20	U
Tin	1.08	6.49	"		1.12			4	20	B
Uranium	ND	13.0	"		ND				20	U
Vanadium	16.2	1.62	"		18.6			15	20	
Zinc	109	6.49	"		128			16	20	

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

WC Hanford, Inc	Project: RC-116	
2620 Fermi Avenue	Project Number: [none]	Reported:
Richland WA, 99354	Project Manager: Joan Kessner	04/22/2009 11:00

Metals by SW846 6000/7000 series - Quality Control

Lionville Laboratory

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch L904017 - SW 3050B										
Matrix Spike (L904017-MS1)		**Source: 0902047-16**		**Prepared: 04/03/2009 Analyzed: 04/04/2009**						
Aluminum	5110	1.33	mg/kg	133.33	5600	NR	75-125			
Antimony	29.9	0.400	"	33.333	0.659	88	75-125			
Arsenic	132	0.667	"	133.33	1.02	98	75-125			
Barium	170	0.333	"	133.33	41.2	97	75-125			
Beryllium	1.45	0.133	"	1.3333	0.140	98	75-125			
Bismuth	322	6.67	"	333.33	ND	97	75-125			
Boron	60.9	1.33	"	66.667	1.02	90	75-125			
Cadmium	3.70	0.133	"	3.3333	0.568	94	75-125			
Calcium	4080	66.7	"	1666.7	2710	82	75-125			
Chromium	26.2	0.333		13.333	14.3	89	75-125			
Cobalt	34.3	1.33	"	33.333	3.68	92	75-125			
Copper	27.2	0.667	"	16.667	13.8	80	75-125			
Iron	14800	13.3	"	66.667	15000	NR	75-125			
Lead	42.1	0.333	"	33.333	13.1	87	75-125			
Lithium	68.6	1.67	"	66.667	5.58	95	75-125			
Magnesium	4170	50.0	"	1666.7	2850	79	75-125			
Manganese	182	1.33	"	33.333	156	77	75-125			
Molybdenum	64.5	1.33	"	66.667	0.240	96	75-125			
Nickel	40.6	2.67	"	33.333	10.4	90	75-125			
Phosphorus	641	33.3	"	333.33	364	83	75-125			
Potassium	2170	267	"	1666.7	542	98	75-125			
Selenium	123	0.667	"	133.33	ND	92	75-125			
Silicon	771	1.33	"	66.667	623	223	75-125			
Silver	3.28	0.133	"	3.3333	ND	98	75-125			
Sodium	1750	33.3	"	1666.7	156	96	75-125			
Strontium	81.4	0.667	"	66.667	17.3	96	75-125			
Thallium	122	0.333	"	133.33	ND	92	75-125			
Tin	63.5	6.67	"	66.667	1.12	94	75-125			
Uranium	332	13.3	"	333.33	ND	100	75-125			
Vanadium	68.8	1.67	"	33.333	38.6	90	75-125			
Zinc	145	6.67	"	33.333	128	51	75-125			

WC Hanford, Inc	Project: RC-136	
2620 Fermi Avenue	Project Number: [none]	Reported:
Richland WA, 99354	Project Manager: Joan Kessner	04/27/2009 11:00

Metals by SW846 6000/7000 series - Quality Control

Lionville Laboratory

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch L904017 - SW 3050B										
Reference (L904017-SRM1)				Prepared: 04/03/2009 Analyzed: 04/04/2009						
Aluminum	2800	5.00	mg/kg	2725.2		103	30.8-169.3			
Antimony	8410	28.8	"	4954.8		170	0-264.8			
Arsenic	48.4	1.00	"	24.800		195	0-205.6			
Barium	611	0.500	"	586.40		104	83.9-116.1			
Cadmium	1.35	0.200	"	1.2000		112	108.3-188.1			
Calcium	5670	100	"	5326.5		106	70.1-129.9			
Chromium	11.4	0.200	"	10.700		106	0-205.6			
Cobalt	2.29	2.00	"	2.7000		85	0-1000			
Copper	4110	48.0	"	4792.4		86	52.2-147.8			
Iron	8640	20.0	"	6481.4		133	15.8-184.5			
Lead	102000	24.0	"	144740		70	0-1000			
Magnesium	2220	75.0	"	2167.4		102	0-1000			
Manganese	185	5.00	"	174.20		106	63.1-136.6			
Nickel	12.2	4.00	"	12.600		97	61.8-136.2			
Potassium	1070	400	"	1005.8		106	67.1-137.8			
Silver	7.06	0.500	"	6.5000		109	56.9-169.2			
Sodium	316	50.0	"	380.00		83	25-175			
Thallium	ND	0.500	"	0.600000			0-1000			Q
Tin	376	10.0	"	304.10		124	0-1000			
Vanadium	15.8	2.50	"	8.7000		181	0-1000			
Zinc	662	10.0	"	546.40		121	64.6-135.4			

Date: 7 December 2009
To: Washington Closure Hanford (technical representative)
From: ELR Consultants
Project: Columbia River Component of the RCBRA - Sediment
Subject: Volatile - Data Package No K1540-LLI

INTRODUCTION

This memo presents the results of data validation on Data Package No. K1540 prepared by Lionville Laboratory Inc. (LLI). A list of samples validated along with the analyses reported and the method of analysis is provided in the following table.

Sample ID	Sample Date	Media	Validation	Analysis
J18610	2/12/09	Solid	C	See note 1
J18779	2/12/09	Solid	C	See note 1
J18794	2/12/09	Solid	C	See note 1
J18795	2/12/09	Solid	C	See note 1
J18796	2/12/09	Solid	C	See note 1
J18797	2/12/09	Solid	C	See note 1
J187D2	2/12/09	Solid	C	See note 1
J187D4	2/12/09	Solid	C	See note 1
J187D5	2/12/09	Solid	C	See note 1
J187K6	2/12/09	Solid	C	See note 1
J187K7	2/12/09	Solid	C	See note 1
J17W12	2/12/09	Solid	C	See note 1
J17X03	2/12/09	Solid	C	See note 1
J187Y2	2/12/09	Solid	C	See note 1
J10672	2/12/09	Solid	C	See note 1

1 – Volatiles by 8260C.

Data validation was conducted in accordance with the Washington Closure Hanford (WCH) validation statement of work and the Remedial Investigation Work Plan for Hanford Site Releases to the Columbia River (DOE/RL-2008-11, Rev. 0. September 2008). Appendices 1 through 6 provide the following information as indicated below:

Appendix 1. Glossary of Data Reporting Qualifiers
Appendix 2. Summary of Data Qualification
Appendix 3. Qualified Data Summary and Annotated Laboratory Reports
Appendix 4. Laboratory Narrative and Chain-of-Custody Documentation
Appendix 5. Data Validation Supporting Documentation
Appendix 6 Additional Date Requested by Client

DATA QUALITY OBJECTIVES

- **Holding Times & Sample Preservation**

Analytical holding times were assessed to ascertain whether the holding time requirements were met by the laboratory. The holding time requirements are as follows: Samples must be extracted and analyzed within 14 days of the date of sample collection.

If holding times are exceeded, but not by greater than two times the limit, all associated sample results are qualified as estimates and flagged "J" for detects and "UJ" for non-detects. If holding times are exceeded by greater than two times the limit, all associated detectable sample results are qualified as estimates and flagged "J" and all non-detects are rejected and flagged "UR".

All holding times were acceptable.

- **Method Blanks**

Method blank analyses are conducted to determine the extent of laboratory contamination introduced through sampling, sample preparation and analysis. At least one acceptable method blank analysis must be conducted for every 20 samples. No contaminants should be present in the method blank. Analytical results for analytes present in any sample at less than five times the concentration of that analyte found in the associated blank are qualified as non-detects and flagged "U". Common laboratory contaminants present in samples at less than ten times the concentration of that analyte found in the associated blank are qualified as non-detects. If a sample result is less than the CRQL and is less than five times (or less than ten times for lab contaminants) the highest associated blank result, the sample result value is raised to the CRQL level and qualified as undetected "U".

All method blank results were acceptable.

Field Blanks

Three field (trip) blanks (J18672, J17W12 & J18680) were submitted for analysis. Methylene chloride and acetone was detected in sample J18680. Under the WCH statement of work, no qualification is required. No other analytes were detected in the field blanks.

- **Accuracy**

Matrix Spike/Matrix Spike Duplicate & Blank Spike Recoveries

Matrix spike/matrix spike duplicate analyses are used to assess the analytical accuracy of the reported data and the effect of the matrix on the ability to accurately quantify sample concentrations. Matrix spike/matrix spike duplicate analyses are performed in duplicate using five compounds for which percent recoveries must be within a range of 50-150% or within laboratory control limits. If spike recoveries are outside control limits, detected sample results less than five times the spike concentration are qualified as estimates and flagged "J". Undetected sample results with spike recoveries below control limits are qualified as estimates and flagged "UJ". Undetected sample results are not qualified if the spike recovery is above control limits Sample results greater than five times the spike concentration require no qualification.

Due to LCS (152%), matrix spike (193%) and matrix spike duplicate (173%) recoveries outside QC limits, the acetone result in sample J18680 was qualified as an estimate and flagged "J".

All other accuracy results were acceptable.

Surrogate Recovery

The analyses of surrogate compounds provide a measure of performance for individual samples. Matrix-specific surrogate compound recovery control windows have been established by the EPA CLP program. If two surrogates of the same class of compounds (base/neutral or acid) are out of control limits, all associated sample results greater than the contract required quantitation limit (CRQL) are qualified as estimates and flagged "J". Sample results less than the CRQL and below the lower control limit are qualified as estimates and flagged "UJ". Sample results less than the CRQL with recoveries above the upper control limit require no qualification. If a surrogate recovery is less than 10%, detects are qualified as estimates and flagged "J" and nondetects are rejected and flagged "UR".

All surrogate results were acceptable.

- **Precision**

Matrix Spike/Matrix Spike Duplicate Samples

Matrix spike (MS)/matrix spike duplicate (MSD) results provide matrix-specific information on the precision of the method for specific target compound classes. Precision is expressed by the relative percent difference (RPD) between the recoveries of duplicate matrix spike analyses performed on a sample. Samples results must be within RPD limits of +/-30%. If RPD values are out of specification and the sample

concentration is less than five times the spike concentration, all associated detected sample results are qualified as estimates and flagged "J". If RPD values are out of specification and the sample concentration is greater than five times the spike concentration, no qualification is required.

Due to an RPD outside QC limits (31%), all 2-hexanone results in samples J18610 and J18680 were qualified as estimates and flagged "J".

All other precision results were acceptable.

Field Duplicate Samples

One set of field duplicates (J18610/J18795) was submitted for analysis. Field duplicates are compared using the same criteria as for laboratory duplicates. All field duplicates results were acceptable.

- **Analytical Detection Levels**

Reported analytical detection levels are compared against the required quantitation limits (RQL's) to ensure that laboratory detection levels meet the required criteria. Fourteen 1,1-dichlorethane results exceeded the RQL. Under the WCH statement of work, no qualification is required. All other analyes met the RQL.

- **Completeness**

Data package No. K1540 was submitted for validation and verified for completeness. Completeness is based on the percentage of data determined to be valid (i.e., not rejected). The completion percentage was 100%.

MAJOR DEFICIENCIES

None found.

MINOR DEFICIENCIES

The following minor deficiencies were noted:

- Due to LCS (152%), matrix spike (193%) and matrix spike duplicate (173%) recoveries outside QC limits, the acetone result in sample J18680 was qualified as an estimate and flagged "J".

- Due to an RPD outside QC limits (31%), all 2-hexanone results in samples J18610 and J18680 were qualified as estimates and flagged "J".

Data flagged "J" indicates that the associated concentration is an estimate, but under the WCH statement of work, the data may be usable for decision-making purposes. All other validated results are considered accurate within the standard error associated with the methods.

Fourteen 1,1-dichlorethane results exceeded the RQL. Under the WCH statement of work, no qualification is required.

REFERENCES

Washington Closure Hanford Contract #S00W307A00 (March 2008), *Data Validation Services*.

DOE/RL-2008-11, Rev.0, *Remedial Investigation Work Plan for Hanford Site Releases to the Columbia River*, September 2008.

Appendix 1

Glossary of Data Reporting Qualifiers

Qualifiers which may be applied by data validators in compliance with the WCH validation SOW are as follows:

U - Indicates the compound or analyte was analyzed for and not detected in the sample. The value reported is the same quantitation limit corrected for sample dilution and moisture content by the laboratory.

UJ - Indicates the compound or analyte was analyzed for and not detected in the sample. Due to a minor QC deficiency identified during the data validation, the associated quantitation limit is an estimate.

J - Indicates the compound or analyte was analyzed for and detected. Due to a minor QC deficiency identified during the data validation, the associated quantitation limit is an estimate.

R - Indicates the compound or analyte was analyzed for, detected, and due to an identified major QC deficiency, the data are unusable.

UR - Indicates the compound or analyte was analyzed for and not detected in the sample. Additionally, the data is unusable due to an identified major QC deficiency.

NJ - Indicates presumptive evidence of a compound at an estimated value. The data may not be valid for some specific applications (i.e., usable for decision-making purposes).

N - Indicates presumptive evidence of a compound. The data may not be valid for some specific applications usable for decision-making purposes).

Appendix 2

Summary of Data Qualification

VOLATILE ORGANIC DATA QUALIFICATION SUMMARY*

SDG: K1525	**REVIEWER: ELR**	**Project: RCBRA**	**QC Issue**
COMPOUND	QUALIFIER	SAMPLES AFFECTED	REASON
Acetone	U	J18680	Method blank contamination
2-hexanone	J	J18610, J18680	RPD

* - The Qualified Data Summary Table includes laboratory applied "U" qualifiers not specifically identified here. The laboratory applied "U" qualifiers are included to minimize misinterpretation of results contained in the table.

Appendix 3

Qualified Data Summary and Annotated Laboratory Reports

LIONVILLE LABORATORY

204 Welsh Pool Ro
Exton, PA 193
Phone: 610-280-30
Fax: 610-280-30

WC-Hanford, Inc.
2620 Fermi Avenue
Richland WA, 99354

Project: RC-116
Project Number: [none]
Project Manager: Joan Kessner

Reported:
04/07/2009 12:08

J17W12
0902047-26 (Solid)

✓ 12/4/09

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	No
Lionville Laboratory									
Volatile Organic Compounds by SW846 8260B									
1,1,1-Trichloroethane	ND	4.90	ug/kg wet	1	L902165	02/15/2009	02/15/2009	8260B	
1,1,2,2-Tetrachloroethane	ND	4.90	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	4.90	"	"	"	"	"	"	
1,1-Dichloroethane	ND	4.90	"	"	"	"	"	"	
1,1-Dichloroethene	ND	4.90	"	"	"	"	"	"	
1,2-Dichloroethane	ND	5.88	"	"	"	"	"	"	
1,2-Dichloropropane	ND	4.90	"	"	"	"	"	"	
2-Butanone	ND	11.8	"	"	"	"	"	"	
2-Hexanone	ND	11.8	"	"	"	"	"	"	
4-Methyl-2-pentanone	ND	11.8	"	"	"	"	"	"	
Acetone	ND	11.8	"	"	"	"	"	"	
Benzene	ND	4.90	"	"	"	"	"	"	
Bromodichloromethane	ND	5.88	"	"	"	"	"	"	
Bromoform	ND	4.90	"	"	"	"	"	"	
Bromomethane	ND	9.80	"	"	"	"	"	"	
Carbon Disulfide	ND	4.90	"	"	"	"	"	"	
Carbon Tetrachloride	ND	4.90	"	"	"	"	"	"	
Chlorobenzene	ND	4.90	"	"	"	"	"	"	
Chloroethane	ND	9.80	"	"	"	"	"	"	
Chloroform	ND	4.90	"	"	"	"	"	"	
Chloromethane	ND	9.80	"	"	"	"	"	"	
cis-1,3-Dichloropropene	ND	4.90	"	"	"	"	"	"	
Dibromochloromethane	ND	4.90	"	"	"	"	"	"	
Ethylbenzene	ND	4.90	"	"	"	"	"	"	
Methylene Chloride	ND	5.88	"	"	"	"	"	"	
Styrene	ND	4.90	"	"	"	"	"	"	
Tetrachloroethene	ND	4.90	"	"	"	"	"	"	
Toluene	ND	4.90	"	"	"	"	"	"	
trans-1,3-Dichloropropene	ND	4.90	"	"	"	"	"	"	
Trichloroethene	ND	4.90	"	"	"	"	"	"	
Vinyl chloride	ND	9.80	"	"	"	"	"	"	
Xylenes, total	ND	5.88	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	4.90	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	4.90	"	"	"	"	"	"	

LVL
LIONVILLE LABORATORY

264 Welsh Pool R
Exton, PA 19
Phone: 610-280-3
Fax: 610-280-3

WC-Hanford, Inc
2620 Fermi Avenue
Richland WA, 99354

Project: RC 116
Project Number: [none]
Project Manager: Joan Kessner

Reported:
04/07/2009 12:08

J17W12
0902047-26 (Solid)

12/4/09

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Nc
Lionville Laboratory									
Volatile Organic Compounds by SW846 8260B									
Tentatively Identified Compound	0.00		ug/kg wet	1	1902165	02/13/2009	02/13/2009	8260B	
Surrogate: 1,2-Dichloroethane-d4		*93 %*	*63-151*		"	"	"	"	
Surrogate: Toluene-d8		*97 %*	*68-140*		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*107 %*	*66-122*		"	"	"	"	

264 Welsh Pool Roa
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

WC-Hanford, Inc.	Project: RC-116	
2620 Fermi Avenue	Project Number: (none)	Reported:
Richland WA, 99354	Project Manager: Joan Kessner	04/07/2009 12:08

J18672

0902047-30 (Solid)

12/4/09

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Note

Lionville Laboratory

Volatile Organic Compounds by SW846 8260B

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Note
1,1,1-Trichloroethane	ND	4.46	ug/kg wet	1	L902165	02/13/2009	02/13/2009	8260B	
1,1,2,2-Tetrachloroethane	ND	4.46	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	4.46	"	"	"	"	"	"	
1,1-Dichloroethane	ND	4.46	"	"	"	"	"	"	
1,1-Dichloroethene	ND	4.46	"	"	"	"	"	"	
1,2-Dichloroethane	ND	5.36	"	"	"	"	"	"	
1,2-Dichloropropane	ND	4.46	"	"	"	"	"	"	
2-Butanone	ND	10.7	"	"	"	"	"	"	
2-Hexanone	ND	10.7	"	"	"	"	"	"	
4-Methyl-2-pentanone	ND	10.7	"	"	"	"	"	"	
Acetone	ND	10.7	"	"	"	"	"	"	
Benzene	ND	4.46	"	"	"	"	"	"	
Bromodichloromethane	ND	5.36	"	"	"	"	"	"	
Bromoform	ND	4.46	"	"	"	"	"	"	
Bromomethane	ND	8.93	"	"	"	"	"	"	
Carbon Disulfide	ND	4.46	"	"	"	"	"	"	
Carbon Tetrachloride	ND	4.46	"	"	"	"	"	"	
Chlorobenzene	ND	4.46	"	"	"	"	"	"	
Chloroethane	ND	8.93	"	"	"	"	"	"	
Chloroform	ND	4.46	"	"	"	"	"	"	
Chloromethane	ND	8.93	"	"	"	"	"	"	
cis-1,3-Dichloropropene	ND	4.46	"	"	"	"	"	"	
Dibromochloromethane	ND	4.46	"	"	"	"	"	"	
Ethylbenzene	ND	4.46	"	"	"	"	"	"	
Methylene Chloride	ND	5.36	"	"	"	"	"	"	
Styrene	ND	4.46	"	"	"	"	"	"	
Tetrachloroethene	ND	4.46	"	"	"	"	"	"	
Toluene	ND	4.46	"	"	"	"	"	"	
trans-1,3-Dichloropropene	ND	4.46	"	"	"	"	"	"	
Trichloroethene	ND	4.46	"	"	"	"	"	"	
Vinyl chloride	ND	8.93	"	"	"	"	"	"	
Xylenes, total	ND	5.36	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	4.46	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	4.46	"	"	"	"	"	"	

LVL
LIONVILLE LABORATORY

264 Welsh Pool
Exton, PA 1
Phone: 610-280-
Fax: 610-280-

WC-Hanford, Inc.
2620 Fermi Avenue
Richland WA, 99354

Project: RC-116
Project Number: [none]
Project Manager: Joan Kessner

Reported:
04/07/2009 12:08

J18672
0902047-30 (Solid)

VL 12/4/09

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	N
Lionville Laboratory									
Volatile Organic Compounds by SW846 8260B									
Tentatively Identified Compound	0.00		ug/kg wet	1	1902165	02/15/2009	02/15/2009	8260B	
Surrogate: 1,2-Dichloroethane-d4		*99 %*	*63-151*		"	"	"	"	
Surrogate: Toluene-d8		*95 %*	*68-140*		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*105 %*	*66-122*		"	"	"	"	

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WC-Hanford, Inc. 2620 Fermi Avenue Richland WA, 99354	Project: RC-116 Project Number: [none] Project Manager: Joan Kessner	Reported: 04/07/2009 12:08

J18794
0902047-04 (Solid)

12/4/09

Lionville Laboratory

Volatile Organic Compounds by SW846 8260B

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
1,1,1-Trichloroethane	ND	4.90	ug/kg wet	1	1902166	02/16/2009	02/16/2009	8260B	
1,1,2,2-Tetrachloroethane	ND	4.90	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	4.90	"	"	"	"	"	"	
1,1-Dichloroethane	ND	4.90	"	"	"	"	"	"	
1,1-Dichloroethene	ND	4.90	"	"	"	"	"	"	
1,2-Dichloroethane	ND	5.88	"	"	"	"	"	"	
1,2-Dichloropropane	ND	4.90	"	"	"	"	"	"	
2-Butanone	ND	11.8	"	"	"	"	"	"	
2-Hexanone	ND	11.8	"	"	"	"	"	"	
4-Methyl-2-pentanone	ND	11.8	"	"	"	"	"	"	
Acetone	ND	11.8	"	"	"	"	"	"	
Benzene	ND	4.90	"	"	"	"	"	"	
Bromodichloromethane	ND	5.88	"	"	"	"	"	"	
Bromoform	ND	4.90	"	"	"	"	"	"	
Bromomethane	ND	9.80	"	"	"	"	"	"	
Carbon Disulfide	ND	4.90	"	"	"	"	"	"	
Carbon Tetrachloride	ND	4.90	"	"	"	"	"	"	
Chlorobenzene	ND	4.90	"	"	"	"	"	"	
Chloroethane	ND	9.80	"	"	"	"	"	"	
Chloroform	ND	4.90	"	"	"	"	"	"	
Chloromethane	ND	9.80	"	"	"	"	"	"	
cis-1,3-Dichloropropene	ND	4.90	"	"	"	"	"	"	
Dibromochloromethane	ND	4.90	"	"	"	"	"	"	
Ethylbenzene	ND	4.90	"	"	"	"	"	"	
Methylene Chloride	**5.66**	5.88	"	"	"	"	"	"	
Styrene	ND	4.90	"	"	"	"	"	"	
Tetrachloroethene	ND	4.90	"	"	"	"	"	"	
Toluene	ND	4.90	"	"	"	"	"	"	
trans-1,3-Dichloropropene	ND	4.90	"	"	"	"	"	"	
Trichloroethene	ND	4.90	"	"	"	"	"	"	
Vinyl chloride	ND	9.80	"	"	"	"	"	"	
Xylenes, total	ND	5.88	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	4.90	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	4.90	"	"	"	"	"	"	

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WC-Hanford, Inc. 2620 Fermi Avenue Richland WA 99354	Project: RC-116 Project Number: [none] Project Manager: Joan Kessner	**Reported:** 04/07/2009 12:08

J18794
0902047-05 (Solid)

12/4/09

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	No
Lionville Laboratory									
Volatile Organic Compounds by SW846 8260B									
Tentatively Identified Compound	0.00		ug/kg wet	1	1902166	02/16/2009	02/16/2009	8260B	
Surrogate: 1,2-Dichloroethane-d4		*94 %*	*63-151*		"	"	"	"	
Surrogate: Toluene-d8		*91 %*	*68-140*		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*102 %*	*66-122*		"	"	"	"	

LIONVILLE LABORATORY

264 Welsh Pool R
Exton, PA 19
Phone: 610-280-3
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WC-Hanford, Inc.
2620 Fermi Avenue
Richland WA, 99354

Project: RC-116
Project Number: [none]
Project Manager: Joan Kessner

Reported:
04/07/2009 12:08

J18795
0902047-06 (Solid)

12/4/09

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	No
Lionville Laboratory									
Volatile Organic Compounds by SW846 8260B									
1,1,1-Trichloroethane	ND	4.72	ug/kg wet	1	L902164	02/16/2009	02/16/2009	8260B	
1,1,2,2-Tetrachloroethane	ND	4.72	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	4.72	"	"	"	"	"	"	
1,1-Dichloroethane	ND	4.72	"	"	"	"	"	"	
1,1-Dichloroethene	ND	4.72	"	"	"	"	"	"	
1,2-Dichloroethane	ND	5.66	"	"	"	"	"	"	
1,2-Dichloropropane	ND	4.72	"	"	"	"	"	"	
2-Butanone	ND	11.3	"	"	"	"	"	"	
2-Hexanone	ND	11.3	"	"	"	"	"	"	
4-Methyl-2-pentanone	ND	11.3	"	"	"	"	"	"	
Acetone	ND	11.3	"	"	"	"	"	"	
Benzene	ND	4.72	"	"	"	"	"	"	
Bromodichloromethane	ND	5.66	"	"	"	"	"	"	
Bromoform	ND	4.72	"	"	"	"	"	"	
Bromomethane	ND	9.43	"	"	"	"	"	"	
Carbon Disulfide	ND	4.72	"	"	"	"	"	"	
Carbon Tetrachloride	ND	4.72	"	"	"	"	"	"	
Chlorobenzene	ND	4.72	"	"	"	"	"	"	
Chloroethane	ND	9.43	"	"	"	"	"	"	
Chloroform	ND	4.72	"	"	"	"	"	"	
Chloromethane	ND	9.43	"	"	"	"	"	"	
cis-1,3-Dichloropropene	ND	4.72	"	"	"	"	"	"	
Dibromochloromethane	ND	4.72	"	"	"	"	"	"	
Ethylbenzene	ND	4.72	"	"	"	"	"	"	
Methylene Chloride	**3.90**	5.66	"	"	"	"	"	"	
Styrene	ND	4.72	"	"	"	"	"	"	
Tetrachloroethene	ND	4.72	"	"	"	"	"	"	
Toluene	ND	4.72	"	"	"	"	"	"	
trans-1,3-Dichloropropene	ND	4.72	"	"	"	"	"	"	
Trichloroethene	ND	4.72	"	"	"	"	"	"	
Vinyl chloride	ND	9.43	"	"	"	"	"	"	
Xylenes, total	ND	5.66	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	4.72	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	4.72	"	"	"	"	"	"	

LIONVILLE LABORATORY

264 Welsh Pool Roa
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WC-Hanford, Inc.
2620 Fermi Avenue
Richland WA 99354

Project: RC-116
Project Number: [none]
Project Manager: Joan Kessner

Reported:
04/07/2009 12:08

J18795
0902047-06 (Solid)

12/4/09

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Note

Lionville Laboratory

Volatile Organic Compounds by SW846 8260B

Tentatively Identified Compound	0.00		ug/kg wet	1	L902166	02/16/2009	02/16/2009	8260B	1
Surrogate: 1,2-Dichloroethane-d4		*96 %*	*63-151*		"	"	"	"	
Surrogate: Toluene-d8		*98 %*	*68-140*		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*104 %*	*66-122*		"	"	"	"	

LVL
LIONVILLE LABORATORY

264 Welsh Pool R
Exton, PA 19,
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WC-Hanford, Inc. 2620 Fermi Avenue Richland WA, 99354	Project: RC-116 Project Number: [none] Project Manager: Joan Kessner	Reported: 04/07/2009 12:08

J18796
0902047-07 (Solid)

✓ 12/14/09

Lionville Laboratory

Volatile Organic Compounds by SW846 8260B

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	No
1,1,1-Trichloroethane	ND	4.31	ug/kg wet	1	1902166	02/16/2009	02/16/2009	8260B	
1,1,2,2-Tetrachloroethane	ND	4.31	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	4.31	"	"	"	"	"	"	
1,1-Dichloroethane	ND	4.31	"	"	"	"	"	"	
1,1-Dichloroethene	ND	4.31	"	"	"	"	"	"	
1,2-Dichloroethane	ND	5.17	"	"	"	"	"	"	
1,2-Dichloropropane	ND	4.31	"	"	"	"	"	"	
2-Butanone	ND	10.3	"	"	"	"	"	"	
2-Hexanone	ND	10.3	"	"	"	"	"	"	
4-Methyl-2-pentanone	ND	10.3	"	"	"	"	"	"	
Acetone	ND	10.3	"	"	"	"	"	"	
Benzene	ND	4.31	"	"	"	"	"	"	
Bromodichloromethane	ND	5.17	"	"	"	"	"	"	
Bromoform	ND	4.31	"	"	"	"	"	"	
Bromomethane	ND	8.62	"	"	"	"	"	"	
Carbon Disulfide	ND	4.31	"	"	"	"	"	"	
Carbon Tetrachloride	ND	4.31	"	"	"	"	"	"	
Chlorobenzene	ND	4.31	"	"	"	"	"	"	
Chloroethane	ND	8.62	"	"	"	"	"	"	
Chloroform	ND	4.31	"	"	"	"	"	"	
Chloromethane	ND	8.62	"	"	"	"	"	"	
cis-1,3-Dichloropropene	ND	4.31	"	"	"	"	"	"	
Dibromochloromethane	ND	4.31	"	"	"	"	"	"	
Ethylbenzene	ND	4.31	"	"	"	"	"	"	
Methylene Chloride	3.19	5.17	"	"	"	"	"	"	
Styrene	ND	4.31	"	"	"	"	"	"	
Tetrachloroethene	ND	4.31	"	"	"	"	"	"	
Toluene	ND	4.31	"	"	"	"	"	"	
trans-1,3-Dichloropropene	ND	4.31	"	"	"	"	"	"	
Trichloroethene	ND	4.31	"	"	"	"	"	"	
Vinyl chloride	ND	8.62	"	"	"	"	"	"	
Xylenes, total	ND	5.17	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	4.31	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	4.31	"	"	"	"	"	"	

WC-Hanford, Inc. 2620 Fermi Avenue Richland WA, 99354	Project: RC-316 Project Number: [none] Project Manager: Joan Kessner	Reported: 04/07/2009 12:08

J18796

0902047-07 (Solid)

2/4/09

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes

Lionville Laboratory

Volatile Organic Compounds by SW846 8260B									
Tentatively Identified Compound	0.00		ug/kg wet	1	L902166	02/16/2009	02/16/2009	8260B	L
Surrogate: 1,2-Dichloroethane-d4		*98 %*	*63-151*		"	"	"	"	
Surrogate: Toluene-d8		*101 %*	*68-140*		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*108 %*	*66-122*		"	"	"	"	

LVL
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WC-Hanford, Inc.
2620 Fermi Avenue
Richland WA, 99354

Project: RC-116
Project Number: [none]
Project Manager: Joan Kessner

Reported:
04/07/2009 12:08

J18797
0902047-08 (Solid)

12/4/09

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Lionville Laboratory								
Volatile Organic Compounds by SW846 8260B								
1,1,1-Trichloroethane	ND	4.55	ug/kg wet	1	1902166	02/16/2009	02/16/2009	8260B
1,1,2,2-Tetrachloroethane	ND	4.55	"	"	"	"	"	"
1,1,2-Trichloroethane	ND	4.55	"	"	"	"	"	"
1,1-Dichloroethane	ND	4.55	"	"	"	"	"	"
1,1-Dichloroethene	ND	4.55	"	"	"	"	"	"
1,2-Dichloroethane	ND	5.45	"	"	"	"	"	"
1,2-Dichloropropane	ND	4.55	"	"	"	"	"	"
2-Butanone	ND	10.9	"	"	"	"	"	"
2-Hexanone	ND	10.9	"	"	"	"	"	"
4-Methyl-2-pentanone	ND	10.9	"	"	"	"	"	"
Acetone	ND	10.9	"	"	"	"	"	"
Benzene	ND	4.55	"	"	"	"	"	"
Bromodichloromethane	ND	5.45	"	"	"	"	"	"
Bromoform	ND	4.55	"	"	"	"	"	"
Bromomethane	ND	9.09	"	"	"	"	"	"
Carbon Disulfide	ND	4.55	"	"	"	"	"	"
Carbon Tetrachloride	ND	4.55	"	"	"	"	"	"
Chlorobenzene	ND	4.55	"	"	"	"	"	"
Chloroethane	ND	9.09	"	"	"	"	"	"
Chloroform	ND	4.55	"	"	"	"	"	"
Chloromethane	ND	9.09	"	"	"	"	"	"
cis-1,3-Dichloropropene	ND	4.55	"	"	"	"	"	"
Dibromochloromethane	ND	4.55	"	"	"	"	"	"
Ethylbenzene	ND	4.55	"	"	"	"	"	"
Methylene Chloride	**4.63**	5.45	"	"	"	"	"	"
Styrene	ND	4.55	"	"	"	"	"	"
Tetrachloroethene	ND	4.55	"	"	"	"	"	"
Toluene	ND	4.55	"	"	"	"	"	"
trans-1,3-Dichloropropene	ND	4.55	"	"	"	"	"	"
Trichloroethene	ND	4.55	"	"	"	"	"	"
Vinyl chloride	ND	9.09	"	"	"	"	"	"
Xylenes, total	ND	5.45	"	"	"	"	"	"
cis-1,2-Dichloroethene	ND	4.55	"	"	"	"	"	"
trans-1,2-Dichloroethene	ND	4.55	"	"	"	"	"	"

WC-Hanford, Inc.
2620 Fermi Avenue
Richland WA, 99354

Project: RC-116
Project Number: [none]
Project Manager: Joan Kessner

Reported:
04/07/2009 12:08

J18797
0902047-08 (Solid)

12/4/09

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Note

Lionville Laboratory

Volatile Organic Compounds by SW846 8260B

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Note
Tentatively Identified Compound	0.00		ug/kg wet	1	L902166	03/16/2009	03/16/2009	8260B	
Surrogate: 1,2-Dichloroethane-d4		*104 %*	*63-151*		"	"	"	"	
Surrogate: Toluene-d8		*97 %*	*68-140*		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*108 %*	*66-122*		"	"	"	"	

LVL
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WC-Hanford, Inc.
2620 Fermi Avenue
Richland WA 99354

Project: RC-116
Project Number: [none]
Project Manager: Joan Kessner

Reported:
04/07/2009 12:08

J187D2
0902047-12 (Solid)

1/2 12/4/09

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	No
Lionville Laboratory									
Volatile Organic Compounds by SW846 8260B									
1,1,1-Trichloroethane	ND	5.00	ug/kg wet	1	1903166	02/16/2009	02/16/2009	8260B	
1,1,2,2-Tetrachloroethane	ND	5.00	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	5.00	"	"	"	"	"	"	
1,1-Dichloroethane	ND	5.00	"	"	"	"	"	"	
1,1-Dichloroethene	ND	5.00	"	"	"	"	"	"	
1,2-Dichloroethane	ND	6.00	"	"	"	"	"	"	
1,2-Dichloropropane	ND	5.00	"	"	"	"	"	"	
2-Butanone	ND	12.0	"	"	"	"	"	"	
2-Hexanone	ND	12.0	"	"	"	"	"	"	
4-Methyl-2-pentanone	ND	12.0	"	"	"	"	"	"	
Acetone	ND	12.0	"	"	"	"	"	"	
Benzene	ND	5.00	"	"	"	"	"	"	
Bromodichloromethane	ND	6.00	"	"	"	"	"	"	
Bromoform	ND	5.00	"	"	"	"	"	"	
Bromomethane	ND	10.0	"	"	"	"	"	"	
Carbon Disulfide	ND	5.00	"	"	"	"	"	"	
Carbon Tetrachloride	ND	5.00	"	"	"	"	"	"	
Chlorobenzene	ND	5.00	"	"	"	"	"	"	
Chloroethane	ND	10.0	"	"	"	"	"	"	
Chloroform	ND	5.00	"	"	"	"	"	"	
Chloromethane	ND	10.0	"	"	"	"	"	"	
cis-1,3-Dichloropropene	ND	5.00	"	"	"	"	"	"	
Dibromochloromethane	ND	5.00	"	"	"	"	"	"	
Ethylbenzene	ND	5.00	"	"	"	"	"	"	
Methylene Chloride	**5.55**	6.00	"	"	"	"	"	"	
Styrene	ND	5.00	"	"	"	"	"	"	
Tetrachloroethene	ND	5.00	"	"	"	"	"	"	
Toluene	ND	5.00	"	"	"	"	"	"	
trans-1,3-Dichloropropene	ND	5.00	"	"	"	"	"	"	
Trichloroethene	ND	5.00	"	"	"	"	"	"	
Vinyl chloride	ND	10.0	"	"	"	"	"	"	
Xylenes, total	ND	6.00	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	5.00	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	5.00	"	"	"	"	"	"	

LVL
LIONVILLE LABORATORY

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WC-Hanford, Inc. 2620 Fermi Avenue Richland WA, 99354	Project: RC-116 Project Number: [none] Project Manager: Joan Kessner	Reported: 04/07/2009 12:08

J187D2
0902047-12 (Solid)

12/14/09

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Not
Lionville Laboratory									
Volatile Organic Compounds by SW846 8260B									
Tentatively Identified Compound	0.00		ug/kg wet	1	L902166	02/16/2009	02/16/2009	8260B	
Surrogate: 1,2-Dichloroethane-d4		*100 %*	*63-151*		-	-	-	-	
Surrogate: Toluene-d8		*96 %*	*68-140*		-	-	-	-	
Surrogate: 4-Bromofluorobenzene		*101 %*	*66-122*		-	-	-	-	

264 Welsh Pool R
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WC-Hanford, Inc.
2620 Fermi Avenue
Richland WA, 99354

Project: RC-116
Project Number: [none]
Project Manager: Joan Kessner

Reported:
04/07/2009 12:08

J187D4
0902047-13 (Solid)

12/4/09

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Nc
			Lionville Laboratory						
Volatile Organic Compounds by SW846 8260B									
1,1,1-Trichloroethane	ND	4.81	ug/kg wet	1	L902166	03/16/2009	03/16/2009	8260B	
1,1,2,2-Tetrachloroethane	ND	4.81	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	4.81	"	"	"	"	"	"	
1,1-Dichloroethane	ND	4.81	"	"	"	"	"	"	
1,1-Dichloroethene	ND	4.81	"	"	"	"	"	"	
1,2-Dichloroethane	ND	5.77	"	"	"	"	"	"	
1,2-Dichloropropane	ND	4.81	"	"	"	"	"	"	
2-Butanone	ND	11.5	"	"	"	"	"	"	
2-Hexanone	ND	11.5	"	"	"	"	"	"	
4-Methyl-2-pentanone	ND	11.5	"	"	"	"	"	"	
Acetone	ND	11.5	"	"	"	"	"	"	
Benzene	ND	4.81	"	"	"	"	"	"	
Bromodichloromethane	ND	5.77	"	"	"	"	"	"	
Bromoform	ND	4.81	"	"	"	"	"	"	
Bromomethane	ND	9.62	"	"	"	"	"	"	
Carbon Disulfide	ND	4.81	"	"	"	"	"	"	
Carbon Tetrachloride	ND	4.81	"	"	"	"	"	"	
Chlorobenzene	ND	4.81	"	"	"	"	"	"	
Chloroethane	ND	9.62	"	"	"	"	"	"	
Chloroform	ND	4.81	"	"	"	"	"	"	
Chloromethane	ND	9.62	"	"	"	"	"	"	
cis-1,3-Dichloropropene	ND	4.81	"	"	"	"	"	"	
Dibromochloromethane	ND	4.81	"	"	"	"	"	"	
Ethylbenzene	ND	4.81	"	"	"	"	"	"	
Methylene Chloride	7.80	5.77	"	"	"	"	"	"	
Styrene	ND	4.81	"	"	"	"	"	"	
Tetrachloroethene	ND	4.81	"	"	"	"	"	"	
Toluene	ND	4.81	"	"	"	"	"	"	
trans-1,3-Dichloropropene	ND	4.81	"	"	"	"	"	"	
Trichloroethene	ND	4.81	"	"	"	"	"	"	
Vinyl chloride	ND	9.62	"	"	"	"	"	"	
Xylenes, total	ND	5.77	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	4.81	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	4.81	"	"	"	"	"	"	

264 Welsh Pool Roa
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Phone: 610-280-300
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WC-Hanford, Inc.
2620 Fermi Avenue
Richland WA, 99354

Project: RC-116
Project Number: [none]
Project Manager: Joan Kessner

Reported:
04/07/2009 12:08

J187D4
0902047-13 (Solid)

12/4/07

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes

Lionville Laboratory

Volatile Organic Compounds by SW846 8260B

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Tentatively Identified Compound	0.00		ug/kg wet	1	L902166	02/16/2009	02/16/2009	8260B	
Surrogate: 1,2-Dichloroethane-d4		*108 %*	*63-151*		"	"	"	"	
Surrogate: Toluene-d8		*104 %*	*69-140*		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*121 %*	*66-122*		"	"	"	"	

WC-Hanford, Inc. 2620 Fermi Avenue Richland WA, 99354	Project: RC-116 Project Number: (none) Project Manager: Joan Kessner	**Reported:** 04/07/2009 12:08

J187D5
0902047-14 (Solid)

12/4/09

Lionville Laboratory

Volatile Organic Compounds by SW846 8260B

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	No
1,1,1-Trichloroethane	ND	4.63	ug/kg wet	1	L902166	02/16/2009	02/16/2009	8260B	
1,1,2,2-Tetrachloroethane	ND	4.63	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	4.63	"	"	"	"	"	"	
1,1-Dichloroethane	ND	4.63	"	"	"	"	"	"	
1,1-Dichloroethene	ND	4.63	"	"	"	"	"	"	
1,2-Dichloroethane	ND	5.56	"	"	"	"	"	"	
1,2-Dichloropropane	ND	4.63	"	"	"	"	"	"	
2-Butanone	ND	11.1	"	"	"	"	"	"	
2-Hexanone	ND	11.1	"	"	"	"	"	"	
4-Methyl-2-pentanone	ND	11.1	"	"	"	"	"	"	
Acetone	ND	11.1	"	"	"	"	"	"	
Benzene	ND	4.63	"	"	"	"	"	"	
Bromodichloromethane	ND	5.56	"	"	"	"	"	"	
Bromoform	ND	4.63	"	"	"	"	"	"	
Bromomethane	ND	9.26	"	"	"	"	"	"	
Carbon Disulfide	ND	4.63	"	"	"	"	"	"	
Carbon Tetrachloride	ND	4.63	"	"	"	"	"	"	
Chlorobenzene	ND	4.63	"	"	"	"	"	"	
Chloroethane	ND	9.26	"	"	"	"	"	"	
Chloroform	ND	4.63	"	"	"	"	"	"	
Chloromethane	ND	9.26	"	"	"	"	"	"	
cis-1,3-Dichloropropene	ND	4.63	"	"	"	"	"	"	
Dibromochloromethane	ND	4.63	"	"	"	"	"	"	
Ethylbenzene	ND	4.63	"	"	"	"	"	"	
Methylene Chloride	**5.90**	5.56	"	"	"	"	"	"	
Styrene	ND	4.63	"	"	"	"	"	"	
Tetrachloroethene	ND	4.63	"	"	"	"	"	"	
Toluene	ND	4.63	"	"	"	"	"	"	
trans-1,3-Dichloropropene	ND	4.63	"	"	"	"	"	"	
Trichloroethene	ND	4.63	"	"	"	"	"	"	
Vinyl chloride	ND	9.26	"	"	"	"	"	"	
Xylenes, total	ND	5.56	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	4.63	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	4.63	"	"	"	"	"	"	

WC-Hanford, Inc.
2620 Fermi Avenue
Richland WA 99354

Project: RC-116
Project Number: (none)
Project Manager: Joan Kessner

Reported:
04/07/2009 12:08

J187D5
0902047-14 (Solid)

12/4/09

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	No
Lionville Laboratory									
Volatile Organic Compounds by SW846 8260B									
Tentatively Identified Compound	0.00		ug/kg wet	1	L902166	02/16/2009	02/16/2009	8260B	
Surrogate: 1,2-Dichloroethane-d4		*100 %*	*63-131*		"	"	"	"	
Surrogate: Toluene-d8		*96 %*	*68-140*		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*115 %*	*66-122*		"	"	"	"	

WC-Hanford, Inc. 2620 Fermi Avenue Richland WA, 99354	Project: RC-116 Project Number: [none] Project Manager: Joan Kessner	Reported: 04/07/2009 12:08

J187K6

0902047-21 (Solid)

12/4/09

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
			Lionville Laboratory						
Volatile Organic Compounds by SW846 8260B									
1,1,1-Trichloroethane	ND	4.55	ug/kg wet	1	L902166	02/16/2009	02/16/2009	8260B	
1,1,2,2-Tetrachloroethane	ND	4.55	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	4.55	"	"	"	"	"	"	
1,1-Dichloroethane	ND	4.55	"	"	"	"	"	"	
1,1-Dichloroethene	ND	4.55	"	"	"	"	"	"	
1,2-Dichloroethane	ND	5.45	"	"	"	"	"	"	
1,2-Dichloropropane	ND	4.55	"	"	"	"	"	"	
2-Butanone	ND	10.9	"	"	"	"	"	"	
2-Hexanone	ND	10.9	"	"	"	"	"	"	
4-Methyl-2-pentanone	ND	10.9	"	"	"	"	"	"	
Acetone	ND	10.9	"	"	"	"	"	"	
Benzene	ND	4.55	"	"	"	"	"	"	
Bromodichloromethane	ND	5.45	"	"	"	"	"	"	
Bromoform	ND	4.55	"	"	"	"	"	"	
Bromomethane	ND	9.09	"	"	"	"	"	"	
Carbon Disulfide	ND	4.55	"	"	"	"	"	"	
Carbon Tetrachloride	ND	4.55	"	"	"	"	"	"	
Chlorobenzene	ND	4.55	"	"	"	"	"	"	
Chloroethane	ND	9.09	"	"	"	"	"	"	
Chloroform	ND	4.55	"	"	"	"	"	"	
Chloromethane	ND	9.09	"	"	"	"	"	"	
cis-1,3-Dichloropropene	ND	4.55	"	"	"	"	"	"	
Dibromochloromethane	ND	4.55	"	"	"	"	"	"	
Ethylbenzene	ND	4.55	"	"	"	"	"	"	
Methylene Chloride	5.49	5.45	"	"	"	"	"	"	
Styrene	ND	4.55	"	"	"	"	"	"	
Tetrachloroethene	ND	4.55	"	"	"	"	"	"	
Toluene	ND	4.55	"	"	"	"	"	"	
trans-1,3-Dichloropropene	ND	4.55	"	"	"	"	"	"	
Trichloroethene	ND	4.55	"	"	"	"	"	"	
Vinyl chloride	ND	9.09	"	"	"	"	"	"	
Xylenes, total	ND	5.45	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	4.55	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	4.55	"	"	"	"	"	"	

264 Welsh Pool Roa
Exton, PA 1934
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WC-Hanford, Inc.
2620 Fermi Avenue
Richland WA, 99354

Project: RC-116
Project Number: [none]
Project Manager: Joan Kessner

Reported:
04/07/2009 12:08

J187K6

0902047-21 (Solid)

12/4/09

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Not
Lionville Laboratory									
Volatile Organic Compounds by SW846 8260B									
Tentatively Identified Compound	0.00		ug/kg wet	1	L902164	02/16/2009	02/16/2009	8260B	
Surrogate: 1,2-Dichloroethane-d4		*101 %*	*63-151*		"	"	"	"	
Surrogate: Toluene-d8		*96 %*	*68-140*		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*106 %*	*66-122*		"	"	"	"	

LVL
LIONVILLE LABORATORY

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WC-Hanford, Inc
2620 Fermi Avenue
Richland WA 99354

Project: RC-116
Project Number: [none]
Project Manager: Joan Kessner

Reported:
04/07/2009 12:08

J187K7
0902047-22 (Solid)

12/4/09

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	No
			Lionville Laboratory						
Volatile Organic Compounds by SW846 8260B									
1,1,1-Trichloroethane	ND	4.03	ug/kg wet	1	1907166	02/16/2009	02/16/2009	8260B	
1,1,2,2-Tetrachloroethane	ND	4.03	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	4.03	"	"	"	"	"	"	
1,1-Dichloroethane	ND	4.03	"	"	"	"	"	"	
1,1-Dichloroethene	ND	4.03	"	"	"	"	"	"	
1,2-Dichloroethane	ND	4.84	"	"	"	"	"	"	
1,2-Dichloropropane	ND	4.03	"	"	"	"	"	"	
2-Butanone	ND	9.68	"	"	"	"	"	"	
2-Hexanone	ND	9.68	"	"	"	"	"	"	
4-Methyl-2-pentanone	ND	9.68	"	"	"	"	"	"	
Acetone	ND	9.68	"	"	"	"	"	"	
Benzene	ND	4.03	"	"	"	"	"	"	
Bromodichloromethane	ND	4.84	"	"	"	"	"	"	
Bromoform	ND	4.03	"	"	"	"	"	"	
Bromomethane	ND	8.06	"	"	"	"	"	"	
Carbon Disulfide	ND	4.03	"	"	"	"	"	"	
Carbon Tetrachloride	ND	4.03	"	"	"	"	"	"	
Chlorobenzene	ND	4.03	"	"	"	"	"	"	
Chloroethane	ND	8.06	"	"	"	"	"	"	
Chloroform	ND	4.03	"	"	"	"	"	"	
Chloromethane	ND	8.06	"	"	"	"	"	"	
cis-1,3-Dichloropropene	ND	4.03	"	"	"	"	"	"	
Dibromochloromethane	ND	4.03	"	"	"	"	"	"	
Ethylbenzene	ND	4.03	"	"	"	"	"	"	
Methylene Chloride	4.19	4.84	"	"	"	"	"	"	
Styrene	ND	4.03	"	"	"	"	"	"	
Tetrachloroethene	ND	4.03	"	"	"	"	"	"	
Toluene	ND	4.03	"	"	"	"	"	"	
trans-1,3-Dichloropropene	ND	4.03	"	"	"	"	"	"	
Trichloroethene	ND	4.03	"	"	"	"	"	"	
Vinyl chloride	ND	8.06	"	"	"	"	"	"	
Xylenes, total	ND	4.84	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	4.03	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	4.03	"	"	"	"	"	"	

LIONVILLE LABORATORY

264 Welsh Pool Rd
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WC-Hanford, Inc
2620 Fermi Avenue
Richland WA, 99354

Project: RC-116
Project Number: [none]
Project Manager: Joan Kessner

Reported:
04/07/2009 12:08

J187K7
0902047-22 (Solid)

12/4/09

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	No
Lionville Laboratory									
Volatile Organic Compounds by SW846 8260B									
Tentatively Identified Compound	0.00		ug/kg wet	1	L902166	02/16/2009	02/16/2009	8260B	
Surrogate: 1,2-Dichloroethane-d4		*103 %*	*63-151*		"	"	"	"	
Surrogate: Toluene-d8		*99 %*	*68-140*		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*106 %*	*66-122*		"	"	"	"	

LIONVILLE LABORATORY

204 Welsh Pool Ro
Exton, PA 193
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WC-Hanford, Inc, 2620 Fermi Avenue Richland WA, 99354	Project: RC-116 Project Number: [none] Project Manager: Joan Kessner	Reported: 04/07/2009 12:08

J17X03
0902047-27 (Solid)

12/4/09

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Not
			Lionville Laboratory						
Volatile Organic Compounds by SW846 8260B									
1,1,1-Trichloroethane	ND	5.00	ug/kg wet	1	1902166	02/16/2009	02/16/2009	8260B	
1,1,2,2-Tetrachloroethane	ND	5.00	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	5.00	"	"	"	"	"	"	
1,1-Dichloroethane	ND	5.00	"	"	"	"	"	"	
1,1-Dichloroethene	ND	5.00	"	"	"	"	"	"	
1,2-Dichloroethane	ND	6.00	"	"	"	"	"	"	
1,2-Dichloropropane	ND	5.00	"	"	"	"	"	"	
2-Butanone	ND	12.0	"	"	"	"	"	"	
2-Hexanone	ND	12.0	"	"	"	"	"	"	
4-Methyl-2-pentanone	ND	12.0	"	"	"	"	"	"	
Acetone	ND	12.0	"	"	"	"	"	"	
Benzene	ND	5.00	"	"	"	"	"	"	
Bromodichloromethane	ND	6.00	"	"	"	"	"	"	
Bromoform	ND	5.00	"	"	"	"	"	"	
Bromomethane	ND	10.0	"	"	"	"	"	"	
Carbon Disulfide	ND	5.00	"	"	"	"	"	"	
Carbon Tetrachloride	ND	5.00	"	"	"	"	"	"	
Chlorobenzene	ND	5.00	"	"	"	"	"	"	
Chloroethane	ND	10.0	"	"	"	"	"	"	
Chloroform	ND	5.00	"	"	"	"	"	"	
Chloromethane	ND	10.0	"	"	"	"	"	"	
cis-1,3-Dichloropropene	ND	5.00	"	"	"	"	"	"	
Dibromochloromethane	ND	5.00	"	"	"	"	"	"	
Ethylbenzene	ND	5.00	"	"	"	"	"	"	
Methylene Chloride	6.59	6.00	"	"	"	"	"	"	
Styrene	ND	5.00	"	"	"	"	"	"	
Tetrachloroethene	ND	5.00	"	"	"	"	"	"	
Toluene	ND	5.00	"	"	"	"	"	"	
trans-1,3-Dichloropropene	ND	5.00	"	"	"	"	"	"	
Trichloroethene	ND	5.00	"	"	"	"	"	"	
Vinyl chloride	ND	10.0	"	"	"	"	"	"	
Xylenes, total	ND	6.00	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	5.00	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	5.00	"	"	"	"	"	"	

WC-Hanford, Inc.
2620 Fermi Avenue
Richland WA, 99354

Project: KC-116
Project Number: [none]
Project Manager: Joan Kessner

Reported:
04/07/2009 12:08

J17X03
0902047-27 (Solid)

12/4/09

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	No
Lionville Laboratory									
Volatile Organic Compounds by SW846 8260B									
Tentatively Identified Compound	0.00		ug/kg wet	1	L902164	02/16/2009	02/16/2009	8260B	
Surrogate: 1,2-Dichloroethane-d4		*99 %*	*63-131*		-	"	"	"	
Surrogate: Toluene-d8		*104 %*	*68-140*		-	"	"	"	
Surrogate: 4-Bromofluorobenzene		*113 %*	*66-122*		-	"	"	"	

LVL
LIONVILLE LABORATORY

264 Welsh Pool Roa
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WC-Hanford, Inc.
2620 Fermi Avenue
Richland WA, 99354

Project: RC-116
Project Number: [none]
Project Manager: Joan Kessner

Reported
04/07/2009 12 08

J187Y2
0902047-28 (Solid)

12/4/09

Lionville Laboratory

Volatile Organic Compounds by SW846 8260B

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
1,1,1-Trichloroethane	ND	4.39	ug/kg wet	1	L902166	02/16/2009	02/16/2009	8260B	
1,1,2,2-Tetrachloroethane	ND	4.39	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	4.39	"	"	"	"	"	"	
1,1-Dichloroethane	ND	4.39	"	"	"	"	"	"	
1,1-Dichloroethene	ND	4.39	"	"	"	"	"	"	
1,2-Dichloroethane	ND	5.26	"	"	"	"	"	"	
1,2-Dichloropropane	ND	4.39	"	"	"	"	"	"	
2-Butanone	ND	10.5	"	"	"	"	"	"	
2-Hexanone	ND	10.5	"	"	"	"	"	"	
4-Methyl-2-pentanone	ND	10.5	"	"	"	"	"	"	
Acetone	ND	10.5	"	"	"	"	"	"	
Benzene	ND	4.39	"	"	"	"	"	"	
Bromodichloromethane	ND	5.26	"	"	"	"	"	"	
Bromoform	ND	4.39	"	"	"	"	"	"	
Bromomethane	ND	8.77	"	"	"	"	"	"	
Carbon Disulfide	ND	4.39	"	"	"	"	"	"	
Carbon Tetrachloride	ND	4.39	"	"	"	"	"	"	
Chlorobenzene	ND	4.39	"	"	"	"	"	"	
Chloroethane	ND	8.77	"	"	"	"	"	"	
Chloroform	ND	4.39	"	"	"	"	"	"	
Chloromethane	ND	8.77	"	"	"	"	"	"	
cis-1,3-Dichloropropene	ND	4.39	"	"	"	"	"	"	
Dibromochloromethane	ND	4.39	"	"	"	"	"	"	
Ethylbenzene	ND	4.39	"	"	"	"	"	"	
Methylene Chloride	4.35	5.26	"	"	"	"	"	"	
Styrene	ND	4.39	"	"	"	"	"	"	
Tetrachloroethene	ND	4.39	"	"	"	"	"	"	
Toluene	ND	4.39	"	"	"	"	"	"	
trans-1,3-Dichloropropene	ND	4.39	"	"	"	"	"	"	
Trichloroethene	ND	4.39	"	"	"	"	"	"	
Vinyl chloride	ND	8.77	"	"	"	"	"	"	
Xylenes, total	ND	5.26	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	4.39	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	4.39	"	"	"	"	"	"	

LVL
LIONVILLE LABORATORY

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WC-Hanford, Inc.
2620 Fermi Avenue
Richland WA, 99354

Project: RC-116
Project Number: [none]
Project Manager: Joan Kessner

Reported:
04/07/2009 12:08

J187Y2
0902047-28 (Solid)

12/4/09

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	No

Lionville Laboratory

Volatile Organic Compounds by SW846 8260B

Tentatively Identified Compound	0.00		ug/kg wet	1	L902166	02/16/2009	02/16/2009	8260B	
Surrogate: 1,2-Dichloroethane-d4		*103 %*	*63-151*		"	"	"	"	
Surrogate: Toluene-d8		*100 %*	*68-140*		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*110 %*	*66-122*		"	"	"	"	

LIONVILLE LABORATORY

264 Welsh Pool Ro
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WC-Hanford, Inc. 2620 Fermi Avenue Richland WA, 99354	Project: RC-116 Project Number: [none] Project Manager: Joan Kessner	Reported: 04/07/2009 12:08

J18610
0902047-01 (Solid)

12/4/09.

Analyte	Result		Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Not
Lionville Laboratory										
Volatile Organic Compounds by SW846 8260B										
1,1,1-Trichloroethane	ND		4.81	ug/kg wet	1	L902167	02/17/2009	02/17/2009	8260B	
1,1,2,2-Tetrachloroethane	ND		4.81	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND		4.81	"	"	"	"	"	"	
1,1-Dichloroethane	ND		4.81	"	"	"	"	"	"	
1,1-Dichloroethene	ND		4.81	"	"	"	"	"	"	
1,2-Dichloroethane	ND		5.77	"	"	"	"	"	"	
1,2-Dichloropropane	ND		4.81	"	"	"	"	"	"	
2-Butanone	ND		11.5	"	"	"	"	"	"	
2-Hexanone	ND	J	11.5	"	"	"	"	"	"	
4-Methyl-2-pentanone	ND		11.5	"	"	"	"	"	"	
Acetone	ND		11.5	"	"	"	"	"	"	
Benzene	ND		4.81	"	"	"	"	"	"	
Bromodichloromethane	ND		5.77	"	"	"	"	"	"	
Bromoform	ND		4.81	"	"	"	"	"	"	
Bromomethane	ND		9.62	"	"	"	"	"	"	
Carbon Disulfide	ND		4.81	"	"	"	"	"	"	
Carbon Tetrachloride	ND		4.81	"	"	"	"	"	"	
Chlorobenzene	ND		4.81	"	"	"	"	"	"	
Chloroethane	ND		9.62	"	"	"	"	"	"	
Chloroform	ND		4.81	"	"	"	"	"	"	
Chloromethane	ND		9.62	"	"	"	"	"	"	
cis-1,3-Dichloropropene	ND		4.81	"	"	"	"	"	"	
Dibromochloromethane	ND		4.81	"	"	"	"	"	"	
Ethylbenzene	ND		4.81	"	"	"	"	"	"	
Methylene Chloride	7.57		5.77	"	"	"	"	"	"	
Styrene	ND		4.81	"	"	"	"	"	"	
Tetrachloroethene	ND		4.81	"	"	"	"	"	"	
Toluene	ND		4.81	"	"	"	"	"	"	
trans-1,3-Dichloropropene	ND		4.81	"	"	"	"	"	"	
Trichloroethene	ND		4.81	"	"	"	"	"	"	
Vinyl chloride	ND		9.62	"	"	"	"	"	"	
Xylenes, total	ND		5.77	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND		4.81	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND		4.81	"	"	"	"	"	"	

WC-Hanford, Inc. 2620 Fermi Avenue Richland WA, 99354	Project: RC-116 Project Number: [none] Project Manager: Joan Kessner	Reported: 04/07/2009 12:08

J18610

0902047-01 (Solid)

12/4/09

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes

Lionville Laboratory

Volatile Organic Compounds by SW846 8260B

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Tentatively Identified Compound	0.00		ug/kg wet	1	L902167	02/17/2009	02/17/2009	8260B	
Surrogate: 1,2-Dichloroethane-d4		*96 %*	*63-131*		"	"	"	"	
Surrogate: Toluene-d8		*96 %*	*68-140*		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*103 %*	*66-122*		"	"	"	"	

LVL
LIONVILLE LABORATORY

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WC-Hanford, Inc
2620 Fermi Avenue
Richland WA, 99354

Project: RC-116
Project Number: [none]
Project Manager: Joan Kessner

Reported:
04/07/2009 12:08

J18680
0902047-02 (Solid)

JK 12/4/09

Lionville Laboratory

Volatile Organic Compounds by SW846 8260B

Analyte	Result		Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	No
1,1,1-Trichloroethane	ND		4.63	ug/kg wet	1	L902167	02/17/2009	02/17/2009	8260B	
1,1,2,2-Tetrachloroethane	ND		4.63	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND		4.63	"	"	"	"	"	"	
1,1-Dichloroethane	ND		4.63	"	"	"	"	"	"	
1,1-Dichloroethene	ND		4.63	"	"	"	"	"	"	
1,2-Dichloroethane	ND		5.56	"	"	"	"	"	"	
1,2-Dichloropropane	ND		4.63	"	"	"	"	"	"	
2-Butanone	ND		11.1	"	"	"	"	"	"	
2-Hexanone	ND	J	11.1	"	"	"	"	"	"	
4-Methyl-2-pentanone	ND		11.1	"	"	"	"	"	"	
Acetone	**5.88**	U	11.1	"	"	"	"	"	"	
Benzene	ND		4.63	"	"	"	"	"	"	
Bromodichloromethane	ND		5.56	"	"	"	"	"	"	
Bromoform	ND		4.63	"	"	"	"	"	"	
Bromomethane	ND		9.26	"	"	"	"	"	"	
Carbon Disulfide	ND		4.63	"	"	"	"	"	"	
Carbon Tetrachloride	ND		4.63	"	"	"	"	"	"	
Chlorobenzene	ND		4.63	"	"	"	"	"	"	
Chloroethane	ND		9.26	"	"	"	"	"	"	
Chloroform	ND		4.63	"	"	"	"	"	"	
Chloromethane	ND		9.26	"	"	"	"	"	"	
cis-1,3-Dichloropropene	ND		4.63	"	"	"	"	"	"	
Dibromochloromethane	ND		4.63	"	"	"	"	"	"	
Ethylbenzene	ND		4.63	"	"	"	"	"	"	
Methylene Chloride	**6.27**		5.56	"	"	"	"	"	"	
Styrene	ND		4.63	"	"	"	"	"	"	
Tetrachloroethene	ND		4.63	"	"	"	"	"	"	
Toluene	ND		4.63	"	"	"	"	"	"	
trans-1,3-Dichloropropene	ND		4.63	"	"	"	"	"	"	
Trichloroethene	ND		4.63	"	"	"	"	"	"	
Vinyl chloride	ND		9.26	"	"	"	"	"	"	
Xylenes, total	ND		5.56	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND		4.63	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND		4.63	"	"	"	"	"	"	

WC-Hanford, Inc.
2620 Fermi Avenue
Richland WA, 99354

Project: RC-116
Project Number: [none]
Project Manager: Joan Kessner

Reported:
04/07/2009 12:08

J18680
0902047-02 (Solid)

12/4/09

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Not
			Lionville Laboratory						
Volatile Organic Compounds by SW846 8260B									
Tentatively Identified Compound	0.00		ug/kg wet	1	L902167	02/17/2009	02/17/2009	8260B	
Surrogate: 1,2-Dichloroethane-d4		*92 %*	*63-131*		-	-	-	-	
Surrogate: Toluene-d8		*96 %*	*68-140*		-	-	-	-	
Surrogate: 4-Bromofluorobenzene		*105 %*	*66-122*		-	-	-	-	

Appendix 4

Laboratory Narrative and Chain-of-Custody Documentation

LVL
LIONVILLE LABORATORY

784 Welsh Pool Road
Exton, Pennsylvania 19341
Phone (610) 280-3000
Fax (610) 280-3041

Case Narrative
REVISION

This narrative is issued to revise item 5, where matrix QC is associated with SDGs K1539 and K1537.

Client: WC-HANFORD RC-116
LVL #: 0902047
SDG/SAF # K1540 / RC-116

W.O. #: 60049-001-001-0001-00
Date Received: 02-14-2009

GC/MS VOLATILE

Fifteen (15) solid samples were collected on 02-11,12-2009

The samples and associated QC samples were analyzed according to criteria set forth in Lionville Laboratory SOPs based on EPA Method 8260B and Soil Method 5030A for TCL Volatile target compounds on 02-15,16,17-2009.

The following is a summary of QC results accompanying the sample results. Lionville Laboratory (LVL) certifies that all test results meet the requirements of NELAC except as noted below:

1. Samples are reported on a "wet weight" basis.
2. Samples were analyzed within hold time.
3. Non-target compounds were not detected in these samples.
4. All surrogate recoveries were within acceptance criteria.
5. Matrix spike recoveries for prep batch L902167 were within acceptance criteria. Matrix QC for preparation batches L902165 and L902166 are associated with SDG# K1539 (LVL# 0902041) and SDG# K1537 (LVL# 0902036), respectively.
6. All blank spike recoveries were within acceptance criteria.
7. The method blanks were below the reporting limit for all target compounds.
8. All internal standard area and retention time criteria were met.
9. Manual integrations are performed according to SOP QA-125 to produce quality data with utmost integrity. All manual integrations are required to be technically valid and properly documented. Appropriate technical flags are defined in the Glossary ("Technical Flags For Manual Integration").

[illegible]

2

10. LvL is NELAP accredited by the State of Pennsylvania. For a complete listing of accrediting authorities and the corresponding analytes/methods, please contact your Project Manager

11. "I certify that this sample data package is in compliance with SOW requirements, both technically and for completeness, other than the conditions detailed above. Release of the data contained in this hard-copy data package has been authorized by the Laboratory Manager or a designee, as verified by the following signature."

Nitin Daniels
Laboratory Manager
Lionville Laboratory

11/30/07
Date

5

264 Welsh Pool Road
Exton, Pennsylvania 19341
Phone (610) 280-3000
Fax (610) 280-3041

Case Narrative

Client: WC-HANFORD RC-116
LVL #: 0902047
SDG/SAF # K1540 / RC-116

W.O. #: 60049-001-001-0001-00
Date Received: 02-14-2009

DIESEL RANGE ORGANICS

Twelve (12) other solid samples were collected on 02-12-2009

The samples and their associated QC samples were extracted on 02-27-2009 and analyzed according to Lionville Laboratory SOPs based on SW846, 3rd Edition procedure on 03-05,06-2009. The extraction procedure was based on method 3540C and the extracts were analyzed based on method 8015B for DRO.

All soil samples are reported on a dry weight basis unless requested by the client, required by the method, or noted otherwise. The following is a summary of QC results accompanying the sample results. Lionville Laboratory Inc (LvL) certifies that all test results meet the requirements of NELAC except as noted below:

1. The samples were extracted one day outside of recommended hold time.

2. The method blank contained Motor Oil Range Organics (MRO) at a level above the Quantitation limit. Samples contained MRO in the range of 1 to 2 times the level seen in the blank, and with a similar pattern to the peaks seen in the blank. The contamination in the blank for MRO was greater than the lab PQL, although no client MRL exists for this analyte. Lab contamination of these samples should be suspected, and the data user should consider the sample values to be maximum values.

3. All obtainable surrogate recoveries were within acceptance criteria.

4. All blank spike recoveries were within acceptance criteria.

5. All matrix spike recoveries were within acceptance criteria.

6. All initial calibrations associated with this data set were within acceptance criteria.

7. All continuing calibration standards analyzed prior to sample extracts were within acceptance criteria.

8. LvL is NELAP accredited by the State of Pennsylvania. For a complete listing of accrediting authorities and the corresponding analytes/methods, please contact your Project Manager.

9. I certify that this sample data package is in compliance with SOW requirements, both technically and for completeness, other than the conditions detailed above. Release of the data contained in this hard copy data package has been authorized by the Laboratory Manager or a designee, as verified by the following signature.

Jim Daniels
Laboratory Manager
Lionville Laboratory

5/4/09
Date

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-116-779

0000000047

Collector L Stratton	Company Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator WEISS, RL
Project Designation Columbia River Component of the RCBRA - Sediment	Sampling Location EVGF - 7 - SSD Duplicate		SAF No. RC-116
Chain No. WCH-08-006.053.036	Field Logbook No. EL-1631-1	COA BESCRC6570	Method of Shipment FED EX
Shipped To EBERLINE SERVICES (LIONVILLE)	Offsite Property No. N/A		Bill of Lading/Air Bill No. 796342246620

Price Code 9K

Data Turnaround 45 Days

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

0400000

Preservation	None	None	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	None
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	aG	aG	G	*
No. of Container(s)	1	1	1	1	1	1	1	1	1	1
Volume	1500g	100g	10g	10g	250g	250g	125g	250g	250g	1*
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Technetium-99	See item (2) in Special Instructions	See item (3) in Special Instructions	PCBs - 8082	Pesticides - 8081	Semi-VOA - 8270A (TCL)	See item (4) in Special Instructions	-

Sample No.	Matrix *	Sample Date	Sample Time										
18610	OTHER SOLID	2/12/09	1245					X	X	X	X	X	

Shipper unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab.

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
[illegible]	2-12-09 1315	R B	2-12-09 1315
Ref. B	2/13/09 0800	D. Heidelberg LSX	2/13/09 0800
D. Heidelberg LSX	2/13/09 1200	FedEx	2/13/09 1200
FedEx	2-14-09 1125	[illegible]	2-14-09 1125

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) (Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238)
(2) Strontium-89,90 -- Total Sr; Isotopic Thorium (Thorium-232); Isotopic Uranium (Uranium 233/234, Uranium-235, Uranium-238); Isotopic Plutonium
(3) ICP Metals - 6010 (Full List) (Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc); Mercury - 7471 - (CV)
(4) VOA - 8260A (TCL) (1,1,1-Trichloroethane, 1,1,2,2-Tetrachloroethane, 1,1,2-Trichloroethane, 1,1-Dichloroethane, 1,1-Dichloroethene, 1,2-Dichloroethane, 1,2-Dichloropropane, 2-Butanone, 2-Hexanone, 4-Methyl-2-Pentanone, Acetone, Benzene, Bromodichloromethane, Bromoform, Bromomethane, Carbon disulfide, Carbon tetrachloride, Chlorobenzene, Chloroethane, Chloroform, Chloromethane, cis-1,2-Dichloroethylene, cis-1,3-Dichloropropene, Dibromochloromethane, Ethylbenzene, Methylene chloride, Styrene, Tetrachloroethene, Toluene, trans-1,2-Dichloroethylene -

Matrix *
S = Soil
SE = Sediment
SO = Solid
SL = Sludge
W = Water
O = Oil
A = Air
DS = Drum Solids
DL = Drum Liquids
T = Tissue
WI = Wipe
L = Liquid
V = Vegetation
X = Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-116-779 Page 1 of 1

Collector L. Stratton	Company Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator WEISS, RL
Project Designation Columbia River Component of the RCHRA - Sediment	Sampling Location WRT - 16 SSD Duplicate		SAF No. RC-116
Ice Chest No. WCH-08-00605 4036	Field Logbook No. EL-1631/7-1	COA RESCRC6520	Method of Shipment FED EX
Shipped To EBERLINE SERVICES (LIONVILLE)	Offsite Property No. N/A		Bill of Lading/Air Bill No. 796342246660

Price Code 9K

Data Turnaround 45 Days

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

2400001

Preservation	Cool 4C	Cool 4C	None
Type of Container	G	aG	G/P
No. of Container(s)	1	1	1
Volume	125mL 5	125g	100g
SAMPLE ANALYSIS	See item(1) in Special Instructions	TOC - 415.1	Particle Size (dry Sieve) D422

Sample No	Matrix *	Sample Date	Sample Time			
J16610	OTHER SOLID	2/12/09	1245	X	X	X

CHAIN OF POSSESSION Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
	2-12-09 / 1715		2-12-09 1915
Kof. B	2/13/09 0800	D. Hellberg	2/13/09 0800
D. Hellberg	2/13/09 1200	Fedex	2/13/09 1200
FedEx	2-15-09 1125		2-14-09 1125

SPECIAL INSTRUCTIONS

5 ~~4~~ / 2-13-09

(1) TPH - Diesel Range - WTPH-D + {Total petroleum hydrocarbons - diesel range, Total petroleum hydrocarbons - motor oil (high boiling)}

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE 011

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-116-816 | Page 1 of 1

ollector L-S	Company Contact JOAN KESSNER	Telephone No. 375-4688
roject Designation Columbia River Component of the RCBRA - Sediment	Sampling Location SSD [✓ TRIP 1]	
e Chest No. WCH-08-006,051,036	Field Logbook No. EL-1631-1	COA BESCRC6510
hipped To EBERLINE SERVICES/ [✓ LIONVILLE]	Offsite Property No. N/A	

Project Coordinator WEISS, RL	Price Code 9K
SAF No. RC-116	Data Turnaround 45 Days
Method of Shipment FED EX	
Bill of Lading/Air Bill No.	796342246660

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

000048

Preservation			Cool 4C									
Type of Container			G									
No. of Container(s)			1									
Volume			250g									
SAMPLE ANALYSIS			See item (1) in Special Instructions									
Sample No.	Matrix *	Sample Date	Sample Time									
8680	OTHER SOLID	2/11/09	0750	X								

CHAIN OF POSSESSION

Sign/Print Names

Relinquished By/Removed From	Date/Time 2-12-09 / 1715	Received By/Stored In RFB	Date/Time 2-11-09 / 1715
Relinquished By/Removed From RFB	Date/Time 2/13/09 0800	Received By/Stored In BWoodward	Date/Time 2/13/09 0800
Relinquished By/Removed From BWoodward	Date/Time 2/13/09 1200	Received By/Stored In Fed Ex	Date/Time 2/13/09 1200
Relinquished By/Removed From Fed Ex	Date/Time 2-16-09 1125	Received By/Stored In	Date/Time 2-16-09 1125
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time

SPECIAL INSTRUCTIONS

(1) VOA - 8260A (TCL) {1,1,1-Trichloroethane, 1,1,2,2-Tetrachloroethane, 1,1,2-Trichloroethane, 1,1-Dichloroethane, 1,1-Dichloroethene, 1,2-Dichloroethane, 1,2-Dichloropropane, 2-Butanone, 2-Hexanone, 4-Methyl-2-Pentanone, Acetone, Benzene, Bromodichloromethane, Bromoform, Bromomethane, Carbon disulfide, Carbon tetrachloride, Chlorobenzene, Chloroethane, Chloroform, Chloromethane, cis-1,2-Dichloroethylene, cis-1,3-Dichloropropene, Dibromochloromethane, Ethylbenzene, Methylenechloride, Styrene, Tetrachloroethene, Toluene, trans-1,2-Dichloroethylene, trans-1,3-Dichloropropene, Trichloroethene, Vinyl chloride, Xylenes (total)}

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab.

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

BHEE-011

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-116-964

Page 1 of 1

ector: BM

ect Designation: olumbia River Component of the RCBRA - Sediment

Chest No.: WCH-06-002-2

pped To: EBERLINE SERVICES (LIONVILLE)

Company Contact: JOAN KESSNER

Telephone No.: 375-4680

Sampling Location: RDO- 8 SSD

Field Logbook No.: EL-1631-1

COA: BFSCRC6520

Offsite Property No.: N/A

Project Coordinator: WEISS, RL

SAF No.: RC-116

Price Code: 9K

Data Turnaround: 45 Days

Method of Shipment: FED EX

Bill of Lading/Air Bill No.: 796337322140

OSSIBLE SAMPLE HAZARDS/REMARKS

ecial Handling and/or Storage

0000049

Preservation	None	None	None	None	Cool 4C	Cool 4C	None				
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	G/P				
No. of Container(s)	1	1	1	1	1	1	1				
Volume	1500g	100g	10g	10g	250g	125g	1000g				
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Technetium-99	See item (2) in Special Instructions	See item (3) in Special Instructions	TOC - 415.1	Particle Size (Dry Sieve) - D422				

Sample No.	Matrix *	Sample Date	Sample Time											
B7G4	OTHER SOLID	2/11/09	1720					X	X	X				

CHAIN OF POSSESSION

Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
S. Taylor	2/11/09 1600	B. A	2/11/09 1600
B. A	2/12/09 0800	B. Woodward	2/12/09 0800
B. Woodward	2/12/09 0930	FedEx	2/12/09 0930
	2-14-09 1135		2-14-09 1135

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) (Americium-241, Antimony-125, Beryllium-7, Cerium-144, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238)
(2) Strontium-89,90 – Total Sr; Isotopic Thorium (Thorium-232); Isotopic Uranium (Uranium-233/234, Uranium-235, Uranium-238); Isotopic Plutonium
(3) ICP Metals - 6010 (Full List) (Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc); Mercury - 7471 - (CV)

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab.

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION — Received By: Title: Date/Time:

FINAL SAMPLE DISPOSITION — Disposal Method: Disposed By: Date/Time:

CH-EE-011

* Original Chain of Custody mailed 2/12/09. samples mailed 2/13/09.

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-116-979 | Page 1 of 1

llector BM	Company Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator WEISS, RL
roject Designation Columbia River Component of the RCBRA - Sediment	Sampling Location LLH SSD		SAF No. RC-116
e Chest No. WCH-06-066, 051, 036	Field Logbook No. EL-1631-1	COA DESCRC6520	Method of Shipment FED EX
hipped To EBERLINE SERVICES [✓ LIONVILLE]	Offsite Property No. N/A		Bill of Lading/Air Bill No. 796342246660

Price Code 9K

Data Turnaround 45 Days

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

050000

Preservation	None	None	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	None
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	aG	G	aG	G/P
No. of Container(s)	1	1	1	1	1	1	1	1	1	1
Volume	1500g	100g	10g	40g	250g	250g	125g	125mL	125g	1000g
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Technetium-99	See item (2) in Special Instructions	See item (3) in Special Instructions	PCBs - 8082	Pesticides - 8081	See item (4) in Special Instructions	TOC - 415.1	Particle Size (Dry Sieve) - D422

Sample No.	Matrix *	Sample Date	Sample Time										
118779	OTHER SOLID	2/12/09	1315					X	X	X	X	X	X

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
B Maylor	2/12/09 1315	Eric H	2/12/09 1315
Eric H	2/13/09 0800	D Heidelberg	2/13/09 0800
D Heidelberg	2/13/09 1200	FedEx	2/13/09 1200
FedEx	2-14-09 1125		2-14-09 1125

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) {Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238}

(2) Strontium-89,90 - Total Sr; Isotopic Thorium {Thorium-232}; Isotopic Uranium {Uranium-233/234, Uranium-235, Uranium-238}; Isotopic Plutonium

(3) ICP Metals - 6010 (Full List) {Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc}; Mercury - 7471 - (CV)

(4) TPH-Diesel Range - WTPH-D + {Total petroleum hydrocarbons - diesel range; Total petroleum hydrocarbons - motor oil (high boiling)}

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location using custody of samples for shipment to lab.

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-116-983 | Page 1 of 1

Collector [illegible]	Company Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator WEISS, RL
Project Designation Columbia River Component of the RCBRA - Sediment	Sampling Location WBT-6 SSD		SAF No. RC-116
Ice Chest No. WCH-08-006, 051, 036	Field Logbook No. EL-1631-1	COA BPSCRC6520	Method of Shipment FED EX
Shipped To EBERLINE SERVICES (LIONVILLE)	Offsite Property No. N/A		Bill of Lading/Air Bill No. 796342246660

Price Code 9K

Data Turnaround 45 Days

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

150051

Preservation	None	None	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	None
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	aG	aG	G	[illegible]
No. of Container(s)	1	1	1	[illegible]	1	1	1	1	1	1
Volume	1500g	100g	10g	40g	250g	250g	125g	250g	250g	1*
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Technetium-99	See item (2) in Special Instructions	See item (3) in Special Instructions	PCBs - 8082	Pesticides - 8081	Semi-VOA - 8270A (TCL)	See item (4) in Special Instructions	-

Sample No.	Matrix *	Sample Date	Sample Time										
18794	OTHER SOLID	2/14/09	1125					X	X	X	X	X	

Sample unavailable to remove samples from controlled storage. Sample removed samples from storage location having custody of samples for shipment to lab

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
[illegible]	2-12-09 / 1715	[illegible]	2-12-09 / 1715
[illegible]	2/13/09 0800	B Woodward	2/13/09 0800
B Woodward	2/13/09 1200	Fed Ex	2/13/09 1200
[illegible]	2-14-09 1125	[illegible]	2-14-09 1125

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) (Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238)

(2) Strontium-89,90 -- Total Sr; Isotopic Thorium (Thorium-232); Isotopic Uranium (Uranium-233/234, Uranium-235, Uranium-238); Isotopic Plutonium

(3) ICP Metals - 6010 (Full List) (Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc); Mercury - 7471 - (CV)

(4) VOA - 8260A (TCL) (1,1,1-Trichloroethane, 1,1,2,2-Tetrachloroethane, 1,1,2-Trichloroethane, 1,1-Dichloroethane, 1,1-Dichloroethene, 1,2-Dichloroethane, 1,2-Dichloropropane, 2-Butanone, 2-Hexanone, 4-Methyl-2-Pentanone, Acetone, Benzene, Bromodichloromethane, Bromoform, Bromomethane, Carbon disulfide, Carbon tetrachloride, Chlorobenzene, Chloroethane, Chloroform, Chloromethane, cis-1,2-Dichloroethylene, cis-1,3-Dichloropropene, Dibromochloromethane, Ethylbenzene, Methylene chloride, Styrene, Tetrachloroethene, Toluene, trans-1,2-Dichloroethylene

Matrix *

S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

CH-EE-011

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-116-983 | Page 1 of 1

ollector: L Shatlen	Company Contact: JOAN KESSNER	Telephone No.: 375-4684	Project Coordinator: WEISS, RL
roject Designation: Columbia River Component of the RCBRA - Sediment	Sampling Location: WBT- 4 SSD		SAF No.: RC-116
e Chest No.: WCH-08-006, 051, 036	Field Logbook No.: EL-1631-1	COA: DESCRC6520	Method of Shipment: FED EX
hipped To: EBERLINE SERVICES (LIONVILLE)	Offsite Property No.: N/A		Bill of Lading/Air Bill No.: 796342246660

Price Code: 9K

Data Turnaround: 45 Days

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

Preservation	Cool 4C	Cool 4C	None
Type of Container	G	aG	G/P
No. of Container(s)	1	1	1
Volume	125mL	125g	1000g
SAMPLE ANALYSIS	~~See item (1) in Special Instructions.~~ 5	TOC - 415.1	Particle Size (Dry Sieve) - Diadi

Sample No	Matrix *	Sample Date	Sample Time			
16794	OTHER SOLID	2/12/09	1125	X	X	X

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
[illegible]	2-12-09 / 1715	[illegible]	2-12-09 1715
LB 2/13/09	0800	B Woodward 2/13/09	0800
B Woodward	2-13-09 1200	FedEx	2/13/09 1200
FedEx	2-14-09	1125	[illegible] 2-14-09	1125

SPECIAL INSTRUCTIONS

5 [illegible] 1/13/09

~~(1)~~ TPH-Diesel Range - WTPH-D - (Total petroleum hydrocarbons - diesel range. Total petroleum hydrocarbons - motor oil (high boiling))

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

CH-EE-011

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-116-984 | Page 1 of 2

Collector L Stratton	Company Contact KIAN KESSNER	Telephone No. 375-4688	Project Coordinator WEISS, RL
Project Designation Columbia River Component of the RCBRA - Sediment	Sampling Location WBT- 16 SSD		SAF No. RC-116
Ice Chest No. WCH-08-006,054,0316	Field Logbook No. EL-1631-1	COA BESCRC6520	Method of Shipment FED EX
Shipped To EBERLINE SERVICES [✓ LIONVILLE]	Offsite Property No. N/A		Bill of Lading/Air Bill No. 796342246660

Price Code 9K

Data Turnaround 45 Days

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

B500053

Preservation	None	None	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	None
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	aG	aG	G	*
No. of Container(s)	1	1	1	1	1	1	1	1	1	1
Volume	1500g	100g	10g	10g	250g	250g	125g	250g	250g	1*
SAMPLE ANALYSIS	See note (1) in Special Instructions	Carbon-14	Technetium-99	See note (2) in Special Instructions	See note (3) in Special Instructions	PCBs - 8082	Pesticides - 8081	Semi-VOA - 8270A (TCL)	See note (4) in Special Instructions	-

Sample No.	Matrix *	Sample Date	Sample Time										
J18795	OTHER SOLID	2/11/09	1130					X	X	X	X	X	

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location using custody of samples for shipment to lab.

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
	2-12-09/1715		2-12-09 1715
Rel. B	2/13/09 0800	D Heidelberg	2/13/09 0800
D Heidelberg	2/13/09 1200	FedEx 2/13/09	1200
	2-14-09 1125		2-14-09 1125

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full Lib) [Americium-241, Antimony-125, Beryllium-7, Cerium-144, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238]
(2) Strontium-89,90 – Total Sr; Isotopic Thorium [Thorium-232]; Isotopic Uranium [Uranium-233/234, Uranium-235, Uranium-238]; Isotopic Plutonium
(3) ICP Metals - 6010 (Full List) [Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc]; Mercury - 7471 - (CV)
(4) VOA - 8260A (TCL) [1,1,1-Trichloroethane, 1,1,2,2-Tetrachloroethane, 1,1,2-Trichloroethane, 1,1-Dichloroethene, 1,1-Dichloroethane, 1,2-Dichloroethane, 1,2-Dichloropropane, 2-Butanone, 2-Hexanone, 4-Methyl-2-Pentanone, Acetone, Benzene, Bromodichloromethane, Bromoform, Bromomethane, Carbon disulfide, Carbon tetrachloride, Chlorobenzene, Chloroethane, Chloroform, Chloromethane, cis-1,2-Dichloroethylene, cis-1,3-Dichloropropene, Dibromochloromethane, Ethylbenzene, Methylene chloride, Styrene, Tetrachloroethene, Toluene, trans-1,2-Dichloroethylene

Matrix *

S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

CH-EE-011

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-116-984 Page 1 of 1

ollector L Stewart

Company Contact JOAN KESSNER

Telephone No. 375-4688

Project Coordinator WEISS, RL

Price Code 9K

Data Turnaround 45 Days

roject Designation Columbia River Component of the RCBRA - Sediment

Sampling Location WBT-2a SSD

SAF No. RC-116

e Chest No. WCH-08-026, 051, 036

Field Logbook No. EL-1637-1

COA BESCRC6520

Method of Shipment FED EX

hipped To EBERLINE SERVICES [✓ LIONVILLE]

Offsite Property No. N/A

Bill of Lading/Air Bill No. 7963 422 4 6660

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

0000054

Preservation	Cool 4C	Cool 4C	None
Type of Container	G	aG	G/P
No. of Container(s)	1	1	1
Volume	125mL 5	125g	1000g
SAMPLE ANALYSIS	See item (1) in Special Instructions	TOC - 415.1	Particle Size (Dry Sieve) - D422

Sample No.	Matrix *	Sample Date	Sample Time			
18795	OTHER SOLID	2/12/09	1215	X	X	X

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
	2-12-09 / 1915	Ref A	2-12-09 / 1915
Ref. B	2/13/09 0800	D Hallberg	2/13/09 0800
D Hallberg	2/13/09 1200	FedEx	2/13/09 1200
	2-15-09 1145		2-16-09 1145

SPECIAL INSTRUCTIONS

S 4/4/1709

(1) TPH-Diesel Range - WTPH-D + {Total petroleum hydrocarbons - diesel range, Total petroleum hydrocarbons - motor oil (high boiling)}

Samples unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab

Matrix *

LABORATORY SECTION Received By Title Date/Time

FINAL SAMPLE DISPOSITION Disposal Method Disposed By Date/Time

WCH-EE-011

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-116-985 | Page 1 of 1

Collector: L Sh[illegible]

Company Contact: JOAN KESSNER

Telephone No.: 373-4688

Project Coordinator: WEISS, RL

Price Code: 9K

Data Turnaround: 45 Days

Project Designation: Columbia River Component of the RCBRA - Sediment

Sampling Location: WBT- 1 SSO

SAF No.: RC-116

Ice Chest No.: WCH-08-026, 051, 036

Field Logbook No.: EL-1631/-1

COA: BRSCRC6520

Method of Shipment: FED EX

Shipped To: EBERLINE SERVICES [✓ LIONVILLE]

Offsite Property No.: N/A

Bill of Lading/Air Bill No.: 796342246660

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

SS0040

Preservation	None	None	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	None
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	aG	aG	G	*
No. of Container(s)	1	1	1	1	1	1	1	1	1	1
Volume	1500g	100g	10g	10g	250g	250g	125g	250g	250g	1*
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Technetium-99	See item (2) in Special Instructions	See item (3) in Special Instructions	PCBs - 8082	Pesticides 8081	Semi-VOA - 8270A (TCL)	See item (4) in Special Instructions	-

Sample No.	Matrix *	Sample Date	Sample Time										
J18790	OTHER SOLID	[illegible]	[illegible]						X	X	X	X	X

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
	2-12-09 / 1915	Ref B	2-12-09 / 1915
Ref B	2/13/09 0800	BlDarklund	2/13/09 0800
BlDarklund	2/13/09 1200	FedEx	2/13/09 1200
FedEx	2-14-09 1125		2-14-09 1125

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) {Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238}

(2) Strontium-89,90 - Total Sr; Isotopic Thorium {Thorium-232}; Isotopic Uranium {Uranium-233/234, Uranium-235, Uranium-238}; Isotopic Plutonium

(3) ICP Metals - 6010 (Full List) {Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc}; Mercury - 7471 - (CV)

(4) VOA - 8260A (TCL) {1,1,1-Trichloroethane, 1,1,2,2-Tetrachloroethane, 1,1,2-Trichloroethane, 1,1-Dichloroethane, 1,1-Dichloroethene, 1,2-Dichloroethane, 1,2-Dichloropropane, 2-Butanone, 2-Hexanone, 4-Methyl-2-Pentanone, Acetone, Benzene, Bromodichloromethane, Bromoform, Bromomethane, Carbon disulfide, Carbon tetrachloride, Chlorobenzene, Chloroethane, Chloroform, Chloromethane, cis-1,2-Dichloroethylene, cis-1,3-Dichloropropene, Dibromochloromethane, Ethylbenzene, Methylene chloride, Styrene, Tetrachloroethene, Toluene, trans-1,2-Dichloroethylene

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION — Received By: Title: Date/Time:

FINAL SAMPLE DISPOSITION — Disposal Method: Disposed By: Date/Time:

WCH-EE-011

Washington Closure Hanford | **CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST** | RC-116-985 | Page 1 of 1

Collector [illegible]	Company Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator WEISS, RL	Price Code 9K
Project Designation Columbia River Component of the RCBRA - Sediment	Sampling Location WBT- , SSD		SAF No. RC-116	Data Turnaround 45 Days
Ice Chest No. WCH-08-006, 051, 026	Field Logbook No. EL-1631-1	COA BESCRC6520	Method of Shipment FED EX	
Shipped To EBERLINE SERVICES [✓ LIONVILLE]	Offsite Property No. N/A		Bill of Lading/Air Bill No. 796342246660	

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

95000[illegible]

Preservation	Cool 4C	Cool 4C	None
Type of Container	G	aG	G/P
No. of Container(s)	1	1	1
Volume	125mL 5	125g	1000g
SAMPLE ANALYSIS	See item (1) in Special Instructions	TOC - 415.1	Particle Size (Dry Sieve) - D422

Sample No	Matrix *	Sample Date	Sample Time			
J18796	OTHER SOLID	2/12/09	1910	X	X	X

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
	2-12-09 1715	Rof B	2-12-09 1915
Rof B	2/13/09 0800	JB Woodhead	2/13/09 0800
B Woodhead	2/13/09 1200	Fed Ex	2/13/09 1200
Fed Ex	2/16/09 1125		2-16-09 1125

SPECIAL INSTRUCTIONS

5 [illegible]

(1) TPH-Diesel Range - WTPH-D + (Total petroleum hydrocarbons - diesel range, Total petroleum hydrocarbons - motor oil (high boiling))

Sampler has authority to remove samples from controlled storage. Sampler removed samples from storage location during custody of samples for shipment to lab

Matrix *

S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By		Title		Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method		Disposed By		Date/Time

WCH-EE-011

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-116-980

Collector I. Sherman	Company Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator WEISS, RL
Project Designation Columbia River Component of the RCBRA - Sediment	Sampling Location WBT- 2 SSD		SAF No. RC-116
Ice Chest No. WCH-08-006,051,036	Field Logbook No. EL-1631-1	COA DESCRC6520	Method of Shipment FED EX
Shipped To EBERLINE SERVICES [✓ LIONVILLE]	Offsite Property No. N/A		Bill of Lading/Air Bill No. 796342246660

Price Code 9K

Data Turnaround 45 Days

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

2500000

Preservation	None	None	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	None
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	aG	aG	G	-
No. of Container(s)	1	1	1	1	1	1	1	1	1	1
Volume	1500g	100g	10g	10g	250g	250g	125g	250g	250g	1
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Technetium-99	See item (2) in Special Instructions	See item (3) in Special Instructions	PCBs - 8082	Pesticides - 8081	Semi-VOA - 8270A (TCL)	See item (4) in Special Instructions	-

Sample No.	Matrix *	Sample Date	Sample Time										
J18797	OTHER SOLID	2/12/09	1010					X	X	X	X	X	

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location using [illegible] of samples for shipment to lab

CHAIN OF POSSESSION Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
	2-12-09/1715	RLF B	2-12-09/1715
RLF B	2/13/09 0800	B Dadlund	2/13/09 0800
B Dadlund	2/13/09 1200	Fed Ex	2/13/09 1200
Fed Ex	2-14-09 1125		2-14-09 1125

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) [Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238]

(2) Strontium-89,90 – Total Sr, Isotopic Thorium (Thorium 232), Isotopic Uranium (Uranium-233/234, Uranium-235, Uranium-238), Isotopic Plutonium

(3) ICP Metals - 6010 (Full List) (Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Titanium, Vanadium, Zinc); Mercury - 7471 - (CV)

(4) VOA - 8260A (TCL) [1,1,1-Trichloroethane, 1,1,2,2-Tetrachloroethane, 1,1,2-Trichloroethane, 1,1-Dichloroethane, 1,1-Dichloroethene, 1,2-Dichloroethane, 1,2-Dichloropropane, 2-Butanone, 2-Hexanone, 4-Methyl-2-Pentanone, Acetone, Benzene, Bromodichloromethane, Bromoform, Bromomethane, Carbon disulfide, Carbon tetrachloride, Chlorobenzene, Chloroethane, Chloroform, Chloromethane, cis-1,2-Dichloroethylene, cis-1,3-Dichloropropene, Dibromochloromethane, Ethylbenzene, Methylene chloride, Styrene, Tetrachloroethene, Toluene, trans-1,2-Dichloroethylene

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

0000000058

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-116-986 | Page 2 of 2

Collector L Stailpac	Company Contact JOAN KESSNER	Telephone No. 375-4684	Project Coordinator WEISS, RL
Project Designation Columbia River Component of the RCBRA - Sediment	Sampling Location WBT- 2 SSD		SAF No. RC-116
Ice Chest No. WCH-08-006, 051, 036	Field Logbook No. EL-1656-1	COA HESCRC6520	Method of Shipment FED EX
Shipped To EBERLINE SERVICES (LIONVILLE)	Offsite Property No. N/A		Bill of Lading/Air Bill No. 796342246660

Price Code 9K

Data Turnaround 45 Days

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

B500058

Preservation	Cool 4C	Cool 4C	None
Type of Container	G	aG	G/P
No. of Container(s)	1	1	1
Volume	125mL	375g	1000g
SAMPLE ANALYSIS	~~See item (1) in Special Instructions~~ S	TOC - 415.1	Particle Size (Dry Sieve) - D422

Sample No.	Matrix *	Sample Date	Sample Time			
J18797	OTHER SOLID	2/12/09	1010	X	X	X

CHAIN OF POSSESSION Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
	2-12-09 / 1715	RJ	2-12-09 / 1915
RLF	2/13/09 0800	BWoodlund	2/13/09 0800
SWoodlund	2/13/09 1200	FedEx	2/13/09 1200
FedEx	2-14-09 1125		2-14-09 1125

SPECIAL INSTRUCTIONS

S 1/20/09

(1) TPH-Diesel Range WTPH-D - [Total petroleum hydrocarbons - diesel range, Total petroleum hydrocarbons - motor oil (high boiling)]

Sampler are unable to remove samples from controlled storage. Shipper removed samples from storage location using custody of samples for shipment to lab.

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

CH-EE-011

Washington Closure Hanford | **CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST** | RC-116-987 | Page 1 of 1

Collector L Slatjin	**Company Contact** JOAN KESSNER / **Telephone No.** 375-4648	**Project Coordinator** WEISS, RL	**Price Code** 9K / **Data Turnaround** 45 Days
Project Designation Columbia River Component of the RCBRA - Sediment	**Sampling Location** WBT-3 SSD	**SAF No.** RC-116	
Ice Chest No. WCH-08-006, 051, 036	**Field Logbook No.** EL-1630-1 / **COA** DESCRC6520	**Method of Shipment** FED EX	
Shipped To EBERLINE SERVICES (LIONVILLE)	**Offsite Property No.** N/A	**Bill of Lading/Air Bill No.** 796342246660	

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

6500060

Preservation	None	None	None	None	Cool 4C	Cool 4C	None			
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	G/P			
No. of Container(s)	1	1	1	1	1	1	1			
Volume	1500g	100g	10g	10g	150g	125g	1000g			
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Technetium-99	See item (2) in Special Instructions	See item (3) in Special Instructions	TOC - 415.1	Particle Size (Dry Sieve) D422			

Sample No.	Matrix *	Sample Date	Sample Time										
J18798	OTHER SOLID	2/12/09	1640					X	X	X			

CHAIN OF POSSESSION | Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
	2-12-09 / 1915	RCB	2-12-09 1915
RCB	2/13/09 0800	Blindwood	2/13/09 0800
Blindwood	2/13/09 1200	Fed Ex	2/13/09 1200
	2-14-09 1125		2-14-09 1125

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) (Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238)
(2) Strontium-89,90 – Total Sr, Isotopic Thorium (Thorium-232), Isotopic Uranium (Uranium-233/234, Uranium-235, Uranium-238), Isotopic Plutonium
(3) ICP Metals - 6010 (Full List) (Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc), Mercury - 7471 - (CV)

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-116-988 Page 1 of 1

Collector J. Phillips	Company Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator WEISS, RL
Project Designation Columbia River Component of the RCBRA - Sediment	Sampling Location WBT- 4 SSD		SAF No. RC-116
Ice Chest No. WCH-08-006,051,036	Field Logbook No. EL-1631-1	COA BBSCRC6520	Method of Shipment FED EX
Shipped To EBERLINE SERVICES [✓ LIONVILLE]	Offsite Property No. N/A		Bill of Lading/Air Bill No. 796342246660

Price Code 9K

Data Turnaround 45 Days

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

0900100

Preservation	None	None	None	None	Cool 4C	Cool 4C	None
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	G/P
No. of Container(s)	1	1	1	1	1	1	1
Volume	1500g	100g	10g	30g	250g	125g	1000g
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Technetium-99	See item (2) in Special Instructions	See item (3) in Special Instructions	TOC - 415.1	Particle Size (Dry Sieve) - D422

Sample No.	Matrix *	Sample Date	Sample Time							
18789	OTHER SOLID	2/11/09	1100					X	X	X

CHAIN OF POSSESSION

Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
	2-11-09/1315		2-11-09 / 1315
	2/13/09 0800	Blundland	2/13/09 0800
S. Dickerson	2/13/09 1200	Fed Ex	2/13/09 1200
Fed Ex	2-14-09 1125		2-14-09 1125

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) (Americium-241, Antimony-125, Beryllium-7, Cerium-144, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238)
(2) Strontium-89,90 - Total Sr, Isotopic Thorium (Thorium-232); Isotopic Uranium (Uranium-233/234, Uranium-235, Uranium-238), Isotopic Plutonium
(3) ICP Metals - 6010 (Full List) (Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc); Mercury - 7471 - (CV)

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab.

Matrix *
S = Soil
SE = Sediment
SO = Solid
SL = Sludge
W = Water
O = Oil
A = Air
DS = Drum Solids
DL = Drum Liquids
T = Tissue
WI = Wipe
L = Liquid
V = Vegetation
X = Other

LABORATORY SECTION	Received By Title Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method Disposed By Date/Time

CN-EE-011

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-116-989 Page 1 of 1

Collector [illegible]	Company Contact JOAN KESSNER	Telephone No. 373-4688	Project Coordinator WEISS, RL
Project Designation Columbia River Component of the RCBRA - Sediment	Sampling Location WBT-17 SSD		SAF No. RC-116
Ice Chest No. WCH-08-006 P51036	Field Logbook No. EL-1634-1	COA BESCRC6520	Method of Shipment FED EX
Shipped To EBERLINE SERVICES (LIONVILLE)	Offsite Property No. N/A		Bill of Lading/Air Bill No. 796342246660

Price Code 9K

Data Turnaround 45 Days

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

E90000

Preservation	None	None	None	None	Cool 4C	Cool 4C	None			
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	G/P			
No. of Container(s)	1	1	1	1	1	1	1			
Volume	1500g	100g	10g	10g	250g	125g	1000g			
SAMPLE ANALYSIS	See note (1) in Special Instructions	Carbon-14	Technetium-99	See note (2) in Special Instructions	See note (3) in Special Instructions	TOC - 415.1	Particle Size (Dry Sieve) - D422			

Sample No	Matrix *	Sample Date	Sample Time										
J16700	OTHER SOLID	[illegible]	[illegible]					X	X	X			

CHAIN OF POSSESSION

Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
[illegible]	2-12-09 1715	[illegible]	2-12-09 1715
[illegible]	2/13/09 0800	Heidelberg	2/13/09 0800
Heidelberg	2/13/09 1200	FedEx	2/13/09 1200
[illegible]	2/14/09 1125	[illegible]	2/14/09 1125

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) (Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238)
(2) Strontium-89,90 - Total Sr; Isotopic Thorium (Thorium-232); Isotopic Uranium (Uranium-233/234, Uranium-235, Uranium-238); Isotopic Plutonium
(3) ICP Metals - 6010 (Full List) (Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc); Mercury - 7471 - (CV)

Sampler unavailable to remove samples
from controlled storage. Shipper removed
samples from storage location taking custody
of samples for shipment to lab.

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

Washington Closure Hanford | **CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST** | RC-116-101 | Page 1 of 1

Collector BM	Company Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator WEISS, RL
Price Code 9K	Data Turnaround 45 Days		
Project Designation Columbia River Component of the RCBRA - Sediment	Sampling Location RH- SSD		SAF No. RC-116
Ice Chest No. WCH-08-026,051,036	Field Logbook No. EL-1631-1	COA BESCRC6330	Method of Shipment FED EX
Shipped To EBERLINE SERVICES LIONVILLE	Offsite Property No. N/A		Bill of Lading/Air Bill No. 796342246660

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

2900062

Preservation	None	None	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	None
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	aG	aG	G	*
No. of Container(s)	1	1	1	1	1	1	1	1	1	1
Volume	1500g	100g	10g	10g	250g	250g	125g	250g	250g	1*
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Technetium-99	See item (2) in Special Instructions	See item (3) in Special Instructions	PCBs - 8082	Pesticides - 8081	Semi-VOA - 8270A (TCL)	See item (4) in Special Instructions	-

Sample No.	Matrix *	Sample Date	Sample Time										
J187D2	OTHER SOLID	2/12/09	1015					X	X	X	X	X	

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
B Myler	2/12/09 1715	Frig 1	2/12/09 1715
Frig 1	2/13/09 0800	D Hesselberg	2/13/09 0800
D Hesselberg	2/13/09 1200	FedEx	2/13/09 1200
FedEx	2-14-09 1125		2-14-09 1125

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) {Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238}
(2) Strontium-89,90 -- Total Sr; Isotopic Thorium {Thorium-232}; Isotopic Uranium {Uranium-233/234, Uranium-235, Uranium-238}, Isotopic Plutonium
(3) ICP Metals - 6010 (Full List) {Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc}, Mercury - 7471 - (CV)
(4) VOA - 8260A (TCL) {1,1,1-Trichloroethane, 1,1,2,2-Tetrachloroethane, 1,1,2-Trichloroethane, 1,1-Dichloroethane, 1,1-Dichloroethene, 1,2-Dichloroethane, 1,2-Dichloropropane, 2-Butanone, 2-Hexanone, 4-Methyl-2-Pentanone, Acetone, Benzene, Bromodichloromethane, Bromoform, Bromomethane, Carbon disulfide, Carbon tetrachloride, Chlorobenzene, Chloroethane, Chloroform, Chloromethane, cis-1,2-Dichloroethylene, cis-1,3-Dichloropropene, Dibromochloromethane, Ethylbenzene, Methylenechloride, Styrene, Tetrachloroethene, Toluene, trans-1,2-Dichloroethylene

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-116-1011

Page 2 of 2

Collector B[illegible]

Company Contact JOAN KESSNER

Telephone No. 375-4688

Project Coordinator WEISS, RL

Price Code 9K

Data Turnaround 45 Days

Project Designation Columbia River Component of the RCBRA - Sediment

Sampling Location RH- 8 SSD

SAF No. RC-116

Ice Chest No. WCH-08-006, 051, 036

Field Logbook No. EL-1631/-1

COA RESCRC6530

Method of Shipment FED EX

Shipped To EBERLINE SERVICES / [✓ IONVILLE]

Offsite Property No. N/A

Bill of Lading/Air Bill No. 796342246660

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

000093

Preservation	Cool 4C	Cool 4C	None
Type of Container	G	aG	G/P
No. of Container(s)	1	1	1
Volume	125mL 5	125g	1000g
SAMPLE ANALYSIS	See item (5) in Special Instructions	TOC - 415.1	Particle Size (Dry Sieve) - D422

Sample No	Matrix *	Sample Date	Sample Time			
J187D2	OTHER SOLID	2/11/09	1015	X	X	X

CHAIN OF POSSESSION

Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
B [illegible]	2/11/09 1715	Fr[illegible]	2/11/09 1715
D. Heidelberg	~~2/13/09 0800~~	~~D[illegible] 2/13/09~~	
F[illegible]	2/13/09 0800	D. Heidelberg	2/13/09 0800
D. Heidelberg	2/14/09 1200	Fedex	2/14/09 1200
[illegible]	2-14-09 1125	[illegible]	2-14-09 1125

SPECIAL INSTRUCTIONS

5 [illegible] 1109

(5) TPH Diesel Range - WTPH-D + (Total petroleum hydrocarbons - diesel range, Total petroleum hydrocarbons - motor oil (high boiling))

Sampler unavailable to remove samples from controlled storage. Shipper removes samples from storage location taking custody of samples for shipment to lab.

Matrix *

S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION Received By

Title

Date/Time

FINAL SAMPLE DISPOSITION Disposal Method

Disposed By

Date/Time

CH-EE-011

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-116-1013 Page 1 of 1

0000065

ector 1/M	Company Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator WEISS, RL
ject Designation Columbia River Component of the RCBRA - Sediment	Sampling Location RB- 4/ SSD		SAF No. RC-116
Chest No. WCH-08-006,051,036	Field Logbook No. EL-1630-1	COA 0ESCRC6520	Method of Shipment FED EX
pped To EBERLINE SERVICES [✓ LIONVILLE]	Offsite Property No. N/A		Bill of Lading/Air Bill No. 796347246660

Price Code 9K

Data Turnaround 45 Days

OSSIBLE SAMPLE HAZARDS/REMARKS

pecial Handling and/or Storage

0000064

Preservation	None	None	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	None
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	aG	aG	G	-
No. of Container(s)	1	1	1	1	1	1	1	1	1	1
Volume	1500g	400g	10g	10g	250g	250g	125g	250g	250g	1C
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Technetium-99	See item (2) in Special Instructions	See item (3) in Special Instructions	PCBs - 8082	Pesticides 8081	Semi-VOA - 8270A (TCL)	See item (4) in Special Instructions	-

Sample No.	Matrix *	Sample Date	Sample Time										
1B7D4	OTHER SOLID	2/12/09	945					X	X	X	X	X	

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Rygl	2/12/09 1715	Fry A	2/12/09 1715
Fry A	2/13/09 0800	D. Heidelberg	2/13/09 0800
D. Heidelberg	2/13/09 1200	Fedex	2/13/09 1200
	2-14-09 1125		2-14-09 1125

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) (Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238)

(2) Strontium-89,90 -- Total Sr; Isotopic Thorium (Thorium 232); Isotopic Uranium (Uranium 233/234, Uranium-235, Uranium-238); Isotopic Plutonium

(3) ICP Metals - 6010 (Full List) (Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc); Mercury - 7471 (CV)

(4) VOA - 8260A (TCL) (1,1,1-Trichloroethane, 1,1,2,2-Tetrachloroethane, 1,1,2-Trichloroethane, 1,1-Dichloroethane, 1,1-Dichloroethene, 1,2-Dichloroethane, 1,2-Dichloropropane, 2-Butanone, 2-Hexanone, 4-Methyl-2-Pentanone, Acetone, Benzene, Bromodichloromethane, Bromoform, Bromomethane, Carbon disulfide, Carbon tetrachloride, Chlorobenzene, Chloroethane, Chloroform, Chloromethane, cis-1,2-Dichloroethylene, cis-1,3-Dichloropropene, Dibromochloromethane, [illegible]

Matrix *

[illegible]

ABORATORY SECTION	Received By	Title	Date/Time
INAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

CH-EE-011

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-116-1013 | Page 2 of 2

Collector BM	Company Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator WEISS, RL
Project Designation Columbia River Component of the RCBRA - Sediment	Sampling Location RH 4 SSD		SAF No. RC-116
Ice Chest No. WCHOX-006,051,036	Field Logbook No. EL-1631-1	COA BESCRC6520	Method of Shipment FED EX
Shipped To EBERLINE SERVICES [✓ LIONVILLE]	Offsite Property No. N/A		Bill of Lading/Air Bill No. 796342246660

Price Code 9K

Data Turnaround 45 Days

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

S900

Preservation	Cool 4C	Cool 4C	None	
Type of Container	G	aG	G/P	
No. of Container(s)	1	1	1	
Volume	125mL 5	125g	1000g	
SAMPLE ANALYSIS	Semivolatile Organics [illegible]	TOC - 415.1	Particle Size (Dry Sieve) (D422)	

Sample No.	Matrix *	Sample Date	Sample Time			
J187D4	OTHER SOLID	2/12/09	945	X	X	X

CHAIN OF POSSESSION

Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
B Mahan [illegible]	2/12/09 1715	Fox A	2/12/09 1715
Fox A	2/13/09 0600	D. Heidelberg WSI	2/13/09 0800
D. Heidelberg WSI	2/13/09 1200	FedEx	2/13/09 1200
Fed Ex	2-14-09 1125	[illegible]	2-14-09 1125

SPECIAL INSTRUCTIONS

5 AD [illegible]

(1) TPH Diesel Range - WTPH-D + (Total petroleum hydrocarbons - diesel range, Total petroleum hydrocarbons - motor oil (high boiling))

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab.

Matrix *

S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By Date/Time

WCH-EE-011

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-116-1014 | Page 1 of 2

Collector: BM	Company Contact: JOAN KESSNER; Telephone No.: 375-4688	Project Coordinator: WEISS, RL
Project Designation: Columbia River Component of the RCBRA - Sediment	Sampling Location: RH- SSD	Price Code: 9K
Ice Chest No.: WCH-08-006, 051, 036	Field Logbook No.: EL-1631-3	SAF No.: RC-116
Shipped To: EBERLINE SERVICES [✓ LIONVILLE]	COA: BESCRC6520	Date Turnaround: 45 Days
	Offsite Property No.: N/A	Method of Shipment: FED EX
		Bill of Lading/Air Bill No.: 796342246660

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

9900000

			Preservation	None	None	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	None
			Type of Container	G/P	G/P	G/P	G/P	G/P	aG	aG	aG	G	-
			No. of Container(s)	1	1	1	1	1	1	1	1	1	1
			Volume	1500g	100g	10g	10g	250g	250g	125g	250g	250g	1*
SAMPLE ANALYSIS				See item (1) in Special Instructions	Carbon 14	Technetium-99	See item (2) in Special Instructions	See item (3) in Special Instructions	PCBs - 8082	Pesticides 8081	Semi VOA - 8270A (TCL)	See item (4) in Special Instructions	-
Sample No.	Matrix *	Sample Date	Sample Time										
107D5	OTHER SOLID	2/10/09	1032					X	X	X	X	X	

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab.

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
S Taylor	2/12/09 1715	FedEx	2/12/09 1715
FedEx	2/13/09 0800	V. Hedelberg	2/13/09 0800
V. Hedelberg	2/13/09 1200	FedEx	2/13/09 1200
FedEx	2-14-09 1125		2-14-09 1125

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) (Americium-241, Antimony-125, Beryllium-7, Cerium-144, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238)
(2) Strontium-89,90 - Total Sr; Isotopic Thorium (Thorium-232); Isotopic Uranium (Uranium-233/234, Uranium-235, Uranium-238); Isotopic Plutonium
(3) ICP Metals - 6010 (Full List) (Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc), Mercury - 7471 - (CV)
(4) VOA - 8260A (TCL) (1,1,1-Trichloroethane, 1,1,2,2-Tetrachloroethane, 1,1,2-Trichloroethane, 1,1-Dichloroethane, 1,1-Dichloroethene, 1,2-Dichloroethane, 1,2-Dichloropropane, 2-Butanone, 2-Hexanone, 4-Methyl-2-Pentanone, Acetone, Benzene, Bromodichloromethane, Bromoform, Bromomethane, Carbon disulfide, Carbon tetrachloride, Chlorobenzene, Chloroethane, Chloroform, Chloromethane, cis-1,2-Dichloroethylene, cis-1,3-Dichloropropene, Dibromochloromethane, [illegible]

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE 011

Washington Closure Hanford	**CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST**	RC-116-1814	Page 2 of 2

Collector BA	Company Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator WEISS, RL
Project Designation Columbia River Component of the RCBRA - Sediment	Sampling Location RM 4 SSD		SAF No. RC-116
Ice Chest No. WOH-08-006051036	Field Logbook No. EL-1637-1	COA BESCRC6520	Method of Shipment FED EX
Shipped To EBERLINE SERVICES [✓ LIONVILLE]	Offsite Property No. N/A		Bill of Lading/Air Bill No. 796342246660

Price Code 9K

Data Turnaround 45 Days

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

Preservation	Cool 4C	Cool 4C	None
Type of Container	G	aG	G/P
No. of Container(s)	1	1	1
Volume	125mL 5	125g	1000g
SAMPLE ANALYSIS	See item (1) in Special Instructions	TOC - 415.1	Particle Size (Dry Sieve) - D422

Sample No.	Matrix *	Sample Date	Sample Time			
J187D5	OTHER SOLID	2/12/09	1032	X	X	X

CHAIN OF POSSESSION

Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
B [illegible]	2/12/09 [illegible]	Fray A	2/12/09 1715
Fray A	2/13/09 0800	D Hellberg	2/13/09 0800
D Hellberg	2/13/09 1200	Fedex	2/13/09 1200
[illegible]	2-14-09 1125	[illegible]	2-14-09 1125

SPECIAL INSTRUCTIONS

5 11409

(1) TPH-Diesel Range - WTPH-D + (Total petroleum hydrocarbons - diesel range, Total petroleum hydrocarbons - motor oil (high boiling))

Sampler unavailable to remove samples from controlled storage. Shipper removing samples from storage location taking custody of samples for shipment to lab.

Matrix *

S = Soil
SE = Sediment
SO = Solid
SL = Sludge
W = Water
O = Oil
A = Air
DS = Drum Solids
DL = Drum Liquids
T = Tissue
WI = Wipe
L = Liquid
V = Vegetation
X = Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

BCH-EE-011

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-136-1015 | Page 1 of 1

Collector: Br

Company Contact: JOAN KESSNER

Telephone No.: 375-4684

Project Coordinator: WEISS, RL

Price Code: 9K

Data Turnaround: 45 Days

Project Designation: Columbia River Component of the RCBRA - Sediment

Sampling Location: RH-5 SSD

SAF No.: RC-116

Ice Chest No.: WCH-08-006,051,036

Field Logbook No.: EL-1631-1

COA: BESCRC6620

Method of Shipment: FED EX

Shipped To: EBERLINE SERVICES (LIONVILLE)

Offsite Property No.: N/A

Bill of Lading/Air Bill No.: 7963422466680

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

890000

Preservation	None	None	None	None	Cool 4C	Cool 4C	None			
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	G/P			
No. of Container(s)	1	1	1	1	1	1	1			
Volume	1500g	100g	10g	10g	750g	125g	1000g			
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Technetium-99	See item (2) in Special Instructions	See item (3) in Special Instructions	TOC - 415.1	Particle Size (Dry Sieve - D422)			

Sample No.	Matrix *	Sample Date	Sample Time										
J187D8	OTHER SOLID	2/12/09	1405					X	X	X			

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
	2/12/09 1705		2/12/09 1705
	2/13/09 0800	Holleberg	2/13/09 0800
Holleberg	2/13/09 1200	FedEx	2/13/09 1200
	2-14-09 1125		2-14-09 1125

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) {Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238}
(2) Strontium-89,90 - Total Sr; Isotopic Thorium {Thorium-232}; Isotopic Uranium {Uranium-233/234, Uranium-235, Uranium-238}; Isotopic Plutonium
(3) ICP Metals - 6010 (Full List) {Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc}; Mercury - 7471 - (CV)

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION | Received By | Title | Date/Time

FINAL SAMPLE DISPOSITION | Disposal Method | Disposed By | Date/Time

CH-EE-011

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-116-1017 Page 1 of 1

Collector BM	Company Contact JOAN KESSNER	Telephone No. 375-4648	Project Coordinator WEISS, RL
Project Designation Columbia River Component of the RCBRA - Sediment	Sampling Location RH-3 SSD		SAF No. RC-116
Ice Chest No. WCH-08-006 051,036	Field Logbook No. EL-1631-1	COA BESCRC6520	Method of Shipment FED EX
Shipped To EBERLINE SERVICES (LIONVILLE)	Offsite Property No. N/A		Bill of Lading/Air Bill No. 796342246660

Price Code 9K

Data Turnaround 45 Days

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

690000

	Preservation	None	None	None	None	Cool 4C	Cool 4C	None		
	Type of Container	G/P	G/P	G/P	G/P	G/P	aG	G/P		
	No. of Container(s)	1	1	1	1	1	1	1		
	Volume	1500g	100g	10g	10g	250g	125g	1000g		
SAMPLE ANALYSIS		See item (1) in Special Instructions	Carbon-14	Technetium-99	See item (2) in Special Instructions	See item (3) in Special Instructions	TOC - 415.1	Particle Size (Dry Sieve) - DAFE		

Sample No.	Matrix *	Sample Date	Sample Time									
J187D8	OTHER SOLID	2/12/09	1125					X	X	X		

CHAIN OF POSSESSION Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
[illegible]	2/12/09 0915	Eric A	2/12/09 0915
Eric A	2/13/09 0800	D. Heidelberg	2/13/09 0800
D. Heidelberg	2/13/09 1200	Fedex	2/13/09 1200
[illegible]	2-14-09 1125	[illegible]	2-14-09 1125

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) {Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238}

(2) Strontium-89,90 -- Total Sr; Isotopic Thorium {Thorium-232}; Isotopic Uranium {Uranium-233/234, Uranium-235, Uranium-238}; Isotopic Plutonium

(3) ICP Metals - 6010 (Full List) {Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc}; Mercury - 7471 - (CV)

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-116-1016

Page 1 of 1

Collector: BM

Company Contact: JOAN KESSNER

Telephone No.: 375-4688

Project Coordinator: WEISS, RL

Price Code: 9K

Data Turnaround: 45 Days

Project Designation: Columbia River Component of the RCBRA - Sediment

Sampling Location: RH- 7 SSD

SAF No.: RC-116

Ice Chest No.: WCH-08-0016, 051, 036

Field Logbook No.: EL-1631?-3

COA: BESCRC6520

Method of Shipment: FED EX

Shipped To: EBERLINE SERVICES [✓ OAK RIDGE] [✓ DONVILLE]

Offsite Property No.: N/A

Bill of Lading/Air Bill No.: 796342246660

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

020000

Preservation	None	None	None	None	Cool 4C	Cool 4C	None
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	G/P
No. of Container(s)	1	1	1	1	1	1	1
Volume	1500g	100g	10g	10g	250g	125g	1000g
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Technetium-99	See item (2) in Special Instructions	See item (3) in Special Instructions	TOC - 415.1	Particle Size (Dry Sieve) - D422

Sample No.	Matrix *	Sample Date	Sample Time							
J187D7	OTHER SOLID	2/12/09	1420					X	X	X

CHAIN OF POSSESSION

Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
B. Hampl Bangl	2/12/09 1715	Eric A	2/12/09 1715
Eric A	2/13/09 0800	D Heidelberg	2/13/09 0800
D Heidelberg	2/13/09 1200	Fedex	2/13/09 1200
Fed Ex	2/14/09 1125		2/14/09 1125

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) [Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238]

(2) Strontium-89,90 -- Total Sr; Isotopic Thorium (Thorium-232), Isotopic Uranium (Uranium-233/234, Uranium-235, Uranium-238); Isotopic Plutonium

(3) ICP Metals - 6010 (Full List) [Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc]; Mercury - 7471 - (CV)

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab.

Matrix *

S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION — Received By: Title: Date/Time:

FINAL SAMPLE DISPOSITION — Disposal Method: Disposed By: Date/Time:

CH-EE-011

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-116-1818 Page 1 of 1

Collector BM	Company Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator WEISS, RL
Price Code 9K	Data Turnaround 45 Days		
Project Designation Columbia River Component of the RCBRA - Sediment	Sampling Location RIL 6 SSD		SAF No. RC-116
Ice Chest No. WCH-08-006, 051, 036	Field Logbook No. EL-1631-1	COA BESCRC6520	Method of Shipment FED EX
Shipped To EBERLINE SERVICES [✓ LIONVILLE]	Offsite Property No. N/A		Bill of Lading/Air Bill No. 791634224 6660

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

[illegible]

	Preservation	None	None	None	None	Cool 4C	Cool 4C	None		
	Type of Container	G/P	G/P	G/P	G/P	G/P	aG	G/P		
	No. of Container(s)	1	1	1	1	1	1	1		
	Volume	1500g	100g	10g	10g	150g	125g	1000g		
SAMPLE ANALYSIS		See item (1) in Special Instructions	Carbon-14	Technetium-99	See item (2) in Special Instructions	See item (3) in Special Instructions	TOC - 415.1	Particle Size (Dry Sieve) - D422		

Sample No.	Matrix *	Sample Date	Sample Time									
J187D9	OTHER SOLID	2/12/09	1400					X	X	X		

CHAIN OF POSSESSION

Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Bryan Boyd	2/12/09 1515	Eric A	2/12/09 1525
Eric A	2/13/09 0800	D. Heidelberg	2/13/09 0800
D. Heidelberg	2/13/09 1200	FedEx	2/13/09 1200
FedEx	2/14/09 1125		2-14-09 1125

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) (Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238)

(2) Strontium-89,90 – Total Sr; Isotopic Thorium (Thorium-232), Isotopic Uranium (Uranium-233/234, Uranium-235, Uranium-238); Isotopic Plutonium

(3) ICP Metals - 6010 (Full List) (Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc); Mercury - 7471 - (CV)

Sampler was unable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-116-1019 Page 1 of 1

Collector BA	**Company Contact** JOAN KESSNER **Telephone No.** 375-4688	**Project Coordinator** WEISS, RL
Project Designation Columbia River Component of the RCBRA - Sediment	**Sampling Location** RH- 2 SSD	**SAF No.** RC-116
Ice Chest No. WCH-08-006, 051, 036	**Field Logbook No.** EL-1631-1 **COA** BESCRCd$20	**Method of Shipment** FED EX
Shipped To EBERLINE SERVICES (LIONVILLE)	**Offsite Property No.** N/A	**Bill of Lading/Air Bill No.** 796 34224 6066

Price Code 9K

Data Turnaround 45 Days

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

220000

Preservation	None	None	None	None	Cool 4C	Cool 4C	None
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	G/P
No. of Container(s)	1	1	1	1	1	1	1
Volume	1500g	100g	10g	10g	250g	125g	1000g
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Technetium-99	See item (2) in Special Instructions	See item (3) in Special Instructions	TOC - 415.1	Particle Size (Dry Sieve - D422)

Sample No.	Matrix *	Sample Date	Sample Time							
107F0	OTHER SOLID	2/12/09	1120					X	X	X

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
	2/12/09 1015		2/12/09 1015
	2/13/09 0800	D. Hetzelberg	2/13/09 0800
D. Hetzelberg	2/13/09 1200	FedEx	2/13/09 1200
FedEx	2-14-09 1625		2-14-09 1625

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) (Americium-241, Antimony-125, Beryllium-7, Cerium-144, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238)

(2) Strontium-89,90 — Total Sr, Isotopic Thorium (Thorium-232), Isotopic Uranium (Uranium-233/234, Uranium-235, Uranium-238); Isotopic Plutonium

(3) ICP Metals - 6010 (Full List) (Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc), Mercury - 7471 - (CV)

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab.

Matrix *

S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By / Title / Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method / Disposed By / Date/Time

CH-EE-011

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-116-1020 Page 1 of 1

Collector: BM

Company Contact: JOAN KESSNER Telephone No. 375-4688

Project Coordinator: WEISS, RL

Price Code: 9K

Data Turnaround: 45 Days

Project Designation: Columbia River Component of the RCBRA - Sediment

Sampling Location: RB- 10 SSD

SAF No.: RC-116

Ice Chest No.: WCH-08-0060,051636

Field Logbook No.: EL-1631-1

COA: BESCRL6520

Method of Shipment: FED EX

Shipped To: EBERLINE SERVICES / [✓ RICHMOND?]

Offsite Property No.: N/A

Bill of Lading/Air Bill No.: 796342246660

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

E00073

Preservation	None	None	None	None	Cool 4C	Cool 4C	None			
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	G/P			
No. of Container(s)	1	1	1	1	1	1	1			
Volume	1500g	100g	10g	10g	750g	125g	1000g			
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Technetium-99	See item (2) in Special Instructions	See item (3) in Special Instructions	TOC - 415.1	Particle Size (Dry Sieve) [illegible]			

Sample No.	Matrix *	Sample Date	Sample Time										
J187F1	OTHER SOLID	2/12/09	1220					X	X	X			

CHAIN OF POSSESSION

Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
BM	2/12/09 1115	Eric A	2/12/09 1715
Eric A	2/13/09 0800	D. Heisselberg	2/13/09 0800
D. Heisselberg	2/13/09 1200	FedEx	2/13/09 1200
Fed Ex	2-14-09 1125		2-14-09 1125

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) {Americium-241, Antimony-125, Beryllium-7, Cerium-144, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238}

(2) Strontium-89,90 – Total Sr; Isotopic Thorium {Thorium-232}; Isotopic Uranium {Uranium-233/234, Uranium-235, Uranium-238}; Isotopic Plutonium

(3) ICP Metals - 6010 (Full List) {Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc}, Mercury - 7471 - (CV)

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION — Received By: Title: Date/Time:

FINAL SAMPLE DISPOSITION — Disposal Method: Disposed By: Date/Time:

WCH-EE-011

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-116-1031

Page 1 of 2

Collector [illegible]

Company Contact JOAN KESSNER

Telephone No. 375-4688

Project Coordinator WEISS, RL

Price Code 9K

Data Turnaround 45 Days

Project Designation Columbia River Component of the RCBRA - Sediment

Sampling Location RFLS-3-SSD

SAF No. RC-116

Ice Chest No. WCH-06-000,051,636

Field Logbook No. EL-1631-1

COA BESCRC6520

Method of Shipment FED EX

Shipped To EBERLINE SERVICES [✓ LIONVILLE]

Offsite Property No. N/A

Bill of Lading/Air Bill No. 796342246660

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

K000074

Preservation	None	None	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	None
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	aG	aG	G	-
No. of Container(s)	1	1	1	1	1	1	1	1	1	1
Volume	1500g	100g	10g	10g	250g	250g	125g	250g	250g	1?
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Technetium-99	See item (2) in Special Instructions	See item (3) in Special Instructions	PCBs - 8082	Pesticides 8081	Semi-VOA 8270A (TCL)	See item (4) in Special Instructions	-

Sample No.	Matrix *	Sample Date	Sample Time										
J187K6	OTHER SOLID	2/11/09	1510					X	X	X	X	X	

Sample unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab.

CHAIN OF POSSESSION

Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
	2-12-09 / 1715	Ray B	2-12-09 / 1715
Ref. B	2/13/09 0800	D Heidelberg	2/13/09 0800
D Heidelberg	2/13/09 1200	Fedex	2/13/09 1200
	2/14/09 1125		2-14-09 1125

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) {Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238}
(2) Strontium-89,90 - Total Sr, Isotopic Thorium {Thorium-232}, Isotopic Uranium {Uranium-233/234, Uranium-235, Uranium-238}, Isotopic Plutonium
(3) ICP Metals - 6010 (Full List) {Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc}, Mercury - 7471 (CV)
(4) VOA - 8260A (TCL) {1,1,1-Trichloroethane, 1,1,2,2-Tetrachloroethane, 1,1,2-Trichloroethane, 1,1-Dichloroethane, 1,1-Dichloroethene, 1,2-Dichloroethane, 1,2-Dichloropropane, 2-Butanone, 2-Hexanone, 4-Methyl-2-Pentanone, Acetone, Benzene, Bromodichloromethane, Bromoform, Bromomethane, Carbon disulfide, Carbon tetrachloride, Chlorobenzene, Chloroethane, Chloroform, Chloromethane, cis-1,2-Dichloroethylene, cis-1,3-Dichloropropene, Dibromochloromethane, Ethylbenzene, Methylenechloride, Styrene, Tetrachloroethene, Toluene, trans-1,2-Dichloroethylene

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION | Received By | Title | Date/Time

FINAL SAMPLE DISPOSITION | Disposal Method | Disposed By | Date/Time

WCH-EE-011

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-116-1031

Page 2 of 2

Collector: L Strat[illegible]

Company Contact: JOAN KESSNER

Telephone No.: 375-4644

Project Coordinator: WEISS, RL

Price Code: 9K

Data Turnaround: 45 Days

Project Designation: Columbia River Component of the RCBRA - Sediment

Sampling Location: RFLS- 2 SSD

SAF No.: RC-116

Ice Chest No.: WCH-08-006, 051, [illegible]

Field Logbook No.: EL-1631?-1

COA: BDSCRK6520

Method of Shipment: FED EX

Shipped To: EBERLINE SERVICES [✓ OAK RIDGE]

Offsite Property No.: N/A

Bill of Lading/Air Bill No.: 796342246660

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

S70000

Preservation	Cool 4C	Cool 4C	None
Type of Container	G	aG	GP
No. of Container(s)	1	1	1
Volume	125mL 5	125g	100g
SAMPLE ANALYSIS	See item (1) in Special Instructions	TOC - 9060	Particle Size (Dry Sieve) D422

Sample No.	Matrix *	Sample Date	Sample Time			
J187K6	OTHER SOLID	2/12/09	1500	X	X	X

CHAIN OF POSSESSION

Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
L Strat	2-12-09 / 1715	Ref B	2-12-09 / 1715
R. F. B	2/13/09 0800	D. Heidelberg	2/13/09 0800
D. Heidelberg	2/13/09 1200	Fedex	2/13/09 1200
	2-14-09 1125		2-14-09 1125

SPECIAL INSTRUCTIONS

5 A/B 2/13/09

(1) TPH-Diesel Range - WTPH-D ; (Total petroleum hydrocarbons - diesel range, Total petroleum hydrocarbons - motor oil (high boiling))

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab.

Matrix *

[illegible]

LABORATORY SECTION — Received By: Title: Date/Time:

FINAL SAMPLE DISPOSITION — Disposal Method: Disposed By: Date/Time:

WCH-EE-011

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-116-1032 Page 1 of 2

Collector BRH	**Company Contact** JOAN KESSNER · **Telephone No.** 373-4688	**Project Coordinator** WEISS, RL	**Price Code** 9K · **Data Turnaround** 45 Days
Project Designation Columbia River Component of the RCBRA - Sediment	**Sampling Location** RFLS- / SSD	**SAF No.** RC-116	
Ice Chest No. WCH-08-006/05/036	**Field Logbook No.** EL-1637-1 · **COA** HESCRC6520	**Method of Shipment** FED EX	
Shipped To EBERLINE SERVICES (LIONVILLE)	**Offsite Property No.** N/A	**Bill of Lading/Air Bill No.** 796342246660	

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

9200009

Preservation	None	None	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	None
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	aG	aG	aG	[illegible]
No. of Container(s)	1	1	1	1	1	1	1	1	1	1
Volume	1500g	100g	10g	10g	250g	250g	125g	250g	250g	1
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Technetium-99	See item (2) in Special Instructions	See item (3) in Special Instructions	PCBs - 8082	Pesticides - 8081	Semi-VOA - 8270A (TCL)	See item (4) in Special Instructions	

Sample No.	Matrix *	Sample Date	Sample Time										
J187K7	OTHER SOLID	2/12/09	1510					X	X	X	X	X	

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location using custody of samples for shipment to lab

CHAIN OF POSSESSION Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
B Neher BRH	2/12/09 1715	Fry A	2/12/09 1725
Fry A	2/13/09 0800	D Heidelberg	2/13/09 0800
D Heidelberg	2/13/09 1200	FedEx	2/13/09 1200
FedEx	2/14/09 1125		2/14/09 1125

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) [Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238]
(2) Strontium-89,90 - Total Sr, Isotopic Thorium [Thorium-232], Isotopic Uranium [Uranium-233/234, Uranium-235, Uranium-238], Isotopic Plutonium
(3) ICP Metals - 6010 (Full List) [Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc], Mercury - 7471 - (CV)
(4) VOA - 8260A (TCL) [1,1,1-Trichloroethane, 1,1,2,2-Tetrachloroethane, 1,1,2-Trichloroethane, 1,1-Dichloroethane, 1,1-Dichloroethene, 1,2-Dichloroethane, 1,2-Dichloropropane, 2-Butanone, 2-Hexanone, 4-Methyl-2-Pentanone, Acetone, Benzene, Bromodichloromethane, Bromoform, Bromomethane, Carbon disulfide, Carbon tetrachloride, Chlorobenzene, Chloroethane, Chloroform, Chloromethane, cis-1,2-Dichloroethylene, cis-1,3-Dichloropropene, Dibromochloromethane,

Matrix *

S = Soil
SE = Sediment
SO = Solid
SL = Sludge
W = Water
O = Oil
A = Air
DS = Drum Solids
DL = Drum Liquids
T = Tissue
WI = Wipe
L = Liquid
V = Vegetation
X = Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-116-1032 Page 2 of 2

Collector BM	Company Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator WEISS, RL
Project Designation Columbia River Component of the RCBRA - Sediment	Sampling Location RFLS- / SSD		SAF No. RC-116
Ice Chest No. WCH-08-000605-086	Field Logbook No. EL-1631/-1	COA HESCRC6520	Method of Shipment FED EX
Shipped To EBERLINE SERVICES / LIONVILLE	Offsite Property No. N/A		Bill of Lading/Air Bill No. 796342246660

Price Code 9K

Data Turnaround 45 Days

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

	Cool 4C	Cool 4C	None
Preservation	Cool 4C	Cool 4C	None
Type of Container	G	aG	G/P
No. of Container(s)	1	1	1
Volume	125mL 5	125g	1000g
SAMPLE ANALYSIS	See item (1) in Special Instructions	TOC - 415.1	Particle Size (Dry Sieve) D422

2240000

Sample No.	Matrix *	Sample Date	Sample Time			
J187K7	OTHER SOLID	2/12/09	1510	X	X	X

CHAIN OF POSSESSION Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
B Mayhew	2/12/09 1715	Eric A	2/12/09 1715
Eric A	2/13/09 0800	D Hedelberg	2/13/09 0800
D Hedelberg	2/13/09 1200	FedEx	2/13/09 1200
	2-14-09 1125		2-14-09 1125

SPECIAL INSTRUCTIONS

5 [illegible]

(1) TPH-Diesel Range - WTPH-D+ (Total petroleum hydrocarbons - diesel range, Total petroleum hydrocarbons - motor oil (high boiling))

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab

Matrix *
S = Soil
SE = Sediment
SO = Solid
SL = Sludge
W = Water
O = Oil
A = Air
DS = Drum Solids
DL = Drum Liquids
T = Tissue
WI = Wipe
L = Liquid
V = Vegetation
X = Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-116-1033 Page 1 of 1

Collector L Smith	**Company Contact** JOAN KESSNER	**Telephone No.** 375-4688	**Project Coordinator** WEISS, RL
Project Designation Columbia River Component of the RCBRA - Sediment	**Sampling Location** RFLS- 5 SSD		**SAF No.** RC-116
Ice Chest No. WCH-06-006-05-036	**Field Logbook No.** EL-1630-1	**COA** DESCRC6320	**Method of Shipment** FED EX
Shipped To EBERLINE SERVICES LIONVILLE	**Offsite Property No.** N/A		**Bill of Lading/Air Bill No.** 796342246660

Price Code 9K

Data Turnaround 45 Days

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

820000

Preservation	None	None	None	None	Cool 4C	Cool 4C	None			
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	G/P			
No. of Container(s)	1	1	1	1	1	1	1			
Volume	1500g	100g	10g	10g	250g	125g	1000g			
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Technetium-99	See item (2) in Special Instructions	See item (3) in Special Instructions	TOC - 415.1	Particle Size (Dry Sieve) - D422			

Sample No	Matrix *	Sample Date	Sample Time										
J187K8	OTHER SOLID	2/12/09	1105					X	X	X			

CHAIN OF POSSESSION Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
L Smith	2-12-09 / 1715	RcF B	2-12-09 / 1715
RcF B	2/13/09 0800	D. Heidebrecht	2/13/09 0800
D. Heidebrecht	2/13/09 1200	Fedex	2/13/09 1200
	2-14-09 1125		2-14-09 1125

SPECIAL INSTRUCTIONS

(1) Gamma Spec (Full List) [Americium-241, Antimony-125, Beryllium-7, Cerium-144, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238]
(2) Strontium-89,90 - Total Sr; Isotopic Thorium [Thorium-232]; Isotopic Uranium [Uranium-233/234, Uranium-235, Uranium-238]; Isotopic Plutonium
(3) ICP Metals - 6010 (Full List) [Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc]; Mercury - 7471 - (CV)

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-116-1034 Page 1 of 1

Collector L Smith

Company Contact JOAN KESSNER **Telephone No.** 375-4688

Project Coordinator WEISS, RL

Price Code 9K **Data Turnaround** 45 Days

Project Designation Columbia River Component of the RCBRA - Sediment

Sampling Location RFCS-4 SSD

SAF No. RC-116

Ice Chest No. WCH-08-006, 051, 036

Field Logbook No. EL-1631-1

COA BESCRC6510

Method of Shipment FED EX

Shipped To EBERLINE SERVICES/LIONVILLE

Offsite Property No. N/A

Bill of Lading/Air Bill No. 796342246660

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

0000079

		Preservation	None	None	None	None	Cool 4C	Cool 4C	None	
		Type of Container	G/P	G/P	G/P	G/P	G/P	aG	G/P	
		No. of Container(s)	1	1	1	1	1	1	1	
		Volume	1500g	100g	10g	10g	250g	125g	1000g	
		SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Technetium-99	See item (2) in Special Instructions	See item (3) in Special Instructions	TOC - 415.1	Particle Size (Dry Sieve) - Lab	
Sample No.	**Matrix ***	**Sample Date**	**Sample Time**							
J187K9	OTHER SOLID	2/12/09	1505				X	X	X	

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
L Smith	2/12-09 /1715		2-12-09 /1715
Bob B	2/13/09	D Hellberg	2/13/09 0800
D. Hellberg	2/13/09 1200	Fedex	2/13/09 1200
Fedex	2/14/09 1125		2-14-09 1125

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) {Americium-241, Antimony-125, Beryllium-7, Cerium-144, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238}

(2) Strontium-89,90 -- Total Sr; Isotopic Thorium {Thorium-232}; Isotopic Uranium {Uranium-233/234, Uranium-235, Uranium-238}; Isotopic Plutonium

(3) ICP Metals - 6010 (Full List) {Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Titanium, Vanadium, Zinc}; Mercury - 7471 - (CV)

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab

Matrix *

S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION Received by Title Date/Time

FINAL SAMPLE DISPOSITION Disposal Method Disposed By Date/Time

WCH-EE-011

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-116-1035 | Page 1 of 1

Collector B	**Company Contact** JOAN KESSNER	**Telephone No.** 375-4688	**Project Coordinator** WEISS, RL
Project Designation Columbia River Component of the RCBRA - Sediment	**Sampling Location** RFLS-5 SSD		**SAF No.** RC-116
Ice Chest No. WCH-08-006, 051, 036	**Field Logbook No.** EL-1631-1	**COA** BESCRC6510	**Method of Shipment** FED EX
Shipped To EBERLINE SERVICES (LIONVILLE)	**Offsite Property No.** N/A		**Bill of Lading/Air Bill No.** 796342246660

Price Code 9K

Data Turnaround 45 Days

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

Preservation	None	None	None	None	Cool 4C	Cool 4C	None			
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	G/P			
No. of Container(s)	1	1	1	1	1	1	1			
Volume	1500g	100g	10g	10g	250g	125g	1000g			
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Technetium-99	See item (2) in Special Instructions	See item (3) in Special Instructions	TOC - 415.1	Particle Size (Dry Sieve - D422)			

Sample No	Matrix *	Sample Date	Sample Time										
J187L0	OTHER SOLID	2/12/09	1540					X	X	X			

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
B...	2/12/09 1715	Eric A	2/12/09 1715
Eric A	2/13/09 0800	Dite Delberg	2/13/09 0800
D. Delberg	2/13/09 1200	FedEx	2/13/09 1200
FedEx	2-14-09 1125		2-14-09 1125

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) [Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238]
(2) Strontium-89,90 - Total Sr; Isotopic Thorium (Thorium-232); Isotopic Uranium (Uranium-233/234, Uranium-235, Uranium-238); Isotopic Plutonium
(3) ICP Metals - 6010 (Full List) [Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc]; Mercury - 7471 - (CV)

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab.

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-116-124 Page 1 of 1

Collector BM	Company Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator WEISS, RL
Project Designation Columbia River Component of the RCBRA - Sediment	Sampling Location TRIP BLANK		SAF No. RC-116
Ice Chest No. WH-08-006, 051, 036	Field Logbook No. EL-1631-1	COA RESCRC6520	Method of Shipment FED EX
Shipped To EBERLINE SERVICES (LIONVILLE)	Offsite Property No. N/A		Bill of Lading/Air Bill No. 796342246660

Price Code 9K

Data Turnaround 45 Days

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

E800000

Preservation	Cool 4C
Type of Container	G
No. of Container(s)	1
Volume	250g
SAMPLE ANALYSIS	See item (1) in Special Instructions.

Sample No.	Matrix *	Sample Date	Sample Time	
J17W12	OTHER SOLID	2/12/09	730	✓

CHAIN OF POSSESSION

Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
B M[illegible]	2/12/09 1715	Frey A	2/12/09 1715
Frey A	2/13/09 0800	D Heidelberg	2/13/09 0800
D Heidelberg	2/13/09 1200	FedEx	2/13/09 1200
[illegible]	2-14-09 1125	[illegible]	2-14-09 1125

SPECIAL INSTRUCTIONS

(1) VOA - 8260A (TCL) {1,1,1-Trichloroethane, 1,1,2,2-Tetrachloroethane, 1,1,2-Trichloroethane, 1,1-Dichloroethene, 1,1-Dichloroethane, 1,2-Dichloroethane, 1,2-Dichloropropane, 2-Butanone, 2-Hexanone, 4-Methyl-2-Pentanone, Acetone, Benzene, Bromodichloromethane, Bromoform, Bromomethane, Carbon disulfide, Carbon tetrachloride, Chlorobenzene, Chloroethane, Chloroform, Chloromethane, cis-1,2-Dichloroethylene, cis-1,3-Dichloropropene, Dibromochloromethane, Ethylbenzene, Methylene chloride, Styrene, Tetrachloroethene, Toluene, trans-1,2-Dichloroethylene, trans-1,3-Dichloropropene, Trichloroethene, Vinyl chloride, Xylenes (total)}

Samples unavailable to remove [illegible]
Lab controlled storage. Shipper removing
samples from storage location taking custody
of samples for shipment to lab

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-116-306

Page 1 of 1

Collector: L Stratton

Company Contact: JOAN KESSNER

Telephone No.: 375-4688

Project Coordinator: WEISS, RL

Price Code: 9K

Data Turnaround: 45 Days

Project Designation: Columbia River Component of the RCBRA - Sediment

Sampling Location: WRT- 73 SD

SAF No.: RC-116

Ice Chest No.: WCH-08-006,051,036

Field Logbook No.: EL-1638-1

COA: BESCRC6520

Method of Shipment: FED EX

Shipped To: EBERLINE SERVICES [✓ LIONVILLE]

Offsite Property No.: N/A

Bill of Lading/Air Bill No.: 796342246660

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

Preservation	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	None			
Type of Container	G/P	aG	aG	aG	G	aG	G/P			
No. of Container(s)	1	1	1	1	1	1	1			
Volume	250g	250g	125g	250g	250g	125g	1000g			
SAMPLE ANALYSIS	See item (1) in Special Instructions	PCBs - 8082	Pesticides - 8081	Semi-VOA - 8270A (TCL)	See item (2) in Special Instructions	TOC - 415.1	Particle Size (Dry Sieve) - D422			

Sample No.	Matrix *	Sample Date	Sample Time										
J17X03	OTHER SOLID	2/12/09	0940	X	X	X	X	X	X	X			

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
	2-12-09 1715		2-12-09 1715
RF B	2/13/09 0800	B Woodward	2/13/09 0800
B Woodward	2/13/09 1200	FedEx	2/13/09 1200
Fed Ex	2-14-09 1125		2-14-09 1125
Fed Ex	2-14-09 1125		2-14-09 1125

SPECIAL INSTRUCTIONS

(1) ICP Metals - 6010 (Full List) {Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc}; Mercury - 7471 - {CV}

(2) VOA - 8260A (TCL) {1,1,1-Trichloroethane, 1,1,2,2-Tetrachloroethane, 1,1,2-Trichloroethane, 1,1-Dichloroethane, 1,1-Dichloroethene, 1,2-Dichloroethane, 1,2-Dichloropropane, 2-Butanone, 2-Hexanone, 4-Methyl-2-Pentanone, Acetone, Benzene, Bromodichloromethane, Bromoform, Bromomethane, Carbon disulfide, Carbon tetrachloride, Chlorobenzene, Chloroethane, Chloroform, Chloromethane, cis-1,2-Dichloroethylene, cis-1,3-Dichloropropene, Dibromochloromethane, Ethylbenzene, Methylenechloride, Styrene, Tetrachloroethene, Toluene, trans-1,2-Dichloroethylene, trans-1,3-Dichloropropene, Trichloroethene, Vinyl chloride, Xylenes (total)}

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab.

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION — Received By: Title: Date/Time:

FINAL SAMPLE DISPOSITION — Disposal Method: Disposed By: Date/Time:

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-116-1084 Page 3 of 3

Collector E. Sh[illegible]	Company Contact JOAN KESSNER	Telephone No. 375-4588	Project Coordinator KESSNER, JH
Project Designation Columbia River Component of the RCBRA - Sediment	Sampling Location HT- / SSD		SAF No. RC-116
Ice Chest No. WCH-08-0016, 057, 036	Field Logbook No. EL-1637-1	COA BESCNC6520	Method of Shipment FED EX
Shipped To EBERLINE SERVICES [✓ LIONVILLE]	Offsite Property No. N/A		Bill of Lading/Air Bill No. 7963422466660

Price Code 9K

Data Turnaround 45 Days

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

380000

Preservation	None	None	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	None
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	aG	aG	G	-
No. of Container(s)	1	1	1	1	1	1	1	1	1	1
Volume	500g	100g	10g	10g	250g	250g	125g	250g	250g	1
SAMPLE ANALYSIS	See note (1) - Special Instructions	Carbon-14	Technetium-99	See note (2) - Special Instructions	See note (3) - Special Instructions	PCBs - 8082	Pesticides 8081	Semi-VOA 8270A (TCL)	See note (4) - Special Instructions	

Sample No.	Matrix *	Sample Date	Sample Time										
J1B7Y2	OTHER SOLID	2/12/09	1350					X	X	X	X	X	

CHAIN OF POSSESSION Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
[illegible]	2-12-09 / 1915	RLB	2-12-09 / 1915
RLB	2/13/09 0800	D. Heidelberg	2/13/09 0800
D. Heidelberg	2/13/09 1200	FedEx	2/13/09 1200
FedEx	2-14-09 1125	[illegible]	2-14-09 1125

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab.

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) {Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238}
(2) Strontium-89,90 -- Total Sr, Isotopic Thorium {Thorium-232}, Isotopic Uranium {Uranium-233/234, Uranium-235, Uranium-238}, Isotopic Plutonium
(3) ICP Metals - 6010 (Full List) {Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc}; Mercury - 7471 - (CV)
(4) VOA - 8260A (TCL) {1,1,1-Trichloroethane, 1,1,2,2-Tetrachloroethane, 1,1,2-Trichloroethane, 1,1-Dichloroethane, 1,1-Dichloroethene, 1,2-Dichloroethane, 1,2-Dichloropropane, 2-Butanone, 2-Hexanone, 4-Methyl-2-Pentanone, Acetone, Benzene, Bromodichloromethane, Bromoform, Bromomethane, Carbon disulfide, Carbon tetrachloride, Chlorobenzene, Chloroethane, Chloroform, Chloromethane, cis-1,2-Dichloroethylene, cis-1,3-Dichloropropene, Dibromochloromethane, [illegible]

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-136-1084 Page 2 of 2

Collector L. Stre[illegible]	Company Contact JOAN KESSNER	Telephone No. 375 4658	Project Coordinator KESSNER, JH
Project Designation Columbia River Component of the RCBRA - Sediment	Sampling Location HT- 1 SSD		SAF No. RC-136
Ice Chest No. WCH-08-006651036	Field Logbook No. EL-1631-1	COA BESCRC6520	Method of Shipment FED EX
Shipped To CHEMLINE SERVICES [✓ JONVILLE]	Offsite Property No. N/A		Bill of Lading/Air Bill No. 796342246660

Price Code 9K

Data Turnaround 45 Days

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

0810084

Preservation	Cool 4C	Cool 4C	None	
Type of Container	G	aG	G/P	
No. of Container(s)	1	1	1	
Volume	125mL 5	125g	1000g	
SAMPLE ANALYSIS	See item (5) in Special Instructions	TPH - 418.1	Particle Size (Dry Sieve) - D422	

Sample No.	Matrix *	Sample Date	Sample Time			
J187Y2	OTHER SOLID	2/11/09	1500	X	X	X

CHAIN OF POSSESSION

Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
[illegible]	2-12-09 / 1715	Ref B	2-12-09 1915
Ref. B	2/13/09 0800	D. Heikelberg	2/13/09 0800
D. Heikelberg	2/13/09 1200	FedEx	2/13/09 1200
FedEx	2-14-09 1125	[illegible]	2-14-09 1125

SPECIAL INSTRUCTIONS

5 AJB 12/09

(5) TPH Diesel Range - WTPH-D + (Total petroleum hydrocarbons - diesel range, Total petroleum hydrocarbons - motor oil (high boiling))

Samplers unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab.

Matrix *

S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-116-1087 Page 1 of 1

Collector: L Stallions

Company Contact: JOAN KESSNER

Telephone No.: 375-4648

Project Coordinator: KESSNER, JH

Price Code: 9K

Data Turnaround: 45 Days

Project Designation: Columbia River Component of the RCBRA - Sediment

Sampling Location: HT-4 SSD

SAF No.: RC-116

Ice Chest No.: WCH-08-006, 051, 036

Field Logbook No.: EL-1631-1

COA: RESCRC6120

Method of Shipment: FED EX

Shipped To: EBERLINE SERVICES [✓ LIONVILLE]

Offsite Property No.: N/A

Bill of Lading/Air Bill No.: 796342246660

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

SH0000

Preservation	None	None	None	None	Cool 4C	Cool 4C	None
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	G/P
No. of Container(s)	1	1	1	1	1	1	1
Volume	1500g	100g	10g	10g	250g	125g	1000g
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Technetium-99	See item (2) in Special Instructions	See item (3) in Special Instructions	TOC - 415.1	Particle Size (Dry Sieve) D422

Sample No.	Matrix *	Sample Date	Sample Time							
J187Y5	OTHER SOLID	2/11/09	1405					X	X	X

CHAIN OF POSSESSION

Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
LStallion	2-11-09/1715	Ref B	2-12-09/1715
Ref B	2/13/09 0800	BWoodward	2/13/09 0800
BWoodward	2/13/09 1200	FedEx	2/13/09 1200
FedEx	2-14-09 1125		2-14-09 1125

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) {Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238}
(2) Strontium-89,90 -- Total Sr; Isotopic Thorium {Thorium-232}, Isotopic Uranium {Uranium-233/234, Uranium-235, Uranium-238}, Isotopic Plutonium
(3) ICP Metals - 6010 (Full List) {Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc}, Mercury - 7471 - (CV)

Sample unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION | Received By | Title | Date/Time

FINAL SAMPLE DISPOSITION | Disposal Method | Date/Time | Disposed By | Date/Time

WCH-EE-011

Appendix 5

Data Validation Supporting Documentation

GC/MS ORGANIC DATA VALIDATION CHECKLIST

VALIDATION LEVEL:	A	B	[✓ C]	D	E

PROJECT: RCBRA		DATA PACKAGE: K1540	
VALIDATOR: BLR	LAB: LLI		DATE: 11/28/05
		SDG: K1540	

ANALYSES PERFORMED

[✓ SW-846 8260]		SW-846 8260 (TCLP)	SW-846 8270		SW-846 8270 (TCLP)

SAMPLES/MATRIX

J18610 J18690 J18751 J18745 J18756 J18777

J18702 J18704 J18705 J18766 J18767 J17612

J17803 J18742 J18673

Soil

1. DATA PACKAGE COMPLETENESS AND CASE NARRATIVE

Technical verification documentation present? .... Yes [✓ No] N/A

Comments:

2. INSTRUMENT TUNING AND CALIBRATION (Levels D and E)

GC/MS tuning/performance check acceptable? .... Yes No [✓ N/A]

Initial calibrations acceptable? .... Yes No [✓ N/A]

Continuing calibrations acceptable? .... Yes No [✓ N/A]

Standards traceable? .... Yes No [✓ N/A]

Standards expired? .... Yes No [✓ N/A]

Calculation check acceptable? .... Yes No [✓ N/A]

Comments:

GC/MS ORGANIC DATA VALIDATION CHECKLIST

3. BLANKS (Levels B, C, D, and E)

Calibration blanks analyzed? (Levels D, E) .... Yes No [✓ N/A]
Calibration blank results acceptable? (Levels D, E) .... Yes No [✓ N/A]
Laboratory blanks analyzed? .... Yes No N/A
Laboratory blank results acceptable? .... Yes No N/A
Field/trip blanks analyzed? (Levels C, D, E) .... [✓ Yes] No N/A
Field/trip blank results acceptable? (Levels C, D, E) .... Yes [✓ No] N/A
Transcription/calculation errors? (Levels D, E) .... Yes No [✓ N/A]
Comments: MB - 610 + 630 [illegible]

FB 680 472 -

4. ACCURACY (Levels C, D, and E)

Surrogates/system monitoring compounds analyzed? .... [✓ Yes] No N/A
Surrogate/system monitoring compound recoveries acceptable? .... [✓ Yes] No N/A
Surrogates traceable? (Levels D, E) .... Yes No [✓ N/A]
Surrogates expired? (Levels D, E) .... Yes No [✓ N/A]
MS/MSD samples analyzed? .... [✓ Yes] No N/A
MS/MSD results acceptable? .... Yes [✓ No] N/A
MS/MSD standards NIST traceable? (Levels D, E) .... Yes No [✓ N/A]
MS/MSD standards? (Levels D, E) .... Yes No [✓ N/A]
LCS/BSS samples analyzed? .... [✓ Yes] No N/A
LCS/BSS results acceptable? .... Yes [✓ No] N/A
Standards traceable? (Levels D, E) .... Yes No [✓ N/A]
Standards expired? (Levels D, E) .... Yes No [✓ N/A]
Transcription/calculation errors? (Levels D, E) .... Yes No [✓ N/A]
Performance audit sample(s) analyzed? .... Yes [✓ No] N/A
Performance audit sample results acceptable? .... Yes No [✓ N/A]
Comments: No PAS

LCS 152% MS 163% 173% — [illegible] — 7680

GC/MS ORGANIC DATA VALIDATION CHECKLIST

5. PRECISION (Levels C, D, and E)

MS/MSD samples analyzed? .... Yes No N/A

MS/MSD RPD values acceptable? .... Yes No N/A

MS/MSD standards NIST traceable? (Levels D, E) .... Yes No [✓ N/A]

MS/MSD standards expired? (Levels D, E) .... Yes No [✓ N/A]

Field duplicate RPD values acceptable? .... [✓ Yes] No N/A

Field split RPD values acceptable? .... Yes No [✓ N/A]

Transcription/calculation errors? (Levels D, E) .... Yes No [✓ N/A]

Comments: RPD - 2-hexanone - 61% + 69% - J

6. SYSTEM PERFORMANCE (Levels D and E)

Internal standards analyzed? .... Yes No [✓ N/A]

Internal standard areas acceptable? .... Yes No [✓ N/A]

Internal standard retention times acceptable? .... Yes No [✓ N/A]

Standards traceable? .... Yes No [✓ N/A]

Standards expired? .... Yes No [✓ N/A]

Transcription/calculation errors? .... Yes No [✓ N/A]

Comments:

7. HOLDING TIMES (all levels)

Samples properly preserved? .... [✓ Yes] No N/A

Sample holding times acceptable? .... [✓ Yes] No N/A

Comments:

GC/MS ORGANIC DATA VALIDATION CHECKLIST

8. COMPOUND IDENTIFICATION, QUANTITATION, AND DETECTION LIMITS (all levels)

Compound identification acceptable? (Levels D, E) .... Yes No [✓ N/A]
Compound quantitation acceptable? (Levels D, E) .... Yes No [✓ N/A]
Results reported for all requested analyses? .... [✓ Yes] No N/A
Results supported in the raw data? (Levels D, E) .... Yes No [✓ N/A]
Samples properly prepared? (Levels D, E) .... Yes No [✓ N/A]
Laboratory properly identified and coded all TIC? (Levels D, E) .... Yes No [✓ N/A]
Detection limits meet RDL? .... Yes [✓ No] N/A
Transcription/calculation errors? (Levels D, E) .... Yes No [✓ N/A]
Comments: 14 out

9. SAMPLE CLEANUP (Levels D and E)

GPC cleanup performed? .... Yes No [✓ N/A]
GPC check performed? .... Yes No [✓ N/A]
GPC check recoveries acceptable? .... Yes No [✓ N/A]
GPC calibration performed? .... Yes No [✓ N/A]
GPC calibration check performed? .... Yes No [✓ N/A]
GPC calibration check retention times acceptable? .... Yes No [✓ N/A]
Check/calibration materials traceable? .... Yes No [✓ N/A]
Check/calibration materials Expired? .... Yes No [✓ N/A]
Analytical batch QC given similar cleanup? .... Yes No [✓ N/A]
Transcription/Calculation Errors? .... Yes No [✓ N/A]
Comments:

Appendix 6

Additional Documentation Requested by Client

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

WC-Hanford, Inc. 2620 Fermi Avenue Richland WA, 99354	Project: RC-116 Project Number: (none) Project Manager: Joan Kessner	Reported: 04/03/2009 12:12

Volatile Organic Compounds by SW846 8260B - Quality Control

Lionville Laboratory

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch L902165 - SW 5035										
LCS (L902165-BS1)				Prepared & Analyzed: 02/15/2009						
Surrogate: 1,2-Dichloroethane-d4	*44.9*		ug/kg wet	*50.000*		*90*	*63-131*			
Surrogate: Toluene-d8	*51.4*		"	*50.000*		*103*	*68-140*			
Surrogate: 4-Bromofluorobenzene	*53.3*		"	*50.000*		*107*	*66-131*			
Batch L902166 - SW 5035										
Blank (L902166-BLK1)				Prepared & Analyzed: 02/16/2009						
1,1,1-Trichloroethane	ND	5.00	ug/kg wet							U
1,1,2,2-Tetrachloroethane	ND	5.00	"							U
1,1,2-Trichloroethane	ND	5.00	"							U
1,1-Dichloroethane	ND	5.00	"							U
1,1-Dichloroethene	ND	5.00	"							U
1,2-Dichloroethane	ND	6.00	"							U
1,2-Dichloropropane	ND	5.00	"							U
2-Butanone	ND	12.0	"							U
2-Hexanone	ND	12.0	"							U
4-Methyl-2-pentanone	ND	12.0	"							U
Acetone	ND	12.0	"							U
Benzene	ND	5.00	"							U
Bromodichloromethane	ND	6.00	"							U
Bromoform	ND	5.00	"							U
Bromomethane	ND	10.0	"							U
Carbon Disulfide	ND	5.00	"							U
Carbon Tetrachloride	ND	5.00	"							U
Chlorobenzene	ND	5.00	"							U
Chloroethane	ND	10.0	"							U
Chloroform	ND	5.00	"							U
Chloromethane	ND	10.0	"							U
cis-1,3-Dichloropropene	ND	5.00	"							U
Dibromochloromethane	ND	5.00	"							U
Ethylbenzene	ND	5.00	"							U
Methylene Chloride	ND	6.00	"							U
Styrene	ND	5.00	"							U
Tetrachloroethene	ND	5.00	"							U
Toluene	ND	5.00	"							U
trans-1,3-Dichloropropene	ND	5.00	"							U
Trichloroethene	ND	5.00	"							U
Vinyl chloride	ND	10.0	"							U

264 Welsh Pool Road
Exton, PA 19341
Phone 610-280-3000
Fax: 610-280-3041

WC-Hanford, Inc. 2620 Fermi Avenue Richland WA, 99354	Project: RC-116 Project Number: [none] Project Manager: Joan Kessner	Reported: 04/03/2009 12:12

Volatile Organic Compounds by SW846 8260B - Quality Control

Lionville Laboratory

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch L902166 - SW 5035										
Blank (L902166-BLK1)				Prepared & Analyzed: 02/16/2009						
Xylenes, total	ND	6.00	ug/kg wet							U
cis-1,2-Dichloroethene	ND	5.00	"							U
trans-1,2-Dichloroethene	ND	5.00	"							U
Tentatively Identified Compound	0.00		"							U
Surrogate: 1,2-Dichloroethane-d4	*45.2*		"	*50.000*		*90*	*65-151*			
Surrogate: Toluene-d8	*50.0*		"	*50.000*		*100*	*68-140*			
Surrogate: 4-Bromofluorobenzene	*53.4*		"	*50.000*		*107*	*66-122*			
LCS (L902166-BS1)				Prepared & Analyzed: 02/16/2009						
1,1,1-Trichloroethane	52.3	5.00	ug/kg wet	50.000		105	60-140			
1,1,2,2-Tetrachloroethane	37.3	5.00	"	50.000		75	70-130			
1,1,2-Trichloroethane	41.1	5.00	"	50.000		82	70-130			
1,1-Dichloroethane	54.1	5.00	"	50.000		108	60-140			
1,1-Dichloroethene	60.8	5.00	"	50.000		122	60-130			
1,2-Dichloroethane	40.1	6.00	"	50.000		80	60-140			
1,2-Dichloropropane	50.8	5.00	"	50.000		102	70-130			
2-Butanone	54.6	12.0	"	50.000		109	20-200			
2-Hexanone	47.8	12.0	"	50.000		96	20-200			
4-Methyl-2-pentanone	33.6	12.0	"	50.000		67	30-150			
Acetone	57.0	12.0	"	50.000		114	20-200			
Benzene	53.0	5.00	"	50.000		106	70-130			
Bromodichloromethane	45.2	6.00	"	50.000		90	60-140			
Bromoform	35.7	5.00	"	50.000		71	60-140			
Bromomethane	49.4	10.0	"	50.000		99	30-180			
Carbon Disulfide	63.6	5.00	"	50.000		127	60-140			
Carbon Tetrachloride	55.5	5.00	"	50.000		111	60-140			
Chlorobenzene	50.5	5.00	"	50.000		101	70-130			
Chloroethane	69.1	10.0	"	50.000		138	30-180			
Chloroform	52.0	5.00	"	50.000		104	60-140			
Chloromethane	63.2	10.0	"	50.000		126	30-180			
cis-1,3-Dichloropropene	44.3	5.00	"	50.000		89	70-130			
Dibromochloromethane	41.5	5.00	"	50.000		83	70-130			
Ethylbenzene	53.6	5.00	"	50.000		107	70-130			
Methylene Chloride	51.7	6.00	"	50.000		103	30-180			
Styrene	49.8	5.00	"	50.000		100	70-130			
Tetrachloroethene	52.3	5.00	"	50.000		105	60-140			
Toluene	54.2	5.00	"	50.000		108	70-130			
trans-1,3-Dichloropropene	39.9	5.00	"	50.000		80	70-130			

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

WC-Hanford, Inc. 2620 Fermi Avenue Richland WA, 99354	Project: RC-116 Project Number: (none) Project Manager: Joan Kessner	Reported: 04/03/2009 12:17

Volatile Organic Compounds by SW846 8260B - Quality Control
Lionville Laboratory

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch L902166 - SW 5035										
LCS (L902166-BS1)				Prepared & Analyzed: 02/16/2009						
Trichloroethene	54.4	5.00	ug/kg wet	50.000		109	70-130			
Vinyl chloride	66.2	10.0	"	50.000		132	50-180			
Xylenes, total	164	6.00	"	150.00		110	70-130			
cis-1,2-Dichloroethene	50.4	5.00	"	50.000		101	60-140			
trans-1,2-Dichloroethene	58.1	5.00	"	50.000		116	60-140			
Surrogate: 1,2-Dichloroethane-d4	*37.3*		"	*50.000*		*75*	*43-131*			
Surrogate: Toluene-d8	*49.5*		"	*50.000*		*99*	*44-140*			
Surrogate: 4-Bromofluorobenzene	*51.1*		"	*50.000*		*103*	*66-133*			
Matrix Spike (L902166-MS1)		Source: 0902036-12		Prepared & Analyzed: 02/16/2009						
1,1,1-Trichloroethane	48.7	4.63	ug/kg wet	46.296	ND	105	60-140			
1,1,2,2-Tetrachloroethane	49.8	4.63	"	46.296	ND	108	70-130			
1,1,2-Trichloroethane	48.5	4.63	"	46.296	ND	105	70-130			
1,1-Dichloroethene	52.9	4.63	"	46.296	ND	114	60-140			
1,1-Dichloroethane	56.6	4.63	"	46.296	ND	122	60-130			
1,2-Dichloroethane	48.3	5.56	"	46.296	ND	104	60-140			
1,2-Dichloropropane	54.5	4.63	"	46.296	ND	118	70-130			
2-Butanone	105	11.1	"	46.296	ND	226	20-200			
2-Hexanone	88.2	11.1	"	46.296	ND	190	20-200			
4-Methyl-2-pentanone	62.6	11.1	"	46.296	ND	135	50-150			
Acetone	104	11.1	"	46.296	ND	225	20-200			
Benzene	50.4	4.63	"	46.296	ND	109	70-130			
Bromodichloromethane	50.3	5.56	"	46.296	ND	109	60-140			
Bromoform	49.5	4.63	"	46.296	ND	107	60-140			
Bromomethane	51.6	9.26	"	46.296	ND	111	30-180			
Carbon Disulfide	57.4	4.63	"	46.296	ND	124	60-140			
Carbon Tetrachloride	51.6	4.63	"	46.296	ND	111	60-140			
Chlorobenzene	48.0	4.63	"	46.296	ND	104	70-130			
Chloroethane	62.0	9.26	"	46.296	ND	134	30-180			
Chloroform	51.2	4.63	"	46.296	ND	111	60-140			
Chloromethane	48.1	9.26	"	46.296	ND	104	50-180			
cis-1,3-Dichloropropene	44.3	4.63	"	46.296	ND	96	70-130			
Dibromochloromethane	50.0	4.63	"	46.296	ND	108	70-130			
Ethylbenzene	47.1	4.63	"	46.296	ND	102	70-130			
Methylene Chloride	52.2	5.56	"	46.296	ND	113	50-180			
Styrene	50.4	4.63	"	46.296	ND	109	70-130			
Tetrachloroethene	45.9	4.63	"	46.296	ND	99	60-140			
Toluene	49.4	4.63	"	46.296	ND	107	70-130			

244 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

WC-Hanford, Inc.	Project: RC-310	
2620 Fermi Avenue	Project Number: (none)	Reported:
Richland WA, 99354	Project Manager: Joan Kessner	04/03/2009 12:12

Volatile Organic Compounds by SW846 8260B - Quality Control

Lionville Laboratory

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch L902166 - SW 5035										
Matrix Spike (L902166-MS1)		Source: 0902036-12		Prepared & Analyzed: 02/16/2009						
trans-1,3-Dichloropropene	45.7	4.63	ug/kg wet	46.296	ND	99	70-130			
Trichloroethene	51.5	4.63	"	46.296	ND	111	70-130			
Vinyl chloride	52.3	9.26	"	46.296	ND	113	50-180			
Xylenes, total	151	5.56	"	138.89	ND	109	70-130			
cis-1,2-Dichloroethene	49.4	4.63	"	46.296	ND	107	60-140			
trans-1,2-Dichloroethene	54.8	4.63	"	46.296	ND	118	60-140			
Surrogate: 1,2-Dichloroethane-d4	*41.8*		"	*46.296*		*91*	*65-131*			
Surrogate: Toluene-d8	*43.1*		"	*46.296*		*93*	*65-140*			
Surrogate: 4-Bromofluorobenzene	*43.4*		"	*46.296*		*94*	*66-132*			
Matrix Spike Dup (L902166-MSD1)		Source: 0902036-12		Prepared & Analyzed: 02/16/2009						
1,1,1-Trichloroethane	40.4	3.91	ug/kg wet	39.062	ND	100	60-140	20	20	
1,1,2,2-Tetrachloroethane	44.3	3.91	"	39.062	ND	113	70-130	12	20	
1,1,2-Trichloroethane	43.5	3.91	"	39.062	ND	111	70-130	13	20	
1,1-Dichloroethane	43.8	3.91	"	39.062	ND	112	60-140	19	20	
1,1-Dichloroethene	46.4	3.91	"	39.062	ND	119	60-130	19	20	
1,2-Dichloroethane	41.5	4.69	"	39.062	ND	106	60-140	15	20	
1,2-Dichloropropane	44.3	3.91	"	39.062	ND	113	70-130	21	20	
2-Butanone	98.2	9.38	"	39.062	ND	251	20-200	7	20	
2-Hexanone	82.5	9.38	"	39.062	ND	211	20-200	7	20	
4-Methyl-2-pentanone	56.2	9.38	"	39.062	ND	144	50-150	11	20	
Acetone	97.1	9.38	"	39.062	ND	248	20-200	7	20	
Benzene	42.1	3.91	"	39.062	ND	108	70-130	18	20	
Bromodichloromethane	42.7	4.69	"	39.062	ND	109	60-140	16	20	
Bromoform	41.2	3.91	"	39.062	ND	106	60-140	18	20	
Bromomethane	48.7	7.81	"	39.062	ND	125	50-180	6	20	
Carbon Disulfide	48.0	3.91	"	39.062	ND	123	60-140	28	20	
Carbon Tetrachloride	43.7	3.91	"	39.062	ND	112	60-140	16	20	
Chlorobenzene	40.6	3.91	"	39.062	ND	104	70-130	17	20	
Chloroethane	52.0	7.81	"	39.062	ND	133	50-180	18	20	
Chloroform	42.9	3.91	"	39.062	ND	110	60-140	18	20	
Chloromethane	41.6	7.81	"	39.062	ND	107	50-180	14	20	
cis-1,3-Dichloropropene	38.9	3.91	"	39.062	ND	99	70-130	13	20	
Dibromochloromethane	42.0	3.91	"	39.062	ND	108	70-130	17	20	
Ethylbenzene	39.7	3.91	"	39.062	ND	102	70-130	17	20	
Methylene Chloride	46.6	4.69	"	39.062	ND	119	50-180	11	20	
Styrene	42.1	3.91	"	39.062	ND	108	70-130	18	20	
Tetrachloroethene	38.2	3.91	"	39.062	ND	98	60-140	18	20	

208 Welsh Pool Road
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WC-Hanford, Inc	Project: RC-116	
2620 Fermi Avenue	Project Number: [none]	Reported:
Richland WA, 99354	Project Manager: Joan Kessner	04/03/2009 12:12

Volatile Organic Compounds by SW846 8260B - Quality Control

Lionville Laboratory

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch L902166 - SW 5035										
Matrix Spike Dup (L902166-MSD1)		Source: 0902036-12		Prepared & Analyzed: 02/16/2009						
Toluene	40.8	3.91	ug/kg wet	39.062	ND	105	70-130	19	20	
trans-1,3-Dichloropropene	39.9	3.91	"	39.062	ND	102	70-130	14	20	
Trichloroethene	41.4	3.91	"	39.062	ND	106	70-130	22	20	
Vinyl chloride	45.5	7.81	"	39.062	ND	117	50-150	14	20	
Xylenes, total	124	4.69	"	117.19	ND	107	70-130	18	20	
cis-1,2-Dichloroethene	41.9	3.91	"	39.062	ND	107	60-140	16	20	
trans-1,2-Dichloroethene	45.9	3.91	"	39.062	ND	117	60-140	18	20	
Surrogate: 1,2-Dichloroethane-d4	*34.7*		"	*39.062*		*89*	*63-131*			
Surrogate: Toluene-d8	*35.4*		"	*39.062*		*91*	*68-140*			
Surrogate: 4-Bromofluorobenzene	*38.3*		"	*39.062*		*98*	*66-137*			

WC-Hanford, Inc.	Project: AC-116	
2620 Fermi Avenue	Project Number: K1539	Reported:
Richland WA, 99354	Project Manager: Joan Kessner	04/03/2009 15:08

Volatile Organic Compounds by SW846 8260B - Quality Control

Lionville Laboratory

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch L902165 - SW 5035										
Blank (L902165-BLK1)				Prepared & Analyzed: 02/13/2009						
1,1,1-Trichloroethane	ND	5.00	ug/kg wet							U
1,1,2,2-Tetrachloroethane	ND	5.00	"							U
1,1,2-Trichloroethane	ND	5.00	"							U
1,1-Dichloroethane	ND	5.00	"							U
1,1-Dichloroethene	ND	5.00	"							U
1,2-Dichloroethane	ND	6.00	"							U
1,2-Dichloropropane	ND	5.00	"							U
2-Butanone	ND	12.0	"							U
2-Hexanone	ND	12.0	"							U
4-Methyl-2-pentanone	ND	12.0	"							U
Acetone	ND	12.0	"							U
Benzene	ND	5.00	"							U
Bromodichloromethane	ND	6.00	"							U
Bromoform	ND	5.00	"							U
Bromomethane	ND	10.0	"							U
Carbon Disulfide	ND	5.00	"							U
Carbon Tetrachloride	ND	5.00	"							U
Chlorobenzene	ND	5.00	"							U
Chloroethane	ND	10.0	"							U
Chloroform	ND	5.00	"							U
Chloromethane	ND	10.0	"							U
cis-1,3-Dichloropropene	ND	5.00	"							U
Dibromochloromethane	ND	5.00	"							U
Ethylbenzene	ND	5.00	"							U
Methylene Chloride	ND	6.00	"							U
Styrene	ND	5.00	"							U
Tetrachloroethene	ND	5.00	"							U
Toluene	ND	5.00	"							U
trans-1,3-Dichloropropene	ND	5.00	"							U
Trichloroethene	ND	5.00	"							U
Vinyl chloride	ND	10.0	"							U
Xylenes, total	ND	6.00	"							U
cis-1,2-Dichloroethene	ND	5.00	"							U
trans-1,2-Dichloroethene	ND	5.00	"							U
Tentatively Identified Compound	0.00		"							U
Surrogate: 1,2-Dichloroethane-d4	*42.6*		"	*50.000*		*85*	*63-131*			
Surrogate: Toluene-d8	*50.0*		"	*50.000*		*100*	*68-140*			

LVL
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WC-Hanford, Inc. 2620 Fermi Avenue Richland WA, 99354	Project: RC-116 Project Number: K15.19 Project Manager: Joan Kessner	Reported: 04/03/2009 15:08

Volatile Organic Compounds by SW846 8260B - Quality Control
Lionville Laboratory

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch L902164 - SW 5035										
Blank (L902165-BLK1)				Prepared & Analyzed: 02/15/2009						
Surrogate: 4-Bromofluorobenzene	*51.4*		*ug/kg wet*	*50.0*		*103*	*66-122*			
Blank (L902165-BLK2)				Prepared & Analyzed: 02/16/2009						
1,1,1-Trichloroethane	ND	5.00	ug/kg wet							U
1,1,2,2-Tetrachloroethane	ND	5.00	"							U
1,1,2-Trichloroethane	ND	5.00	"							U
1,1-Dichloroethane	ND	5.00	"							U
1,1-Dichloroethene	ND	5.00	"							U
1,2-Dichloroethane	ND	6.00	"							U
1,2-Dichloropropane	ND	5.00	"							U
2-Butanone	ND	12.0	"							U
2-Hexanone	ND	12.0	"							U
4-Methyl-2-pentanone	ND	12.0	"							U
Acetone	ND	12.0	"							U
Benzene	ND	5.00	"							U
Bromodichloromethane	ND	4.00	"							U
Bromoform	ND	5.00	"							U
Bromomethane	ND	10.0	"							U
Carbon Disulfide	ND	5.00	"							U
Carbon Tetrachloride	ND	5.00	"							U
Chlorobenzene	ND	5.00	"							U
Chloroethane	ND	10.0	"							U
Chloroform	ND	5.00	"							U
Chloromethane	ND	10.0	"							U
cis-1,3-Dichloropropene	ND	5.00	"							U
Dibromochloromethane	ND	5.00	"							U
Ethylbenzene	ND	5.00	"							U
Methylene Chloride	ND	6.00	"							U
Styrene	ND	5.00	"							U
Tetrachloroethene	ND	5.00	"							U
Toluene	ND	5.00	"							U
trans-1,3-Dichloropropene	ND	5.00	"							U
Trichloroethene	ND	5.00	"							U
Vinyl chloride	ND	10.0	"							U
Xylenes, total	ND	6.00	"							U
cis-1,2-Dichloroethene	ND	5.00	"							U
trans-1,2-Dichloroethene	ND	5.00	"							U
Tentatively Identified Compound	0.00		"							U

LVL

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WC-Hanford, Inc. 2620 Fermi Avenue Richland WA, 99354	Project: RC-116 Project Number: K1539 Project Manager: Joan Kessner	Reported: 04/03/2009 15:08

Volatile Organic Compounds by SW846 8260B - Quality Control
Lionville Laboratory

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch L902165 - SW 5035										
Blank (L902165-BLK2)				Prepared & Analyzed: 02/16/2009						
Surrogate: 1,2-Dichloroethane-d4	*45.2*		ug/kg wet	*50.000*		*90*	*61-131*			
Surrogate: Toluene-d8	*50.0*		"	*50.000*		*100*	*66-140*			
Surrogate: 4-Bromofluorobenzene	*53.6*		"	*50.000*		*107*	*66-133*			
LCS (L902165-BS1)				Prepared & Analyzed: 02/15/2009						
1,1,1-Trichloroethane	47.9	5.00	ug/kg wet	50.000		96	60-140			
1,1,2,2-Tetrachloroethane	50.2	5.00	"	50.000		100	70-130			
1,1,2-Trichloroethane	49.7	5.00	"	50.000		99	70-130			
1,1-Dichloroethane	50.5	5.00	"	50.000		101	60-140			
1,1-Dichloroethene	55.1	5.00	"	50.000		110	60-130			
1,2-Dichloroethane	44.8	5.00	"	50.000		90	60-140			
1,2-Dichloropropane	52.1	5.00	"	50.000		104	70-130			
2-Butanone	67.3	10.0	"	50.000		135	20-200			
2-Hexanone	54.1	10.0	"	50.000		108	20-200			
4-Methyl-2-pentanone	46.5	10.0	"	50.000		93	30-150			
Acetone	64.4	10.0	"	50.000		129	20-200			
Benzene	50.3	5.00	"	50.000		101	70-130			
Bromodichloromethane	50.4	5.00	"	50.000		101	60-140			
Bromoform	51.5	5.00	"	50.000		103	60-140			
Bromomethane	51.9	10.0	"	50.000		104	30-180			
Carbon Disulfide	56.9	5.00	"	50.000		114	60-140			
Carbon Tetrachloride	51.9	5.00	"	50.000		104	60-140			
Chlorobenzene	49.5	5.00	"	50.000		99	70-130			
Chloroethane	60.0	10.0	"	50.000		120	50-180			
Chloroform	49.7	5.00	"	50.000		99	60-140			
Chloromethane	53.5	10.0	"	50.000		107	50-180			
cis-1,3-Dichloropropene	46.8	5.00	"	50.000		94	70-130			
Dibromochloromethane	49.5	5.00	"	50.000		99	70-130			
Ethylbenzene	49.0	5.00	"	50.000		98	70-130			
Methylene Chloride	49.0	5.00	"	50.000		98	50-160			
Styrene	51.8	5.00	"	50.000		104	70-130			
Tetrachloroethene	49.2	5.00	"	50.000		98	60-140			
Toluene	51.0	5.00	"	50.000		102	70-130			
trans-1,3-Dichloropropene	48.3	5.00	"	50.000		97	70-130			
Trichloroethene	48.4	5.00	"	50.000		97	70-130			
Vinyl chloride	57.9	10.0	"	50.000		116	50-180			
Xylenes, total	153	5.00	"	150.00		102	70-130			
cis-1,2-Dichloroethene	48.7	5.00	"	50.000		97	60-140			

WC-Hanford, Inc.
2620 Fermi Avenue
Richland WA, 99354

Project: KC-116
Project Number: K1539
Project Manager: Joan Kessner

Reported:
04/03/2009 15:08

Volatile Organic Compounds by SW846 8260B - Quality Control
Lionville Laboratory

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch L902165 - SW 5030										
LCS (L902165-BS1)				Prepared & Analyzed: 02/15/2009						
trans-1,2-Dichloroethene	52.9	5.00	ug/kg wet	50.000		106	60-140			
Surrogate: 1,2-Dichloroethane-d4	*44.9*		"	*50.000*		*90*	*65-131*			
Surrogate: Toluene-d8	*51.4*		"	*50.000*		*103*	*68-140*			
Surrogate: 4-Bromofluorobenzene	*53.5*		"	*50.000*		*107*	*66-132*			
LCS (L902165-BS2)				Prepared & Analyzed: 02/16/2009						
1,1,1-Trichloroethane	52.3	5.00	ug/kg wet	50.000		105	60-140			
1,1,2,2-Tetrachloroethane	37.3	5.00	"	50.000		75	70-130			
1,1,2-Trichloroethane	41.1	5.00	"	50.000		82	70-130			
1,1-Dichloroethane	54.1	5.00	"	50.000		108	60-140			
1,1-Dichloroethene	60.8	5.00	"	50.000		122	60-130			
1,2-Dichloroethane	40.1	5.00	"	50.000		80	60-140			
1,2-Dichloropropane	50.8	5.00	"	50.000		102	70-130			
2-Butanone	54.6	12.0	"	50.000		109	30-200			
2-Hexanone	47.8	12.0	"	50.000		96	30-200			
4-Methyl-2-pentanone	33.6	12.0	"	50.000		67	50-150			
Acetone	57.0	12.0	"	50.000		114	20-200			
Benzene	53.0	5.00	"	50.000		106	70-130			
Bromodichloromethane	45.2	5.00	"	50.000		90	60-140			
Bromoform	35.7	5.00	"	50.000		71	60-140			
Bromomethane	49.4	10.0	"	50.000		99	50-180			
Carbon Disulfide	63.6	5.00	"	50.000		127	60-140			
Carbon Tetrachloride	55.5	5.00	"	50.000		111	60-140			
Chlorobenzene	50.5	5.00	"	50.000		101	70-130			
Chloroethane	69.1	10.0	"	50.000		138	50-180			
Chloroform	52.0	5.00	"	50.000		104	60-140			
Chloromethane	63.2	10.0	"	50.000		126	50-180			
cis-1,3-Dichloropropene	44.3	5.00	"	50.000		89	70-130			
Dibromochloromethane	41.5	5.00	"	50.000		83	70-130			
Ethylbenzene	53.6	5.00	"	50.000		107	70-130			
Methylene Chloride	51.7	5.00	"	50.000		103	50-180			
Styrene	49.8	5.00	"	50.000		100	70-130			
Tetrachloroethene	52.5	5.00	"	50.000		105	60-140			
Toluene	54.2	5.00	"	50.000		108	70-130			
trans-1,3-Dichloropropene	39.9	5.00	"	50.000		80	70-130			
Trichloroethene	54.4	5.00	"	50.000		109	70-130			
Vinyl chloride	66.2	10.0	"	50.000		132	50-180			
Xylenes, total	164	5.00	"	150.00		110	70-130			

LVL

264 Welsh Pool Road
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WC-Hanford, Inc. 2620 Fermi Avenue Richland WA, 99354	Project: RC-116 Project Number: K1339 Project Manager: Joan Kessner	Reported: 04/01/2009 15:08

Volatile Organic Compounds by SW846 8260B - Quality Control

Lionville Laboratory

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch L902165 - SW 5035										
LCS (L902165-BS1)				Prepared & Analyzed: 02/16/2009						
cis-1,2-Dichloroethene	50.4	5.00	ug/kg wet	50.000		101	60-140			
trans-1,2-Dichloroethene	58.1	5.00	"	50.000		116	60-140			
Surrogate: 1,2-Dichloroethane-d4	*37.5*		"	*50.000*		*75*	*65-131*			
Surrogate: Toluene-d8	*49.5*		"	*50.000*		*99*	*68-140*			
Surrogate: 4-Bromofluorobenzene	*51.5*		"	*50.000*		*103*	*66-122*			
Matrix Spike (L902165-MS1)		Source: 0902041-04		Prepared & Analyzed: 02/16/2009						
1,1,1-Trichloroethane	43.8	4.03	ug/kg wet	40.323	ND	109	60-140			
1,1,2,2-Tetrachloroethane	42.3	4.03	"	40.323	ND	105	70-130			
1,1,2-Trichloroethane	42.5	4.03	"	40.323	ND	105	70-130			
1,1-Dichloroethane	46.0	4.03	"	40.323	ND	114	60-140			
1,1-Dichloroethene	50.0	4.03	"	40.323	ND	124	60-130			
1,2-Dichloroethane	42.4	4.84	"	40.323	ND	105	60-140			
1,2-Dichloropropane	47.1	4.03	"	40.323	ND	117	70-130			
2-Butanone	92.8	9.68	"	40.323	ND	230	20-200			
2-Hexanone	75.6	9.68	"	40.323	ND	187	20-200			
4-Methyl-2-pentanone	56.4	9.68	"	40.323	ND	140	50-130			
Acetone	92.7	9.68	"	40.323	ND	230	20-200			
Benzene	45.7	4.03	"	40.323	ND	113	70-130			
Bromodichloromethane	45.5	4.84	"	40.323	ND	113	60-140			
Bromoform	42.6	4.03	"	40.323	ND	106	60-140			
Bromomethane	52.0	8.06	"	40.323	ND	129	30-180			
Carbon Disulfide	51.9	4.03	"	40.323	ND	129	60-140			
Carbon Tetrachloride	47.2	4.03	"	40.323	ND	117	60-140			
Chlorobenzene	42.3	4.03	"	40.323	ND	105	70-130			
Chloroethane	56.9	8.06	"	40.323	ND	141	50-180			
Chloroform	45.9	4.03	"	40.323	ND	114	60-140			
Chloromethane	44.8	8.06	"	40.323	ND	111	30-180			
cis-1,3-Dichloropropene	40.0	4.03	"	40.323	ND	99	70-130			
Dibromochloromethane	42.3	4.03	"	40.323	ND	105	70-130			
Ethylbenzene	41.3	4.03	"	40.323	ND	102	70-130			
Methylene Chloride	50.0	4.84	"	40.323	ND	124	40-180			
Styrene	43.6	4.03	"	40.323	ND	108	70-130			
Tetrachloroethene	39.8	4.03	"	40.323	ND	99	60-140			
Toluene	43.4	4.03	"	40.323	ND	108	70-130			
trans-1,3-Dichloropropene	39.4	4.03	"	40.323	ND	98	70-130			
Trichloroethene	44.8	4.03	"	40.323	ND	111	70-130			
Vinyl chloride	49.3	8.06	"	40.323	ND	122	50-180			

264 Welsh Pool Road
Exton, PA 19341
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WC-Hanford, Inc. 2620 Fermi Avenue Richland WA 99354	Project: RC-116 Project Number: K1539 Project Manager: Joan Kessner	Reported: 04/03/2009 15:08

Volatile Organic Compounds by SW846 8260B - Quality Control
Lionville Laboratory

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch L902165 - SW 5035										
Matrix Spike (L902165-MS1)		**Source: 0902041-04**		**Prepared & Analyzed: 02/16/2009**						
Xylenes, total	133	4.84	mg/kg wet	120.97	ND	110	70-130			
cis-1,2-Dichloroethene	44.3	4.03	"	40.323	ND	110	60-140			
trans-1,2-Dichloroethene	49.4	4.03	"	40.323	ND	122	60-140			
Surrogate: 1,2-Dichloroethane-d4	*38.1*		"	*40.323*		*94*	*65-137*			
Surrogate: Toluene-d8	*39.1*		"	*40.323*		*97*	*68-140*			
Surrogate: 4-Bromofluorobenzene	*39.0*		"	*40.323*		*97*	*66-133*			
Matrix Spike Dup (L902165-MSD1)		**Source: 0902041-04**		**Prepared & Analyzed: 02/16/2009**						
1,1,1-Trichloroethane	43.9	4.24	mg/kg wet	42.373	ND	104	60-140	0.3	20	
1,1,2,2-Tetrachloroethane	41.6	4.24	"	42.373	ND	98	70-130	2	20	
1,1,2-Trichloroethane	43.9	4.24	"	42.373	ND	104	70-130	3	20	
1,1-Dichloroethane	46.8	4.24	"	42.373	ND	111	60-140	2	20	
1,1-Dichloroethene	51.0	4.24	"	42.373	ND	120	60-130	2	20	
1,2-Dichloroethane	45.2	5.08	"	42.373	ND	107	60-140	2	20	
1,2-Dichloropropane	50.0	4.24	"	42.373	ND	118	70-130	6	20	
2-Butanone	85.6	10.2	"	42.373	ND	202	20-200	8	20	
2-Hexanone	81.2	10.2	"	42.373	ND	192	20-200	7	20	
4-Methyl-2-pentanone	57.9	10.2	"	42.373	ND	137	50-150	3	20	
Acetone	90.2	10.2	"	42.373	ND	213	20-200	1	20	
Benzene	46.7	4.24	"	42.373	ND	110	70-130	2	20	
Bromodichloromethane	46.1	5.08	"	42.373	ND	109	60-140	1	20	
Bromoform	43.6	4.24	"	42.373	ND	103	60-140	2	20	
Bromomethane	51.8	8.47	"	42.373	ND	122	50-180	0.4	20	
Carbon Disulfide	52.0	4.24	"	42.373	ND	123	60-140	0.08	20	
Carbon Tetrachloride	46.9	4.24	"	42.373	ND	111	60-140	0.7	20	
Chlorobenzene	45.1	4.24	"	42.373	ND	106	70-130	6	20	
Chloroethane	56.4	8.47	"	42.373	ND	133	50-180	0.9	20	
Chloroform	47.5	4.24	"	42.373	ND	112	60-140	4	20	
Chloromethane	44.1	8.47	"	42.373	ND	104	50-180	1	20	
cis-1,3-Dichloropropene	42.4	4.24	"	42.373	ND	100	70-130	6	20	
Dibromochloromethane	44.2	4.24	"	42.373	ND	104	70-130	4	20	
Ethylbenzene	43.4	4.24	"	42.373	ND	102	70-130	5	20	
Methylene Chloride	47.1	5.08	"	42.373	ND	111	50-180	4	20	
Styrene	47.6	4.24	"	42.373	ND	112	70-130	9	20	
Tetrachloroethene	40.4	4.24	"	42.373	ND	95	60-140	1	20	
Toluene	46.3	4.24	"	42.373	ND	109	70-130	6	20	
trans-1,3-Dichloropropene	43.2	4.24	"	42.373	ND	102	70-130	9	20	
Trichloroethene	46.0	4.24	"	42.373	ND	109	70-130	5	20	

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Phone: 610-280-3000
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WC-Hanford, Inc. 2620 Fermi Avenue Richland WA, 99354	Project: RC-110 Project Number: K1539 Project Manager: Joan Kessner	Reported: 04/03/2009 15:08

Volatile Organic Compounds by SW846 8260B - Quality Control
Lionville Laboratory

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch L902165 - SW 5035										
Matrix Spike Dup (L902165-MSD1)		**Source: 0902041-04**		**Prepared & Analyzed: 02/16/2009**						
Vinyl chloride	49.1	8.47	ug/kg wet	42.373	ND	116	50-180	0.7	30	
Xylenes, total	142	5.08	"	127.12	ND	111	76-130	6	30	
cis-1,2-Dichloroethene	44.8	4.24	"	42.373	ND	106	60-140	1	20	
trans-1,2-Dichloroethene	49.0	4.24	"	42.373	ND	116	60-140	0.8	20	
Surrogate: 1,2-Dichloroethane-d4	*37.7*		"	*42.373*		*89*	*65-131*			
Surrogate: Toluene-d8	*40.5*		"	*42.373*		*96*	*68-140*			
Surrogate: 4-Bromofluorobenzene	*40.6*		"	*42.373*		*96*	*66-122*			

Volatile Organic Compounds by SW846 8260B - Quality Control
Lionville Laboratory

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch L902166 - SW 5035										
LCS (L902166-BS1)				Prepared & Analyzed: 02/16/2009						
Trichloroethene	54.4	5.00	ug/kg wet	50.000		109	70-130			
Vinyl chloride	66.2	10.0	"	50.000		132	50-180			
Xylenes, total	164	6.00	"	150.00		110	70-130			
cis-1,2-Dichloroethene	50.4	5.00	"	50.000		101	60-140			
trans-1,2-Dichloroethene	58.1	5.00	"	50.000		116	60-140			
Surrogate: 1,2-Dichloroethane-d4	*37.3*		"	*50.000*		*75*	*63-131*			
Surrogate: Toluene-d8	*49.5*		"	*50.000*		*99*	*68-140*			
Surrogate: 4-Bromofluorobenzene	*51.3*		"	*50.000*		*103*	*66-132*			
Batch L902167 - SW 5035										
Blank (L902167-BLK1)				Prepared & Analyzed: 02/17/2009						
1,1,1-Trichloroethane	ND	5.00	ug/kg wet							
1,1,2,2-Tetrachloroethane	ND	5.00	"							
1,1,2-Trichloroethane	ND	5.00	"							
1,1-Dichloroethane	ND	5.00	"							
1,1-Dichloroethene	ND	5.00	"							
1,2-Dichloroethane	ND	6.00	"							
1,2-Dichloropropane	ND	5.00	"							
2-Butanone	ND	12.0	"							
2-Hexanone	ND	12.0	"							
4-Methyl-2-pentanone	ND	12.0	"							
Acetone	ND	12.0	"							
Benzene	ND	5.00	"							
Bromodichloromethane	ND	6.00	"							
Bromoform	ND	5.00	"							
Bromomethane	ND	16.0	"							
Carbon Disulfide	ND	5.00	"							
Carbon Tetrachloride	ND	5.00	"							
Chlorobenzene	ND	5.00	"							
Chloroethane	ND	19.9	"							
Chloroform	ND	5.00	"							
Chloromethane	ND	10.0	"							
cis-1,3-Dichloropropene	ND	5.00	"							
Dibromochloromethane	ND	5.00	"							
Ethylbenzene	ND	5.00	"							
Methylene Chloride	5.83	6.00	"							
Styrene	ND	5.00	"							

Volatile Organic Compounds by SW846 8260B - Quality Control
Lionville Laboratory

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch L902167 - SW 5035										
Blank (L902167-BLK1)				Prepared & Analyzed: 02/17/2009						
Tetrachloroethene	ND	5.00	ug/kg wet							
Toluene	ND	5.00	"							
trans-1,3-Dichloropropene	ND	5.00	"							
Trichloroethene	ND	5.00	"							
Vinyl chloride	ND	10.0	"							
Xylenes, total	ND	6.00	"							
cis-1,2-Dichloroethene	ND	5.00	"							
trans-1,2-Dichloroethene	ND	5.00	"							
Tentatively Identified Compound	0.00		"							
Surrogate: 1,2-Dichloroethane-d4	*46.8*		"	*50.000*		*94*	*63-131*			
Surrogate: Toluene-d8	*51.0*		"	*50.000*		*107*	*68-140*			
Surrogate: 4-Bromofluorobenzene	*53.5*		"	*50.000*		*107*	*66-122*			
LCS (L902167-BS1)				Prepared & Analyzed: 02/17/2009						
1,1,1-Trichloroethane	49.8	5.00	ug/kg wet	50.000		100	60-140			
1,1,2,2-Tetrachloroethane	43.4	5.00	"	50.000		87	70-130			
1,1,2-Trichloroethane	44.4	5.00	"	50.000		89	70-130			
1,1-Dichloroethane	52.4	5.00	"	50.000		105	60-140			
1,1-Dichloroethene	60.1	5.00	"	50.000		120	60-130			
1,2-Dichloroethane	43.6	6.00	"	50.000		87	60-140			
1,2-Dichloropropane	50.5	5.00	"	50.000		101	70-130			
2-Butanone	76.1	12.0	"	50.000		152	20-200			
2-Hexanone	57.4	12.0	"	50.000		115	20-200			
4-Methyl-2-pentanone	42.4	12.0	"	50.000		85	50-150			
Acetone	75.9	12.0	"	50.000		152	20-200			
Benzene	49.7	5.00	"	50.000		99	70-130			
Bromodichloromethane	47.3	6.00	"	50.000		95	60-140			
Bromoform	42.1	5.00	"	50.000		84	60-140			
Bromomethane	52.8	10.0	"	50.000		106	50-150			
Carbon Disulfide	59.0	5.00	"	50.000		118	60-140			
Carbon Tetrachloride	52.0	5.00	"	50.000		104	60-140			
Chlorobenzene	47.2	5.00	"	50.000		94	70-130			
Chloroethane	65.5	10.0	"	50.000		131	50-150			
Chloroform	50.2	5.00	"	50.000		100	60-140			
Chloromethane	60.2	10.0	"	50.000		120	50-150			
cis-1,3-Dichloropropene	44.3	5.00	"	50.000		89	70-130			
Dibromochloromethane	44.9	5.00	"	50.000		90	70-130			
Ethylbenzene	47.7	5.00	"	50.000		95	70-130			

Volatile Organic Compounds by SW846 8260B - Quality Control

Lionville Laboratory

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch L902167 - SW 5035										
LCS (L902167-BS1)				Prepared & Analyzed: 02/17/2009						
Methylene Chloride	53.6	6.00	ug/kg wet	50.000		107	50-180			
Styrene	47.6	5.00	"	50.000		95	70-130			
Tetrachloroethene	47.7	5.00	"	50.000		95	60-140			
Toluene	50.1	5.00	"	50.000		100	70-130			
trans-1,3-Dichloropropene	41.5	5.00	"	50.000		83	70-130			
Trichloroethene	50.2	5.00	"	50.000		100	70-130			
Vinyl chloride	63.9	10.0	"	50.000		128	50-180			
Xylenes, total	147	6.00	"	150.00		98	70-130			
cis-1,2-Dichloroethene	49.6	5.00	"	50.000		99	60-140			
trans-1,2-Dichloroethene	56.8	5.00	"	50.000		114	60-140			
Surrogate: 1,2-Dichloroethane-d4	*43.2*		"	*50.000*		*86*	*61-151*			
Surrogate: Toluene-d8	*50.9*		"	*50.000*		*102*	*68-140*			
Surrogate: 4-Bromofluorobenzene	*52.1*		"	*50.000*		*104*	*66-122*			
Matrix Spike (L902167-MS1)		Source: 0901047-01		Prepared & Analyzed: 02/17/2009						
1,1,1-Trichloroethane	46.9	4.81	ug/kg wet	48.077	ND	98	60-140			
1,1,2,2-Tetrachloroethane	47.2	4.81	"	48.077	ND	98	70-130			
1,1,2-Trichloroethane	47.9	4.81	"	48.077	ND	100	70-130			
1,1-Dichloroethane	50.5	4.81	"	48.077	ND	105	60-140			
1,1-Dichloroethene	53.8	4.81	"	48.077	ND	112	60-130			
1,2-Dichloroethane	43.8	5.77	"	48.077	ND	91	60-140			
1,2-Dichloropropane	51.0	4.81	"	48.077	ND	106	70-130			
2-Butanone	94.1	11.5	"	48.077	ND	196	20-200			
2-Hexanone	84.8	11.5	"	48.077	ND	176	20-200			
4-Methyl-2-pentanone	61.4	11.5	"	48.077	ND	128	50-150			
Acetone	92.5	11.5	"	48.077	ND	193	20-200			
Benzene	48.8	4.81	"	48.077	ND	102	70-130			
Bromodichloromethane	48.0	5.77	"	48.077	ND	100	60-140			
Bromoform	47.2	4.81	"	48.077	ND	98	60-140			
Bromomethane	52.9	9.62	"	48.077	ND	110	50-180			
Carbon Disulfide	55.6	4.81	"	48.077	ND	116	60-140			
Carbon Tetrachloride	49.3	4.81	"	48.077	ND	103	60-140			
Chlorobenzene	48.5	4.81	"	48.077	ND	101	70-130			
Chloroethane	61.5	9.62	"	48.077	ND	128	50-180			
Chloroform	49.7	4.81	"	48.077	ND	103	60-140			
Chloromethane	45.5	9.62	"	48.077	ND	95	50-180			
cis-1,3-Dichloropropene	45.4	4.81	"	48.077	ND	95	70-130			
Dibromochloromethane	47.8	4.81	"	48.077	ND	100	70-130			

WC-Hanford, Inc.	Project: RC-116	
2620 Fermi Avenue	Project Number: [none]	Reported:
Richland WA, 99354	Project Manager: Joan Kessner	04/07/2009 12:08

Volatile Organic Compounds by SW846 8260B - Quality Control
Lionville Laboratory

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch L902167 - SW 5035										
Matrix Spike (L902167-MS1)		**Source: 0902047-01**		**Prepared & Analyzed: 02/17/2009**						
Ethylbenzene	47.7	4.81	ug/kg wet	48.077	ND	99	70-130			
Methylene Chloride	53.0	5.77	"	48.077	7.57	95	50-180			
Styrene	50.5	4.81	"	48.077	ND	105	70-130			
Tetrachloroethene	47.6	4.81	"	48.077	ND	99	60-140			
Toluene	49.5	4.81	"	48.077	ND	103	70-130			
trans-1,3-Dichloropropene	44.7	4.81	"	48.077	ND	93	70-130			
Trichloroethene	48.9	4.81	"	48.077	ND	102	70-130			
Vinyl chloride	50.7	9.62	"	48.077	ND	105	50-180			
Xylenes, total	151	5.77	"	144.23	ND	105	70-130			
cis-1,2-Dichloroethene	47.2	4.81	"	48.077	ND	98	60-140			
trans-1,2-Dichloroethene	53.0	4.81	"	48.077	ND	110	60-140			
Surrogate: 1,2-Dichloroethane-d4	*40.5*		"	*48.077*		*84*	*63-131*			
Surrogate: Toluene-d8	*46.7*		"	*48.077*		*97*	*68-140*			
Surrogate: 4-Bromofluorobenzene	*46.9*		"	*48.077*		*98*	*66-132*			
Matrix Spike Dup (L902167-MSD1)		**Source: 0902047-01**		**Prepared & Analyzed: 02/17/2009**						
1,1,1-Trichloroethane	41.3	4.17	ug/kg wet	41.667	ND	99	60-140	13	20	
1,1,2,2-Tetrachloroethane	40.0	4.17	"	41.667	ND	96	70-130	16	20	
1,1,2-Trichloroethane	38.8	4.17	"	41.667	ND	93	70-130	21	20	
1,1-Dichloroethane	42.9	4.17	"	41.667	ND	103	60-140	16	20	
1,1-Dichloroethene	45.7	4.17	"	41.667	ND	110	60-130	16	20	
1,2-Dichloroethane	37.0	5.00	"	41.667	ND	89	60-140	17	20	
1,2-Dichloropropane	42.4	4.17	"	41.667	ND	102	70-130	18	20	
2-Butanone	72.9	10.0	"	41.667	ND	175	20-200	25	20	
2-Hexanone	61.9	10.0	"	41.667	ND	149	20-200	31	20	
4-Methyl-2-pentanone	48.6	10.0	"	41.667	ND	117	50-150	23	20	
Acetone	72.2	10.0	"	41.667	ND	173	20-200	25	20	
Benzene	42.4	4.17	"	41.667	ND	102	70-130	14	20	
Bromodichloromethane	41.3	5.00	"	41.667	ND	99	60-140	16	20	
Bromoform	36.9	4.17	"	41.667	ND	88	60-140	24	20	
Bromomethane	40.1	8.33	"	41.667	ND	96	50-180	27	20	
Carbon Disulfide	48.2	4.17	"	41.667	ND	116	60-140	14	20	
Carbon Tetrachloride	42.8	4.17	"	41.667	ND	103	60-140	14	20	
Chlorobenzene	41.4	4.17	"	41.667	ND	99	70-130	16	20	
Chloroethane	52.0	8.33	"	41.667	ND	125	50-180	17	20	
Chloroform	41.7	4.17	"	41.667	ND	100	60-140	17	20	
Chloromethane	41.1	8.33	"	41.667	ND	99	50-180	19	20	
cis-1,3-Dichloropropene	37.5	4.17	"	41.667	ND	90	70-130	19	20	

Volatile Organic Compounds by SW846 8260B - Quality Control
Lionville Laboratory

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch L902167 - SW 5035										
Matrix Spike Dup (L902167-MSD1)		**Source: 0902047-01**		**Prepared & Analyzed: 02/17/2009**						
Dibromochloromethane	38.4	4.17	ug/kg wet	41.667	ND	92	70-130	22	20	
Ethylbenzene	41.0	4.17	"	41.667	ND	98	70-130	15	20	
Methylene Chloride	45.4	5.00	"	41.667	7.37	91	50-180	16	20	
Styrene	41.2	4.17	"	41.667	ND	99	70-130	20	20	
Tetrachloroethene	40.0	4.17	"	41.667	ND	96	60-140	17	20	
Toluene	43.0	4.17	"	41.667	ND	103	70-130	14	20	
trans-1,3-Dichloropropene	38.0	4.17	"	41.667	ND	91	70-130	16	20	
Trichloroethene	39.8	4.17	"	41.667	ND	96	70-130	20	20	
Vinyl chloride	46.1	8.33	"	41.667	ND	111	50-180	10	20	
Xylenes, total	129	5.00	"	125.00	ND	103	70-130	16	20	
cis-1,2-Dichloroethene	39.7	4.17	"	41.667	ND	95	60-140	17	20	
trans-1,2-Dichloroethene	44.7	4.17	"	41.667	ND	107	60-140	17	20	
Surrogate: 1,2-Dichloroethane-d4	*34.6*		"	*41.667*		*83*	*65-137*			
Surrogate: Toluene-d8	*40.0*		"	*41.667*		*96*	*68-140*			
Surrogate: 4-Bromofluorobenzene	*40.9*		"	*41.667*		*98*	*66-122*			

Date: 7 December 2009
To: Washington Closure Hanford (technical representative)
From: ELR Consultants
Project: Columbia River Component of the RCBRA - Sediment
Subject: PCB/Pesticide - Data Package No. K1540-LLI

INTRODUCTION

This memo presents the results of data validation on Data Package No. K1540 prepared by Lionville Laboratory Inc. (LLI). A list of samples validated along with the analyses reported and the method of analysis is provided in the following table.

Sample ID	Sample Date	Media	Validation	Anaysis
J18610	2/12/09	Solid	C	See note 1
J18779	2/12/09	Solid	C	See note 1
J18794	2/12/09	Solid	C	See note 1
J18795	2/12/09	Solid	C	See note 1
J18796	2/12/08	Solid	C	See note 1
J18797	2/12/09	Solid	C	See note 1
J187D2	2/12/09	Solid	C	See note 1
J187D4	2/12/08	Solid	C	See note 1
J187D5	2/12/09	Solid	C	See note 1
J187K6	2/12/09	Solid	C	See note 1
J187K7	2/12/09	Solid	C	See note 1
J17X03	2/12/09	Solid	C	See note 1
J187Y2	2/12/09	Solid	C	See note 1

1 - PCBs by 8082 and pesticides by 8081A.

Data validation was conducted in accordance with the Washington Closure Hanford (WCH) validation statement of work and the Remedial Investigation Work Plan for Hanford Site Releases to the Columbia River (DOE/RL-2008-11, Rev. 0, September 2008). Appendices 1 through 6 provide the following information as indicated below:

Appendix 1. Glossary of Data Reporting Qualifiers
Appendix 2. Summary of Data Qualification
Appendix 3. Qualified Data Summary and Annotated Laboratory Reports
Appendix 4. Laboratory Narrative and Chain-of-Custody Documentation
Appendix 5. Data Validation Supporting Documentation
Appendix 6. Additional Data Requested by Client

DATA QUALITY OBJECTIVES

Holding Times & Sample Preservation

Sample data were assessed to ascertain whether the holding time requirements were met by the laboratory. The holding time requirements are as follows: Soil samples must be extracted within 14 days of the date of sample collection and analyzed within 40 days from the date of extraction.

If holding times are exceeded by less than or equal to twice times the limit, all associated sample results are qualified as estimates and flagged "J" for detects and "UJ" for non-detects. If holding times are exceeded by greater than two times the limit, all associated detected sample results are qualified as estimates and flagged "J" and all non-detects are rejected and flagged "UR"

All holding times were acceptable.

Method Blank

Method blank analyses are performed to determine the extent of laboratory contamination introduced through sampling, sample preparation or analysis. At least one method blank analysis must be conducted for every 20 samples. Method blanks should not contain target compounds at a concentration greater than required quantitation limit (RQL). If target compounds are present, sample results less than five times the blank concentration are qualified as undetected and flagged "U". If the sample result is less than five times the blank concentration and less than RQL, the result is qualified as undetected and elevated to the RQL.

Due to method blank contamination, the aldrin result in sample J187D5 was qualified as undetected and flagged "U".

All other method blank results were acceptable.

Field Blanks

No field blanks were submitted for analysis

Accuracy

Matrix Spike & Laboratory Control Sample

Matrix spike (MS) and laboratory control sample (LCS) analyses are used to assess the analytical accuracy of the reported data. The matrix spike is used to assess the effect of the matrix on the ability to accurately quantify sample concentrations. Recoveries must fall within the range of 50% to 150%. If spike recoveries are outside control limits, detected sample results less than five times the spike concentration are qualified as estimates and flagged "J". Non-detected sample results with spike recoveries outside control limits are qualified as estimates and flagged "UJ". Sample results greater than five times the spike concentration require no qualification.

Due to the lack of an LCS, matrix spike and matrix spike duplicate analysis, all toxaphene results were qualified as estimates and flagged "J".

All other accuracy results were acceptable

Surrogate Recovery

The analysis of surrogate compounds provides a measure of performance for individual samples. Matrix-specific surrogate compound recovery control windows have been established by the laboratory. When a surrogate compound recovery is outside the control window, all positively identified target compounds associated with the unacceptable surrogate recoveries are qualified as estimates and flagged "J" Non-detected compounds with surrogate recoveries less than the lower control limit are qualified as having an estimated detection limit and flagged "UJ". Non-detected compounds with surrogate recoveries above the upper control limit require no qualification.

All surrogate results were acceptable.

- **Precision**

Matrix Spike/Matrix Spike Duplicate Samples

Matrix spike/matrix spike duplicate results provide matrix-specific information on the precision of the method for specific target compound classes. Precision is expressed as the relative percent difference (RPD) between the recoveries of duplicate matrix spike analyses performed on a sample. For soil samples, results must be within RPD limits of plus/minus 30% If RPD values are out of specification and the sample concentration is less than five times the spike concentration, all associated detected sample results are qualified as estimates and flagged "J". If RPD values are out of specification and the sample concentration is greater than five times the spike concentration, no qualification is required.

Due to the lack of a matrix spike and matrix spike duplicate analysis, all toxaphene results were qualified as estimates and flagged "J".

All other precision results were acceptable.

Field Duplicate Samples

One set of field duplicates (J18810/J18795) was submitted for analysis. Field duplicates are compared using the same criteria as for laboratory duplicates. All field duplicates results were acceptable.

- **Analytical Detection Levels**

Reported analytical detection levels are compared against the project specific RQLs to ensure that laboratory detection levels meet the required criteria. All analytes met the RQL.

- **Completeness**

Data Package No. K1540 was submitted for validation and verified for completeness. Completeness is based on the percentage of data determined to be valid (i.e., not rejected). The completion percentage was 0%.

MAJOR DEFICIENCIES

None found.

MINOR DEFICIENCIES

The following minor deficiencies were noted:

- Due to method blank contamination, the aldrin result in sample J187D5 was qualified as undetected and flagged "U"
- Due to the lack of an LCS, matrix spike and matrix spike duplicate analysis, all toxaphene results were qualified as estimates and flagged "J".

Data flagged "J" indicates that the associated concentration is an estimate, but under the WCH statement of work, the data may be usable for decision-making purposes. All other validated results are considered accurate within the standard error associated with the methods.

Appendix 1

Glossary of Data Reporting Qualifiers

Qualifiers which may be applied by data validators in compliance with the procedures herein are as follows:

U - Indicates the compound or analyte was analyzed for and not detected in the sample. The value reported is the sample quantitation limit corrected for sample dilution and moisture content by the laboratory.

UJ - Indicates the compound or analyte was analyzed for and not detected in the sample. Due to a minor QC deficiency identified during the data validation, the associated quantitation limit is an estimate.

J - Indicates the compound or analyte was analyzed for and detected. Due to a minor QC deficiency identified during the data validation, the associated quantitation limit is an estimate.

R - Indicates the compound or analyte was analyzed for, detected, and due to an identified major QC deficiency, the data are unusable.

UR - Indicates the compound or analyte was analyzed for and not detected in the sample. Additionally, the data is unusable due to an identified major QC deficiency.

NJ - Indicates presumptive evidence of a compound at an estimated value. The data may not be valid for some specific applications (i.e., usable for decision-making purposes).

N - Indicates presumptive evidence of a compound. The data may not be valid for some specific applications (i.e., usable for decision-making purposes).

Appendix 2

Summary of Data Qualification

PCB/PESTICIDE DATA QUALIFICATION SUMMARY*

SDG: K1540	**REVIEWER: ELR**	**Project: RCBRA**	**QC Issue**
COMPOUND	QUALIFIER	SAMPLES AFFECTED	REASON
Aldrin	U	J187D5	Method blank contamination
Toxaphene	J	All	No MS, MSD or LCS

* - The Qualified Data Summary Table includes laboratory applied "U" qualifiers not specifically identified here. The laboratory applied "U" qualifiers are included to minimize misinterpretation of results contained in the table.

Appendix 3

Qualified Data Summary and Annotated Laboratory Reports

J18610

0902047-01 (Solid)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Lionville Laboratory									
Polychlorinated Biphenyls by SW846 8082									
Aroclor 1016	ND	13.3	ug/kg wet	1	1802175	02/24/2009	03/12/2009	8082	U
Aroclor 1221	ND	13.3	"	"	"	"	"	"	U
Aroclor 1232	ND	13.3	"	"	"	"	"	"	U
Aroclor 1242	ND	13.3	"	"	"	"	"	"	U
Aroclor 1248	ND	13.3	"	"	"	"	"	"	U
Aroclor 1254	ND	13.3	"	"	"	"	"	"	U
Aroclor 1260	ND	13.3	"	"	"	"	"	"	U
Surrogate: Decachlorobiphenyl		*104 %*	*33-144*		"	"	"	"	
Surrogate: Tetrachloro-meta-xylene		*87 %*	*52-141*		"	"	"	"	

V 4/24/09

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

WC-Hanford, Inc	Project: RC-116	
2620 Fermi Avenue	Project Number: [none]	Reported:
Richland WA, 99354	Project Manager: Joan Kessner	04/13/2009 17:16

J18779

0902047 04 (Solid)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes

Lionville Laboratory

Polychlorinated Biphenyls by SW846 8082

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Aroclor 1016	ND	13.3	ug/kg wet	1	1902175	02/24/2009	03/11/2009	8082	U
Aroclor 1221	ND	13.3	"	"	"	"	"	"	U
Aroclor 1232	ND	13.3	"	"	"	"	"	"	U
Aroclor 1242	ND	13.3	"	"	"	"	"	"	U
Aroclor 1248	ND	13.3	"	"	"	"	"	"	U
Aroclor 1254	ND	13.3	"	"	"	"	"	"	U
Aroclor 1260	ND	13.3	"	"	"	"	"	"	U
Surrogate: Decachlorobiphenyl		*98 %*	*35-144*		"	"	"	"	
Surrogate: Tetrachloro-meta-xylene		*80 %*	*52-141*		"	"	"	"	

K 11/24/09

000009B

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

WC-Hanford, Inc 2620 Fermi Avenue Richland WA, 99354	Project: RC-116 Project Number: [none] Project Manager: Joan Kessner	**Reported:** 03/13/2009 17:16

J18794

0902047-05 (Solid)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
			Lionville Laboratory						
Polychlorinated Biphenyls by SW846 8082									
Aroclor 1016	ND	13.3	ug/kg wet	1	1902175	02/24/2009	03/11/2009	8082	U
Aroclor 1221	ND	13.3	"	"	"	"	"	"	U
Aroclor 1232	ND	13.3	"	"	"	"	"	"	U
Aroclor 1242	ND	13.3	"	"	"	"	"	"	U
Aroclor 1248	ND	13.3	"	"	"	"	"	"	U
Aroclor 1254	ND	13.3	"	"	"	"	"	"	U
Aroclor 1260	ND	13.3	"	"	"	"	"	"	U
Surrogate: Decachlorobiphenyl		*106 %*	*43-144*		"	"	"	"	
Surrogate: Tetrachloro-meta-xylene		*66 %*	*52-141*		"	"	"	"	

11/25/09

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

WCHanford, Inc	Project: RC-116	
2620 Fermi Avenue	Project Number: [none]	**Reported:**
Richland WA, 99354	Project Manager: Joan Kessner	04/14/2009 17:16

J18795

0902047-06 (Solid)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes

Lionville Laboratory

Polychlorinated Biphenyls by SW846 8082

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Aroclor 1016	ND	13.3	ug/kg wet	1	L902175	02/21/2009	03/11/2009	8082	U
Aroclor 1221	ND	13.3	"	"	"	"	"	"	U
Aroclor 1232	ND	13.3	"	"	"	"	"	"	U
Aroclor 1242	ND	13.3	"	"	"	"	"	"	U
Aroclor 1248	ND	13.3	"	"	"	"	"	"	U
Aroclor 1254	ND	13.3	"	"	"	"	"	"	U
Aroclor 1260	ND	13.3	"	"	"	"	"	"	U
Surrogate: Decachlorobiphenyl		*100 %*	*43-144*		"	"	"	"	
Surrogate: Tetrachloro-meta-xylene		*97 %*	*52-141*		"	"	"	"	

11/24/09

208 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

WC-Hanford, Inc 2620 Fermi Avenue Richland WA, 99354	Project: RC-116 Project Number: [none] Project Manager: Joan Kessner	Reported: 03/13/2009 17:16

J18796
0902047-07RE2 (Solid)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes

Lionville Laboratory

Polychlorinated Biphenyls by SW846 8082

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Aroclor 1016	ND	13.3	ug/kg wet	1	1902175	02/24/2009	03/12/2009	8082	U
Aroclor 1221	ND	13.3	"	"	"	"	"	"	U
Aroclor 1232	ND	13.3	"	"	"	"	"	"	U
Aroclor 1242	ND	13.3	"	"	"	"	"	"	U
Aroclor 1248	ND	13.3	"	"	"	"	"	"	U
Aroclor 1254	ND	13.3	"	"	"	"	"	"	U
Aroclor 1260	ND	13.3	"	"	"	"	"	"	U
Surrogate: Decachlorobiphenyl		*113 %*	*43-144*		"	"	"	"	
Surrogate: Tetrachloro-meta-xylene		*97 %*	*52-141*		"	"	"	"	

11/24/09

000009F

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

WCH Hanford, Inc	Project: RC-116	
2620 Fermi Avenue	Project Number: [none]	Reported:
Richland WA, 99354	Project Manager: Joan Kessner	04/13/2009 17:16

J18797

0902047-08RE2 (Solid)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Lionville Laboratory									
Polychlorinated Biphenyls by SW846 8082									
Aroclor 1016	ND	13.3	ug/kg wet	1	0902175	02/24/2009	04/13/2009	8082	U
Aroclor 1221	ND	13.3	"	"	"	"	"	"	U
Aroclor 1232	ND	13.3	"	"	"	"	"	"	U
Aroclor 1242	ND	13.3	"	"	"	"	"	"	U
Aroclor 1248	ND	13.3	"	"	"	"	"	"	U
Aroclor 1254	ND	13.3	"	"	"	"	"	"	U
Aroclor 1260	ND	13.3	"	"	"	"	"	"	U
Surrogate: Decachlorobiphenyl		*104 %*	*44-144*		"	"	"	"	
Surrogate: Tetrachloro-meta-xylene		*98 %*	*53-141*		"	"	"	"	

11/24/09

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

WCH Hanford, Inc 2620 Fermi Avenue Richland WA, 99354	Project: RC 116 Project Number: [none] Project Manager: Joan Kessner	Reported: 04/13/2009 12:16

J187T2

0902047-12RE1 (Solid)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
			Lionville Laboratory						
Polychlorinated Biphenyls by SW846 8082									
Aroclor 1016	ND	13.3	ug/kg wet	1	0902175	02/24/2009	03/12/2009	8082	U
Aroclor 1221	ND	13.3	"	"	"	"	"	"	U
Aroclor 1232	ND	13.3	"	"	"	"	"	"	U
Aroclor 1242	ND	13.3	"	"	"	"	"	"	U
Aroclor 1248	ND	13.3	"	"	"	"	"	"	U
Aroclor 1254	ND	13.3	"	"	"	"	"	"	U
Aroclor 1260	ND	13.3	"	"	"	"	"	"	U
Surrogate: Decachlorobiphenyl		*116 %*	*33-144*		"	"	"	"	
Surrogate: Tetrachloro-meta-xylene		*85 %*	*52-141*		"	"	"	"	

W
11/29/09

000084G

WCH-Hanford, Inc	Project: RC-116	
2620 Fermi Avenue	Project Number: [none]	Reported:
Richland WA, 99354	Project Manager: Joan Kessner	04/13/2009 17:16

J187D4

0902047-13RE1 (Solid)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes

Lionville Laboratory

Polychlorinated Biphenyls by SW846 8082

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Aroclor 1016	ND	13.3	ug/kg wet	1	0902175	02/24/2009	03/13/2009	8082	U
Aroclor 1221	ND	13.3	"	"	"	"	"	"	U
Aroclor 1232	ND	13.3	"	"	"	"	"	"	U
Aroclor 1242	ND	13.3	"	"	"	"	"	"	U
Aroclor 1248	ND	13.3	"	"	"	"	"	"	U
Aroclor 1254	ND	13.3	"	"	"	"	"	"	U
Aroclor 1260	ND	13.3	"	"	"	"	"	"	U
Surrogate: Decachlorobiphenyl		*121 %*	*43-144*		"	"	"	"	
Surrogate: Tetrachloro-meta-xylene		*88 %*	*45-147*		"	"	"	"	

11/29/09

208 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

WC-Hanford, Inc 2620 Fermi Avenue Richland WA, 99354	Project: RC 116 Project Number: [none] Project Manager: Joan Kessner	Reported: 03/13/2009 17:16

J187D5

0902047-14RE1 (Solid)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Lionville Laboratory									
Polychlorinated Biphenyls by SW846 8082									
Aroclor 1016	ND	13.3	ug/kg wet	1	0902175	02/24/2009	03/12/2009	8082	U
Aroclor 1221	ND	13.3	"	"	"	"	"	"	U
Aroclor 1232	ND	13.3	"	"	"	"	"	"	U
Aroclor 1242	ND	13.3	"	"	"	"	"	"	U
Aroclor 1248	ND	13.3	"	"	"	"	"	"	U
Aroclor 1254	ND	13.3	"	"	"	"	"	"	U
Aroclor 1260	ND	13.3	"	"	"	"	"	"	U
Surrogate: Decachlorobiphenyl		*100 %*	*43-144*		"	"	"	"	
Surrogate: Tetrachloro-meta-xylene		*93 %*	*52-141*		"	"	"	"	

11/29/09

000009 I

WCH Hanford, Inc.	Project: RC-116	
2620 Fermi Avenue	Project Number: [none]	Reported:
Richland WA 99354	Project Manager: Joan Kessner	04/13/2009 17:16

J187K6

0902047-21RE1 (Solid)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Lionville Laboratory									
Polychlorinated Biphenyls by SW846 8082									
Aroclor 1016	ND	13.3	ug/kg wet	1	0902175	02/24/2009	03/12/2009	8082	U
Aroclor 1221	ND	13.3	"	"	"	"	"	"	U
Aroclor 1232	ND	13.3	"	"	"	"	"	"	U
Aroclor 1242	ND	13.3	"	"	"	"	"	"	U
Aroclor 1248	ND	13.3	"	"	"	"	"	"	U
Aroclor 1254	ND	13.3	"	"	"	"	"	"	U
Aroclor 1260	ND	13.3	"	"	"	"	"	"	U
Surrogate: Decachlorobiphenyl		*112 %*	*43-144*		"	"	"	"	
Surrogate: Tetrachloro-meta-xylene		*84 %*	*52-141*		"	"	"	"	

11/21/09

000009 J

WC-Hanford, Inc	Project: RC-116	
2620 Fermi Avenue	Project Number: [none]	Reported:
Richland WA, 99354	Project Manager: Joan Kessner	04/13/2009 17:16

J187K7

0902047-22RE2 (Solid)

Lionville Laboratory

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Polychlorinated Biphenyls by SW846 8082									
Aroclor 1016	ND	13.3	ug/kg wet	1	1902175	02/24/2009	03/17/2009	8082	U
Aroclor 1221	ND	13.3	"	"	"	"	"	"	U
Aroclor 1232	ND	13.3	"	"	"	"	"	"	U
Aroclor 1242	ND	13.3	"	"	"	"	"	"	U
Aroclor 1248	ND	13.3	"	"	"	"	"	"	U
Aroclor 1254	ND	13.3	"	"	"	"	"	"	U
Aroclor 1260	ND	13.3	"	"	"	"	"	"	U
Surrogate: Decachlorobiphenyl		*85 %*	*43-144*		"	"	"	"	
Surrogate: Tetrachloro-meta-xylene		*75 %*	*52-141*		"	"	"	"	

11/24/07

000009 K

364 Welsh Pool Road
Exton, PA 19341
Phone: 610 280 3000
Fax: 610 280 3041

WC-Hanford, Inc 2620 Fermi Avenue Richland WA, 99354	Project: RC 116 Project Number: [none] Project Manager: Joan Kessner	**Reported:** 04/13/2009 17:16

J17X03

0902047-27RE1 (Solid)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
			Lionville Laboratory						
Polychlorinated Biphenyls by SW846 8082									
Aroclor 1016	ND	13.3	ug/kg wet	1	0902175	02/24/2009	03/12/2009	8082	U
Aroclor 1221	ND	13.3	"	"	"	"	"	"	U
Aroclor 1232	ND	13.3	"	"	"	"	"	"	U
Aroclor 1242	ND	13.3	"	"	"	"	"	"	U
Aroclor 1248	ND	13.3	"	"	"	"	"	"	U
Aroclor 1254	ND	13.3	"	"	"	"	"	"	U
Aroclor 1260	ND	13.3	"	"	"	"	"	"	U
Surrogate: Decachlorobiphenyl		*117 %*	*33-144*		"	"	"	"	
Surrogate: Tetrachloro-meta-xylene		*81 %*	*52-141*		"	"	"	"	

11/24/09

WC Hanford, Inc 2620 Fermi Avenue Richland WA, 99354	Project: RC-116 Project Number: [none] Project Manager: Joan Kessner	**Reported:** 04/13/2009 17:16

J187Y2

0902047-28 (Solid)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes

Lionville Laboratory

Polychlorinated Biphenyls by SW846 8082

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Aroclor 1016	ND	13.3	ug/kg wet	1	1902175	02/24/2009	03/13/2009	8082	U
Aroclor 1221	ND	13.3	"	"	"	"	"	"	U
Aroclor 1232	ND	13.3	"	"	"	"	"	"	U
Aroclor 1242	ND	13.3	"	"	"	"	"	"	U
Aroclor 1248	ND	13.3	"	"	"	"	"	"	U
Aroclor 1254	ND	13.3	"	"	"	"	"	"	U
Aroclor 1260	ND	13.3	"	"	"	"	"	"	U
Surrogate: Decachlorobiphenyl		*130 %*	*35-144*		"	"	"	"	
Surrogate: Tetrachloro-meta-xylene		*90 %*	*32-111*		"	"	"	"	

11/24/09

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

WC-Hanford, Inc 2620 Fermi Avenue Richland WA, 99354	Project: RC-116 Project Number: [none] Project Manager: Joan Kessner	Reported: 04/27/2009 14:08

J18610

0902047-01 (Solid)

Analyte	Result	Reporting Limit	Qualifier	Units	Dilution	Batch	Prepared	Analyzed	Method
			Lionville Laboratory						
Organochlorine Pesticides by SW846 8081A									
alpha-BHC	1.33	1.33	U	ug/kg wet	1	B902174	02/23/2009	03/16/2009	8081A
gamma-BHC	1.33	1.33	U	"	"	"	"	"	"
beta-BHC	1.33	1.33	U	"	"	"	"	"	"
delta-BHC	1.33	1.33	U	"	"	"	"	"	"
Heptachlor	1.33	1.33	U	"	"	"	"	"	"
Aldrin	1.33	1.33	U	"	"	"	"	"	"
Heptachlor epoxide	1.33	1.33	U	"	"	"	"	"	"
gamma-Chlordane	1.33	1.33	U	"	"	"	"	"	"
alpha-Chlordane	1.33	1.33	U	"	"	"	"	"	"
Endosulfan I	1.33	1.33	U	"	"	"	"	"	"
4,4'-DDE	1.33	1.33	U	"	"	"	"	"	"
Dieldrin	1.33	1.33	U	"	"	"	"	"	"
Endrin	1.33	1.33	U	"	"	"	"	"	"
4,4'-DDD	1.33	1.33	U	"	"	"	"	"	"
Endosulfan II	1.33	1.33	U	"	"	"	"	"	"
4,4'-DDT	1.33	1.33	U	"	"	"	"	"	"
Endrin aldehyde	1.33	1.33	U	"	"	"	"	"	"
Endosulfan sulfate	1.33	1.33	U	"	"	"	"	"	"
Methoxychlor	1.33	1.33	U	"	"	"	"	"	"
Endrin ketone	1.33	1.33	U	"	"	"	"	"	"
Toxaphene	20.0	20.0	U J	"	"	"	"	"	"
Surrogate: Tetrachloro-meta-xylene		*118 %*			*28-166*	"	"	"	"
Surrogate: Decachlorobiphenyl		*131 %*			*37-153*	"	"	"	"

11/23/09

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

WC Hanford, Inc 2620 Fermi Avenue Richland WA, 99354	Project: RC-116 Project Number: [none] Project Manager: Joan Kessner	**Reported:** 04/27/2009 14:08

J18779

0902047-04 (Solid)

Lionville Laboratory

Organochlorine Pesticides by SW846 8081A

Analyte	Result	Reporting Limit	Qualifier	Units	Dilution	Batch	Prepared	Analyzed	Method
alpha-BHC	1.33	1.33	U	ug/kg wet	5	1902173	02/24/2009	03/16/2009	8081A
gamma-BHC	1.33	1.33	U	"	"	"	"	"	"
beta-BHC	1.33	1.33	U	"	"	"	"	"	"
delta-BHC	1.33	1.33	U	"	"	"	"	"	"
Heptachlor	1.33	1.33	U	"	"	"	"	"	"
Aldrin	1.33	1.33	U	"	"	"	"	"	"
Heptachlor epoxide	1.33	1.33	U	"	"	"	"	"	"
gamma-Chlordane	1.33	1.33	U	"	"	"	"	"	"
alpha-Chlordane	1.33	1.33	U	"	"	"	"	"	"
Endosulfan I	1.33	1.33	U	"	"	"	"	"	"
4,4'-DDE	1.33	1.33	U	"	"	"	"	"	"
Dieldrin	1.33	1.33	U	"	"	"	"	"	"
Endrin	1.33	1.33	U	"	"	"	"	"	"
4,4'-DDD	1.33	1.33	U	"	"	"	"	"	"
Endosulfan II	1.33	1.33	U	"	"	"	"	"	"
4,4'-DDT	1.33	1.33	U	"	"	"	"	"	"
Endrin aldehyde	1.33	1.33	U	"	"	"	"	"	"
Endosulfan sulfate	1.33	1.33	U	"	"	"	"	"	"
Methoxychlor	1.33	1.33	U	"	"	"	"	"	"
Endrin ketone	1.33	1.33	U	"	"	"	"	"	"
Toxaphene	20.0	20.0	U J	"	"	"	"	"	"
Surrogate: Tetrachloro-meta-xylene		*114 %*			*28-160*	"	"	"	"
Surrogate: Decachlorobiphenyl		*113 %*			*47-153*	"	"	"	"

11/21/09

WC-Hanford, Inc. 2620 Fermi Avenue Richland WA, 99354	Project: RC-116 Project Number: [none] Project Manager: Joan Kessner	Reported: 04/27/2009 14:08

J18794
0902047-05 (Solid)

Analyte	Result	Reporting Limit	Qualifier	Units	Dilution	Batch	Prepared	Analyzed	Method
Lionville Laboratory									
Organochlorine Pesticides by SW846 8081A									
alpha-BHC	1.33	1.33	U	ug/kg wet	4	9021178	02/24/2009	03/16/2009	8081A
gamma-BHC	1.33	1.33	U	"	"	"	"	"	"
beta-BHC	1.33	1.33	U	"	"	"	"	"	"
delta-BHC	1.33	1.33	U	"	"	"	"	"	"
Heptachlor	1.33	1.33	U	"	"	"	"	"	"
Aldrin	1.33	1.33	U	"	"	"	"	"	"
Heptachlor epoxide	1.33	1.33	U	"	"	"	"	"	"
gamma-Chlordane	1.33	1.33	U	"	"	"	"	"	"
alpha-Chlordane	1.33	1.33	U	"	"	"	"	"	"
Endosulfan I	1.33	1.33	U	"	"	"	"	"	"
4,4'-DDE	1.33	1.33	U	"	"	"	"	"	"
Dieldrin	1.33	1.33	U	"	"	"	"	"	"
Endrin	1.33	1.33	U	"	"	"	"	"	"
4,4'-DDD	1.33	1.33	U	"	"	"	"	"	"
Endosulfan II	1.33	1.33	U	"	"	"	"	"	"
4,4'-DDT	1.33	1.33	U	"	"	"	"	"	"
Endrin aldehyde	1.33	1.33	U	"	"	"	"	"	"
Endosulfan sulfate	1.33	1.33	U	"	"	"	"	"	"
Methoxychlor	1.33	1.33	U	"	"	"	"	"	"
Endrin ketone	1.33	1.33	U	"	"	"	"	"	"
Toxaphene	20.0	20.0	U J	"	"	"	"	"	"
Surrogate: Tetrachloro-meta-xylene		*125 %*			*28-166*	"	"	"	"
Surrogate: Decachlorobiphenyl		*129 %*			*37-153*	"	"	"	"

11/24/09

208 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

WC Hanford, Inc 2620 Fermi Avenue Richland WA, 99354	Project: RL-116 Project Number: [none] Project Manager: Joan Kessner	Reported: 04/27/2009 14:08

J18795

0902047 06 (Solid)

Lionville Laboratory

Organochlorine Pesticides by SW846 8081A

Analyte	Result	Reporting Limit	Qualifier	Units	Dilution	Batch	Prepared	Analyzed	Method
alpha-BHC	1.33	1.33	U	ug/kg wet	4	0902175	02/24/2009	03/16/2009	8081A
gamma-BHC	1.33	1.33	U	"	"	"	"	"	"
beta-BHC	1.33	1.33	U	"	"	"	"	"	"
delta-BHC	1.33	1.33	U	"	"	"	"	"	"
Heptachlor	1.33	1.33	U	"	"	"	"	"	"
Aldrin	1.33	1.33	U	"	"	"	"	"	"
Heptachlor epoxide	1.33	1.33	U	"	"	"	"	"	"
gamma-Chlordane	1.33	1.33	U	"	"	"	"	"	"
alpha-Chlordane	1.33	1.33	U	"	"	"	"	"	"
Endosulfan I	1.33	1.33	U	"	"	"	"	"	"
4,4'-DDE	1.33	1.33	U	"	"	"	"	"	"
Dieldrin	1.33	1.33	U	"	"	"	"	"	"
Endrin	1.33	1.33	U	"	"	"	"	"	"
4,4'-DDD	1.33	1.33	U	"	"	"	"	"	"
Endosulfan II	1.33	1.33	U	"	"	"	"	"	"
4,4'-DDT	1.33	1.33	U	"	"	"	"	"	"
Endrin aldehyde	1.33	1.33	U	"	"	"	"	"	"
Endosulfan sulfate	1.33	1.33	U	"	"	"	"	"	"
Methoxychlor	1.33	1.33	U	"	"	"	"	"	"
Endrin ketone	1.33	1.33	U	"	"	"	"	"	"
Toxaphene	20.0	20.0	U J	"	"	"	"	"	"
Surrogate: Tetrachloro-meta-xylene		*111 %*			*28-166*	"	"	"	"
Surrogate: Decachlorobiphenyl		*111 %*			*37-153*	"	"	"	"

N 11/24/09

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

WC-Hanford, Inc. 2620 Fermi Avenue Richland WA, 99354	Project: RC-116 Project Number: [none] Project Manager: Joan Kessner	Reported: 04/27/2009 14:08

J18796
0902047-07 (Solid)

Analyte	Result	Reporting Limit	Qualifier	Units	Dilution	Batch	Prepared	Analyzed	Method
Lionville Laboratory									
Organochlorine Pesticides by SW846 8081A									
alpha-BHC	1.33	1.33	U	ug/kg wet	1	0902175	02/24/2009	03/16/2009	8081A
gamma-BHC	1.33	1.33	U	"	"	"	"	"	"
beta-BHC	1.33	1.33	U	"	"	"	"	"	"
delta-BHC	1.33	1.33	U	"	"	"	"	"	"
Heptachlor	1.33	1.33	U	"	"	"	"	"	"
Aldrin	1.33	1.33	U	"	"	"	"	"	"
Heptachlor epoxide	1.33	1.33	U	"	"	"	"	"	"
gamma-Chlordane	1.33	1.33	U	"	"	"	"	"	"
alpha-Chlordane	1.33	1.33	U	"	"	"	"	"	"
Endosulfan I	1.33	1.33	U	"	"	"	"	"	"
4,4'-DDE	1.33	1.33	U	"	"	"	"	"	"
Dieldrin	1.33	1.33	U	"	"	"	"	"	"
Endrin	1.33	1.33	U	"	"	"	"	"	"
4,4'-DDD	1.33	1.33	U	"	"	"	"	"	"
Endosulfan II	1.33	1.33	U	"	"	"	"	"	"
4,4'-DDT	1.33	1.33	U	"	"	"	"	"	"
Endrin aldehyde	1.33	1.33	U	"	"	"	"	"	"
Endosulfan sulfate	1.33	1.33	U	"	"	"	"	"	"
Methoxychlor	1.33	1.33	U	"	"	"	"	"	"
Endrin ketone	1.33	1.33	U	"	"	"	"	"	"
Toxaphene	20.0	20.0	U J	"	"	"	"	"	"
Surrogate: Tetrachloro-meta-xylene		*124 %*			*38-166*	"	"	"	"
Surrogate: Decachlorobiphenyl		*122 %*			*37-153*	"	"	"	"

11/24/09

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

WCH-Hanford, Inc
2620 Fermi Avenue
Richland WA, 99354

Project: RC-116
Project Number: [none]
Project Manager: Joan Kessner

Reported:
04/27/2009 14:08

J18797

0902047-08 (Solid)

Lionville Laboratory

Organochlorine Pesticides by SW846 8081A

Analyte	Result	Reporting Limit	Qualifier	Units	Dilution	Batch	Prepared	Analyzed	Method
alpha-BHC	1.33	1.33	U	ug/kg wet	4	L902175	02/24/2009	03/16/2009	8081A
gamma-BHC	1.33	1.33	U	"	"	"	"	"	"
beta-BHC	1.33	1.33	U	"	"	"	"	"	"
delta-BHC	1.33	1.33	U	"	"	"	"	"	"
Heptachlor	1.33	1.33	U	"	"	"	"	"	"
Aldrin	1.33	1.33	U	"	"	"	"	"	"
Heptachlor epoxide	1.33	1.33	U	"	"	"	"	"	"
gamma-Chlordane	1.33	1.33	U	"	"	"	"	"	"
alpha-Chlordane	1.33	1.33	U	"	"	"	"	"	"
Endosulfan I	1.33	1.33	U	"	"	"	"	"	"
4,4'-DDE	1.33	1.33	U	"	"	"	"	"	"
Dieldrin	1.33	1.33	U	"	"	"	"	"	"
Endrin	1.33	1.33	U	"	"	"	"	"	"
4,4'-DDD	1.33	1.33	U	"	"	"	"	"	"
Endosulfan II	1.33	1.33	U	"	"	"	"	"	"
4,4'-DDT	1.33	1.33	U	"	"	"	"	"	"
Endrin aldehyde	1.33	1.33	U	"	"	"	"	"	"
Endosulfan sulfate	1.33	1.33	U	"	"	"	"	"	"
Methoxychlor	1.33	1.33	U	"	"	"	"	"	"
Endrin ketone	1.33	1.33	U	"	"	"	"	"	"
Toxaphene	20.0	20.0	U J	"	"	"	"	"	"
Surrogate: Tetrachloro-meta-xylene		*112 %*				"	"	"	"
Surrogate: Decachlorobiphenyl		*109 %*			*28-166*	"	"	"	"
					37-153	"	"	"	"

11/24/09

264 Welsh Pool Road
Exton, PA 19341
Phone: 610 280-3000
Fax: 610 280-3041

WC-Hanford, Inc.
2620 Fermi Avenue
Richland WA, 99354

Project: RC-116
Project Number: [none]
Project Manager: Joan Kessner

Reported:
04/27/2009 14:08

J187D2
0902047-12 (Solid)

Analyte	Result	Reporting Limit	Qualifier	Units	Dilution	Batch	Prepared	Analyzed	Method
Lionville Laboratory									
Organochlorine Pesticides by SW846 8081A									
alpha-BHC	1.33	1.33	U	ug/kg wet	4	1902175	02/24/2009	03/10/2009	8081A
gamma-BHC	1.33	1.33	U	"	"	"	"	"	"
beta-BHC	1.33	1.33	U	"	"	"	"	"	"
delta-BHC	1.33	1.33	U	"	"	"	"	"	"
Heptachlor	1.33	1.33	U	"	"	"	"	"	"
Aldrin	1.33	1.33	U	"	"	"	"	"	"
Heptachlor epoxide	1.33	1.33	U	"	"	"	"	"	"
gamma-Chlordane	1.33	1.33	U	"	"	"	"	"	"
alpha-Chlordane	1.33	1.33	U	"	"	"	"	"	"
Endosulfan I	1.33	1.33	U	"	"	"	"	"	"
4,4'-DDE	1.33	1.33	U	"	"	"	"	"	"
Dieldrin	1.33	1.33	U	"	"	"	"	"	"
Endrin	1.33	1.33	U	"	"	"	"	"	"
4,4'-DDD	1.33	1.33	U	"	"	"	"	"	"
Endosulfan II	1.33	1.33	U	"	"	"	"	"	"
4,4'-DDT	1.33	1.33	U	"	"	"	"	"	"
Endrin aldehyde	1.33	1.33	U	"	"	"	"	"	"
Endosulfan sulfate	1.33	1.33	U	"	"	"	"	"	"
Methoxychlor	1.33	1.33	U	"	"	"	"	"	"
Endrin ketone	1.33	1.33	U	"	"	"	"	"	"
Toxaphene	20.0	20.0	U J	"	"	"	"	"	"
Surrogate: Tetrachloro-meta-xylene		*112 %*			*28-166*	"	"	"	"
Surrogate: Decachlorobiphenyl		*108 %*			*37-153*	"	"	"	"

Kr
11/20/09

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

WC-Hanford, Inc.	Project: RC 116	
2620 Fermi Avenue	Project Number: [none]	
Richland WA, 99354	Project Manager: John Kessner	Reported: 04/27/2009 14:08

J187D4

0902047-13 (Solid)

Analyte	Result	Reporting Limit	Qualifier	Units	Dilution	Batch	Prepared	Analyzed	Method
Lionville Laboratory									
Organochlorine Pesticides by SW846 8081A									
alpha-BHC	1.33	1.33	U	ug/kg wet	4	1902175	02/24/2009	03/16/2009	8081A
gamma-BHC	1.33	1.33	U	"	"	"	"	"	"
beta-BHC	1.33	1.33	U	"	"	"	"	"	"
delta-BHC	1.33	1.33	U	"	"	"	"	"	"
Heptachlor	1.33	1.33	U	"	"	"	"	"	"
Aldrin	1.33	1.33	U	"	"	"	"	"	"
Heptachlor epoxide	1.33	1.33	U	"	"	"	"	"	"
gamma-Chlordane	1.33	1.33	U	"	"	"	"	"	"
alpha-Chlordane	1.33	1.33	U	"	"	"	"	"	"
Endosulfan I	1.33	1.33	U	"	"	"	"	"	"
4,4'-DDE	1.33	1.33	U	"	"	"	"	"	"
Dieldrin	1.33	1.33	U	"	"	"	"	"	"
Endrin	1.33	1.33	U	"	"	"	"	"	"
4,4'-DDD	1.33	1.33	U	"	"	"	"	"	"
Endosulfan II	1.33	1.33	U	"	"	"	"	"	"
4,4'-DDT	1.33	1.33	U	"	"	"	"	"	"
Endrin aldehyde	1.33	1.33	U	"	"	"	"	"	"
Endosulfan sulfate	1.33	1.33	U	"	"	"	"	"	"
Methoxychlor	1.33	1.33	U	"	"	"	"	"	"
Endrin ketone	1.33	1.33	U	"	"	"	"	"	"
Toxaphene	20.0	20.0	U J	"	"	"	"	"	"
Surrogate: Tetrachloro-meta-xylene		*118 %*			*28-166*	"	"	"	"
Surrogate: Decachlorobiphenyl		*110 %*			*37-153*	"	"	"	"

11/24/09

764 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

WC Hanford, Inc
2620 Fermi Avenue
Richland WA, 99354

Project: RC-116
Project Number: [none]
Project Manager: Joan Kessner

Reported:
04/27/2009 14:08

J187D5

0902047-14 (Solid)

Analyte	Result	Reporting Limit	Qualifier	Units	Dilution	Batch	Prepared	Analyzed	Method
Lionville Laboratory									
Organochlorine Pesticides by SW846 8081A									
alpha-BHC	1.33	1.33	U	ug/kg wet	4	1902175	02/24/2009	03/16/2009	8081A
gamma-BHC	1.33	1.33	U	"	"	"	"	"	"
beta-BHC	1.33	1.33	U	"	"	"	"	"	"
delta-BHC	1.33	1.33	U	"	"	"	"	"	"
Heptachlor	1.33	1.33	U	"	"	"	"	"	"
Aldrin	1.33	1.33	~~J, D~~ U	"	"	"	"	"	"
Heptachlor epoxide	1.33	1.33	U	"	"	"	"	"	"
gamma-Chlordane	1.33	1.33	U	"	"	"	"	"	"
alpha-Chlordane	1.33	1.33	U	"	"	"	"	"	"
Endosulfan I	1.33	1.33	U	"	"	"	"	"	"
4,4'-DDE	1.67	1.33	J, D	"	"	"	"	"	"
Dieldrin	1.33	1.33	U	"	"	"	"	"	"
Endrin	1.67	1.33	J, D	"	"	"	"	"	"
4,4'-DDD	1.33	1.33	U	"	"	"	"	"	"
Endosulfan II	1.33	1.33	U	"	"	"	"	"	"
4,4'-DDT	1.33	1.33	U	"	"	"	"	"	"
Endrin aldehyde	1.33	1.33	U	"	"	"	"	"	"
Endosulfan sulfate	1.33	1.33	U	"	"	"	"	"	"
Methoxychlor	1.33	1.33	U	"	"	"	"	"	"
Endrin ketone	1.33	1.33	U	"	"	"	"	"	"
Toxaphene	20.0	20.0	U J	"	"	"	"	"	"
Surrogate: Tetrachloro-meta-xylene		*117 %*			*28-166*	"	"	"	"
Surrogate: Decachlorobiphenyl		*115 %*			*37-153*	"	"	"	"

4/29/09

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

WCH Hanford, Inc 2620 Fermi Avenue Richland WA, 99354	Project: BC-116 Project Number: [none] Project Manager: Joan Kessner	Reported: 04/27/2009 14:08

J187K6

0902047-21 (Solid)

Lionville Laboratory

Organochlorine Pesticides by SW846 8081A

Analyte	Result	Reporting Limit	Qualifier	Units	Dilution	Batch	Prepared	Analyzed	Method
alpha-BHC	1.33	1.33	U	ug/kg wet	4	0902175	02/24/2009	03/17/2009	8081A
gamma-BHC	1.33	1.33	U	"	"	"	"	"	"
beta-BHC	1.33	1.33	U	"	"	"	"	"	"
delta-BHC	1.33	1.33	U	"	"	"	"	"	"
Heptachlor	1.33	1.33	U	"	"	"	"	"	"
Aldrin	1.33	1.33	U	"	"	"	"	"	"
Heptachlor epoxide	1.33	1.33	U	"	"	"	"	"	"
gamma-Chlordane	1.33	1.33	U	"	"	"	"	"	"
alpha-Chlordane	1.33	1.33	U	"	"	"	"	"	"
Endosulfan I	1.33	1.33	U	"	"	"	"	"	"
4,4'-DDE	1.33	1.33	U	"	"	"	"	"	"
Dieldrin	1.33	1.33	U	"	"	"	"	"	"
Endrin	1.33	1.33	U	"	"	"	"	"	"
4,4'-DDD	1.33	1.33	U	"	"	"	"	"	"
Endosulfan II	1.33	1.33	U	"	"	"	"	"	"
4,4'-DDT	1.33	1.33	U	"	"	"	"	"	"
Endrin aldehyde	1.33	1.33	U	"	"	"	"	"	"
Endosulfan sulfate	1.33	1.33	U	"	"	"	"	"	"
Methoxychlor	1.33	1.33	U	"	"	"	"	"	"
Endrin ketone	1.33	1.33	U	"	"	"	"	"	"
Toxaphene	20.0	20.0	U J	"	"	"	"	"	"
Surrogate: Tetrachloro-meta-xylene		*112 %*			*28-166*	"	"	"	"
Surrogate: Decachlorobiphenyl		*109 %*			*37-153*	"	"	"	"

W 11/21/09

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

WC Hanford, Inc.
2620 Fermi Avenue
Richland WA, 99354

Project: RC-116
Project Number: [none]
Project Manager: Joan Kessner

Reported:
04/27/2009 14:08

J187K7

0902047-22 (Solid)

Analyte	Result	Reporting Limit	Qualifier	Units	Dilution	Batch	Prepared	Analyzed	Method
				Lionville Laboratory					
Organochlorine Pesticides by SW846 8081A									
alpha-BHC	1.33	1.33	U	ug/kg wet	4	1903175	03/24/2009	03/27/2009	8081A
gamma-BHC	1.33	1.33	U	"	"	"	"	"	"
beta-BHC	1.33	1.33	U	"	"	"	"	"	"
delta-BHC	1.33	1.33	U	"	"	"	"	"	"
Heptachlor	1.33	1.33	U	"	"	"	"	"	"
Aldrin	1.33	1.33	U	"	"	"	"	"	"
Heptachlor epoxide	1.33	1.33	U	"	"	"	"	"	"
gamma-Chlordane	1.33	1.33	U	"	"	"	"	"	"
alpha-Chlordane	1.33	1.33	U	"	"	"	"	"	"
Endosulfan I	1.33	1.33	U	"	"	"	"	"	"
4,4'-DDE	1.33	1.33	U	"	"	"	"	"	"
Dieldrin	1.33	1.33	U	"	"	"	"	"	"
Endrin	1.33	1.33	U	"	"	"	"	"	"
4,4'-DDD	1.33	1.33	U	"	"	"	"	"	"
Endosulfan II	1.33	1.33	U	"	"	"	"	"	"
4,4'-DDT	1.33	1.33	U	"	"	"	"	"	"
Endrin aldehyde	1.33	1.33	U	"	"	"	"	"	"
Endosulfan sulfate	1.33	1.33	U	"	"	"	"	"	"
Methoxychlor	1.33	1.33	U	"	"	"	"	"	"
Endrin ketone	1.33	1.33	U	"	"	"	"	"	"
Toxaphene	20.0	20.0	U J	"	"	"	"	"	"
Surrogate: Tetrachloro-meta-xylene		*112 %*		*28-166*		"	"	"	"
Surrogate: Decachlorobiphenyl		*120 %*		*17-133*		"	"	"	"

11/27/09

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

WCH Hanford, Inc
2620 Fermi Avenue
Richland WA, 99354

Project: RC-116
Project Number: (none)
Project Manager: Joan Kessner

Reported:
04/27/2009 14:08

J17X03
0902047-27 (Solid)

Analyte	Result	Reporting Limit	Qualifier	Units	Dilution	Batch	Prepared	Analyzed	Method
Lionville Laboratory									
Organochlorine Pesticides by SW846 8081A									
alpha-BHC	1.33	1.33	U	ug/kg wet	4	1902173	02/24/2009	03/17/2009	8081A
gamma-BHC	1.33	1.33	U	"	"	"	"	"	"
beta-BHC	1.33	1.33	U	"	"	"	"	"	"
delta-BHC	1.33	1.33	U	"	"	"	"	"	"
Heptachlor	1.33	1.33	U	"	"	"	"	"	"
Aldrin	1.33	1.33	U	"	"	"	"	"	"
Heptachlor epoxide	1.33	1.33	U	"	"	"	"	"	"
gamma-Chlordane	1.33	1.33	U	"	"	"	"	"	"
alpha-Chlordane	1.33	1.33	U	"	"	"	"	"	"
Endosulfan I	1.33	1.33	U	"	"	"	"	"	"
4,4'-DDE	1.33	1.33	U	"	"	"	"	"	"
Dieldrin	1.33	1.33	U	"	"	"	"	"	"
Endrin	1.33	1.33	U	"	"	"	"	"	"
4,4'-DDD	1.33	1.33	U	"	"	"	"	"	"
Endosulfan II	1.33	1.33	U	"	"	"	"	"	"
4,4'-DDT	1.33	1.33	U	"	"	"	"	"	"
Endrin aldehyde	1.33	1.33	U	"	"	"	"	"	"
Endosulfan sulfate	1.33	1.33	U	"	"	"	"	"	"
Methoxychlor	1.33	1.33	U	"	"	"	"	"	"
Endrin ketone	1.33	1.33	U	"	"	"	"	"	"
Toxaphene	20.0	20.0	U J	"	"	"	"	"	"
Surrogate: Tetrachloro-meta-xylene		*115 %*			*28-166*	"	"	"	"
Surrogate: Decachlorobiphenyl		*127 %*			*37-153*	"	"	"	"

LIONVILLE LABORATORY

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

WC-Hanford, Inc. 2620 Fermi Avenue Richland WA, 99354	Project: RC-116 Project Number: [none] Project Manager: Joan Kessner	Reported: 04/27/2009 14:08

J187Y2

0902047-28 (Solid)

Analyte	Result	Reporting Limit	Qualifier	Units	Dilution	Batch	Prepared	Analyzed	Method
				Lionville Laboratory					
Organochlorine Pesticides by SW846 8081A									
alpha-BHC	1.33	1.33	U	ug/kg wet	4	L902175	02/24/2009	03/17/2009	8081A
gamma-BHC	1.33	1.33	U	"	"	"	"	"	"
beta-BHC	1.33	1.33	U	"	"	"	"	"	"
delta-BHC	1.33	1.33	U	"	"	"	"	"	"
Heptachlor	1.33	1.33	U	"	"	"	"	"	"
Aldrin	1.33	1.33	U	"	"	"	"	"	"
Heptachlor epoxide	1.33	1.33	U	"	"	"	"	"	"
gamma-Chlordane	1.33	1.33	U	"	"	"	"	"	"
alpha-Chlordane	1.33	1.33	U	"	"	"	"	"	"
Endosulfan I	1.33	1.33	U	"	"	"	"	"	"
4,4'-DDE	1.33	1.33	U	"	"	"	"	"	"
Dieldrin	1.33	1.33	U	"	"	"	"	"	"
Endrin	1.33	1.33	U	"	"	"	"	"	"
4,4'-DDD	1.33	1.33	U	"	"	"	"	"	"
Endosulfan II	1.33	1.33	U	"	"	"	"	"	"
4,4'-DDT	1.33	1.33	U	"	"	"	"	"	"
Endrin aldehyde	1.33	1.33	U	"	"	"	"	"	"
Endosulfan sulfate	1.33	1.33	U	"	"	"	"	"	"
Methoxychlor	1.33	1.33	U	"	"	"	"	"	"
Endrin ketone	1.33	1.33	U	"	"	"	"	"	"
Toxaphene	20.0	20.0	U J	"	"	"	"	"	"
Surrogate: Tetrachloro-meta-xylene		*111 %*			*28-166*	"	"	"	"
Surrogate: Decachlorobiphenyl		*108 %*			*37-153*	"	"	"	"

11/24/09

Appendix 4

Laboratory Narrative and Chain-of-Custody Documentation

Case Narrative

Client: WC-HANFORD RC-116
LVL #: 0902047
SDG/SAF # K2540 RC 116

W.O. #: 60049-001-001-0001-00
Date Received: 02-14-2009

PCBs

Thirteen (13) solid samples were collected on 02-12-2009.

The samples and associated QC samples were extracted on 02-24-2009 and analyzed according to Lionville Laboratory SOPs based on SW846, 3rd Edition procedure on 03-10,11,12,17-2009. The extraction procedure was based on method 3540C and the extracts were analyzed based on method 8082.

All soil samples are reported on a dry weight basis unless requested by the client, required by the method, or noted otherwise. The following is a summary of the QC results accompanying the sample results. Lionville Laboratory (LvL) certifies that all test results meet the requirements of NELAC except as noted below:

1. All required holding times for extraction and analysis have been met.

2. The samples and their associated QC samples received Copper-Sulfur and Sulfuric Acid cleanups according to Lionville Laboratory SOPs based on SW846 methods 3660A and 3665A respectively.

3. The method blank was below the reporting limits for all target compounds.

4. All obtainable surrogate recoveries were within acceptance criteria.

5. All blank spike recoveries were within acceptance criteria.

6. All matrix spike recoveries were within acceptance criteria.

7. All initial calibrations associated with this data set were within acceptance criteria.

8. All continuing calibration standards analyzed prior to sample extracts were within acceptance criteria.

9. LvL is NELAP accredited by the State of Pennsylvania. For a complete listing of accrediting authorities and the corresponding analytes/methods, please contact your Project Manager.

10. I certify that this sample data package is in compliance with SOW requirements, both technically and for completeness, other than the conditions detailed above. Release of the data contained in this hard-copy data package has been authorized by the laboratory manager or a designee as verified by the following signature.

Judy Stone

Larry Daniels
Laboratory Manager
Lionville Laboratory

4/25/01
Date

264 Welsh Pool Road
Exton, Pennsylvania 19341
Phone (610) 280-3000
Fax (610) 280-3041

Case Narrative

Client: WC-HANFORD RC-116
LVL #: 0902047
SDG/SAF # K1540/RC-116

W.O. #: 60049-001-001-0001-00
Date Received: 02-14-2009

CHLORINATED PESTICIDES

Thirteen (13) solid samples were collected on 02-12-2009.

The samples and their associated QC samples were extracted on 02-24-2009 and analyzed according to Lionville Laboratory SOPs based on SW846, 3rd Edition procedure on 03-16,17-2009. The extraction procedure was based on method 3540C and the extracts were analyzed based on method 8081A.

All soil samples are reported on a dry weight basis unless requested by the client, required by the method, or noted otherwise. The following is a summary of the QC results accompanying the sample results. Lionville Laboratory (LvL) certifies that all test results meet the requirements of NELAC except as noted below:

1. All required holding times for extraction and analysis have been met.
2. The samples and their associated QC samples received Copper-Sulfur cleanups according to Lionville Laboratory SOPs based on SW846 method 3660A.
3. The method blank contained Aldrin at a level below the quantitation limit. Aldrin was not detected in any samples processed with this blank at or above the quantitation limit. A copy of the Sample Discrepancy Report (SDR# 09GC069) has been enclosed.
4. All obtainable surrogate recoveries were within acceptance criteria.
5. All blank spike recoveries were within acceptance criteria.
6. Four (4) of forty (40) matrix spike recoveries were outside acceptance criteria. A copy of the Sample Discrepancy Report (SDR# 09GC069) has been enclosed.
7. All samples required a 4-fold instrument dilution due the matrix and high concentrations of non-target analytes. Reporting limits have been adjusted to reflect the necessary dilutions.

8. All initial calibrations associated with this data set were within acceptance criteria.

9. All continuing calibration standards analyzed prior to sample extracts were within acceptance criteria.

10. LvL is NELAP accredited by the State of Pennsylvania. For a complete listing of accrediting authorities and the corresponding analytes/methods, please contact your Project Manager.

11. I certify that this sample data package is in compliance with SOW requirements, both technically and for completeness, other than the conditions detailed above. Release of the data contained in this hard-copy data package has been authorized by the laboratory manager or a designee, as verified by the following signature.

Iain Daniels
Laboratory Manager
Lionville Laboratory

5/4/09
Date

Lionville Laboratory Sample Discrepancy Report (SDR)

SDR #: 09SC069

Initiator: L. Kauffman
Date: 4-27-2009
Client: [illegible] Hanford RC-116
Batch: C9D?042
Samples: [illegible]
Method: SW846/[illegible]
Parameter: OC/[illegible]
Matrix: [illegible]
Prep Batch: L9Q125

1. Reason for SDR

a. COC Discrepancy
Tech Profile Error
... Transcription Error
_ Client Request
Wrong Test Code
... Sampler Error on C-O-C
_ Other

b. General Discrepancy
Missing Sample/Extract*
.. Hold Time Exceeded
... Improper Bottle Type
__ Container Broken
Insufficient Sample*
Not Amenable to Analysis
.. Wrong Sample Pulled
.. Preservation Wrong
__ Label ID's Illegible
.. Received Past Hold

Note* Verified by [Log-In] or [Prep Group] (circle) signature/date

c. Problem (Include all relevant specific results, attach data if necessary)

Aldrin hit in L9Q125-BLK1 at J level. No Aldrin hits in samples above ~~detection~~ quantitation limit. JD 4/27/09

~~Each of~~ Three of fourty matrix spike recoveries outside acceptance range. JD 4/27/09

2. Known or Probable Causes(s)

3. Discussion and Proposed Action

__ Re-log
_ Entire Batch
Following Samples
Re-leach
__ Re-extract
Re-digest
__ Revise EDD
Change Test Code to
_ Place On/Take Off Hold (circle)

Other Description

Narrate.

4. Project Manager Instructions signature/date 5/4/09

✓ Concur with Proposed Action
__ Disagree with Proposed Action. See Instruction
.. Include in Case Narrative
__ Client Contacted
Date/Person
__ Add
.. Cancel

5. Final Action signature/date [illegible]

✓ Verified (a [log][leach][extract][digest][analysis] (circle)
✓ Included in Case Narrative
Hard Copy COC Revised
_ Electronic COC Revised
EDD Corrections Completed

Other Explanation.

When Final Action has been recorded, forward original to QA for diposition.

Route
✓ Lab Manager [✓ Danve's]
_ Project Mgr (circle) [✓ Johnson] / Stone
Sample Prep (circle) Ford
__ Log-in Ford

Route
_ Metals Welsh /
_ Inorganic Perrone /
GC/LC Cheney /
_ MS VOA Ruona /
_ MS BNA Gordon /
_ Other

QA-[illegible]

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-116-779 | Page 1 of 1

Collector: [illegible]	Company Contact: JOAN KESSNER	Telephone No.: 375-4688
Project Designation: Columbia River Component of the RCBRA - Sediment	Sampling Location: [illegible] SSD Duplicate	Project Coordinator: WEISS, RL
Ice Chest No.: WCH-08-006-D53036	Field Logbook No.: EL-1631-1	COA: BESCRC6520
Shipped To: EBERLINE SERVICES (LIONVILLE)	Offsite Property No.: N/A	SAF No.: RC-536
Price Code: 9K	Data Turnaround: 45 Days	Method of Shipment: FED EX
Bill of Lading/Air Bill No.: 796342246620		

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

			Preservation	None	None	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	None
			Type of Container	G/P	G/P	G/P	G/P	G/P	aG	aG	aG	G	-
			No. of Container(s)	1	1	1	1	1	1	1	1	1	1
			Volume	1500g	100g	10g	10g	250g	250g	125g	250g	250g	-
SAMPLE ANALYSIS				[illegible] Special Instructions	Carbon-14	Technetium-99	See [illegible] Special Instructions	See [illegible] Special Instructions	[illegible]	[illegible]	Semi-VOA - 8270A (TCL)	See [illegible] Special Instructions	-
Sample No.	Matrix *	Sample Date	Sample Time										
J18610	OTHER SOLID	2/12/09	1245					X	X	X	X	X	

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From: [illegible]	Date/Time: 2-12-09 1315	Received By/Stored In: [illegible]	Date/Time: 2-12-09 1315
Relinquished By/Removed From: [illegible]	Date/Time: 2/13/09 0800	Received By/Stored In: D. Heidelberg	Date/Time: 2/13/09 0800
Relinquished By/Removed From: D. Heidelberg	Date/Time: 2/13/09 1200	Received By/Stored In: FedEx	Date/Time: 2/13/09 1200
Relinquished By/Removed From: FedEx	Date/Time: 2-14-09 11 25	Received By/Stored In: [illegible]	Date/Time: 2-14-09 1125
Relinquished By/Removed From:	Date/Time:	Received By/Stored In:	Date/Time:
Relinquished By/Removed From:	Date/Time:	Received By/Stored In:	Date/Time:

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab.

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) (Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238)
(2) Strontium-89,90 - Total Sr, Isotopic Thorium (Thorium-232), Isotopic Uranium (Uranium-233/234, Uranium-235, Uranium-238), Isotopic Plutonium
(3) ICP Metals - 6010 (Full List) (Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc); Mercury - 7471 - (CV)
(4) VOA - 8260A (TCL) (1,1,1-Trichloroethane, 1,1,2,2-Tetrachloroethane, 1,1,2-Trichloroethane, 1,1-Dichloroethane, 1,1-Dichloroethene, 1,2-Dichloroethane, 1,2-Dichloropropane, 2-Butanone, 2-Hexanone, 4-Methyl-2-Pentanone, Acetone, Benzene, Bromodichloromethane, Bromoform, Bromomethane, Carbon disulfide, Carbon tetrachloride, Chlorobenzene, Chloroethane, Chloroform, Chloromethane, cis-1,2-Dichloroethylene, cis-1,3-Dichloropropene, Dibromochloromethane, [illegible]

Matrix *

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-015

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-116-979 Page 1 of 1

Collector BM	Company Contact JOAN KESSNER	Telephone No. 375-4588	Project Coordinator WEISS, RL
Project Designation Columbia River Component of the RCBRA - Sediment	Sampling Location 11-11 SSD		SAF No. RC-116
Ice Chest No. WCH-08-006, 051, 036	Field Logbook No. EL-1631-1	COA BESCRC6570	Method of Shipment FED EX
Shipped To CHEMLINE SERVICES [✓ LIONVILLE]	Offsite Property No. N/A		Bill of Lading/Air Bill No. 796342246660

Price Code 9K

Data Turnaround 45 Days

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

Preservation	None	None	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	None
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	aG	G	aG	G/P
No. of Container(s)	1	1	1	1	1	1	1	1	1	1
Volume	1500g	100g	10g	10g	250g	250g	125g	125mL	125g	1000g
SAMPLE ANALYSIS	See note (1) in Special Instructions	Carbon-14	Technetium-99	See note (2) in Special Instructions	See note (3) in Special Instructions	PCBs - 8082	Pesticides - 8081	See Note (4) in Special Instructions	TOC - 9060	Particle Size (Dry Sieve - Lag)

Sample No.	Matrix *	Sample Date	Sample Time										
J18779	OTHER SOLID	2/12/09	1715					X	X	X	X	X	X

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
B Mayher	2/12/09 1715	Eric	2/12/09 1715
Eric A	2/13/09 0800	D Hedberg	2/13/09 0800
D Hedberg	2/13/09 1200	FedEx 2/13/09	1200
FedEx	2/14/09 1135		2-14-09/1135

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (HASL300) {Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238}

(2) Strontium-89,90 -- Total Sr, Isotopic Thorium {Thorium-232}; Isotopic Uranium {Uranium-233/234, Uranium-235, Uranium-238}; Isotopic Plutonium

(3) ICP Metals - 6010 (TAL) {Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc}; Mercury - 7471 - (CV)

(4) TPH-Diesel Range - WTPH-D+ {Total petroleum hydrocarbons - diesel range, Total petroleum hydrocarbons - motor oil (high boiling)}

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab.

Matrix *

S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-116-983 Page 1 of 2

ollector L [illegible]	Company Contact JOAN KESSNER	Telephone No. 375-4683	Project Coordinator WEISS, RL
roject Designation Columbia River Component of the RCBRA - Sediment	Sampling Location WBT- 9 SSD		SAF No. RC-116
e Chest No. WCH-08-006, 051, 036	Field Logbook No. EL-1631-1	COA BESCRC6520	Method of Shipment FED EX
hipped To EBERLINE SERVICES [✓ LIONVILLE]	Offsite Property No. N/A		Bill of Lading/Air Bill No. 7963422466660

Price Code 9K

Data Turnaround 45 Days

OSSIBLE SAMPLE HAZARDS/REMARKS

pecial Handling and/or Storage

			Preservation	None	None	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	None
			Type of Container	G/P	G/P	G/P	G/P	G/P	aG	aG	aG	G	*
			No. of Container(s)	1	1	1	1	1	1	1	1	1	1
			Volume	1500g	100g	10g	10g	250g	250g	125g	250g	250g	1*
SAMPLE ANALYSIS				See item (1) in Special Instructions.	Carbon-14	Technetium-99	See item (2) in Special Instructions	See item (3) in Special Instructions	PCBs - 8082	Pesticides - 8081	Semi-VOA - 8270A (TCL)	See item (4) in Special Instructions	-
Sample No.	Matrix *	Sample Date	Sample Time										
079M	OTHER SOLID	2/12/09	1125					X	X	X	X	X	

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab.

CHAIN OF POSSESSION Sign/Print Names

elinquished By/Removed From	Date/Time 2-12-09 / 1715	Received By/Stored In	Date/Time 2-12-09 / 1715
elinquished By/Removed From	Date/Time 2/13/09 0800	Received By/Stored In BL [illegible]	Date/Time 02/13/09 0800
elinquished By/Removed From [illegible]	Date/Time 02/13/09 1200	Received By/Stored In Fed Ex	Date/Time 2/13/09 1200
elinquished By/Removed From Fed Ex	Date/Time 2/14/09 1125	Received By/Stored In	Date/Time 2-14-09 1125
elinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
elinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) {Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238}
(2) Strontium-89,90 -- Total Sr; Isotopic Thorium {Thorium-232}; Isotopic Uranium {Uranium-233/234, Uranium-235, Uranium-238}; Isotopic Plutonium
(3) ICP Metals - 6010 (Full List) {Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc}; Mercury - 7471 - (CV)
(4) VOA - 8260A (TCL) {1,1,1-Trichloroethane, 1,1,2,2-Tetrachloroethane, 1,1,2-Trichloroethane, 1,1-Dichloroethane, 1,1-Dichloroethene, 1,2-Dichloroethane, 1,2-Dichloropropane, 2-Butanone, 2-Hexanone, 4-Methyl-2-Pentanone, Acetone, Benzene, Bromodichloromethane, Bromoform, Bromomethane, Carbon disulfide, Carbon tetrachloride, Chlorobenzene, Chloroethane, Chloroform, Chloromethane, cis-1,2-Dichloroethylene, cis-1,3-Dichloropropene, Dibromochloromethane,

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

ABORATORY SECTION	Received By	Title	Date/Time
INAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-116-984

Page 1 of 2

Collector L Stelzer	Company Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator WEISS, RJ.
Project Designation Columbia River Component of the RCBRA - Sediment	Sampling Location WBT-76 SSD		SAF No. RC-116
Ice Chest No. WCH-08-006,051,036	Field Logbook No. EL-1631-1	COA BESCRC6520	Method of Shipment FED EX
Shipped To EBERLINE SERVICES (OAK RIDGE/RICHMOND/LIONVILLE)	Offsite Property No. N/A		Bill of Lading/Air Bill No. 796342246660

Price Code 9K

Data Turnaround 45 Days

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

Preservation	None	None	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	None
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	aG	aG	G	*
No. of Container(s)	1	1	1	1	1	1	1	1	1	4
Volume	1500g	100g	10g	10g	250g	250g	125g	250g	250g	1*
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Technetium-99	See item (2) in Special Instructions	See item (3) in Special Instructions	PCBs - 8082	Pesticides - 8081	Semi-VOA - 8270A (TCL)	See item (4) in Special Instructions	-

Sample No.	Matrix *	Sample Date	Sample Time										
19795	OTHER SOLID	2/11/09	1130					X	X	X	X	X	

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab.

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
L Stelzer	2-11-09/1715		2-11-09 / 1715
	2/13/09 0800	D Heidelberg	2/13/09 0800
D Heidelberg	2/13/09 1200	FedEx	2/13/09 1200
	2-14-09 1125		2-14-09 1125

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) {Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238}

(2) Strontium-89,90 - Total Sr; Isotopic Thorium {Thorium-232}; Isotopic Uranium {Uranium-233/234, Uranium-235, Uranium-238}; Isotopic Plutonium

(3) ICP Metals - 6010 (Full List) {Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc}; Mercury - 7471 - (CV)

(4) VOA - 8260A (TCL) {1,1,1-Trichloroethane, 1,1,2,2-Tetrachloroethane, 1,1,2-Trichloroethane, 1,1-Dichloroethane, 1,1-Dichloroethene, 1,2-Dichloroethane, 1,2-Dichloropropane, 2-Butanone, 2-Hexanone, 4-Methyl-2-Pentanone, Acetone, Benzene, Bromodichloromethane, Bromoform, Bromomethane, Carbon disulfide, Carbon tetrachloride, Chlorobenzene, Chloroethane, Chloroform, Chloromethane, cis-1,2-Dichloroethylene, cis-1,3-Dichloropropene, Dibromochloromethane, Ethylbenzene, Methylene chloride, Styrene, Tetrachloroethene, Toluene, trans-1,2-Dichloroethylene

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE 011

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-116-985 | Page 1 of 1

lector [illegible]	Company Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator WEISS, RL
ject Designation Columbia River Component of the RCBRA - Sediment	Sampling Location WRF- / SSD		SAF No. RC-116
Chest No. WCH-08-020,051,036	Field Logbook No. EL-1631-1	COA DESCRC6320	Method of Shipment FED EX
ipped To EBERLINE SERVICES [✓ LIONVILLE]	Offsite Property No. N/A		Bill of Lading/Air Bill No. 796342246660

Price Code 9K

Data Turnaround 45 Days

SSIBLE SAMPLE HAZARDS/REMARKS

pecial Handling and/or Storage

Preservation	None	None	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	None
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	aG	aG	G	-
No. of Container(s)	1	1	1	1	1	1	1	1	1	1
Volume	1500g	100g	10g	10g	250g	250g	125g	250g	250g	[illegible]
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Technetium-99	See item (2) in Special Instructions	See item (3) in Special Instructions	PCBs - 8082	Pesticides - 8081	Semi-VOA - 8270A (TCL)	See item (4) in Special Instructions	-

Sample No.	Matrix *	Sample Date	Sample Time										
B706	OTHER SOLID	[illegible]	[illegible]					X	X	X	X	X	

Samples unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab.

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
[illegible]	2-12-09 / 1915	[illegible]	2-12-09 / 1915
[illegible]	2/13/09 0800	B. Dykeward	2/13/09 0800
S. Dykeward	2/13/09 1200	Fed Ex	2/13/09 1200
[illegible]	2-14-09 1125	[illegible]	2-14-09 1125

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) (Americium-241, Antimony-125, Beryllium-7, Cerium-144, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238)
(2) Strontium-89,90 - Total Sr, Isotopic Thorium (Thorium-232); Isotopic Uranium (Uranium-233/234, Uranium-235, Uranium-238), Isotopic Plutonium
(3) ICP Metals - 6010 (Full List) (Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc), Mercury - 7471 - (CV)
(4) VOA - 8260A (TCL) (1,1,1-Trichloroethane, 1,1,2,2-Tetrachloroethane, 1,1,2-Trichloroethane, 1,1-Dichloroethane, 1,1-Dichloroethene, 1,2-Dichloroethane, 1,2-Dichloropropane, 2-Butanone, 2-Hexanone, 4-Methyl-2-Pentanone, Acetone, Benzene, Bromodichloromethane, Bromoform, Bromomethane, Carbon disulfide, Carbon tetrachloride, Chlorobenzene, Chloroethane, Chloroform, Chloromethane, cis-1,2-Dichloroethylene, cis-1,3-Dichloropropene, Dibromochloromethane,

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

ABORATORY SECTION	Received By	Title	Date/Time
NAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-116-986

Page 1 of 1

Collector: [illegible]	Company Contact: JOAN KESSNER	Telephone No.: 375-4688	Project Coordinator: WEISS, RL
Project Designation: Columbia River Component of the RCBRA - Sediment	Sampling Location: WBT- 2 SSD		SAF No.: RC-116
Ice Chest No.: WCH-08-006, 051, 036	Field Logbook No.: EL-1631-1	COA: RESCRC6520	Method of Shipment: FED EX
Shipped To: EBERLINE SERVICES [✓ LIONVILLE]	Offsite Property No.: N/A		Bill of Lading/Air Bill No.: 796342246660

Price Code: 9K

Data Turnaround: 45 Days

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

			Preservation	None	None	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	None
			Type of Container	G/P	G/P	G/P	G/P	G/P	aG	aG	aG	G	-
			No. of Container(s)	1	1	1	1	1	1	1	1	1	1
			Volume	1500g	100g	10g	10g	250g	250g	125g	150g	250g	1
			SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Technetium-99	See item (2) in Special Instructions	See item (3) in Special Instructions	PCBs - 8082	Pesticides - 8081	Semi-VOA - 8270A (TCL)	See item (4) in Special Instructions	-
Sample No.	Matrix *	Sample Date	Sample Time										
J18707	OTHER SOLID	2/12/09	1210					X	X	X	X	X	

CHAIN OF POSSESSION	Date/Time	Sign/Print Names	Date/Time
Relinquished By/Removed From		Received By/Stored In	
[illegible]	2-12-09 / 1215	Ref Bg	2-12-09 / 1215
Relinquished By/Removed From		Received By/Stored In	
Ref Bg	2/13/09 0800	B Woodward	2/13/09 0800
Relinquished By/Removed From		Received By/Stored In	
B Woodward	2/13/09 1200	Fed Ex	2/13/09 1200
Relinquished By/Removed From		Received By/Stored In	
Fed Ex	2-14-09 1125	[illegible]	2-14-09 1125
Relinquished By/Removed From		Received By/Stored In	
Relinquished By/Removed From		Received By/Stored In	

Samples unavailable to remove sediment from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab.

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) {Americium-241, Antimony-125, Beryllium-7, Cerium-144, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238}

(2) Strontium-89,90 - Total Sr; Isotopic Thorium {Thorium-232}; Isotopic Uranium {Uranium-233/234, Uranium-235, Uranium-238}; Isotopic Plutonium

(3) ICP Metals - 6010 (Full List) {Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc}; Mercury - 7471 - (CV)

(4) VOA - 8260A (TCL) {1,1,1-Trichloroethane, 1,1,2,2-Tetrachloroethane, 1,1,2-Trichloroethane, 1,1-Dichloroethane, 1,1-Dichloroethene, 1,2-Dichloroethane, 1,2-Dichloropropane, 2-Butanone, 2-Hexanone, 4-Methyl-2-Pentanone, Acetone, Benzene, Bromodichloromethane, Bromoform, Bromomethane, Carbon disulfide, Carbon tetrachloride, Chlorobenzene, Chloroethane, Chloroform, Chloromethane, cis-1,2-Dichloroethylene, cis-1,3-Dichloropropene, Dibromochloromethane,

Matrix *

S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-116-5011 | Page 3 of 2

Collector: BM	Company Contact: JOAN KESSNER	Telephone No.: 375-4688	Project Coordinator: WEISS, RL
Project Designation: Columbia River Component of the RCBRA - Sediment	Sampling Location: RH- 7 SSD		SAF No.: RC-116
Ice Chest No.: WH-08-006,051,036	Field Logbook No.: EL-1610-4	COA: BESCRC6520	Method of Shipment: FEDEX
Shipped To: EBERLINE SERVICES (LIONVILLE)	Offsite Property No.: N/A		Bill of Lading/Air Bill No.: 796342246660

Price Code: 9K

Data Turnaround: 45 Days

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

S20007

Preservation	None	None	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	None
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	aG	aG	G	P
No. of Container(s)	1	1	1	1	1	1	1	1	1	1
Volume	1500g	100g	10g	10g	750g	250g	125g	250g	250g	1P
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Technetium-99	See item (2) in Special Instructions	See item (3) in Special Instructions	PCBs - 8082	Pesticides 8081	Semi-VOA - 8270A (TCL)	See item (4) in Special Instructions	

Sample No.	Matrix *	Sample Date	Sample Time										
J187D2	OTHER SOLID	2/12/09	1015					X	X	X	X	X	

Sample unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab

CHAIN OF POSSESSION

Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
BM	2/12/09 1715	Eric A	2/12/09 1715
Eric A	2/13/09 0800	Diedelberg	2/13/09 0800
Diedelberg	2/13/09 1200	FedEx	2/13/09 1200
FedEx	2-14 09 1135		2-14-09 1135

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) {Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238}
(2) Strontium-89,90 – Total Sr; Isotopic Thorium {Thorium-232}; Isotopic Uranium {Uranium-233/234, Uranium-235, Uranium-238}; Isotopic Plutonium
(3) ICP Metals - 6010 (Full List) {Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc}; Mercury - 7471 - (CV)
(4) VOA - 8260A (TCL) {1,1,1-Trichloroethane, 1,1,2,2-Tetrachloroethane, 1,1,2-Trichloroethane, 1,1-Dichloroethane, 1,1-Dichloroethene, 1,2-Dichloroethane, 1,2-Dichloropropane, 2-Butanone, 2-Hexanone, 4-Methyl-2-Pentanone, Acetone, Benzene, Bromodichloromethane, Bromoform, Bromomethane, Carbon disulfide, Carbon tetrachloride, Chlorobenzene, Chloroethane, Chloroform, Chloromethane, cis-1,2-Dichloroethylene, cis-1,3-Dichloropropene, Dibromochloromethane, [illegible]

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION | Received By | Title | Date/Time

FINAL SAMPLE DISPOSITION | Disposal Method | Disposed By | Date/Time

WCH-EE-011

Washington Closure Hanford	**CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST**	RC-116-1013	Page 1 of 2
Collector: TCM	Company Contact: JOAN KESSNER Telephone No.: 375-4688	Project Coordinator: WEISS, RL	Price Code: 9K Data Turnaround: 45 Days
Project Designation: Columbia River Component of the RCBRA - Sediment	Sampling Location: RH-4/SSD	SAF No.: RC-116	
Ice Chest No.: WCH-08-006, 051, 036	Field Logbook No.: EL-1631A1 COA: BESCRC6520	Method of Shipment: FED EX	
Shipped To: EBERLINE SERVICES (TONVILLE)	Offsite Property No.: N/A	Bill of Lading/Air Bill No.: 796342246660	

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

Preservation	None	None	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	None
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	aG	aG	G	*
No. of Container(s)	1	1	1	1	1	1	1	1	1	1
Volume	1500g	100g	10g	30g	250g	250g	125g	250g	250g	*
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Technetium-99	See item (2) in Special Instructions	See item (3) in Special Instructions	PCBs - 8082	Pesticides - 8081	Semi-VOA - 8270A (TCL)	See item (4) in Special Instructions	*

Sample No.	Matrix *	Sample Date	Sample Time										
J18704	OTHER SOLID	2/12/09	955					X	X	X	X	X	

Sample unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
B. Mayhew	2/12/09 1715	Eric A	2/12/09 1715
Eric A	2/13/09 0800	D. Heidelberg / Lost	2/13/09 0800
D. Heidelberg	2/13/09 1200	FedEx	2/13/09 1200
FedEx	2-14-09 1125		2-14-09 1125

SPECIAL INSTRUCTIONS

(1) Gamma Spec (Full List) {Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238}

(2) Strontium-89,90 -- Total Sr; Isotopic Thorium {Thorium-232}; Isotopic Uranium {Uranium-233/234, Uranium-235, Uranium-238}; Isotopic Plutonium

(3) ICP Metals - 6010 (Full List) {Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc}; Mercury - 7471 - (CV)

(4) VOA - 8260A (TCL) {1,1,1-Trichloroethane, 1,1,2,2-Tetrachloroethane, 1,1,2-Trichloroethane, 1,1-Dichloroethane, 1,1-Dichloroethene, 1,2-Dichloroethane, 1,2-Dichloropropane, 2-Butanone, 2-Hexanone, 4-Methyl-2-Pentanone, Acetone, Benzene, Bromodichloromethane, Bromoform, Bromomethane, Carbon disulfide, Carbon tetrachloride, Chlorobenzene, Chloroethane, Chloroform, Chloromethane, cis-1,2-Dichloroethylene, cis-1,3-Dichloropropene, Dibromochloromethane, Ethylbenzene, Methylene chloride, Styrene, Tetrachloroethene, Toluene, trans-1,2-Dichloroethylene

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

Washington Closure Hanford	**CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST**	RC-116-1014	Page 1 of 2
Collector BA	Company Contact JOAN KESSNER Telephone No. 375-4688	Project Coordinator WEISS, RL	Price Code 9K Data Turnaround **45 Days**
Project Designation Columbia River Component of the RCBRA - Sediment	Sampling Location RH- SSO	SAF No. RC-116	
Ice Chest No. WCH-08-006, 051, 036	Field Logbook No. EL-1618-1 COA RESCRC6520	Method of Shipment FED EX	
Shipped To EBERLINE SERVICES [✓ LIONVILLE]	Offsite Property No. N/A	Bill of Lading/Air Bill No. 796342246660	

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

Preservation	None	None	None	None	Cool 4°C	Cool 4°C	Cool 4°C	Cool 4°C	Cool 4°C	None
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	aG	aG	G	P
No. of Container(s)	1	1	1	1	1	1	1	1	1	1
Volume	1500g	150g	50g	10g	250g	250g	125g	250g	250g	1
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Technetium-99	See item (2) in Special Instructions	See item (3) in Special Instructions	PCBs - 8082	Pesticides 8081	Semi-VOA - 8270A (TCL)	See item (4) in Special Instructions	-

Sample No.	Matrix *	Sample Date	Sample Time										
J197C5	OTHER SOLID	2/12/09	1032					X	X	X	X	X	

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab

CHAIN OF POSSESSION Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
BH/SC	2/12/09 1715	Fred A	2/12/09 1715
Fred A	2/13/09 0800	D Heidelberg	2/13/09 0800
D Heidelberg	2/13/09 1200	FedEx	2/13/09 1200
FedEx	2-14-09 1125		2-14-09 1125

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) {Americium-241, Antimony-125, Beryllium-7, Cerium-144, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238}
(2) Strontium-89,90 – Total Sr; Isotopic Thorium {Thorium-232}; Isotopic Uranium {Uranium-233/234, Uranium-235, Uranium-238}; Isotopic Plutonium
(3) ICP Metals - 6010 (Full List) {Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc}; Mercury - 7471 - (CV)
(4) VOA - 8260A (TCL) {1,1,1-Trichloroethane, 1,1,2,2-Tetrachloroethane, 1,1,2-Trichloroethane, 1,1-Dichloroethane, 1,1-Dichloroethene, 1,2-Dichloroethane, 1,2-Dichloropropane, 2-Butanone, 2-Hexanone, 4-Methyl-2-Pentanone, Acetone, Benzene, Bromodichloromethane, Bromoform, Bromomethane, Carbon disulfide, Carbon tetrachloride, Chlorobenzene, Chloroethane, Chloroform, Chloromethane, cis-1,2-Dichloroethylene, cis-1,3-Dichloropropene, Dibromochloromethane, Ethylbenzene, Methylenechloride, Styrene, Tetrachloroethene, Toluene, trans-1,2-Dichloroethylene

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST		RC-116-1031	Page 1 of 2
Collector [illegible]	Company Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator WEISS, RL	Price Code 9K
Project Designation Columbia River Component of the RCBRA - Sediment	Sampling Location RFLS-2-SSD		SAF No. RC-116	Data Turnaround 45 Days
Ice Chest No. WCH-06-020,051636	Field Logbook No. EL-1639-1	COA BESCRC6520	Method of Shipment FED EX	
Shipped To GEL LABORATORIES SERVICES (CONVILLE)	Offsite Property No. N/A		Bill of Lading/Air Bill No. 796342246660	

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

Preservation	None	None	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	None
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	aG	aG	G	*
No. of Container(s)	1	1	1	1	1	1	1	1	1	1
Volume	1500g	100g	20g	10g	250g	250g	125g	250g	250g	1*
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Technetium-99	See item (2) in Special Instructions	See item (3) in Special Instructions	PCBs - 8082	Pesticides - 8081	Semi-VOA - 8270A (TCL)	See item (4) in Special Instructions	*

Sample No.	Matrix *	Sample Date	Sample Time										
J187K6	OTHER SOLID	2/11/09	[illegible]					X	X	X	X	X	

Sampler unavailable to remove samples from controlled storage. Sampler removed samples from storage location taking custody of samples for shipment to lab

CHAIN OF POSSESSION	Sign/Print Names		
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
J Steele	2-12-09 / 1315	R B	2-12-09 / 1715
Rob B 2/13/09	0800	D Heidelberg	2/13/09 0800
D. Heidelberg	2/13/09 1200	Fedex 2/13/09	1200
Fed Ex	2-14-09 1125		2-14-09 1125

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full Lab) {Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238}

(2) Strontium-89,90 -- Total Sr, Isotopic Thorium {Thorium-232}, Isotopic Uranium {Uranium-233/234, Uranium-235, Uranium-238}, Isotopic Plutonium

(3) ICP Metals - 6010 (Full Lab) {Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc}; Mercury - 7471 - (CV);

(4) VOA - 8260A (TCL) {1,1,1-Trichloroethane, 1,1,2,2-Tetrachloroethane, 1,1,2-Trichloroethane, 1,1-Dichloroethane, 1,1-Dichloroethene, 1,2-Dichloroethane, 1,2-Dichloropropane, 2-Butanone, 2-Hexanone, 4-Methyl-2-Pentanone, Acetone, Benzene, Bromodichloromethane, Bromoform, Bromomethane, Carbon disulfide, Carbon tetrachloride, Chlorobenzene, Chloroethane, Chloroform, Chloromethane, cis-1,2-Dichloroethylene, cis-1,3-Dichloropropene, Dibromochloromethane, [illegible]

Matrix *

S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WC-EE-011

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-116-1032
Page 1 of 1

Collector: RM
Company Contact: JOAN KESSNER
Telephone No.: 373-4688
Project Coordinator: WEISS, RL
Price Code: 9K
Data Turnaround: 45 Days
Project Designation: Columbia River Component of the RCBRA - Sediment
Sampling Location: RFLS / SSD
SAF No.: RC-116
Ice Chest No.: WCH-08-006/05/0360
Field Logbook No.: EL-1631-1
COA: BESCRC6530
Method of Shipment: FED EX
Shipped To: EBERLINE SERVICES ([illegible])
Offsite Property No.: N/A
Bill of Lading/Air Bill No.: 796342246660

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

Preservation	None	None	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	None
Type of Container	G/P	G/P	G/P	G/P	aG/P	aG	aG	aG	G	-
No. of Container(s)	1	1	1	1	1	1	1	1	1	1
Volume	1500g	100g	10g	10g	250g	250g	125g	250g	250g	-
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Technetium-99	See item (2) in Special Instructions	See item (3) in Special Instructions	PCBs - 8082	Pesticides 8081	Semi-VOA 8270A (TCL)	See item (4) in Special Instructions	-

Sample No.	Matrix *	Sample Date	Sample Time										
J187K7	OTHER SOLID	2/12/09	1510					X	X	X	X	X	

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location using custody of samples for shipment to lab.

CHAIN OF POSSESSION	Date/Time	Sign/Print Names	Date/Time
Relinquished By/Removed From: Blake Rattzel	2/12/09 1715	Received By/Stored In: Fox A	2/12/09 1725
Relinquished By/Removed From: Fox A	2/13/09 0800	Received By/Stored In: D Heselberg	2/13/09 0800
Relinquished By/Removed From: D Heselberg	2/13/09 1200	Received By/Stored In: Fedex	2/13/09 1200
Relinquished By/Removed From: [illegible]	2-14-09 1125	Received By/Stored In: [illegible]	2-14-09 1125
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) (Americium-241, Antimony-125, Beryllium-7, Cerium-144, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238)
(2) Strontium-89,90 -- Total Sr; Isotopic Thorium (Thorium-232); Isotopic Uranium (Uranium-233/234, Uranium-235, Uranium-238); Isotopic Plutonium
(3) ICP Metals - 6010 (Full List) (Aluminum, Antimony, Arsenic, Barium, Beryllium, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc); Mercury - 7471 - (CV)
(4) VOA - 8260A (TCL) (1,1,1-Trichloroethane, 1,1,2,2-Tetrachloroethane, 1,1,2-Trichloroethane, 1,1-Dichloroethane, 1,1-Dichloroethene, 1,2-Dichloroethane, 1,2-Dichloropropane, 2-Butanone, 2-Hexanone, 4-Methyl-2-Pentanone, Acetone, Benzene, Bromodichloromethane, Bromoform, Bromomethane, Carbon disulfide, Carbon tetrachloride, Chlorobenzene, Chloroethane, Chloroform, Chloromethane, cis-1,2-Dichloroethylene, cis-1,3-Dichloropropene, Dibromochloromethane, Ethylbenzene, Methylene chloride, Styrene, Tetrachloroethene, Toluene, trans-1,2-Dichloroethene

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-116-306	Page 1 of 1

Collector L. Phillips	Company Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator WEISS, RL
Project Designation Columbia River Component of the RCBRA - Sediment	Sampling Location WBT-13 SD		SAF No. RC-116
Ice Chest No. WCH-08-006, 051, 036	Field Logbook No. EL-1631-1	COA BESCRC6520	Method of Shipment FED EX
Shipped To EBERLINE SERVICES (LIONVILLE)	Offsite Property No. N/A		Bill of Lading/Air Bill No. 796342246660

Price Code 9K

Data Turnaround
45 Days

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

Preservation	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	None			
Type of Container	G/P	aG	aG	aG	G	aG	G/P			
No. of Container(s)	1	1	1	1	1	1	1			
Volume	250g	250g	125g	250g	250g	125g	1000g			
SAMPLE ANALYSIS	See item (1) in Special Instructions	PCBs - 8082	Pesticides - 8081	Semi-VOA - 8270A (TCL)	See item (2) in Special Instructions	TOC - 415.1	Particle Size (Dry Sieve) - D422			

Sample No.	Matrix *	Sample Date	Sample Time										
J17X03	OTHER SOLID	2/12/09	0940	X	X	X	X	X	X	X			

CHAIN OF POSSESSION Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
	2-12-09 / 1715		2-12-09 / 1715
KF B	2/13/09 0800	B Woodward	2/13/09 0800
B Woodward	2/13/09 1200	FedEx	2/13/09 1200
FedEx	2-14-09 1125		2-14-09 1125
	2-14-09 1125		2-14-09 1125

SPECIAL INSTRUCTIONS

(1) ICP Metals - 6010 (Full List) (Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc); Mercury - 7471 - (CV)
(2) VOA - 8260A (TCL) (1,1,1-Trichloroethane, 1,1,2,2-Tetrachloroethane, 1,1,2-Trichloroethane, 1,1-Dichloroethane, 1,1-Dichloroethene, 1,2-Dichloroethane, 1,2-Dichloropropane, 2-Butanone, 2-Hexanone, 4-Methyl-2-Pentanone, Acetone, Benzene, Bromodichloromethane, Bromoform, Bromomethane, Carbon disulfide, Carbon tetrachloride, Chlorobenzene, Chloroethane, Chloroform, Chloromethane, cis-1,2-Dichloroethylene, cis-1,3-Dichloropropene, Dibromochloromethane, Ethylbenzene, Methylene chloride, Styrene, Tetrachloroethene, Toluene, trans-1,2-Dichloroethylene, trans-1,3-Dichloropropene, Trichloroethene, Vinyl chloride, Xylenes (total))

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-116-1084 Page 1 of 2

Collector [illegible]	Company Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator KESSNER, JF
Project Designation Columbia River Component of the RCBRA - Sediment	Sampling Location HT- / SSD		SAF No. RC-116
Ice Chest No. WCH-08-00e/051,0310	Field Logbook No. EL-1631-1	COA BESCRC6520	Method of Shipment FED EX
Shipped To EBERLINE SERVICES (LIONVILLE)	Offsite Property No. N/A		Bill of Lading/Air Bill No. 79634224660

Price Code 9K

Data Turnaround 45 Days

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

Preservation	None	None	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	None
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	aG	aG	G	-
No. of Container(s)	1	1	1	1	1	1	1	1	1	1
Volume	1500g	100g	10g	10g	250g	250g	125g	250g	250g	[illegible]
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Technetium-99	See item (2) in Special Instructions	See item (3) in Special Instructions	PCBs - 8082	Pesticides - 8081	Semi-VOA - 8270A (TCL)	See item (4) in Special Instructions	

Sample No.	Matrix *	Sample Date	Sample Time										
J187Y2	OTHER SOLID	2/12/09	1350					X	X	X	X	X	

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab.

CHAIN OF POSSESSION

Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
[illegible]	2-12-09 / 1915	B L B	2-12-09 / 1915
B L B	2/13/09 0800	D. Heidelberg	2/13/09 0800
D. Heidelberg	2/13/09 1200	FedEx	2/13/09 1200
[illegible]	2-14-09 1125	[illegible]	2-14-09 1125

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) (Americium-241, Antimony-125, Beryllium-7, Cerium-144, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238)
(2) Strontium-89,90 - Total Sr; Isotopic Thorium (Thorium-232); Isotopic Uranium (Uranium-233/234, Uranium-235, Uranium-238); Isotopic Plutonium
(3) ICP Metals - 6010 (Full List) (Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc); Mercury - 7471 - (CV)
(4) VOA - 8260A (TCL) (1,1,1-Trichloroethane, 1,1,2,2-Tetrachloroethane, 1,1,2-Trichloroethane, 1,1-Dichloroethane, 1,1-Dichloroethene, 1,2-Dichloroethane, 1,2-Dichloropropane, 2-Butanone, 2-Hexanone, 4-Methyl-2-Pentanone, Acetone, Benzene, Bromodichloromethane, Bromoform, Bromomethane, Carbon disulfide, Carbon tetrachloride, Chlorobenzene, Chloroethane, Chloroform, Chloromethane, cis-1,2-Dichloroethylene, cis-1,3-Dichloropropene, Dibromochloromethane, Ethylbenzene, Methylene chloride, Styrene, Tetrachloroethene, Toluene, trans-1,2-Dichloroethylene, [illegible]

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION — Received By — Title — Date/Time

FINAL SAMPLE DISPOSITION — Disposal Method — Disposed By — Date/Time

WCH-EE-011

Appendix 5

Data Validation Supporting Documentation

PCB DATA VALIDATION CHECKLIST

VALIDATION LEVEL:	A	B	[✓ C]	D	E

PROJECT: RCBRA

DATA PACKAGE: K1540

VALIDATOR: ELR

LAB: LLI

DATE:

SDG: K1540

ANALYSES PERFORMED

[✓ SW-846 8081]	SW-846 8081 (TCLP)	[✓ SW-846 8082]	SW-846 8081 (TCLP)		

SAMPLES/MATRIX

J18610	J18779	J18794	J18795	J18796	J18797
J187D2	J187D4	J187D5	J187K6	J187K7	J18X07
J187Y2					

solid

1. DATA PACKAGE COMPLETENESS AND CASE NARRATIVE

Technical verification documentation present? .... Yes [✓ No] N/A

Comments:

2. INSTRUMENT PERFORMANCE AND CALIBRATIONS (Levels D and E)

Initial calibrations acceptable? .... Yes No [✓ N/A]

Continuing calibrations acceptable? .... Yes No [✓ N/A]

Standards traceable? .... Yes No [✓ N/A]

Standards expired? .... Yes No [✓ N/A]

Calculation check acceptable? .... Yes No [✓ N/A]

DDT and endrin breakdowns acceptable? .... Yes No [✓ N/A]

Comments:

PCB DATA VALIDATION CHECKLIST

3. BLANKS (Levels B, C, D, and E)

Calibration blanks analyzed? (Levels D, E) .... Yes No [✓ N/A]

Calibration blank results acceptable? (Levels D, E) .... Yes No [✓ N/A]

Laboratory blanks analyzed? .... [✓ Yes] No N/A

Laboratory blank results acceptable? .... Yes [✓ No] N/A

Field/trip blanks analyzed? (Levels C, D, E) .... Yes [✓ No] N/A

Field/trip blank results acceptable? (Levels C, D, E) .... Yes No [✓ N/A]

Transcription/calculation errors? (Levels D, E) .... Yes No [✓ N/A]

Comments: [illegible] - () - DS No PB

680 [illegible]

4. ACCURACY (Levels C, D, and E)

Surrogates analyzed? .... [✓ Yes] No N/A

Surrogate recoveries acceptable? .... [✓ Yes] No N/A

Surrogates traceable? (Levels D, E) .... Yes No [✓ N/A]

Surrogates expired? (Levels D, E) .... Yes No [✓ N/A]

MS/MSD samples analyzed? .... [✓ Yes] No N/A

MS/MSD results acceptable? .... [✓ Yes] No N/A

MS/MSD standards NIST traceable? (Levels D, E) .... Yes No [✓ N/A]

MS/MSD standards expired? (Levels D, E) .... Yes No [✓ N/A]

LCS/BSS samples analyzed? .... [✓ Yes] No N/A

LCS/BSS results acceptable? .... [✓ Yes] No N/A

Standards traceable? (Levels D, E) .... Yes No [✓ N/A]

Standards expired? (Levels D, E) .... Yes No [✓ N/A]

Transcription/calculation errors? (Levels D, E) .... Yes No [✓ N/A]

Performance audit sample(s) analyzed? .... Yes [✓ No] N/A

Performance audit sample results acceptable? .... Yes No [✓ N/A]

Comments: No BS

Toxaphene - No MS/MSD, LCS [illegible]

PCB DATA VALIDATION CHECKLIST

5. PRECISION (Levels C, D, and E)

Duplicate RPD values acceptable? .... [✓ Yes] No N/A
Duplicate results acceptable? .... [✓ Yes] No N/A
MS/MSD standards NIST traceable? (Levels D, E) .... Yes No [✓ N/A]
MS/MSD standards expired? (Levels D, E) .... Yes No [✓ N/A]
Field duplicate RPD values acceptable? .... [✓ Yes] No N/A
Field split RPD values acceptable? .... Yes No [✓ N/A]
Transcription/calculation errors? (Levels D, E) .... Yes No [✓ N/A]

Comments: Acceptable - no MS/MSD - J. [illegible]

755/610

6. SYSTEM PERFORMANCE (Levels D and E)

Chromatographic performance acceptable? .... Yes No [✓ N/A]
Positive results resolved acceptably? .... Yes No [✓ N/A]

Comments:

7. HOLDING TIMES (all levels)

Samples properly preserved? .... [✓ Yes] No N/A
Sample holding times acceptable? .... [✓ Yes] No N/A

Comments:

PCB DATA VALIDATION CHECKLIST

8. COMPOUND IDENTIFICATION, QUANTITATION, AND DETECTION LIMITS (all levels)

Compound identification acceptable? (Levels D, E) ... Yes No [✓ N/A]
Compound quantitation acceptable? (Levels D, E) ... Yes No [✓ N/A]
Results reported for all requested analyses? ... [✓ Yes] No N/A
Results supported in the raw data? (Levels D, E) ... Yes No [✓ N/A]
Samples properly prepared? (Levels D, E) ... Yes No [✓ N/A]
Detection limits meet RDL? ... [✓ Yes] No N/A
Transcription/calculation errors? (Levels D, E) ... Yes No [✓ N/A]

Comments:

9. SAMPLE CLEANUP (Levels D and E)

Fluoricil ® (or other absorbent) cleanup performed? ... Yes No [✓ N/A]
Lot check performed? ... Yes No [✓ N/A]
Check recoveries acceptable? ... Yes No [✓ N/A]
GPC cleanup performed? ... Yes No [✓ N/A]
GPC check performed? ... Yes No [✓ N/A]
GPC check recoveries acceptable? ... Yes No [✓ N/A]
GPC calibration performed? ... Yes No [✓ N/A]
GPC calibration check performed? ... Yes No [✓ N/A]
GPC calibration check retention times acceptable? ... Yes No [✓ N/A]
Check/calibration materials traceable? ... Yes No [✓ N/A]
Check/calibration materials Expired? ... Yes No [✓ N/A]
Analytical batch QC given similar cleanup? ... Yes No [✓ N/A]
Transcription/Calculation Errors? ... Yes No [✓ N/A]

Comments:

Appendix 6

Additional Documentation Requested by Client

Organochlorine Pesticides by SW846 8081A - Quality Control

Lionville Laboratory

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch L902175 - SW 3540C										
Blank (L902175-BLK1)				Prepared: 02/24/2009 Analyzed: 03/16/2009						
alpha-BHC	ND	0.333	ug/kg wet							U
gamma-BHC	ND	0.333	"							U
beta-BHC	ND	0.333	"							U
delta-BHC	ND	0.333	"							U
Heptachlor	ND	0.333	"							U
Aldrin	0.833	0.333	"							J
Heptachlor epoxide	ND	0.333	"							U
gamma-Chlordane	ND	0.333	"							U
alpha-Chlordane	ND	0.333	"							U
Endosulfan I	ND	0.333	"							U
4,4'-DDE	ND	0.333	"							U
Dieldrin	ND	0.333	"							U
Endrin	ND	0.333	"							U
4,4'-DDD	ND	0.333	"							U
Endosulfan II	ND	0.333	"							U
4,4'-DDT	ND	0.333	"							U
Endrin aldehyde	ND	0.333	"							U
Endosulfan sulfate	ND	0.333	"							U
Methoxychlor	ND	0.333	"							U
Endrin ketone	ND	0.333	"							U
Toxaphene	ND	5.00	"							U
Surrogate: Tetrachloro-meta-xylene	*32.0*		"	*33.333*		*96.0*	*38-166*			
Surrogate: Decachlorobiphenyl	*30.3*		"	*33.333*		*91.0*	*37-151*			
LCS (L902175-BS1)				Prepared: 02/24/2009 Analyzed: 03/16/2009						
alpha-BHC	32.3	0.333	ug/kg wet	33.333		97.0	61-142			
gamma-BHC	33.3	0.333	"	33.333		100	65-142			
beta-BHC	31.0	0.333	"	33.333		93.0	71-134			
delta-BHC	21.7	0.333	"	33.333		65.0	55-144			
Heptachlor	30.3	0.333	"	33.333		91.0	70-138			
Aldrin	30.0	0.333	"	33.333		90.0	70-143			JS
Heptachlor epoxide	33.3	0.333	"	33.333		100	72-140			
gamma-Chlordane	30.7	0.333	"	33.333		92.0	74-140			
alpha-Chlordane	30.0	0.333	"	33.333		90.0	74-138			
Endosulfan I	32.0	0.333	"	33.333		96.0	81-141			
4,4'-DDE	36.0	0.333	"	33.333		108	82-145			
Dieldrin	33.3	0.333	"	33.333		100	79-144			
Endrin	35.7	0.333	"	33.333		107	73-147			
4,4'-DDD	40.0	0.333	"	33.333		120	77-148			
Endosulfan II	29.3	0.333	"	33.333		88.0	80-140			
4,4'-DDT	34.3	0.333	"	33.333		103	82-147			
Endrin aldehyde	27.3	0.333	"	33.333		82.0	59-113			
Endosulfan sulfate	32.7	0.333	"	33.333		98.0	77-119			
Methoxychlor	42.3	0.333	"	33.333		127	77-136			

204 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

WC-Hanford, Inc
2620 Fermi Avenue
Richland WA, 99354

Project: RC-116
Project Number: [none]
Project Manager: Joan Kessner

Reported:
04/27/2009 14:08

Organochlorine Pesticides by SW846 8081A - Quality Control
Lionville Laboratory

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch L902175 - SW 3540C										
LCS (L902175-BS1)				Prepared: 02/24/2009 Analyzed: 03/16/2009						
Endrin ketone	35.0	0.333	ug/kg wet	33.333		105	85-134			
Surrogate: Tetrachloro-meta-xylene	*29.0*		"	*33.337*		*87.0*	*28-166*			
Surrogate: Decachlorobiphenyl	*32.3*		"	*33.333*		*97.0*	*37-153*			
Matrix Spike (L902174-MS2)		Source: 0902047-08		Prepared: 02/24/2009 Analyzed: 03/16/2009						
alpha-BHC	39.0	1.33	ug/kg wet	33.333	ND	117	61-142			D
gamma-BHC	35.0	1.33	"	33.333	ND	105	65-142			D
beta-BHC	41.7	1.33	"	33.333	ND	125	71-134			D
delta-BHC	22.3	1.33	"	33.333	ND	67.0	53-144			D
Heptachlor	40.3	1.33	"	33.333	ND	121	70-138			D
Aldrin	32.0	1.33	"	33.333	ND	96.0	70-143			D, B
Heptachlor epoxide	39.3	1.33	"	33.333	ND	118	72-140			D
gamma-Chlordane	35.7	1.33	"	33.333	ND	107	74-140			D
alpha-Chlordane	38.7	1.33	"	33.333	ND	116	74-138			D
Endosulfan I	41.3	1.33	"	33.333	ND	124	81-141			D
4,4'-DDE	44.0	1.33	"	33.333	ND	132	82-145			D
Dieldrin	40.3	1.33	"	33.333	ND	121	79-144			D
Endrin	41.0	1.33	"	33.333	ND	123	73-147			D
4,4'-DDD	55.7	1.33	"	33.333	ND	* 167	77-148			D
Endosulfan II	42.3	1.33	"	33.333	ND	127	80-140			D
4,4'-DDT	40.7	1.33	"	33.333	ND	122	82-142			D
Endrin aldehyde	30.3	1.33	"	33.333	ND	91.0	59-131			D
Endosulfan sulfate	39.0	1.33	"	33.333	ND	117	77-135			D
Methoxychlor	61.3	1.33	"	33.333	ND	* 184	77-136			D
Endrin ketone	45.3	1.33	"	33.333	ND	* 136	85-134			D
Surrogate: Tetrachloro-meta-xylene	*38.3*		"	*33.337*		*115*	*28-166*			
Surrogate: Decachlorobiphenyl	*36.3*		"	*33.333*		*109*	*37-153*			

208 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

WC-Hanford, Inc
2620 Fermi Avenue
Richland WA, 99354

Project: RC-116
Project Number: [none]
Project Manager: John Kessner

Reported:
04/27/2009 14:08

Organochlorine Pesticides by SW846 8081A - Quality Control

Lionville Laboratory

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch L902175 - SW 3540C										
Matrix Spike Dup (L902175-MSD2)		**Source: 0902047-08**		Prepared: 02/24/2009 Analyzed: 03/16/2009						
alpha-BHC	31.7	1.33	ug/kg wet	33.333	ND	95.0	61-142	20.8	40	D
gamma-BHC	29.7	1.33	"	33.333	ND	89.0	65-142	16.5	40	D
beta-BHC	35.3	1.33	"	33.333	ND	106	71-134	16.5	40	D
delta-BHC	19.0	1.33	"	33.333	ND	57.0	53-144	16.1	40	D
Heptachlor	31.3	1.33	"	33.333	ND	94.0	70-138	25.1	40	D
Aldrin	24.3	1.33	"	33.333	ND	73.0	70-143	27.2	40	R, D
Heptachlor epoxide	31.3	1.33	"	33.333	ND	94.0	72-140	22.6	40	D
gamma-Chlordane	29.0	1.33	"	33.333	ND	87.0	74-140	20.6	40	D
alpha-Chlordane	29.3	1.33	"	33.333	ND	88.0	74-138	27.5	40	D
Endosulfan I	33.3	1.33	"	33.333	ND	100	81-141	21.4	40	D
4,4'-DDE	32.7	1.33	"	33.333	ND	98.0	82-145	29.6	40	D
Dieldrin	32.7	1.33	"	33.333	ND	98.0	79-144	21.0	40	D
Endrin	33.7	1.33	"	33.333	ND	101	73-147	19.6	40	D
4,4'-DDD	43.7	1.33	"	33.333	ND	131	77-148	24.2	40	D
Endosulfan II	35.0	1.33	"	33.333	ND	105	80-140	19.0	40	D
4,4'-DDT	34.3	1.33	"	33.333	ND	103	82-142	16.9	40	D
Endrin aldehyde	30.0	1.33	"	33.333	ND	90.0	59-131	1.20	40	D
Endosulfan sulfate	33.3	1.33	"	33.333	ND	100	77-135	15.7	40	D
Methoxychlor	50.7	1.33	"	33.333	ND	* 152	77-136	19.0	40	D
Endrin ketone	38.7	1.33	"	33.333	ND	116	85-134	15.9	40	D
Surrogate: Tetrachloro-meta-xylene	*33.3*		"	*33.333*		*100*	*25-166*			
Surrogate: Decachlorobiphenyl	*33.7*		"	*33.333*		*101*	*37-153*			

WC Hanford, Inc	Project: RC-116	
2620 Fermi Avenue	Project Number: [none]	Reported:
Richland WA, 99354	Project Manager: Joan Kessner	04/13/2009 17:16

Polychlorinated Biphenyls by SW846 8082 - Quality Control

Lionville Laboratory

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch L902175 - SW 3540C										
Blank (L902175-BLK2)				Prepared: 02/24/2009 Analyzed: 03/11/2009						
Aroclor 1016	ND	13.3	ug/kg wet							U
Aroclor 1221	ND	13.3	"							U
Aroclor 1232	ND	13.3	"							U
Aroclor 1242	ND	13.3	"							U
Aroclor 1248	ND	13.3	"							U
Aroclor 1254	ND	13.3	"							U
Aroclor 1260	ND	13.3	"							U
Surrogate: Decachlorobiphenyl	*29.0*		"	*33.333*		*87*	*33-144*			
Surrogate: Tetrachloro-meta-xylene	*25.0*		"	*33.333*		*75*	*52-141*			
LCS (L902175-BS2)				Prepared: 02/24/2009 Analyzed: 03/11/2009						
Aroclor 1016	109	13.3	ug/kg wet	166.67		65	50-138			
Aroclor 1260	130	13.3	"	166.67		78	50-148			
Surrogate: Decachlorobiphenyl	*30.7*		"	*33.333*		*92*	*33-144*			
Surrogate: Tetrachloro-meta-xylene	*28.4*		"	*33.333*		*85*	*52-141*			
Matrix Spike (L902175-MS5)		Source: 0902047-08		Prepared: 02/24/2009 Analyzed: 03/12/2009						
Aroclor 1016	123	13.3	ug/kg wet	166.67	ND	74	50-138			
Aroclor 1260	159	13.3	"	166.67	ND	95	50-148			
Surrogate: Decachlorobiphenyl	*37.3*		"	*33.333*		*112*	*33-144*			
Surrogate: Tetrachloro-meta-xylene	*27.3*		"	*33.333*		*82*	*52-141*			
Matrix Spike Dup (L902175-MSD5)		Source: 0902047-08		Prepared: 02/24/2009 Analyzed: 03/12/2009						
Aroclor 1016	94.7	13.3	ug/kg wet	166.67	ND	57	50-138	26	40	
Aroclor 1260	122	13.3	"	166.67	ND	73	50-148	26	40	
Surrogate: Decachlorobiphenyl	*27.7*		"	*33.333*		*83*	*33-144*			
Surrogate: Tetrachloro-meta-xylene	*19.3*		"	*33.333*		*58*	*52-141*			

Date: 7 December 2009
To: Washington Closure Hanford Inc. (technical representative)
From: ELR Consulting
Project: Columbia River Component of the RCBRA – Sediment
Subject: Radiochemistry - Data Package No. K1540-EB

INTRODUCTION

This memo presents the results of data validation on Data Package No. K1540 prepared by Eberline Services (EB). A list of samples validated along with the analyses reported and the method of analysis is provided in the following table.

Sample ID	Sample Date	Media	Validation	Anaysis
J187D6	2/12/09	Solid	C	See note 1
J187D7	2/12/09	Solid	C	See note 1
J187D8	2/12/09	Solid	C	See note 1
J187D9	2/12/09	Solid	C	See note 1
J187F0	2/12/09	Solid	C	See note 1
J187F1	2/12/09	Solid	C	See note 1
J187K6	2/12/09	Solid	C	See note 1
J187K7	2/12/09	Solid	C	See note 1
J187K8	2/12/09	Solid	C	See note 1
J187K9	2/12/09	Solid	C	See note 1
J187L0	2/12/09	Solid	C	See note 1
J187Y2	2/12/09	Solid	C	See note 1
J187Y5	2/12/09	Solid	C	See note 1
J18610	2/12/09	Solid	C	See note 1
J18779	2/12/09	Solid	C	See note 1
J18794	2/12/09	Solid	C	See note 1
J18795	2/12/09	Solid	C	See note 1
J18796	2/12/09	Solid	C	See note 1
J18797	2/12/09	Solid	C	See note 1
J18798	2/12/09	Solid	C	See note 1
J18799	2/12/09	Solid	C	See note 1
J187B0	2/12/09	Solid	C	See note 1
J187D2	2/12/09	Solid	C	See note 1
J187D4	2/12/09	Solid	C	See note 1
J187D5	2/12/09	Solid	C	See note 1

1 – Carbon-14, total strontium, technetium 99, alpha spectroscopy and gamma spectroscopy

Data validation was conducted in accordance with the Washington Closure Hanford (WCH) validation statement of work and the Remedial Investigation Work Plan for Hanford Site Releases to the Columbia River (DOE/RL-2008-11, Rev. 0, September 2008). Appendices 1 through 6 provide the following information as indicated below:

Appendix 1. Glossary of Data Reporting Qualifiers
Appendix 2. Summary of Data Qualification
Appendix 3. Qualified Data Summary and Annotated Laboratory Reports
Appendix 4. Laboratory Narrative and Chain-of-Custody Documentation
Appendix 5. Data Validation Supporting Documentation
Appendix 6. Additional Data Requested by Client

DATA QUALITY PARAMETERS

- **Holding Times**

Holding times are calculated from Chain-of-Custody forms to determine the validity of the results. The maximum holding time for radiochemical analysis is 6 months.

All holding times were acceptable

Preparation (Method) Blanks

Laboratory Blanks

Blank samples are analyzed to determine if positive results are due to laboratory reagent, sample container, or detector contamination. If blank analysis results indicate the presence of an analyte above the minimum detectable activity (MDA), the following qualifiers are applied: All positive sample results less than five times the highest blank concentration are qualified as estimates and flagged "J"; sample results below the MDA are qualified as undetected and flagged "U"; sample results above the MDA and greater than five times the highest blank concentration are not qualified.

All blank results were acceptable.

Field (Equipment) Blank

No field blanks were submitted for analysis.

Accuracy

Accuracy is evaluated from laboratory control sample (LCS) or blank spike sample (BSS) batch samples and spiked samples from the analytical batch. Measured activities are compared to the known added amounts. The acceptable LCS or BSS and matrix spike (MS) recovery range is 70-130%. In addition, samples may be spiked with a radiochemical tracer to assist in isolating the radioisotope of interest with the yield of the tracer being used in calculating sample activity. The acceptable range for tracer recovery is 20% to 105%. Spike sample results outside the above ranges result in associated sample results being qualified as estimates, or not qualified, depending on the activity of the individual sample. Results are rejected for LCS/BSS recoveries of less than 30% and tracer recoveries of less than 20%. and tracer recoveries of greater than 115% for detected results.

Due to the lack of an LCS analysis, all thorium-228 (aspec) and thorium-232 (aspec) results were qualified as estimates and flagged "J".

Due to the lack of a matrix spike analysis, all carbon-14 results were qualified as estimates and flagged "J".

All other accuracy results were acceptable.

- **Laboratory Duplicates**

Analytical precision is expressed by the relative percent differences (RPD) between the recoveries of duplicate matrix spike analyses performed on a sample in the analytical batch. Precision may alternatively be assessed using unspiked duplicate analyses performed on a sample in the analytical batch. If both sample and replicate activities (concentrations) are greater than five times the contract required detection limit (CRDL) and the RPD is less than 30%, no qualification is required. If either activity (concentration) is less than five times the CRDL, the RPD control limit is less than or equal to two times the CRDL. If the RPD is outside the applicable control limit, associated results are qualified as estimated detects or estimated non-detects.

All duplicate results were acceptable.

Field Duplicates

One set of field duplicates (J18795/J18610) was submitted for analysis. Field duplicates are compared using the same criteria as for laboratory duplicates. All field duplicates results were acceptable.

- **Detection Levels**

Reported analytical detection levels for undetected analytes are compared against the project RQLs to ensure that laboratory detection levels meet the required criteria. All analytes met the RQL.

- **Completeness**

Data package No. K1540 was submitted for validation and verified for completeness. Completeness is based on the percentage of data determined to be valid (i.e., not rejected). The completion percentage was 100%.

MAJOR DEFICIENCIES

None found.

MINOR DEFICIENCIES

The following minor deficiency was noted.

- Due to the lack of an LCS analysis, all thorium-228 (aspec) and thorium-232 (aspec) results were qualified as estimates and flagged "J".
- Due to the lack of a matrix spike analysis, all carbon-14 results were qualified as estimates and flagged "J".

Data flagged "J" indicates that the associated concentration is an estimate, but under the WCH statement of work, the data may be usable for decision-making purposes. All other validated results are considered accurate within the standard error associated with the methods.

REFERENCES

Washington Closure Hanford Contract #S00W307A00 (March 2008), *Data Validation Services*.

DOE/RL-2008-11, Rev.0, *Remedial Investigation Work Plan for Hanford Site Releases to the Columbia River*, September 2008.

Appendix 1

Glossary of Data Reporting Qualifiers

Qualifiers which may be applied by data validators in compliance with the WCH statement of work are as follows.

U - Indicates the compound or analyte was analyzed for and not detected above the minimum detectable activity (MDA) in the sample. The value reported is the sample result corrected for sample dilution and moisture content by the laboratory. The data is usable for decision making purposes

UJ - Indicates the compound or analyte was analyzed for and not detected at concentrations above the minimum detectable activity (MDA) in the sample. Due to a minor QC deficiency identified during the data validation, the associated quantitation limit is an estimate, but is usable for decision making purposes.

J - Indicates the compound or analyte was analyzed for and detected. Due to a minor QC deficiency identified during the data validation, the associated concentration is an estimate, but the data are usable for decision-making purposes.

R - Indicates the compound or analyte was analyzed for, detected, and due to an identified major QC deficiency, the data are unusable.

UR - Indicates the compound or analyte was analyzed for and not detected in the sample. Additionally, the data is unusable due to an identified major QC deficiency.

Appendix 2

Summary of Data Qualification

RADIOCHEMISTRY DATA QUALIFICATION SUMMARY*

SDG: K1640	**REVIEWER: ELR**	**Project: RCBRA**	**QC Issue**
COMPOUND	QUALIFIER	SAMPLES AFFECTED	REASON
Thorium-228 Thorium-232	J	All	No LCS analysis
Carbon-14	J	All	No MS analysis

* - The Qualified Data Summary Table includes laboratory applied "U" qualifiers not specifically identified here. The laboratory applied "U" qualifiers are included to minimize misinterpretation of results contained in the table.

Appendix 3

Qualified Data Summary and Annotated Laboratory Reports

EBERLINE ANALYTICAL/RICHMOND

SAMPLE DELIVERY GROUP K1540

7307-001

J18610

DATA SHEET

SDG	7307	Client/Case no	Hanford SDG K1540
Contact	N. Joseph Verville	Contract	No. S00W235A00
Lab sample id	R902048-01	Client sample id	J18610
Dept sample id	7307-001	Location/Matrix	WBT-10 SED SOLID
Received	02/14/09	Collected/Weight	02/12/09 12:45 1492 g
% solids	100.0	Custody/SAF No	RC-116-779 RC-116

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Carbon 14	14762-75-5	-0.676	1.7	2.90	50.0	U J	C
Total Strontium	SR RAD	0.017	0.12	0.226	1.00	U	SR
Technetium 99	14133-76-7	0.010	0.14	0.356	15.0	U	TC
Thorium 228	14274-82-9	0.871	0.47	0.439	1.00	J	TH
Thorium 230	14269-63-7	0.503	0.37	0.350	1.00		TH
Thorium 232	TH-232	0.501	0.28	0.360	1.00	J	TH
Uranium 233/234	U 233/234	0.423	0.26	0.249	1.00		U
Uranium 235	15117-96-1	0	0.079	0.302	1.00	U	U
Uranium 238	U-238	0.586	0.27	0.249	1.00		U
Plutonium 238	13981-16-3	0.088	0.12	0.225	1.00	U	PU
Plutonium 239/240	PU-239/240	0.029	0.059	0.225	1.00	U	PU
Potassium 40	13966-00-2	11.7	0.24	0.110			GAM
Cobalt 60	10198-40-0	U		0.011	0.050	U	GAM
Cesium 137	10045-97-3	0.013	0.008	0.010	0.100		GAM
Radium 226	13982-63-3	0.443	0.021	0.020	0.100		GAM
Radium 228	15262-20-1	0.772	0.052	0.048	0.200		GAM
Europium 152	14683-23-9	U		0.030	0.100	U	GAM
Europium 154	15585-10-1	U		0.038	0.100	U	GAM
Europium 155	14391-16-3	U		0.034	0.100	U	GAM
Thorium 228	14274-82-9	0.734	0.015	0.014			GAM
Thorium 232	TH-232	0.772	0.052	0.048			GAM
Uranium 235	15117-96-1	U		0.064		U	GAM
Uranium 238	U-238	U		1.40		U	GAM
Americium 241	14596-10-2	U		0.102		U	GAM
Beryllium 7	13966-02-4	U		0.090		U	GAM
Ruthenium 106	13967-48-1	U		0.084		U	GAM
Antimony 125	14234-35-6	U		0.025		U	GAM
Cesium 134	13967-70-9	U		0.014		U	GAM

ColumbiaRiverComp.ofRCBRA-Sediment

11/29/09

Lab id	EBRLNE
Protocol	Hanford1
Version	Ver 1.0
Form	DVD-DS
Version	1.00
Report date	03/12/09

DATA SHEETS
Page 1
SUMMARY DATA SECTION
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EBERLINE ANALYTICAL/RICHMOND

SAMPLE DELIVERY GROUP K1540

7307-002

J18779

DATA SHEET

SDG	7307	Client/Case no	Hanford SDG_K1540
Contact	N. Joseph Verville	Contract	No. 00W023SA00
Lab sample id	R902048 02	Client sample id	J18779
Dept sample id	7307 002	Location/Matrix	SI-11 SED SOLID
Received	02/14/09	Collected/Weight	02/12/09 13:15 1253 g
% solids	100.0	Custody/SAF No	RC-116-979 RC 116

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Carbon 14	14762-75-5	0.203	1.8	2.96	50.0	UJ	C
Total Strontium	SR-RAD	0.003	0.11	0.228	1.00	U	SR
Technetium 99	14133-76-7	-0.113	0.13	0.376	15.0	U	TC
Thorium 228	14274-82-9	2.14	0.63	0.410	1.00	J	TH
Thorium 230	14269-63-7	1.32	0.52	0.473	1.00		TH
Thorium 232	TH-232	2.18	0.63	0.409	1.00	J	TH
Uranium 233/234	U 233/234	0.924	0.36	0.221	1.00		U
Uranium 235	15117-96-1	0	0.070	0.267	1.00	U	U
Uranium 238	U-238	0.982	0.36	0.221	1.00		U
Plutonium 238	13981-16-3	0.029	0.12	0.220	1.00	U	PU
Plutonium 239/240	PU-239/240	0.058	0.050	0.220	1.00	U	PU
Potassium 40	13966-00-2	12.4	0.83	0.124			GAM
Cobalt 60	10198-40-0	U		0.012	0.050	U	GAM
Cesium 137	10045-97-3	0.034	0.009	0.011	0.100		GAM
Radium 226	13982-63-3	0.765	0.038	0.026	0.100		GAM
Radium 228	15262-20-1	1.99	0.064	0.041	0.200		GAM
Europium 152	14683-23-9	U		0.029	0.100	U	GAM
Europium 154	15585-10-1	U		0.039	0.100	U	GAM
Europium 155	14391-16-3	U		0.090	0.100	U	GAM
Thorium 228	14274-82-9	1.83	0.025	0.017			GAM
Thorium 232	TH-232	1.99	0.064	0.041			GAM
Uranium 235	15117-96-1	U		0.113		U	GAM
Uranium 238	U-238	U		1.93		U	GAM
Americium 241	14596-10-2	U		0.044		U	GAM
Beryllium 7	13966-02-4	U		0.098		U	GAM
Ruthenium 106	13967-48-1	U		0.094		U	GAM
Antimony 125	14234-35-6	U		0.025		U	GAM
Cesium 134	13967-70-9	U		0.018		U	GAM

ColumbiaRiverComp.ofRCURA-Sediment

11/25/09

Lab id	EBRLNE
Protocol	Hanford1
Version	Ver 1.0
Form	DVD-DS
Version	1.06
Report date	03/19/09

EBERLINE ANALYTICAL/RICHMOND

SAMPLE DELIVERY GROUP K1540

7107-003

J18794

DATA SHEET

SDG	7107	Client/Case no	Hanford SDG K1540
Contact	N. Joseph Verville	Contract	No. 000W235A00
Lab sample id	R902098-03	Client sample id	J18794
Dept sample id	7107 003	Location/Matrix	WRT-6 SSD SOLID
Received	02/14/09	Collected/Weight	02/12/09 11:25 1752 g
% solids	100.0	Custody/SAP No	RC-116 003 RC-116

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Carbon 14	14762-75-5	-0.732	1.8	3.14	50.0	U J	C
Total Strontium	SR RAD	0.026	0.11	0.221	1.00	U	SR
Technetium 99	14133-76-7	0.082	0.14	0.414	15.0	U	TC
Thorium 228	14274-82-9	0.618	0.36	0.488	1.00	J	TH
Thorium 230	14269-63-7	1.23	0.54	0.337	1.00		TH
Thorium 232	TH-232	0.924	0.45	0.337	1.00	J	TH
Uranium 233/234	U-233/234	0.493	0.20	0.151	1.00		U
Uranium 235	15117-96-1	0	0.048	0.183	1.00	U	U
Uranium 238	U-238	0.671	0.24	0.151	1.00		U
Plutonium 238	13981-16-3	0.031	0.12	0.237	1.00	U	PU
Plutonium 239/240	PU-239/240	0	0.062	0.237	1.00	U	PU
Potassium 40	13966-00-2	11.3	3.45	0.110			GAM
Cobalt 60	10198-40-0	U		0.011	0.050	U	GAM
Cesium 137	10045-97-3	0.025	0.012	0.012	0.100		GAM
Radium 226	13982-63-3	0.511	0.040	0.020	0.100		GAM
Radium 228	15262-20-1	0.920	0.052	0.039	0.200		GAM
Europium 152	14683-23-9	U		0.029	0.100	U	GAM
Europium 154	15585-10-1	U		0.036	0.100	U	GAM
Europium 155	14391-16-3	U		0.050	0.100	U	GAM
Thorium 228	14274-82-9	0.923	0.021	0.014			GAM
Thorium 232	TH-232	0.920	0.052	0.039			GAM
Uranium 235	15117-96-1	U		0.046		U	GAM
Uranium 238	U-238	U		2.23		U	GAM
Americium 241	14596-10-2	U		0.016		U	GAM
Beryllium 7	13966-02-4	U		0.086		U	GAM
Ruthenium 106	13967-48-1	U		0.085		U	GAM
Antimony 125	14234-35-6	U		0.024		U	GAM
Cesium 134	13967-70-9	U		0.015		U	GAM

ColumbiaRiverComp.ofRCBRA-Sediment

11/25/09

Lab id	EBRLNE
Protocol	Hanford1
Version	Ver 1.0
Form	DVD-DS
Version	3.06
Report date	03/19/09

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EBERLINE ANALYTICAL/RICHMOND

SAMPLE DELIVERY GROUP K1540

7307-004

J18795

DATA SHEET

SDG	7307	Client/Case no	Hanford	SDG K1540
Contact	N. Joseph Verville	Contract	No. 000W235A00	
Lab sample id	8902048-04	Client sample id	J18795	
Dept sample id	7307-004	Location/Matrix	WBT-10 SED	SOLID
Received	02/14/09	Collected/Weight	02/12/09 13:10	2127 g
% solids	100.0	Custody/SAF No	RC-116-084	RC-116

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALIFIERS	TEST
Carbon 14	14762-75-5	0.443	1.7	2.85	50.0	UJ	C
Total Strontium	SR-RAD	0.017	0.10	0.204	1.00	U	SR
Technetium 99	14133-76-7	-0.003	0.15	0.372	15.0	UJ	TC
Thorium 228	14274-82-9	0.613	0.33	0.391	1.00		TH
Thorium 230	14269-63-7	0.611	0.33	0.112	1.00		TH
Thorium 232	TH-232	0.731	0.33	0.312	1.00	J	TH
Uranium 233/234	U-233/234	0.356	0.22	0.273	1.00		U
Uranium 235	15117-96-1	0.086	0.087	0.330	1.00	U	U
Uranium 238	U-238	0.285	0.22	0.273	1.00		U
Plutonium 238	13981-16-3	-0.012	0.035	0.069	1.00	U	PU
Plutonium 239/240	PU-239/240	0	0.012	0.028	1.00	U	PU
Potassium 40	13966-00-2	11.2	0.19	0.080			GAM
Cobalt 60	10198-40-0	U		0.008	0.050	U	GAM
Cesium 137	10045-97-3	0.009	0.005	0.007	0.100		GAM
Radium 226	13982-63-3	0.460	0.019	0.014	0.100		GAM
Radium 228	15262-20-1	0.795	0.040	0.036	0.200		GAM
Europium 152	14683-23-9	U		0.019	0.100	U	GAM
Europium 154	15585-10-1	U		0.027	0.100	U	GAM
Europium 155	14391-16-3	U		0.049	0.100	U	GAM
Thorium 228	14274-82-9	0.837	0.013	0.011			GAM
Thorium 232	TH-232	0.795	0.040	0.036			GAM
Uranium 235	15117-96-1	U		0.047		U	GAM
Uranium 238	U-238	U		1.77		U	GAM
Americium 241	14596-10-2	U		0.013		U	GAM
Beryllium 7	13966-02-4	U		0.065		U	GAM
Ruthenium 106	13967-48-1	U		0.067		U	GAM
Antimony 125	14234-35-6	U		0.016		U	GAM
Cesium 134	13967-70-9	U		0.012		U	GAM

ColumbiaRiverComp,ofRCBRA-Sediment

11/25/09

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Protocol Hanford1
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EBERLINE ANALYTICAL/RICHMOND

SAMPLE DELIVERY GROUP K1540

7307-005 J18796

DATA SHEET

SDG	7307	Client/Case no	Hanford SDG K1540
Contact	N. Joseph Verville	Contract	No. 500W215A00
Lab sample id	8902048-05	Client sample id	J18796
Dept sample id	7307-005	Location/Matrix	WHT-1 SED SOLID
Received	02/14/09	Collected/Weight	02/12/09 09:20 1432 g
% solids	100.0	Custody/SAP No	RC-116:985 RC 116

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Carbon 14	14762-75-5	0.858	1.7	2.85	50.0	U J	C
Total Strontium	SR-RAD	0.047	0.12	0.247	1.00	U	SR
Technetium 99	14133-76-7	-0.020	0.13	0.367	15.0	U	TC
Thorium 228	14274-82-9	0.791	0.45	0.589	1.00	J	TH
Thorium 230	14269-63-7	1.05	0.45	0.335	1.00		TH
Thorium 232	TH-232	0.745	0.36	0.135	1.00	J	TH
Uranium 233/234	U-233/234	1.08	0.35	0.217	1.00		U
Uranium 235	15117-96-1	0.034	0.069	0.262	1.00	U	U
Uranium 238	U-238	0.595	0.29	0.217	1.00		U
Plutonium 238	13981-16-3	-0.021	0.030	0.064	1.00	U	PU
Plutonium 239/240	PU-239/240	0.015	0.018	0.020	1.00	U	PU
Potassium 40	13966-00-2	10.8	0.66	0.086			GAM
Cobalt 60	10198-40-0	U		0.007	0.050	U	GAM
Cesium 137	10045-97-3	0.041	0.008	0.010	0.100		GAM
Radium 226	13982-63-3	0.516	0.024	0.014	0.100		GAM
Radium 228	15262-20-1	0.837	0.047	0.035	0.200		GAM
Europium 152	14683-23-9	U		0.021	0.100	U	GAM
Europium 154	15585-10-1	U		0.025	0.100	U	GAM
Europium 155	14391-16-3	U		0.056	0.100	U	GAM
Thorium 228	14274-82-9	0.842	0.016	0.012			GAM
Thorium 232	TH-232	0.837	0.047	0.035			GAM
Uranium 235	15117-96-1	U		0.072		U	GAM
Uranium 238	U-238	U		2.31		U	GAM
Americium 241	14596-10-2	U		0.062		U	GAM
Beryllium 7	13966-02-4	U		0.069		U	GAM
Ruthenium 106	13967-48-1	U		0.066		U	GAM
Antimony 125	14234-35-6	U		0.019		U	GAM
Cesium 134	13967-70-9	U		0.012		U	GAM

ColumbiARiverComp.oIRCBRA Sediment

11/29/04

Lab id	EBRLNE
Protocol	Hanford1
Version	Ver 1.0
Form	DVD-DS
Version	1.06
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EBERLINE ANALYTICAL/RICHMOND

SAMPLE DELIVERY GROUP K1540

7307-006 J18797

DATA SHEET

SDG	7307	Client/Case no	Hanford SDG_K1540
Contact	N. Joseph Verville	Contract	No. 500W235A00
Lab sample id	R902048-06	Client sample id	J18797
Dept sample id	7307-006	Location/Matrix	WBT-2 SED SOLID
Received	02/14/09	Collected/Weight	02/12/09 10:10 1864 g
% solids	100.0	Custody/SAF No	RC-116-306 RC-116

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Carbon 14	14762 75 5	-0.154	1.9	3.16	50.0	U J	C
Total Strontium	SR-RAD	0.073	0.095	0.221	1.00	U	SR
Technetium 99	14133-76-7	0.040	0.15	0.415	15.0	U	TC
Thorium 228	14274-82-9	0.845	0.43	0.566	1.00	J	TH
Thorium 230	14269-63-7	1.18	0.52	0.322	1.00		TH
Thorium 232	TH-232	1.05	0.43	0.322	1.00	J	TH
Uranium 233/234	U-233/234	0.741	0.34	0.258	1.00		U
Uranium 235	15117-96-1	0.041	0.082	0.312	1.00	U	U
Uranium 238	U-238	0.640	0.30	0.258	1.00		U
Plutonium 238	13981-16-3	0.012	0.029	0.056	1.00	U	PU
Plutonium 239/240	PU 239/240	0.015	0.018	0.022	1.00	U	PU
Potassium 40	13966-00-2	11.0	0.17	0.151			GAM
Cobalt 60	10198-40-0	U		0.016	0.050	U	GAM
Cesium 137	10045-97-3	0.040	0.018	0.020	0.100		GAM
Radium 226	13982-63-3	0.498	0.039	0.035	0.100		GAM
Radium 228	15262-20-1	0.876	0.075	0.063	0.200		GAM
Europium 152	14683-23-9	U		0.041	0.100	U	GAM
Europium 154	15585-10-1	U		0.059	0.100	U	GAM
Europium 155	14391-16-3	U		0.046	0.100	U	GAM
Thorium 228	14274-82-9	0.905	0.027	0.023			GAM
Thorium 232	TH 232	0.876	0.075	0.063			GAM
Uranium 235	15117-96-1	U		0.098		U	GAM
Uranium 238	U-238	U		2.03		U	GAM
Americium 241	14596-10-2	U		0.029		U	GAM
Beryllium 7	13966-02-4	U		0.139		U	GAM
Ruthenium 106	13967 48 1	U		0.138		U	GAM
Antimony 125	14234-35-6	U		0.034		U	GAM
Cesium 134	13967-70-9	U		0.024		U	GAM

ColumbiaRiverComp.ofRCBRA-Sediment

11/24/09

Lab id EBERLINE
Protocol Hanford1
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EBERLINE ANALYTICAL/RICHMOND

SAMPLE DELIVERY GROUP K1540

7307-007 J18798

DATA SHEET

SDG	7307	Client/Case no	Hanford SDG K1540
Contact	N. Joseph Verville	Contract	No. 500W235A00
Lab sample id	R902040-02	Client sample id	J18798
Dept sample id	7307-007	Location/Matrix	WBT-3 SED SOLID
Received	02/14/09	Collected/Weight	02/12/09 10:40 1782 g
% solids	100.0	Custody/SAF No	RC-116-987 RC-116

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Carbon 14	14762-75-5	-0.690	1.8	3.09	50.0	U J	C
Total Strontium	SR-RAD	0.063	0.11	0.218	1.00	U	SR
Technetium 99	14133-76-7	0.061	0.13	0.354	15.0	U	TC
Thorium 228	14274-82-9	0.822	0.42	0.393	1.00	J	TH
Thorium 230	14269-63-7	1.06	0.42	0.313	1.00		TH
Thorium 232	TH-232	0.983	0.42	0.313	1.00	J	TH
Uranium 233/234	U 233/234	0.502	0.27	0.256	1.00		U
Uranium 235	15117-96-1	0	0.081	0.310	1.00	U	U
Uranium 238	U-238	0.970	0.35	0.256	1.00		U
Plutonium 238	13981-16-3	0.018	0.031	0.056	1.00	U	PU
Plutonium 239/240	PU-239/240	0.012	0.010	0.014	1.00	U	PU
Potassium 40	13966-00-2	9.47	0.54	0.188			GAM
Cobalt 60	10198-40-0	U		0.021	0.050	U	GAM
Cesium 137	10045-97-3	0.020	0.017	0.020	0.100		GAM
Radium 226	13982-63-3	0.406	0.050	0.035	0.100		GAM
Radium 228	15262-20-1	0.739	0.096	0.087	0.200		GAM
Europium 152	14683-23-9	U		0.054	0.100	U	GAM
Europium 154	15585-10-1	U		0.068	0.100	U	GAM
Europium 155	14391-16-3	U		0.058	0.100	U	GAM
Thorium 228	14274-82-9	0.809	0.031	0.026			GAM
Thorium 232	TH-232	0.739	0.096	0.087			GAM
Uranium 235	15117-96-1	U		0.080		U	GAM
Uranium 238	U-238	U		2.48		U	GAM
Americium 241	14596-10-2	U		0.030		U	GAM
Beryllium 7	13966-02-4	U		0.168		U	GAM
Ruthenium 106	13967-48-1	U		0.161		U	GAM
Antimony 125	14234-35-6	U		0.044		U	GAM
Cesium 134	13967-70-9	U		0.027		U	GAM

ColumbiaRiverComp.ofRCBRA Sediment

11/24/09

Lab id	EBRLNE
Protocol	Hanford1
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EBERLINE ANALYTICAL/RICHMOND

SAMPLE DELIVERY GROUP K1540

7307-008 J18799

DATA SHEET

SDG	7307	Client/Case no	Hanford SDG_K1540
Contact	N. Joseph Verville	Contract	No. 500W235A00
Lab sample id	K902048 08	Client sample id	J18799
Dept sample id	7307-008	Location/Matrix	WBT 4 SSD SOLID
Received	02/14/09	Collected/Weight	02/12/09 11:00 1880 g
% solids	100.0	Custody/SAF No	RC-115-988 RC 116

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Carbon 14	14762 75 5	-0.275	1.8	3.14	50.0	U J	C
Total Strontium	SR-RAD	0.057	0.10	0.205	1.00	U	SR
Technetium 99	14133-76-7	-0.016	0.12	0.340	15.0	U	TC
Thorium 228	14274-82-9	0.785	0.45	0.538	1.00	J	TH
Thorium 230	14269-63-7	0.894	0.38	0.285	1.00		TH
Thorium 232	TH-232	0.559	0.10	0.285	1.00	J	TH
Uranium 233/234	U-233/234	0.899	0.34	0.255	1.00		U
Uranium 235	15117-96-1	0	0.081	0.300	1.00	U	U
Uranium 238	U-238	0.313	0.20	0.255	1.00		U
Plutonium 238	13981 16-3	0	0.031	0.064	1.00	U	PU
Plutonium 239/240	PU-239/240	0.003	0.012	0.023	1.00	U	PU
Potassium 40	13966-00-2	9.96	0.79	0.098			GAM
Cobalt 60	10198-40 0	U		0.010	0.050	U	GAM
Cesium 137	10045-97-3	0.033	0.010	0.012	0.100		GAM
Radium 226	13982 63 3	0.558	0.031	0.071	0.100		GAM
Radium 228	15262-20-1	0.817	0.059	0.046	0.200		GAM
Europium 152	14683-23-9	U		0.027	0.100	U	GAM
Europium 154	15585-10-1	U		0.032	0.100	U	GAM
Europium 155	14391-16-3	U		0.046	0.100	U	GAM
Thorium 228	14274-82-9	0.790	0.021	0.014			GAM
Thorium 232	TH-232	0.812	0.059	0.046			GAM
Uranium 235	15117 96 1	U		0.063		U	GAM
Uranium 238	U-238	U		1.11		U	GAM
Americium 241	14596-10-2	U		0.036		U	GAM
Beryllium 7	13966-02-4	U		0.088		U	GAM
Ruthenium 106	13967-48-1	U		0.084		U	GAM
Antimony 125	14234-35-6	U		0.023		U	GAM
Cesium 134	13967-70-9	U		0.023		U	GAM

ColumbiaRiverComp.ofRCBRA Sediment

11/25/09

Lab id	EBERLNE
Protocol	Hanford1
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EBERLINE ANALYTICAL/RICHMOND

SAMPLE DELIVERY GROUP K1540

7307-009 J187B0

DATA SHEET

SDG 7307

Contact N. Joseph Verville

Lab sample id X902048-09

Dept sample id 7307-009

Received 02/14/09

% solids 100.0

Client/Case no Hanford SDG K1540

Contract No. 0009215A00

Client sample id J187B0

Location/Matrix WDT-U SED SOLID

Collected/Weight 02/12/09 12:00 2211.4

Custody/SAF No RC-116-009 RC-116

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Carbon 14	14762-75-5	-0.137	1.7	2.82	50.0	U J	C
Total Strontium	SR-RAD	-0.030	0.096	0.209	1.00	U	SR
Technetium 99	14133-76-7	0.019	0.13	0.343	15.0	U	TC
Thorium 228	14274-82-9	0.530	0.38	0.465	1.00	J	TH
Thorium 230	14269-63-7	0.754	0.38	0.288	1.00		TH
Thorium 232	TH-232	0.566	0.31	0.288	1.00	J	TH
Uranium 233/234	U-233/234	0.499	0.27	0.254	1.00		U
Uranium 235	15117-96-1	0.040	0.081	0.308	1.00	U	U
Uranium 238	U 238	0.864	0.34	0.254	1.00		U
Plutonium 238	13981-16-3	0.026	0.044	0.075	1.00	U	PU
Plutonium 239/240	PU-239/240	0.013	0.018	0.034	1.00	U	PU
Potassium 40	13966-00-2	10.4	0.27	0.141			GAM
Cobalt 60	10198-40-0	U		0.013	0.050	U	GAM
Cesium 137	10045-97-3	0.025	0.009	0.012	0.100		GAM
Radium 226	13982-63-3	0.671	0.028	0.025	0.100		GAM
Radium 228	15262-20-1	0.911	0.067	0.062	0.200		GAM
Europium 152	14683-23-9	U		0.037	0.100	U	GAM
Europium 154	15585-10-1	U		0.041	0.100	U	GAM
Europium 155	14391-16-3	U		0.042	0.100	U	GAM
Thorium 228	14274-82-9	0.878	0.019	0.017			GAM
Thorium 232	TH 232	0.911	0.067	0.062			GAM
Uranium 235	15117-96-1	U		0.060		U	GAM
Uranium 238	U-238	U		2.75		U	GAM
Americium 241	14596-10-2	U		0.127		U	GAM
Beryllium 7	13966-02-4	U		0.118		U	GAM
Ruthenium 106	13967-48-1	U		0.100		U	GAM
Antimony 125	14234-35-6	U		0.031		U	GAM
Cesium 134	13967-70-9	U		0.016		U	GAM

ColumbiaRiverComp.ofRCBRA-Sediment

11/29/09

Lab id EBRLNE

Protocol Hanford1

Version Ver 1.0

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EBERLINE ANALYTICAL/RICHMOND

SAMPLE DELIVERY GROUP K1540

7307 010 J187D2

DATA SHEET

SDG	7307	Client/Case no	Hanford SDG K1540
Contact	N. Joseph Verville	Contract	No. 300W235A00
Lab sample id	R302048-10	Client sample id	J187D2
Dept sample id	7307-010	Location/Matrix	RM 8 SED SOLID
Received	02/14/09	Collected/Weight	02/12/09 10:15 1941 g
% solids	100.0	Custody/SAF No	RC 116-1011 RC 116

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Carbon 14	14762-75-5	-2.03	1.6	2.90	50.0	U J	C
Total Strontium	SR-RAD	-0.007	0.10	0.213	1.00	U	SR
Technetium 99	14133-76-7	-0.029	0.16	0.154	15.0	U	TC
Thorium 228	14274-82-9	0.563	0.33	0.308	1.00	J	TH
Thorium 230	14269-63-7	1.16	0.47	0.306	1.00		TH
Thorium 232	TH-232	0.441	0.24	0.306	1.00	J	TH
Uranium 233/234	U-233/234	0.558	0.25	0.247	1.00		U
Uranium 235	15117-96-1	0	0.075	0.287	1.00	U	U
Uranium 238	U-238	0.651	0.32	0.247	1.00		U
Plutonium 238	13981-16-3	-0.026	0.11	0.291	1.00	U	PU
Plutonium 239/240	PU-239/240	0	0.053	0.201	1.00	U	PU
Potassium 40	13966-00-2	8.26	0.17	0.083			GAM
Cobalt 60	10198-40-0	U		0.008	0.050	U	GAM
Cesium 137	10045-97-3	0.101	0.006	0.007	0.100		GAM
Radium 226	13982-63-3	0.465	0.021	0.016	0.100		GAM
Radium 228	15262-20-1	0.733	0.030	0.034	0.200		GAM
Europium 152	14683-23-9	U		0.018	0.100	U	GAM
Europium 154	15585-10-1	U		0.025	0.100	U	GAM
Europium 155	14391-16-3	U		0.035	0.100	U	GAM
Thorium 228	14274-82-9	0.609	0.012	0.010			GAM
Thorium 232	TH-232	0.711	0.018	0.034			GAM
Uranium 235	15117-96-1	U		0.038		U	GAM
Uranium 238	U-238	U		1.74		U	GAM
Americium 241	14596-10-2	U		0.013		U	GAM
Beryllium 7	13966-02-4	U		0.061		U	GAM
Ruthenium 106	13967-48-1	U		0.060		U	GAM
Antimony 125	14234-35-6	U		0.017		U	GAM
Cesium 134	13967-70-9	U		0.012		U	GAM

ColumbiaRiverComp.stRCBRA-Sediment

11/29/09

Lab id EBERLINE
Protocol Hanford1
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EBERLINE ANALYTICAL/RICHMOND

SAMPLE DELIVERY GROUP K1540

7307-011 J187D4

DATA SHEET

SDG	7307	Client/Case no	Hanford SDG_K1540
Contact	N. Joseph Vervillo	Contract	No. 500W22A00
Lab sample id	K902068-11	Client sample id	J187D4
Dept sample id	7307-011	Location/Matrix	RH-4 SGD SOLID
Received	02/14/09	Collected/Weight	02/13/09 09:45 1054 g
% solids	100.0	Custody/SAF No	RC-116-1013 RC-116

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Carbon 14	14762-75-5	-0.834	1.6	2.77	50.0	U J	C
Total Strontium	SR RAD	-0.046	0.095	0.207	1.00	U	SR
Technetium 99	14133-76-7	-0.033	0.19	0.478	15.0	U	TC
Thorium 228	14274-82-9	0.719	0.36	0.440	1.00	J	TH
Thorium 230	14269-63-7	1.25	0.55	0.343	1.00		TH
Thorium 232	TH-232	0.806	0.37	0.341	1.00	J	TH
Uranium 233/234	U-233/234	0.518	0.32	0.305	1.00		U
Uranium 235	15117-96-1	0.048	0.097	0.169	1.00	U	U
Uranium 238	U-238	0.598	0.32	0.305	1.00		U
Plutonium 238	13981-16-3	0.031	0.12	0.235	1.00	U	PU
Plutonium 239/240	PU-239/240	0.031	0.061	0.235	1.00	U	PU
Potassium 40	13966-00-2	9.54	0.47	0.216			GAM
Cobalt 60	10198-40-0	U		0.034	0.050	U	GAM
Cesium 137	10045-97-3	0.206	0.030	0.028	0.100		GAM
Radium 226	13982-63-3	0.507	0.051	0.049	0.100		GAM
Radium 228	15262-20-1	0.780	0.11	0.094	0.200		GAM
Europium 152	14683-23-9	U		0.062	0.100	U	GAM
Europium 154	15585-10-1	U		0.084	0.100	U	GAM
Europium 155	14391-16-3	U		0.081	0.100	U	GAM
Thorium 228	14274-82-9	0.746	0.031	0.029			GAM
Thorium 232	TH-232	0.780	0.11	0.094			GAM
Uranium 235	15117-96-1	U		0.109		U	GAM
Uranium 238	U-238	U		2.80		U	GAM
Americium 241	14596-10-2	U		0.166		U	GAM
Beryllium 7	13966-02-4	U		0.198		U	GAM
Ruthenium 106	13967-48-1	U		0.192		U	GAM
Antimony 125	14234-35-6	U		0.056		U	GAM
Cesium 134	13967-70-9	U		0.040		U	GAM

ColumbiaRiverComp.of/RCBRA-Sediment

11/24/09

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EBERLINE ANALYTICAL/RICHMOND

SAMPLE DELIVERY GROUP K1540

7307-012 J187D5

DATA SHEET

SDG	7307	Client/Case no	Hanford SDG K1540
Contact	N. Joseph Verville	Contract	No. 500W231A00
Lab sample id	0902048-12	Client sample id	J187D5
Dept sample id	7307-012	Location/Matrix	RH-9 SED SOLID
Received	02/14/09	Collected/Weight	02/12/09 10:32 2363 g
% solids	100.0	Custody/SAP No	RC-116-1014 RC-116

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Carbon 14	14762-75-5	1.19	1.0	2.99	50.0	U J	C
Total Strontium	SR RAD	0.030	0.12	0.225	1.00	U	SR
Technetium 99	14133-76-7	0.054	0.13	0.352	15.0	U	TC
Thorium 228	14274-82-9	0.382	0.26	0.424	1.00	J	TH
Thorium 230	14269-63-7	0.465	0.34	0.323	1.00		TH
Thorium 232	TH-232	0.549	0.34	0.323	1.00	J	TH
Uranium 233/234	U-233/234	0.506	0.28	0.352	1.00		U
Uranium 235	15117-96-1	0	0.11	0.426	1.00	U	U
Uranium 238	U-238	0.552	0.28	0.352	1.00		U
Plutonium 238	13981-16-3	-0.027	0.16	0.334	1.00	U	PU
Plutonium 239/240	PU-239/240	0.054	0.054	0.208	1.00	U	PU
Potassium 40	13966-00-2	10.4	0.33	0.146			GAM
Cobalt 60	10198-40-0	U		0.015	0.050	U	GAM
Cesium 137	10045-97-3	0.084	0.016	0.017	0.100		GAM
Radium 226	13982-63-3	0.441	0.041	0.027	0.100		GAM
Radium 228	15262-20-1	0.665	0.067	0.060	0.200		GAM
Europium 152	14683-23-9	U		0.034	0.100	U	GAM
Europium 154	15585-10-1	U		0.048	0.100	U	GAM
Europium 155	14391-16-3	U		0.072	0.100	U	GAM
Thorium 228	14274-82-9	0.588	0.020	0.018			GAM
Thorium 232	TH-232	0.665	0.067	0.060			GAM
Uranium 235	15117-96-1	U		0.058		U	GAM
Uranium 238	U 238	U		2.14		U	GAM
Americium 241	14596-10-2	U		0.023		U	GAM
Beryllium 7	13966-02-4	U		0.161		U	GAM
Ruthenium 106	13967-48-1	U		0.106		U	GAM
Antimony 125	14234-35-6	U		0.028		U	GAM
Cesium 134	13967-70-9	U		0.020		U	GAM

ColumbiaRiverComp.ofRCBRA-Sediment

11/29/09

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EBERLINE ANALYTICAL/RICHMOND

SAMPLE DELIVERY GROUP K1540

7308-001

J187D6

DATA SHEET

SDG	7308	Client/Case no	Hanford SDG_K1540
Contact	N. Joseph Verville	Contract	No. 800W235A00
Lab sample id	B902049-01	Client sample id	J187D6
Dept sample id	7308-001	Location/Matrix	RH-5 SSD SOLID
Received	02/14/09	Collected/Weight	02/12/09 14:05 2295 g
% solids	100.0	Custody/SAP No	RC-116-1015 RC-116

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Carbon 14	14762-75-5	-0.114	1.5	2.50	50.0	U	C
Total Strontium	SR-RAD	-0.001	0.13	0.261	1.00	U	SR
Technetium 99	14133-76-7	0.020	0.21	0.323	15.0	U	TC
Thorium 228	14274-82-9	0.644	0.37	0.441	1.00		TH
Thorium 230	14269-63-7	0.458	0.37	0.350	1.00		TH
Thorium 232	TH-232	0.321	0.28	0.350	1.00	U	TH
Uranium 233/234	U-233/234	0.242	0.16	0.154	1.00		U
Uranium 235	15117-96-1	0	0.049	0.186	1.00	U	U
Uranium 238	U-238	0.302	0.16	0.154	1.00		U
Plutonium 238	13981-16-3	0.061	0.18	0.378	1.00	U	PU
Plutonium 239/240	PU-239/240	0.061	0.062	0.235	1.00	U	PU
Potassium 40	13966-00-2	13.8	0.40	0.175			GAM
Cobalt 60	10198-40-0	U		0.017	0.050	U	GAM
Cesium 137	10045-97-3	0.059	0.015	0.017	0.100		GAM
Radium 226	13982-63-3	0.182	0.042	0.030	0.100		GAM
Radium 228	15262-20-1	0.602	0.072	0.070	0.200		GAM
Europium 152	14683-23-9	U		0.033	0.100	U	GAM
Europium 154	15585-10-1	U		0.055	0.100	U	GAM
Europium 155	14391-16-3	U		0.054	0.100	U	GAM
Thorium 228	14274-82-9	0.549	0.021	0.019			GAM
Thorium 232	TH-232	0.602	0.072	0.070			GAM
Uranium 235	15117-96-1	U		0.056		U	GAM
Uranium 238	U-238	U		1.94		U	GAM
Americium 241	14596-10-2	U		0.024		U	GAM
Beryllium 7	13966-02-4	U		0.136		U	GAM
Ruthenium 106	13967-48-1	U		0.112		U	GAM
Antimony 125	14234-35-6	U		0.031		U	GAM
Cesium 134	13967-70-9	U		0.023		U	GAM

ColumbiaRiverComp.ofRCBRA-Sediment

11/24/09

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EBERLINE ANALYTICAL/RICHMOND

SAMPLE DELIVERY GROUP K1540

7308-002 J187P7

DATA SHEET

SDG	7308	Client/Case no	Hanford SDG K1540
Contact	N. Joseph Verville	Contract	No. 000W235A00
Lab sample id	K902049-02	Client sample id	J187P7
Dept sample id	7308-002	Location/Matrix	RM-7 SED SOLID
Received	02/14/09	Collected/Weight	02/13/09 14:20 2562 g
% solids	100.0	Custody/SAF No	RC-116-1016 RC 116

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Carbon 14	14762-75-5	0.582	1.5	2.52	50.0	U J	C
Total Strontium	SR-RAD	-0.116	0.12	0.274	1.00	U	SR
Technetium 99	14133-76-7	0.013	0.12	0.324	15.0	U	TC
Thorium 228	14274-82-9	1.02	0.54	0.595	1.00	J	TH
Thorium 230	14269-63-7	0.353	0.27	0.338	1.00		TH
Thorium 232	TH-232	0.663	0.36	0.338	1.00	J	TH
Uranium 233/234	U-233/234	0.289	0.16	0.147	1.00		U
Uranium 235	15117-96-1	0.023	0.047	0.178	1.00	U	U
Uranium 238	U-238	0.501	0.20	0.147	1.00		U
Plutonium 238	13981-16-3	0	0.064	0.244	1.00	U	PU
Plutonium 239/240	PU-239/240	0.032	0.064	0.244	1.00	U	PU
Potassium 40	13966-00-2	10.9	0.65	0.076			GAM
Cobalt 60	10198-40-0	U		0.008	0.050	U	GAM
Cesium 137	10045-97-3	0.049	0.005	0.006	0.100		GAM
Radium 226	13982-63-3	0.308	0.025	0.014	0.100		GAM
Radium 228	15262-20-1	0.450	0.044	0.034	0.200		GAM
Europium 152	14683-23-9	U		0.018	0.100	U	GAM
Europium 154	15585-10-1	U		0.025	0.100	U	GAM
Europium 155	14391-16-3	U		0.030	0.100	U	GAM
Thorium 228	14274-82-9	0.448	0.015	0.009			GAM
Thorium 232	TH-232	0.450	0.044	0.034			GAM
Uranium 235	15117-96-1	U		0.035		U	GAM
Uranium 238	U-238	U		0.491		U	GAM
Americium 241	14596-10-2	U		0.023		U	GAM
Beryllium 7	13966-02-4	U		0.141		U	GAM
Ruthenium 106	13967-48-1	U		0.059		U	GAM
Antimony 125	14234-35-6	U		0.015		U	GAM
Cesium 134	13967-70-9	U		0.010		U	GAM

ColumbiaRiverComp.ofRCRA-Sediment

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EBERLINE ANALYTICAL/RICHMOND

SAMPLE DELIVERY GROUP K1540

7308-003

J187D8

DATA SHEET

SDG	7308	Client/Case no	Hanford	SDG K1540
Contact	N. Joseph Verville	Contract	No. 300W235A00	
Lab sample id	E902049-03	Client sample id	J187D8	
Dept sample id	7308-003	Location/Matrix	BH-3 38D	SOLID
Received	02/14/09	Collected/Weight	02/12/09 11:35	2366 g
% solids	100.0	Custody/SAF No	RC 116-1017	RC-116

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Carbon 14	14762-75-5	0.429	1.5	2.60	50.0	U J	C
Total Strontium	SR-RAD	-0.009	0.15	0.302	1.00	U	SR
Technetium 99	14133-76-7	-0.009	0.12	0.120	15.0	U	TC
Thorium 228	14274-82-9	0.354	0.39	0.601	1.00	U J	TH
Thorium 230	14269-63-7	1.21	0.48	0.298	1.00		TH
Thorium 232	TH-232	0.624	0.32	0.298	1.00	J	TH
Uranium 233/234	U-233/234	0.343	0.17	0.164	1.00		U
Uranium 235	15117-96-1	0	0.052	0.199	1.00	U	U
Uranium 238	U-238	0.323	0.17	0.164	1.00		U
Plutonium 238	13981-16-3	0.066	0.20	0.400	1.00	U	PU
Plutonium 239/240	PU-239/240	0.033	0.066	0.254	1.00	U	PU
Potassium 40	13966-00-2	0.73	0.33	0.097			GAM
Cobalt 60	10198-40-0	U		0.009	0.050	U	GAM
Cesium 137	10045-97-3	0.116	0.011	0.010	0.100		GAM
Radium 226	13982-63-3	0.422	0.030	0.017	0.100		GAM
Radium 228	15262-20-1	0.664	0.044	0.036	0.200		GAM
Europium 152	14683-23-9	U		0.024	0.100	U	GAM
Europium 154	15585-10-1	U		0.029	0.100	U	GAM
Europium 155	14391-16-3	U		0.032	0.100	U	GAM
Thorium 228	14274-82-9	0.733	0.019	0.011			GAM
Thorium 232	TH-232	0.664	0.044	0.036			GAM
Uranium 235	15117-96-1	U		0.045		U	GAM
Uranium 238	U-238	U		2.04		U	GAM
Americium 241	14596-10-2	U		0.013		U	GAM
Beryllium 7	13966-02-4	U		0.081		U	GAM
Ruthenium 106	13967-48-1	U		0.069		U	GAM
Antimony 125	14234-35-6	U		0.020		U	GAM
Cesium 134	13967-70-9	U		0.012		U	GAM

ColumbiaRiverComp.ofRCBRA-Sediment

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SAMPLE DELIVERY GROUP K1540

7308-004 J107D9

DATA SHEET

SDG	7308	Client/Case no	Hanford SDG K1540
Contact	N. Joseph Verville	Contract No.	500H235A00
Lab sample id	8902042-04	Client sample id	J107D9
Dept sample id	7308-004	Location/Matrix	BH-6-95D SOLID
Received	02/14/09	Collected/Weight	02/12/09 14:00 2532 g
% solids	100.0	Custody/SAF No	RC-116-1018 RC-116

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Carbon 14	14762-75-5	0.116	1.6	2.63	50.0	U J	C
Total Strontium	SR-RAD	-0.001	0.13	0.276	1.00	U	SR
Technetium 99	14133-76-7	0.032	0.11	0.328	15.0	U	TC
Thorium 228	14274-82-9	1.79	0.62	0.408	1.00	J	TH
Thorium 230	14269-63-7	1.48	0.52	0.324	1.00		TH
Thorium 232	TH-232	1.40	0.52	0.324	1.00	J	TH
Uranium 233/234	U-233/234	0.541	0.20	0.148	1.00		U
Uranium 235	15117-96-1	0	0.047	0.179	1.00	U	U
Uranium 238	U-238	0.522	0.20	0.148	1.00		U
Plutonium 238	13981-16-3	0.028	0.057	0.216	1.00	U	PU
Plutonium 239/240	PU-239/240	0.028	0.056	0.216	1.00	U	PU
Potassium 40	13966-00-2	13.5	0.15	0.062			GAM
Cobalt 60	10198-40-0	U		0.006	0.050	U	GAM
Cesium 137	10045-97-3	0.011	0.004	0.006	0.100		GAM
Radium 226	13982-63-3	0.770	0.017	0.014	0.100		GAM
Radium 228	15262-20-1	1.56	0.031	0.021	0.200		GAM
Europium 152	14683-23-9	U		0.019	0.100	U	GAM
Europium 154	15585-10-1	U		0.019	0.100	U	GAM
Europium 155	14391-16-3	U		0.061	0.100	U	GAM
Thorium 228	14274-82-9	1.54	0.015	0.012			GAM
Thorium 232	TH-232	1.56	0.031	0.021			GAM
Uranium 235	15117-96-1	U		0.049		U	GAM
Uranium 238	U-238	U		2.09		U	GAM
Americium 241	14596-10-2	U		0.037		U	GAM
Beryllium 7	13966-02-4	U		0.071		U	GAM
Ruthenium 106	13967-48-1	U		0.057		U	GAM
Antimony 125	14234-35-6	0.016	0.012	0.017		U	GAM
Cesium 134	13967-70-9	U		0.010		U	GAM

ColumbiaRiverComp.ofRCBRA Sediment

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Lab id	EBERLINE
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EBERLINE ANALYTICAL/RICHMOND

SAMPLE DELIVERY GROUP K1540

7308-005 J187F0

DATA SHEET

SDG	7308	Client/Case no	Hanford SDG K1540
Contact	N. Joseph Verville	Contract	No. 600W235A09
Lab sample id	8902049-05	Client sample id	J187F0
Dept sample id	7308-005	Location/Matrix	RH-2 SSD SOLID
Received	02/14/09	Collected/Weight	02/12/09 11:20 2326 g
% solids	100.0	Custody/SAF No	RC-116-1019 RC 116

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALIFIERS	TEST
Carbon 14	14762-75-5	-0.355	1.6	2.68	50.0	U J	C
Total Strontium	SR-RAD	-0.012	0.14	0.290	1.00	U	SR
Technetium 99	14133-76-7	-0.025	0.12	0.329	15.0	U	TC
Thorium 228	14274-82-9	0.592	0.34	0.321	1.00	J	TH
Thorium 230	14269-63-7	0.671	0.42	0.321	1.00		TH
Thorium 232	TH-232	0.294	0.25	0.321	1.00	U J	TH
Uranium 233/234	U-233/234	0.352	0.17	0.128	1.00		U
Uranium 235	15117-96-1	0.041	0.041	0.155	1.00	U	U
Uranium 238	U-238	0.369	0.17	0.128	1.00		U
Plutonium 238	13981-16-3	-0.029	0.057	0.218	1.00	U	PU
Plutonium 239/240	PU 239/240	0	0.057	0.218	1.00	U	PU
Potassium 40	13966-00-2	11.8	0.24	0.112			GAM
Cobalt 60	10198-40-0	U		0.012	0.050	U	GAM
Cesium 137	10045-97-3	0.197	0.010	0.010	0.100		GAM
Radium 226	13982-63-3	0.480	0.023	0.022	0.100		GAM
Radium 228	15262-20-1	0.751	0.049	0.046	0.200		GAM
Europium 152	14683-23-9	U		0.073	0.100	U	GAM
Europium 154	15585-10-1	U		0.036	0.100	U	GAM
Europium 155	14391-16-3	U		0.054	0.100	U	GAM
Thorium 228	14274-82-9	0.738	0.016	0.015			GAM
Thorium 232	TH 232	0.751	0.049	0.046			GAM
Uranium 235	15117-96-1	U		0.073		U	GAM
Uranium 238	U 238	U		1.28		U	GAM
Americium 241	14596-10-2	U		0.090		U	GAM
Beryllium 7	13966-02-4	U		0.102		U	GAM
Ruthenium 106	13967-48-1	U		0.083		U	GAM
Antimony 125	14234-35-6	U		0.025		U	GAM
Cesium 134	13967-70-9	U		0.013		U	GAM

ColumbiaRiverComp.oIRCBRA Sediment

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Lab id	EBRLNE
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EBERLINE ANALYTICAL/RICHMOND

SAMPLE DELIVERY GROUP K1540

7308-006

J187F1

DATA SHEET

SDG	J10R	Client/Case no	Hanford SDG K1540
Contact	R. Joseph Verville	Contract	No. 300W235A00
Lab sample id	8902042 06	Client sample id	J187F1
Dept sample id	7308 006	Location/Matrix	BH-10 SED SOLID
Received	02/14/09	Collected/Weight	02/12/09 12:00 2101 g
% solids	100.0	Custody/SAF No	RC-116 1020 RC 116

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Carbon 14	14762-75-5	0.394	1.6	2.75	50.0	U J	C
Total Strontium	SR-RAD	0.060	0.14	0.280	1.00	U	SR
Technetium 99	14133-76-7	0.021	0.14	0.329	15.0	U	TC
Thorium 228	14274-82-9	0.440	0.32	0.492	1.00	U J	TH
Thorium 230	14269-63-7	0.834	0.40	0.304	1.00		TH
Thorium 232	TH-232	0.556	0.32	0.304	1.00	J	TH
Uranium 233/234	U-233/234	0.344	0.15	0.146	1.00		U
Uranium 235	15117-96-1	0.023	0.046	0.177	1.00	U	U
Uranium 238	U-238	0.458	0.19	0.146	1.00		U
Plutonium 238	13981-16-3	0.054	0.11	0.208	1.00	U	PU
Plutonium 239/240	PU-239/240	0	0.054	0.208	1.00	U	PU
Potassium 40	13966-00-2	9.79	0.18	0.094			GAM
Cobalt 60	10198-40-0	U		0.008	0.050	U	GAM
Cesium 137	10045-97-3	0.099	0.010	0.010	0.100		GAM
Radium 226	13982-63-3	0.505	0.023	0.010	0.100		GAM
Radium 228	15262-20-1	0.818	0.043	0.039	0.200		GAM
Europium 152	14683-23-9	U		0.022	0.100	U	GAM
Europium 154	15585-10-1	U		0.026	0.100	U	GAM
Europium 155	14391-16-3	U		0.035	0.100	U	GAM
Thorium 228	14274-82-9	0.900	0.014	0.011			GAM
Thorium 232	TH-232	0.818	0.043	0.039			GAM
Uranium 235	15117-96-1	U		0.055		U	GAM
Uranium 238	U-238	U		1.15		U	GAM
Americium 241	14596-10-2	U		0.013		U	GAM
Beryllium 7	13966-02-4	U		0.075		U	GAM
Ruthenium 106	13967-48-1	U		0.066		U	GAM
Antimony 125	14234-35-6	U		0.018		U	GAM
Cesium 134	13967-70-9	U		0.011		U	GAM

ColumbiaRiverComp.ofRCBRA-Sediment

11/29/09

Lab Id	EBRLNE
Protocol	Hanford1
Version	Ver 1.0
Form	DVD-DS
Version	1.06
Report date	03/23/09

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DATA SHEET

SDG	7308	Client/Case no	Hanford SDG K1540
Contact	N. Joseph Verville	Contract	No. 900W735A00
Lab sample id	E902049-07	Client sample id	J187K6
Dept sample id	7308-007	Location/Matrix	RFLD-2 SED SOLID
Received	07/14/09	Collected/Weight	07/13/09 15:20 2016 g
% solids	100.0	Custody/SAF No	RC-116-1011 RC 116

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Carbon 14	14762-75 5	0.236	1.6	2.68	50.0	U J	C
Total Strontium	SR-RAD	0.019	0.13	0.270	1.00	U	SR
Technetium 99	14133 76 7	0.071	0.16	0.336	15.0	U	TC
Thorium 228	14274-82-9	0.620	0.19	0.428	1.00	J	TH
Thorium 230	14269-63-7	0.807	0.39	0.294	1.00		TH
Thorium 232	TH-232	0.692	0.31	0.294	1.00	J	TH
Uranium 233/234	U-233/234	0.504	0.20	0.154	1.00		U
Uranium 235	15117-96-1	0.049	0.049	0.186	1.00	U	U
Uranium 238	U-238	0.383	0.16	0.154	1.00		U
Plutonium 238	13981-16-3	0	0.088	0.337	1.00	U	PU
Plutonium 239/240	PU-239/240	0	0.088	0.837	1.00	U	PU
Potassium 40	13966-00-2	11.8	0.18	0.085			GAM
Cobalt 60	10198 40 0	U		0.008	0.050	U	GAM
Cesium 137	10045-97-3	0.024	0.006	0.007	0.100		GAM
Radium 226	13982 63-3	0.527	0.020	0.015	0.100		GAM
Radium 228	15262-20-1	0.842	0.038	0.034	0.200		GAM
Europium 152	14683-23 9	U		0.017	0.100	U	GAM
Europium 154	15585-10-1	U		0.026	0.100	U	GAM
Europium 155	14391-16-3	U		0.043	0.100	U	GAM
Thorium 228	14274-82-9	0.747	0.017	0.010			GAM
Thorium 232	TH-232	0.842	0.038	0.034			GAM
Uranium 235	15117-96-1	U		0.063		U	GAM
Uranium 238	U-238	U		1.89		U	GAM
Americium 241	14596-10-2	U		0.033		U	GAM
Beryllium 7	13966-02-4	U		0.063		U	GAM
Ruthenium 106	13967 48-1	U		0.059		U	GAM
Antimony 125	14234-35-6	U		0.017		U	GAM
Cesium 134	13967 70 9	U		0.017		U	GAM

ColumbiaRiverComp.ofRCBRA-Sediment

11/24/09

Lab id	EBERLNE
Protocol	Hanford1
Version	Ver. 1.0
Form	DVD DS
Version	1.06
Report date	07/23/09

EBERLINE ANALYTICAL/RICHMOND

SAMPLE DELIVERY GROUP K1540

7308-008 J187K7

DATA SHEET

SDG	7308	Client/Case no	Hanford SDG_K1540
Contact	N. Joseph Verville	Contract	No. 500W235A00
Lab sample id	8902042-08	Client sample id	J187K7
Dept sample id	7308-008	Location/Matrix	RFLS-1 OSD SOLID
Received	02/14/09	Collected/Weight	02/12/09 15:10 2219 g
% solids	100.0	Custody/SAF No	RC-116-1032 RC-116

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Carbon 14	14762-75-5	0.250	1.7	2.81	50.0	U J	C
Total Strontium	SR-RAD	0.027	0.15	0.319	1.00	U	SR
Technetium 99	14133-76-7	0.107	0.15	0.348	15.0	U	TC
Thorium 228	14274-82-9	0.771	0.37	0.453	1.00	J	TH
Thorium 230	14269-63-7	0.731	0.37	0.280	1.00		TH
Thorium 232	TH-232	0.512	0.30	0.280	1.00	J	TH
Uranium 233/234	U-233/234	0.340	0.16	0.153	1.00		U
Uranium 235	15117-96-1	0	0.048	0.185	1.00	U	U
Uranium 238	U-238	0.460	0.20	0.153	1.00		U
Plutonium 238	13981-16-3	-0.027	0.054	0.166	1.00	U	PU
Plutonium 239/240	PU-239/240	0	0.037	0.103	1.00	U	PU
Potassium 40	13966-00-2	15.3	0.41	0.168			GAM
Cobalt 60	10198-40-0	U		0.016	0.050	U	GAM
Cesium 137	10045-97-3	U		0.015	0.100	U	GAM
Radium 226	13982-63-3	0.388	0.034	0.011	0.100		GAM
Radium 228	15262-20-1	0.601	0.076	0.075	0.200		GAM
Europium 152	14683-23-9	U		0.034	0.100	U	GAM
Europium 154	15585-10-1	U		0.056	0.100	U	GAM
Europium 155	14391-16-3	U		0.057	0.100	U	GAM
Thorium 228	14274-82-9	0.579	0.021	0.019			GAM
Thorium 232	TH-232	0.601	0.076	0.075			GAM
Uranium 235	15117-96-1	U		0.057		U	GAM
Uranium 238	U-238	U		1.91		U	GAM
Americium 241	14596-10-2	U		0.025		U	GAM
Beryllium 7	13966-02-4	U		0.126		U	GAM
Ruthenium 106	13967-48-1	U		0.115		U	GAM
Antimony 125	14234-35-6	U		0.031		U	GAM
Cesium 134	13967-70-9	U		0.023		U	GAM

ColumbiaRiverComp.ofRCRRA Sediment

11/29/09

Lab id EBRLNE
Protocol Hanford1
Version Ver 1.0
Form OVD-DS
Version 1.06
Report date 03/23/09

EBERLINE ANALYTICAL/RICHMOND

SAMPLE DELIVERY GROUP K1540

7308-009 J187K8

DATA SHEET

SDG	7308	Client/Case no	Hanford SDG_K1540
Contact	M. Joseph Vetville	Contract	No. 300W235A00
Lab sample id	R902049-09	Client sample id	J187K8
Dept sample id	7308-009	Location/Matrix	KPLE 5 SED SOLID
Received	02/14/09	Collected/Weight	02/12/09 10:00 2211 G
% solids	100.0	Custody/SAF No	RC 116-1033 RC-116

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Carbon 14	14762-75-5	0.491	1.6	2.63	50.0	U J	C
Total Strontium	SR RAD	0.037	0.13	0.255	1.00	U	SR
Technetium 99	14133-76-7	-0.057	0.11	0.135	15.0	U	TC
Thorium 228	14274-82-9	0.891	0.39	0.371	1.00	J	TH
Thorium 230	14269-63-7	1.23	0.47	0.294	1.00		TH
Thorium 232	TH 232	1.27	0.47	0.294	1.00	J	TH
Uranium 233/234	U-233/234	0.889	0.26	0.136	1.00		U
Uranium 235	15117-96-1	0.043	0.043	0.165	1.00	U	U
Uranium 238	U 238	0.925	0.26	0.136	1.00		U
Plutonium 238	13981-16-3	0.012	0.049	0.118	1.00	U	PU
Plutonium 239/240	PU-239/240	0	0.025	0.094	1.00	U	PU
Potassium 40	13966-00-2	11.2	0.33	0.142			GAM
Cobalt 60	10198-40-0	U		0.014	0.050	U	GAM
Cesium 137	10045-97-3	U		0.015	0.100	U	GAM
Radium 226	13982-63-3	1.02	0.042	0.034	0.100		GAM
Radium 228	15262-20-1	1.04	0.069	0.058	0.700		GAM
Europium 152	14683-23-9	U		0.045	0.100	U	GAM
Europium 154	15585-10-1	U		0.044	0.100	U	GAM
Europium 155	14391-16-3	U		0.076	0.100	U	GAM
Thorium 228	14274-82-9	1.06	0.029	0.027			GAM
Thorium 232	TH-232	1.04	0.069	0.058			GAM
Uranium 235	15117-96-1	U		0.100		U	GAM
Uranium 238	U-238	U		1.68		U	GAM
Americium 241	14596-10-2	U		0.080		U	GAM
Beryllium 7	13966-02-4	U		0.163		U	GAM
Ruthenium 106	13967-48-1	U		0.127		U	GAM
Antimony 125	14234-35-6	U		0.039		U	GAM
Cesium 134	13967-70-9	U		0.022		U	GAM

ColumbiaRiverComp.ofRCBRA-Sediment

11/24/09

Lab id EBRLNE
Protocol Hanford1
Version Ver 1.0
Form DVD-DS
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EBERLINE ANALYTICAL/RICHMOND

SAMPLE DELIVERY GROUP K1540

7308-010

J187K9

DATA SHEET

SDG	7308	Client/Case no	Hanford SDG K1540
Contact	N. Joseph Verville	Contract	No. 200W215A00
Lab sample id	E902049-10	Client sample id	J187K9
Dept sample id	7308-010	Location/Matrix	RPLS-4 SED SOLID
Received	02/14/09	Collected/Weight	02/12/09 15:45 2351 g
% solids	100.0	Custody/SAP No	RC-116-1034 RC-116

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Carbon 14	14762-75-5	-0.056	1.5	2.54	50.0	U J	C
Total Strontium	SR-RAD	0.045	0.14	0.278	1.00	U	SR
Technetium 99	14133-76-7	-0.022	0.12	0.336	15.0	U	TC
Thorium 228	14274-82-9	0.831	0.40	0.437	1.00	J	TH
Thorium 230	14269-63-7	0.982	0.48	0.376	1.00		TH
Thorium 232	TH-232	0.472	0.12	0.301	1.00	J	TH
Uranium 233/234	U-233/234	0.424	0.20	0.155	1.00		U
Uranium 235	15117-96-1	0.049	0.049	0.187	1.00	U	U
Uranium 238	U-238	0.344	0.16	0.155	1.00		U
Plutonium 238	13981-16-3	0	0.025	0.096	1.00	U	PU
Plutonium 239/240	PU-239/240	0.025	0.025	0.096	1.00	U	PU
Potassium 40	13966-00-2	11.4	0.73	0.165			GAM
Cobalt 60	10198-40-0	U		0.019	0.050	U	GAM
Cesium 137	10045-97-3	U		0.018	0.100	U	GAM
Radium 226	13982-63-3	0.450	0.044	0.035	0.100		GAM
Radium 228	15262-20-1	0.616	0.088	0.085	0.200		GAM
Europium 152	14683-23-9	U		0.046	0.100	U	GAM
Europium 154	15585-10-1	U		0.062	0.100	U	GAM
Europium 155	14391-16-3	U		0.050	0.100	U	GAM
Thorium 228	14274-82-9	0.555	0.026	0.023			GAM
Thorium 232	TH-232	0.616	0.088	0.085			GAM
Uranium 235	15117-96-1	U		0.049		U	GAM
Uranium 238	U-238	U		2.17		U	GAM
Americium 241	14596-10-2	U		0.060		U	GAM
Beryllium 7	13966-02-4	U		0.160		U	GAM
Ruthenium 106	13967-48-1	U		0.143		U	GAM
Antimony 125	14234-35-6	U		0.038		U	GAM
Cesium 134	13967-70-9	U		0.020		U	GAM

ColumbiaRiverComp ofRCBRA Sediment

11/29/09

Lab id	EBERLINE
Protocol	Hanford
Version	Ver 1.0
Form	DVD-DS
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EBERLINE ANALYTICAL/RICHMOND

SAMPLE DELIVERY GROUP K1540

7308-011 J187L0

DATA SHEET

SDG	7308	Client/Case no	Hanford SDG K1540
Contact	N. Joseph Verville	Contract	No. 500WZ15A00
Lab sample id	E902049-11	Client sample id	J187L0
Dept sample id	7308 011	Location/Matrix	RPIS-1 550 SOLID
Received	02/14/09	Collected/Weight	02/12/09 15:40 2252 g
% solids	100.0	Custody/SAF No	RC-116-1035 RC 116

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Carbon 14	14762-75-5	1.59	1.6	2.68	50.0	U J	C
Total Strontium	SR-RAD	-0.013	0.12	0.265	1.00	U	SR
Technetium 99	14133-76-7	0.049	0.17	0.419	15.0	U	TC
Thorium 228	14274-82-9	0.915	0.45	0.460	1.00	J	TH
Thorium 230	14269-63-7	0.471	0.29	0.278	1.00		TH
Thorium 232	TH-232	0.582	0.29	0.278	1.00	J	TH
Uranium 233/234	U-233/234	0.647	0.22	0.137	1.00		U
Uranium 235	15117-96-1	0	0.044	0.166	1.00	U	U
Uranium 238	U-238	0.431	0.18	0.137	1.00		U
Plutonium 238	13981-16-3	0.026	0.10	0.247	1.00	U	PU
Plutonium 239/240	PU-239/240	0	0.052	0.198	1.00	U	PU
Potassium 40	13966-00-2	9.43	0.51	0.243			GAM
Cobalt 60	10198-40-0	U		0.028	0.050	U	GAM
Cesium 137	10045-97-3	U		0.032	0.100	U	GAM
Radium 226	13982-63-3	0.544	0.052	0.049	0.100		GAM
Radium 228	15262-20-1	0.619	0.10	0.105	0.200		GAM
Europium 152	14683-23-9	U		0.071	0.100	U	GAM
Europium 154	15585-10-1	U		0.087	0.100	U	GAM
Europium 155	14391-16-3	U		0.080	0.100	U	GAM
Thorium 228	14274-82-9	0.796	0.035	0.042			GAM
Thorium 232	TH-232	0.619	0.10	0.105			GAM
Uranium 235	15117-96-1	U		0.119		U	GAM
Uranium 238	U 238	U		3.01		U	GAM
Americium 241	14596-10-2	U		0.241		U	GAM
Beryllium 7	13966-02-4	U		0.244		U	GAM
Ruthenium 106	13967-48-1	U		0.203		U	GAM
Antimony 125	14234-35-6	U		0.062		U	GAM
Cesium 134	13967-70-9	U		0.031		U	GAM

ColumbiaRiverComp.ofRCBRA-Sediment

11/29/09

Lab id EBRLNE
Protocol Hanford1
Version Ver 1.0
Form DVD DS
Version 1.06
Report date 03/31/09

EBERLINE ANALYTICAL/RICHMOND

SAMPLE DELIVERY GROUP K1540

7308-012

J187Y2

DATA SHEET

SDG	7308	Client/Case no	Hanford SDG_K1540
Contact	N. Joseph Verville	Contract	No. 300H215A00
Lab sample id	R902049-12	Client sample id	J187Y2
Dept sample id	7308-012	Location/Matrix	UT-1 SED SOLID
Received	02/14/09	Collected/Weight	02/12/09 11:50 1025 g
% solids	100.0	Custody/SAF No	RC-116-1084 RC-116

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Carbon 14	14762-75-5	0.627	1.5	2.50	50.0	U J	C
Total Strontium	SR-RAD	0.020	0.11	0.256	1.00	U	SR
Technetium 99	14133-76-7	0.083	0.13	0.319	15.0	U	TC
Thorium 228	14274-82-9	0.819	0.40	0.374	1.00	J	TH
Thorium 230	14269-63-7	0.698	0.39	0.296	1.00		TH
Thorium 232	TH-232	1.28	0.48	0.296	1.00	J	TH
Uranium 233/234	U-233/234	0.563	0.24	0.227	1.00		U
Uranium 235	15117-96-1	0.036	0.072	0.274	1.00	U	U
Uranium 238	U-238	0.531	0.24	0.227	1.00		U
Plutonium 238	13981-16-3	0.051	0.10	0.246	1.00	U	PU
Plutonium 239/240	PU-239/240	0.026	0.051	0.196	1.00	U	PU
Potassium 40	13966-00-2	10.1	0.51	0.225			GAM
Cobalt 60	10198-40-0	U		0.023	0.050	U	GAM
Cesium 137	10045-97-3	0.259	0.027	0.027	0.100		GAM
Radium 226	13982-63-3	0.644	0.056	0.040	0.100		GAM
Radium 228	15262-20-1	1.08	0.097	0.084	0.200		GAM
Europium 152	14683-23-9	0.182	0.042	0.058	0.100		GAM
Europium 154	15585-10-1	U		0.074	0.100	U	GAM
Europium 155	14391-16-3	U		0.082	0.100	U	GAM
Thorium 228	14274-82-9	1.01	0.035	0.031			GAM
Thorium 232	TH-232	1.08	0.097	0.084			GAM
Uranium 235	15117-96-1	U		0.099		U	GAM
Uranium 238	U-238	U		2.65		U	GAM
Americium 241	14596-10-2	U		0.033		U	GAM
Beryllium 7	13966-02-4	U		0.216		U	GAM
Ruthenium 106	13967-48-1	U		0.181		U	GAM
Antimony 125	14234-35-6	U		0.052		U	GAM
Cesium 134	13967-70-9	U		0.032		U	GAM

ColumbiaRiverComp.otRCBRA-Sediment

11/25/09

Lab id EBRLNE
Protocol Hanford1
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EBERLINE ANALYTICAL/RICHMOND

SAMPLE DELIVERY GROUP K1540

7108-013

J187Y5

DATA SHEET

SDG	7108	Client/Case no	Hanford SDG K1540
Contact	N. Joseph Verville	Contract	No. 000W215A00
Lab sample id	K902049-13	Client sample id	J187Y5
Dept sample id	7108-013	Location/Matrix	HT.2 SSD SOLID
Received	02/14/09	Collected/Weight	02/12/09 14:05 1040 g.
% solids	100.0	Custody/SAF No	RC 116-1087 RC 116

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Carbon 14	14762-75-5	0.448	1.6	2.71	50.0	U J	C
Total Strontium	SR-RAD	0.111	0.15	0.270	1.00	U	SR
Technetium 99	14133-76-7	0.059	0.16	0.131	15.0	U	TC
Thorium 228	14274-82-9	0.785	0.37	0.240	1.00	J	TH
Thorium 230	14269-63-7	0.686	0.32	0.219	1.00		TH
Thorium 232	TH-232	0.655	0.32	0.239	1.00	J	TH
Uranium 233/234	U-233/234	0.541	0.25	0.230	1.00		U
Uranium 235	15117-96-1	0.036	0.073	0.278	1.00	U	U
Uranium 238	U-238	0.662	0.31	0.230	1.00		U
Plutonium 238	13981-16-3	0.076	0.10	0.191	1.00	U	PU
Plutonium 239/240	PU-239/240	0	0.050	0.193	1.00	U	PU
Potassium 40	13966-00-2	11.0	0.40	0.173			GAM
Cobalt 60	10198-40-0	U		0.020	0.050	U	GAM
Cesium 137	10045-97-3	0.051	0.020	0.022	0.100		GAM
Radium 226	13982-63-3	0.576	0.038	0.031	0.100		GAM
Radium 228	15262-20-1	0.777	0.085	0.083	0.200		GAM
Europium 152	14683-23-9	U		0.051	0.100	U	GAM
Europium 154	15585-10-1	U		0.060	0.100	U	GAM
Europium 155	14391-16-3	U		0.080	0.100	U	GAM
Thorium 228	14274-82-9	0.842	0.029	0.025			GAM
Thorium 232	TH-232	0.777	0.085	0.083			GAM
Uranium 235	15117-96-1	U		0.074		U	GAM
Uranium 238	U-238	U		2.23		U	GAM
Americium 241	14596-10-2	U		0.026		U	GAM
Beryllium 7	13966-02-4	U		0.172		U	GAM
Ruthenium 106	13967-48-1	U		0.152		U	GAM
Antimony 125	14234-35-6	U		0.042		U	GAM
Cesium 134	13967-70-9	U		0.028		U	GAM

ColumbiaRiverComp.ofRCBRA Sediment.

11/29/09

Lab id	EBRLNE
Protocol	Hanford1
Version	Ver 1.0
Form	DVD-DS
Version	1.06
Report date	03/21/07

DATA SHEETS
Page 13
SUMMARY DATA SECTION
Page 27

Appendix 4

Laboratory Narrative and Chain-of-Custody Documentation

1.0 GENERAL

Washington Closure Hanford (WCH) Sample Delivery Group K1540 was composed of twelve solid (other solid) samples designated under SAF No. RC-116 with a Project Designation of: Columbia River Component of the RCBRA – Sediment.

The samples were received as stated on the Chain-of-Custody documents. Any discrepancies are noted on the Eberline Analytical Sample Receipt Checklist. The results were sent to WCH via e-mail March 19, 2009.

2.0 ANALYSIS NOTES

2.1 Carbon-14 Analysis

No problems were encountered during the course of the analyses.

2.2 Strontium-90 Analysis

No problems were encountered during the course of the analyses.

2.3 Technetium-99 Analysis

The technetium-99m tracer yield for the sample J18799 was 106%, greater than the control limit of 105%. No other problems were encountered during the course of the analyses.

2.4 Isotopic Thorium Analysis

No problems were encountered during the course of the analyses.

2.5 Isotopic Uranium Analysis

No problems were encountered during the course of the analyses.

2.6 Isotopic Plutonium Analysis

No problems were encountered during the course of the analyses.

2.7 Gamma Spectroscopy

No problems were encountered during the course of the analyses.

3.0 Case Narrative Certification Statement

"I certify that this data package is in compliance with the SOW, both technically and for completeness, for other than the conditions detailed above. Release of the data obtained in this hard copy data package has been authorized by the Laboratory Manager or a designee, as verified by the following signature."

N. Joseph Verville
Senior Program Manager

3/19/09
Date

1.0 GENERAL

Washington Closure Hanford (WCH) Sample Delivery Group K1540 was composed of thirteen solid (other solid) samples designated under SAF No. RC-116 with a Project Designation of: Columbia River Component of the RCBRA – Sediment

The samples were received as stated on the Chain-of-Custody documents. Any discrepancies are noted on the Eberline Analytical Sample Receipt Checklist. The results were sent to WCH via e-mail March 23, 2009.

2.0 ANALYSIS NOTES

2.1 Carbon-14 Analysis

No problems were encountered during the course of the analyses.

2.2 Strontium-90 Analysis

No problems were encountered during the course of the analyses.

2.3 Technetium-99 Analysis

The technetium-99m tracer yields for twelve of the sixteen analyses (including QC) were between 106% and 114%, greater than the upper control limit of 105%, but less than the absolute limit of 140%. No other problems were encountered during the course of the analyses.

2.4 Isotopic Thorium Analysis

No problems were encountered during the course of the analyses.

2.5 Isotopic Uranium Analysis

No problems were encountered during the course of the analyses.

2.6 Isotopic Plutonium Analysis

No problems were encountered during the course of the analyses.

2.7 Gamma Spectroscopy

No problems were encountered during the course of the analyses.

3.0 Case Narrative Certification Statement

"I certify that this data package is in compliance with the SOW, both technically and for completeness, for other than the conditions detailed above. Release of the data obtained in this hard copy data package has been authorized by the Laboratory Manager or a designee, as verified by the following signature."

[illegible]

N. Joseph Verville
Senior Program Manager

Date

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-116-779

Page 1 of 1

Collector L Stratton	Company Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator WEISS, RL
Project Designation Columbia River Component of the RCBRA - Sediment	Sampling Location WAT - 14 SSD Duplicate K1546 (7307)		SAF No. RC-116
Ice Chest No. WCH-08-031,032	Field Logbook No. EL-1631/-1	COA OESCRC6520	Method of Shipment FED EX
Shipped To EBERLINE SERVICES LIONVILLE	Offsite Property No. N/A		Bill of Lading/Air Bill No. 796342219379

Price Code 9K

Data Turnaround 45 Days

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

000038

			Preservation	None	None	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	None
			Type of Container	G/P	G/P	G/P	G/P	G/P	aG	aG	aG	G	*
			No. of Container(s)	1	1	1	1	1	1	1	1	1	1
			Volume	1500g	100g	10g	10g	250g	250g	125g	250g	250g	1
SAMPLE ANALYSIS				See item (1) in Special Instructions	Carbon-14	Technetium-99	See item (2) in Special Instructions	See item (3) in Special Instructions	PCBs - 8082	Pesticides - 8081	Semi-VOA 8270A (TCL)	See item (4) in Special Instructions	
Sample No.	Matrix *	Sample Date	Sample Time										
J18010	OTHER SOLID	2/11/09	1145	X	X	X	X						

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab

CHAIN OF POSSESSION		Sign/Print Names	
Relinquished By/Removed From LStratton	Date/Time 2-12-09 / 1915	Received By/Stored In RJ B	Date/Time 2-12-09 / 1915
Relinquished By/Removed From RJB	Date/Time 2/13/09 0800	Received By/Stored In BWoodward	Date/Time 2/13/09 0800
Relinquished By/Removed From BWoodward	Date/Time 2/13/09 1200	Received By/Stored In Fed Ex	Date/Time 2/13/09 1200
Relinquished By/Removed From Fed Ex	Date/Time	Received By/Stored In R.F. [illegible]	Date/Time 02/14/09 1150
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) (Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238)
(2) Strontium-89,90 -- Total Sr, Isotopic Thorium (Thorium-232), Isotopic Uranium (Uranium-233/234, Uranium-235, Uranium-238); Isotopic Plutonium
(3) ICP Metals - 6010 (Full List) (Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc); Mercury - 7471 - (CV)
(4) VOA - 8260A (TCL) (1,1,1-Trichloroethane, 1,1,2,2-Tetrachloroethane, 1,1,2-Trichloroethane, 1,1-Dichloroethane, 1,1-Dichloroethene, 1,2-Dichloroethane, 1,2-Dichloropropane, 2-Butanone, 2-Hexanone, 4-Methyl-2-Pentanone, Acetone, Benzene, Bromodichloromethane, Bromoform, Bromomethane, Carbon disulfide, Carbon tetrachloride, Chlorobenzene, Chloroethane, Chloroform, Chloromethane, cis-1,2-Dichloroethylene, cis-1,3-Dichloropropene, Dibromochloromethane, Ethylbenzene, Methylene chloride, Styrene, Tetrachloroethene, Toluene, trans-1,2-Dichloroethylene

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-116-979

Page 1 of 1

Collector: BM

Company Contact: JOAN KESSNER

Telephone No.: 375-4688

Project Coordinator: WEISS, RL

Price Code: 9K

Data Turnaround: 45 Days

Project Designation: Columbia River Component of the RCBRA - Sediment

Sampling Location: LI-11 SSD K1546 (7367)

SAF No.: RC-116

Ice Chest No.: WCH-08-031, 032

Field Logbook No.: EL-1631-1

COA: BESCRC6520

Method of Shipment: FED EX

Shipped To: EBERLINE SERVICES - LIONVILLE

Offsite Property No.: N/A

Bill of Lading/Air Bill No.: 796342219379

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

Preservation	None	None	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	None
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	aG	G	aG	G/P
No. of Container(s)	1	1	1	1	1	1	1	1	1	1
Volume	1500g	100g	10g	10g	250g	250g	125g	125ml	125g	1000g
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Technetium-99	See item (2) in Special Instructions	See item (3) in Special Instructions	PCBs - 8082	Pesticides - 8081	See item (4) in Special Instructions	TOC - 415.1	Particle Size (Dry Sieve) - D422

Sample No.	Matrix *	Sample Date	Sample Time										
J18779	OTHER SOLID	2/12/09	1215	X	X	X	X						

CHAIN OF POSSESSION	Date/Time	Sign/Print Names Received By/Stored In	Date/Time
Relinquished By/Removed From B Naylor BF-4	2/12/09 1315	Fay A	2/12/09 1315
Relinquished By/Removed From Rif A	2/13/09 0800	B Vandiver	2/13/09 0800
Relinquished By/Removed From B Vandiver	2/13/09 1200	Fed Ex	2/13/09 1200
Relinquished By/Removed From FED EX		M.F. Hathaway	02/14/09 1119
Relinquished By/Removed From		Received By/Stored In	
Relinquished By/Removed From		Received By/Stored In	

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) {Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238}
(2) Strontium-89,90 - Total Sr; Isotopic Thorium {Thorium-232}; Isotopic Uranium {Uranium-233/234, Uranium-235, Uranium-238}; Isotopic Plutonium
(3) ICP Metals - 6010 (Full List) {Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc}; Mercury - 7471 - (CV)
(4) TPH-Diesel Range - WTPH-D + {Total petroleum hydrocarbons - diesel range, Total petroleum hydrocarbons - motor oil (high boiling)}

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab.

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION — Received By: Title: Date/Time:

FINAL SAMPLE DISPOSITION — Disposal Method: Disposed By: Date/Time:

WCH-EE-011

Washington Closure Hanford	**CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST**		**RC-116-983**	**Page** 1 of 2
Collector L Stratton	**Company Contact** JOAN KESSNER	**Telephone No.** 375-4688	**Project Coordinator** WEISS, RL	**Price Code** 9K
Project Designation Columbia River Component of the RCBRA - Sediment	**Sampling Location** WBT- 6 SSD K1546 (7347)		**SAF No.** RC-116	**Data Turnaround** 45 Days
Ice Chest No. WCH-08-081,032	**Field Logbook No.** EL-1631-1	**COA** BESCRC6320	**Method of Shipment** FED EX	
Shipped To (EBERLINE SERVICES) LKRVILLE	**Offsite Property No.** N/A		**Bill of Lading/Air Bill No.** 796342219379	

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

			Preservation	None	None	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	None
			Type of Container	G/P	G/P	G/P	G/P	G/P	aG	aG	aG	G	*
			No. of Container(s)	1	1	1	1	1	1	1	1	1	1
			Volume	1500g	100g	10g	10g	250g	250g	125g	250g	250g	1*
SAMPLE ANALYSIS				See item (1) in Special Instructions	Carbon-14	Technetium-99	See item (2) in Special Instructions	See item (3) in Special Instructions	PCBs - 8082	Pesticides - 8081	Semi-VOA - 8270A (TCL)	See item (4) in Special Instructions	-
Sample No.	**Matrix ***	**Sample Date**	**Sample Time**										
J18784	OTHER SOLID	2/12/09	1125	X	X	X	X						

Sampler unavailable to remove samples from controlled storage. Shipper removes samples from storage location taking custody of samples for shipment to lab.

CHAIN OF POSSESSION

Sign/Print Names

Relinquished By/Removed From	**Date/Time** 2-12-09 / 1915	**Received By/Stored In** Ref B	**Date/Time** 2-12-09 / 1915
Relinquished By/Removed From Ref B	**Date/Time** 2/13/09 0800	**Received By/Stored In** BLWoodward	**Date/Time** 2/13/09 0800
Relinquished By/Removed From BLWoodward	**Date/Time** 2/13/09 1200	**Received By/Stored In** FedEx	**Date/Time** 2/13/09 1200
Relinquished By/Removed From Fed Ex	**Date/Time**	**Received By/Stored In** L.F. HATA	**Date/Time** 02/16/09 1150
Relinquished By/Removed From	**Date/Time**	**Received By/Stored In**	**Date/Time**
Relinquished By/Removed From	**Date/Time**	**Received By/Stored In**	**Date/Time**

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) [Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238]
(2) Strontium-89,90 - Total Sr; Isotopic Thorium (Thorium-232); Isotopic Uranium (Uranium-233/234, Uranium-235, Uranium-238); Isotopic Plutonium
(3) ICP Metals - 6010 (Full List) [Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc]; Mercury - 7471 - (CV)
(4) VOA - 8260A (TCL) [1,1,1-Trichloroethane, 1,1,2,2-Tetrachloroethane, 1,1,2-Trichloroethane, 1,1-Dichloroethane, 1,1-Dichloroethene, 1,2-Dichloroethane, 1,2-Dichloropropane, 2-Butanone, 2-Hexanone, 4-Methyl-2-Pentanone, Acetone, Benzene, Bromodichloromethane, Bromoform, Bromomethane, Carbon disulfide, Carbon tetrachloride, Chlorobenzene, Chloroethane, Chloroform, Chloromethane, cis-1,2-Dichloroethylene, cis-1,3-Dichloropropene, Dibromochloromethane, Ethylbenzene, Methylene chloride, Styrene, Tetrachloroethene, Toluene, trans-1,2-Dichloroethene

Matrix *
S = Soil
SE = Sediment
SO = Solid
SL = Sludge
W = Water
O = Oil
A = Air
DS = Drum Solids
DL = Drum Liquids
T = Tissue
WI = Wipe
L = Liquid
V = Vegetation
X = Other

LABORATORY SECTION	**Received By**	**Title**	**Date/Time**
FINAL SAMPLE DISPOSITION	**Disposal Method**	**Disposed By**	**Date/Time**

WCH-EE-011

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-116-984

Page 1 of 2

Collector L S Nitt	Company Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator WEISS, RL
Project Designation Columbia River Component of the RCBRA - Sediment	Sampling Location WBT- 1/2 SSD K1540 (73-7)		SAF No. RC-116
Ice Chest No. WCH-08-031,032	Field Logbook No. EL-1631-1	COA BESCRC6520	Method of Shipment FED EX
Shipped To EBERLINE SERVICES LIONVILLE	Offsite Property No. N/A		Bill of Lading/Air Bill No. 796342219379

Price Code 9K

Data Turnaround 45 Days

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

1-0000

Preservation	None	None	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	None
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	aG	aG	G	-
No. of Container(s)	1	1	1	1	1	1	1	1	1	1
Volume	1500g	100g	10g	10g	250g	250g	125g	250g	250g	1?
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Technetium-99	See item (2) in Special Instructions	See item (3) in Special Instructions	PCBs - 8082	Pesticides - 8081	Semi-VOA - 8270A (TCL)	See item (4) in Special Instructions	-

Sample No.	Matrix *	Sample Date	Sample Time										
J18705	OTHER SOLID	2/12/09	1230	X	X	X	X						

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab

CHAIN OF POSSESSION Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
J Sh	2-12-09 / 1715	Ref R	2-12-09 / 1715
Ref B. 2/13/09	0800	B Woodlund	2/13/09 0800
B Woodlund 2/13/09	1200	Fed Ex	2/13/09 1200
FED EX		R F. [illegible]	02-14-09 1150

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Add Last) {Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238}
(2) Strontium-89,90 -- Total Sr; Isotopic Thorium {Thorium-232}; Isotopic Uranium {Uranium-233/234, Uranium-235, Uranium-238}; Isotopic Plutonium
(3) ICP Metals - 6010 (TAL List) {Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc}; Mercury - 7471 - (CV)
(4) VOA - 8260A (TCL) {1,1,1-Trichloroethane, 1,1,2,2-Tetrachloroethane, 1,1,2-Trichloroethane, 1,1-Dichloroethane, 1,1-Dichloroethene, 1,2-Dichloroethane, 1,2-Dichloropropane, 2-Butanone, 2-Hexanone, 4-Methyl-2-Pentanone, Acetone, Benzene, Bromodichloromethane, Bromoform, Bromomethane, Carbon disulfide, Carbon tetrachloride, Chlorobenzene, Chloroethane, Chloroform, Chloromethane, cis-1,2-Dichloroethylene, cis-1,3-Dichloropropene, Dibromochloromethane, Ethylbenzene, Methylene chloride, Styrene, Tetrachloroethene, Toluene, trans-1,2-Dichloroethylene

Matrix *
S = Soil
SE = Sediment
SO = Solid
SL = Sludge
W = Water
O = Oil
A = Air
DS = Drum Solids
DL = Drum Liquids
T = Tissue
WI = Wipe
L = Liquid
V = Vegetation
X = Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

Washington Closure Hanford	**CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST**	RC-116-985	Page 1 of 2
Collector L Stratton	Company Contact JOAN KESSNER; Telephone No. 375-4688	Project Coordinator WEISS, RL	Price Code 9K; Data Turnaround 45 Days
Project Designation Columbia River Component of the RCBRA - Sediment	Sampling Location WBT- , SSD K154c (7307)	SAF No. RC-116	
Ice Chest No. WCH-08-031, 032	Field Logbook No. EL-1631-1; COA BESCRC6520	Method of Shipment FED EX	
Shipped To EBERLINE SERVICES / LIONVILLE	Offsite Property No. N/A	Bill of Lading/Air Bill No. 796342219379	

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

000042

			Preservation	None	None	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	None
			Type of Container	G/P	G/P	G/P	G/P	G/P	aG	aG	aG	G	-
			No. of Container(s)	1	1	1	1	1	1	1	1	1	1
			Volume	1500g	100g	10g	10g	250g	250g	125g	250g	250g	1*
SAMPLE ANALYSIS				See item (1) in Special Instructions	Carbon-14	Technetium-99	See item (2) in Special Instructions	See item (3) in Special Instructions	PCBs - 8082	Pesticides - 8081	Semi-VOA - 8270A (TCL)	See item (4) in Special Instructions	-
Sample No.	Matrix *	Sample Date	Sample Time										
J18790	OTHER SOLID	2/12/09	0938	X	X	X	X						

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab.

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
	2-12-09 1915		2-12-09 / 1915
RoFB	2/13/09 0800	B Dowdswell	2/13/09 0800
B Dowdswell	2/13/09 1200	Fed Ex	2/13/09 1200
FED EX		F. MARAGHAN	02/14/09 1150

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) {Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238}
(2) Strontium-89,90 – Total Sr; Isotopic Thorium {Thorium-232}; Isotopic Uranium {Uranium-233/234, Uranium-235, Uranium-238}; Isotopic Plutonium
(3) ICP Metals - 6010 (Full List) {Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc}, Mercury - 7471 - {CV}
(4) VOA - 8260A (TCL) {1,1,1-Trichloroethane, 1,1,2,2-Tetrachloroethane, 1,1,2-Trichloroethane, 1,1-Dichloroethane, 1,1-Dichloroethene, 1,2-Dichloroethane, 1,2-Dichloropropane, 2-Butanone, 2-Hexanone, 4-Methyl-2-Pentanone, Acetone, Benzene, Bromodichloromethane, Bromoform, Bromomethane, Carbon disulfide, Carbon tetrachloride, Chlorobenzene, Chloroethane, Chloroform, Chloromethane, cis-1,2-Dichloroethylene, cis-1,3-Dichloropropene, Dibromochloromethane, [illegible]

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Washington Closure Hanford	**CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST**	RC-116-986	Page 1 of 2
Collector L Shaw	**Company Contact** JOAN KESSNER **Telephone No.** 375-4688	**Project Coordinator** WEISS, RL	**Price Code** 9K **Data Turnaround** 45 Days
Project Designation Columbia River Component of the RCBRA - Sediment	**Sampling Location** WBT-~ SSO K1540 (7307)	**SAF No.** RC-116	
Ice Chest No. WXH-08-031, 032	**Field Logbook No.** EL-1631-1 **COA** BESCRC6520	**Method of Shipment** FED EX	
Shipped To [✓ EBERLINE SERVICES] LIONVILLE	**Offsite Property No.** N/A	**Bill of Lading/Air Bill No.** 796342219379	

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

0000043

Preservation	None	None	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	None
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	aG	aG	G	*
No. of Container(s)	1	1	1	1	1	1	1	1	1	1
Volume	1500g	100g	10g	10g	250g	250g	125g	250g	250g	1*
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Technetium-99	See item (2) in Special Instructions	See item (3) in Special Instructions	TPH - 8015	Pesticides 8081	Semi VOA - 8270A (TCL)	See item (4) in Special Instructions	*

Sample No.	Matrix *	Sample Date	Sample Time										
J18787	OTHER SOLID	2/12/09	1010	X	X	X	X						

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab.

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
L Shaw	2/12/09 1715	RB	2-12-09 1715
RB	2/13/09 0800	B Woodlund	2/13/09 0800
B Woodlund	2/13/09 1200	Fed Ex	2/13/09 1200
Fed EX		L. FELLMAN	02/14/09 1150

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) (Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238)
(2) Strontium-89,90 -- Total Sr; Isotopic Thorium (Thorium-232); Isotopic Uranium (Uranium-233/234, Uranium-235, Uranium-238); Isotopic Plutonium
(3) ICP Metals - 6010 (Full List) (Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc); Mercury - 7471 - (CV)
(4) VOA - 8260A (TCL) (1,1,1-Trichloroethane, 1,1,2,2-Tetrachloroethane, 1,1,2-Trichloroethane, 1,1-Dichloroethane, 1,1-Dichloroethene, 1,2-Dichloroethane, 1,2-Dichloropropane, 2-Butanone, 2-Hexanone, 4-Methyl-2-Pentanone, Acetone, Benzene, Bromodichloromethane, Bromoform, Bromomethane, Carbon disulfide, Carbon tetrachloride, Chlorobenzene, Chloroethane, Chloroform, Chloromethane, cis-1,2-Dichloroethylene, cis-1,3-Dichloropropene, Dibromochloromethane, Ethylbenzene, Methylene chloride, Styrene, Tetrachloroethene, Toluene, trans-1,2-Dichloroethylene

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-116-987

Page 1 of 1

Collector: L Stratling

Company Contact: JOAN KESSNER

Telephone No.: 375-4688

Project Coordinator: WEISS, RL

Price Code: 9K

Data Turnaround: 45 Days

Project Designation: Columbia River Component of the RCBRA - Sediment

Sampling Location: WBT- 5 SSD K1540 (7307)

SAF No.: RC-116

Ice Chest No.: WXH-08-031,032

Field Logbook No.: EL-1631-1

COA: 6ESCRC6520

Method of Shipment: FED EX

Shipped To: [✓ OBERLINE SERVICES] LIONVILLE

Offsite Property No.: N/A

Bill of Lading/Air Bill No.: 796342219379

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

000044

	Preservation	None	None	None	None	Cool 4C	Cool 4C	None
	Type of Container	G/P	G/P	G/P	G/P	G/P	aG	G/P
	No. of Container(s)	1	1	1	1	1	1	1
	Volume	1500g	100g	10g	10g	250g	125g	1000g
SAMPLE ANALYSIS		See item (1) in Special Instructions	Carbon-14	Technetium-99	See item (2) in Special Instructions	See item (3) in Special Instructions	TOC - 415.1	Particle Size (Dry Sieve) - D422

Sample No	Matrix *	Sample Date	Sample Time							
J18796	OTHER SOLID	2/12/09	1040	X	X	X	X			

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
	2-12-09/1915	Ref B	2-12-09 /1915
Ref B	2/13/09 0800	B Woodlund	2/13/09 0800
B Woodlund	2/13/09 1200	FedEx	2/13/09 1200
Fed Ex		M.F MARTA	02/14/09 1150

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) {Americium-241, Antimony-125, Beryllium-7, Cerium-144, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238}

(2) Strontium-89,90 - Total Sr; Isotopic Thorium {Thorium-232}; Isotopic Uranium {Uranium-233/234, Uranium-235, Uranium-238}; Isotopic Plutonium

(3) ICP Metals - 6010 (Full List) {Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc}; Mercury - 7471 - (CV)

Sampler unavailable to remove samples
from controlled storage. Shipper removed
samples from storage location taking custody
of samples for shipment to lab

Matrix *

S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-116-988

Page 1 of 1

Collector: L Strater	Company Contact: JOAN KESSNER	Telephone No.: 375-4688	Project Coordinator: WEISS, RL
Project Designation: Columbia River Component of the RCBRA - Sediment	Sampling Location: WBT- 4 SSD K:54c (73-7)		SAF No.: RC-116
Ice Chest No.: WCH-08-031, 032	Field Logbook No.: EL-1631-1	COA: BESCRC6510	Method of Shipment: FED EX
Shipped To: EBERLINE SERVICES LIONVILLE	Offsite Property No.: N/A		Bill of Lading/Air Bill No.: 796342219379

Price Code: 9K

Data Turnaround: 45 Days

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

S401010

Preservation	None	None	None	None	Cool 4C	Cool 4C	None
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	G/P
No. of Container(s)	1	1	1	1	1	1	1
Volume	1500g	100g	10g	10g	250g	125g	1000g
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Technetium-99	See item (2) in Special Instructions	See item (3) in Special Instructions	TOC - 415.1	Particle Size (Dry Sieve) - D422

Sample No	Matrix *	Sample Date	Sample Time							
J18799	OTHER SOLID	2/12/09	1100	X	X	X	X			

CHAIN OF POSSESSION

Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
	2-12-09 / 1915	Ref B	2-12-09 / 1916
Ref B	2/13/09 0800	B Woodward	2/13/09 0900
B Woodward	2/13/09 1200	Fed Ex	2/13/09 1200
Fed Ex		R.F ALAT	2/14/09 1150

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) {Americium-241, Antimony-125, Beryllium-7, Cerium-144, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238}
(2) Strontium-89,90 - Total Sr, Isotopic Thorium {Thorium-232}, Isotopic Uranium {Uranium-233/234, Uranium-235, Uranium-238}, Isotopic Plutonium
(3) ICP Metals - 6010 (Full List) {Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc}, Mercury - 7471 - (CV)

Sample unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab.

Matrix *

S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-116-989

Page 1 of 1

Collector: L SMITTEN	Company Contact: JOAN KESSNER	Telephone No.: 375-4688	Project Coordinator: WEISS, RL
Project Designation: Columbia River Component of the RCBRA - Sediment	Sampling Location: WBT- 8 SSD	K1540 (7307)	SAP No.: RC-116
Ice Chest No.: WCH-08-031,032	Field Logbook No.: EL-1631-1	COA: RESCRC6520	Method of Shipment: FED EX
Shipped To: EBERLINE SERVICES RICHMOND/OAK RIDGE/ALIONVILLE	Offsite Property No.: N/A		Bill of Lading/Air Bill No.: 796342249379

Price Code: 9K

Data Turnaround: 45 Days

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

9400011

Preservation	None	None	None	None	Cool 4C	Cool 4C	None
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	G/P
No. of Container(s)	1	1	1	1	1	1	1
Volume	1500g	100g	10g	10g	250g	125g	1000g
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Technetium-99	See item (2) in Special Instructions	See item (3) in Special Instructions	TOC - 415.1	Particle Size (Dry Sieve) - D422

Sample No	Matrix *	Sample Date	Sample Time							
J18700	OTHER SOLID	2/12/09	1200	X	X	X	X			

CHAIN OF POSSESSION

Sign/Print Names

Relinquished By/Removed From	Date/Time: 2-12-09 / 1215	Received By/Stored In	Date/Time: 2-12-09 / 1415
Relinquished By/Removed From: Ref B	Date/Time: 2/13/09 0800	Received By/Stored In: BL Woodward	Date/Time: 2/13/09 0800
Relinquished By/Removed From: BL Woodward	Date/Time: 2/13/09 1200	Received By/Stored In: FedEx	Date/Time: 2/13/09 1200
Relinquished By/Removed From: Fed Ex	Date/Time	Received By/Stored In: R.F. WATHERS	Date/Time: 2/14/09 1150
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) {Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238}
(2) Strontium-89,90 -- Total Sr; Isotopic Thorium {Thorium-232}; Isotopic Uranium {Uranium-233/234, Uranium-235, Uranium-238}; Isotopic Plutonium
(3) ICP Metals - 6010 (Full List) {Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc}, Mercury - 7471 - (CV)

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location using custody of samples for shipment to [illegible]

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Washington Closure Hanford	**CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST**	RC-116-1013	Page 1 of 2
Collector BA	Company Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator WEISS, RL
Project Designation Columbia River Component of the RCBRA - Sediment	Sampling Location RH-SSD	K1546 (73-7)	SAF No. RC-116
Ice Chest No. WCH-08-631,632	Field Logbook No. EL-1630-1	COA BESCRC0520	Method of Shipment FED EX
Shipped To EBERLINE SERVICES LIONVILLE	Offsite Property No. N/A		Bill of Lading/Air Bill No. 796342219379

Price Code 9K

Data Turnaround 45 Days

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

000047

Preservation	None	None	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	None
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	aG	aG	G	-
No. of Container(s)	1	1	1	1	1	1	1	1	1	1
Volume	1500g	100g	10g	10g	250g	250g	125g	250g	250g	1
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Technetium-99	See item (2) in Special Instructions	See item (3) in Special Instructions	PCBs - 8082	Pesticides - 8081	Semi-VOA - 8270A (TCL)	See item (4) in Special Instructions	-

Sample No.	Matrix *	Sample Date	Sample Time										
J187D2	OTHER SOLID	2/12/09	915	X	X	X	X						

Sampler is transferring to remove samples from SSD storage. Sampler removed samples from storage location taking custody of samples for shipment to lab.

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
D A	2/12/09 0915	Frig 4	2/12/09 0915
Frig 4	2/13/09 0800	B Woodward	2/13/09 0800
B Woodward	2/13/09 1200	Fed Ex	2/13/09 1200
FED EX			2/14/09 11

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) (Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238)

(2) Strontium-89,90 – Total Sr, Isotopic Thorium (Thorium-232), Isotopic Uranium (Uranium-233/234, Uranium-235, Uranium-238), Isotopic Plutonium

(3) ICP Metals - 6010 (Full List) (Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc), Mercury - 7471 - (CV)

(4) VOA - 8260A (TCL) (1,1,1-Trichloroethane, 1,1,2,2-Tetrachloroethane, 1,1,2-Trichloroethane, 1,1-Dichloroethane, 1,1-Dichloroethene, 1,2-Dichloroethane, 1,2-Dichloropropane, 2-Butanone, 2-Hexanone, 4-Methyl-2-Pentanone, Acetone, Benzene, Bromodichloromethane, Bromoform, Bromomethane, Carbon disulfide, Carbon tetrachloride, Chlorobenzene, Chloroethane, Chloroform, Chloromethane, cis-1,2-Dichloroethylene, cis-1,3-Dichloropropene, Dibromochloromethane,

Matrix *

S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-116-1013 | Page 1 of 2

Collector: B~

Company Contact: JOAN KESSNER | Telephone No.: 375-4688

Project Coordinator: WEISS, RL

Price Code: 9K | Data Turnaround: 45 Days

Project Designation: Columbia River Component of the RCBRA - Sediment

Sampling Location: RH- 14 SSD   K1540 (7607)

SAF No.: RC-116

Ice Chest No.: WCH-08-031,032

Field Logbook No.: EL-1631/-1

COA: BESCRC6530

Method of Shipment: FED EX

Shipped To: [✓ EBERLINE SERVICES] LIONVILLE

Offsite Property No.: N/A

Bill of Lading/Air Bill No.: 796342219379

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

0000048

Preservation	None	None	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	None
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	aG	aG	G	-
No. of Container(s)	1	1	1	1	1	1	1	1	1	1
Volume	1500g	100g	10g	10g	250g	250g	125g	250g	250g	1*
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Technetium-99	See item (2) in Special Instructions	See item (3) in Special Instructions	PCBs - 8082	Pesticides - 8081	Semi-VOA - 8270A (TCL)	See item (4) in Special Instructions	-

Sample No.	Matrix *	Sample Date	Sample Time										
J187D4	OTHER SOLID	2/12/09	945	X	X	X	X						

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location (during custody) of samples for shipment to lab

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
	2/12/09 1715		2/12/09 1715
	2/13/09 0800		2/13/09 0800
	2/13/09 1200	FedEx	2/13/09 1200
FED EX			2/14/09 11[illegible]

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) {Americium-241, Antimony-125, Beryllium-7, Cerium-144, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238}

(2) Strontium-89,90 -- Total Sr, Isotopic Thorium {Thorium-232}, Isotopic Uranium {Uranium-233/234, Uranium-235, Uranium-238}, Isotopic Plutonium

(3) ICP Metals - 6010 (Full List) {Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc}; Mercury - 7471 - (CV)

(4) VOA - 8260A (TCL) {1,1,1-Trichloroethane, 1,1,2,2-Tetrachloroethane, 1,1,2-Trichloroethane, 1,1-Dichloroethane, 1,1-Dichloroethene, 1,2-Dichloroethane, 1,2-Dichloropropane, 2-Butanone, 2-Hexanone, 4-Methyl-2-Pentanone, Acetone, Benzene, Bromodichloromethane, Bromoform, Bromomethane, Carbon disulfide, Carbon tetrachloride, Chlorobenzene, Chloroethane, Chloroform, Chloromethane, cis-1,2-Dichloroethylene, cis-1,3-Dichloropropene, Dibromochloromethane, Ethylbenzene, Methylene chloride, Styrene, Tetrachloroethene, Toluene, trans-1,2-Dichloroethylene

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST		RC-116-1014	Page 1 of 2

Collector: BM

Company Contact: JOAN KESSNER

Telephone No.: 375-4688

Project Coordinator: WEISS, RL

Price Code: 9K

Data Turnaround: 45 Days

Project Designation: Columbia River Component of the RCBRA - Sediment

Sampling Location: RH-4 SSD K1540 (7307)

SAF No.: RC-116

Ice Chest No.: WCH-08-031,032

Field Logbook No.: EL-1631-1

COA: BESCRC6520

Method of Shipment: FED EX

Shipped To: EBERLINE SERVICES LIONVILLE

Offsite Property No.: N/A

Bill of Lading/Air Bill No.: 796342219379

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

000049

Preservation	None	None	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	None
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	aG	aG	G	-
No. of Container(s)	1	1	1	1	1	1	1	1	1	1
Volume	1500g	100g	10g	10g	250g	250g	125g	250g	250g	1
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Technetium-99	See item (2) in Special Instructions	See item (3) in Special Instructions	PCBs - 8082	Pesticides - 8081	Semi-VOA - 8270A (TCL)	See item (4) in Special Instructions	-

Sample No.	Matrix *	Sample Date	Sample Time										
J167D5	OTHER SOLID	2/12/09	1027	X	X	X	X						

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
B Taylor B Taylor	2/12/09 1325	Frig 4	2/12/09 1325
R F A	2/13/09 0800	Blackwood	2/13/09 0800
Blackwood	2/13/09 1200	FedEx	2/13/09 1200
FED EX		L.F. LATHAM	2/14/09 1105

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) (Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238)
(2) Strontium-89,90 - Total Sr; Isotopic Thorium (Thorium-232), Isotopic Uranium (Uranium-233/234, Uranium-235, Uranium-238), Isotopic Plutonium
(3) ICP Metals - 6010 (Full List) (Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc); Mercury - 7471 - (CV)
(4) VOA - 8260A (TCL) (1,1,1-Trichloroethane, 1,1,2,2-Tetrachloroethane, 1,1,2-Trichloroethane, 1,1-Dichloroethane, 1,1-Dichloroethene, 1,2-Dichloroethane, 1,2-Dichloropropane, 2-Butanone, 2-Hexanone, 4-Methyl-2-Pentanone, Acetone, Benzene, Bromodichloromethane, Bromoform, Bromomethane, Carbon disulfide, Carbon tetrachloride, Chlorobenzene, Chloroethane, Chloroform, Chloromethane, cis-1,2-Dichloroethylene, cis-1,3-Dichloropropene, Dibromochloromethane, Ethylbenzene, Methylene chloride, Styrene, Tetrachloroethene, Toluene, trans-1,2-Dichloroethylene

Matrix *
S = Soil
SE = Sediment
SO = Solid
SL = Sludge
W = Water
O = Oil
A = Air
DS = Drum Solids
DL = Drum Liquids
T = Tissue
WI = Wipe
L = Liquid
V = Vegetation
X = Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-116-1015	Page 1 of 1

Collector BA	Company Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator WEISS, RL	Price Code 9K Data Turnaround 45 Days
Project Designation Columbia River Component of the RCBRA - Sediment	Sampling Location RH- 5 SSD	K1540 (7308)	SAF No. RC-116	
Ice Chest No. WCH-08-031,032	Field Logbook No. EL-1637-1	COA BESCRC6510	Method of Shipment FED EX	
Shipped To EBERLINE SERVICES LIONVILLE	Offsite Property No. N/A		Bill of Lading/Air Bill No. 796342219379	

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

0510000

Preservation	None	None	None	None	Cool 4C	Cool 4C	None			
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	G/P			
No. of Container(s)	1	1	1	1	1	1	1			
Volume	1500g	100g	10g	10g	250g	125g	1000g			
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Technetium-99	See item (2) in Special Instructions	See item (3) in Special Instructions	TOC - 415.1	Particle Size (Dry Sieve) - D422			

Sample No	Matrix *	Sample Date	Sample Time										
J187D6	OTHER SOLID	2/12/09	1405	X	X	X	X						

CHAIN OF POSSESSION	Date/Time	Sign/Print Names	Date/Time
Relinquished By/Removed From BA BAH	2/12/09 1715	Received By/Stored In Fig 4	2/12/09 1715
Relinquished By/Removed From Ref A 2/13/09	0800	Received By/Stored In BLWoodward 2/13/09	0800
Relinquished By/Removed From BLWoodward 2/13/09	1200	Received By/Stored In FedEx 2/13/09	1200
Relinquished By/Removed From FED EX		Received By/Stored In A.F. MATH[illegible]	02/14/09 1100
Relinquished By/Removed From		Received By/Stored In	
Relinquished By/Removed From		Received By/Stored In	

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) {Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238}
(2) Strontium-89,90 -- Total Sr; Isotopic Thorium {Thorium-232}, Isotopic Uranium {Uranium-233/234, Uranium-235, Uranium-238}, Isotopic Plutonium
(3) ICP Metals - 6010 (Full List) {Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc}; Mercury - 7471 - (CV)

Samples unavailable to remove sample from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab

Matrix *
S = Soil
SE = Sediment
SO = Solid
SL = Sludge
W = Water
O = Oil
A = Air
DS = Drum Solids
DL = Drum Liquids
T = Tissue
WI = Wipe
L = Liquid
V = Vegetation
X = Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Washington Closure Hanford | **CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST** | RC-116-1016 | Page 1 of 1

Collector BM	**Company Contact** JOAN KESSNER	**Telephone No.** 375-4688	**Project Coordinator** WEISS, RL
Project Designation Columbia River Component of the RCBRA - Sediment	**Sampling Location** RH- 7 SSD K154 (72…)		**SAF No.** RC-116
Ice Chest No. WCH-08-031,032	**Field Logbook No.** EL-1631-1	**COA** BESCRC6520	**Method of Shipment** FED EX
Shipped To EBERLINE SERVICES LIONVILLE	**Offsite Property No.** N/A		**Bill of Lading/Air Bill No.** 796342219379

Price Code 9K

Data Turnaround 45 Days

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

TS0000

Preservation	None	None	None	None	Cool 4C	Cool 4C	None
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	G/P
No. of Container(s)	1	1	1	1	1	1	1
Volume	1500g	100g	10g	40g	250g	125g	1000g
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Technetium-99	See item (2) in Special Instructions	See item (3) in Special Instructions	TOC - 9060	Particle Size (Dry Sieve) - D422

Sample No	Matrix *	Sample Date	Sample Time							
J187D7	OTHER SOLID	2/12/09	1420	X	X	X	X			

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Bryan Bell AL	2/12/09 1215	Ec A	2/12/09 1215
RJA 2/13/09	0800	BDWoodward	2/13/09 0800
BDWoodward	2/13/09 1200	Fed Ex	2/13/09 1200
FED EX		L. F. Fuhrman	2/14/09 1100

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) {Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238}

(2) Strontium-89,90 - Total Sr, Isotopic Thorium {Thorium 232}, Isotopic Uranium {Uranium-233/234, Uranium-235, Uranium-238}, Isotopic Plutonium

(3) ICP Metals - 6010 (Full List) {Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc}; Mercury - 7471 - (CV)

Sampler unavailable to remove samples
from controlled storage. Shipper removed
samples from storage location using custody
of samples for shipment to lab

Matrix *

S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-116-1017 Page 1 of 1

Collector: BM	Company Contact: JOAN KESSNER	Telephone No.: 375-4689	Project Coordinator: WEISS, RL
Price Code: 9K	Data Turnaround: 45 Days		
Project Designation: Columbia River Component of the RCBRA - Sediment	Sampling Location: RH-3 SSD K1540 (73.8)		SAF No.: RC-116
Ice Chest No.: WCH-08-031,032	Field Logbook No.: EL-1631-1	COA: BESCRC6530	Method of Shipment: FED EX
Shipped To: EBERLINE SERVICES LIONVILLE	Offsite Property No.: N/A		Bill of Lading/Air Bill No.: 796342219379

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

2510000

Preservation	None	None	None	None	Cool 4C	Cool 4C	None			
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	G/P			
No. of Container(s)	1	1	1	1	1	1	1			
Volume	1500g	100g	10g	10g	250g	125g	1000g			
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Technetium-99	See item (2) in Special Instructions	See item (3) in Special Instructions	TOC - 415.1	Particle Size (Dry Sieve) - D422			

Sample No.	Matrix *	Sample Date	Sample Time										
J18708	OTHER SOLID	2/12/09	1135	X	X	X	X						

CHAIN OF POSSESSION	Date/Time	Sign/Print Names Received By/Stored In	Date/Time
Relinquished By/Removed From: B A Jon Ba...	2/12/09 1135	Eric A	2/12/09 1135
Relinquished By/Removed From: R.F.A. 2/13/09	0800	BWoodward	2/13/09 0800
Relinquished By/Removed From: BWoodward	2/13/09 1200	Fed Ex	2/13/09 1200
Relinquished By/Removed From: Fed Ex		E.F. McCl...	02/14/09 1150
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) {Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238}
(2) Strontium-89,90 -- Total Sr; Isotopic Thorium {Thorium-232}; Isotopic Uranium {Uranium-233/234, Uranium-235, Uranium-238}; Isotopic Plutonium
(3) ICP Metals - 6010 (Full List) {Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc}; Mercury - 7471 - (CV)

Sampler unavailable to remove samples
from controlled storage. Shipper removed
samples from storage location taking custody
of samples for shipment to lab.

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-116-1018 Page 1 of 1

Collector BM	Company Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator WEISS, RL
Project Designation Columbia River Component of the RCBRA - Sediment	Sampling Location RH-6 SSD	K1540 (7308)	SAF No. RC-116
Ice Chest No. WCH08-031, 032	Field Logbook No. EL-1631-1	COA BESCRC6520	Method of Shipment FED EX
Shipped To EBERLINE SERVICES LIONVILLE	Offsite Property No. N/A		Bill of Lading/Air Bill No. 796342219379

Price Code 9K

Data Turnaround 45 Days

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

Preservation	None	None	None	None	Cool 4C	Cool 4C	None			
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	G/P			
No. of Container(s)	1	1	1	1	1	1	1			
Volume	1500g	100g	10g	10g	250g	125g	1000g			
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Technetium-99	See item (2) in Special Instructions	See item (3) in Special Instructions	TOC - 415.1	Particle Size (Dry Sieve) - D422			

Sample No.	Matrix *	Sample Date	Sample Time										
J18709	OTHER SOLID	2/12/09	1400	X	X	X	X						

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Bryan Bergl	2/12/09 1215	Eric A	2/12/09 1215
Ref A 2/13/09	0800	B Woodward	2/13/09 0800
B Woodward	2/13/09 1200	FedEx	2/13/09 1200
Fed Ex		L.F. [illegible]	02/14/09 1150

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) {Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238}
(2) Strontium-89,90 -- Total Sr; Isotopic Thorium {Thorium-232}, Isotopic Uranium {Uranium-233/234, Uranium-235, Uranium-238}; Isotopic Plutonium
(3) ICP Metals - 6010 (Full List) {Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc}; Mercury - 7471 - (CV)

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab.

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-116-1019 Page 1 of 1

Collector: BM

Company Contact: JOAN KESSNER

Telephone No.: 375-4688

Project Coordinator: WEISS, RL

Price Code: 9K

Data Turnaround: 45 Days

Project Designation: Columbia River Component of the RCBRA - Sediment

Sampling Location: RR- Z SSD K1540 (7305)

SAF No.: RC-116

Ice Chest No.: WCH-08-031,032

Field Logbook No.: EL-1631/-1

COA: B1SCRC6320

Method of Shipment: FED EX

Shipped To: EBERLINE SERVICES LIONVILLE

Offsite Property No.: N/A

Bill of Lading/Air Bill No.: 796342219379

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

4530000

		Preservation	None	None	None	None	Cool 4C	Cool 4C	None			
		Type of Container	G/P	G/P	G/P	G/P	G/P	aG	G/P			
		No. of Container(s)	1	1	1	1	1	1	1			
		Volume	1500g	100g	50g	10g	250g	125g	1000g			
SAMPLE ANALYSIS			See item (1) in Special Instructions	Carbon-14	Technetium-99	See item (2) in Special Instructions	See item (3) in Special Instructions	TOC - 415.1	Particle Size (Dry Sieve) - D422			
Sample No.	**Matrix ***	**Sample Date**	**Sample Time**									
J157F0	OTHER SOLID	2/12/09	1120	X	X	X	X					

CHAIN OF POSSESSION Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Brian Berry	2/12/09 1215	Ret A	2/12/09 1215
Ret A	2/13/09 0800	Bluesland	2/13/09 0800
Bluesland	2/13/09 1200	Fed Ex	2/13/09 1200
Fed EX		R. F. MATAMORAN	02/14/09 1100

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) (Americium-241, Antimony-125, Beryllium-7, Cerium-144, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238)
(2) Strontium-89,90 -- Total Sr, Isotopic Thorium (Thorium-232); Isotopic Uranium (Uranium-233/234, Uranium-235, Uranium-238); Isotopic Plutonium
(3) ICP Metals - 6010 (Full List) (Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc); Mercury - 7471 - (CV)

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Washington Closure Hanford	**CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST**	RC-116-1020	Page 1 of 1
Collector BM	**Company Contact** JOAN KESSNER **Telephone No.** 373-4688	**Project Coordinator** WEISS, RL	**Price Code** 9K **Data Turnaround** 45 Days
Project Designation Columbia River Component of the RCBRA - Sediment	**Sampling Location** RH- 40 SSD K1540 (7268)	**SAF No.** RC-116	
Ice Chest No. WCH-08-031, 032	**Field Logbook No.** EL-1631-1 **COA** BESCRC6520	**Method of Shipment** FED EX	
Shipped To EBERLINE SERVICES RICHMOND	**Offsite Property No.** N/A	**Bill of Lading/Air Bill No.** 796342219379	

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

SS01100

			Preservation	None	None	None	None	Cool 4C	Cool 4C	None
			Type of Container	G/P	G/P	G/P	G/P	G/P	aG	G/P
			No. of Container(s)	1	1	1	1	1	1	1
			Volume	1500g	100g	10g	10g	250g	125g	1000g
SAMPLE ANALYSIS				See item (1) in Special Instructions.	Carbon-14	Technetium-99	See item (2) in Special Instructions.	See item (3) in Special Instructions.	TOC - 415.1	Particle Size (Dry Sieve) - D422
Sample No.	**Matrix ***	**Sample Date**	**Sample Time**							
J187F1	OTHER SOLID	2/12/09	1200	X	X	X	X			

CHAIN OF POSSESSION		**Sign/Print Names**	
Relinquished By/Removed From B Mafar [illegible]	**Date/Time** 2/12/09 1715	**Received By/Stored In** Fritz A	**Date/Time** 2/12/09 1715
Relinquished By/Removed From RitA	**Date/Time** 2/13/09 0800	**Received By/Stored In** BWoolund	**Date/Time** 2/13/09 0800
Relinquished By/Removed From BWoolund	**Date/Time** 2/13/09 1200	**Received By/Stored In** FedEx	**Date/Time** 2/13/09 1200
Relinquished By/Removed From Fed Ex	**Date/Time**	**Received By/Stored In** M.E. MATHEWS	**Date/Time** 2/14/09 1109
Relinquished By/Removed From	**Date/Time**	**Received By/Stored In**	**Date/Time**
Relinquished By/Removed From	**Date/Time**	**Received By/Stored In**	**Date/Time**

SPECIAL INSTRUCTIONS

(1) Gamma Spec - {Full List (Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238)}
(2) Strontium-89,90 -- Total Sr, Isotopic Thorium (Thorium-232), Isotopic Uranium (Uranium-233/234, Uranium-235, Uranium-238); Isotopic Plutonium
(3) ICP Metals - 6010 (Full List) {Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc}; Mercury - 7471 - (CV)

Samples unavailable to [illegible] samples from cool/sealed storage. Shipper removed samples from storage location, taking custody of samples for shipment to lab.

Matrix *
S = Soil
SE = Sediment
SO = Solid
SL = Sludge
W = Water
O = Oil
A = Air
DS = Drum Solids
DL = Drum Liquids
T = Tissue
WI = Wipe
L = Liquid
V = Vegetation
X = Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-116-1031 Page 1 of 2

Collector: L. Stratton

Company Contact: JOAN KESSNER

Telephone No.: 375-4688

Project Coordinator: WEISS, RL

Price Code: 9K

Data Turnaround: 45 Days

Project Designation: Columbia River Component of the RCBRA - Sediment

Sampling Location: RFLS-2 SSD K-54C (7308)

SAF No.: RC-116

Ice Chest No.: WCH-08-031, 032

Field Logbook No.: EL-1631-1

COA: HESCRC6520

Method of Shipment: FED EX

Shipped To: EBERLINE SERVICES LIONVILLE

Offsite Property No.: N/A

Bill of Lading/Air Bill No.: 796342219379

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

950000

	Preservation	None	None	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	None
	Type of Container	G/P	G/P	G/P	G/P	G/P	aG	aG	aG	G	
	No. of Container(s)	1	1	1	1	1	1	1	1	1	1
	Volume	1500g	100g	10g	10g	250g	250g	125g	250g	250g	
SAMPLE ANALYSIS		See item (1) in Special Instructions	Carbon-14	Technetium-99	See item (2) in Special Instructions	See item (3) in Special Instructions	PCBs - 8082	Pesticides 8081	Semi-VOA 8270A (TCL)	See item (4) in Special Instructions	

Sample No.	Matrix *	Sample Date	Sample Time										
J187K6	OTHER SOLID	2/12/09	1620	X	X	X	X						

Sample(s) are available to remove samples from continued storage. Shipper removes samples from storage location taking custody of samples for shipment to lab

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
E. Glass	2-12-09 1715	R/R	2-12-09 1715
Ref B	2/13/09 0800	B Woodward	2/13/09 0800
B Woodward	2/13/09 1200	Fed Ex	2/13/09 1200
Fed Ex		L. F. MATTHEWS	02/14/09 1150

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) {Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238}

(2) Strontium-89,90 – Total Sr; Isotopic Thorium {Thorium-232}, Isotopic Uranium {Uranium-233/234, Uranium-235, Uranium-238}, Isotopic Plutonium

(3) ICP Metals - 6010 (Full List) {Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc}, Mercury - 7471 - (CV)

(4) VOA - 8260A (TCL) {1,1,1-Trichloroethane, 1,1,2,2-Tetrachloroethane, 1,1,2-Trichloroethane, 1,1-Dichloroethane, 1,1-Dichloroethene, 1,2-Dichloroethane, 1,2-Dichloropropane, 2-Butanone, 2-Hexanone, 4-Methyl-2-Pentanone, Acetone, Benzene, Bromodichloromethane, Bromoform, Bromomethane, Carbon disulfide, Carbon tetrachloride, Chlorobenzene, Chloroethane, Chloroform, Chloromethane, cis-1,2-Dichloroethylene, cis-1,3-Dichloropropene, Dibromochloromethane, Ethylbenzene, Methylene chloride, Styrene, Tetrachloroethene, Toluene, trans-1,2-Dichloroethylene

Matrix *

S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-116-1032

Page 1 of 2

Collector BM	Company Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator WEISS, RL
Project Designation Columbia River Component of the RCBRA - Sediment	Sampling Location RFLS- | SSD	K1540 (7328)	SAF No. RC-116
Ice Chest No. WCH-08-031, 032	Field Logbook No. EL-1631/-1	COA BESCRC6520	Method of Shipment FED EX
Shipped To [✓ EBERLINE SERVICES] LIONVILLE	Offsite Property No. N/A		Bill of Lading/Air Bill No. 796842219379

Price Code 9K

Data Turnaround 45 Days

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

450000

Preservation	None	None	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	None
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	aG	aG	G	
No. of Container(s)	1	1	1	1	1	1	1	1	1	1
Volume	1500g	100g	10g	10g	250g	250g	125g	250g	250g	1
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Technetium-99	See item (2) in Special Instructions	See item (3) in Special Instructions	PCBs - 8082	Pesticides - 8081	Semi-VOA - 8270A (TCL)	See item (4) in Special Instructions	

Sample No.	Matrix *	Sample Date	Sample Time										
J187K7	OTHER SOLID	2/12/09	1510	X	X	X	X						

CHAIN OF POSSESSION	Date/Time	Sign/Print Names	Date/Time
Relinquished By/Removed From BMahr Bob Sgt	2/12/09 1335	Received By/Stored In FCx A	2/12/09 1?6
Relinquished By/Removed From RCf A 2/13/09	0800	Received By/Stored In BL Woodward	2/13/09 0800
Relinquished By/Removed From BL Woodward	2/13/09 1200	Received By/Stored In Fed Ex	2/13/09 1200
Relinquished By/Removed From FED EX	Date/Time	Received By/Stored In	02/14/09 1100
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time

Sampler was unable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) (Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238)
(2) Strontium-89,90 -- Total Sr; Isotopic Thorium (Thorium-232); Isotopic Uranium (Uranium-233/234, Uranium-235, Uranium-238); Isotopic Plutonium
(3) ICP Metals - 6010 (Full List) (Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc); Mercury - 7471 - (CV)
(4) VOA - 8260A (TCL) (1,1,1-Trichloroethane, 1,1,2,2-Tetrachloroethane, 1,1,2-Trichloroethane, 1,1-Dichloroethane, 1,1-Dichloroethene, 1,2-Dichloroethane, 1,2-Dichloropropane, 2-Butanone, 2-Hexanone, 4-Methyl-2-Pentanone, Acetone, Benzene, Bromodichloromethane, Bromoform, Bromomethane, Carbon disulfide, Carbon tetrachloride, Chlorobenzene, Chloroethane, Chloroform, Chloromethane, cis-1,2-Dichloroethylene, cis-1,3-Dichloropropene, Dibromochloromethane,

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Washington Closure Hanford	**CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST**	RC-116-1033	Page 1 of 1

Collector L. Sexton	Company Contact JOAN KESSNER · Telephone No. 375-4688	Project Coordinator WEISS, RL	Price Code 9K · Data Turnaround 45 Days
Project Designation Columbia River Component of the RCBRA - Sediment	Sampling Location BHLS-5 SSD · K1540 (73.8)	SAF No. RC-116	
Ice Chest No. WCH-08-031,032	Field Logbook No. EL-1651-1 · COA BESCRC6520	Method of Shipment FED EX	
Shipped To [✓ EBERLINE SERVICES] LIONVILLE	Offsite Property No. N/A	Bill of Lading/Air Bill No. 796342219379	

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

Preservation	None	None	None	None	Cool 4C	Cool 4C	None
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	G/P
No. of Container(s)	1	1	1	1	1	1	1
Volume	1500g	100g	10g	10g	250g	125g	1000g
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Technetium-99	See item (2) in Special Instructions	See item (3) in Special Instructions	TOC - 415.1	Particle Size (Dry Sieve) D422

Sample No.	Matrix *	Sample Date	Sample Time							
J187K8	OTHER SOLID	2/12/09	1000	X	X	X	X			

CHAIN OF POSSESSION	Date/Time	Sign/Print Names Received By/Stored In	Date/Time
Relinquished By/Removed From L Sexton	2-12-09 /1415		2-12-09 /1415
Relinquished By/Removed From Ref B 2/13/09	0800	B Woodward 2/13/09	0800
Relinquished By/Removed From B Woodward 2/13/09	1200	FedEx 2/13/09	1200
Relinquished By/Removed From FED EX		N.F. MATA	02/14/09 1150
Relinquished By/Removed From		Received By/Stored In	
Relinquished By/Removed From		Received By/Stored In	

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) (Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238)
(2) Strontium-89,90 – Total Sr, Isotopic Thorium (Thorium-232), Isotopic Uranium (Uranium-233/234, Uranium-235, Uranium-238), Isotopic Plutonium
(3) ICP Metals - 6010 (Full List) (Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc), Mercury - 7471 - (CV)

Sampler unavailable to retrieve samples
from controlled storage. Shipper removed
samples from storage location taking custody
of samples for shipment to lab.

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-116-1034 | Page 1 of 1

Collector L Stratton

Project Designation
Columbia River Component of the RCBRA - Sediment

Ice Chest No. WCH-08-031, 032

Shipped To
EBERLINE SERVICES LIONVILLE

Company Contact
JOAN KESSNER

Telephone No.
375-4688

Sampling Location
RFLS-4 SSD K1540 (7303)

Field Logbook No.
EL-1633-1

COA
BESCRC6520

Offsite Property No.
N/A

Project Coordinator
WEISS, RL

SAF No.
RC-116

Price Code 9K

Data Turnaround
45 Days

Method of Shipment
FED EX

Bill of Lading/Air Bill No. 796342219379

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

6500000

Preservation				None	None	None	None	Cool 4C	Cool 4C	None
Type of Container				G/P	G/P	G/P	G/P	G/P	aG	G/P
No. of Container(s)				1	1	1	1	1	1	1
Volume				1500g	100g	10g	10g	250g	125g	1000g
SAMPLE ANALYSIS				See item (1) in Special Instructions	Carbon-14	Technetium-99	See item (2) in Special Instructions	See item (3) in Special Instructions	TOC - 415.1	Particle Size (Dry Sieve) - D422
Sample No.	**Matrix ***	**Sample Date**	**Sample Time**							
J187K9	OTHER SOLID	2/12/09	1545	X	X	X	X			

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
L Stratton	2-12-09 / 1715	Ret R	2-12-09 / 1715
Ret R	2/13/09 0800	B Woodward	2/13/09 0800
B Woodward	2/13/09 1200	Fed Ex	2/13/09 1200
Fed EX		R. F	02/14/09 1150

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) (Americium-241, Antimony-125, Beryllium-7, Cerium-144, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238)
(2) Strontium-89,90 – Total Sr; Isotopic Thorium (Thorium-232); Isotopic Uranium (Uranium-233/234, Uranium-235, Uranium-238); Isotopic Plutonium
(3) ICP Metals - 6010 (Full List) (Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc}, Mercury - 7471 - (CV)

Sampler unavailable to remove samples
from controlled storage. Shipper removed
samples from storage location taking custody
of samples for shipment to lab

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-116-1035

Page 1 of 1

Collector BA	Company Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator WEISS, RL
Project Designation Columbia River Component of the RCBRA - Sediment	Sampling Location RFLS- 3 SSD	K1540 (7303)	SAF No. RC-116
Ice Chest No. WCH-08-031, 032	Field Logbook No. EL-1634-1	COA 1ESC9RC6530	Method of Shipment FED EX
Shipped To EBERLINE SERVICES LIONVILLE	Offsite Property No. N/A		Bill of Lading/Air Bill No. 796342219379

Price Code 9K

Data Turnaround 45 Days

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

0911110

Preservation	None	None	None	None	Cool 4C	Cool 4C	None			
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	G/P			
No. of Container(s)	1	1	1	1	1	1	1			
Volume	1500g	100g	10g	10g	250g	125g	1000g			
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Technetium-99	See item (2) in Special Instructions	See item (3) in Special Instructions	TOC - 415.1	Particle Size (Dry Sieve) D422			

Sample No	Matrix *	Sample Date	Sample Time										
J187L0	OTHER SOLID	2/10/09	1540	X	X	X	X						

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
B Baker B Baker	2/12/09 015	Ref A	2/12/09 015
Ref A	2/13/09 0800	B Woodlund	2/13/09 0800
B Woodlund	2/13/09 1200	Fed Ex	2/13/09 1200
FED EX		AF MATHEWSON	2/14/09 1150

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) {Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238}
(2) Strontium-89,90 -- Total Sr; Isotopic Thorium {Thorium-232}, Isotopic Uranium {Uranium-233/234, Uranium-235, Uranium-238}, Isotopic Plutonium
(3) ICP Metals - 6010 (Full List) {Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc}, Mercury - 7471 - (CV)

Sampler unavailable to remove samples
from controlled storage. Shipper removed
samples from storage location during packing
of samples for shipment to lab

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-116-1084	Page 1 of 2

Collector L Strathers	Company Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator KESSNER, JH	Price Code 9K
Project Designation Columbia River Component of the RCBRA - Sediment	Sampling Location HT- / SSD K1540 (7x8)		SAF No. RC-116	Data Turnaround 45 Days
Ice Chest No. WCH-08-031,032	Field Logbook No. EL-1630-1	COA BESCRC6520	Method of Shipment FED EX	
Shipped To EBERLINE SERVICES - LIONVILLE	Offsite Property No. N/A		Bill of Lading/Air Bill No. 796342219379	

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

Preservation	None	None	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	None
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	aG	aG	G	[illegible]
No. of Container(s)	1	1	1	1	1	1	1	1	1	1
Volume	1500g	100g	10g	10g	250g	250g	125g	250g	250g	1[illegible]
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Technetium-99	See item (2) in Special Instructions	See item (3) in Special Instructions	PCBs - 8082	Pesticides - 8081	Semi-VOA - 8270A (TCL)	See item (4) in Special Instructions	

Sample No.	Matrix *	Sample Date	Sample Time										
J18TY2	OTHER SOLID	2/12/09	1350	X	X	X	X						

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location using custody of samples for shipment to lab

CHAIN OF POSSESSION	Date/Time	Sign/Print Names	Date/Time
Relinquished By/Removed From L Strathers	2/12/09 1715	Received By/Stored In R.F. B	2/12/09 1715
Relinquished By/Removed From R.F. B 2/13/09	0800	Received By/Stored In B Woodward	2/13/09 0800
Relinquished By/Removed From B Woodward	2/13/09 1200	Received By/Stored In FedEx	2/13/09 1200
Relinquished By/Removed From FED EX		Received By/Stored In	2/14/09 1150
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) [Americium-241, Antimony-125, Beryllium-7, Cerium-144, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238]
(2) Strontium-89,90 - Total Sr, Isotopic Thorium [Thorium-232], Isotopic Uranium [Uranium-233/234, Uranium-235, Uranium-238]; Isotopic Plutonium
(3) ICP Metals - 6010 (Full List) [Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc]; Mercury - 7471 (CV)
(4) VOA - 8260A (TCL) [1,1,1-Trichloroethane, 1,1,2,2-Tetrachloroethane, 1,1,2-Trichloroethane, 1,1-Dichloroethane, 1,1-Dichloroethene, 1,2-Dichloroethane, 1,2-Dichloropropane, 2-Butanone, 2-Hexanone, 4-Methyl-2-Pentanone, Acetone, Benzene, Bromodichloromethane, Bromoform, Bromomethane, Carbon disulfide, Carbon tetrachloride, Chlorobenzene, Chloroethane, Chloroform, Chloromethane, cis-1,2-Dichloroethylene, cis-1,3-Dichloropropene, Dibromochloromethane, Ethylbenzene, Methylene chloride, Styrene, Tetrachloroethene, Toluene, trans-1,2-Dichloroethylene

Matrix *
S = Soil
SE = Sediment
SO = Solid
SL = Sludge
W = Water
O = Oil
A = Air
DS = Drum Solids
DL = Drum Liquids
T = Tissue
WI = Wipe
L = Liquid
V = Vegetation
X = Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-116-1087

Page 1 of 1

Collector L Stratton	Company Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator KESSNER, JH
Project Designation Columbia River Component of the RCBRA - Sediment	Sampling Location HT- 2 SSD	KRSAC (7308)	SAF No. RC-116
Ice Chest No. WCH-DP-031,032	Field Logbook No. EL-1631-1	COA BHSCRC0520	Method of Shipment FED EX
Shipped To [✓ EBERLINE SERVICES] LIONVILLE	Offsite Property No. N/A		Bill of Lading/Air Bill No. 796342219379

Price Code 9K

Data Turnaround 45 Days

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

Preservation	None	None	None	None	Cool 4C	Cool 4C	None		
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	G/P		
No. of Container(s)	1	1	1	1	1	1	1		
Volume	1500g	100g	10g	80g	150g	125g	1000g		
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Technetium-99	See item (2) in Special Instructions	See item (3) in Special Instructions	TOC - 415.1	Particle Size (Dry Sieve) D422		

Sample No.	Matrix *	Sample Date	Sample Time									
J18TY5	OTHER SOLID	2/12/09	1405	X	X	X	X					

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
LStratton	2-12-09 / 1915	RfB	2-12-09 /1915
RfB	2/13/09 0800	B Woodward	2/13/09 0800
B Woodward	2/13/09 1200	FedEx	2/13/09 1200
FedEx			02/14/09 11

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full Lib) (Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238)
(2) Strontium-89,90 -- Total Sr, Isotopic Thorium (Thorium-232), Isotopic Uranium (Uranium 233/234, Uranium-235, Uranium-238), Isotopic Plutonium
(3) ICP Metals - 6010 (Full List) (Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc), Mercury - 7471 - (CV)

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Appendix 5

Data Validation Supporting Documentation

APPENDIX A

RADIOCHEMICAL DATA VALIDATION CHECKLIST

VALIDATION LEVEL:	A	B	[✓ C]	D	E

PROJECT: RCBRA

DATA PACKAGE: K1590

VALIDATOR: RLK

LAB: EB

DATE: 11/6/07

SDG: K1590

ANALYSES PERFORMED

Gross Alpha/Beta Total Uranium	X Strontium-90 Radium-226	X Technetium-99 Tritium	X Alpha Spectroscopy X C-14	X Gamma Spectroscopy

SAMPLES/MATRIX

J187D6	J187D7	J187D8	J187D9	J187F0	J187F1
J187K6	J187K7	J187K8	J187K9	J187L0	J187Y2
J187V5	J187V9	J187Y4	J187Y3	J187Y6	J187Y7
J187Y8	J187Y9	J188B0	J187D2	J187D4	J187D5
J196L6					
					Solid

1. Completeness .... ☐ N/A

Technical verification forms present?................................ Yes [✓ No] N/A

Comments:

2. Initial Calibration (Levels D, E) .... ☒ N/A

Instruments/detectors calibrated?.. Yes No N/A

Initial calibration acceptable? .... Yes No N/A

Standards NIST traceable?.. Yes No N/A

Standards Expired? .... Yes No N/A

Calculation check acceptable?.. Yes No N/A

Comments:

3. Continuing Calibration (Levels D, E) ☒ N/A

Calibration checked within required frequency? .... Yes No N/A

Calibration check acceptable? .... Yes No N/A

Calibration check standards traceable? .... Yes No N/A

Calibration check standards expired? .... Yes No N/A

Calculation check acceptable? .... Yes No N/A

Comments:

4. Background Counts (Levels D, E) .... ☒ N/A

Background Counts checked within required frequency? .... Yes No N/A

Background Counts acceptable? .... Yes No N/A

Calculation check acceptable? .... Yes No N/A

Comments:

5. Blanks (Levels B, C, D, E) .... ☐ N/A

Method blank analyzed within required frequency? .... [✓ Yes] No N/A

Method blank results acceptable? .... [✓ Yes] No N/A

Analytes detected in method blank? .... Yes [✓ No] N/A

Field blank(s) analyzed? .... Yes [✓ No] N/A

Field blank results acceptable? .... Yes No [✓ N/A]

Analytes detected in field blank(s)? .... Yes No [✓ N/A]

Transcription/Calculation Errors? (Levels D, E) .... Yes No [✓ N/A]

Comments: no FB

6. Laboratory Control Samples or Blank Spike Samples (Levels C, D, E) .... ☐ N/A

LCS /BSS analyzed within required frequency? .... [✓ Yes] No N/A

LCS/BSS recoveries acceptable? .... [✓ Yes] No N/A

LCS/BSS traceable? (Levels D,E) .... Yes No [✓ N/A]

LCS/BSS expired? (Levels D,E) .... Yes No [✓ N/A]

LCS/BSS levels correct? (Levels D,E) .... Yes No [✓ N/A]

Transcription/Calculation Errors? (Levels D, E) .... Yes No [✓ N/A]

Comments: no th 228 or th 232 (αspec) LCS - Jall

7. Chemical Carrier Recovery (Levels C, D, E) .... ☒ N/A

Chemical carrier added? .... Yes No N/A

Chemical recovery acceptable? .... Yes No N/A

Chemical carrier traceable? (Levels D, E) .... Yes No N/A

Chemical carrier expired? (Levels D, E) .... Yes No N/A

Transcription/Calculation errors? (Levels D, E) .... Yes No N/A

Comments:

8. Tracer Recovery (Levels C, D, E) .... ☐ N/A

Tracer added? .... [✓ Yes] No N/A

Tracer recovery acceptable? .... [✓ Yes] No N/A

Tracer traceable? (Levels D, E) .... Yes No [✓ N/A]

Tracer expired? (Levels D, E) .... Yes No [✓ N/A]

Transcription/Calculation errors? (Levels D, E) .... Yes No [✓ N/A]

Comments:

9. Matrix Spikes (Levels C, D, E) .... ☐ N/A

Matrix spike analyzed? .... Yes [✓ No] N/A

Spike recoveries acceptable? .... Yes No [✓ N/A]

Spike source traceable? (Levels D, E) .... Yes No [✓ N/A]

Spike source expired? Levels D, E) .... Yes No [✓ N/A]

Transcription/Calculation Errors? (Levels D, E) .... Yes No [✓ N/A]

Comments: No C-14 MS - J all

10. Duplicates (Levels C, D, E) .... ☐ N/A

Duplicates Analyzed at required frequency? .... [✓ Yes] No N/A
RPD Values Acceptable? .... [✓ Yes] No N/A
Transcription/Calculation Errors? (Levels D, E) .... Yes No [✓ N/A]
Comments:

11. Field QC Samples (Levels C, D E) .... ☐ N/A

Field duplicate sample(s) analyzed? .... [✓ Yes] No N/A
Field duplicate RPD values acceptable? .... [✓ Yes] No N/A
Field split sample(s) analyzed? .... Yes [✓ No] N/A
Field split RPD values acceptable? .... Yes No [✓ N/A]
Performance audit sample(s) analyzed? .... Yes [✓ No] N/A
Performance audit sample results acceptable? .... Yes No [✓ N/A]
Comments: no FS or PAS

12. Holding Times (All levels)

Are sample holding times acceptable? .... [✓ Yes] No N/A
Comments:

13. Results and Detection Limits (All Levels) .... ☐ N/A

Results reported for all required sample analyses? .... [✓ Yes] No N/A

Results supported in raw data? (Levels D, F) .... Yes No [✓ N/A]

Results Acceptable? (Levels D, F) .... Yes No [✓ N/A]

Transcription/Calculation errors? (Levels D, F) .... Yes No [✓ N/A]

MDA's meet required detection limits? .... [✓ Yes] No N/A

Transcription/calculation errors? (Levels D, F) .... Yes No [✓ N/A]

Comments:

Appendix 6

Additional Documentation Requested by Client

EBERLINE ANALYTICAL/RICHMOND

SAMPLE DELIVERY GROUP K1540

7307-014 Method Blank

METHOD BLANK

SDG 7307	Client/Case no Hanford	SDG K1540	
Contact N. Joseph Verville	Contract No. 600M235A00		
Lab sample id R902048-14	Client sample id Method Blank		
Dept sample id 7307-014	Material/Matrix	SOLID	
	SAF No KC-116		

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Carbon 14	14762-75-5	0.125	1.9	3.23	50.0	U	C
Total Strontium	SR-RAD	0.067	0.15	0.274	1.00	U	SR
Technetium 99	14133-76-7	-0.063	0.35	0.373	15.0	U	TC
Thorium 228	14274-82-9	0.097	0.19	0.599	1.00	U	TH
Thorium 230	14269-63-7	0.242	0.29	0.370	1.00	U	TH
Thorium 232	TH-232	0.048	0.097	0.370	1.00	U	TH
Uranium 233/234	U 233/234	0	0.062	0.210	1.00	U	U
Uranium 235	15117-96-1	0	0.075	0.288	1.00	U	U
Uranium 238	U-238	0	0.062	0.210	1.00	U	U
Plutonium 238	13981-16-3	0	0.18	0.368	1.00	U	PU
Plutonium 239/240	PU-239/240	0	0.060	0.229	1.00	U	PU
Potassium 40	13966-00-2	U		0.037		U	GAM
Cobalt 60	10198-40-0	U		0.004	0.050	U	GAM
Cesium 137	10045-97-3	U		0.003	0.100	U	GAM
Radium 226	13982-63-3	U		0.006	0.100	U	GAM
Radium 228	15262-20-1	U		0.024	0.200	U	GAM
Europium 152	14683-23-9	U		0.008	0.100	U	GAM
Europium 154	15585-10-1	U		0.010	0.100	U	GAM
Europium 155	14391-16-3	U		0.006	0.100	U	GAM
Thorium 228	14274-82-9	U		0.005		U	GAM
Thorium 232	TH-232	U		0.024		U	GAM
Uranium 235	15117-96-1	U		0.010		U	GAM
Uranium 238	U-238	U		0.405		U	GAM
Americium 241	14596-10-2	U		0.004		U	GAM
Beryllium 7	13966-02-4	U		0.022		U	GAM
Ruthenium 106	13967-48-1	U		0.027		U	GAM
Antimony 125	14234-35-6	U		0.007		U	GAM
Cesium 134	13967-70-9	U		0.004		U	GAM

ColumbiaRiverComp.ofRCBRA-Sediment

Lab id EBRLNE
Protocol Hanford1
Version Ver 1.0
Form DVD GG
Version 3.06
Report date 03/19/02

EBERLINE ANALYTICAL/RICHMOND

SAMPLE DELIVERY GROUP K1540

[illegible]

Lab Control Sample

LAB CONTROL SAMPLE

SDG [illegible]	Client Name Hanford [illegible]
Contact [illegible]	Contract No. [illegible]
Lab sample id [illegible]	Client sample id Lab Control Sample
Dept sample id [illegible]	Material/Matrix [illegible]
	SAF No [illegible]

ANALYTE	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALIFIERS	TEST	ADDED pCi/g	2σ ERR pCi/g	REC %	3σ LMTS (TOTAL)	PROTOCOL LIMITS
Carbon 14	[illegible]	[illegible]	[illegible]	50.0		C	1400	[illegible]	[illegible]	[illegible]	80-120
Total Strontium	10.6	0.54	0.206	1.00		SR	10.1	0.41	105	81-119	80-120
Technetium 99	104	2.9	0.198	15.0		TC	120	4.8	87	82-118	80-120
Thorium 230	25.8	2.9	0.24	1.00		TH	22.6	0.90	114	76-124	80-120
Uranium 233/234	[illegible]	1.4	0.167	1.00		U	[illegible]	0.39	[illegible]	75-125	80-120
Uranium 235	[illegible]	1.1	0.281	1.00		U	9.84	0.33	99	72-128	80-120
Uranium 238	[illegible]	1.4	[illegible]	1.00		U	10.4	0.42	94	76-124	80-120
Plutonium 238	[illegible]	1.0	0.240	1.00		PU	[illegible]	0.28	[illegible]	75-125	80-120
Plutonium 239/240	[illegible]	1.2	0.240	1.00		PU	[illegible]	0.32	102	[illegible]	80-120
Cobalt 60	0.294	[illegible]	0.005	0.050		GAM	[illegible]	[illegible]	[illegible]	[illegible]	80-120
Cesium 137	[illegible]	0.009	0.006	0.100		GAM	[illegible]	0.014	[illegible]	[illegible]	80-120

[illegible]

QC batch [illegible]

LAB CONTROL SAMPLES
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Lab id EBERLINE
Protocol Hanford
Version Ver 1.0
Form [illegible]
Version [illegible]
Report date [illegible]

EBERLINE ANALYTICAL/RICHMOND

SAMPLE DELIVERY GROUP 81540

7307-015 J18610

DUPLICATE

SDG	7307			Client/Case no	Hanford SDG 81540
Contact	N. Joseph Verville			Contract	No. 20042...
	DUPLICATE		ORIGINAL		
Lab sample id	S902048-10	Lab sample id	S902048-01	Client sample id	J18610
Dept sample id	7307-015	Dept sample id	7307-001	Location/Matrix	WRT 10.2BD SOLID
		Received	02/14/09	Collected/Weight	02/12/09 12:45 [illegible] g
% solids	100.0	% solids	100.0	Custody/SAF No	RC-110-77x RC-116

ANALYTE	DUPLICATE pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALIFIERS	TEST	ORIGINAL pCi/g	2σ ERR (COUNT)	MDA pCi/g	QUALIFIERS	RPD %	3σ TOT	DER σ
Carbon 14	0.131	1.7	2.92	50.0	U	C	0.676	1.7	2.90	U	-		0.6
Total Strontium	0.017	0.11	0.214	1.00	U	SR	0.037	0.12	0.226	U			0.2
Technetium 99	-0.054	0.15	0.164	15.0	U	TC	0.010	0.14	0.258	U	-		0.6
Thorium 228	0.144	0.25	0.345	1.00	U	TH	0.471	0.47	0.419		87	114	2.0
Thorium 230	0.779	0.32	0.218	1.00		TH	0.501	0.17	0.160		43	116	1.1
Thorium 232	0.685	0.32	0.218	1.00		TH	0.503	0.28	0.150		31	109	0.8
Uranium 233/234	0.715	0.32	0.236	1.00		U	0.423	0.26	0.240		51	110	1.4
Uranium 235	0.018	0.075	0.200	1.00	U	U	0	0.079	0.202	U			0.2
Uranium 238	0.464	0.25	0.230	1.00		U	0.586	0.27	0.249		23	106	0.6
Plutonium 238	0.013	0.13	0.240	1.00	U	PU	0.048	0.12	0.225	U			0.6
Plutonium 239/240	0	0.065	0.240	1.00	U	PU	0.029	0.059	0.225	U			0.7
Potassium 40	10.5	0.32	0.091			GAM	11.7	0.24	0.110		11	14	3.0
Cobalt 60	0		0.009	0.050	U	GAM	0		0.011	U	-		0.3
Cesium 137	0.014	0.009	0.009	0.100		GAM	0.013	0.008	0.010		7	115	0.3
Radium 226	0.404	0.029	0.017	0.100		GAM	0.451	0.031	0.020		11	19	1.8
Radium 228	0.687	0.043	0.036	0.200		GAM	0.772	0.052	0.048		12	20	1.7
Europium 152	0		0.025	0.100	U	GAM	0		0.030	U	-		0.4
Europium 154	0		0.031	0.100	U	GAM	0		0.038	U	-		0.3
Europium 155	0		0.045	0.100	U	GAM	0		0.048	U			0.4
Thorium 228	0.726	0.017	0.011			GAM	0.734	0.015	0.014		1	16	0.2
Thorium 232	0.687	0.043	0.036			GAM	0.772	0.052	0.048		12	20	1.7
Uranium 235	0		0.056		U	GAM	0		0.064	U			0.8
Uranium 238	0		1.23		U	GAM	0		1.40	U	-		0.2
Americium 241	0		0.033		U	GAM	0		0.102	U	-		1.7
Beryllium 7	0		0.075		U	GAM	0		0.090	U	-		0.1
Ruthenium 106	0		0.069		U	GAM	0		0.084	U			0.3
Antimony 125	0		0.019		U	GAM	0		0.025	U	-		0.4
Cesium 134	0		0.013		U	GAM	0		0.014	U			0.2

ColumbiaRiverComp.ofRCBRA-Sediment

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Lab id	EBERLINE
Protocol	Hanford
Version	Ver 1.0
Form	DVD-DUP
Version	3.06
Report date	03/18/09

EBERLINE ANALYTICAL/RICHMOND

SAMPLE DELIVERY GROUP X1540

7308-015

Method Blank

METHOD BLANK

SDG 7308
Contact N. Joseph Verville
Client/Case no Hanford
SDG X1540
Contract No. 500W235A00

Lab sample id R902049-15
Dept sample id 7308-015
Client sample id Method Blank
Material/Matrix SOLID
SAF No RC-116

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Carbon 14	14762-75-5	0.155	1.7	2.82	50.0	U	C
Total Strontium	SR-RAD	0.030	0.12	0.253	1.00	U	SR
Technetium 99	14133-76-7	0.056	0.11	0.135	15.0	U	TC
Thorium 228	14274-82-9	0.041	0.082	0.315	1.00	U	TH
Thorium 230	14269-63-7	0	0.16	0.313	1.00	U	TH
Thorium 232	TH-232	0	0.082	0.313	1.00	U	TH
Uranium 233/234	U-233/234	0	0.060	0.240	1.00	U	U
Uranium 235	15117-96-1	0	0.073	0.278	1.00	U	U
Uranium 238	U-238	0	0.060	0.230	1.00	U	U
Plutonium 238	13981-16-3	0.026	0.052	0.200	1.00	U	PU
Plutonium 239/240	PU-239/240	0	0.052	0.200	1.00	U	PU
Potassium 40	13966-00-2	U		0.079		U	GAM
Cobalt 60	10198-40-0	U		0.006	0.050	U	GAM
Cesium 137	10045-97-3	U		0.007	0.100	U	GAM
Radium 226	13982-63-3	U		0.014	0.100	U	GAM
Radium 228	15262-20-1	U		0.028	0.200	U	GAM
Europium 152	14683-23-9	U		0.014	0.100	U	GAM
Europium 154	15585-10-1	U		0.021	0.100	U	GAM
Europium 155	14391-16-3	U		0.014	0.100	U	GAM
Thorium 228	14274-82-9	U		0.009		U	GAM
Thorium 232	TH-232	U		0.078		U	GAM
Uranium 235	15117-96-1	U		0.020		U	GAM
Uranium 238	U-238	U		0.809		U	GAM
Americium 241	14596-10-2	U		0.008		U	GAM
Beryllium 7	13966-02-4	U		0.038		U	GAM
Ruthenium 106	13967-48-1	U		0.050		U	GAM
Antimony 125	14234-35-6	U		0.014		U	GAM
Cesium 134	13967-70-9	U		0.009		U	GAM

ColumbiaRiverComp.ofRCBRA Sediment

Lab id EBRLNE
Protocol Hanford1
Version Ver 1.0
Form DVD-DS
Version 3.06
Report date 03/23/09

EBERLINE ANALYTICAL/RICHMOND

SAMPLE DELIVERY GROUP E1540

[illegible] 014

LAB CONTROL SAMPLE

Lab Control Sample

SDG 7198

Contact N. Joseph Verville

Lab sample id [illegible]

Dept sample id 7198-014

Client/Case no Hanford SDG E1540

Contract No. [illegible]

Client sample id Lab Control Sample

Material/Matrix SOLID

SAF No [illegible]

ANALYTE	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST	ADDED pCi/g	2σ ERR pCi/g	REC %	3σ LMTS (Recal)	PROTOCOL LIMITS
Carbon 14	1590	82	6.56	50.0		C	1420	55	112	82-128	80-120
Total Strontium	9.54	0.52	0.22[illegible]	1.00		SR	9.15	0.37	104	81-119	80-120
Technetium 99	104	1.7	[illegible]	15.0		TC	109	4.4	95	90-110	80-120
Thorium 230	[illegible]	2.4	0.135	1.00		TH	10.4	0.36	112	76-124	80-120
Uranium 233/234	9.82	1.4	0.270	1.00		U	9.78	0.27	100	74-127	80-120
Uranium 235	8.91	1.3	0.294	1.00		U	7.54	0.40	118	70-115	80-120
Uranium 238	10.9	2.5	0.166	1.00		U	10.1	0.40	108	74-126	80-120
Plutonium 238	5.62	0.90	0.217	1.00		PU	5.82	0.23	97	71-127	80-120
Plutonium 239/240	6.54	0.94	0.21[illegible]	1.00		PU	6.40	0.26	100	74-126	80-120
Cobalt 60	0.241	0.039	0.011	0.050		GAM	0.218	0.010	101	87-117	80-120
Cesium 137	0.288	0.017	0.012	0.100		GAM	0.260	0.011	101	85-115	80-120

Columbia River Comp ([illegible]) Sediment

QC LCS [illegible]

LAB CONTROL SAMPLES
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Lab id EBRLINE
Protocol Hanford
Version Ver 1.0
Form DVD LCS
Version 3.06
Report date 09/21/98

EBERLINE ANALYTICAL/RICHMOND

SAMPLE DELIVERY GROUP [illegible]

[illegible] J18706

DUPLICATE

SDG	[illegible]			Client/Case no	Hanford [illegible]
Contact	[illegible]			Contract	[illegible]
DUPLICATE		ORIGINAL			
Lab sample id	[illegible]	Lab sample id	[illegible]	Client sample id	J18706
Impl sample id	[illegible]	Impl sample id	[illegible]	Location/Matrix	[illegible] SOLID
		Received	[illegible]	Collected/weight	[illegible]
% solids	100.0	% solids	[illegible]	Custody/SAF No	[illegible]

ANALYTE	DUPLICATE pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST	ORIGINAL pCi/g	2σ ERR (COUNT)	MDA pCi/g	QUALI-FIERS	RPD %	3σ TOT	DER σ
Carbon 14	0.167	1.5	2.51	50.0	U	C	-0.114	1.5	2.48	U			0.1
Total Strontium	-0.015	0.11	0.226	1.00	U	SR	-0.001	0.11	0.261	U			0.2
Technetium 99	0.030	0.12	0.121	15.0	U	TC	0.020	0.11	0.121	U			0.1
Thorium 228	0.614	0.16	0.117	1.00		TH	0.644	0.37	0.441		2	122	0
Thorium 230	0.675	0.16	0.268	1.00		TH	0.454	0.37	0.450		41	118	1.6
Thorium 232	[illegible]	0.16	0.260	1.00		TH	[illegible]	0.28	0.360	U	42	127	1.4
Uranium 233/234	0.265	0.20	0.251	1.00		U	0.212	0.14	0.154		9	152	0.2
Uranium 235	0	0.086	0.107	1.00	U	U	0	0.047	0.106	U			0
Uranium 238	0.443	0.27	0.251	1.00		U	[illegible]	0.16	0.154		42	124	1.2
Plutonium 238	0.031	0.031	0.057	1.00	U	PU	[illegible]	0.14	0.478	U			0.3
Plutonium 239/240	0.005	0.021	0.049	1.00	U	PU	0.041	0.062	0.235	U			1.1
Potassium 40	11.5	0.14	0.114			GAM	11.8	0.40	0.115		2	16	0.4
Cobalt 60	0		0.012	0.050	U	GAM	0		0.017	U			0.3
Cesium 137	0.061	0.015	0.017	0.100		GAM	0.059	0.015	0.017		3	54	0.4
Radium 226	0.376	0.029	0.026	0.100		GAM	0.382	0.013	0.010		2	25	0.2
Radium 228	0.524	0.060	0.060	0.250		GAM	0.602	0.072	0.071		14	29	1.4
Europium 152	0		0.035	0.200	U	GAM	0		0.031	U			0.1
Europium 154	0		0.040	0.100	U	GAM	0		0.049	U			0.4
Europium 155	0		0.049	0.100	U	GAM	0		0.054	U			0.1
Thorium 228	0.535	0.022	0.020			GAM	0.547	0.021	0.019		5	27	0.4
Thorium 232	0.524	0.060	0.060			GAM	0.602	0.072	0.070		14	29	1.4
Uranium 235	0		0.077		U	GAM	0		0.056	U			0.4
Uranium 238	0		2.14		U	GAM	0		1.54	U			0.1
Americium 241	0		0.041		U	GAM	0		0.024	U			1.2
Beryllium 7	0		0.135		U	GAM	0		0.136	U			0
Ruthenium 106	0		0.111		U	GAM	0		0.112	U			0
Antimony 125	0		0.031		U	GAM	0		0.031	U			0
Cesium 134	0		0.021		U	GAM	0		0.021	U			0

[illegible]

DUPLICATE
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Lab id	EBERLINE
Protocol	Hanford
Version	Ver 1.0
Form	DVD DUP
Version	3.06
Report date	[illegible]

F.1.2.8 SDG K1544

SAF-RC-118
Columbia River Component of the RCBRA – Tissues
FINAL VALIDATION PACKAGE

COMPLETE COPY OF VALIDATION PACKAGE TO:

Kathy Wendt H4-21

COMMENTS:

SDG K1544 **SAF-RC-118**

Date: 7 December 2009
To: Washington Closure Hanford (technical representative)
From: ELR Consultants
Project: Columbia River Component of the RCBRA - Sediment
Subject: Volatile - Data Package No. K1544-LLI

INTRODUCTION

This memo presents the results of data validation on Data Package No. K1544 prepared by Lionville Laboratory Inc. (LLI). A list of samples validated along with the analyses reported and the method of analysis is provided in the following table.

Sample ID	Sample Date	Media	Validation	Anaysis
J18679	2/19/09	Solid	C	See note 1
J18683	2/19/09	Solid	C	See note 1
J18985	2/19/09	Solid	C	See note 1
J18986	2/19/09	Solid	C	See note 1
J18987	2/19/09	Solid	C	See note 1
J18988	2/19/09	Solid	C	See note 1
J18990	2/19/09	Solid	C	See note 1
J18991	2/19/09	Solid	C	See note 1
J18992	2/19/09	Solid	C	See note 1
J189B5	2/19/09	Solid	C	See note 1
J189B6	2/19/09	Solid	C	See note 1
J189B7	2/19/09	Solid	C	See note 1
J189B8	2/19/09	Solid	C	See note 1
J189B9	2/19/09	Solid	C	See note 1
J189C0	2/19/09	Solid	C	See note 1
J189C1	2/19/09	Solid	C	See note 1
J189C3	2/19/09	Solid	C	See note 1
J189C4	2/19/09	Solid	C	See note 1
J189J9	2/19/09	Solid	C	See note 1
J189K2	2/19/09	Solid	C	See note 1
J189K4	2/19/09	Solid	C	See note 1
J189K5	2/19/09	Solid	C	See note 1

1 - Volatiles by 8260C.

Data validation was conducted in accordance with the Washington Closure Hanford (WCH) validation statement of work and the Remedial Investigation Work Plan for Hanford Site Releases to the Columbia River (DOE/RL-2008-11, Rev. 0, September 2008). Appendices 1 through 6 provide the following information as indicated below:

Appendix 1. Glossary of Data Reporting Qualifiers
Appendix 2. Summary of Data Qualification
Appendix 3. Qualified Data Summary and Annotated Laboratory Reports
Appendix 4. Laboratory Narrative and Chain-of-Custody Documentation
Appendix 5. Data Validation Supporting Documentation
Appendix 6 Additional Date Requested by Client

DATA QUALITY OBJECTIVES

· Holding Times & Sample Preservation

Analytical holding times were assessed to ascertain whether the holding time requirements were met by the laboratory. The holding time requirements are as follows: Samples must be extracted and analyzed within 14 days of the date of sample collection.

If holding times are exceeded, but not by greater than two times the limit, all associated sample results are qualified as estimates and flagged "J" for detects and "UJ" for non-detects. If holding times are exceeded by greater than two times the limit, all associated detectable sample results are qualified as estimates and flagged "J" and all non-detects are rejected and flagged "UR".

All holding times were acceptable.

· Method Blanks

Method blank analyses are conducted to determine the extent of laboratory contamination introduced through sampling, sample preparation and analysis. At least one acceptable method blank analysis must be conducted for every 20 samples. No contaminants should be present in the method blank. Analytical results for analytes present in any sample at less than five times the concentration of that analyte found in the associated blank are qualified as non-detects and flagged "U". Common laboratory contaminants present in samples at less than ten times the concentration of that analyte found in the associated blank are qualified as non-detects. If a sample result is less than the CRQL and is less than five times (or less than ten times for lab contaminants) the highest associated blank result, the sample result value is raised to the CRQL level and qualified as undetected "U".

Due to method blank contamination, the methylene chloride result in samples J18991, J18992, J189B5, J189B6, J189J9, J189K2, J189K4 and J189K5 were qualified as undetected and flagged "U".

All other method blank results were acceptable.

<u>Field Blanks</u>

Two field (trip) blanks (J18683 & J18679) were submitted for analysis. No analytes were detected in the field blanks.

- **Accuracy**

Matrix Spike/Matrix Spike Duplicate & Blank Spike Recoveries

Matrix spike/matrix spike duplicate analyses are used to assess the analytical accuracy of the reported data and the effect of the matrix on the ability to accurately quantify sample concentrations. Matrix spike/matrix spike duplicate analyses are performed in duplicate using five compounds for which percent recoveries must be within a range of 50-150% or within laboratory control limits. If spike recoveries are outside control limits, detected sample results less than five times the spike concentration are qualified as estimates and flagged "J". Undetected sample results with spike recoveries below control limits are qualified as estimates and flagged "UJ". Undetected sample results are not qualified if the spike recovery is above control limits. Sample results greater than five times the spike concentration require no qualification.

Due to an LCS (178%), matrix spike (198%) and matrix spike duplicate (193%) recovery outside QC limits, the acetone result in samples J189B6, J189K2 and J189K5 were qualified as estimates and flagged "J".

All other accuracy results were acceptable.

Surrogate Recovery

The analyses of surrogate compounds provide a measure of performance for individual samples. Matrix-specific surrogate compound recovery control windows have been established by the EPA CLP program. If two surrogates of the same class of compounds (base/neutral or acid) are out of control limits, all associated sample results greater than the contract required quantitation limit (CRQL) are qualified as estimates and flagged "J". Sample results less than the CRQL and below the lower control limit are qualified as estimates and flagged "UJ". Sample results less than the CRQL with recoveries above the upper control limit require no qualification. If a surrogate recovery is less than 10%, detects are qualified as estimates and flagged "J" and nondetects are rejected and flagged "UR".

All surrogate results were acceptable.

- **Precision**

Matrix Spike/Matrix Spike Duplicate Samples

Matrix spike (MS)/matrix spike duplicate (MSD) results provide matrix-specific information on the precision of the method for specific target compound classes. Precision is expressed by the relative percent difference (RPD) between the recoveries of duplicate matrix spike analyses performed on a sample. Samples results must be within RPD limits of +/-30%. If RPD values are out of specification and the sample

concentration is less than five times the spike concentration, all associated detected sample results are qualified as estimates and flagged "J". If RPD values are out of specification and the sample concentration is greater than five times the spike concentration, no qualification is required.

All precision results were acceptable.

Field Duplicate Samples

No field duplicate were submitted for analysis

- **Analytical Detection Levels**

Reported analytical detection levels are compared against the required quantitation limits (RQL's) to ensure that laboratory detection levels meet the required criteria. Twelve 2-butanone results exceeded the RQL. Under the WCH statement of work, no qualification is required. All other analyes met the RQL

- **Completeness**

Data package No. K1544 was submitted for validation and verified for completeness. Completeness is based on the percentage of data determined to be valid (i.e., not rejected). The completion percentage was 100%.

MAJOR DEFICIENCIES

None found.

MINOR DEFICIENCIES

The following minor deficiencies were noted:

- Due to method blank contamination, the methylene chloride result in samples J18991, J18992, J189B5, J189B6, J189J9, J189K2, J189K4 and J189K5 were qualified as undetected and flagged "U".
- Due to an LCS (178%), matrix spike (198%) and matrix spike duplicate (193%) recovery outside QC limits, the acetone result in samples J189B6, J189K2 and J189K5 were qualified as estimates and flagged "J".

Data flagged "J" indicates that the associated concentration is an estimate, but under the WCH statement of work, the data may be usable for decision-making purposes. All other validated results are considered accurate within the standard error associated with the methods.

Twelve 2-butanone results exceeded the RQL. Under the WCH statement of work, no qualification is required.

REFERENCES

Washington Closure Hanford Contract #S00W307A00 (March 2008), *Data Validation Services*.

DOE/RL-2008-11, Rev.0, *Remedial Investigation Work Plan for Hanford Site Releases to the Columbia River*, September 2008.

Appendix 1

Glossary of Data Reporting Qualifiers

Qualifiers which may be applied by data validators in compliance with the WCH validation SOW are as follows:

U - Indicates the compound or analyte was analyzed for and not detected in the sample. The value reported is the same quantitation limit corrected for sample dilution and moisture content by the laboratory.

UJ - Indicates the compound or analyte was analyzad for and not detected in the sample. Due to a minor QC deficiency identified during the data validation, the associated quantitation limit is an estimate.

J - Indicates the compound or analyte was analyzed for and detected. Due to a minor QC deficiency identified during the data validation, the associated quantitation limit is an estimate.

R - Indicates the compound or analyte was analyzed for, detected, and due to an identified major QC deficiency, the data are unusable.

UR - Indicates the compound or analyte was analyzed for and not detected in the sample. Additionally, the data is unusable due to an identified major QC deficiency.

NJ - Indicates presumptive evidence of a compound at an estimated value. The data may not be valid for some specific applications (i.e., usable for decision-making purposes).

N - Indicates presumptive evidence of a compound. The data may not be valid for some specific applications usable for decision-making purposes).

Appendix 2

Summary of Data Qualification

VOLATILE ORGANIC DATA QUALIFICATION SUMMARY*

SDG: K1544	**REVIEWER: ELR**	**Project: RCBRA**	**QC Issue**
COMPOUND	QUALIFIER	SAMPLES AFFECTED	REASON
Methylene chloride	U	J189B1, J189B2 J189B5, J189B6 J189J9, J189K2 J189K4, J189K5	Method blank contamination
Acetone	J	J189B6, J189K2 J189K5	LCS, MS and MSD recovery

* - The Qualified Data Summary Table includes laboratory applied "U" qualifiers not specifically identified here. The laboratory applied "U" qualifiers are included to minimize misinterpretation of results contained in the table.

Appendix 3

Qualified Data Summary and Annotated Laboratory Reports

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

WCH-Hanford, Inc 2620 Fermi Avenue Richland WA, 99354	Project: RC-116 Project Number: [none] Project Manager: Joan Kessner	Reported: 04/09/2009 11:59

J18679
0902067-01 (Solid)

K 12/5/9

Lionville Laboratory

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Volatile Organic Compounds by SW846 8260B									
1,1,1-Trichloroethane	ND	4.03	ug/kg wet	1	1903088	02/25/2009	02/25/2009	8260B	U
1,1,2,2-Tetrachloroethane	ND	4.03	"	"	"	"	"	"	U
1,1,2-Trichloroethane	ND	4.03	"	"	"	"	"	"	U
1,1-Dichloroethane	ND	4.03	"	"	"	"	"	"	U
1,1-Dichloroethene	ND	4.03	"	"	"	"	"	"	U
1,2-Dichloroethane	ND	4.84	"	"	"	"	"	"	U
1,2-Dichloropropane	ND	4.03	"	"	"	"	"	"	U
2-Butanone	ND	9.68	"	"	"	"	"	"	U
2-Hexanone	ND	9.68	"	"	"	"	"	"	U
4-Methyl-2-pentanone	ND	9.68	"	"	"	"	"	"	U
Acetone	ND	9.68	"	"	"	"	"	"	U
Benzene	ND	4.03	"	"	"	"	"	"	U
Bromodichloromethane	ND	4.84	"	"	"	"	"	"	U
Bromoform	ND	4.03	"	"	"	"	"	"	U
Bromomethane	ND	8.06	"	"	"	"	"	"	U
Carbon Disulfide	ND	4.03	"	"	"	"	"	"	U
Carbon Tetrachloride	ND	4.03	"	"	"	"	"	"	U
Chlorobenzene	ND	4.03	"	"	"	"	"	"	U
Chloroethane	ND	8.06	"	"	"	"	"	"	U
Chloroform	ND	4.03	"	"	"	"	"	"	U
Chloromethane	ND	8.06	"	"	"	"	"	"	U
cis-1,3-Dichloropropene	ND	4.03	"	"	"	"	"	"	U
Dibromochloromethane	ND	4.03	"	"	"	"	"	"	U
Ethylbenzene	ND	4.03	"	"	"	"	"	"	U
Methylene Chloride	ND	4.84	"	"	"	"	"	"	U
Styrene	ND	4.03	"	"	"	"	"	"	U
Tetrachloroethene	ND	4.03	"	"	"	"	"	"	U
Toluene	ND	4.03	"	"	"	"	"	"	U
trans-1,3-Dichloropropene	ND	4.03	"	"	"	"	"	"	U
Trichloroethene	ND	4.03	"	"	"	"	"	"	U
Vinyl chloride	ND	8.06	"	"	"	"	"	"	U
Xylenes, total	ND	4.84	"	"	"	"	"	"	U
cis-1,2-Dichloroethene	ND	4.03	"	"	"	"	"	"	U
trans-1,2-Dichloroethene	ND	4.03	"	"	"	"	"	"	U

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Fax: 610-280-3041

WC-Hanford, Inc.
2620 Fermi Avenue
Richland WA, 99354

Project: RC 116
Project Number: [none]
Project Manager: Joan Kessner

Reported:
04/09/2009 11:50

J18679
0902067-01 (Solid)

K 12/5/09

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes

Lionville Laboratory

Volatile Organic Compounds by SW846 8260B

Tentatively Identified Compound	0.00		ug/kg wet	1	L903088	02/25/2009	02/25/2009	8260B	U
Surrogate: 1,2-Dichloroethane-d4		*104 %*	*63-151*		"	"	"	"	
Surrogate: Toluene-d8		*104 %*	*68-140*		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*110 %*	*66-122*		"	"	"	"	

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WC Hanford, Inc. 2620 Fermi Avenue Richland WA, 99354	Project: KC-116 Project Number: [none] Project Manager: Joan Kessner	**Reported:** 04/09/2009 11:59

J18683

0902067-02 (Solid)

12/15/09

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes

Lionville Laboratory

Volatile Organic Compounds by SW846 8260B

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
1,1,1-Trichloroethane	ND	4.90	ug/kg wet	1	L9B1088	02/25/2009	02/25/2009	8260B	U
1,1,2,2-Tetrachloroethane	ND	4.90	"	"	"	"	"	"	U
1,1,2-Trichloroethane	ND	4.90	"	"	"	"	"	"	U
1,1-Dichloroethane	ND	4.90	"	"	"	"	"	"	U
1,1-Dichloroethene	ND	4.90	"	"	"	"	"	"	U
1,2-Dichloroethane	ND	5.88	"	"	"	"	"	"	U
1,2-Dichloropropane	ND	4.90	"	"	"	"	"	"	U
2-Butanone	ND	11.8	"	"	"	"	"	"	U
2-Hexanone	ND	11.8	"	"	"	"	"	"	U
4-Methyl-2-pentanone	ND	11.8	"	"	"	"	"	"	U
Acetone	ND	11.8	"	"	"	"	"	"	U
Benzene	ND	4.90	"	"	"	"	"	"	U
Bromodichloromethane	ND	5.88	"	"	"	"	"	"	U
Bromoform	ND	4.90	"	"	"	"	"	"	U
Bromomethane	ND	9.80	"	"	"	"	"	"	U
Carbon Disulfide	ND	4.90	"	"	"	"	"	"	U
Carbon Tetrachloride	ND	4.90	"	"	"	"	"	"	U
Chlorobenzene	ND	4.90	"	"	"	"	"	"	U
Chloroethane	ND	9.80	"	"	"	"	"	"	U
Chloroform	ND	4.90	"	"	"	"	"	"	U
Chloromethane	ND	9.80	"	"	"	"	"	"	U
cis-1,3-Dichloropropene	ND	4.90	"	"	"	"	"	"	U
Dibromochloromethane	ND	4.90	"	"	"	"	"	"	U
Ethylbenzene	ND	4.90	"	"	"	"	"	"	U
Methylene Chloride	ND	5.88	"	"	"	"	"	"	U
Styrene	ND	4.90	"	"	"	"	"	"	U
Tetrachloroethene	ND	4.90	"	"	"	"	"	"	U
Toluene	ND	4.90	"	"	"	"	"	"	U
trans-1,3-Dichloropropene	ND	4.90	"	"	"	"	"	"	U
Trichloroethene	ND	4.90	"	"	"	"	"	"	U
Vinyl chloride	ND	9.80	"	"	"	"	"	"	U
Xylenes, total	ND	5.88	"	"	"	"	"	"	U
cis-1,2-Dichloroethene	ND	4.90	"	"	"	"	"	"	U
trans-1,2-Dichloroethene	ND	4.90	"	"	"	"	"	"	U

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WC-Hanford, Inc. 2620 Fermi Avenue Richland WA, 99354	Project: RC-116 Project Number: [none] Project Manager: Joan Kessner	Reported: 04/09/2009 11:59

J18683

0903067-02 (Solid)

K 12/5/09

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Lionville Laboratory									
Volatile Organic Compounds by SW846 8260B									
Tentatively Identified Compound	0.00		ug/kg wet	1	L903068	02/25/2009	02/25/2009	8260B	U
Surrogate: 1,2-Dichloroethane-d4		*97 %*	*63-151*		"	"	"	"	
Surrogate: Toluene-d8		*99 %*	*68-140*		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*111 %*	*66-122*		"	"	"	"	

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WC-Hanford, Inc
2620 Fermi Avenue
Richland WA, 99354

Project: RC-116
Project Number: [none]
Project Manager: Joan Kessner

Reported:
04/09/2009 11:59

J18985
0902067-05 (Solid)

K 12/5/09

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Lionville Laboratory									
Volatile Organic Compounds by SW846 8260B									
1,1,1-Trichloroethane	ND	4.10	ug/kg wet	1	1903088	02/25/2009	02/25/2009	8260B	U
1,1,2,2-Tetrachloroethane	ND	4.10	"	"	"	"	"	"	U
1,1,2-Trichloroethane	ND	4.10	"	"	"	"	"	"	U
1,1-Dichloroethane	ND	4.10	"	"	"	"	"	"	U
1,1-Dichloroethene	ND	4.10	"	"	"	"	"	"	U
1,2-Dichloroethane	ND	4.92	"	"	"	"	"	"	U
1,2-Dichloropropane	ND	4.10	"	"	"	"	"	"	U
2-Butanone	ND	9.84	"	"	"	"	"	"	U
2-Hexanone	ND	9.84	"	"	"	"	"	"	U
4-Methyl-2-pentanone	ND	9.84	"	"	"	"	"	"	U
Acetone	ND	9.84	"	"	"	"	"	"	U
Benzene	ND	4.10	"	"	"	"	"	"	U
Bromodichloromethane	ND	4.92	"	"	"	"	"	"	U
Bromoform	ND	4.10	"	"	"	"	"	"	U
Bromomethane	ND	8.20	"	"	"	"	"	"	U
Carbon Disulfide	ND	4.10	"	"	"	"	"	"	U
Carbon Tetrachloride	ND	4.10	"	"	"	"	"	"	U
Chlorobenzene	ND	4.10	"	"	"	"	"	"	U
Chloroethane	ND	8.20	"	"	"	"	"	"	U
Chloroform	ND	4.10	"	"	"	"	"	"	U
Chloromethane	ND	8.20	"	"	"	"	"	"	U
cis-1,3-Dichloropropene	ND	4.10	"	"	"	"	"	"	U
Dibromochloromethane	ND	4.10	"	"	"	"	"	"	U
Ethylbenzene	ND	4.10	"	"	"	"	"	"	U
Methylene Chloride	ND	4.92	"	"	"	"	"	"	U
Styrene	ND	4.10	"	"	"	"	"	"	U
Tetrachloroethene	ND	4.10	"	"	"	"	"	"	U
Toluene	ND	4.10	"	"	"	"	"	"	U
trans-1,3-Dichloropropene	ND	4.10	"	"	"	"	"	"	U
Trichloroethene	ND	4.10	"	"	"	"	"	"	U
Vinyl chloride	ND	8.20	"	"	"	"	"	"	U
Xylenes, total	ND	4.92	"	"	"	"	"	"	U
cis-1,2-Dichloroethene	ND	4.10	"	"	"	"	"	"	U
trans-1,2-Dichloroethene	ND	4.10	"	"	"	"	"	"	U

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WC Hanford, Inc.	Project: RC-116	Reported:
2670 Fermi Avenue	Project Number: [none]	04/09/2009 11:59
Richland WA, 99354	Project Manager: Joan Kessner	

J18985
0902067-05 (Solid)

K 12/5/09

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Lionville Laboratory									
Volatile Organic Compounds by SW846 8260B									
Tentatively Identified Compound	0.00		ug/kg wet	1	L903088	02/25/2009	02/25/2009	8260B	U
Surrogate: 1,2-Dichloroethane-d4		*104 %*	*63-131*		"	"	"	"	
Surrogate: Toluene-d8		*99 %*	*68-110*		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*103 %*	*66-122*		"	"	"	"	

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WC-Hanford, Inc 2620 Fermi Avenue Richland WA 99354	Project: RC 116 Project Number: [none] Project Manager: Joan Kessner	**Reported:** 04/09/2009 11:59

J1R9N6
0902067-06 (Solid)

12/5/05

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes

Lionville Laboratory

Volatile Organic Compounds by SW846 8260B

1,1,1-Trichloroethane	ND	4.03	ug/kg wet	1	1903080	02/23/2009	02/25/2009	8260B	U
1,1,2,2-Tetrachloroethane	ND	4.03	"	"	"	"	"	"	U
1,1,2-Trichloroethane	ND	4.03	"	"	"	"	"	"	U
1,1-Dichloroethane	ND	4.03	"	"	"	"	"	"	U
1,1-Dichloroethene	ND	4.03	"	"	"	"	"	"	U
1,2-Dichloroethane	ND	4.84	"	"	"	"	"	"	U
1,2-Dichloropropane	ND	4.03	"	"	"	"	"	"	U
2-Butanone	ND	9.68	"	"	"	"	"	"	U
2-Hexanone	ND	9.68	"	"	"	"	"	"	U
4-Methyl-2-pentanone	ND	9.68	"	"	"	"	"	"	U
Acetone	ND	9.68	"	"	"	"	"	"	U
Benzene	ND	4.03	"	"	"	"	"	"	U
Bromodichloromethane	ND	4.84	"	"	"	"	"	"	U
Bromoform	ND	4.03	"	"	"	"	"	"	U
Bromomethane	ND	8.06	"	"	"	"	"	"	U
Carbon Disulfide	ND	4.03	"	"	"	"	"	"	U
Carbon Tetrachloride	ND	4.03	"	"	"	"	"	"	U
Chlorobenzene	ND	4.03	"	"	"	"	"	"	U
Chloroethane	ND	8.06	"	"	"	"	"	"	U
Chloroform	ND	4.03	"	"	"	"	"	"	U
Chloromethane	ND	8.06	"	"	"	"	"	"	U
cis-1,3-Dichloropropene	ND	4.03	"	"	"	"	"	"	U
Dibromochloromethane	ND	4.03	"	"	"	"	"	"	U
Ethylbenzene	ND	4.03	"	"	"	"	"	"	U
Methylene Chloride	ND	4.84	"	"	"	"	"	"	U
Styrene	ND	4.03	"	"	"	"	"	"	U
Tetrachloroethene	ND	4.03	"	"	"	"	"	"	U
Toluene	ND	4.03	"	"	"	"	"	"	U
trans-1,3-Dichloropropene	ND	4.03	"	"	"	"	"	"	U
Trichloroethene	ND	4.03	"	"	"	"	"	"	U
Vinyl chloride	ND	8.06	"	"	"	"	"	"	U
Xylenes, total	ND	4.84	"	"	"	"	"	"	U
cis-1,2-Dichloroethene	ND	4.03	"	"	"	"	"	"	U
trans-1,2-Dichloroethene	ND	4.03	"	"	"	"	"	"	U

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WC-Hanford, Inc 2620 Fermi Avenue Richland WA, 99354	Project: RC-116 Project Number: [none] Project Manager: Joan Kessner	**Reported:** 04/09/2009 11:59

J18986

0902067-06 (Solid)

12/5/09

Lionville Laboratory

Volatile Organic Compounds by SW846 8260B

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Tentatively Identified Compound	0.00		ug/kg wet	1	L903088	02/23/2009	02/23/2009	8260B	U
Surrogate: 1,2-Dichloroethane-d4		*107 %*	*61-151*		"	"	"	"	
Surrogate: Toluene-d8		*97 %*	*68-140*		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*111 %*	*66-122*		"	"	"	"	

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WC-Hanford, Inc. 2620 Fermi Avenue Richland WA, 99354	Project: RC-116 Project Number: (none) Project Manager: Joan Kessner	Reported: 04/09/2009 11:59

J18987

0902067-07 (Solid)

12/5/09

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes

Lionville Laboratory

Volatile Organic Compounds by SW846 8260B

1,1,1-Trichloroethane	ND	4.24	ug/kg wet	1	L903084	02/25/2009	02/25/2009	8260B	U
1,1,2,2-Tetrachloroethane	ND	4.24	"	"	"	"	"	"	U
1,1,2-Trichloroethane	ND	4.24	"	"	"	"	"	"	U
1,1-Dichloroethane	ND	4.24	"	"	"	"	"	"	U
1,1-Dichloroethene	ND	4.24	"	"	"	"	"	"	U
1,2-Dichloroethane	ND	5.08	"	"	"	"	"	"	U
1,2-Dichloropropane	ND	4.24	"	"	"	"	"	"	U
2-Butanone	ND	10.2	"	"	"	"	"	"	U
2-Hexanone	ND	10.2	"	"	"	"	"	"	U
4-Methyl-2-pentanone	ND	10.2	"	"	"	"	"	"	U
Acetone	ND	10.2	"	"	"	"	"	"	U
Benzene	ND	4.24	"	"	"	"	"	"	U
Bromodichloromethane	ND	5.08	"	"	"	"	"	"	U
Bromoform	ND	4.24	"	"	"	"	"	"	U
Bromomethane	ND	8.47	"	"	"	"	"	"	U
Carbon Disulfide	ND	4.24	"	"	"	"	"	"	U
Carbon Tetrachloride	ND	4.24	"	"	"	"	"	"	U
Chlorobenzene	ND	4.24	"	"	"	"	"	"	U
Chloroethane	ND	8.47	"	"	"	"	"	"	U
Chloroform	ND	4.24	"	"	"	"	"	"	U
Chloromethane	ND	8.47	"	"	"	"	"	"	U
cis-1,3-Dichloropropene	ND	4.24	"	"	"	"	"	"	U
Dibromochloromethane	ND	4.24	"	"	"	"	"	"	U
Ethylbenzene	ND	4.24	"	"	"	"	"	"	U
Methylene Chloride	ND	5.08	"	"	"	"	"	"	U
Styrene	ND	4.24	"	"	"	"	"	"	U
Tetrachloroethene	ND	4.24	"	"	"	"	"	"	U
Toluene	ND	4.24	"	"	"	"	"	"	U
trans-1,3-Dichloropropene	ND	4.24	"	"	"	"	"	"	U
Trichloroethene	ND	4.24	"	"	"	"	"	"	U
Vinyl chloride	ND	8.47	"	"	"	"	"	"	U
Xylenes, total	ND	5.08	"	"	"	"	"	"	U
cis-1,2-Dichloroethene	ND	4.24	"	"	"	"	"	"	U
trans-1,2-Dichloroethene	ND	4.24	"	"	"	"	"	"	U

WC-Hanford, Inc
2620 Fermi Avenue
Richland WA, 99354

Project: RC-116
Project Number: [none]
Project Manager: Joan Kessner

Reported:
04/09/2009 11:59

J18987
0902067-07 (Solid)

W 12/5/09

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Lionville Laboratory									
Volatile Organic Compounds by SW846 8260B									
Tentatively Identified Compound	0.00		ug/kg wet	1	1903088	02/23/2009	02/23/2009	8260B	U
Surrogate: 1,2-Dichloroethane-d4		*107 %*	*63-151*		-	-	-	-	
Surrogate: Toluene-d8		*97 %*	*68-140*		-	-	-	-	
Surrogate: 4-Bromofluorobenzene		*107 %*	*66-172*		-	-	-	-	

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WC-Hanford, Inc. 2620 Fermi Avenue Richland WA 99354	Project: RC-116 Project Number: [none] Project Manager: Joan Kessner	Reported: 04/09/2009 11:59

J18988
0902067-08 (Solid)

12/5/09

Lionville Laboratory

Volatile Organic Compounds by SW846 8260B

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
1,1,1-Trichloroethane	ND	3.97	ug/kg wet	1	1903048	02/25/2009	02/25/2009	8260B	U
1,1,2,2-Tetrachloroethane	ND	3.97	"	"	"	"	"	"	U
1,1,2-Trichloroethane	ND	3.97	"	"	"	"	"	"	U
1,1-Dichloroethane	ND	3.97	"	"	"	"	"	"	U
1,1-Dichloroethene	ND	3.97	"	"	"	"	"	"	U
1,2-Dichloroethane	ND	4.76	"	"	"	"	"	"	U
1,2-Dichloropropane	ND	3.97	"	"	"	"	"	"	U
2-Butanone	ND	9.52	"	"	"	"	"	"	U
2-Hexanone	ND	9.52	"	"	"	"	"	"	U
4-Methyl-2-pentanone	ND	9.52	"	"	"	"	"	"	U
Acetone	ND	9.52	"	"	"	"	"	"	U
Benzene	ND	3.97	"	"	"	"	"	"	U
Bromodichloromethane	ND	4.76	"	"	"	"	"	"	U
Bromoform	ND	3.97	"	"	"	"	"	"	U
Bromomethane	ND	7.94	"	"	"	"	"	"	U
Carbon Disulfide	ND	3.97	"	"	"	"	"	"	U
Carbon Tetrachloride	ND	3.97	"	"	"	"	"	"	U
Chlorobenzene	ND	3.97	"	"	"	"	"	"	U
Chloroethane	ND	7.94	"	"	"	"	"	"	U
Chloroform	ND	3.97	"	"	"	"	"	"	U
Chloromethane	ND	7.94	"	"	"	"	"	"	U
cis-1,3-Dichloropropene	ND	3.97	"	"	"	"	"	"	U
Dibromochloromethane	ND	3.97	"	"	"	"	"	"	U
Ethylbenzene	ND	3.97	"	"	"	"	"	"	U
Methylene Chloride	ND	4.76	"	"	"	"	"	"	U
Styrene	ND	3.97	"	"	"	"	"	"	U
Tetrachloroethene	ND	3.97	"	"	"	"	"	"	U
Toluene	ND	3.97	"	"	"	"	"	"	U
trans-1,3-Dichloropropene	ND	3.97	"	"	"	"	"	"	U
Trichloroethene	ND	3.97	"	"	"	"	"	"	U
Vinyl chloride	ND	7.94	"	"	"	"	"	"	U
Xylenes, total	ND	4.76	"	"	"	"	"	"	U
cis-1,2-Dichloroethene	ND	3.97	"	"	"	"	"	"	U
trans-1,2-Dichloroethene	ND	3.97	"	"	"	"	"	"	U

LVL
LIONVILLE LABORATORY

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WC Hanford, Inc.
2620 Fermi Avenue
Richland WA, 99354

Project: RC-116
Project Number: [none]
Project Manager: Joan Kessner

Reported:
04/09/2009 11:59

J18988
0902067-08 (Solid)

K 12/5/09

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Lionville Laboratory									
Volatile Organic Compounds by SW846 8260B									
Tentatively Identified Compound	0.00		ug/kg wet	1	L903088	02/23/2009	02/23/2009	8260B	U
Surrogate: 1,2-Dichloroethane-d4		*100 %*	*65-151*		"	"	"	"	
Surrogate: Toluene-d8		*103 %*	*68-140*		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*102 %*	*66-122*		"	"	"	"	

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WC-Hanford, Inc.
2620 Fermi Avenue
Richland WA, 99354

Project: RC-116
Project Number: [none]
Project Manager: Joan Kessner

Reported:
04/09/2009 11:59

J18990
0902067-09 (Solid)

12/5/05

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes

Lionville Laboratory

Volatile Organic Compounds by SW846 8260B

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
1,1,1-Trichloroethane	ND	4.10	ug/kg wet	1	[illegible]	02/25/2009	02/25/2009	8260B	U
1,1,2,2-Tetrachloroethane	ND	4.10	"	"	"	"	"	"	U
1,1,2-Trichloroethane	ND	4.10	"	"	"	"	"	"	U
1,1-Dichloroethane	ND	4.10	"	"	"	"	"	"	U
1,1-Dichloroethene	ND	4.10	"	"	"	"	"	"	U
1,2-Dichloroethane	ND	4.92	"	"	"	"	"	"	U
1,2-Dichloropropane	ND	4.10	"	"	"	"	"	"	U
2-Butanone	ND	9.84	"	"	"	"	"	"	U
2-Hexanone	ND	9.84	"	"	"	"	"	"	U
4-Methyl-2-pentanone	ND	9.84	"	"	"	"	"	"	U
Acetone	ND	9.84	"	"	"	"	"	"	U
Benzene	ND	4.10	"	"	"	"	"	"	U
Bromodichloromethane	ND	4.92	"	"	"	"	"	"	U
Bromoform	ND	4.10	"	"	"	"	"	"	U
Bromomethane	ND	8.20	"	"	"	"	"	"	U
Carbon Disulfide	ND	4.10	"	"	"	"	"	"	U
Carbon Tetrachloride	ND	4.10	"	"	"	"	"	"	U
Chlorobenzene	ND	4.10	"	"	"	"	"	"	U
Chloroethane	ND	8.20	"	"	"	"	"	"	U
Chloroform	ND	4.10	"	"	"	"	"	"	U
Chloromethane	ND	8.20	"	"	"	"	"	"	U
cis-1,3-Dichloropropene	ND	4.10	"	"	"	"	"	"	U
Dibromochloromethane	ND	4.10	"	"	"	"	"	"	U
Ethylbenzene	ND	4.10	"	"	"	"	"	"	U
Methylene Chloride	ND	4.92	"	"	"	"	"	"	U
Styrene	ND	4.10	"	"	"	"	"	"	U
Tetrachloroethene	ND	4.10	"	"	"	"	"	"	U
Toluene	ND	4.10	"	"	"	"	"	"	U
trans-1,3-Dichloropropene	ND	4.10	"	"	"	"	"	"	U
Trichloroethene	ND	4.10	"	"	"	"	"	"	U
Vinyl chloride	ND	8.20	"	"	"	"	"	"	U
Xylenes, total	ND	4.92	"	"	"	"	"	"	U
cis-1,2-Dichloroethene	ND	4.10	"	"	"	"	"	"	U
trans-1,2-Dichloroethene	ND	4.10	"	"	"	"	"	"	U

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WC-Hanford, Inc 2620 Fermi Avenue Richland WA, 99354	Project: RCC-116 Project Number: [none] Project Manager: Joan Kessner	Reported: 04/09/2009 11:59

J18990

0902067-09 (Solid)

12/9/05

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes

Lionville Laboratory

Volatile Organic Compounds by SW846 8260B

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Tentatively Identified Compound	0.00		ug/kg wet	1	1903084	02/23/2009	02/23/2009	8260B	U
Surrogate: 1,2-Dichloroethane-d4		*103 %*	*63-131*		"	"	"	"	
Surrogate: Toluene-d8		*101 %*	*68-140*		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*106 %*	*66-122*		"	"	"	"	

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WC-Hanford, Inc 2620 Fermi Avenue Richland WA, 99354	Project: RC-116 Project Number: (none) Project Manager: Joan Kessner	Reported: 04/09/2009 11:59

J18991
0902067-10 (Solid)

12/5/09

Analyte	Result		Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes

Lionville Laboratory

Volatile Organic Compounds by SW846 8260B

Analyte	Result		Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
1,1,1-Trichloroethane	ND		3.85	ug/kg wet	1	1903092	02/23/2009	02/23/2009	8260B	U
1,1,2,2-Tetrachloroethane	ND		3.85	"	"	"	"	"	"	U
1,1,2-Trichloroethane	ND		3.85	"	"	"	"	"	"	U
1,1-Dichloroethane	ND		3.85	"	"	"	"	"	"	U
1,1-Dichloroethene	ND		3.85	"	"	"	"	"	"	U
1,2-Dichloroethane	ND		4.62	"	"	"	"	"	"	U
1,2-Dichloropropane	ND		3.85	"	"	"	"	"	"	U
2-Butanone	ND		9.23	"	"	"	"	"	"	U
2-Hexanone	ND		9.23	"	"	"	"	"	"	U
4-Methyl-2-pentanone	ND		9.23	"	"	"	"	"	"	U
Acetone	ND		9.23	"	"	"	"	"	"	U
Benzene	ND		3.85	"	"	"	"	"	"	U
Bromodichloromethane	ND		4.62	"	"	"	"	"	"	U
Bromoform	ND		3.85	"	"	"	"	"	"	U
Bromomethane	ND		7.69	"	"	"	"	"	"	U
Carbon Disulfide	ND		3.85	"	"	"	"	"	"	U
Carbon Tetrachloride	ND		3.85	"	"	"	"	"	"	U
Chlorobenzene	ND		3.85	"	"	"	"	"	"	U
Chloroethane	ND		7.69	"	"	"	"	"	"	U
Chloroform	ND		3.85	"	"	"	"	"	"	U
Chloromethane	ND		7.69	"	"	"	"	"	"	U
cis-1,3-Dichloropropene	ND		3.85	"	"	"	"	"	"	U
Dibromochloromethane	ND		3.85	"	"	"	"	"	"	U
Ethylbenzene	ND		3.85	"	"	"	"	"	"	U
Methylene Chloride	7.25	U	4.62	"	"	"	"	"	"	B B 4/9/09
Styrene	ND		3.85	"	"	"	"	"	"	U
Tetrachloroethene	ND		3.85	"	"	"	"	"	"	U
Toluene	ND		3.85	"	"	"	"	"	"	U
trans-1,3-Dichloropropene	ND		3.85	"	"	"	"	"	"	U
Trichloroethene	ND		3.85	"	"	"	"	"	"	U
Vinyl chloride	ND		7.69	"	"	"	"	"	"	U
Xylenes, total	ND		4.62	"	"	"	"	"	"	U
cis-1,2-Dichloroethene	ND		3.85	"	"	"	"	"	"	U
trans-1,2-Dichloroethene	ND		3.85	"	"	"	"	"	"	U

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WC-Hanford, Inc. 2620 Fermi Avenue Richland WA, 99354	Project: RC-116 Project Number: [none] Project Manager: Joan Kessner	Reported: 03/09/2009 11:59

J18991
0902067-10 (Solid)

12/5/09

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Note

Lionville Laboratory

Volatile Organic Compounds by SW846 8260B

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Note
Tentatively Identified Compound	0.00		ug/kg wet	1	L903092	02/25/2009	02/25/2009	8260B	U
Surrogate: 1,2-Dichloroethane-d4		*107 %*	*63-151*		"	"	"	"	
Surrogate: Toluene-d8		*98 %*	*68-140*		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*99 %*	*66-122*		"	"	"	"	

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WC-Hanford, Inc 2620 Fermi Avenue Richland WA, 99354	Project: RC 116 Project Number: [none] Project Manager: Joan Kessner	**Reported:** 04/09/2009 11:59

J18992
0902067-11 (Solid)

Ue 12/5/09

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes

Lionville Laboratory

Volatile Organic Compounds by SW846 8260B

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
1,1,1-Trichloroethane	ND	4.17	ug/kg wet	1	1903092	02/23/2009	02/25/2009	8260B	U
1,1,2,2-Tetrachloroethane	ND	4.17	"	"	"	"	"	"	U
1,1,2-Trichloroethane	ND	4.17	"	"	"	"	"	"	U
1,1-Dichloroethane	ND	4.17	"	"	"	"	"	"	U
1,1-Dichloroethene	ND	4.17	"	"	"	"	"	"	U
1,2-Dichloroethane	ND	5.00	"	"	"	"	"	"	U
1,2-Dichloropropane	ND	4.17	"	"	"	"	"	"	U
2-Butanone	ND	10.0	"	"	"	"	"	"	U
2-Hexanone	ND	10.0	"	"	"	"	"	"	U
4-Methyl-2-pentanone	ND	10.0	"	"	"	"	"	"	U
Acetone	ND	10.0	"	"	"	"	"	"	U
Benzene	ND	4.17	"	"	"	"	"	"	U
Bromodichloromethane	ND	5.00	"	"	"	"	"	"	U
Bromoform	ND	4.17	"	"	"	"	"	"	U
Bromomethane	ND	8.33	"	"	"	"	"	"	U
Carbon Disulfide	ND	4.17	"	"	"	"	"	"	U
Carbon Tetrachloride	ND	4.17	"	"	"	"	"	"	U
Chlorobenzene	ND	4.17	"	"	"	"	"	"	U
Chloroethane	ND	8.33	"	"	"	"	"	"	U
Chloroform	ND	4.17	"	"	"	"	"	"	U
Chloromethane	ND	8.33	"	"	"	"	"	"	U
cis-1,3-Dichloropropene	ND	4.17	"	"	"	"	"	"	U
Dibromochloromethane	ND	4.17	"	"	"	"	"	"	U
Ethylbenzene	ND	4.17	"	"	"	"	"	"	U
Methylene Chloride	**6.36** U	5.00	"	"	"	"	"	"	B2
Styrene	ND	4.17	"	"	"	"	"	"	U
Tetrachloroethene	ND	4.17	"	"	"	"	"	"	U
Toluene	ND	4.17	"	"	"	"	"	"	U
trans-1,3-Dichloropropene	ND	4.17	"	"	"	"	"	"	U
Trichloroethene	ND	4.17	"	"	"	"	"	"	U
Vinyl chloride	ND	8.33	"	"	"	"	"	"	U
Xylenes, total	ND	5.00	"	"	"	"	"	"	U
cis-1,2-Dichloroethene	ND	4.17	"	"	"	"	"	"	U
trans-1,2-Dichloroethene	ND	4.17	"	"	"	"	"	"	U

[illegible]

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WCH-Hanford, Inc. 2620 Fermi Avenue Richland WA, 99354	Project: RC-116 Project Number: [none] Project Manager: Joan Kessner	Reported: 04/09/2009 11:59

J18992

0902067-11 (Solid)

12/5/09

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes

Lionville Laboratory

<u>Volatile Organic Compounds by SW846 8260B</u>

Tentatively Identified Compound	0.00		ug/kg wet	1	L903092	02/25/2009	02/25/2009	8260B	U
Surrogate: 1,2-Dichloroethane-d4		*99 %*	*63-131*		-	-	-	-	
Surrogate: Toluene-d8		*105 %*	*68-140*		-	-	-	-	
Surrogate: 4-Bromofluorobenzene		*103 %*	*66-122*		-	-	-	-	

WC-Hanford, Inc.	Project: RC-116	
2620 Fermi Avenue	Project Number: [none]	**Reported:**
Richland WA, 99354	Project Manager: Joan Kessner	03/09/2009 11:59

J189B5
0902067-12 (Solid)

V 12/5/05

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes

Lionville Laboratory

Volatile Organic Compounds by SW846 8260B

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
1,1,1-Trichloroethane	ND	4.81	ug/kg wet	1	1900092	02/25/2009	02/25/2009	8260B	U
1,1,2,2-Tetrachloroethane	ND	4.81	"	"	"	"	"	"	U
1,1,2-Trichloroethane	ND	4.81	"	"	"	"	"	"	U
1,1-Dichloroethane	ND	4.81	"	"	"	"	"	"	U
1,1-Dichloroethene	ND	4.81	"	"	"	"	"	"	U
1,2-Dichloroethane	ND	5.77	"	"	"	"	"	"	U
1,2-Dichloropropane	ND	4.81	"	"	"	"	"	"	U
2-Butanone	ND	11.5	"	"	"	"	"	"	U
2-Hexanone	ND	11.5	"	"	"	"	"	"	U
4-Methyl-2-pentanone	ND	11.5	"	"	"	"	"	"	U
Acetone	ND	11.5	"	"	"	"	"	"	U
Benzene	ND	4.81	"	"	"	"	"	"	U
Bromodichloromethane	ND	5.77	"	"	"	"	"	"	U
Bromoform	ND	4.81	"	"	"	"	"	"	U
Bromomethane	ND	9.62	"	"	"	"	"	"	U
Carbon Disulfide	ND	4.81	"	"	"	"	"	"	U
Carbon Tetrachloride	ND	4.81	"	"	"	"	"	"	U
Chlorobenzene	ND	4.81	"	"	"	"	"	"	U
Chloroethane	ND	9.62	"	"	"	"	"	"	U
Chloroform	ND	4.81	"	"	"	"	"	"	U
Chloromethane	ND	9.62	"	"	"	"	"	"	U
cis-1,3-Dichloropropene	ND	4.81	"	"	"	"	"	"	U
Dibromochloromethane	ND	4.81	"	"	"	"	"	"	U
Ethylbenzene	ND	4.81	"	"	"	"	"	"	U
Methylene Chloride	9.42 U	5.77	"	"	"	"	"	"	B
Styrene	ND	4.81	"	"	"	"	"	"	U
Tetrachloroethene	ND	4.81	"	"	"	"	"	"	U
Toluene	ND	4.81	"	"	"	"	"	"	U
trans-1,3-Dichloropropene	ND	4.81	"	"	"	"	"	"	U
Trichloroethene	ND	4.81	"	"	"	"	"	"	U
Vinyl chloride	ND	9.62	"	"	"	"	"	"	U
Xylenes, total	ND	5.77	"	"	"	"	"	"	U
cis-1,2-Dichloroethene	ND	4.81	"	"	"	"	"	"	U
trans-1,2-Dichloroethene	ND	4.81	"	"	"	"	"	"	U

B 7/14/09

WC Hanford, Inc. 2620 Fermi Avenue Richland WA, 99354	Project: RC-116 Project Number: [none] Project Manager: Joan Kessner	**Reported:** 04/09/2009 11:59

J189B5
0902067-12 (Solid)

12/5/09

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
			Lionville Laboratory						
Volatile Organic Compounds by SW846 8260B									
Tentatively Identified Compound	0.00		ug/kg wet	1	1903092	02/25/2009	02/25/2009	8260B	U
Surrogate: 1,2-Dichloroethane-d4		*102 %*	*63-137*		"	"	"	"	
Surrogate: Toluene-d8		*101 %*	*68-140*		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*111 %*	*66-122*		"	"	"	"	

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WC-Hanford, Inc. 2620 Fermi Avenue Richland WA, 99354	Project: RCT-116 Project Number: [none] Project Manager: Joan Kessner	Reported: 04/09/2009 11:59

J189B6

0902067-13 (Solid)

12/5/09

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Note
Lionville Laboratory									
Volatile Organic Compounds by SW846 8260B									
1,1,1-Trichloroethane	ND	4.90	ug/kg wet	1	1903092	02/25/2009	02/25/2009	8260B	U
1,1,2,2-Tetrachloroethane	ND	4.90	"	"	"	"	"	"	U
1,1,2-Trichloroethane	ND	4.90	"	"	"	"	"	"	U
1,1-Dichloroethane	ND	4.90	"	"	"	"	"	"	U
1,1-Dichloroethene	ND	4.90	"	"	"	"	"	"	U
1,2-Dichloroethane	ND	5.88	"	"	"	"	"	"	U
1,2-Dichloropropane	ND	4.90	"	"	"	"	"	"	U
2-Butanone	ND	11.8	"	"	"	"	"	"	U
2-Hexanone	ND	11.8	"	"	"	"	"	"	U
4-Methyl-2-pentanone	ND	11.8	"	"	"	"	"	"	U
Acetone	7.47 J	11.8	"	"	"	"	"	"	J
Benzene	ND	4.90	"	"	"	"	"	"	U
Bromodichloromethane	ND	5.88	"	"	"	"	"	"	U
Bromoform	ND	4.90	"	"	"	"	"	"	U
Bromomethane	ND	9.80	"	"	"	"	"	"	U
Carbon Disulfide	ND	4.90	"	"	"	"	"	"	U
Carbon Tetrachloride	ND	4.90	"	"	"	"	"	"	U
Chlorobenzene	ND	4.90	"	"	"	"	"	"	U
Chloroethane	ND	9.80	"	"	"	"	"	"	U
Chloroform	ND	4.90	"	"	"	"	"	"	U
Chloromethane	ND	9.80	"	"	"	"	"	"	U
cis-1,3-Dichloropropene	ND	4.90	"	"	"	"	"	"	U
Dibromochloromethane	ND	4.90	"	"	"	"	"	"	U
Ethylbenzene	ND	4.90	"	"	"	"	"	"	U
Methylene Chloride	9.24 U	5.88	"	"	"	"	"	"	[illegible]
Styrene	ND	4.90	"	"	"	"	"	"	U
Tetrachloroethene	ND	4.90	"	"	"	"	"	"	U
Toluene	ND	4.90	"	"	"	"	"	"	U
trans-1,3-Dichloropropene	ND	4.90	"	"	"	"	"	"	U
Trichloroethene	ND	4.90	"	"	"	"	"	"	U
Vinyl chloride	ND	9.80	"	"	"	"	"	"	U
Xylenes, total	ND	5.88	"	"	"	"	"	"	U
cis-1,2-Dichloroethene	ND	4.90	"	"	"	"	"	"	U
trans-1,2-Dichloroethene	ND	4.90	"	"	"	"	"	"	U

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WC-Hanford, Inc	Project: RCI-116	
2620 Fermi Avenue	Project Number: [none]	**Reported:**
Richland WA, 99354	Project Manager: Joan Kessner	04/09/2009 11:59

J189B6

0902067-13 (Solid)

12/5/05

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Lionville Laboratory									
Volatile Organic Compounds by SW846 8260B									
Tentatively Identified Compound	0.00		ug/kg wet	1	L903092	03/25/2009	03/25/2009	8260B	U
Surrogate: 1,2-Dichloroethane-d4		*106 %*	*63-131*		-	-	-	-	
Surrogate: Toluene-d8		*109 %*	*68-140*		-	-	-	-	
Surrogate: 4-Bromofluorobenzene		*115 %*	*66-122*		-	-	-	-	

WC-Hanford, Inc. 2620 Fermi Avenue Richland WA, 99354	Project: RC-116 Project Number: [none] Project Manager: Joan Kessner	Reported: 04/09/2009 11:59

J189B7
0902067-14 (Solid)

K 12/5/05

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
			Lionville Laboratory						
Volatile Organic Compounds by SW846 8260B									
1,1,1-Trichloroethane	ND	4.10	ug/kg wet	1	E901088	02/23/2009	02/25/2009	8260B	U
1,1,2,2-Tetrachloroethane	ND	4.10	"	"	"	"	"	"	U
1,1,2-Trichloroethane	ND	4.10	"	"	"	"	"	"	U
1,1-Dichloroethane	ND	4.10	"	"	"	"	"	"	U
1,1-Dichloroethene	ND	4.10	"	"	"	"	"	"	U
1,2-Dichloroethane	ND	4.92	"	"	"	"	"	"	U
1,2-Dichloropropane	ND	4.10	"	"	"	"	"	"	U
2-Butanone	ND	9.84	"	"	"	"	"	"	U
2-Hexanone	ND	9.84	"	"	"	"	"	"	U
4-Methyl-2-pentanone	ND	9.84	"	"	"	"	"	"	U
Acetone	ND	9.84	"	"	"	"	"	"	U
Benzene	ND	4.10	"	"	"	"	"	"	U
Bromodichloromethane	ND	4.92	"	"	"	"	"	"	U
Bromoform	ND	4.10	"	"	"	"	"	"	U
Bromomethane	ND	8.20	"	"	"	"	"	"	U
Carbon Disulfide	ND	4.10	"	"	"	"	"	"	U
Carbon Tetrachloride	ND	4.10	"	"	"	"	"	"	U
Chlorobenzene	ND	4.10	"	"	"	"	"	"	U
Chloroethane	ND	8.20	"	"	"	"	"	"	U
Chloroform	ND	4.10	"	"	"	"	"	"	U
Chloromethane	ND	8.20	"	"	"	"	"	"	U
cis-1,3-Dichloropropene	ND	4.10	"	"	"	"	"	"	U
Dibromochloromethane	ND	4.10	"	"	"	"	"	"	U
Ethylbenzene	ND	4.10	"	"	"	"	"	"	U
Methylene Chloride	ND	4.92	"	"	"	"	"	"	U
Styrene	ND	4.10	"	"	"	"	"	"	U
Tetrachloroethene	ND	4.10	"	"	"	"	"	"	U
Toluene	ND	4.10	"	"	"	"	"	"	U
trans-1,3-Dichloropropene	ND	4.10	"	"	"	"	"	"	U
Trichloroethene	ND	4.10	"	"	"	"	"	"	U
Vinyl chloride	ND	8.20	"	"	"	"	"	"	U
Xylenes, total	ND	4.92	"	"	"	"	"	"	U
cis-1,2-Dichloroethene	ND	4.10	"	"	"	"	"	"	U
trans-1,2-Dichloroethene	ND	4.10	"	"	"	"	"	"	U

WC-Hanford, Inc	Project: RC-116	
2620 Fermi Avenue	Project Number: [none]	Reported:
Richland WA, 99354	Project Manager: Joan Kessner	03/09/2009 11:59

J189B7
0902067-14 (Solid)

12/5/09

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes

Lionville Laboratory

Volatile Organic Compounds by SW846 8260B

Tentatively Identified Compound	0.00		ug/kg wet	1	1903088	02/25/2009	02/25/2009	8260B	U
Surrogate: 1,2-Dichloroethane-d4		*104 %*	*63-131*		"	"	"	"	
Surrogate: Toluene-d8		*104 %*	*68-140*		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*102 %*	*66-122*		"	"	"	"	

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WC-Hanford, Inc. 2620 Fermi Avenue Richland WA, 99354	Project: RC-116 Project Number: [none] Project Manager: Joan Kessner	Reported: 04/09/2009 11:59

J189B8
0902067-15 (Solid)

Kn 12/5/05

Lionville Laboratory

Volatile Organic Compounds by SW846 8260B

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
1,1,1-Trichloroethane	ND	4.46	ug/kg wet	1	1903083	02/25/2009	02/25/2009	8260B	U
1,1,2,2-Tetrachloroethane	ND	4.46	"	"	"	"	"	"	U
1,1,2-Trichloroethane	ND	4.46	"	"	"	"	"	"	U
1,1-Dichloroethane	ND	4.46	"	"	"	"	"	"	U
1,1-Dichloroethene	ND	4.46	"	"	"	"	"	"	U
1,2-Dichloroethane	ND	5.36	"	"	"	"	"	"	U
1,2-Dichloropropane	ND	4.46	"	"	"	"	"	"	U
2-Butanone	ND	10.7	"	"	"	"	"	"	U
2-Hexanone	ND	10.7	"	"	"	"	"	"	U
4-Methyl-2-pentanone	ND	10.7	"	"	"	"	"	"	U
Acetone	ND	10.7	"	"	"	"	"	"	U
Benzene	ND	4.46	"	"	"	"	"	"	U
Bromodichloromethane	ND	5.36	"	"	"	"	"	"	U
Bromoform	ND	4.46	"	"	"	"	"	"	U
Bromomethane	ND	8.93	"	"	"	"	"	"	U
Carbon Disulfide	ND	4.46	"	"	"	"	"	"	U
Carbon Tetrachloride	ND	4.46	"	"	"	"	"	"	U
Chlorobenzene	ND	4.46	"	"	"	"	"	"	U
Chloroethane	ND	8.93	"	"	"	"	"	"	U
Chloroform	ND	4.46	"	"	"	"	"	"	U
Chloromethane	ND	8.93	"	"	"	"	"	"	U
cis-1,3-Dichloropropene	ND	4.46	"	"	"	"	"	"	U
Dibromochloromethane	ND	4.46	"	"	"	"	"	"	U
Ethylbenzene	ND	4.46	"	"	"	"	"	"	U
Methylene Chloride	ND	5.36	"	"	"	"	"	"	U
Styrene	ND	4.46	"	"	"	"	"	"	U
Tetrachloroethene	ND	4.46	"	"	"	"	"	"	U
Toluene	ND	4.46	"	"	"	"	"	"	U
trans-1,3-Dichloropropene	ND	4.46	"	"	"	"	"	"	U
Trichloroethene	ND	4.46	"	"	"	"	"	"	U
Vinyl chloride	ND	8.93	"	"	"	"	"	"	U
Xylenes, total	ND	5.36	"	"	"	"	"	"	U
cis-1,2-Dichloroethene	ND	4.46	"	"	"	"	"	"	U
trans-1,2-Dichloroethene	ND	4.46	"	"	"	"	"	"	U

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WC Hanford, Inc. 2620 Fermi Avenue Richland WA, 99354	Project: RC-116 Project Number: [none] Project Manager: Joan Kessner	Reported: 04/09/2009 11:59

3189B8
0902067-15 (Solid)

12/5/09

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes

Lionville Laboratory

Volatile Organic Compounds by SW846 8260B

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Tentatively Identified Compound	0.00		ug/kg wet	1	1903088	02/25/2009	02/25/2009	8260B	U
Surrogate: 1,2-Dichloroethane-d4		*99 %*	*63-151*		"	"	"	"	
Surrogate: Toluene-d8		*99 %*	*68-140*		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*103 %*	*66-122*		"	"	"	"	

WC-Hanford, Inc. 2620 Fermi Avenue Richland WA, 99354	Project: RCI-116 Project Number: [none] Project Manager: Joan Kessner	Reported: 04/09/2009 11:59

J189B9
0902067-16 (Solid)

12/5/05

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes

Lionville Laboratory

Volatile Organic Compounds by SW846 8260B

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
1,1,1-Trichloroethane	ND	4.81	ug/kg wet	1	L903068	02/23/2009	02/23/2009	8260B	U
1,1,2,2-Tetrachloroethane	ND	4.81	"	"	"	"	"	"	U
1,1,2-Trichloroethane	ND	4.81	"	"	"	"	"	"	U
1,1-Dichloroethane	ND	4.81	"	"	"	"	"	"	U
1,1-Dichloroethene	ND	4.81	"	"	"	"	"	"	U
1,2-Dichloroethane	ND	5.77	"	"	"	"	"	"	U
1,2-Dichloropropane	ND	4.81	"	"	"	"	"	"	U
2-Butanone	ND	11.5	"	"	"	"	"	"	U
2-Hexanone	ND	11.5	"	"	"	"	"	"	U
4-Methyl-2-pentanone	ND	11.5	"	"	"	"	"	"	U
Acetone	ND	11.5	"	"	"	"	"	"	U
Benzene	ND	4.81	"	"	"	"	"	"	U
Bromodichloromethane	ND	5.77	"	"	"	"	"	"	U
Bromoform	ND	4.81	"	"	"	"	"	"	U
Bromomethane	ND	9.62	"	"	"	"	"	"	U
Carbon Disulfide	ND	4.81	"	"	"	"	"	"	U
Carbon Tetrachloride	ND	4.81	"	"	"	"	"	"	U
Chlorobenzene	ND	4.81	"	"	"	"	"	"	U
Chloroethane	ND	9.62	"	"	"	"	"	"	U
Chloroform	ND	4.81	"	"	"	"	"	"	U
Chloromethane	ND	9.62	"	"	"	"	"	"	U
cis-1,3-Dichloropropene	ND	4.81	"	"	"	"	"	"	U
Dibromochloromethane	ND	4.81	"	"	"	"	"	"	U
Ethylbenzene	ND	4.81	"	"	"	"	"	"	U
Methylene Chloride	ND	5.77	"	"	"	"	"	"	U
Styrene	ND	4.81	"	"	"	"	"	"	U
Tetrachloroethene	ND	4.81	"	"	"	"	"	"	U
Toluene	ND	4.81	"	"	"	"	"	"	U
trans-1,3-Dichloropropene	ND	4.81	"	"	"	"	"	"	U
Trichloroethene	ND	4.81	"	"	"	"	"	"	U
Vinyl chloride	ND	9.62	"	"	"	"	"	"	U
Xylenes, total	ND	5.77	"	"	"	"	"	"	U
cis-1,2-Dichloroethene	ND	4.81	"	"	"	"	"	"	U
trans-1,2-Dichloroethene	ND	4.81	"	"	"	"	"	"	U

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WCH-Hanford, Inc. 2620 Fermi Avenue Richland WA, 99354	Project: RC-116 Project Number: [none] Project Manager: Joan Kessner	**Reported:** 04/09/2009 11:59

J189B9
0902067-16 (Solid)

12/5/05

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes

Lionville Laboratory

Volatile Organic Compounds by SW846 8260B

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Tentatively Identified Compound	0.00		ug/kg wet	1	L903088	02/23/2009	02/25/2009	8260B	U
Surrogate: 1,2-Dichloroethane-d4		97 %	*63-131*		"	"	"	"	
Surrogate: Toluene-d8		97 %	*68-140*		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		94 %	*66-122*		"	"	"	"	

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WC-Hanford, Inc
2620 Fermi Avenue
Richland WA, 99354

Project: RC-110
Project Number: [none]
Project Manager: Joan Kessner

Reported:
04/09/2009 11:59

J189C0
0902067-17 (Solid)

12/5/05

Lionville Laboratory

Volatile Organic Compounds by SW846 8260B

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
1,1,1-Trichloroethane	ND	3.85	ug/kg wet	1	L903088	02/25/2009	02/25/2009	8260B	U
1,1,2,2-Tetrachloroethane	ND	3.85	"	"	"	"	"	"	U
1,1,2-Trichloroethane	ND	3.85	"	"	"	"	"	"	U
1,1-Dichloroethane	ND	3.85	"	"	"	"	"	"	U
1,1-Dichloroethene	ND	3.85	"	"	"	"	"	"	U
1,2-Dichloroethane	ND	4.62	"	"	"	"	"	"	U
1,2-Dichloropropane	ND	3.85	"	"	"	"	"	"	U
2-Butanone	ND	9.23	"	"	"	"	"	"	U
2-Hexanone	ND	9.23	"	"	"	"	"	"	U
4-Methyl-2-pentanone	ND	9.23	"	"	"	"	"	"	U
Acetone	ND	9.23	"	"	"	"	"	"	U
Benzene	ND	3.85	"	"	"	"	"	"	U
Bromodichloromethane	ND	4.62	"	"	"	"	"	"	U
Bromoform	ND	3.85	"	"	"	"	"	"	U
Bromomethane	ND	7.69	"	"	"	"	"	"	U
Carbon Disulfide	ND	3.85	"	"	"	"	"	"	U
Carbon Tetrachloride	ND	3.85	"	"	"	"	"	"	U
Chlorobenzene	ND	3.85	"	"	"	"	"	"	U
Chloroethane	ND	7.69	"	"	"	"	"	"	U
Chloroform	ND	3.85	"	"	"	"	"	"	U
Chloromethane	ND	7.69	"	"	"	"	"	"	U
cis-1,3-Dichloropropene	ND	3.85	"	"	"	"	"	"	U
Dibromochloromethane	ND	3.85	"	"	"	"	"	"	U
Ethylbenzene	ND	3.85	"	"	"	"	"	"	U
Methylene Chloride	ND	4.62	"	"	"	"	"	"	U
Styrene	ND	3.85	"	"	"	"	"	"	U
Tetrachloroethene	ND	3.85	"	"	"	"	"	"	U
Toluene	ND	3.85	"	"	"	"	"	"	U
trans-1,3-Dichloropropene	ND	3.85	"	"	"	"	"	"	U
Trichloroethene	ND	3.85	"	"	"	"	"	"	U
Vinyl chloride	ND	7.69	"	"	"	"	"	"	U
Xylenes, total	ND	4.62	"	"	"	"	"	"	U
cis-1,2-Dichloroethene	ND	3.85	"	"	"	"	"	"	U
trans-1,2-Dichloroethene	ND	3.85	"	"	"	"	"	"	U

WC-Hanford, Inc.	Project: RC-116	
2620 Fermi Avenue	Project Number: [none]	**Reported:**
Richland WA, 99354	Project Manager: Joan Kessner	04/09/2009 11:59

J189C0
0902067-17 (Solid)

12/5/09

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
				Lionville Laboratory					
Volatile Organic Compounds by SW846 8260B									
Tentatively Identified Compound	0.00		ug/kg wet	1	1903088	02/25/2009	02/25/2009	8260B	U
Surrogate: 1,2-Dichloroethane-d4		*101 %*	*63-151*		"	"	"	"	
Surrogate: Toluene-d8		*100 %*	*68-140*		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*108 %*	*66-122*		"	"	"	"	

WC Hanford, Inc. 2620 Fermi Avenue Richland WA, 99354	Project: RC-116 Project Number: [none] Project Manager: Joan Kessner	**Reported:** 04/09/2009 11:59

J189C1

0902067-18 (Solid)

12-15-09

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes

Lionville Laboratory

Volatile Organic Compounds by SW846 8260B

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
1,1,1-Trichloroethane	ND	4.31	ug/kg wet	1	0903088	02/25/2009	02/25/2009	8260B	U
1,1,2,2-Tetrachloroethane	ND	4.31	"	"	"	"	"	"	U
1,1,2-Trichloroethane	ND	4.31	"	"	"	"	"	"	U
1,1-Dichloroethane	ND	4.31	"	"	"	"	"	"	U
1,1-Dichloroethene	ND	4.31	"	"	"	"	"	"	U
1,2-Dichloroethane	ND	5.17	"	"	"	"	"	"	U
1,2-Dichloropropane	ND	4.31	"	"	"	"	"	"	U
2-Butanone	ND	10.3	"	"	"	"	"	"	U
2-Hexanone	ND	10.3	"	"	"	"	"	"	U
4-Methyl-2-pentanone	ND	10.3	"	"	"	"	"	"	U
Acetone	ND	10.3	"	"	"	"	"	"	U
Benzene	ND	4.31	"	"	"	"	"	"	U
Bromodichloromethane	ND	5.17	"	"	"	"	"	"	U
Bromoform	ND	4.31	"	"	"	"	"	"	U
Bromomethane	ND	8.62	"	"	"	"	"	"	U
Carbon Disulfide	ND	4.31	"	"	"	"	"	"	U
Carbon Tetrachloride	ND	4.31	"	"	"	"	"	"	U
Chlorobenzene	ND	4.31	"	"	"	"	"	"	U
Chloroethane	ND	8.62	"	"	"	"	"	"	U
Chloroform	ND	4.31	"	"	"	"	"	"	U
Chloromethane	ND	8.62	"	"	"	"	"	"	U
cis-1,3-Dichloropropene	ND	4.31	"	"	"	"	"	"	U
Dibromochloromethane	ND	4.31	"	"	"	"	"	"	U
Ethylbenzene	ND	4.31	"	"	"	"	"	"	U
Methylene Chloride	ND	5.17	"	"	"	"	"	"	U
Styrene	ND	4.31	"	"	"	"	"	"	U
Tetrachloroethene	ND	4.31	"	"	"	"	"	"	U
Toluene	ND	4.31	"	"	"	"	"	"	U
trans-1,3-Dichloropropene	ND	4.31	"	"	"	"	"	"	U
Trichloroethene	ND	4.31	"	"	"	"	"	"	U
Vinyl chloride	ND	8.62	"	"	"	"	"	"	U
Xylenes, total	ND	5.17	"	"	"	"	"	"	U
cis-1,2-Dichloroethene	ND	4.31	"	"	"	"	"	"	U
trans-1,2-Dichloroethene	ND	4.31	"	"	"	"	"	"	U

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WC-Hanford, Inc 2620 Fermi Avenue Richland WA, 99354	Project: RC-116 Project Number: [none] Project Manager: Joan Kessner	Reported: 04/09/2009 11:59

J189C1
0902067-18 (Solid)

K 12/5/09

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
			Lionville Laboratory						
Volatile Organic Compounds by SW846 8260B									
Tentatively Identified Compound	0.00		ug/kg wet	1	0903088	02/25/2009	02/25/2009	8260B	U
Surrogate: 1,2-Dichloroethane-d4		*109 %*	*63-151*		"	"	"	"	
Surrogate: Toluene-d8		*103 %*	*68-110*		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*115 %*	*66-122*		"	"	"	"	

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WC-Hanford, Inc 2620 Fermi Avenue Richland WA, 99354	Project: RC-116 Project Number: [none] Project Manager: Joan Kessner	**Reported:** 04/09/2009 11:59

J189C3

0902067-19 (Solid)

K 12/3/09

Lionville Laboratory

Volatile Organic Compounds by SW846 8260B

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
1,1,1-Trichloroethane	ND	4.46	ug/kg wet	1	L9B0088	02/23/2009	02/24/2009	8260B	U
1,1,2,2-Tetrachloroethane	ND	4.46	"	"	"	"	"	"	U
1,1,2-Trichloroethane	ND	4.46	"	"	"	"	"	"	U
1,1-Dichloroethane	ND	4.46	"	"	"	"	"	"	U
1,1-Dichloroethene	ND	4.46	"	"	"	"	"	"	U
1,2-Dichloroethane	ND	5.36	"	"	"	"	"	"	U
1,2-Dichloropropane	ND	4.46	"	"	"	"	"	"	U
2-Butanone	ND	10.7	"	"	"	"	"	"	U
2-Hexanone	ND	10.7	"	"	"	"	"	"	U
4-Methyl-2-pentanone	ND	10.7	"	"	"	"	"	"	U
Acetone	ND	10.7	"	"	"	"	"	"	U
Benzene	ND	4.46	"	"	"	"	"	"	U
Bromodichloromethane	ND	5.36	"	"	"	"	"	"	U
Bromoform	ND	4.46	"	"	"	"	"	"	U
Bromomethane	ND	8.91	"	"	"	"	"	"	U
Carbon Disulfide	ND	4.46	"	"	"	"	"	"	U
Carbon Tetrachloride	ND	4.46	"	"	"	"	"	"	U
Chlorobenzene	ND	4.46	"	"	"	"	"	"	U
Chloroethane	ND	8.91	"	"	"	"	"	"	U
Chloroform	ND	4.46	"	"	"	"	"	"	U
Chloromethane	ND	8.91	"	"	"	"	"	"	U
cis-1,3-Dichloropropene	ND	4.46	"	"	"	"	"	"	U
Dibromochloromethane	ND	4.46	"	"	"	"	"	"	U
Ethylbenzene	ND	4.46	"	"	"	"	"	"	U
Methylene Chloride	ND	5.36	"	"	"	"	"	"	U
Styrene	ND	4.46	"	"	"	"	"	"	U
Tetrachloroethene	ND	4.46	"	"	"	"	"	"	U
Toluene	ND	4.46	"	"	"	"	"	"	U
trans-1,3-Dichloropropene	ND	4.46	"	"	"	"	"	"	U
Trichloroethene	ND	4.46	"	"	"	"	"	"	U
Vinyl chloride	ND	8.91	"	"	"	"	"	"	U
Xylenes, total	ND	5.36	"	"	"	"	"	"	U
cis-1,2-Dichloroethene	ND	4.46	"	"	"	"	"	"	U
trans-1,2-Dichloroethene	ND	4.46	"	"	"	"	"	"	U

WC-Hanford, Inc.	Project: RC-116	
2620 Fermi Avenue	Project Number: [none]	Reported:
Richland WA, 99354	Project Manager: Joan Kessner	04/09/2009 11:59

J189C3
0902067-19 (Solid)

12/5/09

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes

Lionville Laboratory

Volatile Organic Compounds by SW846 8260B

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Tentatively Identified Compound	0.00		ug/kg wet	1	L903088	02/25/2009	02/25/2009	8260B	U
Surrogate: 1,2-Dichloroethane-d4		*106 %*	*63-151*		"	"	"	"	
Surrogate: Toluene-d8		*103 %*	*68-140*		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*108 %*	*66-172*		"	"	"	"	

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WC Hanford, Inc. 2620 Fermi Avenue Richland WA, 99354	Project: RC-116 Project Number: (none) Project Manager: Joan Kessner	Reported: 03/09/2009 11:59

J189C4
0902067-20 (Solid)

12/3/09

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes

Lionville Laboratory

Volatile Organic Compounds by SW846 8260B

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
1,1,1-Trichloroethane	ND	4.17	ug/kg wet	1	L903088	02/25/2009	02/25/2009	8260B	U
1,1,2,2-Tetrachloroethane	ND	4.17	"	"	"	"	"	"	U
1,1,2-Trichloroethane	ND	4.17	"	"	"	"	"	"	U
1,1-Dichloroethane	ND	4.17	"	"	"	"	"	"	U
1,1-Dichloroethene	ND	4.17	"	"	"	"	"	"	U
1,2-Dichloroethane	ND	5.00	"	"	"	"	"	"	U
1,2-Dichloropropane	ND	4.17	"	"	"	"	"	"	U
2-Butanone	ND	10.0	"	"	"	"	"	"	U
2-Hexanone	ND	10.0	"	"	"	"	"	"	U
4-Methyl-2-pentanone	ND	10.0	"	"	"	"	"	"	U
Acetone	ND	10.0	"	"	"	"	"	"	U
Benzene	ND	4.17	"	"	"	"	"	"	U
Bromodichloromethane	ND	5.00	"	"	"	"	"	"	U
Bromoform	ND	4.17	"	"	"	"	"	"	U
Bromomethane	ND	8.33	"	"	"	"	"	"	U
Carbon Disulfide	ND	4.17	"	"	"	"	"	"	U
Carbon Tetrachloride	ND	4.17	"	"	"	"	"	"	U
Chlorobenzene	ND	4.17	"	"	"	"	"	"	U
Chloroethane	ND	8.33	"	"	"	"	"	"	U
Chloroform	ND	4.17	"	"	"	"	"	"	U
Chloromethane	ND	8.33	"	"	"	"	"	"	U
cis-1,3-Dichloropropene	ND	4.17	"	"	"	"	"	"	U
Dibromochloromethane	ND	4.17	"	"	"	"	"	"	U
Ethylbenzene	ND	4.17	"	"	"	"	"	"	U
Methylene Chloride	ND	5.00	"	"	"	"	"	"	U
Styrene	ND	4.17	"	"	"	"	"	"	U
Tetrachloroethene	ND	4.17	"	"	"	"	"	"	U
Toluene	ND	4.17	"	"	"	"	"	"	U
trans-1,3-Dichloropropene	ND	4.17	"	"	"	"	"	"	U
Trichloroethene	ND	4.17	"	"	"	"	"	"	U
Vinyl chloride	ND	8.33	"	"	"	"	"	"	U
Xylenes, total	ND	5.00	"	"	"	"	"	"	U
cis-1,2-Dichloroethene	ND	4.17	"	"	"	"	"	"	U
trans-1,2-Dichloroethene	ND	4.17	"	"	"	"	"	"	U

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WC-Hanford, Inc.	Project: RC-116	
2620 Fermi Avenue	Project Number: [none]	Reported:
Richland WA, 99354	Project Manager: Joan Kessner	04/09/2009 11:59

J189C4
0902067-20 (Solid)

12/5/09

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Lionville Laboratory									
Volatile Organic Compounds by SW846 8260B									
Tentatively Identified Compound	0.00		ug/kg wet	1	L902088	02/25/2009	02/25/2009	8260B	U
Surrogate: 1,2-Dichloroethane-d4		*106 %*	*63-131*		"	"	"	"	
Surrogate: Toluene-d8		*99 %*	*68-140*		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*112 %*	*66-122*		"	"	"	"	

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WC-Hanford, Inc 2620 Fermi Avenue Richland WA 99354	Project: RC-116 Project Number: [none] Project Manager: Joan Kessner	Reported: 04/09/2009 11:59

J189J9
0902067-21 (Solid)

12/5/09

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes

Lionville Laboratory

Volatile Organic Compounds by SW846 8260B

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
1,1,1-Trichloroethane	ND	4.39	ug/kg wet	1	1903092	02/25/2009	02/25/2009	8260B	U
1,1,2,2-Tetrachloroethane	ND	4.39	"	"	"	"	"	"	U
1,1,2-Trichloroethane	ND	4.39	"	"	"	"	"	"	U
1,1-Dichloroethane	ND	4.39	"	"	"	"	"	"	U
1,1-Dichloroethene	ND	4.39	"	"	"	"	"	"	U
1,2-Dichloroethane	ND	5.26	"	"	"	"	"	"	U
1,2-Dichloropropane	ND	4.39	"	"	"	"	"	"	U
2-Butanone	ND	10.5	"	"	"	"	"	"	U
2-Hexanone	ND	10.5	"	"	"	"	"	"	U
4-Methyl-2-pentanone	ND	10.5	"	"	"	"	"	"	U
Acetone	ND	10.5	"	"	"	"	"	"	U
Benzene	ND	4.39	"	"	"	"	"	"	U
Bromodichloromethane	ND	5.26	"	"	"	"	"	"	U
Bromoform	ND	4.39	"	"	"	"	"	"	U
Bromomethane	ND	8.77	"	"	"	"	"	"	U
Carbon Disulfide	ND	4.39	"	"	"	"	"	"	U
Carbon Tetrachloride	ND	4.39	"	"	"	"	"	"	U
Chlorobenzene	ND	4.39	"	"	"	"	"	"	U
Chloroethane	ND	8.77	"	"	"	"	"	"	U
Chloroform	ND	4.39	"	"	"	"	"	"	U
Chloromethane	ND	8.77	"	"	"	"	"	"	U
cis-1,3-Dichloropropene	ND	4.39	"	"	"	"	"	"	U
Dibromochloromethane	ND	4.39	"	"	"	"	"	"	U
Ethylbenzene	ND	4.39	"	"	"	"	"	"	U
Methylene Chloride	7.54 U	5.26	"	"	"	"	"	"	B
Styrene	ND	4.39	"	"	"	"	"	"	U
Tetrachloroethene	ND	4.39	"	"	"	"	"	"	U
Toluene	ND	4.39	"	"	"	"	"	"	U
trans-1,3-Dichloropropene	ND	4.39	"	"	"	"	"	"	U
Trichloroethene	ND	4.39	"	"	"	"	"	"	U
Vinyl chloride	ND	8.77	"	"	"	"	"	"	U
Xylenes, total	ND	5.26	"	"	"	"	"	"	U
cis-1,2-Dichloroethene	ND	4.39	"	"	"	"	"	"	U
trans-1,2-Dichloroethene	ND	4.39	"	"	"	"	"	"	U

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WC-Hanford, Inc. 2620 Fermi Avenue Richland WA, 99354	Project: RC 116 Project Number: [none] Project Manager: Joan Kessner	**Reported:** 04/09/2009 11:59

J18939
0902067-21 (Solid)

12/5/08

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Lionville Laboratory									
Volatile Organic Compounds by SW846 8260B									
Tentatively Identified Compound	0.00		ug/kg wet	1	0900092	02/25/2009	02/25/2009	8260B	U
Surrogate: 1,2-Dichloroethane-d4		*103 %*	*63-131*		-	-	-	-	
Surrogate: Toluene-d8		*102 %*	*68-140*		-	-	-	-	
Surrogate: 4-Bromofluorobenzene		*106 %*	*66-122*		-	-	-	-	

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WC-Hanford, Inc. 2620 Fermi Avenue Richland WA, 99354	Project: RC-116 Project Number: [none] Project Manager: Joan Kessner	Reported: 04/09/2009 11:59

J189K2

0902067-22 (Solid)

12/4/09

Lionville Laboratory

Volatile Organic Compounds by SW846 8260B

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
1,1,1-Trichloroethane	ND	4.39	ug/kg wet	1	1/03092	02/25/2009	02/25/2009	8260B	U
1,1,2,2-Tetrachloroethane	ND	4.39	"	"	"	"	"	"	U
1,1,2-Trichloroethane	ND	4.39	"	"	"	"	"	"	U
1,1-Dichloroethane	ND	4.39	"	"	"	"	"	"	U
1,1-Dichloroethene	ND	4.39	"	"	"	"	"	"	U
1,2-Dichloroethane	ND	5.26	"	"	"	"	"	"	U
1,2-Dichloropropane	ND	4.39	"	"	"	"	"	"	U
2-Butanone	ND	10.5	"	"	"	"	"	"	U
2-Hexanone	ND	10.5	"	"	"	"	"	"	U
4-Methyl-2-pentanone	ND	10.5	"	"	"	"	"	"	U
Acetone	3.63 J	10.5	"	"	"	"	"	"	J
Benzene	ND	4.39	"	"	"	"	"	"	U
Bromodichloromethane	ND	5.26	"	"	"	"	"	"	U
Bromoform	ND	4.39	"	"	"	"	"	"	U
Bromomethane	ND	8.77	"	"	"	"	"	"	U
Carbon Disulfide	ND	4.39	"	"	"	"	"	"	U
Carbon Tetrachloride	ND	4.39	"	"	"	"	"	"	U
Chlorobenzene	ND	4.39	"	"	"	"	"	"	U
Chloroethane	ND	8.77	"	"	"	"	"	"	U
Chloroform	ND	4.39	"	"	"	"	"	"	U
Chloromethane	ND	8.77	"	"	"	"	"	"	U
cis-1,3-Dichloropropene	ND	4.39	"	"	"	"	"	"	U
Dibromochloromethane	ND	4.39	"	"	"	"	"	"	U
Ethylbenzene	ND	4.39	"	"	"	"	"	"	U
Methylene Chloride	6.95 U	5.26	"	"	"	"	"	"	B
Styrene	ND	4.39	"	"	"	"	"	"	U
Tetrachloroethene	ND	4.39	"	"	"	"	"	"	U
Toluene	ND	4.39	"	"	"	"	"	"	U
trans-1,3-Dichloropropene	ND	4.39	"	"	"	"	"	"	U
Trichloroethene	ND	4.39	"	"	"	"	"	"	U
Vinyl chloride	ND	8.77	"	"	"	"	"	"	U
Xylenes, total	ND	5.26	"	"	"	"	"	"	U
cis-1,2-Dichloroethene	ND	4.39	"	"	"	"	"	"	U
trans-1,2-Dichloroethene	ND	4.39	"	"	"	"	"	"	U

13 [illegible]

WC-Hanford, Inc.	Project: RC-116	
2620 Fermi Avenue	Project Number: [none]	Reported:
Richland WA, 99354	Project Manager: Joan Kessner	04/09/2009 11:59

J189K2
0902067-22 (Solid)

12/5/09

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Lionville Laboratory									
Volatile Organic Compounds by SW846 8260B									
Tentatively Identified Compound	0.00		ug/kg wet	1	L903092	02/25/2009	02/25/2009	8260B	O
Surrogate: 1,2-Dichloroethane-d4		*101 %*	*63-151*		-	-	-	-	
Surrogate: Toluene-d8		*103 %*	*68-140*		-	-	-	-	
Surrogate: 4-Bromofluorobenzene		*111 %*	*66-122*		-	-	-	-	

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WC-Hanford, Inc 2620 Fermi Avenue Richland WA, 99354	Project: RC-116 Project Number: [none] Project Manager: Joan Kessner	**Reported:** 04/09/2009 11:59

J189K4
0902067-23 (Solid)

12/3/09

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes

Lionville Laboratory

Volatile Organic Compounds by SW846 8260B

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
1,1,1-Trichloroethane	ND	4.24	ug/kg wet	1	[illegible]	03/25/2009	03/25/2009	8260B	U
1,1,2,2-Tetrachloroethane	ND	4.24	"	"	"	"	"	"	U
1,1,2-Trichloroethane	ND	4.24	"	"	"	"	"	"	U
1,1-Dichloroethane	ND	4.24	"	"	"	"	"	"	U
1,1-Dichloroethene	ND	4.24	"	"	"	"	"	"	U
1,2-Dichloroethane	ND	5.08	"	"	"	"	"	"	U
1,2-Dichloropropane	ND	4.24	"	"	"	"	"	"	U
2-Butanone	ND	10.2	"	"	"	"	"	"	U
2-Hexanone	ND	10.2	"	"	"	"	"	"	U
4-Methyl-2-pentanone	ND	10.2	"	"	"	"	"	"	U
Acetone	ND	10.2	"	"	"	"	"	"	U
Benzene	ND	4.24	"	"	"	"	"	"	U
Bromodichloromethane	ND	5.08	"	"	"	"	"	"	U
Bromoform	ND	4.24	"	"	"	"	"	"	U
Bromomethane	ND	8.47	"	"	"	"	"	"	U
Carbon Disulfide	ND	4.24	"	"	"	"	"	"	U
Carbon Tetrachloride	ND	4.24	"	"	"	"	"	"	U
Chlorobenzene	ND	4.24	"	"	"	"	"	"	U
Chloroethane	ND	8.47	"	"	"	"	"	"	U
Chloroform	ND	4.24	"	"	"	"	"	"	U
Chloromethane	ND	8.47	"	"	"	"	"	"	U
cis-1,3-Dichloropropene	ND	4.24	"	"	"	"	"	"	U
Dibromochloromethane	ND	4.24	"	"	"	"	"	"	U
Ethylbenzene	ND	4.24	"	"	"	"	"	"	U
Methylene Chloride	6.69 U	5.08	"	"	"	"	"	"	[illegible]
Styrene	ND	4.24	"	"	"	"	"	"	U
Tetrachloroethene	ND	4.24	"	"	"	"	"	"	U
Toluene	ND	4.24	"	"	"	"	"	"	U
trans-1,3-Dichloropropene	ND	4.24	"	"	"	"	"	"	U
Trichloroethene	ND	4.24	"	"	"	"	"	"	U
Vinyl chloride	ND	8.47	"	"	"	"	"	"	U
Xylenes, total	ND	5.08	"	"	"	"	"	"	U
cis-1,2-Dichloroethene	ND	4.24	"	"	"	"	"	"	U
trans-1,2-Dichloroethene	ND	4.24	"	"	"	"	"	"	U

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WC-Hanford, Inc.	Project: RC-116	
2620 Fermi Avenue	Project Number: [none]	**Reported:**
Richland WA, 99354	Project Manager: Joan Kessner	04/09/2009 11:59

J189K4
0902067-23 (Solid)

12/5/09

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes

Lionville Laboratory

Volatile Organic Compounds by SW846 8260B

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Tentatively Identified Compound	0.00		ug/kg wet	1	L903092	02/23/2009	02/23/2009	8260B	U
Surrogate: 1,2-Dichloroethane-d4		*108 %*	*63-151*		"	"	"	"	
Surrogate: Toluene-d8		*101 %*	*68-140*		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*107 %*	*66-122*		"	"	"	"	

LVL
LIONVILLE LABORATORY

208 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

WC-Hanford, Inc. 2620 Fermi Avenue Richland WA, 99354	Project: RC-116 Project Number: (none) Project Manager: Joan Kessner	Reported: 04/09/2009 11:59

J189K5
0902067-24 (Solid)

12/5/09

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes

Lionville Laboratory

Volatile Organic Compounds by SW846 8260B

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
1,1,1-Trichloroethane	ND	5.00	ug/kg wet	1	L903092	02/25/2009	02/25/2009	8260B	U
1,1,2,2-Tetrachloroethane	ND	5.00	"	"	"	"	"	"	U
1,1,2-Trichloroethane	ND	5.00	"	"	"	"	"	"	U
1,1-Dichloroethane	ND	5.00	"	"	"	"	"	"	U
1,1-Dichloroethene	ND	5.00	"	"	"	"	"	"	U
1,2-Dichloroethane	ND	6.00	"	"	"	"	"	"	U
1,2-Dichloropropane	ND	5.00	"	"	"	"	"	"	U
2-Butanone	ND	12.0	"	"	"	"	"	"	U
2-Hexanone	ND	12.0	"	"	"	"	"	"	U
4-Methyl-2-pentanone	ND	12.0	"	"	"	"	"	"	U
Acetone	4.37 J	12.0	"	"	"	"	"	"	J
Benzene	ND	5.00	"	"	"	"	"	"	U
Bromodichloromethane	ND	6.00	"	"	"	"	"	"	U
Bromoform	ND	5.00	"	"	"	"	"	"	U
Bromomethane	ND	10.0	"	"	"	"	"	"	U
Carbon Disulfide	ND	5.00	"	"	"	"	"	"	U
Carbon Tetrachloride	ND	5.00	"	"	"	"	"	"	U
Chlorobenzene	ND	5.00	"	"	"	"	"	"	U
Chloroethane	ND	10.0	"	"	"	"	"	"	U
Chloroform	ND	5.00	"	"	"	"	"	"	U
Chloromethane	ND	10.0	"	"	"	"	"	"	U
cis-1,3-Dichloropropene	ND	5.00	"	"	"	"	"	"	U
Dibromochloromethane	ND	5.00	"	"	"	"	"	"	U
Ethylbenzene	ND	5.00	"	"	"	"	"	"	U
Methylene Chloride	7.18 U	6.00	"	"	"	"	"	"	B
Styrene	ND	5.00	"	"	"	"	"	"	U
Tetrachloroethene	ND	5.00	"	"	"	"	"	"	U
Toluene	ND	5.00	"	"	"	"	"	"	U
trans-1,3-Dichloropropene	ND	5.00	"	"	"	"	"	"	U
Trichloroethene	ND	5.00	"	"	"	"	"	"	U
Vinyl chloride	ND	10.0	"	"	"	"	"	"	U
Xylenes, total	ND	6.00	"	"	"	"	"	"	U
cis-1,2-Dichloroethene	ND	5.00	"	"	"	"	"	"	U
trans-1,2-Dichloroethene	ND	5.00	"	"	"	"	"	"	U

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

WC-Hanford, Inc. 2620 Fermi Avenue Richland WA, 99354	Project: RC-116 Project Number: [none] Project Manager: Joan Kessner	**Reported:** 03/09/2009 11:59

J189K5
0902067-24 (Solid)

K 12/5/09

Lionville Laboratory

Volatile Organic Compounds by SW846 8260B

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Tentatively Identified Compound	0.00		ug/kg wet	1	1900092	02/25/2009	02/25/2009	8260B	U
Surrogate: 1,2-Dichloroethane-d4		*97 %*	*63-151*		"	"	"	"	
Surrogate: Toluene-d8		*104 %*	*68-140*		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*108 %*	*66-122*		"	"	"	"	

Appendix 4

Laboratory Narrative and Chain-of-Custody Documentation

LVL
LIONVILLE LABORATORY

204 Welsh Pool Road
Exton, Pennsylvania 19341
Phone (610) 280-3000
Fax (610) 280-3041

Case Narrative
REVISION

This narrative is issued to revise item 5, where matrix QC is associated with client SDG# K1543.

Client: WC-HANFORD RC-116
LVL #: 0902067
SDG/SAF # K1544 / RC-116

TW.O. #: 60049-001-001-0001-00
Date Received: 02-21-2009

GC/MS VOLATILE

Twenty-two (22) solid samples were collected on 02-19-2009

The samples and associated QC samples were analyzed according to criteria set forth in Lionville Laboratory SOPs based on Soil Method 5030A for TCE. Volatile target compounds on 02-24,25-2009.

The following is a summary of QC results accompanying the sample results. Lionville Laboratory (LvL) certifies that all test results meet the requirements of NELAC except as noted below:

1. Samples were analyzed within hold time.
2. Samples are reported on a "wet weight" basis.
3. Non-target compounds were not detected in these samples.
4. All surrogate recoveries were within acceptance criteria.
5. All matrix spike recoveries were within acceptance criteria. Matrix QC for preparation batch L903088 is associated with WCH SDG# K1543 (LVL# 0902061).
6. All blank spike recoveries were within acceptance criteria.
7. The method blanks contained the common laboratory contaminant Methylene Chloride at levels less than the CRQL.
8. Internal standard areas were outside QC limits for sample J189K5. Associated matrix spike analyses (J189K5MS) and J189K5MSD) fulfilled its reanalysis requirement.
9. Manual integrations are performed according to SOP QA-125 to produce quality data with utmost integrity. All manual integrations are required to be technically valid and properly documented. Appropriate technical flags are defined in the Glossary ("Technical Flags For Manual Integration").
10. LvL is NELAP accredited by the State of Pennsylvania. For a complete listing of accrediting authorities and the corresponding analytes/methods, please contact your Project Manager

[illegible]

The results presented in this report relate only to the analytical testing and condition of the samples at receipt and during storage. All pages of this report are integral parts of the analytical data. Therefore, this report should only be reproduced in its entirety of 102 pages.

2

11 "I certify that this sample data package is in compliance with SOW requirements, both technically and for completeness, other than the conditions detailed above. Release of the data contained in this hard-copy data package has been authorized by the Laboratory Manager or a designee, as verified by the following signature."

John Daniels
Laboratory Manager
Lionville Laboratory

4/4/09
Date

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-116-815

Page 1 of 1

ollector: T. Sund

Company Contact: JOAN KESSNER

Telephone No.: 375 4684

Project Coordinator: WEISS, RL

Price Code: 9K

Data Turnaround: 45 Days

roject Designation: Columbia River Component of the RCBRA - Sediment

Sampling Location: SSD TRIP

SAF No.: RC-116

e Chest No.: WCH-08-013, 072, 022

Field Logbook No.: EL-1631-1

COA: BESCRC6520

Method of Shipment: FED EX

hipped To: EBERLINE SERVICES [✓ LIONVILLE]

Offsite Property No.: N/A

Bill of Lading/Air Bill No.: 796361208296

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

8500010

Preservation	Cool 4C
Type of Container	G
No. of Container(s)	1
Volume	125g
SAMPLE ANALYSIS	See item (1) in Special Instructions

Sample No.	Matrix *	Sample Date	Sample Time	
18678	OTHER SOLID	2/19/09	0730	X

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Sam Sund	2/19/09 1400	Kelly B	2/19/09 1030
Kel B	2/20/09 0800	D. Hellelberg	2/20/09 0800
D. Hellelberg	2/20/09 1200	Fedex	2/20/09 1200
Fed Ex	2-21-09 1045		2-21-09 1045
Fed Ex	2-23-09 0850		2-23-09 0850

SPECIAL INSTRUCTIONS

(1) VOA - 8260A (TCL) {1,1,1-Trichloroethane, 1,1,2,2-Tetrachloroethane, 1,1,2-Trichloroethane, 1,1-Dichloroethane, 1,1-Dichloroethene, 1,2-Dichloroethane, 1,2-Dichloropropane, 2-Butanone, 2-Hexanone, 4-Methyl-2-Pentanone, Acetone, Benzene, Bromodichloromethane, Bromoform, Bromomethane, Carbon disulfide, Carbon tetrachloride, Chlorobenzene, Chloroethane, Chloroform, Chloromethane, cis-1,2-Dichloroethylene, cis-1,3-Dichloropropene, Dibromochloromethane, Ethylbenzene, Methylene chloride, Styrene, Tetrachloroethene, Toluene, trans-1,2-Dichloroethylene, trans-1,3-Dichloropropene, Trichloroethene, Vinyl chloride, Xylenes (total)}

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location having custody of samples for shipment to lab.

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION — Received By: Title: Date/Time:

FINAL SAMPLE DISPOSITION — Disposal Method: Disposed By: Date/Time:

WCH-EE-011

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-116-819 | Page 1 of 1

ollector SJ Martin	Company Contact RIAN KESSNER	Telephone No. 375-4688	Project Coordinator WEISS, RL
roject Designation Columbia River Component of the RC BRA - Sediment	Sampling Location SSP, TRIP		SAF No. RC-116
e Chest No. WCH-08-013, 022, 072	Field Logbook No. EL-1610-1	COA DESCRC6520	Method of Shipment FEDEX
hipped To LIONVILLE SERVICES LIONVILLE	Offsite Property No. N/A		Bill of Lading/Air Bill No. 796361202296

Price Code 9K

Data Turnaround 45 Days

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

Preservation	Cool 4C
Type of Container	G
No. of Container(s)	1
Volume	250g

SAMPLE ANALYSIS: See item (1) in Special Instructions

Sample No.	Matrix *	Sample Date	Sample Time	See item (1) in Special Instructions
18683	OTHER SOLID	2/19/09	0740	X

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
SJ Martin	2-19-09 / 1630		2-19-09 / 1630
GFB	2/20/09 0800		2/20/09 0800
	2/20/09 1200	FedEx	2/20/09 1200
FedEx	2-21-09 1045		2-21-09 1045
FedEx	2-23-09 0850		2-23-09 0850

SPECIAL INSTRUCTIONS

(1) VOA - 8260A (TCL) {1,1,1-Trichloroethane, 1,1,2,2-Tetrachloroethane, 1,1,2-Trichloroethane, 1,1-Dichloroethane, 1,1-Dichloroethene, 1,2-Dichloroethane, 1,2-Dichloropropane, 2-Butanone, 2-Hexanone, 4-Methyl-2-Pentanone, Acetone, Benzene, Bromodichloromethane, Bromoform, Bromomethane, Carbon disulfide, Carbon tetrachloride, Chlorobenzene, Chloroethane, Chloroform, Chloromethane, cis-1,2-Dichloroethylene, cis-1,3-Dichloropropene, Dibromochloromethane, Ethylbenzene, Methylenechloride, Styrene, Tetrachloroethene, Toluene, trans-1,2-Dichloroethylene, trans-1,3-Dichloropropene, Trichloroethene, Vinyl chloride, Xylenes (total)}

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab

Matrix *
S = Soil
SE = Sediment
SO = Solid
SL = Sludge
W = Water
O = Oil
A = Air
DS = Drum Solids
DL = Drum Liquids
T = Tissue
WI = Wipe
L = Liquid
V = Vegetation
X = Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-116-1330 Page 1 of 2

Collector: B M	Company Contact: JOAN KESSNER; Telephone No.: 375-4688	Project Coordinator: KESSNER, JH	Price Code: 9K; Data Turnaround: 45 Days
Project Designation: Columbia River Component of the RCBRA - Sediment	Sampling Location: HA- 2 SSD	SAF No.: RC-116	
Ice Chest No.: WCH-08-013, 022, 072	Field Logbook No.: EL-1631-1; COA: 01SCRCR520	Method of Shipment: FEDEX	
Shipped To: EBERLINE SERVICES LIONVILLE	Offsite Property No.: N/A	Bill of Lading/Air Bill No.: 796360120 8296	

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

0900000

Preservation	None	None	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	None
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	aG	aG	G	-
No. of Container(s)	1	1	1	1	1	1	1	1	1	1
Volume	1500g	100g	10g	10g	250g	250g	125g	250g	250g	1
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Technetium-99	See item (2) in Special Instructions	See item (3) in Special Instructions	PCBs - 8082	Pesticides - 8081	Semi-VOA - 8270	See item (4) in Special Instructions	

Sample No.	Matrix *	Sample Date	Sample Time										
J16985	OTHER SOLID	2/19/09	921					X	X	X	X	X	

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab.

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
B Bishop	2/19/09 1130	Eric A	2/19/09 1630
Eric A	2/20/09 0800	D Hedberg	2/20/09 0800
D Hedberg	2/20/09 1100	Fedex	2/26/09 1200
[illegible]	2-21-09 1045	J Vymnuth	2-21-09 1045
[illegible]	2-23-09 0850	J Vymnuth	2-23-08 0850

SPECIAL INSTRUCTIONS

(1) Gamma Spec - GEA (Full List) [Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238]

(2) Strontium-89,90 -- Total Sr, Isotopic Uranium (Uranium-233/234, Uranium-235, Uranium-238), Isotopic Plutonium

(3) ICP Metals - 6010 (Full List) [Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Titanium, Vanadium, Zinc]; Mercury - 7471 - (1.5)

(4) VOA - 8260 (TCL) [1,1,1-Trichloroethane, 1,1,2,2-Tetrachloroethane, 1,1,2-Trichloroethane, 1,1-Dichloroethane, 1,1-Dichloroethene, 1,2-Dichloroethane, 1,2-Dichloropropane, 2-Butanone, 2-Hexanone, 4-Methyl-2-Pentanone, Acetone, Benzene, Bromodichloromethane, Bromoform, Bromomethane, Carbon disulfide, Carbon tetrachloride, Chlorobenzene, Chloroethane, Chloroform, Chloromethane, cis-1,2-Dichloroethylene, cis-1,3-Dichloropropene, Dibromochloromethane, Ethylbenzene, Methylene chloride, Styrene, Tetrachloroethene, Toluene, trans-1,2-Dichloroethylene, [illegible]

Matrix *

[illegible]

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-116-131 | Page 1 of 2

Collector: BA

Company Contact: JOAN KESSNER | Telephone No: 375-4688

Project Coordinator: KESSNER, JH

Price Code: 9K | Data Turnaround: 45 Days

Project Designation: Columbia River Component of the RC BRA - Sediment

Sampling Location: HA- 4 SSD

SAF No.: RC-116

Ice Chest No.: WCH-08-013, 022, 072

Field Logbook No.: EL-1631-3

COA: BENCRC6536

Method of Shipment: FED EX

Shipped To: FULFLINE SERVICES (LOUISVILLE)

Offsite Property No.: N/A

Bill of Lading/Air Bill No.: 796361208276

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

Preservation	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	aG	aG	G	-
No. of Container(s)	1	1	1	1	1	1	1	1	1	5
Volume	1500g	250g	10g	10g	250g	250g	125g	250g	250g	[illegible]
SAMPLE ANALYSIS	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	

Sample No.	Matrix *	Sample Date	Sample Time										
J18986	OTHER SOLID	2/19/09	1010					X	X	X	X	X	

Sampler is available to remove samples from controlled storage. Shipper removed samples from storage location, taking custody of samples for shipment to lab.

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
B. Taylor B. Tyl	2/19/09 1620	Eric A	2/19/09 1630
Eric A	2/20/09 0800	D. Heidelberg	2/20/09 0800
D. Heidelberg	2/20/09 1200	Fedex 2/20/09	1200
[illegible]	2-21-09 1045	[illegible]	2-21-09 1045
[illegible]	2-23-09 1050	[illegible]	2-23-09 1050

SPECIAL INSTRUCTIONS

(1) Gamma Spec - Add-on (Americium-241, Antimony-125, Beryllium-7, Cerium-144, Cesium-134, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238)

(2) Strontium-89,90 - Total Sr; Isotopic Thorium {Thorium-232}; Isotopic Uranium {Uranium-233/234, Uranium-235, Uranium-238}; Isotopic Plutonium

(3) ICP Metals - 6010 (Trace) {Aluminum, Antimony, Arsenic, Barium, Beryllium, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Titanium, Vanadium, Zinc}; Mercury - 7471 - (CVA)

(4) VOA - 8260A (TCL) {1,1,1-Trichloroethane, 1,1,2,2-Tetrachloroethane, 1,1,2-Trichloroethane, 1,1-Dichloroethane, 1,1-Dichloroethene, 1,2-Dichloroethane, 1,2-Dichloropropane, 2-Butanone, 2-Hexanone, 4-Methyl-2-Pentanone, Acetone, Benzene, Bromodichloromethane, Bromoform, Bromomethane, Carbon disulfide, Carbon tetrachloride, Chlorobenzene, Chloroethane, Chloroform, Chloromethane, cis-1,2-Dichloroethylene, cis-1,3-Dichloropropene, Ethylbenzene, Methylene chloride, [illegible]

Matrix *
[illegible]

LABORATORY SECTION | Received By | Title | Date/Time

FINAL SAMPLE DISPOSITION | Disposal Method | Disposed By | Date/Time

WCH-EE-011

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-116-1332 Page 1 of 2

Collector	**Company Contact** JOAN KESSNER	**Telephone No.** 375-4688	**Project Coordinator** KESSNER, JM
Project Designation Columbia River Component of the RCBRA - Sediment	**Sampling Location** HA- 6 SSD		**SAF No.** RC-116
Ice Chest No. WCH08-013,022,072	**Field Logbook No.** EL-1651-1	**COA** DESCHC6320	**Method of Shipment** FEDEX
Shipped To EBERLINE SERVICES (RICHMOND)	**Offsite Property No.** N/A		**Bill of Lading/Air Bill No.** 796361208296

Price Code 9K

Data Turnaround 45 Days

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

2900062

Preservation	None	None	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	None
Type of Container	G/P	G/P	G/P	G/P	aG/P	aG	G	aG	G	[illegible]
No. of Container(s)	1	1	1	1	1	1	1	1	1	1
Volume	1500g	150g	10g	10g	250g	250g	125g	250g	250g	1
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Technetium-99	See item (2) in Special Instructions	See item (3) in Special Instructions	PCBs - 8082	Pesticides 8081	Semi-VOA - 8270A (TCL)	See item (4) in Special Instructions	

Sample No.	Matrix *	Sample Date	Sample Time										
J10987	OTHER SOLID	2/19/05	1030					X	X	X	X	X	

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location using custody of samples for shipment to lab.

CHAIN OF POSSESSION Sign/Print Names

Relinquished By/Removed From B [illegible]	Date/Time 2/19/05 1630	Received By/Stored In Eric A	Date/Time 2/19/05 1630
Relinquished By/Removed From Eric A	Date/Time 7/20/09 0800	Received By/Stored In D Heidelberg	Date/Time 7/20/09 0800
Relinquished By/Removed From D Heidelberg	Date/Time 7/20/09 1200	Received By/Stored In Fed Ex	Date/Time 7/20/09 1200
Relinquished By/Removed From FedEx	Date/Time 7.21.09 1045	Received By/Stored In	Date/Time 7.21.09 1045
Relinquished By/Removed From FedEx	Date/Time 7.22.09 1030	Received By/Stored In	Date/Time 7.23.09 1030
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) {Americium-241, Antimony-125, Beryllium-7, Cerium-144, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Thorium-228}

(2) Strontium-89,90 - Total Sr; Isotopic Thorium {Thorium-228, Isotopic Uranium {Uranium-233/234, Uranium-235, Uranium-238}; Isotopic Plutonium

(3) ICP Metals - 6010 (Full List) {Aluminum, Antimony, Arsenic, Barium, Beryllium, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Titanium, Vanadium, Zinc}; Mercury - 7471 (CV AA)

(4) VOA - 8260A (TCL) {1,1,1-Trichloroethane, 1,1,2,2-Tetrachloroethane, 1,1,2-Trichloroethane, 1,1-Dichloroethane, 1,1-Dichloroethene, 1,2-Dichloroethane, 1,2-Dichloropropane, 2-Butanone, 2-Hexanone, 4-Methyl-2-Pentanone, Acetone, Benzene, Bromodichloromethane, Bromoform, Bromomethane, Carbon disulfide, Carbon tetrachloride, Chlorobenzene, Chloroethane, Chloroform, Chloromethane, cis-1,2-Dichloroethylene, cis-1,3-Dichloropropene, Dibromochloromethane, [illegible]

Matrix *
S = Soil
SE = Sediment
SO = Solid
SL = Sludge
W = Water
O = Oil
A = Air
DS = Drum Solids
DL = Drum Liquids
T = Tissue
WI = Wipe
L = Liquid
V = Vegetation
X = Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-116-1333 Page 1 of 2

Collector 15⁶	**Company Contact** JOAN KESSNER **Telephone No.** 375-4686	**Project Coordinator** KESSNER, JH	**Price Code** 9K **Data Turnaround** 45 Days
Project Designation Columbia River Component of the 300 ERA - Sediment	**Sampling Location** HA- 8 SSD	**SAF No.** RC-116	
Ice Chest No. WCH-08-013,022,072	**Field Logbook No.** EL-1613-1 **COA** [illegible]	**Method of Shipment** FED EX	
Shipped To EBERLINE SERVICES [✓ RICHMOND]	**Offsite Property No.** N/A	**Bill of Lading/Air Bill No.** 796361208296 ~~WCH-08-GLPH~~ 2/20/09	

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

Preservation	None	None	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	None
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	aG	aG	aG	
No. of Container(s)	1	1	1	1	1	1	1	1	1	1
Volume	1500g	150g	10g	10g	250g	250g	125g	250g	250g	[illegible]
SAMPLE ANALYSIS	[illegible]	[illegible]	[illegible]	See item [illegible] in Special Instructions	See item [illegible] in Special Instructions	[illegible]	[illegible]	[illegible]	See item [illegible] in Special Instructions	

Sample No.	Matrix *	Sample Date	Sample Time										
J18988	OTHER SOLID	2/17/09	1046					X	X	X	X	X	

Samples unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab

CHAIN OF POSSESSION	Date/Time	Sign/Print Names Received By/Stored In	Date/Time
Relinquished By/Removed From: [illegible]	2/18/09 1630	Received By/Stored In: [illegible]	2/18/09 1630
Relinquished By/Removed From: [illegible]	2/20/09 0800	Received By/Stored In: D. Heckelberg	2/20/09 0800
Relinquished By/Removed From: D. Heckelberg	2/20/09 12:00	Received By/Stored In: FedEx	2/20/09 1200
Relinquished By/Removed From: [illegible]	2.21.09 1045	Received By/Stored In: [illegible]	2.21.09 1045
Relinquished By/Removed From: [illegible]	2.23.09 0850	Received By/Stored In: [illegible]	2.23.09 0850
Relinquished By/Removed From:		Received By/Stored In:	

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) {Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Thorium-228, Uranium-235};
(2) Strontium-89,90 - Total Sr, Isotopic Thorium {Thorium-232}; Isotopic Uranium {Uranium-233/234, Uranium-235, Uranium-238}; Isotopic Plutonium
(3) ICP Metals - 6010 (Full List) {Aluminum, Antimony, Arsenic, Barium, Beryllium, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc}; Mercury - 7471 (CVAA)
(4) VOA - 8260A (TCL) {1,1,1-Trichloroethane, 1,1,2,2-Tetrachloroethane, 1,1,2-Trichloroethane, 1,1-Dichloroethane, 1,1-Dichloroethene, 1,2-Dichloroethane, 1,2-Dichloropropane, 2-Butanone, 2-Hexanone, 4-Methyl-2-Pentanone, Acetone, Benzene, Bromodichloromethane, Bromoform, Bromomethane, Carbon disulfide, Carbon tetrachloride, Chlorobenzene, Chloroethane, Chloroform, Chloromethane, cis-1,2-Dichloroethylene, cis-1,3-Dichloropropene, Dibromochloromethane, [illegible]

Matrix *
S = Soil
SE = Sediment
SO = Solid
SL = Sludge
W = Water
O = Oil
A = Air
DS = Drum Solids
DL = Drum Liquids
T = Tissue
WI = Wipe
L = Liquid
V = Vegetation
X = Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-013

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-116-1335 Page 1 of 2

Collector L S	Company Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator KESSNER, JT
Project Designation Columbia River Component of the RCBRA - Sediment	Sampling Location EIA 3 SSE		SAF No. RL-116
Ice Chest No. WCH-08-013, 022, 022	Field Logbook No. EL-1631-3	COA RE5CRC6520	Method of Shipment FED EX
Shipped To EBERLINE SERVICES [✓ LIONVILLE]	Offsite Property No. N/A		Bill of Lading/Air Bill No. 796361268296

Price Code 9K

Data Turnaround 45 Days

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

Preservation	None	None	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	None
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	aG	aG	G	[illegible]
No. of Container(s)	1	1	1	1	1	1	1	1	1	1
Volume	1500g	100g	1g	10g	250g	250g	125g	250g	250g	1
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Technetium-99	See item (2) in Special Instructions	See item (3) in Special Instructions	PCBs - 8082	[illegible]	[illegible]	See item (4) in Special Instructions	

Sample No.	Matrix *	Sample Date	Sample Time										
J18990	OTHER SOLID	2/15/09	1150					X	X	X	X	X	

Sampler is available to retrieve samples from controlled storage. Shipper removes samples from storage location taking custody of samples for shipment to lab

CHAIN OF POSSESSION

Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
	2-19-09 / 1630	R. B	2-19-09 / 1630
Kit 2/20/09	0830	Blwxlwal 2/20/09	0830
Blwxlwal 2/20/09	1200	FedEx 2/20/09	1200
FedEx	2-21-09 / 1045		2-21-09 / 1045
FedEx	2-23-09 / 1055		2-23-09 / 1055

SPECIAL INSTRUCTIONS

(1) Gamma Spec - [illegible] (Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238)

(2) Strontium-89,90 - Total Sr; Isotopic Thorium (Thorium-232); Isotopic Uranium (Uranium-233/234, Uranium-235, Uranium-238); Isotopic Plutonium

(3) ICP Metals - 6010 (Full List (Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Titanium, Vanadium, Zinc); Mercury - 7471 (CVAA)

(4) VOA - 8260A (TCL) (1,1,1-Trichloroethane, 1,1,2,2-Tetrachloroethane, 1,1,2-Trichloroethane, 1,1-Dichloroethane, 1,1-Dichloroethene, 1,2-Dichloroethane, 1,2-Dichloropropane, 2-Butanone, 2-Hexanone, 4-Methyl-2-Pentanone, Acetone, Benzene, Bromodichloromethane, Bromoform, Bromomethane, Carbon disulfide, Carbon tetrachloride, Chlorobenzene, Chloroethane, Chloroform, Chloromethane, cis-1,2-Dichloroethylene, cis-1,3-Dichloropropene, Dibromochloromethane, [illegible]

Matrix *

S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION Received By Title Date/Time

FINAL SAMPLE DISPOSITION Disposal Method Disposed By Date/Time

WCH-EE-011

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-116-4336 Page 1 of 1

Collector L Shatter	Company Contact RIAN KESSNER	Telephone No. 375-4666	Project Coordinator KESSNER, JH
Project Designation Columbia River Component of the RCBRA - Sediment	Sampling Location 100-F SSR		SAF No. RC-116
Ice Chest No. WH-08-03, 022, 072	Field Logbook No. EL-1610-1	COA RESRCS620	Method of Shipment FED EX
Shipped To EBERLINE SERVICES (DONVILLE)	Offsite Property No. N/A		Bill of Lading/Air Bill No. 796361268296

Price Code 9K

Data Turnaround
45 Days

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

Preservation	None	None	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	None
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	aG	aG	aG	[illegible]
No. of Container(s)	1	1	1	1	1	1	1	1	1	1
Volume	1500g	10g	10g	10g	250g	250g	250g	250g	250g	[illegible]
SAMPLE ANALYSIS	See Item (1) in Special Instructions	Carbon-14	Technetium-99	See Item (2) in Special Instructions	See Item (3) in Special Instructions	PCBs - 8082	Pesticides 8081	Semi-VOA - 8270A (CLP)	See Item (4) in Special Instructions	

Sample No.	Matrix *	Sample Date	Sample Time										
J10991	OTHER SOLIDS	2/17/09	0940					X	X	X	X	X	

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage & [illegible] custody of samples for shipment to lab.

CHAIN OF POSSESSION		Sign/Print Names	
Relinquished By/Removed From L Shatter	Date/Time 2/19/09 / 1630	Received By/Stored In KL B	Date/Time 2/19/09 1630
Relinquished By/Removed From KL B	Date/Time 2/20/09 0800	Received By/Stored In B Woodward	Date/Time 2/20/09 0800
Relinquished By/Removed From B Woodward	Date/Time 2/20/09 1200	Received By/Stored In FedEx	Date/Time 2/20/09 1200
Relinquished By/Removed From	Date/Time 2-21-09 / 1045	Received By/Stored In	Date/Time 2-21-09 / 1045
Relinquished By/Removed From	Date/Time 2-23-09 / 0850	Received By/Stored In	Date/Time 2-23-09 / 0850
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time

SPECIAL INSTRUCTIONS

(1) Gamma Spec - {Full List} {Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238}
(2) Strontium-89,90 - Total Sr; Isotopic Thorium {Thorium-232}; Isotopic Uranium {Uranium-233/234, Uranium-235, Uranium-238}; Isotopic Plutonium
(3) ICP Metals - 6010 {TAL+B+Bi} {Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc}; Mercury - 7471 - {CV}
(4) VOA - 8260A {CLP} {1,1,1-Trichloroethane, 1,1,2,2-Tetrachloroethane, 1,1,2-Trichloroethane, 1,1-Dichloroethane, 1,1-Dichloroethene, 1,2-Dichloroethane, 1,2-Dichloropropane, 2-Butanone, 2-Hexanone, 4-Methyl-2-Pentanone, Acetone, Benzene, Bromodichloromethane, Bromoform, Bromomethane, Carbon disulfide, Carbon tetrachloride, Chlorobenzene, Chloroethane, Chloroform, Chloromethane, cis-1,2-Dichloroethylene, cis-1,3-Dichloropropene, Dibromochloromethane, [illegible]

Matrix *
S = Soil
SE = Sediment
SO = Solid
SL = Sludge
W = Water
O = Oil
A = Air
DS = Drum Solids
DL = Drum Liquids
T = Tissue
WI = Wipe
L = Liquid
V = Vegetation
X = Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Washington Closure Hanford	**CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST**	RC-116-1317	Page 1 of 2
Collector: TS	Company Contact: JOAN KESSNER / Telephone No. 375-4688	Project Coordinator: KESSNER, JH	Price Code 9K / Data Turnaround 45 Days
Project Designation: Columbia River Component of the RCBRA - Sediment	Sampling Location: HA-5 SSD	SAF No. RC-116	
Ice Chest No. WCH-08-03,022,072	Field Logbook No. EL-1631-1 / COA HLSCRCA520	Method of Shipment: FED EX	
Shipped To: EBERLINE SERVICES (RICHMOND)	Offsite Property No. N/A	Bill of Lading/Air Bill No. 796341208296	

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

991000

			Preservation	None	None	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	None
			Type of Container	G/P	G/P	G/P	G/P	G/P	aG	aG	aG	G	-
			No. of Container(s)	1	1	1	1	1	1	1	1	1	1
			Volume	1500g	100g	10g	10g	250g	250g	125g	250g	250g	-
SAMPLE ANALYSIS				See item (1) in Special Instructions	Carbon-14	Technetium-99	See item (2) in Special Instructions	See item (3) in Special Instructions	PCBs - 8082	Pesticides 8081	Semi-VOA 8270	See item (4) in Special Instructions	
Sample No.	Matrix *	Sample Date	Sample Time										
J18992	OTHER SOLID	2/19/09	1025					X	X	X	X	X	

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of all samples for shipment to lab

CHAIN OF POSSESSION Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
	2-5-09/1630	RFB	2-5-09/1630
RFB	2/20/09 0800	B Woodward	2/20/09 0800
B Woodward	2/20/09 1200	Fed Ex	2/20/09 1200
Fed Ex	2-23-09/1045		2-23-09/1045
Fed Ex	2-23-09/0820		2-23-09/0820

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Add-on) (Americium-241, Antimony-125, Beryllium-7, Cerium-144, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238)
(2) Strontium-89,90 - Total Sr; Isotopic Thorium (Thorium-232); Isotopic Uranium (Uranium-233/234, Uranium-235, Uranium-238); Isotopic Plutonium
(3) ICP Metals - 6010 (Add-on) (Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc); Mercury - 7471 (CV)
(4) VOA - 8260A (TCL) (1,1,1-Trichloroethane, 1,1,2,2-Tetrachloroethane, 1,1,2-Trichloroethane, 1,1-Dichloroethane, 1,1-Dichloroethene, 1,2-Dichloroethane, 1,2-Dichloropropane, 2-Butanone, 2-Hexanone, 4-Methyl-2-Pentanone, Acetone, Benzene, Bromodichloromethane, Bromoform, Bromomethane, Carbon disulfide, Carbon tetrachloride, Chlorobenzene, Chloroethane, Chloroform, Chloromethane, cis-1,2-Dichloroethylene, cis-1,3-Dichloropropene, Dibromochloromethane, Ethylbenzene, Methylene chloride, Styrene, Tetrachloroethene, Toluene, [illegible]

Matrix *
S = Soil
SE = Sediment
SO = Solid
SL = Sludge
W = Water
O = Oil
A = Air
DS = Drum Solids
DL = Drum Liquids
T = Tissue
WI = Wipe
L = Liquid
V = Vegetation
X = Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

Washington Closure Hanford	**CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST**	RC116-1350	Page 1 of 2
Collector BM	Company Contact JOAN KESSNER	Telephone No. 375-4685	Project Coordinator KESSNER, JH
Price Code 9K	Data Turnaround 45 Days		
Project Designation Columbia River Component of the RCBRA - Sediment	Sampling Location BF - 3 SNG	SAF No. RC 116	
Ice Chest No. WCH-08-013, 072, 122	Field Logbook No. EL-1630-1	COA [illegible]	Method of Shipment FEDEX
Shipped to EBERLINE SERVICES [✓ OAKVILLE]	Offsite Property No. N/A	Bill of Lading/Air Bill No. 796361 208296	

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

Preservation	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Type of Container	G/P	G/P	G/P	G/P	G/P	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
No. of Container(s)	1	1	1	1	1	[illegible]	1	1	[illegible]	1
Volume	[illegible]	100g	10g	10g	250g	250g	[illegible]	[illegible]	[illegible]	[illegible]
SAMPLE ANALYSIS	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	

Sample No.	Matrix *	Sample Date	Sample Time										
J16965	OTHER SOLID	2/19/09	1128					X	X	X	X	X	

Samples [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] samples from storage location [illegible] of samples for [illegible]

CHAIN OF POSSESSION Sign/Print Names

Relinquished By/Removed From B Mayhew [illegible]	Date/Time 2/19/09 1620	Received By/Stored In Frig 1	Date/Time 2/19/09 1620
Relinquished By/Removed From Frig 1	Date/Time 2/20/09 0800	Received By/Stored In Dite Delberg [illegible]	Date/Time 2/20/09 0800
Relinquished By/Removed From Dite Delberg [illegible]	Date/Time 2/20/09 1200	Received By/Stored In Fedex	Date/Time 2/20/09 1200
Relinquished By/Removed From [illegible]	Date/Time 2-20-09 / 1015	Received By/Stored In [illegible]	Date/Time 2-20-09 / 1015
Relinquished By/Removed From [illegible]	Date/Time 2-23-09 / 0850	Received By/Stored In [illegible]	Date/Time 2-23-09 / 0850
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time

SPECIAL INSTRUCTIONS

(1) Gamma Spec - [illegible]; Americium-241, Antimony-125, Beryllium-7, Cerium-144, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238}

(2) Strontium-89/90 - [illegible] Isotopic Uranium [illegible] Isotopic Thorium [illegible] Isotopic Plutonium

(3) ICP Metals - 6010 [illegible] {Aluminum, Antimony, Arsenic, Barium, Beryllium, [illegible] Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, [illegible] Thallium, Tin, Uranium, Vanadium, Zinc}; Mercury - 7471 [illegible]

(4) VOA - 8260A (TCL) {1,1,1-Trichloroethane, 1,1,2,2-Tetrachloroethane, 1,1,2-Trichloroethane, 1,1-Dichloroethane, 1,1-Dichloroethene, 1,2-Dichloroethane, 1,2-Dichloropropane, 2-Butanone, 2-Hexanone, 4-Methyl-2-Pentanone, Acetone, Benzene, Bromodichloromethane, Bromoform, Bromomethane, Carbon disulfide, Carbon tetrachloride, Chlorobenzene, Chloroethane, Chloroform, Chloromethane, cis-1,2-Dichloroethylene, cis-1,3-Dichloropropene, Dibromochloromethane, [illegible]

Matrix *
[illegible]

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Washington Closure Hanford	**CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST**	RC-116-1351	Page 1 of 2
Collector BM	Company Contact JOAN KESSNER	Telephone No. 373-4688	Project Coordinator KESSNER JH
Project Designation Columbia River Component of the 91 RRA - Sediment	Sampling Location BI - 5 SSD	SAF No. RC-116	Price Code 9K Data Turnaround 45 Days
Ice Chest No. WCH 08-013, 072, 022	Field Logbook No. EL-1630-3	COA DESCRU6550	Method of Shipment FED EX
Shipped To EBERLINE SERVICES (OAK RIDGE)	Offsite Property No. N/A		Bill of Lading/Air Bill No. 796361203856

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

S90000

Preservation	None	None	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	None
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	aG	aG	G	G
No. of Container(s)	1	1	1	1	1	1	1	1	1	1
Volume	1500g	100g	10g	15g	250g	250g	125g	250g	250g	1?
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Technetium-99	See item (2) in Special Instructions	See item (3) in Special Instructions	PCBs - 8082	Pesticides 8081	Semi-VOA 8270 (TCL)	See item (4) in Special Instructions	

Sample No.	Matrix *	Sample Date	Sample Time										
J19986	OTHER SOLID	2/19/09	1154					X	X	X	X	X	

Sampler unable to remove samples from composite storage. Shipper removed samples from storage location taking custody of samples for shipment to lab.

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
[illegible]	2/19/09 1620	[illegible]	2/19/09 1620
Eric A	2/20/09 0800	D Heidelberg	2/20/09 0800
Heidelberg	2/20/09 1206	Fedex	2/20/09 1206
[illegible]	2-23-09 1045	[illegible]	2-23-09 1045
[illegible]	2-23-09 10850	[illegible]	2-23-09 1085?

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (GEA Lab) {Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238};
(2) Strontium-89,90 - Total Sr, Isotopic Thorium {Thorium-228, Thorium-230, Thorium-232}, Isotopic Uranium {Uranium-233/234, Uranium-235, Uranium-238}, Isotopic Plutonium
(3) ICP Metals - 6010 (Full List) {Aluminum, Antimony, Arsenic, Barium, Beryllium, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc}; Mercury - 7471 (CVAA)
(4) VOA - 8260A (TCL) {1,1,1-Trichloroethane, 1,1,2,2-Tetrachloroethane, 1,1,2-Trichloroethane, 1,1-Dichloroethane, 1,1-Dichloroethene, 1,2-Dichloroethane, 1,2-Dichloropropane, 2-Butanone, 2-Hexanone, 4-Methyl-2-Pentanone, Acetone, Benzene, Bromodichloromethane, Bromoform, Bromomethane, Carbon disulfide, Carbon tetrachloride, Chlorobenzene, Chloroethane, Chloroform, Chloromethane, cis-1,2-Dichloroethylene, cis-1,3-Dichloropropene, Dibromochloromethane, [illegible]

Matrix *

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EF-011

Washington Closure Hanford	**CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST**	RC-116-1352	Page 1 of 2
Collector B-[illegible]	Company Contact JOAN KESSNER Telephone No. 375-4688	Project Coordinator KESSNER, JH	Price Code 9K Data Turnaround 45 Days
Project Designation Columbia River Component of the RCBRA - Sediment	Sampling Location [illegible] SSD	SAF No. RC-116	
Ice Chest No. WCH-08-013, 072, 027	Field Logbook No. EL-1651-1 COA [illegible]	Method of Shipment FEDEX	
Shipped To EBERLINE SERVICES [illegible]	Offsite Property No. N/A	Bill of Lading/Air Bill No. 796361203296	

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

6900069

Preservation	None	None	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	None
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	aG	aG	aG	[illegible]
No. of Container(s)	1	1	1	1	1	1	1	1	1	1
Volume	1500g	100g	10g	10g	250g	250g	125g	250g	250g	1
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Technetium-99	See item (2) in Special Instructions	See item (4) in Special Instructions	PCBs - 8082	[illegible]	[illegible]	See item (5) in Special Instructions	

Sample No.	Matrix *	Sample Date	Sample Time										
J16987	OTHER SOLID	2/10/09	1323					X	X	X	X	X	

Sampler unavailable to remove samples from locked storage. Shipper removed samples from storage and maintained custody of samples for shipment to lab.

CHAIN OF POSSESSION		Sign/Print Names	
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
B-[illegible]	2/17/09 1630	Eric A.	2/17/09 1630
Eric A.	2/20/09 0800	D. Heidelberg [illegible]	2/20/09 0800
D. Heidelberg [illegible]	2/20/09 1200	Fedex	2/20/09 1200
[illegible]	2-21-09 1045	[illegible]	2-21-09 1045
[illegible]	2-23-09 1030	[illegible]	2-23-09 0800

SPECIAL INSTRUCTIONS

(1) Gamma Spec - Full List (Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Thorium-228, Uranium-235);

(2) Strontium-89/90 - Total Sr; Isotopic Uranium (Uranium-233/234, Uranium-235, Uranium-238); Isotopic Plutonium

(4) ICP Metals - 6010 (Full List: Aluminum, Antimony, Arsenic, Barium, Beryllium, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Uranium, Vanadium, Zinc); Mercury - 7471 (CVAA)

(5) VOAs - 8260 (Full List: 1,1,1-Trichloroethane, 1,1,2,2-Tetrachloroethane, 1,1,2-Trichloroethane, 1,1-Dichloroethane, 1,1-Dichloroethene, 1,2-Dichloroethane, 1,2-Dichloropropane, 2-Butanone, 2-Hexanone, 4-Methyl-2-Pentanone, Acetone, Benzene, Bromodichloromethane, Bromoform, Bromomethane, Carbon disulfide, Carbon tetrachloride, Chlorobenzene, Chloroethane, Chloroform, Chloromethane, cis-1,2-Dichloroethylene, cis-1,3-Dichloropropene, Dibromochloromethane, [illegible]

Matrix *
S = Soil
SE = Sediment
SO = Solid
SL = Sludge
W = Water
O = Oil
A = Air
DS = Drum Solids
DL = Drum Liquids
T = Tissue
WI = Wipe
L = Liquid
V = Vegetation
X = Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-018

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-116-335J Page 3 of 4

Collector	BM
Company Contact	JOAN KESSNER
Telephone No.	375-4688
Project Coordinator	KESSNER JH
Price Code	9K
Data Turnaround	45 Days
Project Designation	Columbia River Component of the RCBRA - Sediment
Sampling Location	[illegible] 8 SSD
SAF No.	RC-116
Ice Chest No.	WCH-05-013,012,072
Field Logbook No.	EL 1631-1
COA	91 SCURC6520
Method of Shipment	FED EX
Shipped To	EBERLINE SERVICES (RICHMOND)
Offsite Property No.	N/A
Bill of Lading/Air Bill No.	796361208296

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

0200000

Preservation	None	None	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	None
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	aG	aG	aG	[illegible]
No. of Container(s)	1	1	1	1	1	1	2	2	1	1
Volume	1500g	100g	10g	10g	250g	250g	125g	250g	250g	[illegible]
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Technetium-99	See item (2) in Special Instructions	See item (3) in Special Instructions	PCBs - 8082	Pesticides 8081	Semi-VOAs 8270	See item (4) in Special Instructions	

Sample No.	Matrix *	Sample Date	Sample Time										
J18910	OTHER SOLID	2/19/09	1256					X	X	X	X	X	

Courier unavailable to remove samples from controlled storage. Shipper [illegible] samples from storage [illegible] custody of samples [illegible]

CHAIN OF POSSESSION Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
BMaple ESL	2/19/09 1630	Eric A	2/19/09 1630
Eric A	2/20/09 0800	D Heidelberg LSS	2/20/09 0800
D Heidelberg LSS	2/20/09 1200	Fed Ex	2/20/09 1200
[illegible]	2-21-09 1045	[illegible]	2-21-09 1045
[illegible]	2-23-09 1025	[illegible]	2-23-09 1025

SPECIAL INSTRUCTIONS

(1) Gamma Spec - {Full List} {Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238}

(2) Strontium-89,90 - Total Sr; Isotopic Thorium {Thorium-228, 230, 232}; Isotopic Uranium {Uranium-233/234, Uranium-235, Uranium-238}; Isotopic Plutonium

(3) ICP Metals - 6010 {Full List} {Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc}; Mercury - 7471 - (CVA)

(4) VOA - 8260B (TCL) {1,1,1-Trichloroethane, 1,1,2,2-Tetrachloroethane, 1,1,2-Trichloroethane, 1,1-Dichloroethane, 1,1-Dichloroethene, 1,2-Dichloroethane, 1,2-Dichloropropane, 2-Butanone, 2-Hexanone, 4-Methyl-2-Pentanone, Acetone, Benzene, Bromodichloromethane, Bromoform, Bromomethane, Carbon disulfide, Carbon tetrachloride, Chlorobenzene, Chloroethane, Chloroform, Chloromethane, cis-1,2-Dichloroethylene, cis-1,3-Dichloropropene, Dibromochloromethane, [illegible]

Matrix *

S = Soil
SE = Sediment
SO = Solid
SL = Sludge
W = Water
O = Oil
A = Air
DS = Drum Solids
DL = Drum Liquids
T = Tissue
WI = Wipe
L = Liquid
V = Vegetation
X = Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-014

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-116-1354 Page 1 of 2

Collector: 3M

Company Contact: JOAN KESSNER

Telephone No.: 373-4688

Project Coordinator: KESSNER, JH

Price Code: 9K

Data Turnaround: 45 Days

Project Designation: Columbia River Component of the RCBRA - Sediment

Sampling Location: BL-7 SSD

SAF No.: RC-116

Ice Chest No.: WCH-08-013,072,022

Field Logbook No.: EL-1630-1

COA: RESRC6520

Method of Shipment: FED EX

Shipped To: EBERLINE SERVICES [✓ ONSITE]

Offsite Property No.: N/A

Bill of Lading/Air Bill No.: 796361208296

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

Preservation	None	None	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	None
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	aG	aG	aG	
No. of Container(s)	1	1	1	1	1	1	1	1	1	1
Volume	150g	100g	10g	10g	250g	250g	125g	250g	250g	
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon 14	Technetium-99	See item (2) in Special Instructions	See item (3) in Special Instructions	PCBs - 8082	Pesticides 8081	Semi-VOA 8270 (TCL)	See item (4) in Special Instructions	

Sample No.	Matrix *	Sample Date	Sample Time										
[illegible]	OTHER SOLID	2/18/09	1220					X	X	X	X	X	

Samples unavailable to remove samples from controlled storage. Shipper removed samples from storage location fridge 2-20-09 ... for Shipment

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
[illegible]	2/19/09 1600	Eric A	2/19/09 1600
Eric A	2/20/09 0800	D. Hedberg	2/20/09 0800
D. Hedberg	2/20/09 1200	FedEx 2/20/09	1200
[illegible]	2-23-09 1045	[illegible]	2-23-09 1045
[illegible]	2-23-09 1085	[illegible]	2-23-09 1085

SPECIAL INSTRUCTIONS

(1) Gamma Spec - {Full List} {Americium-241, Antimony-125, Beryllium-7, Cerium-144, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238};

(2) Strontium-89,90 - Total Sr; Isotopic Thorium {Thorium-232}; Isotopic Uranium {Uranium-233/234, Uranium-235, Uranium-238}; Isotopic Plutonium

(3) ICP Metals - 6010 {Full List} {Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc}; Mercury - 7471 {Hg};

(4) VOA - 8260A (TCL) {1,1,1-Trichloroethane, 1,1,2,2-Tetrachloroethane, 1,1,2-Trichloroethane, 1,1-Dichloroethane, 1,1-Dichloroethene, 1,2-Dichloroethane, 1,2-Dichloropropane, 2-Butanone, 2-Hexanone, 4-Methyl-2-Pentanone, Acetone, Benzene, Bromodichloromethane, Bromoform, Bromomethane, Carbon disulfide, Carbon tetrachloride, Chlorobenzene, Chloroethane, Chloroform, Chloromethane, cis-1,2-Dichloroethylene, cis-1,3-Dichloropropene, Dibromochloromethane, Ethylbenzene, Methylene chloride, Styrene, Tetrachloroethene, Toluene, [illegible]

Matrix *
S = Soil
SE = Sediment
SO = Solid
SL = Sludge
W = Water
O = Oil
A = Air
DS = Drum Solids
DL = Drum Liquids
T = Tissue
WI = Wipe
L = Liquid
V = Vegetation
X = Other

LABORATORY SECTION — Received By: Title: Date/Time:

FINAL SAMPLE DISPOSITION — Disposal Method: Disposed By: Date/Time:

WCH-EF-011

E200073

3803009

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-116-1355 Page 1 of 2
Collector: [illegible]	Company Contact: JOAN KESSNER Telephone No.: 375-4688	Project Coordinator: KESSNER, JN
Project Designation: Columbia River Component of the RCBRA - Sediment	Sampling Location: [illegible]	SAF No.: RC-116
Price Code: 9K		Data Turnaround: 45 Days
Ice Chest No.: WCH-08-013, 072, 072	Field Logbook No.: EL-1631-E	COA: [illegible]
Method of Shipment: FEDEX		
Shipped To: EBERLINE SERVICES (RSVICE)	Offsite Property No.: N/A	Bill of Lading/Air Bill No.: 796361268296

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

Preservation	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Type of Container	G/P	G/P	G/P	G/P	G/P	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
No. of Container(s)	1	1	1	1	1	1	1	1	1	1
Volume	1500g	100g	50g	10g	250g	250g	125g	250g	25mL	[illegible]
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Technetium-99	See item (2) in Special Instructions	See item (3) in Special Instructions	[illegible]	[illegible]	[illegible]	See item (4) in Special Instructions	

Sample No.	Matrix *	Sample Date	Sample Time										
J189C9	OTHER SOLID	[illegible]	[illegible]					X	X	X	X	X	

Samples unavailable to remove samples from controlled storage. Shipper retrieved samples from storage location [illegible] of samples for shipment to lab.

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From: [illegible]	Date/Time: [illegible] 1630	Received By/Stored In: [illegible]	Date/Time: [illegible] 1630
Relinquished By/Removed From: Ret B	Date/Time: 2/20/09 0800	Received By/Stored In: B[illegible]	Date/Time: 2/20/09 08[illegible]
Relinquished By/Removed From: B[illegible]	Date/Time: 2/20/09 1200	Received By/Stored In: FedEx	Date/Time: 2/20/09 1200
Relinquished By/Removed From: FedEx	Date/Time: 2-21-09 / 1045	Received By/Stored In: [illegible]	Date/Time: 2-21-09 / 1045
Relinquished By/Removed From: FedEx	Date/Time: 2-23-09 / 0850	Received By/Stored In: [illegible]	Date/Time: 2-23-09 / 0850
Relinquished By/Removed From:	Date/Time:	Received By/Stored In:	Date/Time:

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Gel Ext) {Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238}

(2) Strontium-89,90 - Total Sr; Isotopic Thorium {Thorium-232}; Isotopic Uranium {Uranium-233/234, Uranium-235, Uranium-238}; Isotopic Plutonium

(3) ICP Metals - 6010 (TAL list) {Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Titanium, Vanadium, Zinc}; Mercury - 7471 - (CV)

(4) VOA - 8260A (TCL) {1,1,1-Trichloroethane, 1,1,2,2-Tetrachloroethane, 1,1,2-Trichloroethane, 1,1-Dichloroethane, 1,1-Dichloroethene, 1,2-Dichloroethane, 1,2-Dichloropropane, 2-Butanone, 2-Hexanone, 4-Methyl-2-Pentanone, Acetone, Benzene, Bromodichloromethane, Bromoform, Bromomethane, Carbon disulfide, Carbon tetrachloride, Chlorobenzene, Chloroethane, Chloroform, Chloromethane, cis-1,2-Dichloroethylene, cis-1,3-Dichloropropene, Dibromochloromethane, [illegible]

Matrix *

[illegible]

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

Washington Closure Hanford	**CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST**	RC-116-1356	Page 1 of 1
Collector [illegible]	Company Contact JOAN KESSNER	Telephone No. [illegible]	Project Coordinator KESSNER, JH
Project Designation Columbia River Component of the RCBRA - Sediment	Sampling Location DE-1 SSF		SAF No. RC-116
Ice Chest No. WCH-08-083, 022, 072	Field Logbook No. EL-1616-1	COA DESCRC6520	Method of Shipment FEDEX
Shipped To EBERLINE SERVICES (RICHMOND)	Offsite Property No. N/A		Bill of Lading/Air Bill No. 796361208296

Price Code 9K

Data Turnaround 45 Days

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

Preservation	None	None	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	None
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	aG	aG	G	
No. of Container(s)	1	1	1	1	1	1	1	1	1	
Volume	1500g	100g	10g	10g	250g	250g	125g	250g	250g	
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Technetium-99	See item (2) in Special Instructions	See item (3) in Special Instructions	PCBs - 8082	[illegible]	[illegible]	See item (4) in Special Instructions	

Sample No.	Matrix *	Sample Date	Sample Time										
J18VC1	OTHER SOLID	2/19/09	[illegible]					X	X	X	X	X	

Sampler also agree to remove samples from controlled storage. Shipper removed samples from storage location during custody of samples for shipment to lab.

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
[illegible]	2/19/09 1620	R. B.	2/19/09 1620
R. B.	2/20/09 0800	B. Dowland	2/20/09 0800
B. Dowland	2/20/09 1200	FedEx	2/20/09 1200
[illegible]	2-23-09 1045	[illegible]	2-23-09 1045
[illegible]	2-23-09 1050	[illegible]	2-23-09 1050

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) [Americium-241, Antimony-125, Beryllium-7, Cerium-144, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Thorium-232, Uranium-235]

(2) Strontium-89/90 - Total Sr; Isotopic Thorium - [illegible]; Isotopic Uranium (Uranium-233/234, Uranium-235, Uranium-238); Isotopic Plutonium

(3) ICP Metals - 6010 (Full List) (Aluminum, Antimony, Arsenic, Barium, Beryllium, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, [illegible], Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, [illegible], Tin, Uranium, Vanadium, Zinc); Mercury - 7471 [illegible]

(4) VOA - 8260A (TCL) (1,1,1-Trichloroethane, 1,1,2,2-Tetrachloroethane, 1,1,2-Trichloroethane, 1,1-Dichloroethane, 1,1-Dichloroethene, 1,2-Dichloroethane, 1,2-Dichloropropane, 2-Butanone, 2-Hexanone, 4-Methyl-2-Pentanone, Acetone, Benzene, Bromodichloromethane, Bromoform, Bromomethane, Carbon disulfide, Carbon tetrachloride, Chlorobenzene, Chloroethane, Chloroform, Chloromethane, cis-1,2-Dichloroethylene, cis-1,3-Dichloropropene, [illegible]

Matrix *
[illegible]

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

000073

3500003535

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-116-1358 | Page 1 of 2

Collector [illegible]	**Company Contact** JOAN KESSNER	**Telephone No.** 375-4[illegible]	**Project Coordinator** KESSNER, JH
Project Designation Columbia River Component of the RCBRA - Sediment	**Sampling Location** BL 4z SSD		**SAF No.** RC-[illegible]
Ice Chest No. WCH-08-013/08-2022	**Field Logbook No.** EL-1634-1	**COA** OESCRC6520	**Method of Shipment** FEDEX
Shipped To EBERLINE SERVICES [illegible]	**Offsite Property No.** N/A		**Bill of Lading/Air Bill No.** 796361208296

Price Code 9K

Data Turnaround 45 Days

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

#200000

Preservation	None	None	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	None
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	aG	aG	G	
No. of Container(s)	1	1	1	1	1	1	1	1	1	
Volume	1500g	400g	10g	40g	150g	25g	125g	250g	25g	
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Technetium-99	See item (2) in Special Instructions	See item (3) in Special Instructions	[illegible]	[illegible]	Semi-VOA - 8270 (TCL)	See item (4) in Special Instructions	

Sample No.	Matrix *	Sample Date	Sample Time										
J18KC3	OTHER SOLID	2/[illegible]/09	1015					X	X	X	X	X	

Sample unavailable to remain samples in non-controlled storage. Stopped removed samples from storage location taking custody of samples for shipment to lab

CHAIN OF POSSESSION — **Sign/Print Names**

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
[illegible]	2/[illegible] 1630	R. B	2/[illegible] 1630
Ref. B	2/20/09 0800	D. McDalberg LST	2/20/09 09[illegible]
D. McDalberg LST	2/20/09 1200	Fedex 2/20/09	1200
[illegible]	2-23-09 [illegible]	[illegible]	2-23-09 [illegible]
[illegible]	2-23-09/0850	D. [illegible]	2-23-09/0850
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time

SPECIAL INSTRUCTIONS

(1) Gamma Spec - {Add-on} {Americium-241, Antimony-125, Barium-133, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Thorium-228, Uranium-235};
(2) Strontium-89/90 - Total Sr; Isotopic Thorium {Thorium-232}; Isotopic Uranium {Uranium-233/234, Uranium-235, Uranium-238}; Isotopic Plutonium
(3) ICP Metals - 6010 (Full List) {Aluminum, Antimony, Arsenic, Barium, Beryllium, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc}; Mercury - 7471 - (CV);
(4) VOA - 8260A (TCL) {1,1,1-Trichloroethane, 1,1,2,2-Tetrachloroethane, 1,1,2-Trichloroethane, 1,1-Dichloroethane, 1,1-Dichloroethene, 1,2-Dichloroethane, 1,2-Dichloropropane, 2-Butanone, 2-Hexanone, 4-Methyl-2-Pentanone, Acetone, Benzene, Bromodichloromethane, Bromoform, Bromomethane, Carbon disulfide, Carbon tetrachloride, Chlorobenzene, Chloroethane, Chloroform, Chloromethane, cis-1,2-Dichloroethylene, cis-1,3-Dichloropropene, Dibromochloromethane, [illegible]

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EL-011

Washington Closure Hanford	**CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST**	RC-116-1359	Page 1 of 2
Collector [illegible]	Company Contact JOAN KESSNER	Telephone No. 373-4688	Project Coordinator KESSNER, JR
Project Designation Columbia River Component of the RC/RRA - Sediment	Sampling Location BL-4 SNO		SAF No. RC-[illegible]
Ice Chest No. 1WCH-08-012, 027, 072	Field Logbook No. EL-1621-1	COA [illegible]	Method of Shipment FEDEX
Shipped To EBERLINE SERVICES (ERRSVILLE)	Offsite Property No. N/A		Bill of Lading/Air Bill No. 796361208296

Price Code 9K

Data Turnaround 45 Days

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

S200000

Preservation	None	None	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	None
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	aG	aG	G	[illegible]
No. of Container(s)	1		1	1	1	1	1	1	[illegible]	1
Volume	1500g	100g	10g	10g	250g	250g	250g	250g	250g	[illegible]
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Technetium-99	See item (2) in Special Instructions	See item (3) in Special Instructions	PCBs - 8082	Pesticides - 8081	Semi-VOA - 8270 (TCL)	See item (4) in Special Instructions	

Sample No.	Matrix *	Sample Date	Sample Time										
J189C4	OTHER SOLID	2/19/09	1150					X	X	X	X	X	

Sampler unavailable to remove samples from [illegible] storage. Shipper removed samples from storage [illegible] of samples for shipment to lab.

CHAIN OF POSSESSION		Sign/Print Names	
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
[illegible]	2/19/09 / 1030	Ref. B	2/19/09 / 1130
Ref. B	2/20/09 0700	D. Heidelberg	2/20/09 0800
D. Heidelberg	2/20/09 1200	FedEx	2/20/09 1200
[illegible]	2-21-09 / 1045	[illegible]	2-21-09 / 1045
[illegible]	2-23-09 / 1025	[illegible]	2-23-09 / 1025

SPECIAL INSTRUCTIONS

(1) Gamma Spec - {Full List} {Americium-241, Antimony-125, Beryllium-7, Cerium-144, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Thorium-228, Uranium-238}

(2) Strontium-89,90 - Total Sr; Isotopic Plutonium {Plutonium-238, [illegible]}; Isotopic Uranium {Uranium-233/234, Uranium-235, Uranium-238}; Isotopic Thorium

(3) ICP Metals - 6010 {Full List} {Aluminum, Antimony, Arsenic, Barium, Beryllium, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, [illegible] Vanadium, Zinc}; Mercury - 7471 - (CV)

(4) VOA - 8260B (TCL) {1,1,1-Trichloroethane, 1,1,2,2-Tetrachloroethane, 1,1,2-Trichloroethane, 1,1-Dichloroethane, 1,1-Dichloroethene, 1,2-Dichloroethane, 1,2-Dichloropropane, 2-Butanone, 2-Hexanone, 4-Methyl-2-Pentanone, Acetone, Benzene, Bromodichloromethane, Bromoform, Bromomethane, Carbon disulfide, Carbon tetrachloride, Chlorobenzene, Chloroethane, Chloroform, Chloromethane, cis-1,2-Dichloroethylene, cis-1,3-Dichloropropene, Dibromochloromethane, [illegible]

Matrix *

[illegible]

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

BC-116-1392 Page 1 of 2

Collector BG	**Company Contact** JOAN KESSNER	**Telephone No.** 375-4688	**Project Coordinator** KESSNER, JH
Project Designation Columbia River Component of [illegible] RCBRA - Sediment	**Sampling Location** SP- 2 SSO		**SAF No.** BC-116
Ice Chest No. WCH-08-012, 097, 022	**Field Logbook No.** [illegible]	**COA** [illegible]	**Method of Shipment** FED EX
Shipped To [illegible] SERVICES ([illegible])	**Offsite Property No.** N/A		**Bill of Lading/Air Bill No.** 796360120 82960

Price Code 9K

Data Turnaround 45 Days

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

9400076

Preservation	None	None	None	None	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	None
Type of Container	G/P	G/P	G/P	G/P	G/P	[illegible]	[illegible]	[illegible]	[illegible]	-
No. of Container(s)	1	1	1	1	1	1	1	1	1	1
Volume	1500g	100g	[illegible]	[illegible]	150g	250g	125g	250g	250g	[illegible]
SAMPLE ANALYSIS	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	

Sample No.	Matrix *	Sample Date	Sample Time										
J1B9J9	OTHER SOLID	2/19/08	1512					X	X	X	X	X	

Samples unavailable to receive samples from [illegible] storage. Shipper removed samples from storage location [illegible] of samples for shipment to [illegible]

CHAIN OF POSSESSION — **Sign/Print Names**

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
[illegible]	2/19/08 1620	Eric A	2/19/08 1620
Eric A	2/20/08 0800	D Hesselberg	2/20/08 0800
D Hesselberg	2/20/08 1200	[illegible]	2/20/08 1200
[illegible]	2-21-08 1045	[illegible]	2-21-08 1045
[illegible]	2-23-08 1030	[illegible]	2-21-08 1030
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time

SPECIAL INSTRUCTIONS

(1) Gamma Spec - [illegible] {Americium-241, Antimony-125, [illegible] Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Thorium-228};
(2) Strontium-89,90 - Total Sr; Isotopic Thorium {Thorium-228, [illegible]}; Isotopic Uranium {Uranium-233/234, Uranium-235, Uranium-238}; Isotopic Plutonium
(3) ICP Metals - 6010 [illegible] {Aluminum, Antimony, Arsenic, Barium, Beryllium, [illegible] Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc}; Mercury - 7471 [illegible]
(4) VOA - 8260A [illegible] {1,1,1-Trichloroethane, 1,1,2,2-Tetrachloroethane, 1,1,2-Trichloroethane, 1,1-Dichloroethane, 1,1-Dichloroethene, 1,2-Dichloroethane, [illegible] 1,2-Dichloropropane, 2-Butanone, 2-Hexanone, 4-Methyl-2-Pentanone, Acetone, Benzene, [illegible] Bromoform, Bromomethane, Carbon disulfide, Carbon tetrachloride, [illegible] Chlorobenzene, Chloroethane, Chloroform, Chloromethane, cis-1,2-Dichloroethylene, cis-1,3-Dichloropropene, Dibromochloromethane, [illegible]

Matrix *

LABORATORY SECTION Received By — Title — Date/Time

FINAL SAMPLE DISPOSITION Disposal Method — Disposed By — Date/Time

WCH-EE-011

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-116-1395 Page 1 of 3

Collector [illegible]	Company Contact JOAN KESSNER	Telephone No. 375-4648	Project Coordinator KESSNER, JH
Project Designation Columbia River Component of the RCBRA - Sediment	Sampling Location SP- 1 SSD		SAF No. RC 116
Ice Chest No. WCH-08-013, 072, 027	Field Logbook No. EL-1610-1	COA DESCRC6520	Method of Shipment FED EX
Shipped To EBERLINE SERVICES (RICHMOND)	Offsite Property No. N/A		Bill of Lading/Air Bill No. 796361268296

Price Code 9K

Data Turnaround 45 Days

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

Preservation	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Type of Container	G/P	G/P	G/P	G/P	G/P	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
No. of Container(s)	1	1	1	1	1	[illegible]	1	1	[illegible]	1
Volume	1500g	500g	10g	10g	250g	250g	125g	250g	250g	1
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Technetium-99	See item (2) in Special Instructions	See item (3) in Special Instructions	[illegible]	[illegible]	[illegible]	See item (4) in Special Instructions	

Sample No.	Matrix *	Sample Date	Sample Time										
J189K2	OTHER SOLID	2/19/09	1400					X	X	X	X	X	

Samples unavailable to receive ASAP from controlled storage. Shipper retrieved samples from storage location taking custody of samples for shipment to lab.

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
[illegible]	2/19/09/1650	[illegible]	2/19/09/1650
[illegible]	2/20/09 0800	Dale Gelbert [illegible]	2/20/09 0800
D. Gelbert [illegible]	2/20/09 [illegible]	FedEx	2/20/09 1200
[illegible]	2/23/09 1045	[illegible]	2/23/09/1045
[illegible]	2/23/09/0800	[illegible]	2/23/09/0800

SPECIAL INSTRUCTIONS

(1) Gamma Spec - {GEA Full List} {Americium-241, Antimony-125, Beryllium-7, Cerium-144, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Thorium-228, Uranium-235, Uranium-238};

(2) Strontium-89,90 - Total Sr; Isotopic Thorium {Thorium-228, Thorium-230, Thorium-232}; Isotopic Uranium {Uranium-233/234, Uranium-235, Uranium-238}; Isotopic Plutonium

(3) ICP Metals - 6010 (Full List) {Aluminum, Antimony, Arsenic, Barium, Beryllium, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc}; Mercury - 7471 - (CVAA)

(4) VOA - 8260A (TCL) {1,1,1-Trichloroethane, 1,1,2,2-Tetrachloroethane, 1,1,2-Trichloroethane, 1,1-Dichloroethane, 1,1-Dichloroethene, 1,2-Dichloroethane, 1,2-Dichloropropane, 2-Butanone, 2-Hexanone, 4-Methyl-2-Pentanone, Acetone, Benzene, Bromodichloromethane, Bromoform, Bromomethane, Carbon disulfide, Carbon tetrachloride, Chlorobenzene, Chloroethane, Chloroform, Chloromethane, cis-1,2-Dichloroethylene, cis-1,3-Dichloropropene, Dibromochloromethane, [illegible]

Matrix * [illegible]

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Washington Closure Hanford	**CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST**	RC-116-1397	Page [illegible] of [illegible]
Collector [illegible]	Company Contact JOAN KESSNER Telephone No. 375-4688	Project Coordinator KESSNER, JH	Price Code 9K Data Turnaround **45 Days**
Project Designation Columbia River Component of the RCBRA - Sediment	Sampling Location SP-4 SSD	SAF No. RC 116	
Ice Chest No. ICCH08-03,072,027	Field Logbook No. EL-1610-1 COA [illegible]	Method of Shipment FEDEX	
Shipped To EBERLINE SERVICES ([illegible])	Offsite Property No. N/A	Bill of Lading/Air Bill No. 796361708296	

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

R200000

			Preservation	None	None	None	None	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	None
			Type of Container	G/P	G/P	G/P	G/P	G/P	aG	aG	aG	[illegible]	[illegible]
			No. of Container(s)	1	1	1	1	1	1	1	1	1	1
			Volume	100g	10g	10g	30g	25g	25g	125g	25g	25g	[illegible]
SAMPLE ANALYSIS				See item (1) in Special Instructions	Carbon-14	Technetium-99	See item (2) in Special Instructions	See item (3) in Special Instructions	[illegible]	[illegible]	[illegible]	See item (4) in Special Instructions	
Sample No.	Matrix *	Sample Date	Sample Time										
J189K4	OTHER SOLID	[illegible]	[illegible]					X	X	X	X	X	

Samples [illegible] to [illegible] samples from [illegible] storage. Shipper removed samples from storage location taking custody of samples for shipment to lab

CHAIN OF POSSESSION	Date/Time	Sign/Print Names	Date/Time
Relinquished By/Removed From [illegible]	[illegible] 1630	Received By/Stored In [illegible]	[illegible] 1630
Relinquished By/Removed From [illegible]	2/20/09 0800	Received By/Stored In D. Heidelberg	2/20/09 0800
Relinquished By/Removed From D. Heidelberg	2/20/09 1200	Received By/Stored In Fedex	2/20/09 1200
Relinquished By/Removed From [illegible]	2-23-09 1045	Received By/Stored In [illegible]	2-23-09 1045
Relinquished By/Removed From [illegible]	2-23-09 1050	Received By/Stored In [illegible]	2-23-09 1050
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time

SPECIAL INSTRUCTIONS

(1) Gamma Spec - {GEA} {Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238}

(2) Strontium-89/90 - Total Sr; Isotopic Thorium {Thorium-228, Thorium-230, Thorium-232}; Isotopic Uranium {Uranium-233/234, Uranium-235, Uranium-238}; Isotopic Plutonium

(3) ICP Metals - 6010 (Full List) {Aluminum, Antimony, Arsenic, Barium, Beryllium, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Titanium, Vanadium, Zinc}; Mercury - 7471 (CV)

(4) VOA - 8260A (TCL) {1,1,1-Trichloroethane, 1,1,2,2-Tetrachloroethane, 1,1,2-Trichloroethane, 1,1-Dichloroethane, 1,1-Dichloroethene, 1,2-Dichloroethane, 1,2-Dichloropropane, 2-Butanone, 2-Hexanone, 4-Methyl-2-Pentanone, Acetone, Benzene, Bromodichloromethane, Bromoform, Bromomethane, Carbon disulfide, Carbon tetrachloride, Chlorobenzene, Chloroethane, Chloroform, Chloromethane, cis-1,2-Dichloroethylene, cis-1,3-Dichloropropene, Dibromochloromethane, Ethylbenzene, [illegible]

Matrix *

S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

BC-116-1398 Page 1 of 2

Collector	Company Contact JEAN KESSNER	Telephone No. 375-4688	Project Coordinator KESSNER, JH
Project Designation Columbia River Component of the RCBRA - Sediment	Sampling Location SP 3 SSD		SAF No. RC-116
Ice Chest No. WCH-08-13,072,027	Field Logbook No. EL-1636-1	COA [illegible]	Method of Shipment FEDEX
Shipped To EBERLINE SERVICES (LIONVILLE)	Offsite Property No. N/A		Bill of Lading/Air Bill No. 7963612082096

Price Code 9K

Data Turnaround 45 Days

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

Preservation	None	None	None	None	Cool 4C	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Type of Container	G/P	G/P	G/P	G/P	G/s	[illegible]	[illegible]	[illegible]	[illegible]	
No. of Container(s)	1	1	1	1	1	1	1	1	1	1
Volume	1500g	15g	15g	40g	25g	25g	125g	25g	250g	
SAMPLE ANALYSIS	[illegible] see Special Instructions	Carbon-14	Technetium-99	[illegible] see Special Instructions	[illegible] see Special Instructions	[illegible]	Pesticides [illegible]	[illegible]	[illegible]	

Sample No.	Matrix *	Sample Date	Sample Time										
J195K5	OTHER SOLID	[illegible]	1925					X	X	X	X	X	

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location using custody & samples for shipment to lab

CHAIN OF POSSESSION	Date/Time	Sign/Print Names	Date/Time
Relinquished By/Removed From [illegible]	2-19-09 1130	Received By/Stored In [illegible]	2-19-09 1130
Relinquished By/Removed From [illegible]	2/20/09 0800	Received By/Stored In D. Heidelberg	2/20/09 0800
Relinquished By/Removed From D. Heidelberg	2/20/09 1200	Received By/Stored In FedEx	2/20/09 1200
Relinquished By/Removed From [illegible]	2-23-09 1045	Received By/Stored In [illegible]	2-23-09 1045
Relinquished By/Removed From [illegible]	2-23-09 0850	Received By/Stored In [illegible]	2-23-09 0850
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) {Americium-241, Antimony-125, Beryllium-7, Cerium-144, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238};
(2) Strontium-89,90 - Total Sr; Isotopic Thorium {Thorium-228, [illegible]}; Isotopic Uranium {Uranium-233/234, Uranium-235, Uranium-238}; Isotopic Plutonium;
(3) ICP Metals - 6010 (Full List) {Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc}; Mercury - 7471 (CV);
(4) VOA - 8260A (TCL) {1,1,1-Trichloroethane, 1,1,2,2-Tetrachloroethane, 1,1,2-Trichloroethane, 1,1-Dichloroethane, 1,1-Dichloroethene, 1,2-Dichloroethane, 1,2-Dichloropropane, 2-Butanone, 2-Hexanone, 4-Methyl-2-Pentanone, Acetone, Benzene, Bromodichloromethane, Bromoform, Bromomethane, Carbon disulfide, Carbon tetrachloride, Chlorobenzene, Chloroethane, Chloroform, Chloromethane, cis-1,2-Dichloroethylene, cis-1,3-Dichloropropene, Dibromochloromethane, [illegible]

Matrix *

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Appendix 5

Data Validation Supporting Documentation

GC/MS ORGANIC DATA VALIDATION CHECKLIST

VALIDATION LEVEL	A	B	[✓ C]	D	E

PROJECT: RCBRA
DATA PACKAGE: K1544
VALIDATOR: EGR
LAB: LLI
DATE: 11/26/09
SDG: K1544

ANALYSES PERFORMED

[✓ SW-846 8260]		SW-846 8260 (TCLP)	SW-846 8270		SW 846 8270 (TCLP)

SAMPLES/MATRIX

J18679	J18683	J18785	J18786	J18987	J18989
J18990	J18991	J18992	J189B5	J18786	J18787
J18788	J18789	J189C0	J189C1	J189C3	J189C4
J189J9	J189F2	J189K4	J189K5		
					solid

1. DATA PACKAGE COMPLETENESS AND CASE NARRATIVE

Technical verification documentation present? .... Yes [✓ No] N/A

Comments:

2. INSTRUMENT TUNING AND CALIBRATION (Levels D and E)

GC/MS tuning/performance check acceptable? .... Yes No [✓ N/A]

Initial calibrations acceptable? .... Yes No [✓ N/A]

Continuing calibrations acceptable? .... Yes No [✓ N/A]

Standards traceable? .... Yes No [✓ N/A]

Standards expired? .... Yes No [✓ N/A]

Calculation check acceptable? .... Yes No [✓ N/A]

Comments:

GC/MS ORGANIC DATA VALIDATION CHECKLIST

3. BLANKS (Levels B, C, D, and E)

Calibration blanks analyzed? (Levels D, E) .... Yes No [✓ N/A]
Calibration blank results acceptable? (Levels D, E) .... Yes No [✓ N/A]
Laboratory blanks analyzed? .... [✓ Yes] No N/A
Laboratory blank results acceptable? .... Yes [✓ No] N/A
Field/trip blanks analyzed? (Levels C, D, E) .... [✓ Yes] No N/A
Field/trip blank results acceptable? (Levels C, D, E) .... [✓ Yes] No N/A
Transcription/calculation errors? (Levels D, E) .... Yes No [✓ N/A]

Comments: MB - 91, 92, B5, 06, J1, K2, K4, K5 - U [illegible]
~~(K4 - [illegible])~~
~~(K2 - K4 - [illegible] - RQC [illegible])~~

4. ACCURACY (Levels C, D, and E)

Surrogates/system monitoring compounds analyzed? .... [✓ Yes] No N/A
Surrogate/system monitoring compound recoveries acceptable? .... [✓ Yes] No N/A
Surrogates traceable? (Levels D, E) .... Yes No [✓ N/A]
Surrogates expired? (Levels D, E) .... Yes No [✓ N/A]
MS/MSD samples analyzed? .... [✓ Yes] No N/A
MS/MSD results acceptable? .... Yes [✓ No] N/A
MS/MSD standards NIST traceable? (Levels D, E) .... Yes No [✓ N/A]
MS/MSD standards? (Levels D, E) .... Yes No [✓ N/A]
LCS/BSS samples analyzed? .... [✓ Yes] No N/A
LCS/BSS results acceptable? .... Yes [✓ No] N/A
Standards traceable? (Levels D, E) .... Yes No [✓ N/A]
Standards expired? (Levels D, E) .... Yes No [✓ N/A]
Transcription/calculation errors? (Levels D, E) .... Yes No [✓ N/A]
Performance audit sample(s) analyzed? .... Yes [✓ No] N/A
Performance audit sample results acceptable? .... Yes No [✓ N/A]

Comments: ~~B7 - C4 - no ms/msd - J only~~ 11/4/[illegible]
MS - acetone 91 K5 - J detected in K92 [illegible]
MSD acetone [illegible] - U [illegible] ~~(LCS - J [illegible])~~
LCS - all detects acetone - J
no PAs

GC/MS ORGANIC DATA VALIDATION CHECKLIST

5. PRECISION (Levels C, D, and E)

MS/MSD samples analyzed? .... [✓ Yes] No N/A

MS/MSD RPD values acceptable? .... [✓ Yes] No N/A

MS/MSD standards NIST traceable? (Levels D, E) .... Yes No [✓ N/A]

MS/MSD standards expired? (Levels D, E) .... Yes No [✓ N/A]

Field duplicate RPD values acceptable? .... [✓ Yes] No N/A

Field split RPD values acceptable? .... Yes No [✓ N/A]

Transcription/calculation errors? (Levels D, E) .... Yes No [✓ N/A]

Comments: ~~[illegible]~~ MS/MSD – J [illegible] 7/2/06

6. SYSTEM PERFORMANCE (Levels D and E)

Internal standards analyzed? .... Yes No [✓ N/A]

Internal standard areas acceptable? .... Yes No [✓ N/A]

Internal standard retention times acceptable? .... Yes No [✓ N/A]

Standards traceable? .... Yes No [✓ N/A]

Standards expired? .... Yes No [✓ N/A]

Transcription/calculation errors? .... Yes No [✓ N/A]

Comments:

7. HOLDING TIMES (all levels)

Samples properly preserved? .... [✓ Yes] No N/A

Sample holding times acceptable? .... [✓ Yes] No N/A

Comments:

GC/MS ORGANIC DATA VALIDATION CHECKLIST

8. COMPOUND IDENTIFICATION, QUANTITATION, AND DETECTION LIMITS (all levels)

Compound identification acceptable? (Levels D, E) .... Yes No [✓ N/A]

Compound quantitation acceptable? (Levels D, E) .... Yes No [✓ N/A]

Results reported for all requested analyses? .... [✓ Yes] No N/A

Results supported in the raw data? (Levels D, E) .... Yes No [✓ N/A]

Samples properly prepared? (Levels D, E) .... Yes No [✓ N/A]

Laboratory properly identified and coded all TIC? (Levels D, E) .... Yes No [✓ N/A]

Detection limits meet RDL? .... Yes [✓ No] N/A

Transcription/calculation errors? (Levels D, E) .... Yes No [✓ N/A]

Comments. [illegible] = [illegible]

9. SAMPLE CLEANUP (Levels D and E)

GPC cleanup performed? .... Yes No [✓ N/A]

GPC check performed? .... Yes No [✓ N/A]

GPC check recoveries acceptable? .... Yes No [✓ N/A]

GPC calibration performed? .... Yes No [✓ N/A]

GPC calibration check performed? .... Yes No [✓ N/A]

GPC calibration check retention times acceptable? .... Yes No [✓ N/A]

Check/calibration materials traceable? .... Yes No [✓ N/A]

Check/calibration materials Expired? .... Yes No [✓ N/A]

Analytical batch QC given similar cleanup? .... Yes No [✓ N/A]

Transcription/Calculation Errors? .... Yes No [✓ N/A]

Comments.

Appendix 6

Additional Documentation Requested by Client

208 Welsh Pool Road
Exton, PA 19341
Phone 610-280-3000
Fax: 610-280-3041

WC-Hanford, Inc.	Project: RC-116	
2620 Fermi Avenue	Project Number: [none]	Reported:
Richland WA, 99354	Project Manager: Joan Kessner	03/30/2009 11:45

Volatile Organic Compounds by SW846 8260B - Quality Control

Lionville Laboratory

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch L903086 - SW 5030B										
LCS (L903086-BS1)				Prepared & Analyzed: 02/24/2009						
Surrogate: 1,2-Dichloroethane-d4	*44.4*		ug/kg wet	*50.000*		*89*	*63-151*			
Surrogate: Toluene-d8	*52.2*		"	*50.000*		*104*	*68-140*			
Surrogate: 4-Bromofluorobenzene	*49.5*		"	*50.000*		*99*	*48-127*			
Batch L903088 - SW 5030B										
Blank (L903088-BLK1)				Prepared & Analyzed: 02/24/2009						
1,1,1-Trichloroethane	ND	5.00	ug/kg wet							U
1,1,2,2-Tetrachloroethane	ND	5.00	"							U
1,1,2-Trichloroethane	ND	5.00	"							U
1,1-Dichloroethene	ND	5.00	"							U
1,1-Dichloroethane	ND	5.00	"							U
1,2-Dichloroethane	ND	6.00	"							U
1,2-Dichloropropane	ND	5.00	"							U
2-Butanone	ND	12.0	"							U
2-Hexanone	ND	12.0	"							U
4-Methyl-2-pentanone	ND	12.0	"							U
Acetone	ND	12.0	"							U
Benzene	ND	5.00	"							U
Bromodichloromethane	ND	6.00	"							U
Bromoform	ND	5.00	"							U
Bromomethane	ND	10.0	"							U
Carbon Disulfide	ND	5.00	"							U
Carbon Tetrachloride	ND	5.00	"							U
Chlorobenzene	ND	5.00	"							U
Chloroethane	ND	10.0	"							U
Chloroform	ND	5.00	"							U
Chloromethane	ND	10.0	"							U
cis-1,3-Dichloropropene	ND	5.00	"							U
Dibromochloromethane	ND	5.00	"							U
Ethylbenzene	ND	5.00	"							U
Methylene Chloride	ND	6.00	"							U
Styrene	ND	5.00	"							U
Tetrachloroethene	ND	5.00	"							U
Toluene	ND	5.00	"							U
trans-1,3-Dichloropropene	ND	5.00	"							U
Trichloroethene	ND	5.00	"							U
Vinyl chloride	ND	10.0	"							U

WCH-Hanford, Inc. 2620 Fermi Avenue Richland WA, 99354	Project: RC-116 Project Number: [none] Project Manager: Joan Kessner	Reported: 03/30/2009 11:45

Volatile Organic Compounds by SW846 8260B - Quality Control
Lionville Laboratory

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch L903088 - SW 5030B										
Blank (L903088-BLK1)				Prepared & Analyzed: 03/24/2009						
Xylenes, total	ND	6.00	ug/kg wet							U
cis-1,2-Dichloroethene	ND	5.00	"							U
trans-1,2-Dichloroethene	ND	5.00	"							U
Tentatively Identified Compound	0.00		"							U
Surrogate: 1,2-Dichloroethane-d4	*48.4*		"	*50.000*		*97*	*65-131*			
Surrogate: Toluene-d8	*51.7*		"	*50.000*		*103*	*64-140*			
Surrogate: 4-Bromofluorobenzene	*53.3*		"	*50.000*		*107*	*66-122*			
LCS (L903088-BS1)				Prepared & Analyzed: 03/24/2009						
1,1,1-Trichloroethane	47.0	5.00	ug/kg wet	50.000		94	60-140			
1,1,2,2-Tetrachloroethane	50.5	5.00	"	50.000		101	70-130			
1,1,2-Trichloroethane	46.4	5.00	"	50.000		93	70-130			
1,1-Dichloroethene	49.2	5.00	"	50.000		98	60-140			
1,1-Dichloroethane	52.0	5.00	"	50.000		104	60-130			
1,2-Dichloroethane	43.6	6.00	"	50.000		87	60-140			
1,2-Dichloropropane	51.1	5.00	"	50.000		102	70-130			
2-Butanone	86.6	12.0	"	50.000		173	20-200			
2-Hexanone	75.4	12.0	"	50.000		151	20-200			
4-Methyl-2-pentanone	51.1	12.0	"	50.000		102	40-150			
Acetone	85.0	12.0	"	50.000		170	20-200			
Benzene	48.8	5.00	"	50.000		98	70-130			
Bromodichloromethane	47.1	6.00	"	50.000		94	60-140			
Bromoform	46.6	5.00	"	50.000		93	60-140			
Bromomethane	70.8	10.0	"	50.000		142	40-180			
Carbon Disulfide	55.1	5.00	"	50.000		110	60-140			
Carbon Tetrachloride	50.9	5.00	"	50.000		102	60-140			
Chlorobenzene	48.0	5.00	"	50.000		96	70-130			
Chloroethane	67.5	10.0	"	50.000		135	40-180			
Chloroform	48.2	5.00	"	50.000		96	60-140			
Chloromethane	58.0	10.0	"	50.000		116	50-180			
cis-1,3-Dichloropropene	44.7	5.00	"	50.000		89	70-130			
Dibromochloromethane	47.0	5.00	"	50.000		94	70-130			
Ethylbenzene	49.2	5.00	"	50.000		98	70-130			
Methylene Chloride	47.9	6.00	"	50.000		96	50-140			
Styrene	52.0	5.00	"	50.000		104	70-130			
Tetrachloroethene	48.9	5.00	"	50.000		98	60-140			
Toluene	50.6	5.00	"	50.000		101	70-130			
trans-1,3-Dichloropropene	46.0	5.00	"	50.000		92	70-130			

WC-Hanford, Inc.
2620 Fermi Avenue
Richland WA, 99354

Project: RC-116
Project Number: [none]
Project Manager: Joan Kessner

Reported:
03/30/2009 11:45

Volatile Organic Compounds by SW846 8260B - Quality Control

Lionville Laboratory

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch L903088 - SW 5030B										
LCS (L903088-BS1)				Prepared & Analyzed: 02/24/2009						
Trichloroethene	47.5	5.00	ug/kg wet	50.000		95	70-130			
Vinyl chloride	64.4	10.0	"	50.000		129	50-180			
Xylenes, total	159	6.00	"	150.00		106	70-130			
cis-1,2-Dichloroethene	44.8	5.00	"	50.000		90	60-140			
trans-1,2-Dichloroethene	51.8	5.00	"	50.000		104	60-140			
Surrogate: 1,2-Dichloroethane-d4	*45.0*		"	*50.000*		*90*	*63-131*			
Surrogate: Toluene-d8	*49.5*		"	*50.000*		*99*	*68-140*			
Surrogate: 4-Bromofluorobenzene	*46.5*		"	*50.000*		*93*	*66-132*			
Matrix Spike (L903088-MS1)		Source: 0902061-27		Prepared & Analyzed: 02/24/2009						
1,1,1-Trichloroethane	39.4	4.31	ug/kg wet	43.103	ND	91	60-140			
1,1,2,2-Tetrachloroethane	48.0	4.31	"	43.103	ND	111	70-130			
1,1,2-Trichloroethane	44.8	4.31	"	43.103	ND	104	70-130			
1,1-Dichloroethane	42.7	4.31	"	43.103	ND	99	60-140			
1,1-Dichloroethene	43.7	4.31	"	43.103	ND	101	60-130			
1,2-Dichloroethane	38.9	5.17	"	43.103	ND	90	60-140			
1,2-Dichloropropane	45.0	4.31	"	43.103	ND	104	70-130			
2-Butanone	64.5	10.3	"	43.103	ND	150	20-200			
2-Hexanone	53.9	10.3	"	43.103	ND	125	20-200			
4-Methyl-2-pentanone	42.4	10.3	"	43.103	ND	98	30-150			
Acetone	63.2	10.3	"	43.103	ND	147	20-200			
Benzene	41.5	4.31	"	43.103	ND	96	70-130			
Bromodichloromethane	40.7	5.17	"	43.103	ND	95	60-140			
Bromoform	41.5	4.31	"	43.103	ND	96	60-140			
Bromomethane	55.6	8.62	"	43.103	ND	129	50-180			
Carbon Disulfide	45.0	4.31	"	43.103	ND	105	60-140			
Carbon Tetrachloride	42.0	4.31	"	43.103	ND	97	60-140			
Chlorobenzene	41.4	4.31	"	43.103	ND	96	70-130			
Chloroethane	53.9	8.62	"	43.103	ND	125	50-180			
Chloroform	41.8	4.31	"	43.103	ND	97	60-140			
Chloromethane	39.0	8.62	"	43.103	ND	91	50-180			
cis-1,3-Dichloropropene	40.2	4.31	"	43.103	ND	93	70-130			
Dibromochloromethane	40.4	4.31	"	43.103	ND	94	70-130			
Ethylbenzene	41.7	4.31	"	43.103	ND	97	70-130			
Methylene Chloride	42.4	5.17	"	43.103	ND	98	50-180			
Styrene	43.8	4.31	"	43.103	ND	102	70-130			
Tetrachloroethene	38.3	4.31	"	43.103	ND	89	60-140			
Toluene	43.1	4.31	"	43.103	ND	100	70-130			

Volatile Organic Compounds by SW846 8260B - Quality Control

Lionville Laboratory

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch L903088 - SW 5030B										
Matrix Spike (L903088-MS1)		Source: 0902061-27		Prepared & Analyzed: 02/24/2009						
trans-1,3-Dichloropropene	42.0	4.31	ug/kg wet	43.103	ND	97	70-130			
Trichloroethene	39.7	4.31	"	43.103	ND	92	70-130			
Vinyl chloride	42.9	8.62	"	43.103	ND	100	50-180			
Xylenes, total	131	5.17	"	129.31	ND	101	70-130			
cis-1,2-Dichloroethene	38.6	4.31	"	43.103	ND	89	60-140			
trans-1,2-Dichloroethene	41.6	4.31	"	43.103	ND	102	60-140			
Surrogate: 1,2-Dichloroethane-d4	*41.2*		"	*43.103*		*95*	*61-137*			
Surrogate: Toluene-d8	*45.2*		"	*43.103*		*105*	*64-140*			
Surrogate: 4-Bromofluorobenzene	*45.4*		"	*43.103*		*105*	*66-122*			
Matrix Spike Dup (L903088-MSD1)		Source: 0902061-27		Prepared & Analyzed: 02/25/2009						
1,1,1-Trichloroethane	36.3	3.97	ug/kg wet	39.683	ND	91	60-140	8	20	
1,1,2,2-Tetrachloroethane	43.0	3.97	"	39.683	ND	108	70-130	11	20	
1,1,2-Trichloroethane	40.2	3.97	"	39.683	ND	101	70-130	11	20	
1,1-Dichloroethane	38.3	3.97	"	39.683	ND	97	60-140	10	20	
1,1-Dichloroethene	41.4	3.97	"	39.683	ND	104	65-130	6	20	
1,2-Dichloroethane	37.2	4.76	"	39.683	ND	94	60-140	5	20	
1,2-Dichloropropane	42.1	3.97	"	39.683	ND	106	70-130	7	20	
2-Butanone	58.1	9.92	"	39.683	ND	146	20-200	10	20	
2-Hexanone	50.1	9.92	"	39.683	ND	126	20-200	7	20	
4-Methyl-2-pentanone	39.7	9.92	"	39.683	ND	100	30-130	7	20	
Acetone	56.5	9.92	"	39.683	ND	142	20-200	11	20	
Benzene	38.8	3.97	"	39.683	ND	98	70-130	7	20	
Bromodichloromethane	38.6	4.76	"	39.683	ND	97	60-140	5	20	
Bromoform	39.0	3.97	"	39.683	ND	98	60-140	6	20	
Bromomethane	48.1	7.94	"	39.683	ND	121	50-180	14	20	
Carbon Disulfide	41.5	3.97	"	39.683	ND	105	60-140	8	20	
Carbon Tetrachloride	39.1	3.97	"	39.683	ND	98	60-140	7	20	
Chlorobenzene	40.0	3.97	"	39.683	ND	101	70-130	3	20	
Chloroethane	49.3	7.94	"	39.683	ND	124	50-180	9	20	
Chloroform	38.8	3.97	"	39.683	ND	98	60-140	7	20	
Chloromethane	38.6	7.94	"	39.683	ND	97	50-180	1	20	
cis-1,3-Dichloropropene	36.9	3.97	"	39.683	ND	93	70-130	9	20	
Dibromochloromethane	38.7	3.97	"	39.683	ND	98	70-130	4	20	
Ethylbenzene	39.1	3.97	"	39.683	ND	99	70-130	6	20	
Methylene Chloride	39.2	4.76	"	39.683	ND	99	50-130	8	20	
Styrene	41.6	3.97	"	39.683	ND	105	70-130	5	20	
Tetrachloroethene	37.0	3.97	"	39.683	ND	93	60-140	5	20	

Volatile Organic Compounds by SW846 8260B - Quality Control

Lionville Laboratory

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch L903098 - SW 5030B										
Matrix Spike Dup (L903098-MSD1)		Source: 9902061-27		Prepared & Analyzed: 02/25/2009						
Toluene	40.9	3.97	ug/kg wet	39.683	ND	103	70-130	3	30	
trans-1,3-Dichloropropene	37.7	3.97	"	39.683	ND	95	70-130	11	30	
Trichloroethene	38.6	3.97	"	39.683	ND	97	70-130	3	30	
Vinyl chloride	42.1	7.94	"	39.683	ND	106	50-180	2	20	
Xylenes, total	125	4.76	"	119.05	ND	105	70-130	4	20	
cis-1,2-Dichloroethene	36.0	3.97	"	39.683	ND	91	60-140	9	20	
trans-1,2-Dichloroethene	40.0	3.97	"	39.683	ND	101	60-140	9	20	
Surrogate: 1,2-Dichloroethane-d4	*38.6*		"	*39.683*		*96*	*61-131*			
Surrogate: Toluene-d8	*41.2*		"	*39.683*		*104*	*68-130*			
Surrogate: 4-Bromofluorobenzene	*39.8*		"	*39.683*		*100*	*66-132*			

WC-Hanford, Inc 2620 Fermi Avenue Richland WA, 99354	Project: RC-116 Project Number: [none] Project Manager: Joan Kessner	**Reported:** 04/09/2009 11:59

Volatile Organic Compounds by SW846 8260B - Quality Control

Lionville Laboratory

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch L903088 - SW 5030B										
LCS (L903088-BS1)				Prepared & Analyzed: 02/24/2009						
Surrogate: 1,2-Dichloroethane-d4	*45.0*		ug/kg wet	*50.000*		*90*	*65-131*			
Surrogate: Toluene-d8	*49.5*		"	*50.000*		*99*	*68-140*			
Surrogate: 4-Bromofluorobenzene	*46.5*		"	*50.000*		*93*	*66-122*			
Batch L903092 - SW 5035										
Blank (L903092-BLK1)				Prepared & Analyzed: 02/25/2009						
1,1,1-Trichloroethane	ND	5.00	ug/kg wet							U
1,1,2,2-Tetrachloroethane	ND	5.00	"							U
1,1,2-Trichloroethane	ND	5.00	"							U
1,1-Dichloroethene	ND	5.00	"							U
1,1-Dichloroethane	ND	5.00	"							U
1,2-Dichloroethane	ND	6.00	"							U
1,2-Dichloropropane	ND	5.00	"							U
2-Butanone	ND	12.0	"							U
2-Hexanone	ND	12.0	"							U
4-Methyl-2-pentanone	ND	12.0	"							U
Acetone	ND	12.0	"							U
Benzene	ND	5.00	"							U
Bromodichloromethane	ND	6.00	"							U
Bromoform	ND	5.00	"							U
Bromomethane	ND	10.0	"							U
Carbon Disulfide	ND	5.00	"							U
Carbon Tetrachloride	ND	5.00	"							U
Chlorobenzene	ND	5.00	"							U
Chloroethane	ND	10.0	"							U
Chloroform	ND	5.00	"							U
Chloromethane	ND	10.0	"							U
cis-1,3-Dichloropropene	ND	5.00	"							U
Dibromochloromethane	ND	5.00	"							U
Ethylbenzene	ND	5.00	"							U
Methylene Chloride	4.58	6.00	"							J
Styrene	ND	5.00	"							U
Tetrachloroethene	ND	5.00	"							U
Toluene	ND	5.00	"							U
trans-1,3-Dichloropropene	ND	5.00	"							U
Trichloroethene	ND	5.00	"							U
Vinyl chloride	ND	10.0	"							U

WC-Hanford, Inc. 2620 Fermi Avenue Richland WA, 99354	Project: RC-116 Project Number: [none] Project Manager: Joan Kessner	Reported: 04/09/2009 11:59

Volatile Organic Compounds by SW846 8260B - Quality Control

Lionville Laboratory

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch L903092 - SW 5035										
Blank (L903092-BLK1)				Prepared & Analyzed: 02/23/2009						
Xylenes, total	ND	6.00	ug/kg wet							U
cis-1,2-Dichloroethene	ND	5.00	"							U
trans-1,2-Dichloroethene	ND	5.00	"							U
Tentatively Identified Compound	0.00		"							U
Surrogate: 1,2-Dichloroethane-d4	*44.5*		"	*50.000*		*89*	*65-151*			
Surrogate: Toluene-d8	*49.1*		"	*50.000*		*98*	*68-140*			
Surrogate: 4-Bromofluorobenzene	*50.3*		"	*50.000*		*101*	*66-122*			
LCS (L903092-BS1)				Prepared & Analyzed: 02/23/2009						
1,1,1-Trichloroethane	46.3	5.00	ug/kg wet	50.000		93	60-140			
1,1,2,2-Tetrachloroethane	52.2	5.00	"	50.000		104	70-130			
1,1,2-Trichloroethane	49.0	5.00	"	50.000		98	70-130			
1,1-Dichloroethane	47.6	5.00	"	50.000		95	60-140			
1,1-Dichloroethene	51.3	5.00	"	50.000		103	60-130			
1,2-Dichloroethane	43.0	6.00	"	50.000		86	60-140			
1,2-Dichloropropane	50.1	5.00	"	50.000		100	70-130			
2-Butanone	92.1	12.0	"	50.000		184	20-200			
2-Hexanone	88.6	12.0	"	50.000		177	20-200			
4-Methyl-2-pentanone	62.2	12.0	"	50.000		124	50-150			
Acetone	88.9	12.0	"	50.000		178	20-200			
Benzene	47.9	5.00	"	50.000		96	70-130			
Bromodichloromethane	47.5	6.00	"	50.000		95	60-140			
Bromoform	48.0	5.00	"	50.000		96	60-140			
Bromomethane	69.3	10.0	"	50.000		139	50-180			
Carbon Disulfide	52.2	5.00	"	50.000		104	60-140			
Carbon Tetrachloride	49.6	5.00	"	50.000		99	60-140			
Chlorobenzene	51.0	5.00	"	50.000		102	70-130			
Chloroethane	62.7	10.0	"	50.000		125	50-180			
Chloroform	47.8	5.00	"	50.000		96	60-140			
Chloromethane	53.2	10.0	"	50.000		106	50-180			
cis-1,3-Dichloropropene	46.3	5.00	"	50.000		93	70-130			
Dibromochloromethane	47.8	5.00	"	50.000		96	70-130			
Ethylbenzene	51.6	5.00	"	50.000		103	70-130			
Methylene Chloride	53.3	6.00	"	50.000		107	50-180			
Styrene	53.8	5.00	"	50.000		108	70-130			
Tetrachloroethene	49.6	5.00	"	50.000		99	60-140			
Toluene	51.3	5.00	"	50.000		103	70-130			
trans-1,3-Dichloropropene	47.6	5.00	"	50.000		95	70-130			

WC-Hanford, Inc.
2620 Fermi Avenue
Richland WA, 99354

Project: RC-116
Project Number: [none]
Project Manager: Joan Kessner

Reported:
04/09/2009 11:59

Volatile Organic Compounds by SW846 8260B - Quality Control

Lionville Laboratory

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch L903092 - SW 5035										
LCS (L903092-BS1)				Prepared & Analyzed: 02/25/2009						
Trichloroethene	47.5	5.00	ug/kg wet	50.000		95	70-130			
Vinyl chloride	61.2	10.0	"	50.000		122	50-180			
Xylenes, total	163	6.00	"	150.00		109	70-130			
cis-1,2-Dichloroethene	45.6	5.00	"	50.000		91	60-140			
trans-1,2-Dichloroethene	50.5	5.00	"	50.000		101	60-140			
Surrogate: 1,2-Dichloroethane-d4	*43.2*		"	*50.000*		*86*	*61-151*			
Surrogate: Toluene-d8	*51.5*		"	*50.000*		*103*	*68-140*			
Surrogate: 4-Bromofluorobenzene	*48.0*		"	*50.000*		*96*	*66-122*			
Matrix Spike (L903092-MS1)		**Source: 0902067-24**		Prepared & Analyzed: 02/25/2009						
1,1,1-Trichloroethane	39.9	4.17	ug/kg wet	41.667	ND	96	60-140			
1,1,2,2-Tetrachloroethane	47.0	4.17	"	41.667	ND	113	70-130			
1,1,2-Trichloroethane	45.7	4.17	"	41.667	ND	110	70-130			
1,1-Dichloroethane	42.7	4.17	"	41.667	ND	103	60-140			
1,1-Dichloroethene	42.5	4.17	"	41.667	ND	102	60-130			
1,2-Dichloroethane	39.4	5.00	"	41.667	ND	95	60-140			
1,2-Dichloropropane	42.3	4.17	"	41.667	ND	101	70-130			
2-Butanone	82.3	10.0	"	41.667	ND	198	20-200			
2-Hexanone	71.8	10.0	"	41.667	ND	172	20-200			
4-Methyl-2-pentanone	49.8	10.0	"	41.667	ND	120	50-130			
Acetone	86.9	10.0	"	41.667	4.37	198	20-200			
Benzene	40.2	4.17	"	41.667	ND	97	70-130			
Bromodichloromethane	39.9	5.00	"	41.667	ND	96	60-140			
Bromoform	39.4	4.17	"	41.667	ND	94	60-140			
Bromomethane	52.5	8.33	"	41.667	ND	126	50-180			
Carbon Disulfide	41.9	4.17	"	41.667	ND	100	60-140			
Carbon Tetrachloride	38.6	4.17	"	41.667	ND	93	60-140			
Chlorobenzene	42.4	4.17	"	41.667	ND	102	70-130			
Chloroethane	54.2	8.33	"	41.667	ND	130	50-180			
Chloroform	42.4	4.17	"	41.667	ND	102	60-140			
Chloromethane	34.8	8.33	"	41.667	ND	84	50-180			
cis-1,3-Dichloropropene	37.3	4.17	"	41.667	ND	90	70-130			
Dibromochloromethane	39.2	4.17	"	41.667	ND	94	70-130			
Ethylbenzene	40.2	4.17	"	41.667	ND	96	70-130			
Methylene Chloride	49.3	5.00	"	41.667	7.18	101	50-180			
Styrene	43.0	4.17	"	41.667	ND	103	70-130			
Tetrachloroethene	39.0	4.17	"	41.667	ND	94	60-140			
Toluene	41.8	4.17	"	41.667	ND	100	70-130			

WC-Hanford, Inc
2620 Fermi Avenue
Richland WA, 99354

Project: RC 116
Project Number: [none]
Project Manager: Joan Kessner

Reported:
04/09/2009 11:59

Volatile Organic Compounds by SW846 8260B - Quality Control
Lionville Laboratory

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch L903092 - SW 5035										
Matrix Spike (L903092-MS1)		Source: 0902067-24		Prepared & Analyzed: 02/25/2009						
trans-1,3-Dichloropropene	39.3	4.17	ug/kg wet	41.667	ND	94	70-130			
Trichloroethene	39.0	4.17	"	41.667	ND	94	70-130			
Vinyl chloride	40.7	8.33	"	41.667	ND	98	50-180			
Xylenes, total	130	5.00	"	125.00	ND	104	70-130			
cis-1,2-Dichloroethene	36.6	4.17	"	41.667	ND	88	60-140			
trans-1,2-Dichloroethene	42.0	4.17	"	41.667	ND	101	60-140			
Surrogate: 1,2-Dichloroethane-d4	*41.2*		"	*41.667*		*99*	*61-151*			
Surrogate: Toluene-d8	*43.5*		"	*41.667*		*104*	*68-140*			
Surrogate: 4-Bromofluorobenzene	*40.5*		"	*41.667*		*97*	*66-122*			
Matrix Spike Dup (L903092-MSD1)		Source: 0902067-24		Prepared & Analyzed: 02/25/2009						
1,1,1-Trichloroethane	43.6	4.55	ug/kg wet	45.455	ND	96	60-140	9	20	
1,1,2,2-Tetrachloroethane	55.5	4.55	"	45.455	ND	122	70-130	16	20	
1,1,2-Trichloroethane	50.8	4.55	"	45.455	ND	112	70-130	11	20	
1,1-Dichloroethane	47.0	4.55	"	45.455	ND	103	60-140	10	20	
1,1-Dichloroethene	46.7	4.55	"	45.455	ND	103	60-130	9	20	
1,2-Dichloroethane	44.1	5.45	"	45.455	ND	97	60-140	11	20	
1,2-Dichloropropane	48.4	4.55	"	45.455	ND	107	70-130	14	20	
2-Butanone	90.8	10.9	"	45.455	ND	200	20-200	10	20	
2-Hexanone	76.8	10.9	"	45.455	ND	169	20-200	7	20	
4-Methyl-2-pentanone	54.6	10.9	"	45.455	ND	120	50-150	9	20	
Acetone	92.1	10.9	"	45.455	4.17	193	20-200	6	20	
Benzene	44.4	4.55	"	45.455	ND	98	70-130	10	20	
Bromodichloromethane	42.3	5.45	"	45.455	ND	93	60-140	5	20	
Bromoform	44.9	4.55	"	45.455	ND	99	60-140	13	20	
Bromomethane	62.4	9.09	"	45.455	ND	137	40-180	17	20	
Carbon Disulfide	45.2	4.55	"	45.455	ND	100	60-140	8	20	
Carbon Tetrachloride	41.8	4.55	"	45.455	ND	92	60-140	8	20	
Chlorobenzene	44.7	4.55	"	45.455	ND	98	70-130	5	20	
Chloroethane	56.7	9.09	"	45.455	ND	125	50-180	4	20	
Chloroform	45.8	4.55	"	45.455	ND	101	60-140	8	20	
Chloromethane	42.1	9.09	"	45.455	ND	93	50-180	19	20	
cis-1,3-Dichloropropene	41.4	4.55	"	45.455	ND	91	70-130	10	20	
Dibromochloromethane	44.4	4.55	"	45.455	ND	98	70-130	13	20	
Ethylbenzene	45.1	4.55	"	45.455	ND	99	70-130	12	20	
Methylene Chloride	54.5	5.45	"	45.455	7.18	104	50-180	10	20	
Styrene	47.1	4.55	"	45.455	ND	104	70-130	9	20	
Tetrachloroethene	43.4	4.55	"	45.455	ND	95	60-140	11	20	

WCHanford, Inc. 2620 Fermi Avenue Richland WA, 99354	Project: RC-116 Project Number: [none] Project Manager: Joan Kessner	Reported: 04/09/2009 11:59

Volatile Organic Compounds by SW846 8260B - Quality Control

Lionville Laboratory

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch L903092 - SW 5035										
Matrix Spike Dup (L903092-MSD1)	Source: 0902067-24			Prepared & Analyzed: 02/25/2009						
Toluene	46.3	4.55	ug/kg wet	45.455	ND	102	70-130	10	20	
trans-1,3-Dichloropropene	43.1	4.55	"	45.455	ND	95	70-130	9	20	
Trichloroethene	43.0	4.55	"	45.455	ND	95	70-130	10	20	
Vinyl chloride	48.6	9.09	"	45.455	ND	107	50-180	18	20	
Xylenes, total	142	5.45	"	136.36	ND	104	70-130	8	20	
cis-1,2-Dichloroethene	44.6	4.55	"	45.455	ND	98	60-140	20	20	
trans-1,2-Dichloroethene	46.2	4.55	"	45.455	ND	102	60-140	9	20	
Surrogate: 1,2-Dichloroethane-d4	*44.7*		"	*45.455*		*98*	*61-137*			
Surrogate: Toluene-d8	*45.8*		"	*45.455*		*101*	*65-140*			
Surrogate: 4-Bromofluorobenzene	*44.2*		"	*45.455*		*97*	*66-122*			

Date: 7 December 2009
To: Washington Closure Hanford Inc. (technical representative)
From: ELR Consulting
Project: Columbia River Component of the RCBRA – Sediment
Subject: Metals - Data Package No. K1544-LLI

INTRODUCTION

This memo presents the results of data validation on Data Package No. K1544 prepared by Lionville Laboratories Inc. (LLI). A list of samples validated along with the analyses reported and the method of analysis is provided in the following table.

Sample ID	Sample Date	Media	Validation	Analysis
J189D8	2/19/09	Solid	C	See note 1
J189F0	2/19/09	Solid	C	See note 1
J18985	2/19/09	Solid	C	See note 1
J18986	2/19/09	Solid	C	See note 1
J18987	2/19/09	Solid	C	See note 1
J18988	2/19/09	Solid	C	See note 1
J18990	2/19/09	Solid	C	See note 1
J18991	2/19/09	Solid	C	See note 1
J18992	2/19/09	Solid	C	See note 1
J189B5	2/19/09	Solid	C	See note 1
J189B6	2/19/09	Solid	C	See note 1
J189B7	2/19/09	Solid	C	See note 1
J189B8	2/19/09	Solid	C	See note 1
J189B9	2/19/09	Solid	C	See note 1
J189C0	2/19/09	Solid	C	See note 1
J189C1	2/19/09	Solid	C	See note 1
J189C3	2/19/09	Solid	C	See note 1
J189C4	2/19/09	Solid	C	See note 1
J189J9	2/19/09	Solid	C	See note 1
J189K2	2/19/09	Solid	C	See note 1
J189K4	2/19/09	Solid	C	See note 1
J189K5	2/19/09	Solid	C	See note 1

1 – ICP metals by 6010B and mercury by 7471A.

Data validation was conducted in accordance with the Washington Closure Hanford (WCH) validation statement of work and the Remedial Investigation Work Plan for Hanford Site Releases to the Columbia River (DOE/RL-2008-11, Rev. 0, September 2008). Appendices 1 through 6 provide the following information as indicated below:

Appendix 1. Glossary of Data Reporting Qualifiers
Appendix 2. Summary of Data Qualification
Appendix 3 Qualified Data Summary and Annotated Laboratory Reports
Appendix 4. Laboratory Narrative and Chain-of-Custody Documentation
Appendix 5. Data Validation Supporting Documentation
Appendix 6. Additional Documentation Requested by Client

DATA QUALITY PARAMETERS

Holding Times

Analytical holding times for metals are assessed to ascertain whether the holding time requirements were met by the laboratory. The holding time requirements are as follows: Soil samples must be analyzed within 6 months for ICP metals and 28 days for mercury.

All holding times were acceptable.

Preparation (Method) Blanks

Preparation Blanks

At least one preparation blank, consisting of deionized distilled water processed through each sample preparation and analysis procedure, must be prepared and analyzed with every sample delivery group. In the case of positive blank results, samples with digestate concentrations less than five times the preparation blank value have had their associated values qualified as non-detected and flagged "U". Samples with concentrations of greater than five times the highest blank concentration do not require qualification.

In the case of negative blank results, if the absolute value exceeds the contract required detection limit (CRDL), all nondetects are rejected and flagged "UR" and all detects that are less than ten times the absolute value of the associated preparation blank result are qualified as estimates and flagged "J". If the absolute value of the negative preparation blank is greater than the instrument detection limit (IDL) and less than or equal to the CRDL, all nondetects are qualified as estimates and flagged "UJ" and all detects less than ten times the absolute value of the blank are qualified as estimates and flagged "J". If the sample results are greater than ten times the absolute value of the preparation blank, no qualification is necessary.

Due to method blank contamination, the lead results in samples J189B8, J189B5, J189B7, J189B5, J189J9, J189K2 and J189K4 were qualified as undetected and flagged "UJ".

Due to method blank contamination, all tin results were qualified as undetected and flagged "UJ".

All other preparation blank results were acceptable.

Field (Equipment) Blank

No field blanks were submitted for analysis.

Accuracy

Matrix Spike and Laboratory Control Sample

Matrix spike (MS) and laboratory control sample (LCS) analyses are used to assess the analytical accuracy of the reported data. The matrix spike is used to assess the effect of the matrix on the ability to accurately quantify sample concentrations. Recoveries must fall within the range of 70% to 130%. Samples with a recovery of less than 30% and a sample result below the IDL are rejected and flagged "UR" Samples with a recovery of 30% to 69% and a sample result less than the IDL are qualified "UJ". Samples with a recovery of greater than 130% or less than 70% and a sample result greater than the IDL are qualified as estimates and flagged "J". Finally, for samples with a recovery greater than 130% and a sample result less than the IDL, no qualification is required.

Due to matrix spike recoveries outside QC limits (52% & 53%), all antimony results were qualified as estimates and flagged "J".

Due to a matix spike recovery outside QC limits (20%), all phosphorous results in samples J189C1, J189C3, J189C4, J189J9, J189K2, J189K4 and J189K5 were qualified as estimates and flagged "J".

Due to an LCS recovery outside QC limits, all detected antimony (189% & 192%), arsenic (204% & 192%) , copper (710% & 648%), nickel (142% & 186%), thallium (0% & 0%), vanadium (162% & 164%) and zinc (683% & 605%) results in all samples were qualified as estimates and flagged "J".

Due to an LCS recovery outside QC limits, all detected tin (138%) results in samples J189D6, J189F0, J18985, J18986, J18987, J18988, J18990, J18991, J18992, J189B5, J189B6, J189B7, J189B8, J189B9 and J189C0 were qualified as estimates and flagged "J".

All other accuracy results were acceptable.

· Precision

Laboratory Duplicate Samples

Analytical precision is expressed by the relative percent differences (RPD) between the recoveries of matrix spike duplicate (MSD) analyses performed on a sample in the analytical batch. Precision may alternatively be assessed using unspiked duplicate analyses performed on a sample in the analytical batch. If both sample and replicate activities (concentrations) are greater than five times the CRDL and the RPD is less than 30%, no qualification is required. If either activity (concentration) is less than five times the CRDL, the RPD control limit is less than or equal to two times the CRDL. If the RPD is outside the applicable control limit, associated results are qualified as estimated detects or estimated non-detects.

Due to an RPD outside QC limits (40%), the phosphorous result in samples J189C1, J189C3, J189C4, J189J9, J189K2, J189K4 and J189K5 were qualified as estimates and flagged "J"

All other laboratory duplicate results were acceptable.

Field Duplicate

No field duplicate were submitted for analysis.

- **Analytical Detection Levels**

Reported analytical detection levels are compared against the project RQLs to ensure that laboratory detection levels meet the required criteria. All results met the RQL.

- **Completeness**

Data package No. K1544 was submitted for validation and verified for completeness. Completeness is based on the percentage of data determined to be valid (i.e., not rejected). The completion percentage was 100%.

MAJOR DEFICIENCIES

None found.

MINOR DEFICIENCIES

The following minor deficiencies were noted:

- Due to method blank contamination, the lead results in samples J189B8, J189B5, J189B7, J189B5, J189J9, J189K2 and J189K4 were qualified as undetected and flagged "UJ".
- Due to method blank contamination, all tin results were qualified as undetected and flagged "UJ".
- Due to matrix spike recoveries outside QC limits (52% & 53%), all antimony results were qualified as estimates and flagged "J".
- Due to a matix spike recovery outside QC limits (20%), all phosphorous results in samples J189C1, J189C3, J189C4, J189J9, J189K2, J189K4 and J189K5 were qualified as estimates and flagged "J".
- Due to an LCS recovery outside QC limits, all detected antimony (189% & 192%).

arsenic (204% & 192%) , copper (710% & 648%), nickel (142% & 186%), thallium (0% & 0%), vanadium (162% & 164%) and zinc (683% & 605%) results in all samples were qualified as estimates and flagged "J".

- Due to an LCS recovery outside QC limits, all detected tin (138%) results in samples J189D8, J189F0, J18985, J18986, J18987, J18988, J18990, J18991, J18992, J189B5, J189B6, J189B7, J189B8, J189B9 and J189C0 were qualified as estimates and flagged "J".

- Due to an RPD outside QC limits (40%), the phosphorous result in samples J189C1, J189C3, J189C4, J189J9, J189K2, J189K4 and J189K5 were qualified as estimates and flagged "J".

Data flagged "J" indicates that the associated concentration is an estimate, but under the WCH statement of work, the data may be usable for decision-making purposes. All other validated results are considered accurate within the standard error associated with the methods.

REFERENCES

Washington Closure Hanford Contract #S00W307A00 (March 2008), *Data Validation Services*.

DOE/RL-2008-11, Rev.0, *Remedial Investigation Work Plan for Hanford Site Releases to the Columbia River*, September 2008.

Appendix 1

Glossary of Data Reporting Qualifiers

Qualifiers which may be applied by data validators in compliance with WCH validation SOW are as follows:

U - Indicates the compound or analyte was analyzed for and not detected in the sample. The value reported is the sample quantitation limit corrected for sample dilution and moisture content by the laboratory.

UJ - Indicates the compound or analyte was analyzed for and not detected in the sample. Due to a minor QC deficiency identified during the data validation, the associated quantitation limit is an estimate.

J - Indicates the compound or analyte was analyzed for and detected. Due to a minor QC deficiency identified during the data validation, the associated concentration is an estimate, but the data are usable for decision-making purposes.

BJ - Applied to inorganic analyses only. Indicates the analyte concentration was greater than the IDL but less than the CRDL and is considered an estimated value.

R - Indicates the compound or analyte was analyzed for, detected, and due to an identified major QC deficiency, the data are unusable.

UR - Indicates the compound or analyte was analyzed for and not detected in the sample. Additionally, the data is unusable due to an identified major QC deficiency.

NJ - Indicates presumptive evidence of a compound at an estimated value. The data may not be valid for some specific applications (i.e., usable for decision-making purposes).

N - Indicates presumptive evidence of a compound. The data may not be valid for some specific applications (i.e., usable for decision-making purposes).

Appendix 2

Summary of Data Qualification

METALS ORGANIC DATA QUALIFICATION SUMMARY*

SDG: K1544	**REVIEWER: ELR**	**Project: RCBRA**	**QC Issue**
COMPOUND	QUALIFIER	SAMPLES AFFECTED	REASON
Lead	UJ	J189B8, J189B5 J18987, J18985 J189J9, J189K2 J189K4	Method blank contamination
Tin	UJ	All	Method blank contamination
Antimony	J	All	MS recovery
Phosphorous	J	J189C1, J189C3 J189C4, J189J9 J189K2, J189K4 J189K5	MS recovery
Antimony arsenic copper nickel thallium vanadium zinc	J	All	LCS recovery
Tin	J	J189D8, J189F0 J18985, J18986 J18987, J18988 J18990, J18991 J18992, J189B5 J18986, J189B7 J189B8, J189B9 J189C0	LCS recovery
Phosphorous	J	J189C1, J189C3 J189C4, J189J9 J189K2, J189K4 J189K5	RPD

* - The Qualified Data Summary Table includes laboratory applied "U" qualifiers not specifically identified here. The laboratory applied "U" qualifiers are included to minimize misinterpretation of results contained in the table.

Appendix 3

Qualified Data Summary and Annotated Laboratory Reports

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

WCH-Hanford, Inc 2620 Fermi Avenue Richland WA, 99354	Project: RC 110 Project Number: [none] Project Manager: Joan Kessner	Reported: 05/06/2009 12:48

J189D8

0902067-03 (Solid)

K 12/5/15

Analyte	Result	Reporting Limit	Qualifier	Units	Dilution	Batch	Prepared	Analyzed	Method
			Lionville Laboratory						
Metals by SW846 6000/7000 series									
Aluminum	5750	3.79		mg/kg	1	1904077	04/15/2009	04/22/2009	6010B
Antimony	0.432	0.455	~~B~~ J	"	"	"	"	"	"
Arsenic	4.83	0.758	J	"	"	"	"	"	"
Barium	47.9	0.379		"	"	"	"	"	"
Beryllium	0.174	0.152		"	"	"	"	"	"
Bismuth	7.58	7.58	U	"	"	"	"	"	"
Boron	0.681	1.52	B	"	"	"	"	"	"
Cadmium	0.422	0.152		"	"	"	"	"	"
Calcium	3560	75.8		"	"	"	"	"	"
Chromium	14.0	0.152		"	"	"	"	"	"
Cobalt	3.62	1.52		"	"	"	"	"	"
Copper	18.6	0.758	J	"	"	"	"	"	"
Iron	15700	15.2		"	"	"	"	"	"
Lead	25.5	0.379		"	"	"	"	"	"
Lithium	6.81	1.89		"	"	"	"	"	"
Magnesium	3470	56.8		"	"	"	"	"	"
Manganese	184	3.79		"	"	"	"	"	"
Molybdenum	0.364	1.52	B	"	"	"	"	"	"
Nickel	9.98	3.03	J	"	"	"	"	"	"
Phosphorus	522	37.9		"	"	"	"	"	"
Potassium	792	303		"	"	"	"	"	"
Selenium	0.758	0.758	U	"	"	"	"	"	"
Silicon	1250	1.52		"	"	"	"	"	"
Silver	0.152	0.152	U	"	"	"	"	"	"
Sodium	183	37.9		"	"	"	"	"	"
Strontium	19.8	0.758		"	"	"	"	"	"
Thallium	0.379	0.379	U J	"	"	"	"	"	"
Tin	1.48	7.58	~~B~~ UJ	"	"	"	"	"	"
Uranium	15.2	15.2	U	"	"	"	"	"	"
Vanadium	35.6	1.89	J	"	"	"	"	"	"
Zinc	153	7.58	J	"	"	"	"	"	"
Mercury	0.0243	0.0243	U	mg/kg wet	"	1903157	03/18/2009	03/18/2009	7471A

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

WC-Hanford, Inc 2620 Fermi Avenue Richland WA, 99354	Project: RC-116 Project Number: [none] Project Manager: Jodi Kessner	Reported: 05/06/2009 12:48

J189F0
0902067-04 (Solid)

12/5/07

Analyte	Result	Reporting Limit	Qualifier	Units	Dilution	Batch	Prepared	Analyzed	Method

Lionville Laboratory

Metals by SW846 6000/7000 series

Analyte	Result	Reporting Limit	Qualifier	Units	Dilution	Batch	Prepared	Analyzed	Method
Aluminum	**5790**	4.03		mg/kg	1	1904077	04/15/2009	04/22/2009	6010B
Antimony	0.484	0.484	U J	"	"	"	"	"	"
Arsenic	**2.55**	0.806	J	"	"	"	"	"	"
Barium	**43.7**	0.403		"	"	"	"	"	"
Beryllium	**0.196**	0.161		"	"	"	"	"	"
Bismuth	8.06	8.06	U	"	"	"	"	"	"
Boron	**0.926**	1.61	B	"	"	"	"	"	"
Cadmium	**0.379**	0.161		"	"	"	"	"	"
Calcium	**3110**	80.6		"	"	"	"	"	"
Chromium	**12.9**	0.161		"	"	"	"	"	"
Cobalt	**3.04**	1.61		"	"	"	"	"	"
Copper	**10.2**	0.806	J	"	"	"	"	"	"
Iron	**16100**	16.1		"	"	"	"	"	"
Lead	**9.64**	0.403		"	"	"	"	"	"
Lithium	**6.15**	2.02		"	"	"	"	"	"
Magnesium	**3190**	60.5		"	"	"	"	"	"
Manganese	**196**	4.03		"	"	"	"	"	"
Molybdenum	**0.265**	1.61	B	"	"	"	"	"	"
Nickel	**8.91**	1.23	J	"	"	"	"	"	"
Phosphorus	**448**	40.3		"	"	"	"	"	"
Potassium	**618**	121		"	"	"	"	"	"
Selenium	0.806	0.806	U	"	"	"	"	"	"
Silicon	**1460**	1.61		"	"	"	"	"	"
Silver	0.161	0.161	U	"	"	"	"	"	"
Sodium	**144**	40.3		"	"	"	"	"	"
Strontium	**19.2**	0.806		"	"	"	"	"	"
Thallium	0.403	0.403	U J	"	"	"	"	"	"
Tin	**1.22**	8.06	B UJ	"	"	"	"	"	"
Uranium	16.1	16.1	U	"	"	"	"	"	"
Vanadium	**39.6**	2.02	J	"	"	"	"	"	"
Zinc	**80.9**	8.06	J	"	"	"	"	"	"
Mercury	0.0300	0.0300	U	mg/kg wet	-	1903157	04/18/2009	04/18/2009	7471A

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

WC Hanford Inc
2620 Fermi Avenue
Richland WA, 99354

Project: RC-116
Project Number: [none]
Project Manager: Joan Kessner

Reported:
05/06/2009 12:48

J18985
0902067-05 (Solid)

12/5/09

Lionville Laboratory

Metals by SW846 6000/7000 series

Analyte	Result	Reporting Limit	Qualifier	Units	Dilution	Batch	Prepared	Analyzed	Method
Aluminum	5430	3.97		mg/kg	1	1904027	04/15/2009	04/22/2009	6010B
Antimony	0.476	0.476	U J						
Arsenic	4.80	0.794	J						
Barium	47.0	0.397							
Beryllium	0.337	0.159							
Bismuth	7.94	7.94	U						
Boron	0.710	1.59	B						
Cadmium	0.196	0.159							
Calcium	3870	79.4							
Chromium	9.01	0.159							
Cobalt	3.44	1.59							
Copper	9.36	0.794	J						
Iron	19200	15.9							
Lead	3.71	0.397	U J						
Lithium	5.33	1.98							
Magnesium	3880	39.7							
Manganese	205	3.97							
Molybdenum	0.226	1.59	J B						
Nickel	8.34	3.17	J						
Phosphorus	719	39.7							
Potassium	467	317							
Selenium	0.794	0.794	U						
Silicon	956	1.59							
Silver	0.159	0.159	U						
Sodium	212	19.7							
Strontium	20.1	0.794							
Thallium	0.397	0.397	U J						
Tin	1.74	7.94	B UJ						
Uranium	15.9	15.9	U						
Vanadium	54.7	1.98	J						
Zinc	49.8	7.94	J						
Mercury	0.0273	0.0273	U	mg/kg wet	1	1903157	03/18/2009	03/18/2009	7471A

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WCH-Hanford, Inc
2620 Fermi Avenue
Richland WA, 99354

Project: RC-116
Project Number: [none]
Project Manager: Joan Kessner

Reported:
05/06/2009 12 18

J18986
0902067-06 (Solid)

12/5/09

Lionville Laboratory

Analyte	Result	Reporting Limit	Qualifier	Units	Dilution	Batch	Prepared	Analyzed	Method
Metals by SW846 6000/7000 series									
Aluminum	5270	4.10		mg/kg	1	L904027	04/15/2009	04/22/2009	6010B
Antimony	0.492	0.492	U J	"	"	"	"	"	"
Arsenic	3.32	0.820	J	"	"	"	"	"	"
Barium	45.7	0.410		"	"	"	"	"	"
Beryllium	0.162	0.164	B	"	"	"	"	"	"
Bismuth	8.20	8.20	U	"	"	"	"	"	"
Boron	0.860	1.64	B	"	"	"	"	"	"
Cadmium	0.172	0.164		"	"	"	"	"	"
Calcium	3460	82.0		"	"	"	"	"	"
Chromium	14.3	0.164		"	"	"	"	"	"
Cobalt	3.41	1.64		"	"	"	"	"	"
Copper	8.33	0.820	J	"	"	"	"	"	"
Iron	19300	16.4		"	"	"	"	"	"
Lead	4.76	0.410		"	"	"	"	"	"
Lithium	5.60	2.05		"	"	"	"	"	"
Magnesium	3760	61.5		"	"	"	"	"	"
Manganese	187	4.10		"	"	"	"	"	"
Molybdenum	0.224	1.64	B	"	"	"	"	"	"
Nickel	10.2	1.28	J	"	"	"	"	"	"
Phosphorus	616	41.0		"	"	"	"	"	"
Potassium	530	328		"	"	"	"	"	"
Selenium	0.820	0.820	U	"	"	"	"	"	"
Silicon	1030	1.64		"	"	"	"	"	"
Silver	0.164	0.164	U	"	"	"	"	"	"
Sodium	164	41.0		"	"	"	"	"	"
Strontium	27.4	0.820		"	"	"	"	"	"
Thallium	0.410	0.410	U J	"	"	"	"	"	"
Tin	1.52	8.20	~~B~~ U J	"	"	"	"	"	"
Uranium	16.4	16.4	U	"	"	"	"	"	"
Vanadium	55.0	2.05	J	"	"	"	"	"	"
Zinc	42.1	8.20	J	"	"	"	"	"	"
Mercury	0.0273	0.0273	U	mg/kg wet	"	1903137	03/18/2009	03/18/2009	7471A

264 Welsh Pool Road
Exton, PA 19341
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WC-Hanford, Inc 2620 Fermi Avenue Richland WA, 99354	Project: RC-116 Project Number: [none] Project Manager: Joan Kessner	Reported: 05/06/2009 12:48

J18987

0902067-07 (Solid)

12/5/09

Analyte	Result	Reporting Limit	Qualifier	Units	Dilution	Batch	Prepared	Analyzed	Method
				Lionville Laboratory					
Metals by SW846 6000/7000 series									
Aluminum	4920	3.25		mg/kg	1	0904077	04/15/2009	04/22/2009	6010B
Antimony	0.390	0.390	U J	"	"	"	"	"	"
Arsenic	2.30	0.649	J	"	"	"	"	"	"
Barium	59.1	0.325		"	"	"	"	"	"
Beryllium	0.156	0.130		"	"	"	"	"	"
Bismuth	6.49	6.49	U	"	"	"	"	"	"
Boron	0.549	1.30	U	"	"	"	"	"	"
Cadmium	0.195	0.130		"	"	"	"	"	"
Calcium	4210	64.9		"	"	"	"	"	"
Chromium	5.65	0.130		"	"	"	"	"	"
Cobalt	3.94	1.30		"	"	"	"	"	"
Copper	10.4	0.649	J	"	"	"	"	"	"
Iron	19100	13.0		"	"	"	"	"	"
Lead	3.01	0.325	UJ	"	"	"	"	"	"
Lithium	3.94	1.62		"	"	"	"	"	"
Magnesium	3870	48.7		"	"	"	"	"	"
Manganese	236	1.25		"	"	"	"	"	"
Molybdenum	0.275	1.30	U	"	"	"	"	"	"
Nickel	8.24	2.60	J	"	"	"	"	"	"
Phosphorus	966	32.5		"	"	"	"	"	"
Potassium	404	260		"	"	"	"	"	"
Selenium	0.649	0.649	U	"	"	"	"	"	"
Silicon	802	1.30		"	"	"	"	"	"
Silver	0.130	0.130	U	"	"	"	"	"	"
Sodium	258	32.5		"	"	"	"	"	"
Strontium	18.6	0.649		"	"	"	"	"	"
Thallium	0.325	0.325	U J	"	"	"	"	"	"
Tin	1.62	6.49	~~J~~ UJ	"	"	"	"	"	"
Uranium	13.0	13.0	U	"	"	"	"	"	"
Vanadium	50.0	1.62	J	"	"	"	"	"	"
Zinc	49.6	6.49	J	"	"	"	"	"	"
Mercury	0.0273	0.0273	U	mg/kg wet	"	0903157	03/18/2009	03/18/2009	7471A

264 Welsh Pool Road
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WC Hanford, Inc
2620 Fermi Avenue
Richland WA, 99354

Project: RC-BRA
Project Number: [none]
Project Manager: Joan Kessner

Reported:
05/06/2009 12:48

J18988
0902067-08 (Solid)

W 12/5/09

Analyte	Result	Reporting Limit	Qualifier	Units	Dilution	Batch	Prepared	Analyzed	Method

Lionville Laboratory

Metals by SW846 6000/7000 series

Analyte	Result	Reporting Limit	Qualifier	Units	Dilution	Batch	Prepared	Analyzed	Method
Aluminum	**5480**	4.39		mg/kg	1	L904077	04/15/2009	04/22/2009	6010B
Antimony	0.526	0.526	U J	"	"	"	"	"	"
Arsenic	**2.54**	0.877	J	"	"	"	"	"	"
Barium	**52.0**	0.439		"	"	"	"	"	"
Beryllium	**0.157**	0.175	B	"	"	"	"	"	"
Bismuth	8.77	8.77	U	"	"	"	"	"	"
Boron	**0.899**	1.75	B	"	"	"	"	"	"
Cadmium	**0.166**	0.175	B	"	"	"	"	"	"
Calcium	**3960**	87.7		"	"	"	"	"	"
Chromium	**11.9**	0.175		"	"	"	"	"	"
Cobalt	**4.06**	1.75		"	"	"	"	"	"
Copper	**7.54**	0.877	J	"	"	"	"	"	"
Iron	**19800**	17.5		"	"	"	"	"	"
Lead	**4.40**	0.439		"	"	"	"	"	"
Lithium	**5.61**	2.19		"	"	"	"	"	"
Magnesium	**4250**	65.8		"	"	"	"	"	"
Manganese	**224**	4.39		"	"	"	"	"	"
Molybdenum	**0.207**	1.75	B	"	"	"	"	"	"
Nickel	**11.9**	3.51	J	"	"	"	"	"	"
Phosphorus	**656**	43.9		"	"	"	"	"	"
Potassium	**533**	351		"	"	"	"	"	"
Selenium	0.877	0.877	U	"	"	"	"	"	"
Silicon	**1090**	1.75		"	"	"	"	"	"
Silver	0.175	0.175	U	"	"	"	"	"	"
Sodium	**191**	43.9		"	"	"	"	"	"
Strontium	**22.1**	0.877		"	"	"	"	"	"
Thallium	0.439	0.439	U J	"	"	"	"	"	"
Tin	**1.90**	8.77	~~B~~ UJ	"	"	"	"	"	"
Uranium	17.5	17.5	U	"	"	"	"	"	"
Vanadium	**56.4**	2.19	J	"	"	"	"	"	"
Zinc	**42.7**	8.77	J	"	"	"	"	"	"
Mercury	0.0300	0.0300	U	mg/kg wet	"	L903157	03/18/2009	03/18/2009	7471A

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J18990
0902067-09 (Solid)

12/5/09

Analyte	Result	Reporting Limit	Qualifier	Units	Dilution	Batch	Prepared	Analyzed	Method
			Lionville Laboratory						
Metals by SW846 6000/7000 series									
Aluminum	5690	4.03		mg/kg	1	1904077	04/14/2009	04/22/2009	6010B
Antimony	0.484	0.484	U J	"	"	"	"	"	"
Arsenic	2.25	0.806	J	"	"	"	"	"	"
Barium	62.3	0.403		"	"	"	"	"	"
Beryllium	0.157	0.161	B	"	"	"	"	"	"
Bismuth	8.06	8.06	U	"	"	"	"	"	"
Boron	0.713	1.61	B	"	"	"	"	"	"
Cadmium	0.198	0.161		"	"	"	"	"	"
Calcium	3480	80.6		"	"	"	"	"	"
Chromium	11.6	0.161		"	"	"	"	"	"
Cobalt	3.09	1.61		"	"	"	"	"	"
Copper	11.0	0.806	J	"	"	"	"	"	"
Iron	17800	16.1		"	"	"	"	"	"
Lead	4.72	0.403		"	"	"	"	"	"
Lithium	5.97	2.02		"	"	"	"	"	"
Magnesium	3800	60.5		"	"	"	"	"	"
Manganese	188	4.03		"	"	"	"	"	"
Molybdenum	0.214	1.61	B	"	"	"	"	"	"
Nickel	9.20	3.23	J	"	"	"	"	"	"
Phosphorus	614	40.3		"	"	"	"	"	"
Potassium	544	323		"	"	"	"	"	"
Selenium	0.806	0.806	U	"	"	"	"	"	"
Silicon	1080	1.61		"	"	"	"	"	"
Silver	0.161	0.161	U	"	"	"	"	"	"
Sodium	190	40.3		"	"	"	"	"	"
Strontium	18.9	0.806		"	"	"	"	"	"
Thallium	0.403	0.403	U J	"	"	"	"	"	"
Tin	1.51	8.06	B U J	"	"	"	"	"	"
Uranium	16.1	16.1	U	"	"	"	"	"	"
Vanadium	49.5	2.02	J	"	"	"	"	"	"
Zinc	46.9	8.06	J	"	"	"	"	"	"
Mercury	0.0281	0.0281	U	mg/kg wet	"	0903157	03/18/2009	03/18/2009	7471A

764 Welsh Pool Road
Exton, PA 19341
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WC-Hanford, Inc 2620 Fermi Avenue Richland WA, 99354	Project: RC-116 Project Number: [none] Project Manager: Joan Kessner	Reported: 05/06/2009 12:48

J18991
0902067-10 (Solid)

12/5/09

Analyte	Result	Reporting Limit	Qualifier	Units	Dilution	Batch	Prepared	Analyzed	Method
			Lionville Laboratory						
Metals by SW846 6000/7000 series									
Aluminum	4920	4.63		mg/kg	1	1904077	04/15/2009	04/22/2009	6010B
Antimony	0.556	0.556	U J	"	"	"	"	"	"
Arsenic	2.19	0.926	J	"	"	"	"	"	"
Barium	59.0	0.463		"	"	"	"	"	"
Beryllium	0.161	0.185	B	"	"	"	"	"	"
Bismuth	9.26	9.26	U	"	"	"	"	"	"
Boron	0.627	1.85	B	"	"	"	"	"	"
Cadmium	0.142	0.185		"	"	"	"	"	"
Calcium	3690	92.6		"	"	"	"	"	"
Chromium	9.01	0.185		"	"	"	"	"	"
Cobalt	4.30	1.85		"	"	"	"	"	"
Copper	10.0	0.926	J	"	"	"	"	"	"
Iron	20200	18.5		"	"	"	"	"	"
Lead	4.56	0.463		"	"	"	"	"	"
Lithium	4.78	2.31		"	"	"	"	"	"
Magnesium	3540	69.4		"	"	"	"	"	"
Manganese	218	4.63		"	"	"	"	"	"
Molybdenum	0.290	1.85	B	"	"	"	"	"	"
Nickel	8.06	3.70	J	"	"	"	"	"	"
Phosphorus	788	46.3		"	"	"	"	"	"
Potassium	459	370		"	"	"	"	"	"
Selenium	0.926	0.926	U	"	"	"	"	"	"
Silicon	1060	1.85		"	"	"	"	"	"
Silver	0.185	0.185	U	"	"	"	"	"	"
Sodium	263	46.3		"	"	"	"	"	"
Strontium	17.7	0.926		"	"	"	"	"	"
Thallium	0.463	0.463	U J	"	"	"	"	"	"
Tin	2.05	9.26	~~B~~ UJ	"	"	"	"	"	"
Uranium	18.5	18.5	U	"	"	"	"	"	"
Vanadium	49.5	2.31	J	"	"	"	"	"	"
Zinc	56.7	9.26	J	"	"	"	"	"	"
Mercury	0.0257	0.0257	U	mg/kg wet	"	1903157	03/18/2009	03/18/2009	7471A

264 Welsh Pool Road
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WCH Hanford, Inc 2620 Fermi Avenue Richland WA, 99354	Project: RC-116 Project Number: [none] Project Manager: Joan Kessner	Reported: 05/06/2009 12:48

J18992

0902067-11 (Solid)

V 12/5/09

Analyte	Result	Reporting Limit	Qualifier	Units	Dilution	Batch	Prepared	Analyzed	Method

Lionville Laboratory

Metals by SW846 6000/7000 series

Analyte	Result	Reporting Limit	Qualifier	Units	Dilution	Batch	Prepared	Analyzed	Method
Aluminum	6020	4.24		mg/kg	1	L904077	04/14/2009	04/22/2009	6010B
Antimony	0.508	0.508	U J	"	"	"	"	"	"
Arsenic	2.43	0.847	J	"	"	"	"	"	"
Barium	39.6	0.424		"	"	"	"	"	"
Beryllium	0.177	0.169		"	"	"	"	"	"
Bismuth	8.47	8.47	U	"	"	"	"	"	"
Boron	0.837	1.69	B	"	"	"	"	"	"
Cadmium	0.183	0.169		"	"	"	"	"	"
Calcium	3090	84.7		"	"	"	"	"	"
Chromium	15.9	0.169		"	"	"	"	"	"
Cobalt	3.65	1.69		"	"	"	"	"	"
Copper	8.96	0.847	J	"	"	"	"	"	"
Iron	19400	16.9		"	"	"	"	"	"
Lead	4.59	0.424		"	"	"	"	"	"
Lithium	6.80	2.12		"	"	"	"	"	"
Magnesium	4230	63.6		"	"	"	"	"	"
Manganese	196	4.24		"	"	"	"	"	"
Molybdenum	0.204	1.69	B	"	"	"	"	"	"
Nickel	11.0	3.39	J	"	"	"	"	"	"
Phosphorus	550	42.4		"	"	"	"	"	"
Potassium	524	339		"	"	"	"	"	"
Selenium	0.847	0.847	U	"	"	"	"	"	"
Silicon	1040	1.69		"	"	"	"	"	"
Silver	0.169	0.169	U	"	"	"	"	"	"
Sodium	191	42.4		"	"	"	"	"	"
Strontium	17.1	0.847		"	"	"	"	"	"
Thallium	0.424	0.424	U J	"	"	"	"	"	"
Tin	1.60	8.47	~~B~~ U J	"	"	"	"	"	"
Uranium	16.9	16.9	U	"	"	"	"	"	"
Vanadium	55.3	2.12	J	"	"	"	"	"	"
Zinc	44.6	8.47	J	"	"	"	"	"	"
Mercury	0.0257	0.0257	U	mg/kg wet	"	L901157	03/18/2009	03/18/2009	7471A

264 Welsh Pool Road
Exton, PA 19341
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WCH Hanford, Inc.
2620 Fermi Avenue
Richland WA, 99354

Project: RC-136
Project Number: (none)
Project Manager: Joan Kessner

Reported:
05/06/2009 12:48

J189B5

0902067-12 (Solid)

V 12/5/09

Analyte	Result	Reporting Limit	Qualifier	Units	Dilution	Batch	Prepared	Analyzed	Method
Lionville Laboratory									
Metals by SW846 6000/7000 series									
Aluminum	**4140**	3.25		mg/kg	1	1904077	04/15/2009	04/22/2009	6010B
Antimony	0.390	0.390	U J	"	"	"	"	"	"
Arsenic	**2.32**	0.649	J	"	"	"	"	"	"
Barium	**37.9**	0.325		"	"	"	"	"	"
Beryllium	**0.114**	0.130	B	"	"	"	"	"	"
Bismuth	6.49	6.49	U	"	"	"	"	"	"
Boron	**0.684**	1.30	B	"	"	"	"	"	"
Cadmium	**0.106**	0.130	B	"	"	"	"	"	"
Calcium	**2650**	64.9		"	"	"	"	"	"
Chromium	**15.2**	0.130		"	"	"	"	"	"
Cobalt	**2.80**	1.30		"	"	"	"	"	"
Copper	**4.31**	0.649	J	"	"	"	"	"	"
Iron	**16300**	13.0		"	"	"	"	"	"
Lead	**3.15**	0.325	UJ	"	"	"	"	"	"
Lithium	**4.69**	1.62		"	"	"	"	"	"
Magnesium	**2830**	48.7		"	"	"	"	"	"
Manganese	**149**	3.25		"	"	"	"	"	"
Molybdenum	**0.337**	1.30	B	"	"	"	"	"	"
Nickel	**10.5**	2.60	J	"	"	"	"	"	"
Phosphorus	**562**	32.5		"	"	"	"	"	"
Potassium	**432**	260		"	"	"	"	"	"
Selenium	0.649	0.649	U	"	"	"	"	"	"
Silicon	**808**	1.30		"	"	"	"	"	"
Silver	0.130	0.130	U	"	"	"	"	"	"
Sodium	**113**	32.5		"	"	"	"	"	"
Strontium	**14.7**	0.649		"	"	"	"	"	"
Thallium	0.325	0.325	U J	"	"	"	"	"	"
Tin	**1.09**	6.49	~~B~~ UJ	"	"	"	"	"	"
Uranium	13.0	13.0	U	"	"	"	"	"	"
Vanadium	**44.4**	1.62	J	"	"	"	"	"	"
Zinc	**78.1**	6.49	J	"	"	"	"	"	"
Mercury	0.0290	0.0290	U	mg/kg wet	"	1903137	03/18/2009	03/18/2009	7471A

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WC Hanford, Inc 2620 Fermi Avenue Richland WA 99354	Project: RC-116 Project Number: [none] Project Manager: Joan Kessner	Reported: 05/06/2009 12:18

J189B6
0902067-13 (Solid)

K 12/5/09

Analyte	Result	Reporting Limit	Qualifier	Units	Dilution	Batch	Prepared	Analyzed	Method
			Lionville Laboratory						
Metals by SW846 6000/7000 series									
Aluminum	7300	3.38		mg/kg	1	9D04077	04/15/2009	04/22/2009	6010B
Antimony	0.405	0.405	U J	"	"	"	"	"	"
Arsenic	2.05	0.676	J	"	"	"	"	"	"
Barium	70.5	0.338		"	"	"	"	"	"
Beryllium	0.207	0.135		"	"	"	"	"	"
Bismuth	6.76	6.76	U	"	"	"	"	"	"
Boron	0.949	1.35	B	"	"	"	"	"	"
Cadmium	0.184	0.135		"	"	"	"	"	"
Calcium	3510	67.6		"	"	"	"	"	"
Chromium	13.2	0.135		"	"	"	"	"	"
Cobalt	3.84	1.35		"	"	"	"	"	"
Copper	8.47	0.676	J	"	"	"	"	"	"
Iron	13600	13.5		"	"	"	"	"	"
Lead	4.34	0.338		"	"	"	"	"	"
Lithium	6.59	1.69		"	"	"	"	"	"
Magnesium	3490	50.7		"	"	"	"	"	"
Manganese	171	3.38		"	"	"	"	"	"
Molybdenum	0.109	1.35	B	"	"	"	"	"	"
Nickel	13.4	2.70	J	"	"	"	"	"	"
Phosphorus	473	33.8		"	"	"	"	"	"
Potassium	761	270		"	"	"	"	"	"
Selenium	0.676	0.676	U	"	"	"	"	"	"
Silicon	1250	1.35		"	"	"	"	"	"
Silver	0.135	0.135	U	"	"	"	"	"	"
Sodium	220	33.8		"	"	"	"	"	"
Strontium	26.6	0.676		"	"	"	"	"	"
Thallium	0.338	0.338	U J	"	"	"	"	"	"
Tin	1.28	6.76	~~B~~ U J	"	"	"	"	"	"
Uranium	13.5	13.5	U	"	"	"	"	"	"
Vanadium	29.6	1.69	J	"	"	"	"	"	"
Zinc	38.6	6.76	J	"	"	"	"	"	"
Mercury	0.0300	0.0300	U	mg/kg wet	"	9D03157	04/18/2009	04/18/2009	7471A

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WCH Hanford, Inc 2620 Fermi Avenue Richland WA, 99354	Project: RCI 116 Project Number: [none] Project Manager: Joan Kessner	Reported: 05/06/2009 12:48

J18987

0902067-14 (Solid)

V 12/5/09

Analyte	Result	Reporting Limit	Qualifier	Units	Dilution	Batch	Prepared	Analyzed	Method

Lionville Laboratory

Metals by SW846 6000/7000 series

Analyte	Result	Reporting Limit	Qualifier	Units	Dilution	Batch	Prepared	Analyzed	Method
Aluminum	**6100**	3.85		mg/kg	1	1904077	04/15/2009	04/22/2009	6010B
Antimony	0.462	0.462	U J	"	"	"	"	"	"
Arsenic	**4.11**	0.769	J	"	"	"	"	"	"
Barium	**60.5**	0.385		"	"	"	"	"	"
Beryllium	**0.258**	0.154		"	"	"	"	"	"
Bismuth	7.69	7.69	U	"	"	"	"	"	"
Boron	**0.654**	1.54	B	"	"	"	"	"	"
Cadmium	**0.190**	0.154		"	"	"	"	"	"
Calcium	**6190**	76.9		"	"	"	"	"	"
Chromium	**16.8**	0.154		"	"	"	"	"	"
Cobalt	**5.27**	1.54		"	"	"	"	"	"
Copper	**14.9**	0.769	J	"	"	"	"	"	"
Iron	**26700**	15.4		"	"	"	"	"	"
Lead	**4.87**	0.385		"	"	"	"	"	"
Lithium	**3.84**	1.92		"	"	"	"	"	"
Magnesium	**3990**	57.7		"	"	"	"	"	"
Manganese	**285**	3.85		"	"	"	"	"	"
Molybdenum	**0.684**	1.54	B	"	"	"	"	"	"
Nickel	**13.8**	3.08	J	"	"	"	"	"	"
Phosphorus	**1410**	38.5		"	"	"	"	"	"
Potassium	**666**	308		"	"	"	"	"	"
Selenium	0.769	0.769	U	"	"	"	"	"	"
Silicon	**1070**	1.54		"	"	"	"	"	"
Silver	0.154	0.154	U	"	"	"	"	"	"
Sodium	**477**	38.5		"	"	"	"	"	"
Strontium	**26.6**	0.769		"	"	"	"	"	"
Thallium	0.385	0.385	U J	"	"	"	"	"	"
Tin	**2.00**	7.69	~~B~~ U J	"	"	"	"	"	"
Uranium	15.4	15.4	U	"	"	"	"	"	"
Vanadium	**74.6**	1.92	J	"	"	"	"	"	"
Zinc	**50.6**	7.69	J	"	"	"	"	"	"
Mercury	0.0225	0.0225	U	mg/kg wet	"	1903157	03/18/2009	03/18/2009	7471A

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WC Hanford Inc 2620 Fermi Avenue Richland WA, 99354	Project: RC-116 Project Number: [none] Project Manager: Joan Kessner	Reported: 05/06/2009 12:48

J189B8
0902067-15 (Solid)

V 12/5/09

Analyte	Result	Reporting Limit	Qualifier	Units	Dilution	Batch	Prepared	Analyzed	Method

Lionville Laboratory

Metals by SW846 6000/7000 series

Analyte	Result	Reporting Limit	Qualifier	Units	Dilution	Batch	Prepared	Analyzed	Method
Aluminum	6710	3.47		mg/kg	1	1904077	04/15/2009	04/22/2009	6010B
Antimony	0.417	0.417	U J	"	"	"	"	"	"
Arsenic	2.61	0.694	J	"	"	"	"	"	"
Barium	49.5	0.347		"	"	"	"	"	"
Beryllium	0.147	0.139		"	"	"	"	"	"
Bismuth	6.94	6.94	U	"	"	"	"	"	"
Boron	1.03	1.39	B	"	"	"	"	"	"
Cadmium	0.155	0.139		"	"	"	"	"	"
Calcium	4010	69.4		"	"	"	"	"	"
Chromium	22.7	0.139		"	"	"	"	"	"
Cobalt	4.79	1.39		"	"	"	"	"	"
Copper	6.47	0.694	J	"	"	"	"	"	"
Iron	22700	13.9		"	"	"	"	"	"
Lead	5.34	0.347	U J	"	"	"	"	"	"
Lithium	5.57	1.74		"	"	"	"	"	"
Magnesium	3940	52.1		"	"	"	"	"	"
Manganese	214	3.47		"	"	"	"	"	"
Molybdenum	0.149	1.39	B	"	"	"	"	"	"
Nickel	19.7	2.78	J	"	"	"	"	"	"
Phosphorus	563	34.7		"	"	"	"	"	"
Potassium	551	278		"	"	"	"	"	"
Selenium	0.694	0.694	U	"	"	"	"	"	"
Silicon	1100	1.39		"	"	"	"	"	"
Silver	0.139	0.139	U	"	"	"	"	"	"
Sodium	247	34.7		"	"	"	"	"	"
Strontium	25.1	0.694		"	"	"	"	"	"
Thallium	0.347	0.347	U J	"	"	"	"	"	"
Tin	1.54	6.94	~~B~~ U J	"	"	"	"	"	"
Uranium	13.9	13.9	U	"	"	"	"	"	"
Vanadium	73.0	1.74	J	"	"	"	"	"	"
Zinc	41.8	6.94	J	"	"	"	"	"	"
Mercury	0.0281	0.0281	U	mg/kg wet	"	1903157	03/18/2009	03/18/2009	7471A

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WC-Hanford Inc. 2620 Fermi Avenue Richland WA, 99354	Project: RC-116 Project Number: [none] Project Manager: Joan Kessner	Reported: 05/06/2009 12:48

J189B9
0902067-16 (Solid)

✓ 12/5/09

Lionville Laboratory

Metals by SW846 6000/7000 series

Analyte	Result	Reporting Limit	Qualifier	Units	Dilution	Batch	Prepared	Analyzed	Method
Aluminum	8030	3.79		mg/kg	1	9D04077	04/13/2009	04/22/2009	6010B
Antimony	0.480	0.455	J	"	"	"	"	"	"
Arsenic	6.30	0.758	J	"	"	"	"	"	"
Barium	71.0	0.379		"	"	"	"	"	"
Beryllium	0.221	0.152		"	"	"	"	"	"
Bismuth	7.58	7.58	U	"	"	"	"	"	"
Boron	1.12	1.52	B	"	"	"	"	"	"
Cadmium	2.72	0.152		"	"	"	"	"	"
Calcium	3660	75.8		"	"	"	"	"	"
Chromium	15.4	0.152		"	"	"	"	"	"
Cobalt	5.44	1.52		"	"	"	"	"	"
Copper	16.1	0.758	J	"	"	"	"	"	"
Iron	17800	15.2		"	"	"	"	"	"
Lead	26.1	0.379		"	"	"	"	"	"
Lithium	7.73	1.89		"	"	"	"	"	"
Magnesium	4030	56.8		"	"	"	"	"	"
Manganese	340	3.79		"	"	"	"	"	"
Molybdenum	0.185	1.52	B	"	"	"	"	"	"
Nickel	18.1	3.03	J	"	"	"	"	"	"
Phosphorus	546	37.9		"	"	"	"	"	"
Potassium	816	303		"	"	"	"	"	"
Selenium	0.758	0.758	U	"	"	"	"	"	"
Silicon	1310	1.52		"	"	"	"	"	"
Silver	0.152	0.152	U	"	"	"	"	"	"
Sodium	216	37.9		"	"	"	"	"	"
Strontium	27.9	0.758		"	"	"	"	"	"
Thallium	0.379	0.379	U J	"	"	"	"	"	"
Tin	1.65	7.58	~~B~~ U J	"	"	"	"	"	"
Uranium	15.2	15.2	U	"	"	"	"	"	"
Vanadium	35.9	1.89	J	"	"	"	"	"	"
Zinc	157	7.58	J	"	"	"	"	"	"
Mercury	0.0279	0.0265		mg/kg wet	"	9C03157	03/18/2009	03/18/2009	7471A

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WCH-Hanford, Inc 2620 Fermi Avenue Richland WA, 99354	Project: RC-116 Project Number: [none] Project Manager: Joan Kessner	Reported: 05/06/2009 12:48

J189C0
0902067-17 (Solid)

✓ 12/5/09

Lionville Laboratory

Metals by SW846 6000/7000 series

Analyte	Result	Reporting Limit	Qualifier	Units	Dilution	Batch	Prepared	Analyzed	Method
Aluminum	**4760**	3.68		mg/kg	1	9D00077	04/15/2009	04/22/2009	6010B
Antimony	0.441	0.441	U J	"	"	"	"	"	"
Arsenic	**2.36**	0.735	J	"	"	"	"	"	"
Barium	**36.6**	0.368		"	"	"	"	"	"
Beryllium	**0.124**	0.147	B	"	"	"	"	"	"
Bismuth	7.35	7.35	U	"	"	"	"	"	"
Boron	**0.779**	1.47	B	"	"	"	"	"	"
Cadmium	**0.139**	0.147	B	"	"	"	"	"	"
Calcium	**2810**	73.5		"	"	"	"	"	"
Chromium	**11.6**	0.147		"	"	"	"	"	"
Cobalt	**5.09**	1.47		"	"	"	"	"	"
Copper	**6.05**	0.735	J	"	"	"	"	"	"
Iron	**12500**	14.7		"	"	"	"	"	"
Lead	**6.83**	0.368		"	"	"	"	"	"
Lithium	**4.79**	1.84		"	"	"	"	"	"
Magnesium	**2760**	55.1		"	"	"	"	"	"
Manganese	**161**	3.68		"	"	"	"	"	"
Molybdenum	**0.132**	1.47	B	"	"	"	"	"	"
Nickel	**10.7**	2.94	J	"	"	"	"	"	"
Phosphorus	**496**	36.8		"	"	"	"	"	"
Potassium	**482**	294		"	"	"	"	"	"
Selenium	0.735	0.735	U	"	"	"	"	"	"
Silicon	**1080**	1.47		"	"	"	"	"	"
Silver	0.147	0.147	U	"	"	"	"	"	"
Sodium	**155**	36.8		"	"	"	"	"	"
Strontium	**17.0**	0.735		"	"	"	"	"	"
Thallium	0.368	0.368	U J	"	"	"	"	"	"
Tin	**5.21**	7.35	B U J	"	"	"	"	"	"
Uranium	14.7	14.7	U	"	"	"	"	"	"
Vanadium	**30.9**	1.84	J	"	"	"	"	"	"
Zinc	**44.8**	7.35	J	"	"	"	"	"	"
Mercury	0.0237	0.0237	U	mg/kg wet	1	9D03157	04/18/2009	04/18/2009	7471A

WC Hanford, Inc	Project: RC-116	
2620 Fermi Avenue	Project Number: [none]	Reported:
Richland WA, 99354	Project Manager: Joan Kessner	05/06/2009 12:48

J189C1
0902067-18 (Solid)

K 12/5/09

Analyte	Result	Reporting Limit	Qualifier	Units	Dilution	Batch	Prepared	Analyzed	Method

Lionville Laboratory

Metals by SW846 6000/7000 series

Analyte	Result	Reporting Limit	Qualifier	Units	Dilution	Batch	Prepared	Analyzed	Method
Aluminum	**4760**	3.91		mg/kg	1	1090078	03/15/2009	04/22/2009	6010B
Antimony	0.469	0.469	U J	"	"	"	"	"	"
Arsenic	**2.36**	0.781	J	"	"	"	"	"	"
Barium	**43.9**	0.391		"	"	"	"	"	"
Beryllium	**0.142**	0.156	B	"	"	"	"	"	"
Bismuth	7.81	7.81	U	"	"	"	"	"	"
Boron	**0.982**	1.56	B	"	"	"	"	"	"
Cadmium	**0.182**	0.156		"	"	"	"	"	"
Calcium	**2840**	78.1		"	"	"	"	"	"
Chromium	**13.1**	0.156		"	"	"	"	"	"
Cobalt	**4.49**	1.56		"	"	"	"	"	"
Copper	**8.04**	0.781	J	"	"	"	"	"	"
Iron	**14200**	15.6		"	"	"	"	"	"
Lead	**4.14**	0.391		"	"	"	"	"	"
Lithium	**4.83**	1.95		"	"	"	"	"	"
Magnesium	**3060**	58.6		"	"	"	"	"	"
Manganese	**180**	1.91		"	"	"	"	"	"
Molybdenum	**0.139**	1.56	B	"	"	"	"	"	"
Nickel	**14.7**	3.12	J	"	"	"	"	"	"
Phosphorus	**436**	39.1	J	"	"	"	"	"	"
Potassium	**531**	112		"	"	"	"	"	"
Selenium	0.781	0.781	U	"	"	"	"	"	"
Silicon	**1190**	1.56		"	"	"	"	"	"
Silver	0.156	0.156	U	"	"	"	"	"	"
Sodium	**197**	39.1		"	"	"	"	"	"
Strontium	**18.1**	0.781		"	"	"	"	"	"
Thallium	0.391	0.391	U J	"	"	"	"	"	"
Tin	**3.38**	7.81	B UJ	"	"	"	"	"	"
Uranium	15.6	15.6	U	"	"	"	"	"	"
Vanadium	**33.3**	1.95	J	"	"	"	"	"	"
Zinc	**48.4**	7.81	J	"	"	"	"	"	"
Mercury	0.0237	0.0237	U	mg/kg wet	1	1903157	03/18/2009	03/18/2009	7471A

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WC Hanford, Inc 2620 Fermi Avenue Richland WA, 99354	Project: 300-116 Project Number: [none] Project Manager: Joan Kessner	Reported: 05/07/2009 12:18

J189C5
0902067-19 (Solid)

12/5/09

Analyte	Result	Reporting Limit	Qualifier	Units	Dilution	Batch	Prepared	Analyzed	Method

Lionville Laboratory

Metals by SW846 6000/7000 series

Analyte	Result	Reporting Limit	Qualifier	Units	Dilution	Batch	Prepared	Analyzed	Method
Aluminum	8290	3.79		mg/kg	1	1904018	04/15/2009	04/22/2009	6010B
Antimony	0.455	0.455	U J	"	"	"	"	"	"
Arsenic	2.40	0.758	J	"	"	"	"	"	"
Barium	82.0	0.379		"	"	"	"	"	"
Beryllium	0.259	0.152		"	"	"	"	"	"
Bismuth	7.58	7.58	U	"	"	"	"	"	"
Boron	1.16	1.52	B	"	"	"	"	"	"
Cadmium	0.315	0.152		"	"	"	"	"	"
Calcium	3820	75.8		"	"	"	"	"	"
Chromium	14.7	0.152		"	"	"	"	"	"
Cobalt	4.57	1.52		"	"	"	"	"	"
Copper	12.5	0.758	J	"	"	"	"	"	"
Iron	15300	15.2		"	"	"	"	"	"
Lead	6.80	0.379		"	"	"	"	"	"
Lithium	7.24	1.89		"	"	"	"	"	"
Magnesium	3760	56.8		"	"	"	"	"	"
Manganese	250	3.79		"	"	"	"	"	"
Molybdenum	0.137	1.52	B	"	"	"	"	"	"
Nickel	14.2	1.03	J	"	"	"	"	"	"
Phosphorus	514	17.9	J	"	"	"	"	"	"
Potassium	892	103		"	"	"	"	"	"
Selenium	0.758	0.758	U	"	"	"	"	"	"
Silicon	1390	1.52		"	"	"	"	"	"
Silver	0.152	0.152	U	"	"	"	"	"	"
Sodium	226	17.9		"	"	"	"	"	"
Strontium	28.0	0.758		"	"	"	"	"	"
Thallium	0.379	0.379	U J	"	"	"	"	"	"
Tin	1.31	7.58	B UJ	"	"	"	"	"	"
Uranium	15.2	15.2	U	"	"	"	"	"	"
Vanadium	33.0	1.89	J	"	"	"	"	"	"
Zinc	56.4	7.58	J	"	"	"	"	"	"
Mercury	0.0138	0.0300	B	mg/kg wet	1	1904157	04/18/2009	04/18/2009	7471A

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WC-Hanford, Inc
2620 Fermi Avenue
Richland WA, 99354

Project: RC-116
Project Number: (none)
Project Manager: Joan Kessner

Reported:
05/06/2009 12:48

J189C4
0902067-20 (Solid)

12/5/09

Analyte	Result	Reporting Limit	Qualifier	Units	Dilution	Batch	Prepared	Analyzed	Method
Lionville Laboratory									
Metals by SW846 6000/7000 series									
Aluminum	**6050**	3.42		mg/kg	1	1904078	04/15/2009	04/22/2009	6010B
Antimony	0.411	0.411	U J	"	"	"	"	"	"
Arsenic	**3.18**	0.685	J	"	"	"	"	"	"
Barium	**47.1**	0.342		"	"	"	"	"	"
Beryllium	**0.142**	0.137		"	"	"	"	"	"
Bismuth	6.85	6.85	U	"	"	"	"	"	"
Boron	**1.03**	1.37	B	"	"	"	"	"	"
Cadmium	**0.164**	0.137		"	"	"	"	"	"
Calcium	**4080**	68.5		"	"	"	"	"	"
Chromium	**21.3**	0.137		"	"	"	"	"	"
Cobalt	**4.49**	1.37		"	"	"	"	"	"
Copper	**5.85**	0.685	J	"	"	"	"	"	"
Iron	**21000**	13.7		"	"	"	"	"	"
Lead	**4.36**	0.342		"	"	"	"	"	"
Lithium	**5.82**	1.71		"	"	"	"	"	"
Magnesium	**3970**	51.4		"	"	"	"	"	"
Manganese	**228**	3.42		"	"	"	"	"	"
Molybdenum	**0.151**	1.37	B	"	"	"	"	"	"
Nickel	**16.9**	2.74	J	"	"	"	"	"	"
Phosphorus	**692**	34.2	J	"	"	"	"	"	"
Potassium	**493**	274		"	"	"	"	"	"
Selenium	0.685	0.685	U	"	"	"	"	"	"
Silicon	**860**	1.37		"	"	"	"	"	"
Silver	0.137	0.137	U	"	"	"	"	"	"
Sodium	**182**	34.2		"	"	"	"	"	"
Strontium	**19.0**	0.685		"	"	"	"	"	"
Thallium	0.342	0.342	U J	"	"	"	"	"	"
Tin	**1.25**	6.85	~~B~~ UJ	"	"	"	"	"	"
Gallium	13.7	13.7	U	"	"	"	"	"	"
Vanadium	**58.9**	1.71	J	"	"	"	"	"	"
Zinc	**47.8**	6.85	J	"	"	"	"	"	"
Mercury	0.0250	0.0250	U	mg/kg wet	-	1903157	03/18/2009	03/18/2009	7471A

000028

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

WC Hanford Inc 2620 Fermi Avenue Richland WA 99354	Project: RC 116 Project Number: [none] Project Manager: Joan Kessner	Reported: 05/06/2009 12:18

J189J0
0902067-21 (Solid)

12/5/09

Lionville Laboratory

Metals by SW846 6000/7000 series

Analyte	Result	Reporting Limit	Qualifier	Units	Dilution	Batch	Prepared	Analyzed	Method
Aluminum	3400	3.25		mg/kg	1	1904078	04/15/2009	04/22/2009	6010B
Antimony	0.390	0.390	U J	"	"	"	"	"	"
Arsenic	1.35	0.649	J	"	"	"	"	"	"
Barium	28.1	0.325		"	"	"	"	"	"
Beryllium	0.0978	0.130	B	"	"	"	"	"	"
Bismuth	6.49	6.49	U	"	"	"	"	"	"
Boron	0.579	1.30	B	"	"	"	"	"	"
Cadmium	0.163	0.130		"	"	"	"	"	"
Calcium	2300	64.9		"	"	"	"	"	"
Chromium	8.69	0.130		"	"	"	"	"	"
Cobalt	1.95	1.30		"	"	"	"	"	"
Copper	3.44	0.649	J	"	"	"	"	"	"
Iron	8270	13.0		"	"	"	"	"	"
Lead	2.11	0.325	U J	"	"	"	"	"	"
Lithium	3.99	1.62		"	"	"	"	"	"
Magnesium	2190	38.7		"	"	"	"	"	"
Manganese	81.8	3.25		"	"	"	"	"	"
Molybdenum	0.0674	1.30	B	"	"	"	"	"	"
Nickel	5.49	2.60	J	"	"	"	"	"	"
Phosphorus	267	32.5	J	"	"	"	"	"	"
Potassium	582	260		"	"	"	"	"	"
Selenium	0.649	0.649	U	"	"	"	"	"	"
Silicon	843	1.30		"	"	"	"	"	"
Silver	0.130	0.130	U	"	"	"	"	"	"
Sodium	131	32.5		"	"	"	"	"	"
Strontium	12.9	0.649		"	"	"	"	"	"
Thallium	0.325	0.325	U J	"	"	"	"	"	"
Tin	0.987	6.49	~~B~~ UJ	"	"	"	"	"	"
Uranium	13.0	13.0	U	"	"	"	"	"	"
Vanadium	20.0	1.62	J	"	"	"	"	"	"
Zinc	28.0	6.49	J	"	"	"	"	"	"
Mercury	0.0273	0.0273	U	mg/kg wet	"	1904157	04/18/2009	04/18/2009	7471A

[illegible]

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

WCH Hanford, Inc 2620 Fermi Avenue Richland WA 99354	Project: RC-1 Ins Project Number: [none] Project Manager: Joan Kessner	Reported: 05/06/2009 12:18

J189K2
0902067-22 (Solid)

✓ 12/8/09

Analyte	Result	Reporting Limit	Qualifier	Units	Dilution	Batch	Prepared	Analyzed	Method

Lionville Laboratory

Metals by SW846 6000/7000 series

Analyte	Result	Reporting Limit	Qualifier	Units	Dilution	Batch	Prepared	Analyzed	Method
Aluminum	4320	3.73		mg/kg	1	1904078	04/15/2009	04/22/2009	6010B
Antimony	0.448	0.448	U J	"	"	"	"	"	"
Arsenic	1.97	0.746	J	"	"	"	"	"	"
Barium	39.2	0.373		"	"	"	"	"	"
Beryllium	0.142	0.149	B	"	"	"	"	"	"
Bismuth	7.46	7.46	U	"	"	"	"	"	"
Boron	0.685	1.49	B	"	"	"	"	"	"
Cadmium	0.190	0.149		"	"	"	"	"	"
Calcium	9430	74.6		"	"	"	"	"	"
Chromium	11.2	0.149		"	"	"	"	"	"
Cobalt	2.56	1.49		"	"	"	"	"	"
Copper	4.63	0.746	J	"	"	"	"	"	"
Iron	11000	14.9		"	"	"	"	"	"
Lead	3.81	0.373	UJ	"	"	"	"	"	"
Lithium	5.20	1.87		"	"	"	"	"	"
Magnesium	2830	56.0		"	"	"	"	"	"
Manganese	110	3.73		"	"	"	"	"	"
Molybdenum	0.142	1.49	B	"	"	"	"	"	"
Nickel	7.73	2.99	J	"	"	"	"	"	"
Phosphorus	394	37.3	J	"	"	"	"	"	"
Potassium	714	209		"	"	"	"	"	"
Selenium	0.746	0.746	U	"	"	"	"	"	"
Silicon	1010	1.49		"	"	"	"	"	"
Silver	0.149	0.149	U	"	"	"	"	"	"
Sodium	182	37.3		"	"	"	"	"	"
Strontium	24.2	0.746		"	"	"	"	"	"
Thallium	0.373	0.373	U J	"	"	"	"	"	"
Tin	1.30	7.46	~~B~~ UJ	"	"	"	"	"	"
Uranium	14.9	14.9	U	"	"	"	"	"	"
Vanadium	27.0	1.87	J	"	"	"	"	"	"
Zinc	31.4	7.46	J	"	"	"	"	"	"
Mercury	0.0225	0.0225	U	mg/kg wet	"	1904157	04/18/2009	04/18/2009	7471A

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

WC-Hanford, Inc 2620 Fermi Avenue Richland WA, 99354	Project: RC 116 Project Number: [none] Project Manager: Joan Kessner	Reported: 05/06/2009 12:48

J189K4

0902067-23 (Solid)

12/5/09

Analyte	Result	Reporting Limit	Qualifier	Units	Dilution	Batch	Prepared	Analyzed	Method

Lionville Laboratory

Metals by SW846 6000/7000 series

Analyte	Result	Reporting Limit	Qualifier	Units	Dilution	Batch	Prepared	Analyzed	Method
Aluminum	4330	3.68		mg/kg	1	1904078	04/15/2009	04/27/2009	6010B
Antimony	0.441	0.441	U J	"	"	"	"	"	"
Arsenic	1.99	0.735	J	"	"	"	"	"	"
Barium	80.5	0.368		"	"	"	"	"	"
Beryllium	0.176	0.147		"	"	"	"	"	"
Bismuth	7.35	7.35	U	"	"	"	"	"	"
Boron	0.501	1.47	B	"	"	"	"	"	"
Cadmium	0.214	0.147		"	"	"	"	"	"
Calcium	5440	73.5		"	"	"	"	"	"
Chromium	6.75	0.147		"	"	"	"	"	"
Cobalt	4.58	1.47		"	"	"	"	"	"
Copper	10.8	0.735	J	"	"	"	"	"	"
Iron	26300	14.7		"	"	"	"	"	"
Lead	2.85	0.368	U J	"	"	"	"	"	"
Lithium	3.36	1.84		"	"	"	"	"	"
Magnesium	3490	55.1		"	"	"	"	"	"
Manganese	197	3.68		"	"	"	"	"	"
Molybdenum	0.366	1.47	B	"	"	"	"	"	"
Nickel	7.00	2.94	J	"	"	"	"	"	"
Phosphorus	1430	36.8	J	"	"	"	"	"	"
Potassium	518	294		"	"	"	"	"	"
Selenium	0.735	0.735	U	"	"	"	"	"	"
Silicon	805	1.47		"	"	"	"	"	"
Silver	0.147	0.147	U	"	"	"	"	"	"
Sodium	304	36.8		"	"	"	"	"	"
Strontium	26.4	0.735		"	"	"	"	"	"
Thallium	0.368	0.368	U J	"	"	"	"	"	"
Tin	2.07	7.35	~~B~~ U J	"	"	"	"	"	"
Uranium	14.7	14.7	U	"	"	"	"	"	"
Vanadium	82.3	1.84	J	"	"	"	"	"	"
Zinc	58.5	7.35	J	"	"	"	"	"	"
Mercury	0.0225	0.0225	U	mg/kg wet	1	1903136	03/18/2009	03/18/2009	7471A

WC Hanford Inc 2620 Fermi Avenue Richland WA, 99354	Project: RC-116 Project Number: [none] Project Manager: Joan Kessner	Reported: 05/06/2009 12:48

J189K5

0902067-24 (Solid)

12/5/09

Lionville Laboratory

Metals by SW846 6000/7000 series

Analyte	Result	Reporting Limit	Qualifier	Units	Dilution	Batch	Prepared	Analyzed	Method
Aluminum	5260	3.73		mg/kg	1	1904078	04/15/2009	04/22/2009	6010B
Antimony	0.448	0.448	U J	"	"	"	"	"	"
Arsenic	2.20	0.746	J	"	"	"	"	"	"
Barium	44.3	0.373		"	"	"	"	"	"
Beryllium	0.269	0.149		"	"	"	"	"	"
Bismuth	7.46	7.46	U	"	"	"	"	"	"
Boron	0.993	1.49	B	"	"	"	"	"	"
Cadmium	0.311	0.149		"	"	"	"	"	"
Calcium	4890	74.6		"	"	"	"	"	"
Chromium	11.3	0.149		"	"	"	"	"	"
Cobalt	3.46	1.49		"	"	"	"	"	"
Copper	6.15	0.746	J	"	"	"	"	"	"
Iron	10900	14.9		"	"	"	"	"	"
Lead	3.01	0.373		"	"	"	"	"	"
Lithium	5.80	1.87		"	"	"	"	"	"
Magnesium	3360	56.0		"	"	"	"	"	"
Manganese	125	3.73		"	"	"	"	"	"
Molybdenum	0.0936	1.49	B	"	"	"	"	"	"
Nickel	8.94	2.99	J	"	"	"	"	"	"
Phosphorus	486	37.3	J	"	"	"	"	"	"
Potassium	925	200		"	"	"	"	"	"
Selenium	0.746	0.746	U	"	"	"	"	"	"
Silicon	1100	1.49		"	"	"	"	"	"
Silver	0.149	0.149	U	"	"	"	"	"	"
Sodium	171	37.3		"	"	"	"	"	"
Strontium	20.9	0.746		"	"	"	"	"	"
Thallium	0.373	0.373	U J	"	"	"	"	"	"
Tin	1.33	7.46	~~B~~ UJ	"	"	"	"	"	"
Uranium	14.9	14.9	U	"	"	"	"	"	"
Vanadium	24.7	1.87	J	"	"	"	"	"	"
Zinc	44.2	7.46	J	"	"	"	"	"	"
Mercury	0.0290	0.0290	U	mg/kg wet	1	1904136	04/18/2009	04/18/2009	7471A

Appendix 4

Laboratory Narrative and Chain-of-Custody Documentation

204 Welsh Pool Road
Exton, Pennsylvania 19341
Phone (610) 280-3000
Fax (610) 280-3041

Case Narrative
REVISION

This narrative is issued to revise item 9, where matrix QC is associated with SDG# K1547.

Client: WC HANFORD RC-116 K1544
LVL#: 0902067

W.O.#: 60049-001-001-0001-00
Date Received: 02-21-09

METALS

The following is a summary of the QC results accompanying the sample results. Lionville Laboratory (LvL) certifies that all test results meet the requirements of NELAC except as noted below.

The sample was reported on a dry weight basis unless requested by the client, required by the method, or noted otherwise.

1. This narrative covers the analyses of 22 soil samples. The sample results are reported on a wet weight "as-received" basis.

2. The samples were prepared and analyzed in accordance with methods checked on the attached glossary

3. All analyses were performed within the required holding times.

4. All Initial and Continuing Calibration Verifications (ICV/CCVs) were within the 90-110% control limits (80-120% for Mercury) with the exception of CCV4 for various analytes in file ICP0423B. L904078-BLK1 was surrounded by QC within control. L904078-SRM1 was rerun in file ICP0425B.

5. All Initial and Continuing Calibration Blanks (ICB/CCBs) were within control limits (less than the LOQ).

6. The preparation/method blank for 1 analyte was outside method criteria. (less than the Limit of Quantitation (3-10X the LOD), or samples greater than 20X MB value). Refer to the Inorganics Method Blank Data Summary

   a). The MB L904077 and L904078 results for Lead were *greater* than the Limit of Quantitation (LOQ) (3-10x the (LOD) Limit of Detection) and all samples, with the exception of samples J189D8 and J189B9, read less than 20 times the MB concentration. However, no corrective action criteria for MBs were provided in SW846 method 6010B. The sample results were reported herein "uncorrected" for the levels found in the MB.

7. All ICP Interference Check Standards were within control limits

84

2

8. All Standard Reference Material (SRM) analytes were within the Prediction Interval control limits with the exception of L904077-SRM1 for Copper (710%), Nickel (142%), and Zinc (683%), and L904078-SRM1 for Copper (648%), Nickel (186%), and Zinc (605%).

9. The matrix spike (MS) recoveries for 4 analytes were outside the 75-125% control limits. Matrix QC for preparation batch L904078 is associated with SDG# K1547 (LVL# 0902075).

10. For analytes where the ICP MS is out-of-control, a post-digestion MS (PDS) and serial dilution are performed. A PDS was prepared at meaningful concentration level for the following analytes:

Sample ID	Element	PDS Concentration (ppb)	PDS % Recovery
J189D8	Aluminum	20,000	92.5
	Antimony	100	96.9
	Iron	40,000	89.0
	Silicon	5,100	84.9

11. The duplicate analysis for 1 analyte was outside the 20% Relative Percent Difference (RPD) control limits.

12. For the purposes of this report, the data has been reported to the Limit of Detection (LOD). Values between the LOD and the Limit of Quantitation (LOQ) are acquired in a region of less-certain quantification.

13. LvL is NELAP accredited by the State of Pennsylvania. For a complete listing of accrediting authorities and the corresponding analytes/methods, please contact your Project Manager.

14. I certify that this sample data package is in compliance with SOW requirements, both technically and for completeness, other than the conditions detailed above. Release of the data contained in this hard-copy data package has been authorized by the Laboratory Manager or a designee, as verified by the following signature.

Iain Daniels
Laboratory Manager
Lionville Laboratory

12/1/09
Date

[illegible]

13

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-116-1372 Page 1 of 1

Collector [illegible]	Company Contact JOAN KESSNER	Telephone No. 373-4088
Project Designation Columbia River Component of the RC&RA - Sediment	Sampling Location [illegible] SSTF	
Ice Chest No. WCH-08-013, 022, 072	Field Logbook No. [illegible]	COA [illegible]
Shipped To [illegible] (circled)	Offsite Property No. N/A	

Project Coordinator KESSNER, JM	Price Code 9K
SAF No. RC-116	Data Turnaround 45 Days
Method of Shipment FEDEX	
Bill of Lading/Air Bill No. 791361262976	

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

Preservation	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]			
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	G/P			
No. of Container(s)	1	1	1	1	1	1	1			
Volume	1500g	140g	20g	50g	250g	125g	[illegible]			
SAMPLE ANALYSIS	[illegible] Special [illegible]	[illegible]	[illegible]	[illegible] Special [illegible]	[illegible] Special [illegible]	[illegible]	[illegible]			

Sample No.	Matrix *	Sample Date	Sample Time										
J18019	OTHER SOLID	2/13/09	0945					X	X	X			

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
[illegible]	[illegible] 1630	[illegible]	[illegible] 1630
[illegible]	2/19/09 0800	B Woodward	2/20/09 0800
B Woodward	2/20/09 1200	FedEx	2/20/09 1200
[illegible]	2-23-09 1045	[illegible]	2-23-09 1045
[illegible]	2-23-09 [illegible]		
[illegible]	2-23-09 0850	[illegible]	2-23-09 0850

LABORATORY SECTION — Received By — Title — Date/Time

FINAL SAMPLE DISPOSITION — Disposal Method — Disposed By — Date/Time

SPECIAL INSTRUCTIONS

(1) Gamma Spec - {Full List} (Americium-241, Antimony-125, Beryllium-7, Cerium-144, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238);
(2) Strontium-89,90 - Total Sr; Isotopic Thorium {Thorium-228, Thorium-230, Thorium-232}; Isotopic Uranium {Uranium-233/234, Uranium-235, Uranium-238}; Isotopic Plutonium
(3) ICP Metals - 6010 {Full List} (Aluminum, Antimony, Arsenic, Barium, Beryllium, Cadmium, Boron, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc}; Mercury - 7471 [4.9]

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab.

Matrix *
[illegible]

WCH-EE-011

Washington Closure Hanford	**CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST**	RC-116-1374	Page 1 of 1
Collector: [illegible]	Company Contact: JOAN KESSNER · Telephone No.: 375-4688	Project Coordinator: KESSNER, JH	Price Code: 9K · Data Turnaround: 45 Days
Project Designation: Columbia River Component of the RCBRA - Sediment	Sampling Location: J16FF - S - SS1	SAF No.: RC-116	
Ice Chest No.: WCH-02-013, 022, 072	Field Logbook No.: EL-1651-1 · COA: BTSC RC6376	Method of Shipment: FEDEX	
Shipped To: SEVERN TRENT SERVICES [✓ DENVER]	Offsite Property No.: N/A	Bill of Lading/Air Bill No.: 796361268216	

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

Preservation	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]			
Type of Container	G/P	G/P	G/P	G/P	G/P	Pb	G/P			
No. of Container(s)	1	1	1	1	1	1	1			
Volume	150g	100g	50g	50g	250g	125g	1000g			
SAMPLE ANALYSIS	See Item (1) in Special Instructions	Carbon-14	Technetium-99	See Item (2) in Special Instructions	See Item (3) in Special Instructions	[illegible]	Particle Size [illegible]			

Sample No.	Matrix *	Sample Date	Sample Time										
J16?FD	OTHER SOLID	2/19/09	[illegible]					X	X	X			

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
[illegible]	[illegible] 1400	[illegible]	2/[illegible] 1430
[illegible] B	2/20/09 0800	[illegible]	2/20/09 0800
[illegible]	2/20/09 1200	Fed Ex	2/20/09 1200
[illegible]	2-21-09 1045	[illegible]	2-21-09 1045
[illegible]	2-23-09 0850	[illegible]	2-23-09 0850

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) {Americium-241, Antimony-125, Beryllium-7, Cerium-144, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238};
(2) Strontium-89,90 - Total Sr; Isotopic Thorium (Thorium-228, ...); Isotopic Uranium (Uranium-233/234, Uranium-235, Uranium-238); Isotopic Plutonium;
(3) ICP Metals - 6010 (Full List) {Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc}; Mercury - 7471 (CVAA)

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab.

Matrix * [illegible]

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Washington Closure Hanford	**CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST**	RC-116-1330 Page 1 of 1
Collector: B	Company Contact: JOAN KESSNER Telephone No.: 375-4688	Project Coordinator: KESSNER, JH
Project Designation: Columbia River Component of the RCBRA - Sediment	Sampling Location: HA-2 SSD	SAF No: RC-116
Ice Chest No.: WCH-08-013, 022, 072	Field Logbook No.: EL-1631-1	COA: BESCRC6530
Shipped To: GENERAL ENGINEERING LABORATORIES (GEL)	Offsite Property No.: N/A	Method of Shipment: FED EX
		Bill of Lading/Air Bill No.: 796361208296

Price Code: 9K

Data Turnaround: 45 Days

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

Preservation	None	None	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	None
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	aG	aG	G	[illegible]
No. of Container(s)	1	1	1	1	1	1	1	1	1	1
Volume	1500g	10g	10g	10g	250g	250g	125g	250g	250g	1
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Technetium-99	See item (2) in Special Instructions	See item (3) in Special Instructions	[illegible]	[illegible]	Semi-VOA (TCL)	See item (4) in Special Instructions	

Sample No.	Matrix *	Sample Date	Sample Time										
J16905	OTHER SOLID	2/19/09	921					X	X	X	X	X	

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
B Bishop	2/16/09 1100	Fair A	2/16/09 1630
Fair A	2/20/09 0800	D Heidelberg	2/20/09 0800
D Heidelberg	2/20/09 1200	Fedex	2/20/09 1200
	2/23/09 1045		2/23/09 1045
	2/23/09 1052		2/23/09 1055

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) [Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238]

(2) Strontium-89/90 - Total Sr, Isotopic Thorium (Thorium-232, [illegible]), Isotopic Uranium (Uranium-233/234, Uranium-235, Uranium-238), Isotopic Plutonium

(3) ICP Metals - 6010 (Full List) [Aluminum, Antimony, Arsenic, Barium, Beryllium, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Titanium, Vanadium, Zinc], Mercury - 7471 [illegible]

(4) VOA - 8260A (TCL) [1,1,1-Trichloroethane, 1,1,2,2-Tetrachloroethane, 1,1,2-Trichloroethane, 1,1-Dichloroethane, 1,1-Dichloroethene, 1,2-Dichloroethane, 1,2-Dichloropropane, 2-Butanone, 2-Hexanone, 4-Methyl-2-Pentanone, Acetone, Benzene, Bromodichloromethane, Bromoform, Bromomethane, Carbon disulfide, Carbon tetrachloride, Chlorobenzene, Chloroethane, Chloroform, Chloromethane, cis-1,2-Dichloroethylene, cis-1,3-Dichloropropene, Dibromochloromethane, [illegible]

Matrix *
S = Soil
SE = Sediment
SO = Solid
SL = Sludge
W = Water
O = Oil
A = Air
DS = Drum Solids
DL = Drum Liquids
T = Tissue
WI = Wipe
L = Liquid
V = Vegetation
X = Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-116-1331 Page 1 of 2

Collector BA	Company Contact JOAN KESSNER Telephone No. 375-4686	Project Coordinator KESSNER, JH	Price Code 9K Data Turnaround 45 Days
Project Designation Columbia River Component of the RCBRA - Sediment	Sampling Location HA-4 SSD	SAF No. RC-116	
Ice Chest No. WCH-08-013, 022, 072	Field Logbook No. EL-[illegible] COA [illegible]	Method of Shipment FED EX	
Shipped To EBERLINE SERVICES ([illegible])	Offsite Property No. N/A	Bill of Lading/Air Bill No. 796361208276	

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

Preservation	None	[illegible]	[illegible]	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	[illegible]
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	aG	aG	G	[illegible]
No. of Container(s)	1	1	1	1	1	1	1	1	1	1
Volume	1500g	10g	10g	10g	250g	250g	125g	250g	250g	[illegible]
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Technetium-99	See item (2) in Special Instructions	See item (3) in Special Instructions	PCBs - 8082	Pesticides 8081	Semi-VOA 8270 [illegible]	See item (4) in Special Instructions	

Sample No.	Matrix *	Sample Date	Sample Time										
J18R66	OTHER SOLID	2/19/09	1010					X	X	X	X	X	

Sampler unavailable to remove samples from cold storage. Shipper removed samples from storage location using custody & samples for shipment to lab.

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
B. Anderson B. Engle	2/19/09 1620	Fr. A	2/19/09 1630
Fr. A	2/20/09 0800	Dale Dellaberg	2/20/09 0800
Dale Dellaberg	2/20/09 1200	FedEx	2/20/09 1200
[illegible]	2-21-09 1045	[illegible]	2-21-09 1045
[illegible]	2-23-09 0850	[illegible]	2-23-09 [illegible]

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) {Americium-241, Antimony-125, Beryllium-7, Cerium-144, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238};

(2) Strontium-89,90 - Total Sr; Isotopic Thorium {Thorium-232}; Isotopic Uranium {Uranium-233/234, Uranium-235, Uranium-238}; Isotopic Plutonium

(3) ICP Metals - 6010 (Full List) {Aluminum, Antimony, Arsenic, Barium, Beryllium, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc}; Mercury - 7471 (CV)

(4) VOA - 8260A (TCL) {1,1,1-Trichloroethane, 1,1,2,2-Tetrachloroethane, 1,1,2-Trichloroethane, 1,1-Dichloroethane, 1,1-Dichloroethene, 1,2-Dichloroethane, 1,2-Dichloropropane, 2-Butanone, 2-Hexanone, 4-Methyl-2-Pentanone, Acetone, Benzene, Bromodichloromethane, Bromoform, Bromomethane, Carbon disulfide, Carbon tetrachloride, Chlorobenzene, Chloroethane, Chloroform, Chloromethane, cis-1,2-Dichloroethylene, cis-1,3-Dichloropropene, Dibromochloromethane, [illegible]

Matrix *

S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-014

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-116-1332 | Page 1 of 2

Collector B[illegible]	Company Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator KESSNER, JH
Project Designation Columbia River Component of the RC [illegible] - Sediment	Sampling Location HA 6 SSD		SAF No. RC-116
Ice Chest No. WCH-08-613,022,172	Field Logbook No. EL-1650-1	COA BESCRC6520	Method of Shipment FEDEX
Shipped To EBERLINE SERVICES (LIONVILLE)	Offsite Property No. N/A		Bill of Lading/Air Bill No. 796361208296

Price Code **9K**

Data Turnaround **45 Days**

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

Preservation	None	None	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	[illegible]
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	aG	aG	G	[illegible]
No. of Container(s)	1	1	1	1	1	1	1	1	1	1
Volume	1500g	150g	10g	10g	250g	250g	125g	250g	250g	1
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Technetium-99	See item (2) in Special Instructions	See item (3) in Special Instructions	PCBs - 8082	Pesticides 8081	Semi-VOA 8270	See item (4) in Special Instructions	

Sample No.	Matrix *	Sample Date	Sample Time										
J18967	OTHER SOLID	2/16/05	1030					X	X	X	X	X	

Samples [illegible] to remove samples from controlled storage. Shipper removed samples from storage location using custody of samples for shipment to lab

CHAIN OF POSSESSION	Date/Time	Sign/Print Names	Date/Time
Relinquished By/Removed From B. [illegible]	2/16/05 1620	Received By/Stored In Frig 1	2/16/05 1630
Relinquished By/Removed From Frig 1	7/20/09 0800	Received By/Stored In D. Heidelberg LS	7/20/09 0800
Relinquished By/Removed From D. Heidelberg LS	7/20/09 1200	Received By/Stored In Fedex	7/20/09 1200
Relinquished By/Removed From FedEx	2-21-09 1045	Received By/Stored In [illegible]	2-21-09 1045
Relinquished By/Removed From FedEx	2-23-09 1045	Received By/Stored In [illegible]	2-23-09 1045
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time

SPECIAL INSTRUCTIONS

(1) Gamma Spec - {Full List} [Americium-241, Antimony-125, Beryllium-7, Cerium-144, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238]
(2) Strontium-89/90 - Total Sr; Isotopic Plutonium [Plutonium-238]; Isotopic Uranium {Uranium-233/234, Uranium-235, Uranium-238}; Isotopic Plutonium
(3) ICP Metals - 6010 {Full List} (Aluminum, Antimony, Arsenic, Barium, Beryllium, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Titanium, Vanadium, Zinc); Mercury - 7471 (CV)
(4) VOA - 8260A (TCL) {1,1,1-Trichloroethane, 1,1,2,2-Tetrachloroethane, 1,1,2-Trichloroethane, 1,1-Dichloroethane, 1,1-Dichloroethene, 1,2-Dichloroethane, 1,2-Dichloropropane, 2-Butanone, 2-Hexanone, 4-Methyl-2-Pentanone, Acetone, Benzene, Bromodichloromethane, Bromoform, Bromomethane, Carbon disulfide, Carbon tetrachloride, Chlorobenzene, Chloroethane, Chloroform, Chloromethane, cis-1,2-Dichloroethylene, cis-1,3-Dichloropropene, Dibromochloromethane, [illegible]

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EF-011

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-116-1333 Page 1 of 1

Collector BZ	Company Contact JOAN KESSNER	Telephone No. 373-4688	Project Coordinator KESSNER, JH
Project Designation Columbia River Component of the RCBRA - Sediment	Sampling Location HA- 8 SSD		SAF No. RC-116
Ice Chest No. WCH-08-013,022,072	Field Logbook No. EL 1631-1	COA OESCRC6520	Method of Shipment FED EX
Shipped To EBERLINE SERVICES [✓ KNOXVILLE]	Offsite Property No. N/A		Bill of Lading/Air Bill No. 796361208296 ~~WCH-08-0[illegible]~~

Price Code 9K

Data Turnaround 45 Days

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

Preservation	None	None	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	None
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	aG	aG	G	P
No. of Container(s)	1	1	1	1	1	1	1	1	1	1
Volume	1500g	150g	10g	10g	250g	250g	125g	250g	250g	1?
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Technetium-99	See item (2) in Special Instructions	See item (3) in Special Instructions	PCBs - 8082	Pesticides [illegible]	Semi-VOA - 8270A (TCL)	See item (4) in Special Instructions	

Sample No.	Matrix *	Sample Date	Sample Time										
J18588	OTHER SOLID	2/14/09	1046					X	X	X	X	X	

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
B[illegible] Ball	2/14/09 1630	Frig 4	2/14/09 1630
Frig 4	2/20/09 0800	D. Heidelberg	2/20/09 0800
D. Heidelberg	2/20/09 1200	FedEx	2/20/09 1200
[illegible]	2-21-09 1045	[illegible]	2-21-09 1045
[illegible]	2-23-09 0850	[illegible]	2-23-09 0850

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) {Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238}
(2) Strontium-89,90 -- Total Sr, Isotopic Thorium {Thorium-232}, Isotopic Uranium {Uranium-233/234, Uranium-235, Uranium-238}, Isotopic Plutonium
(3) ICP Metals - 6010 (Full List) {Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Titanium, Vanadium, Zinc}, Mercury - 7471 - (CV)
(4) VOA - 8260A (TCL) {1,1,1-Trichloroethane, 1,1,2,2-Tetrachloroethane, 1,1,2-Trichloroethane, 1,1-Dichloroethane, 1,1-Dichloroethene, 1,2-Dichloroethane, 1,2-Dichloropropane, 2-Butanone, 2-Hexanone, 4-Methyl-2-Pentanone, Acetone, Benzene, Bromodichloromethane, Bromoform, Bromomethane, Carbon disulfide, Carbon tetrachloride, Chlorobenzene, Chloroethane, Chloroform, Chloromethane, cis-1,2-Dichloroethylene, cis-1,3-Dichloropropene, Dibromochloromethane, Ethylbenzene, Methylene chloride, Styrene, Tetrachloroethene, Toluene, trans-1,2-Dichloroethylene

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-116-1335 Page 1 of 2

Collector LS	Company Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator KESSNER, JJ
Project Designation Columbia River Component of the RCBRA - Sediment	Sampling Location HA-3 SSD		SAF No. RC-116
Ice Chest No. WCH-08-013, 022, 072	Field Logbook No. EL-1610-4	COA DES4RC6520	Method of Shipment FED EX
Shipped To EBERLINE SERVICES (RICHMOND)	Offsite Property No. N/A		Bill of Lading/Air Bill No. 796361208296

Price Code 9K

Data Turnaround 45 Days

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

2400010

Preservation	None	None	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	None
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	aG	aG	G	[illegible]
No. of Container(s)	1	1	1	1	1	1	1	1	1	1
Volume	1500g	100g	10g	30g	250g	250g	125g	250g	25mg	1L
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Technetium-99	See item (2) in Special Instructions	See item (3) in Special Instructions	PCBs - 8082	Pesticides 8081	Semi-VOA 8270 (TCL)	See item (4) in Special Instructions	

Sample No.	Matrix *	Sample Date	Sample Time										
J18990	OTHER SOLID	2/19/09	10:30					X	X	X	X	X	

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location for chain of custody of samples for shipment to lab.

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
	2/19/09 1630	RCB	2/19/09 1630
RCB	2/20/09 0800	B Woodward	2/20/09 0800
B Woodward	2/20/09 1200	FedEx	2/20/09 1200
FedEx	2-21-09/1045	N Dorman	2-21-09/1045
	2-23-09/1050		2-23-09/1050

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) {Americium-241, Antimony-125, Beryllium-7, Cerium-144, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238}

(2) Strontium-89,90 - Total Sr, Isotopic Thorium {Thorium-228, Thorium-230, Thorium-232}, Isotopic Uranium {Uranium-233/234, Uranium-235, Uranium-238}, Isotopic Plutonium

(3) ICP Metals - 6010 (Full List) {Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Titanium, Vanadium, Zinc}, Mercury - 7471 - (CVAA)

(4) VOA - 8260A (TCL) {1,1,1-Trichloroethane, 1,1,2,2-Tetrachloroethane, 1,1,2-Trichloroethane, 1,1-Dichloroethane, 1,1-Dichloroethene, 1,2-Dichloroethane, 1,2-Dichloropropane, 2-Butanone, 2-Hexanone, 4-Methyl-2-Pentanone, Acetone, Benzene, Bromodichloromethane, Bromoform, Bromomethane, Carbon disulfide, Carbon tetrachloride, Chlorobenzene, Chloroethane, Chloroform, Chloromethane, cis-1,2-Dichloroethylene, cis-1,3-Dichloropropene, Dibromochloromethane, Ethylbenzene, Methylene chloride, Styrene, Tetrachloroethene, Toluene,

Matrix *
S = Soil
SE = Sediment
SO = Solid
SL = Sludge
W = Water
O = Oil
A = Air
DS = Drum Solids
DL = Drum Liquids
T = Tissue
WI = Wipe
L = Liquid
V = Vegetation
X = Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-116-1336 Page 3 of 7

Collector L Stallin	Company Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator KESSNER, JH
Project Designation Columbia River Component of the RC/RA - Sediment	Sampling Location 11A / SN3		SAF No. RC-116
Ice Chest No. WH-08-133, 022, 072	Field Logbook No. EL-1631-1	COA DESCRC0520	Method of Shipment FEDEX
Shipped To LIBERTINE SERVICES (KNOXVILLE)	Offsite Property No. N/A		Bill of Lading/Air Bill No. 796361208296

Price Code **9K**

Data Turnaround **45 Days**

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

Preservation	None	None	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	None
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	aG	aG	G	-
No. of Container(s)	1	1	1	1	1	1	1	1	1	1
Volume	1500g	100g	10g	10g	250g	250g	125g	250g	250g	1
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Technetium-99	See item (2) in Special Instructions	See item (3) in Special Instructions	PCBs - 8082	Pesticides 8081	Semi-VOA 8270A (TCL)	See item (4) in Special Instructions	

Sample No.	Matrix *	Sample Date	Sample Time										
B6591	OTHER SOLID	2/19/09	0940					X	X	X	X	X	

CHAIN OF POSSESSION

Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
L Stallin	2/19/09 1630	Rel B	2/19/09 1630
Rel B	2/20/09 0800	BWoodward	2/20/09 0800
BWoodward	2/20/09 1200	FedEx	2/20/09 1200
	2/23/09 1045		2/23/09 1045
	2/23/09 0850		2/23/09 0850

Samples are retained to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab.

SPECIAL INSTRUCTIONS

(1) Gamma Spec - GEA (Americium-241, Antimony-125, Beryllium-7, Cerium-144, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238)

(2) Strontium-89,90 -- Total Sr; Isotopic Thorium (Thorium-232); Isotopic Uranium (Uranium-233/234, Uranium-235, Uranium-238); Isotopic Plutonium

(3) ICP Metals - 6010 (Full List) (Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Titanium, Vanadium, Zinc); Mercury - 7471 - (CV)

(4) VOA - 8260A (TCL) (1,1,1-Trichloroethane, 1,1,2,2-Tetrachloroethane, 1,1,2-Trichloroethane, 1,1-Dichloroethane, 1,1-Dichloroethene, 1,2-Dichloroethane, 1,2-Dichloropropane, 2-Butanone, 2-Hexanone, 4-Methyl-2-Pentanone, Acetone, Benzene, Bromodichloromethane, Bromoform, Bromomethane, Carbon disulfide, Carbon tetrachloride, Chlorobenzene, Chloroethane, Chloroform, Chloromethane, cis-1,3-Dichloropropene, [illegible]

Matrix *
S = Soil
SE = Sediment
SO = Solid
SL = Sludge
W = Water
O = Oil
A = Air
DS = Drum Solids
DL = Drum Liquids
T = Tissue
WI = Wipe
L = Liquid
V = Vegetation
X = Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

0000043

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-316-1337 Page 2 of 2

Collector L S	Company Contact JOAN KESSNER	Telephone No. 375-4628	Project Coordinator KESSNER, JH
Project Designation Columbia River Component of the RCBRA - Sediment	Sampling Location HA 5 SSR		SAF No. RC-030
Ice Chest No. WCH-08-013, 022, 072	Field Logbook No. EL-1673-1	COA RCSTRC6520	Method of Shipment FEDEX
Shipped To EBERLINE SERVICES (RICHMOND)	Offsite Property No. N/A		Bill of Lading/Air Bill No. 791364208296

Price Code 9K

Data Turnaround
45 Days

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

Preservation	None	None	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	None
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	G	aG	aG	—
No. of Container(s)	1	1	1	1	1	1	1	1	1	1
Volume	1500g	100g	10g	10g	250g	250g	125g	250g	250g	1
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Technetium-99	See item (2) in Special Instructions	See item (3) in Special Instructions	[illegible]	[illegible]	[illegible]	See item (4) in Special Instructions	

Sample No.	Matrix *	Sample Date	Sample Time										
J18907	OTHER SOLID	2/19/09	1015					X	X	X	X	X	

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab.

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
	2/19/09 1630	RJ B	2/19/09 1630
KEB	2/20/09 0800	BLWoodward	2/20/09 0800
BLWoodward	2/20/09 1200	Fed Ex	2/20/09 1200
Fed Ex	2-21-09 1045		2-21-09 1045
Fed Ex	2-23-09 1050		2-23-09 1050

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) (Americium-241, Antimony-125, Beryllium-7, Cerium-144, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238);
(2) Strontium-89,90 – Total Sr; Isotopic Thorium {Thorium-232}; Isotopic Uranium {Uranium-233/234, Uranium-235, Uranium-238}; Isotopic Plutonium
(3) ICP Metals - 6010 (Full List) (Aluminum, Antimony, Arsenic, Barium, Beryllium, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc); Mercury - 7471 (CVA)
(4) VOA - 8260A (TCL) {1,1,1-Trichloroethane, 1,1,2,2-Tetrachloroethane, 1,1,2-Trichloroethane, 1,1-Dichloroethane, 1,1-Dichloroethene, 1,2-Dichloroethane, 1,2-Dichloropropane, 2-Butanone, 2-Hexanone, 4-Methyl-2-Pentanone, Acetone, Benzene, Bromodichloromethane, Bromoform, Bromomethane, Carbon disulfide, Carbon tetrachloride, Chlorobenzene, Chloroethane, Chloroform, Chloromethane, cis-1,2-Dichloroethene, cis-1,3-Dichloropropene, [illegible]

Matrix *
[illegible]

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Washington Closure Hanford	**CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST**	RC-116-1350	Page 1 of 2

Collector BM	Company Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator KESSNER, JH	Price Code 9K
Project Designation Columbia River Component of the RC/RRA - Sediment	Sampling Location RL- 3 SSD		SAF No. RC-116	Data Turnaround 45 Days
Ice Chest No. WCH-08-013, 072, 022	Field Logbook No. EL-1610-1	COA [illegible]	Method of Shipment FEDEX	
Shipped To EBERLINE SERVICES (CONVERTE)	Offsite Property No. N/A		Bill of Lading/Air Bill No. 796361208296	

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

Preservation	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	aG	aG	G	[illegible]
No. of Container(s)	1	1	1	1	1	1	1	1	1	1
Volume	1500g	100g	10g	10g	250g	250g	125g	250g	250g	[illegible]
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Technetium-99	See item (2) in Special Instructions	See item (3) in Special Instructions	[illegible]	Pesticides - PCBs	Semi-VOA [illegible]	See item (4) in Special Instructions	

Sample No.	Matrix *	Sample Date	Sample Time										
J18965	OTHER SOLID	2/19/09	1128					X	X	X	X	X	

Sample unavailable to remove analyses from controlled storage. Shipped removed samples from storage location taking custody of samples ~~to~~ shipment. [illegible]

CHAIN OF POSSESSION Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
B Mayhew BM [illegible]	2/19/09 1630	Eric A	2/19/09 1630
Eric A 2/20/09	0800	Dale Dolberg [illegible]	2/20/09 0800
Dale Dolberg [illegible]	2/20/09 1200	Fedex 2/20/09	1200
[illegible]	2-21-09 / 1045	[illegible]	2-21-09 / 1045
[illegible]	2-23-09 / 0830	[illegible]	2-23-09 / 0830
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time

SPECIAL INSTRUCTIONS

(1) Gamma Spec - {Gel Lvl} Americium-241, Antimony-125, [illegible] Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238}

(2) Strontium-89,90 - Total Sr; Isotopic Thorium {Thorium-228, Thorium-230, Thorium-232}; Isotopic Uranium {Uranium-233/234, Uranium-235, Uranium-238}; Isotopic Plutonium

(3) ICP Metals - 6010 {TAL Lvl} {Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Titanium, Vanadium, Zinc}; Mercury - 7471 (gNo)

(4) VOA - 8260A (TCL) {1,1,1-Trichloroethane, 1,1,2,2-Tetrachloroethane, 1,1,2-Trichloroethane, 1,1-Dichloroethane, 1,1-Dichloroethene, 1,2-Dichloroethane, 1,2-Dichloropropane, 2-Butanone, 2-Hexanone, 4-Methyl-2-Pentanone, Acetone, Benzene, Bromodichloromethane, Bromoform, Bromomethane, Carbon disulfide, Carbon tetrachloride, Chlorobenzene, Chloroethane, Chloroform, Chloromethane, cis-1,2-Dichloroethylene, cis-1,3-Dichloropropene, Dibromochloromethane, Ethylbenzene, Methylene chloride, [illegible]

Matrix *
[illegible]

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

0000045

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-116-1351 | Page 1 of 2

Collector 13M	Company Contact JOAN KESSNER	Telephone No. 375-4633	Project Coordinator KESSNER, JH
Project Designation Columbia River Component of the RI/FS ERA - Sediment	Sampling Location HL-5 SNP		SAF No. RC-116
Ice Chest No. ECH-08-013, 072, 022	Field Logbook No. EL-1651-1	COA HESCRC6524	Method of Shipment FEDEX
Shipped To EBERLINE SERVICES [✓ RICHMOND]	Offsite Property No. N/A		Bill of Lading/Air Bill No. 796361208866

Price Code 9K

Data Turnaround 45 Days

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

Preservation	None	None	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	None
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	aG	aG	G	[illegible]
No. of Container(s)	1	1	1	1	1	1	1	1	1	1
Volume	150g	100g	50g	10g	250g	250g	125g	250g	250g	1L
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Technetium-99	See item (2) in Special Instructions	See item (3) in Special Instructions	PCBs - 8082	Cyanide - total	Semi-VOA - 8270	See item (4) in Special Instructions	

Sample No.	Matrix *	Sample Date	Sample Time										
J18996	OTHER SOLID	2/19/09	1154					X	X	X	X	X	

Sample custodian to remove samples from controlled storage. Shipper removed samples from storage location during custody of samples for shipment to lab.

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
[illegible]	2/19/09 1630	[illegible]	2/19/09 1630
Eric A	2/20/09 0800	D. Heidelberg	2/20/09 0800
D. Heidelberg	2/20/09 1200	FedEx	2/20/09 1200
[illegible]	2-23-09 / 1045	[illegible]	2-23-09 / 1045
[illegible]	2-23-09 / 1050	[illegible]	2-23-09 / 1050
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Am-241 (Americium 241), Antimony 125, Beryllium 7, Cerium 144, Cesium 137, Cobalt 60, Europium 152, Europium 154, Europium 155, Potassium 40, Radium 226, Radium 228, Ruthenium 106, Uranium 235, Uranium 238};
(2) Strontium-89,90 - Total Sr, Isotopic Thorium {Thorium-232}; Isotopic Uranium {Uranium 233/234, Uranium 235, Uranium 238}, Isotopic Plutonium;
(3) ICP Metals - 6010 (Full List) {Aluminum, Antimony, Arsenic, Barium, Beryllium, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Titanium, Vanadium, Zinc}, Mercury - 7471 [illegible];
(4) VOA - 8260A (TCL) {1,1,1-Trichloroethane, 1,1,2,2-Tetrachloroethane, 1,1,2-Trichloroethane, 1,1-Dichloroethane, 1,1-Dichloroethene, 1,2-Dichloroethane, 1,2-Dichloropropane, 2-Butanone, 2-Hexanone, 4-Methyl-2-Pentanone, Acetone, Benzene, Bromodichloromethane, Bromoform, Bromomethane, Carbon disulfide, Carbon tetrachloride, Chlorobenzene, Chloroethane, Chloroform, Chloromethane, cis-1,2-Dichloroethylene, cis-1,3-Dichloropropene, Dibromochloromethane, [illegible]

Matrix *
S = Soil
SE = Sediment
SO = Solid
SL = Sludge
W = Water
O = Oil
A = Air
DS = Drum Solids
DL = Drum Liquids
T = Tissue
WI = Wipe
L = Liquid
V = Vegetation
X = Other

LABORATORY SECTION	Received By / Title / Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method / Disposed By / Date/Time

WCH-EE-001

0900046

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-116-1351 Page 1 of 2

Collector B [illegible]	Company Contact RIAN KESSNER	Telephone No. [illegible]	Project Coordinator KESSNER, JH
Project Designation Columbia River Component of the RCBRA - Sediment	Sampling Location HC- 47 SSD		SAF No. RC-[illegible]
Ice Chest No. WCH-08-NZ,672,027	Field Logbook No. EL-1615-[illegible]	COA RESCRC0520	Method of Shipment FED EX
Shipped To EBERLINE SERVICES (RICHMOND)	Offsite Property No. N/A		Bill of Lading/Air Bill No. 7963601203296

Price Code 9K

Data Turnaround 45 Days

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

000047

Preservation	None	None	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	[illegible]
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	aG	aG	G	[illegible]
No. of Container(s)	1	1	1	1	1	1	1	1	1	1
Volume	1500g	100g	10g	10g	250g	250g	125g	250g	250g	[illegible]
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Technetium-99	See item (2) in Special Instructions	See item (3) in Special Instructions	PCBs - 8082	Pesticides 8081	Semi-VOA 8270 [illegible]	See item (4) in Special Instructions	

Sample No.	Matrix *	Sample Date	Sample Time										
J18907	OTHER SOLID	2/10/09	1323					X	X	X	X	X	

Sampler: [illegible] removal of samples from controlled storage. Shipper removing samples from storage [illegible] of samples for shipment to lab

CHAIN OF POSSESSION	Date/Time	Sign/Print Names	Date/Time
Relinquished By/Removed From B [illegible]	[illegible] 1630	Received By/Stored In Eric A	2/[illegible]/09 1630
Relinquished By/Removed From Eric A	2/20/09 0800	Received By/Stored In D. Hellberg [illegible]	2/20/09 0800
Relinquished By/Removed From D. Hellberg [illegible]	2/20/09 1200	Received By/Stored In Fedex	2/20/09 1200
Relinquished By/Removed From [illegible]	2-23-09 1045	Received By/Stored In [illegible]	2-23-09 1045
Relinquished By/Removed From [illegible]	2-23-09 1050	Received By/Stored In [illegible]	2-23-09 1050
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) {Americium-241, Antimony-125, Barium-133, [illegible] Cesium-134, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Thorium-232, Uranium-238}

(2) Strontium-89,90 - Total Sr; Isotopic Thorium {Thorium-228, [illegible]}; Isotopic Uranium {Uranium-233/234, Uranium-235, Uranium-238}; Isotopic Plutonium

(3) ICP Metals - 6010 (Full List) {Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc}; Mercury - 7471 - [illegible]

(4) VOA - 8260A {1,1,1-Trichloroethane, 1,1,2,2-Tetrachloroethane, 1,1,2-Trichloroethane, 1,1-Dichloroethane, 1,1-Dichloroethene, 1,2-Dichloroethane, 1,2-Dichloropropane, 2-Butanone, 2-Hexanone, 4-Methyl-2-Pentanone, Acetone, Benzene, Bromodichloromethane, Bromoform, Bromomethane, Carbon disulfide, Carbon tetrachloride, Chlorobenzene, Chloroethane, Chloroform, Chloromethane, cis-1,2-Dichloroethene, cis-1,3-Dichloropropene, Dibromochloromethane, [illegible]

Matrix *
[illegible]

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-CE-011

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST		RC-116-1353	Page [illegible]
Collector BM	Company Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator KESSNER, JH	Price Code 9K / Data Turnaround 45 Days
Project Designation [illegible] Burial Grounds Component of the RC RRA - Sediments	Sampling Location RC-8 SSD		SAF No. RC-116	
Ice Chest No. WCH-06-012, 012, 072	Field Logbook No. EL-1632-1	COA DESCRC6320	Method of Shipment FED EX	
Shipped To EBERLINE SERVICES (RICHMOND)	Offsite Property No. N/A		Bill of Lading/Air Bill No. 796360120 8296	

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

Preservation	None	None	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	None
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	aG	aG	G	[illegible]
No. of Container(s)	1	1	1	1	1	1	1	1	1	1
Volume	1500g	100g	10g	10g	250g	250g	125g	250g	250g	1
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Technetium-99	See item (2) in Special Instructions	See item (3) in Special Instructions	PCBs - 8082	Pesticides - 8081	Semi-VOA - 8270 [illegible]	See item (4) in Special Instructions	

Sample No.	Matrix *	Sample Date	Sample Time										
J18938	OTHER SOLID	2/16/09	1256					X	X	X	X	X	

Sampler [illegible] to remove samples from [illegible] storage. Shipper removed samples from storage location using custody of samples for shipment(s).

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
BM [illegible]	2/16/09 1630	Fr[illegible] A	2/16/09 1630
Fr[illegible] A	2/20/09 0800	D. Heidelberg [illegible]	2/20/09 0800
D. Heidelberg [illegible]	2/20/09 1200	Fed Ex	2/20/09 1200
[illegible]	2-21-09 1045	[illegible]	2-21-09 1045
[illegible]	2-23-09 1025	[illegible]	2-23-09 1025

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) {Americium-241, Antimony-125, Barium-133, Cerium-144, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238}

(2) Strontium-89,90 -- Total Sr; Isotopic Thorium {Thorium-232}; Isotopic Uranium {Uranium-233/234, Uranium-235, Uranium-238}; Isotopic Plutonium

(3) ICP Metals - 6010 {TAL List} {Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Titanium, Vanadium, Zinc}; Mercury - 7471 [illegible]

(4) VOA - 8260A {TCL}; {1,1,1-Trichloroethane, 1,1,2,2-Tetrachloroethane, 1,1,2-Trichloroethane, 1,1-Dichloroethane, 1,1-Dichloroethene, 1,2-Dichloroethane, 1,2-Dichloropropane, 2-Butanone, 2-Hexanone, 4-Methyl-2-Pentanone, Acetone, Benzene, Bromodichloromethane, Bromoform, Bromomethane, Carbon disulfide, Carbon tetrachloride, Chlorobenzene, Chloroethane, Chloroform, Chloromethane, cis-1,2-Dichloroethylene, cis-1,3-Dichloropropene, [illegible]

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-116-1354

Page 1 of 2

Collector SM	Company Contact JOAN KESSNER	Telephone No 373-4638	Project Coordinator KESSNER, JH
Project Designation [illegible] River Component of the RCBRA - Soil [illegible]	Sampling Location HF - 7 SSD		SAF No. RC-116
Ice Chest No. WCH-08-013, 072, 022	Field Logbook No. EL-1630-1	COA [illegible]520	Method of Shipment FEDEX
Shipped To [illegible] SERVICES (GONVILLE)	Offsite Property No. N/A		Bill of Lading/Air Bill No. 796361208296

Price Code 9K

Data Turnaround 45 Days

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

0000049

Preservation	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	aG	aG	aG	-
No. of Container(s)	1	1	1	1	1	1	1	1	1	[illegible]
Volume	1500g	100g	10g	10g	250g	250g	125g	250g	250g	[illegible]
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Technetium-99	See item (2) in Special Instructions	See item (3) in Special Instructions	[illegible]	[illegible]	[illegible]	See item (4) in Special Instructions	-

Sample No.	Matrix *	Sample Date	Sample Time										
J18969	OTHER SOLID	2/18/09	1220					X	X	X	X	X	

Samples unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment [illegible]

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
	2/19/09 1000	Eric A	2/19/09 1000
Eric A	2/20/09 0800	D Heidelberg	2/20/09 0800
D Heidelberg	2/20/09 1200	FedEx	2/20/09 1200
	2-23-09 1045		2-23-09 1045
	2-23-09/0855		2-23-09/0855

SPECIAL INSTRUCTIONS

(1) Gamma Spec - GEA (Americium-241, Antimony-125, Beryllium-7, Cerium-144, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238); (2) Strontium-89/90 - Total Sr; Isotopic Thorium (Thorium-232); Isotopic Uranium (Uranium-233/234, Uranium-235, Uranium-238); Isotopic Plutonium; (3) ICP Metals - 6010 (add-on) (Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, [illegible], Uranium, Vanadium, Zinc); Mercury - 7471 (CV); (4) VOA - 8260B (TCL) (1,1,1-Trichloroethane, 1,1,2,2-Tetrachloroethane, 1,1,2-Trichloroethane, 1,1-Dichloroethane, 1,1-Dichloroethene, 1,2-Dichloroethane, 1,2-Dichloropropane, 2-Butanone, 2-Hexanone, 4-Methyl-2-Pentanone, Acetone, Benzene, Bromodichloromethane, Bromoform, Bromomethane, Carbon disulfide, Carbon tetrachloride, Chlorobenzene, Chloroethane, Chloroform, Chloromethane, cis-1,2-Dichloroethylene, cis-1,3-Dichloropropene, [illegible]

Matrix *

[illegible]

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-031

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-116-1355 Page 1 of 2

Collector [illegible]

Company Contact JOAN KESSNER Telephone No. 375-4688

Project Coordinator KESSNER, JH

Price Code 9K

Data Turnaround 45 Days

Project Designation Columbia River Component of the RI/[illegible] - Sediment

Sampling Location RC-[illegible]-SSD

SAF No. RC-116

Ice Chest No. WCH-08-013, 072, 073

Field Logbook No. EL-1631-1

COA [illegible]

Method of Shipment FEDEX

Shipped To EBERLINE SERVICES [illegible]

Offsite Property No. N/A

Bill of Lading/Air Bill No. 796361268290

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

Preservation	None	None	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	None
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	aG	aG	G	
No. of Container(s)	1	1	1	1	1	1	1		1	1
Volume	1500g	100g	50g	10g	250g	250g	125g	250g	250g	
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Technetium-99	See item (2) in Special Instructions	See item (3) in Special Instructions	PCBs - 8082	[illegible]	[illegible]	See item (4) in Special Instructions	
Sample No. / Matrix * / Sample Date / Sample Time										
J18[illegible] / OTHER SOLID / 2/[illegible] / [illegible]					X	X	X	X	X	

Samples unavailable to [illegible] samples [illegible] storage. Shipper removed samples from storage location [illegible] custody of samples for shipment to lab

CHAIN OF POSSESSION	Date/Time	Sign/Print Names	Date/Time
Relinquished By/Removed From [illegible]	[illegible] 1650	Received By/Stored In [illegible]	[illegible] / 1650
Relinquished By/Removed From [illegible]	2/20/09 0800	Received By/Stored In Bluedard	2/20/09 0800
Relinquished By/Removed From Bluedard	2/20/09 1200	Received By/Stored In FedEx	2/20/09 1200
Relinquished By/Removed From FedEx	2/21/09 1045	Received By/Stored In [illegible]	2/21/09 1045
Relinquished By/Removed From FedEx	2/23/09 0850	Received By/Stored In [illegible]	2/23/09 0850
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (GEA Lab) {Americium 241, Antimony 125, Beryllium 7, Cerium 144, Cesium 137, Cobalt 60, Europium 152, Europium 154, Europium 155, Potassium-40, Radium 226, Radium 228, Ruthenium-106, Uranium 235, Uranium 238}

(2) Strontium-89/90 - Total Sr; Isotopic Thorium {Thorium [illegible]}; Isotopic Uranium {Uranium 233/234, Uranium 235, Uranium 238}; Isotopic Plutonium [illegible]

(3) ICP Metals - 6010 (Tot Lab) {Aluminum, Antimony, Arsenic, Barium, Beryllium, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Titanium, Vanadium, Zinc}; Mercury - 7471 - (CVAA)

(4) VOA - 8260A - TCL List {1,1,1-Trichloroethane, 1,1,2,2-Tetrachloroethane, 1,1,2-Trichloroethane, 1,1-Dichloroethane, 1,1-Dichloroethene, 1,2-Dichloroethane, 1,2-Dichloropropane, 2-Butanone, 2-Hexanone, 4-Methyl-2-Pentanone, Acetone, Benzene, Bromodichloromethane, Bromoform, Bromomethane, Carbon disulfide, Carbon tetrachloride, Chlorobenzene, Chloroethane, Chloroform, Chloromethane, cis-1,2-Dichloroethylene, cis-1,3-Dichloropropene, [illegible]

Matrix *

S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION Received By Title Date/Time

FINAL SAMPLE DISPOSITION Disposal Method Disposed By Date/Time

WCH-EE-011

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-116-1356 Page 1 of 1

Collector [illegible]	Company Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator KESSNER, JH
Project Designation Columbia River Component of the RCBRA - Sediment	Sampling Location 100-[illegible] SSD		SAF No. RC-116
Ice Chest No. WCH-08-013, 022, 072	Field Logbook No. EL 1631-1	COA DESCRC0470	Method of Shipment FED EX
Shipped To [illegible] SERVICES (OVIVILLE)	Offsite Property No. N/A		Bill of Lading/Air Bill No. 796341208296

Price Code **9K**

Data Turnaround **45 Days**

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

E500051

Preservation	None	None	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	None
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	aG	aG	G	-
No. of Container(s)	1	1	1	1	1	1	1	1	1	1
Volume	1500g	100g	10g	10g	250g	25g	25g	250g	250g	[illegible]
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Technetium-99	See item (2) in Special Instructions	See item (3) in Special Instructions	VOA - 8260	[illegible]	[illegible]	See item (4) in Special Instructions	

Sample No.	Matrix *	Sample Date	Sample Time										
J18C1	OTHER SOLID	2/19/09	[illegible]					X	X	X	X	X	

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location using custody of samples for shipment to lab.

CHAIN OF POSSESSION		Sign/Print Names	
Relinquished By/Removed From [illegible]	Date/Time 2/19/09 1030	Received By/Stored In R.L.B.	Date/Time 2/19/09 1030
Relinquished By/Removed From RLB	Date/Time 2/20/09 0800	Received By/Stored In B Woodward	Date/Time 2/20/09 0800
Relinquished By/Removed From B Woodward	Date/Time 2/20/09 1200	Received By/Stored In FedEx	Date/Time 2/20/09 1200
Relinquished By/Removed From	Date/Time 2-23-09 1045	Received By/Stored In	Date/Time 2-23-09 1045
Relinquished By/Removed From	Date/Time 2-23-09 1085	Received By/Stored In	Date/Time 2-23-09 1085
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) [Americium-241, Antimony-125, [illegible], Cesium-137, [illegible], Europium-152, Europium-154, Europium-155, [illegible]-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238]
(2) Strontium-89/90 - total Sr, Isotopic Thorium [Thorium-232, [illegible]], Isotopic Uranium [Uranium-233/234, Uranium-235, Uranium-238], Isotopic Plutonium
(3) ICP Metals - 6010 (Full List) [Aluminum, Antimony, Arsenic, Barium, Beryllium, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Titanium, Vanadium, Zinc]; Mercury - 7471 (CV)
(4) VOA - 8260A (TCL) - 1,1,1-Trichloroethane, 1,1,2,2-Tetrachloroethane, 1,1,2-Trichloroethane, 1,1-Dichloroethane, 1,1-Dichloroethene, 1,2-Dichloroethane, 1,2-Dichloropropane, 2-Butanone, 2-Hexanone, 4-Methyl-2-Pentanone, Acetone, Benzene, Bromodichloromethane, Bromoform, Bromomethane, Carbon disulfide, Carbon tetrachloride, Chlorobenzene, Chloroethane, Chloroform, Chloromethane, cis-1,2-Dichloroethylene, cis-1,3-Dichloropropene, Dibromochloromethane, [illegible]

Matrix *
[illegible]

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST		RC-116-358	Page 1 of 1

Collector [illegible]	Company Contact JOAN KESSNER	Telephone No. 375-4658	Project Coordinator KESSNER, JH	Price Code 9K	Data Turnaround 45 Days
Project Designation Columbia River Component of the RCBRA - Sediment	Sampling Location BL [illegible] SSD		SAF No. RC-116		
Ice Chest No. WCH-08-013/08-2022	Field Logbook No. EL-1631-1	COA BESRRC A520	Method of Shipment FEDEX		
Shipped To [illegible] SERVICES [illegible]	Offsite Property No. N/A		Bill of Lading/Air Bill No. 796361208816		

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

Preservation	None	None	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	None
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	aG	aG	aG	
No. of Container(s)	1	1	1	1	1	1	1	1	1	1
Volume	1500g	100g	10g	10g	250g	150g	125g	250g	250g	1
SAMPLE ANALYSIS	See attached (1) Special Instructions	Carbon-14	Technetium-99	See attached (2) Special Instructions	See attached (3) Special Instructions	PCBs - 8082	Pesticides 8081	Anions (IC) [illegible]	See attached (4) Special Instructions	

Sample No.	Matrix *	Sample Date	Sample Time										
J189C3	OTHER SOLID	2/19/09	1115					X	X	X	X	X	

Samples are removed from controlled storage. Shipper retrieved samples from storage location taking custody of samples for shipment to lab.

CHAIN OF POSSESSION Sign/Print Names

Relinquished By/Removed From [illegible]	Date/Time 2/19/09 1650	Received By/Stored In [illegible]	Date/Time 2/19/09 1650
Relinquished By/Removed From RCB	Date/Time 2/20/09 0800	Received By/Stored In D. Hedberg [illegible]	Date/Time 2/20/09 0800
Relinquished By/Removed From D. Hedberg [illegible]	Date/Time 2/20/09 1200	Received By/Stored In FedEx	Date/Time 2/20/09 1200
Relinquished By/Removed From [illegible]	Date/Time 2/23/09 1045	Received By/Stored In [illegible]	Date/Time 2/23/09 1045
Relinquished By/Removed From [illegible]	Date/Time 2/23/09 1050	Received By/Stored In [illegible]	Date/Time 2/23/09 1050
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time

SPECIAL INSTRUCTIONS

(1) Gamma Spec - {Add-On} {Americium-241, Antimony-125, Beryllium-7, Cerium-144, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, [illegible]-235, Uranium-238}
(2) Strontium-89,90 - Total Sr; Isotopic Thorium {Thorium-232}; Isotopic Uranium {Uranium-233/234, Uranium-235, Uranium-238}; Isotopic Plutonium
(3) ICP Metals - 6010 {Add-On} {Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc}; Mercury - 7471 (CV)
(4) VOA - 8260A (TCL) {1,1,1-Trichloroethane, 1,1,2,2-Tetrachloroethane, 1,1,2-Trichloroethane, 1,1-Dichloroethane, 1,1-Dichloroethene, 1,2-Dichloroethane, 1,2-Dichloropropane, 2-Butanone, 2-Hexanone, 4-Methyl-2-Pentanone, Acetone, Benzene, Bromodichloromethane, Bromoform, Bromomethane, Carbon disulfide, Carbon tetrachloride, Chlorobenzene, Chloroethane, Chloroform, Chloromethane, cis-1,2-Dichloroethylene, cis-1,3-Dichloropropene, Dibromochloromethane, Ethylbenzene, [illegible]

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-116-1359	Page 1 of 2

Collector [illegible]	Company Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator KESSNER, JH
Project Designation Columbia River Component of the RCBRA - Sediment	Sampling Location BI 4 SSD		SAF No. RC-116
Ice Chest No. WCH-08013,022,072	Field Logbook No. EL-1656-1	COA HEMRC6850	Method of Shipment FEDEX
Shipped To EBERLINE SERVICES (DONSVILLE)	Offsite Property No. N/A		Bill of Lading/Air Bill No. 796361208296

Price Code 9K

Data Turnaround 45 Days

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

0000053

Preservation	None	None	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	None
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	aG	aG	aG	G
No. of Container(s)	2	1	1	1	1	1	1	1	2	1
Volume	1500g	100g	10g	10g	250g	250g	125g	250g	250g	1
SAMPLE ANALYSIS	See item (1) in Special Instructions	[illegible]	[illegible]	See item (2) in Special Instructions	See item (3) in Special Instructions	[illegible]	[illegible]	[illegible]	See item (4) in Special Instructions	

Sample No.	Matrix *	Sample Date	Sample Time										
J189C4	OTHER SOLID	2/19/09	1150					X	X	X	X	X	

Samples unavailable to include with SAF from controlled storage. Shipper not mixed samples from storage location taking [illegible] of samples for shipment to lab.

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
[illegible]	2/19/09 / 1630	R.L.B.	2/19/09 / 1630
Raf. B 2/20/09	0500	D Hedelberg [illegible]	2/20/09 0500
D Hedelberg [illegible]	2/20/09 1200	Fedex 2/20/09	1200
[illegible]	2/21/09 1045	[illegible]	2/21/09 1045
[illegible]	2/23/09 1025	[illegible]	2/23/09 1025

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) (Americium-241, Antimony-125, Beryllium-7, Cerium-144, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238);
(2) Strontium-89,90 -- Total Sr, Isotopic Thorium (Thorium-232), Isotopic Uranium (Uranium-233/234, Uranium-235, Uranium-238), Isotopic Plutonium;
(3) ICP Metals - 6010 (Full List) (Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, [illegible] Vanadium, Zinc), Mercury - 7471 - (CV);
(4) VOA - 8260A (TCL) (1,1,1-Trichloroethane, 1,1,2,2-Tetrachloroethane, 1,1,2-Trichloroethane, 1,1-Dichloroethane, 1,1-Dichloroethene, 1,2-Dichloroethane, 1,2-Dichloropropane, 2-Butanone, 2-Hexanone, 4-Methyl-2-Pentanone, Acetone, Benzene, Bromodichloromethane, Bromoform, Bromomethane, Carbon disulfide, Carbon tetrachloride, Chlorobenzene, Chloroethane, Chloroform, Chloromethane, cis-1,2-Dichloroethylene, cis-1,3-Dichloropropene, Dibromochloromethane, [illegible]

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-116-1392 Page 2 of 2

Collector BG	Company Contact JOAN KESSNER	Telephone No. 373-4688	Project Coordinator KESSNER, JL
Project Designation Columbia River Component of the RCBRA - Sediment	Sampling Location SP 2 SSD		SAF No. RC-116
Ice Chest No. WCH-08-013, 097, 022	Field Logbook No. EL-1611-4	COA RESCRG620	Method of Shipment FEDEX
Shipped To EBERLINE SERVICES - LIONVILLE	Offsite Property No. N/A		Bill of Lading/Air Bill No. 796360208296

Price Code 9K

Data Turnaround 45 Days

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

4500054

Preservation	None	None	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	None
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	aG	aG	aG	[illegible]
No. of Container(s)	1	1	1	1	1	1	1	1	1	1
Volume	1500g	100g	10g	10g	250g	250g	125g	250g	250g	1L
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Technetium-99	See item (2) in Special Instructions	See item (3) in Special Instructions	PCBs - 8082	Pesticides - 8081	Semi-VOA - 8270A (TCL)	See item (4) in Special Instructions	

Sample No.	Matrix *	Sample Date	Sample Time										
J16909	OTHER SOLID	2/19/09	142					X	X	X	X	X	

Sample originated as remote samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab.

CHAIN OF POSSESSION Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
	2/19/09 1630	Eric A	2/19/09 1630
Eric A	2/20/09 0800	D. Heidelberg	2/20/09 0800
D. Heidelberg	2/20/09 1200	FedEx	2/20/09 1200
	2-23-09/1045		2-23-09/1045
	2-23-09/1045		2-23-09/1045

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full Lib) {Americium-241, Antimony-125, Beryllium-7, Cerium-144, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238}

(2) Strontium-89,90 - Total Sr; Isotopic Thorium {Thorium-232}; Isotopic Uranium {Uranium-233/234, Uranium-235, Uranium-238}; Isotopic Plutonium

(3) ICP Metals - 6010 (Full List) {Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Titanium, Vanadium, Zinc}; Mercury - 7471 - (CVAA)

(4) VOA - 8260A (TCL) {1,1,1-Trichloroethane, 1,1,2,2-Tetrachloroethane, 1,1,2-Trichloroethane, 1,1-Dichloroethane, 1,1-Dichloroethene, 1,2-Dichloroethane, 1,2-Dichloropropane, 2-Butanone, 2-Hexanone, 4-Methyl-2-Pentanone, Acetone, Benzene, Bromodichloromethane, Bromoform, Bromomethane, Carbon disulfide, Carbon tetrachloride, Chlorobenzene, Chloroethane, Chloroform, Chloromethane, cis-1,2-Dichloroethylene, cis-1,3-Dichloropropene, Dibromochloromethane, [illegible]

Matrix *
S = Soil
SE = Sediment
SO = Solid
SL = Sludge
W = Water
O = Oil
A = Air
DS = Drum Solids
DL = Drum Liquids
T = Tissue
WI = Wipe
L = Liquid
V = Vegetation
X = Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-116-1395	Page 1 of 1
Collector [illegible]	Company Contact JOAN KESSNER Telephone No. 375-4688	Project Coordinator KESSNER, JE	Price Code 9K Data Turnaround 45 Days
Project Designation Columbia River Component of the RC BRA - Sediment	Sampling Location SD-1 SSD	SAF No. RC-116	
Ice Chest No. WCH-08-013, 072, 022	Field Logbook No. EL-1651-1 COA [illegible]	Method of Shipment FEDEX	
Shipped To [illegible] SERVICES (ONSVILLE)	Offsite Property No. N/A	Bill of Lading/Air Bill No. 796301708296	

0000055

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

Preservation	None	None	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	None
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	aG	aG	aG	
No. of Container(s)	1	1	1	1	1	1	1	1	1	1
Volume	1500g	100g	10g	10g	250g	250g	125g	250g	250g	[illegible]
SAMPLE ANALYSIS	See item (1) in Special Instructions	[illegible]	[illegible]	See item (2) in Special Instructions	See item (3) in Special Instructions	PCBs - 8082	Pesticides 8081	[illegible]	See item (4) in Special Instructions	

Sample No.	Matrix *	Sample Date	Sample Time										
J18542	OTHER SOLID	2/19/09	1400					X	X	X	X	X	

Samples [illegible] from controlled storage. Shipper retrieved samples from storage location [illegible] of samples for shipment to lab

CHAIN OF POSSESSION Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
L. Stricker [illegible]	2/19/09 / 1650	R.L.B.	2/19/09 / 1650
Ref. B	2/20/09 0800	Dale Kelley	2/20/09 0800
Dale Kelley	2/20/09 1400	FedEx	2/20/09 1200
[illegible]	2/21/09 1045	[illegible]	2/21/09 1045
[illegible]	2/23/09/0850	[illegible]	2/23/09/0850

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) {Americium-241, Antimony-125, Beryllium-7, Cerium-144, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238};
(2) Strontium-89/90 - Total Sr; Isotopic Thorium {Thorium-232}; Isotopic Uranium {Uranium-233/234, Uranium-235, Uranium-238}; Isotopic Plutonium
(3) ICP Metals - 6010 (Full List) {Aluminum, Antimony, Arsenic, Barium, Beryllium, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Titanium, Vanadium, Zinc}; Mercury - 7471 (CVAA)
(4) VOA - 8260A (TCL) {1,1,1-Trichloroethane, 1,1,2,2-Tetrachloroethane, 1,1,2-Trichloroethane, 1,1-Dichloroethane, 1,1-Dichloroethene, 1,2-Dichloroethane, 1,2-Dichloropropane, 2-Butanone, 2-Hexanone, 4-Methyl-2-Pentanone, Acetone, Benzene, Bromodichloromethane, Bromoform, Bromomethane, Carbon disulfide, Carbon tetrachloride, Chlorobenzene, Chloroethane, Chloroform, Chloromethane, cis-1,2-Dichloroethylene, cis-1,3-Dichloropropene, [illegible]

Matrix *
[illegible]

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-116-1397 | Page [illegible] of 2

Collector [illegible]	Company Contact JOAN KESSNER	Telephone No. 375-4698	Project Coordinator KESSNER, JH
Project Designation Columbia River Component of the RCBRA - Sediment	Sampling Location SP [illegible] SSD		SAF No. RC-116
Ice Chest No. IRCH-08-03,072,022	Field Logbook No. EL 1617-E	COA [illegible]	Method of Shipment FEDEX
Shipped To EBERLINE SERVICES (EBSA RET)	Offsite Property No. N/A		Bill of Lading/Air Bill No. 796361208296

Price Code 9K

Data Turnaround 45 Days

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

Preservation	None	None	None	None	Cool 4C	Cool 4C	[illegible]	[illegible]	[illegible]	None
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	aG	aG	[illegible]	[illegible]
No. of Container(s)	1	1	1	1	1	1	1	1	[illegible]	[illegible]
Volume	1500g	100g	10g	10g	250g	250g	125g	250g	250g	[illegible]
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Technetium-99	See item (2) in Special Instructions	See item (3) in Special Instructions	PCBs - 8082	[illegible]	[illegible]	See item (4) in Special Instructions	

Sample No.	Matrix *	Sample Date	Sample Time										
J189K4	OTHER SOLID	[illegible]	[illegible]					X	X	X	X	X	

Sampler [illegible] to remove samples from controlled storage. Shipper [illegible] samples from storage [illegible] of samples for shipment [illegible]

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
[illegible]	7-[illegible]-09 / 1630	Ref B	7-[illegible]-09 / 1630
Ref. B	7/20/09 0800	D Heidelberg	7/20/09 0800
D Heidelberg	7/20/09 1200	Fedex	7/20/09 1200
[illegible]	7-21-09 / 1045	[illegible]	7-21-09 / 1045
[illegible]	7-23-09 / 1050	[illegible]	7-23-09 / 1050

SPECIAL INSTRUCTIONS

(1) Gamma Spec - [illegible] (Americium-241, Antimony-125, [illegible] 7, [illegible] 134, [illegible] 137, Cobalt-60, Europium-152, Europium-154, Europium-155, [illegible], Ruthenium-106, Uranium-235, Uranium-238);
(2) Strontium-89/90 - Total Sr; Isotopic Thorium (Thorium-228, [illegible]); Isotopic Uranium (Uranium-233/234, Uranium-235, Uranium-238); Isotopic Plutonium;
(3) ICP Metals - 6010 [illegible] (Aluminum, Antimony, Arsenic, Barium, Beryllium, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Titanium, Vanadium, Zinc); Mercury - 7471 [illegible];
(4) VOA - 8260A (TCL) (1,1,1-Trichloroethane, 1,1,2,2-Tetrachloroethane, 1,1,2-Trichloroethane, 1,1-Dichloroethane, 1,1-Dichloroethene, 1,2-Dichloroethane, 1,2-Dichloropropane, [illegible], 4-Methyl-2-Pentanone, Acetone, Benzene, [illegible], Bromoform, Bromomethane, Carbon disulfide, Carbon tetrachloride, Chlorobenzene, Chloroethane, Chloroform, Chloromethane, cis-1,2-Dichloroethene, cis-1,3-Dichloropropene, [illegible] [illegible]

Matrix * [illegible]

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-116-1398 Page 1 of 2

Collector	Company Contact JOAN KESSNER	Telephone No. [illegible]	Project Coordinator KESSNER, JH
Project Designation [illegible]	Sampling Location SP 3 SSD		SAF No. RC 116
Ice Chest No. [illegible]	Field Logbook No. [illegible]	COA [illegible]	Method of Shipment FED EX
Shipped To [illegible] ~~[illegible]~~	Offsite Property No. N/A		Bill of Lading/Air Bill No. 796361208209Co

Price Code 9K

Data Turnaround 45 Days

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

Preservation	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Type of Container	G/P	G/P	G/P	G/P	G/P	[illegible]	[illegible]	[illegible]	[illegible]	
No. of Container(s)	1	1	1	1	1	1	1			1
Volume	[illegible]	[illegible]	[illegible]	[illegible]	250g	250g	125g	250g	250g	[illegible]
SAMPLE ANALYSIS	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	

Sample No.	Status *	Sample Date	Sample Time										
J18965	OTHER SOLID	[illegible]	[illegible]					X	X	X	X	X	

Sampler unavailable to remove samples from controlled storage. Shipper retrieved samples from storage location [illegible] custody of samples for shipment to [illegible]

CHAIN OF POSSESSION	Date/Time	Sign/Print Names	Date/Time
Relinquished By/Removed From [illegible]	[illegible] 1630	Received By/Stored In [illegible]	[illegible] 1630
Relinquished By/Removed From [illegible]	7/20/09 0800	Received By/Stored In D. Hedelberg	7/20/09 [illegible]
Relinquished By/Removed From D. Hedelberg	7/20/09 1200	Received By/Stored In FedEx	7/20/09 1200
Relinquished By/Removed From [illegible]	[illegible] 1045	Received By/Stored In [illegible]	[illegible] 1045
Relinquished By/Removed From [illegible]	[illegible] 1050	Received By/Stored In [illegible]	[illegible] 1050
Relinquished By/Removed From		Received By/Stored In	

SPECIAL INSTRUCTIONS

[illegible]

Status *

[illegible]

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-015

Appendix 5

Data Validation Supporting Documentation

INORGANIC ANALYSIS DATA VALIDATION CHECKLIST

VALIDATION LEVEL	A	B	[✓ C]	D	E

PROJECT: RCBRA

DATA PACKAGE: K1544

VALIDATOR: ELR

LAB: ELF

DATE: 11/27/09

SDG: K1544

ANALYSES PERFORMED

[✓ SW-846/ICP]	SW-846/GFAA	[✓ SW-846/Hg]	SW-846 Cyanide		

SAMPLES/MATRIX

J189C9	J189F0	J18985	J18986	J18987	J18988
J18990	J18991	J18992	J189B5	J189B6	J189B7
J189B8	J189B9	J189C0	J18999	J189C3	J18994
J18999	J189K2	J189K4	J189K5		

Solid

1. **DATA PACKAGE COMPLETENESS AND CASE NARRATIVE**

Technical verification documentation present? .... Yes [✓ No] N/A

Comments:

2. **INSTRUMENT PERFORMANCE AND CALIBRATIONS (Levels D and E)**

Initial calibrations performed on all instruments? .... Yes No [✓ N/A]

Initial calibrations acceptable? .... Yes No [✓ N/A]

ICP interference checks acceptable? .... Yes No [✓ N/A]

ICV and CCV checks performed on all instruments? .... Yes No [✓ N/A]

ICV and CCV checks acceptable? .... Yes No [✓ N/A]

Standards traceable? .... Yes No [✓ N/A]

Standards expired? .... Yes No [✓ N/A]

Calculation check acceptable? .... Yes No [✓ N/A]

Comments:

INORGANIC ANALYSIS DATA VALIDATION CHECKLIST

3. BLANKS (Levels B, C, D, and E)

ICB and CCB checks performed for all applicable analyses? (Levels D, E) .... Yes No [✓ N/A]
ICB and CCB results acceptable? (Levels D, E) .... Yes No [✓ N/A]
Laboratory blanks analyzed? .... [✓ Yes] No N/A
Laboratory blank results acceptable? .... Yes [✓ No] N/A
Field blanks analyzed? (Levels C, D, E) .... Yes [✓ No] N/A
Field blank results acceptable? (Levels C, D, E) .... Yes No [✓ N/A]
Transcription/calculation errors? (Levels D, E) .... Yes No [✓ N/A]

Comments: Lead – B9, B7, B5, B8, – UJ   tin – UJ all
J1, K2, K4,
no FB

4. ACCURACY (Levels C, D, and E)

MS/MSD samples analyzed? .... [✓ Yes] No N/A
MS/MSD results acceptable? .... Yes [✓ No] N/A
MS/MSD standards NIST traceable? (Levels D, E) .... Yes No [✓ N/A]
MS/MSD standards expired? (Levels D, E) .... Yes No [✓ N/A]
LCS/BSS samples analyzed? .... [✓ Yes] No N/A
LCS/BSS results acceptable? .... Yes [✓ No] N/A
Standards traceable? (Levels D, E) .... Yes No [✓ N/A]
Standards expired? (Levels D, E) .... Yes No [✓ N/A]
Transcription/calculation errors? (Levels D, E) .... Yes No [✓ N/A]
Performance audit sample(s) analyzed? .... Yes [✓ No] N/A
Performance audit sample results acceptable? .... Yes No [✓ N/A]

Comments: MS – 522 – J (~~[illegible]~~) antimony
MS – phosphorus – 202 – J (E1-K3) all
no PAS

LCS – Antimony – J   D8, B9 – J   vanadium – J all detects
LCS – arsenic – J all detects   zinc J all detects
LCS – Copper – J all detects
LCS – nickel – J all detects
LCS – thallium – J all

INORGANIC ANALYSIS DATA VALIDATION CHECKLIST

5. PRECISION (Levels C, D, and E)

Duplicate RPD values acceptable? .... Yes [✓ No] N/A
Duplicate results acceptable? .... Yes [✓ No] N/A
MS/MSD standards NIST traceable? (Levels D, E) .... Yes No [✓ N/A]
MS/MSD standards expired? (Levels D, E) .... Yes No [✓ N/A]
Field duplicate RPD values acceptable? .... Yes No [✓ N/A]
Field split RPD values acceptable? .... Yes No [✓ N/A]
Transcription/calculation errors? (Levels D, E) .... Yes No [✓ N/A]

Comments: phosphorus - 40% (S1-K5) - J

6. ICP QUALITY CONTROL (Levels D and E)

ICP serial dilution samples analyzed? .... Yes No [✓ N/A]
ICP serial dilution %D values acceptable? .... Yes No [✓ N/A]
ICP post digestion spike required? .... Yes No [✓ N/A]
ICP post digestion spike values acceptable? .... Yes No [✓ N/A]
Standards traceable? .... Yes No [✓ N/A]
Standards expired? .... Yes No [✓ N/A]
Transcription/calculation errors? .... Yes No [✓ N/A]
Comments:

INORGANIC ANALYSIS DATA VALIDATION CHECKLIST

7. FURNACE AA QUALITY CONTROL (Levels D and E)

Duplicate injections performed as required? .... Yes No [✓ N/A]

Duplicate injection %RSD values acceptable? .... Yes No [✓ N/A]

Analytical spikes performed as required? .... Yes No [✓ N/A]

Analytical spike recoveries acceptable? .... Yes No [✓ N/A]

Standards traceable? .... Yes No [✓ N/A]

Standards expired? .... Yes No [✓ N/A]

MSA performed as required? .... Yes No [✓ N/A]

MSA results acceptable? .... Yes No [✓ N/A]

Transcription/calculation errors? .... Yes No [✓ N/A]

Comments:

8. HOLDING TIMES (all levels)

Samples properly preserved? .... [✓ Yes] No N/A

Sample holding times acceptable? .... [✓ Yes] No N/A

Comments:

INORGANIC ANALYSIS DATA VALIDATION CHECKLIST

9. RESULT QUANTITATION AND DETECTION LIMITS (all levels)

Results reported for all requested analyses? .... [✓ Yes] No N/A

Results supported in the raw data? (Levels D, E) .... Yes No [✓ N/A]

Samples properly prepared? (Levels D, E) .... Yes No [✓ N/A]

Detection limits meet RDL? .... [✓ Yes] No N/A

Transcription/calculation errors? (Levels D, E) .... Yes No [✓ N/A]

Comments:

Appendix 6

Additional Documentation Requested by Client

764 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

WC Hanford, Inc 2620 Fermi Avenue Richland WA 99354	Project: RC 316 Project Number: [none] Project Manager: Joan Kessner	Reported: 05/06/2009 12:18

Metals by SW846 6000/7000 series - Quality Control

Lionville Laboratory

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch L903156 - SW 7471A Prep										
Blank (L903156-BLK1)				Prepared & Analyzed: 03/18/2009						
Mercury	ND	0.0300	mg/kg wet							U
Duplicate (L903156-DUP1)	Source: 0902067-23			Prepared & Analyzed: 03/18/2009						
Mercury	ND	0.0257	mg/kg wet		ND				20	U
Matrix Spike (L903156-MS1)	Source: 0902067-23			Prepared & Analyzed: 03/18/2009						
Mercury	0.131	0.0275	mg/kg wet	0.12500	ND	105	75-125			
Reference (L903156-SRM1)				Prepared & Analyzed: 03/18/2009						
Mercury	4.99	0.180	mg/kg wet	4.7000		106	80-120			
Batch L903157 - SW 7471A Prep										
Blank (L903157-BLK1)				Prepared & Analyzed: 03/18/2009						
Mercury	ND	0.0300	mg/kg wet							U
Duplicate (L903157-DUP1)	Source: 0902067-03			Prepared & Analyzed: 03/18/2009						
Mercury	ND	0.0271	mg/kg wet		ND				20	U
Matrix Spike (L903157-MS1)	Source: 0902067-03			Prepared & Analyzed: 03/18/2009						
Mercury	0.149	0.0243	mg/kg wet	0.13514	ND	110	75-125			
Reference (L903157-SRM1)				Prepared & Analyzed: 03/18/2009						
Mercury	4.93	0.180	mg/kg wet	4.7000		105	80-120			
Batch L904077 - SW 3050B										
Blank (L904077-BLK1)				Prepared: 04/15/2009 Analyzed: 04/22/2009						
Aluminum	ND	4.63	mg/kg							U
Antimony	ND	0.556	"							U
Arsenic	ND	0.926	"							U
Barium	ND	0.463	"							U
Beryllium	ND	0.185	"							U
Bismuth	ND	9.26	"							U
Boron	ND	1.85	"							U
Cadmium	ND	0.185	"							U
Calcium	ND	92.6	"							U
Chromium	ND	0.185	"							U
Cobalt	ND	1.85	"							U
Copper	ND	0.926	"							U
Iron	ND	18.5	"							U
Lead	0.251	0.463	"							
Lithium	ND	2.31	"							U
Magnesium	2.00	69.4	"							B
Manganese	ND	0.463	"							U
Molybdenum	ND	1.85	"							U
Nickel	ND	3.70	"							U

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

WC-Hanford, Inc. 2620 Fermi Avenue Richland WA, 99354	Project: RC-116 Project Number: [none] Project Manager: Joan Kessner	Reported: 05/06/2009 12:48

Metals by SW846 6000/7000 series - Quality Control

Lionville Laboratory

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch L904077 - SW 3050B										
Blank (L904077-BLK1)				Prepared: 04/15/2009 Analyzed: 04/22/2009						
Phosphorus	ND	16.3	mg/kg							U
Potassium	ND	370	"							U
Selenium	ND	0.926	"							U
Silicon	ND	1.85	"							U
Silver	ND	0.185	"							U
Sodium	ND	18.5	"							U
Strontium	ND	0.926	"							U
Thallium	ND	0.463	"							U
Tin	0.987	9.26	"							U
Uranium	ND	18.5	"							U
Vanadium	ND	2.31	"							U
Zinc	ND	9.26	"							U
Duplicate (L904077-DUP1)		Source: 0902067-03		Prepared: 04/15/2009 Analyzed: 04/22/2009						
Aluminum	5610	1.62	mg/kg		5750			2	20	
Antimony	0.464	0.435	"		0.432			17	20	B
Arsenic	4.56	0.725	"		4.81			6	20	
Barium	48.7	0.362	"		47.9			2	20	
Beryllium	0.170	0.145	"		0.174			7	20	
Bismuth	ND	7.25	"		ND				20	U
Boron	0.813	1.45	"		0.881			8	20	B
Cadmium	0.403	0.145	"		0.422			4	20	
Calcium	3540	72.5	"		3560			0.5	20	
Chromium	14.3	0.145	"		14.0			5	20	
Cobalt	3.53	1.45	"		3.62			2	20	
Copper	18.1	0.725	"		18.6			3	20	
Iron	15300	14.5	"		15700			2	20	
Lead	26.0	0.362	"		25.5			2	20	
Lithium	6.57	1.81	"		6.81			4	20	
Magnesium	3060	54.3	"		1470			1	20	
Manganese	181	3.62	"		184			2	20	
Molybdenum	0.129	1.45	"		0.164			10	20	B
Nickel	9.43	2.90	"		9.98			6	20	
Phosphorus	545	16.2	"		522			4	20	
Potassium	719	290	"		792			10	20	
Selenium	ND	0.725	"		ND				20	U
Silicon	918	1.45	"		1250			29	20	
Silver	ND	0.145	"		ND				20	U
Sodium	175	36.2	"		183			4	20	
Strontium	22.1	0.725	"		19.8			11	20	
Thallium	ND	0.362	"		ND				20	B
Tin	1.32	7.25	"		1.48			11	20	B
Uranium	ND	14.5	"		ND				20	U
Vanadium	11.8	1.81	"		15.6			5	20	

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

WC-Hanford, Inc 2620 Fermi Avenue Richland WA, 99354	Project: RC 116 Project Number: [none] Project Manager: Joan Kessner	**Reported:** 05/08/2009 12:48

Metals by SW846 6000/7000 series - Quality Control

Lionville Laboratory

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch L904077 - SW 3050B										
Matrix Spike (L904077-MS1)	**Source: 0902067-03**			**Prepared: 04/15/2009 Analyzed: 04/22/2009**						
Aluminum	6560	4.39	mg/kg	175.44	5750	461	75-125			
Antimony	23.1	0.526	"	43.860	0.432	52	75-125			
Arsenic	169	0.877	"	175.44	4.83	93	75-125			
Barium	226	0.439	"	175.44	47.9	101	75-125			
Beryllium	4.44	0.175	"	4.3860	0.174	97	75-125			
Bismuth	415	8.77	"	438.60	ND	95	75-125			
Boron	78.6	1.75	"	87.719	0.881	89	75-125			
Cadmium	4.15	0.175	"	4.3860	0.422	85	75-125			
Calcium	8010	87.7	"	2193.0	5560	112	75-125			
Chromium	31.4	0.175	"	17.544	14.0	99	75-125			
Cobalt	44.6	1.75	"	43.860	1.62	98	75-125			
Copper	37.4	0.877	"	21.930	18.6	86	75-125			
Iron	15400	17.5	"	87.719	15700	NR	75-125			
Lead	61.9	0.439	"	43.860	23.5	88	75-125			
Lithium	90.3	2.19	"	87.719	6.81	95	75-125			
Magnesium	5730	65.8	"	2193.0	3470	103	75-125			
Manganese	423	4.39	"	43.860	384	88	75-125			
Molybdenum	83.7	1.75	"	87.719	0.364	95	75-125			
Nickel	50.8	1.31	"	43.860	9.98	93	75-125			
Phosphorus	937	43.9	"	438.60	522	95	75-125			
Potassium	2900	351	"	2193.0	792	96	75-125			
Selenium	161	0.877	"	175.44	ND	92	75-125			
Silicon	1780	1.75	"	87.719	1250	604	75-125			
Silver	4.04	0.175	"	4.3860	ND	92	75-125			
Sodium	2370	43.9	"	2193.0	181	100	75-125			
Strontium	107	0.877	"	87.719	19.8	100	75-125			
Thallium	157	0.439	"	175.44	ND	90	75-125			
Tin	81.2	8.77	"	87.719	1.48	91	75-125			
Uranium	414	17.5	"	438.60	ND	94	75-125			
Vanadium	58.7	2.19	"	43.860	15.6	98	75-125			
Zinc	191	8.77	"	43.860	153	88	75-125			

Metals by SW846 6000/7000 series - Quality Control

Lionville Laboratory

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch L904077 - SW 3050B										
Reference (L904077-SRM1)				Prepared: 04/15/2009 Analyzed: 04/22/2009						
Aluminum	2760	4.63	mg/kg	2725.2		101	40.8-160.3			
Antimony	9360	26.7	"	1954.8		489	0-261.8			
Arsenic	50.6	0.926	"	24.800		204	0-205.6			
Barium	591	0.463	"	586.40		101	83.9-116.1			
Cadmium	1.31	0.185	"	1.2000		110	0.083-181.7			
Calcium	5700	92.6	"	5426.5		105	70.1-129.9			
Chromium	10.9	0.185	"	10.700		102	0-205.6			
Cobalt	2.80	1.85	"	2.7000		104	0-1000			
Copper	34000	34.4	"	4792.4		710	52.2-147.8			
Iron	8740	18.5	"	6901.4		127	15.8-184.5			
Lead	109000	23.2	"	144240		75	0-1000			
Magnesium	2460	69.4	"	5367.4		104	0-1000			
Manganese	187	4.63	"	174.20		107	63.1-136.6			
Nickel	17.9	3.70	"	12.600		142	61.8-116.2			
Potassium	1080	370	"	1005.8		107	62.1-137.9			
Silver	7.54	0.185	"	6.5000		116	69.9-169.2			
Sodium	321	18.5	"	380.00		84	25-175			
Thallium	ND	0.463	"	0.76880			0-1000			
Tin	419	9.26	"	304.10		138	0-1000			U
Vanadium	14.1	2.31	"	8.7000		162	0-1000			
Zinc	3730	9.26	"	546.40		683	64.6-135.4			
Batch L904078 - SW 3050B										
Blank (L904078-BLK1)				Prepared: 04/15/2009 Analyzed: 04/23/2009						
Aluminum	ND	1.97	mg/kg							
Antimony	ND	0.476	"							U
Arsenic	ND	0.394	"							U
Barium	ND	0.197	"							U
Beryllium	ND	0.159	"							U
Bismuth	ND	7.94	"							U
Boron	ND	1.59	"							U
Cadmium	ND	0.159	"							U
Calcium	ND	39.4	"							U
Chromium	ND	0.159	"							U
Cobalt	ND	1.59	"							U
Copper	ND	0.394	"							U
Iron	ND	15.9	"							U
Lead	0.0649	0.197	"							J
Lithium	ND	3.94	"							
Magnesium	ND	39.3	"							U
Manganese	ND	3.97	"							U
Molybdenum	ND	1.59	"							U
Nickel	ND	1.17	"							U
Phosphorus	ND	19.7	"							U
										U

Metals by SW846 6000/7000 series - Quality Control

Lionville Laboratory

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch L903156 - SW 7471A Prep										
Blank (L903156-BLK1)				Prepared & Analyzed: 03/18/2009						
Mercury	ND	0.0300	mg/kg wet							U
Duplicate (L903156-DUP2)	Source: 0902075-18			Prepared & Analyzed: 03/18/2009						
Mercury	ND	0.0300	mg/kg wet		ND				20	U
Matrix Spike (L903156-MS2)	Source: 0902075-18			Prepared & Analyzed: 03/18/2009						
Mercury	0.146	0.0244	mg/kg wet	0.13514	ND	108	75-125			
Reference (L903156-SRM1)				Prepared & Analyzed: 03/18/2009						
Mercury	4.99	0.180	mg/kg wet	4.7000		106	80-120			
Batch L903161 - SW 7471A Prep										
Blank (L903161-BLK1)				Prepared & Analyzed: 03/19/2009						
Mercury	ND	0.0300	mg/kg wet							U
Duplicate (L903161-DUP1)	Source: 0902075-03			Prepared & Analyzed: 03/19/2009						
Mercury	ND	0.0237	mg/kg wet		ND				20	U
Matrix Spike (L903161-MS1)	Source: 0902075-03			Prepared & Analyzed: 03/19/2009						
Mercury	0.118	0.0237	mg/kg wet	0.13158	ND	89.7	75-125			
Reference (L903161-SRM1)				Prepared & Analyzed: 03/19/2009						
Mercury	4.64	0.180	mg/kg wet	4.7000		98.7	80-120			
Batch L904078 - SW 3050B										
Blank (L904078-BLK1)				Prepared: 04/15/2009 Analyzed: 04/23/2009						
Aluminum	ND	3.97	mg/kg							U
Antimony	ND	0.476	"							U
Arsenic	ND	0.794	"							U
Barium	ND	0.397	"							U
Beryllium	ND	0.159	"							U
Bismuth	ND	7.94	"							U
Boron	ND	1.59	"							U
Cadmium	ND	0.159	"							U
Calcium	ND	79.4	"							U
Chromium	ND	0.159	"							U
Cobalt	ND	1.59	"							U
Copper	ND	0.794	"							U
Iron	ND	15.9	"							U
Lead	0.639	0.397	"							
Lithium	ND	1.98	"							U
Magnesium	ND	39.5	"							U
Manganese	ND	3.97	"							U
Molybdenum	ND	1.59	"							U
Nickel	ND	1.19	"							U

208 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

WCH Hanford, Inc.
2620 Fermi Avenue
Richland WA, 99354

Project: RC-116
Project Number: [none]
Project Manager: John Kessner

Reported:
05/08/2009 14:17

Metals by SW846 6000/7000 series - Quality Control

Lionville Laboratory

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch L904078 - SW 3050B										
Blank (L904078-BLK1)				Prepared: 04/13/2009 Analyzed: 04/23/2009						
Phosphorus	ND	94.7	mg/kg							U
Potassium	ND	113	-							U
Selenium	ND	0.794	-							U
Silicon	ND	1.59	-							U
Silver	ND	0.159	-							U
Sodium	ND	10.5	-							U
Strontium	ND	0.794	-							U
Thallium	ND	0.197	-							U
Tin	0.796	7.94	-							U
Uranium	ND	15.9	-							U
Vanadium	ND	1.98	-							U
Zinc	ND	7.94	-							U
Duplicate (L904078-DUP1)				Source: 0902075-03	Prepared: 04/13/2009 Analyzed: 04/21/2009					
Aluminum	4420	4.38	mg/kg		4780			8	20	
Antimony	ND	0.405	-		ND				20	U
Arsenic	2.72	0.676	-		2.52			11	20	
Barium	42.4	0.338	-		45.9			1	20	
Beryllium	0.158	0.135	-		0.135			21	20	
Bismuth	ND	6.76	-		ND				20	U
Boron	0.759	1.35	-		0.801			5	20	H
Cadmium	0.103	0.135	-		0.121			16	20	fs
Calcium	2540	67.6	-		2440			27	20	
Chromium	12.3	0.315	-		10.9			14	20	
Cobalt	2.72	1.35	-		2.64			6	20	
Copper	3.66	0.676	-		3.91			5	20	
Iron	19900	13.5	-		18100			5	20	
Lead	4.70	0.338	-		4.72			10	20	
Lithium	3.10	1.69	-		3.95			12	20	
Magnesium	1990	50.7	-		1910			3	20	
Manganese	111	1.38	-		110			1	20	
Molybdenum	0.278	1.35	-		0.217			16	20	H
Nickel	2.85	2.70	-		3.28			2	20	
Phosphorus	338	13.8	-		806			40	20	
Potassium	658	2.70	-		693			5	20	
Selenium	ND	0.676	-		ND				20	U
Silicon	978	1.35	-		1100			19	20	
Silver	ND	0.135	-		ND				20	U
Sodium	170	13.8	-		254			15	20	
Strontium	15.2	0.676	-		15.6			2	20	
Thallium	ND	0.338	-		ND				20	U
Tin	ND	6.76	-		ND				20	U
Uranium	ND	13.5	-		ND				20	U
Vanadium	67.1	1.69	-		62.4			8	20	
Zinc	14.2	6.76	-		13.6			2	20	

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

WC Hanford, Inc.
2620 Fermi Avenue
Richland WA, 99354

Project: RCC116
Project Number: [none]
Project Manager: Joan Kessner

Reported:
05/08/2009 14:17

Metals by SW846 6000/7000 series - Quality Control

Lionville Laboratory

Batch L904078 - SW 3050B

Matrix Spike (L904078-MS1) Source: 0902075-03 Prepared: 04/15/2009 Analyzed: 04/23/2009

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Aluminum	5,090	3.21	mg/kg	128.21	4180	478	75-125			
Antimony	16.9	0.385	-	32.051	ND	53	75-125			
Arsenic	121	0.641	-	128.21	2.52	92	75-125			
Barium	142	0.128	-	128.21	13.9	100	75-125			
Beryllium	3.16	0.128	-	3.2051	0.170	93	75-125			
Bismuth	298	6.41	-	320.51	ND	93	75-125			
Boron	56.3	1.28	-	64.103	0.801	87	75-125			
Cadmium	2.85	0.128	-	3.2051	0.721	85	75-125			
Calcium	4600	64.1	-	1602.6	1140	78	75-125			
Chromium	24.1	0.128	-	12.821	10.9	103	75-125			
Cobalt	32.1	1.28	-	32.051	2.55	92	75-125			
Copper	19.4	0.641	-	16.026	5.91	84	75-125			
Iron	19800	12.8	-	64.103	18800	48	75-125			
Lead	31.8	0.128	-	32.051	1.72	94	75-125			
Lithium	64.2	1.60	-	64.103	3.99	91	75-125			
Magnesium	3570	16.1	-	1602.6	1910	102	75-125			
Manganese	171	3.21	-	32.051	130	128	75-125			
Molybdenum	49.3	1.28	-	64.103	0.217	92	75-125			
Nickel	55.0	2.56	-	32.051	5.78	91	75-125			
Phosphorus	870	12.1	-	320.51	806	20	75-125			
Potassium	2180	256	-	1602.6	693	91	75-125			
Selenium	116	0.641	-	128.21	ND	90	75-125			
Silicon	10.8	1.28	-	64.103	1680	NR	75-125			
Silver	2.91	0.128	-	3.2051	ND	91	75-125			
Sodium	1840	12.1	-	1602.6	234	99	75-125			
Strontium	77.3	0.641	-	64.103	15.6	96	75-125			
Thallium	112	0.321	-	128.21	ND	87	75-125			
Tin	46.3	6.41	-	64.103	ND	88	75-125			
Titanium	296	12.8	-	320.51	ND	92	75-125			
Vanadium	103	1.60	-	32.051	62.4	127	75-125			
Zinc	66.0	6.41	-	32.051	33.0	101	75-125			

Date 7 December 2009
To. Washington Closure Hanford Inc. (technical representative)
From; ELR Consulting
Project: Columbia River Component of the RCBRA – Sediment
Subject: Wet Chemistry - Data Package No. K1544-LLI

INTRODUCTION

This memo presents the results of data validation on Data Package No. K1544 prepared by Eberline Services (EB). A list of samples validated along with the analyses reported and the method of analysis is provided in the following table.

Sample ID	Sample Date	Media	Validation	Analysis
J189D8	2/19/09	Solid	C	See note 1
J189F0	2/19/09	Solid	C	See note 1
J18985	2/19/09	Solid	C	See note 1
J18986	2/19/09	Solid	C	See note 1
J18987	2/19/09	Solid	C	See note 1
J18988	2/19/09	Solid	C	See note 1
J18990	2/19/09	Solid	C	See note 1
J18991	2/19/09	Solid	C	See note 1
J18992	2/19/09	Solid	C	See note 1
J189B5	2/19/09	Solid	C	See note 1
J189B6	2/19/09	Solid	C	See note 1
J189B7	2/19/09	Solid	C	See note 1
J189B8	2/19/09	Solid	C	See note 1
J189B9	2/19/09	Solid	C	See note 1
J189C0	2/19/09	Solid	C	See note 1
J189C1	2/19/09	Solid	C	See note 1
J189C3	2/19/09	Solid	C	See note 1
J189C4	2/19/09	Solid	C	See note 1
J189J9	2/19/09	Solid	C	See note 1
J189K2	2/19/09	Solid	C	See note 1
J189K4	2/19/09	Solid	C	See note 1
J189K5	2/19/09	Solid	C	See note 1

1 – Total organic carbon (TOC) by 415.1

Appendix 1. Glossary of Data Reporting Qualifiers
Appendix 2. Summary of Data Qualification
Appendix 3. Qualified Data Summary and Annotated Laboratory Reports
Appendix 4. Laboratory Narrative and Chain-of-Custody Documentation
Appendix 5. Data Validation Supporting Documentation
Appendix 6 Additional Documentation Requested by Client

DATA QUALITY PARAMETERS

- **Holding Times**

Analytical holding times for metals are assessed to ascertain whether the holding time requirements were met by the laboratory. The holding time requirements are as follows: Soil samples must be analyzed within 28 days for total organic carbon.

If holding times are exceeded, but not by greater than two times the limit, all associated sample results are qualified as estimates and flagged "J" for detects and "UJ" for non-detects. If holding times are exceeded by greater than two times the limit, all associated detectable sample results are qualified as estimates and flagged "J" and all non-detects are rejected and flagged "UR".

All holding times were acceptable.

- **Method Blanks**

Method Blanks

Method blank analyses are performed to determine the extent of laboratory contamination introduced through sampling, sample preparation and analysis. At least one acceptable method blank analysis must be conducted for every 20 samples. No contaminants should be present in the method blank. All blank results must fall below the contract required detection limit (CRQL) to be acceptable.

All method blank results were acceptable.

Field (Equipment) Blank

No field blanks were submitted for analysis.

- **Accuracy**

Matrix Spike and Laboratory Control Sample

Matrix spike (MS) and laboratory control sample (LCS) analyses are used to assess the analytical accuracy of the reported data. The matrix spike is used to assess the effect of the matrix on the ability to accurately quantify sample concentrations. Recoveries must fall within the range of 70% to 130%. Samples with a recovery of less than 30% and a sample result below the IDL are rejected and flagged "UR". Samples with a recovery of 30% to 69% and a sample result less than the IDL are qualified "UJ". Samples with a recovery of greater than 130% or less than 70% and a sample result greater than the IDL are qualified as estimates and flagged "J". Finally, for samples with a recovery greater than 130% and a sample result less than the IDL, no qualification is required.

All accuracy results were acceptable.

- **Precision**

Laboratory Duplicate Samples

Analytical precision is expressed by the relative percent differences (RPD) between the recoveries of matrix spike duplicate (MSD) analyses performed on a sample in the analytical batch. Precision may alternatively be assessed using unspiked duplicate analyses performed on a sample in the analytical batch. If both sample and replicate activities (concentrations) are greater than five times the CRDL and the RPD is less than 30%, no qualification is required. If either activity (concentration) is less than five times the CRDL, the RPD control limit is less than or equal to two times the CRDL. If the RPD is outside the applicable control limit, associated results are qualified as estimated detects or estimated non-detects.

All laboratory duplicate results were acceptable.

Field Duplicate

No field duplicates were submitted for analysis.

Analytical Detection Levels

Reported analytical detection levels are compared against the required quantitation limits (RQLs) to ensure that laboratory detection levels meet the required criteria. All analytes met the RQL.

- **Completeness**

Data package No. K1544 was submitted for validation and verified for completeness. Completeness is based on the percentage of data determined to be valid (i.e., not rejected). The completion percentage was 100%.

MAJOR DEFICIENCIES

None found.

MINOR DEFICIENCIES

None found.

REFERENCES

Washington Closure Hanford Contract #S00W307A00 (March 2008), *Data Validation Services*.

DOE/RL-2008-11, Rev 0, *Remedial Investigation Work Plan for Hanford Site Releases to the Columbia River*, September 2008.

Appendix 1

Glossary of Data Reporting Qualifiers

Qualifiers which may be applied by data validators in compliance with WCH validation SOW are as follows:

U - Indicates the compound or analyte was analyzed for and not detected in the 134sample. The value reported is the sample quantitation limit corrected for sample dilution and moisture content by the laboratory.

UJ - Indicates the compound or analyte was analyzed for and not detected in the sample. Due to a minor QC deficiency identified during the data validation, the associated quantitation limit is an estimate.

J - Indicates the compound or analyte was analyzed for and detected. Due to a minor QC deficiency identified during the data validation, the associated concentration is an estimate, but the data are usable for decision-making purposes.

BJ - Applied to inorganic analyses only. Indicates the analyte concentration was greater than the IDL but less than the CRDL and is considered an estimated value.

R - Indicates the compound or analyte was analyzed for, detected, and due to an identified major QC deficiency, the data are unusable.

UR - Indicates the compound or analyte was analyzed for and not detected in the sample. Additionally, the data is unusable due to an identified major QC deficiency.

NJ - Indicates presumptive evidence of a compound at an estimated value. The data may not be valid for some specific applications (i.e., usable for decision-making purposes).

N Indicates presumptive evidence of a compound. The data may not be valid for some specific applications (i.e., usable for decision-making purposes).

Appendix 2

Summary of Data Qualification

WET CHEMISTRY DATA QUALIFICATION SUMMARY*

SDG: K1544	**REVIEWER:** **ELR**	**Project:** **RCBRA**	**PAGE 1 OF 1**

COMMENTS: No qualifiers assigned

* - The Qualified Data Summary Table includes laboratory applied "U" qualifiers not specifically identified here. The laboratory applied "U" qualifiers are included to minimize misinterpretation of results contained in the table.

Appendix 3

Qualified Data Summary and Annotated Laboratory Reports

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

WCH Hanford, Inc 2620 Fermi Avenue Richland WA, 99354	Project: [illegible] Project Number: [none] Project Manager: Joan Kessner	**Reported:** 04/24/2009 12:04

12/5/05

Wet Chemistry
Lionville Laboratory

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
J18983 (0902067-03) Solid	**Sampled: 02/19/2009 08:45**	**Received: 02/23/2009 08:50**							
Total Organic Carbon	646.39	20.00	mg/kg	1	0903214	03/17/200	03/17/200	EPA 415.1	
J18984 (0902067-04) Solid	**Sampled: 02/19/2009 09:10**	**Received: 02/23/2009 08:50**							
Total Organic Carbon	2064.0	20.00	mg/kg	1	0903214	03/17/200	03/17/200	EPA 415.1	
J18985 (0902067-05) Solid	**Sampled: 02/19/2009 09:21**	**Received: 02/23/2009 08:50**							
Total Organic Carbon	965.69	20.00	mg/kg	1	0903214	03/17/200	03/17/200	EPA 415.1	
J18986 (0902067-06) Solid	**Sampled: 02/19/2009 10:10**	**Received: 02/23/2009 08:50**							
Total Organic Carbon	537.91	20.00	mg/kg	1	0903214	03/17/200	03/17/200	EPA 415.1	
J18987 (0902067-07) Solid	**Sampled: 02/19/2009 10:30**	**Received: 02/23/2009 08:50**							
Total Organic Carbon	295.29	20.00	mg/kg	1	0903214	03/17/200	03/17/200	EPA 415.1	
J18988 (0902067-08) Solid	**Sampled: 02/19/2009 10:46**	**Received: 02/23/2009 08:50**							
Total Organic Carbon	53.73	20.00	mg/kg	1	0903214	03/17/200	03/17/200	EPA 415.1	
J18990 (0902067-09) Solid	**Sampled: 02/19/2009 10:00**	**Received: 02/23/2009 08:50**							
Total Organic Carbon	159.49	20.00	mg/kg	1	0903214	03/17/200	03/17/200	EPA 415.1	
J18991 (0902067-10) Solid	**Sampled: 02/19/2009 09:40**	**Received: 02/23/2009 08:50**							
Total Organic Carbon	567.69	20.00	mg/kg	1	0903214	03/17/200	03/17/200	EPA 415.1	
J18992 (0902067-11) Solid	**Sampled: 02/19/2009 10:15**	**Received: 02/23/2009 08:50**							
Total Organic Carbon	107.70	20.00	mg/kg	1	0903214	03/17/200	03/17/200	EPA 415.1	

Nicki Perrone For Orlette Johnson, Project Manager

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

WC Hanford, Inc	Project: RC-116	
2620 Fermi Avenue	Project Number: [none]	**Reported:**
Richland WA, 99354	Project Manager: Joan Kessner	04/24/2009 17:04

Wet Chemistry
Lionville Laboratory

12/5/09

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Note
J189B5 (0902067-12) Solid	**Sampled: 02/19/2009 11:28**	**Received: 02/23/2009 08:50**							
Total Organic Carbon	122.82	20.00	mg/kg	1	L903214	03/17/200	03/17/200	EPA 415.1	
J189B6 (0902067-13) Solid	**Sampled: 02/19/2009 11:54**	**Received: 02/23/2009 08:50**							
Total Organic Carbon	1719.4	20.00	mg/kg	1	L903214	03/17/200	03/17/200	EPA 415.1	
J189B7 (0902067-14) Solid	**Sampled: 02/19/2009 13:23**	**Received: 02/23/2009 08:50**							
Total Organic Carbon	101.88	20.00	mg/kg	1	L903214	03/17/200	03/17/200	EPA 415.1	
J189B8 (0902067-15) Solid	**Sampled: 02/19/2009 12:56**	**Received: 02/23/2009 08:50**							
Total Organic Carbon	340.43	20.00	mg/kg	1	L903214	03/17/200	03/17/200	EPA 415.1	
J189B9 (0902067-16) Solid	**Sampled: 02/19/2009 12:30**	**Received: 02/23/2009 08:50**							
Total Organic Carbon	757.64	20.00	mg/kg	1	L903214	03/17/200	03/17/200	EPA 415.1	
J189C0 (0902067-17) Solid	**Sampled: 02/19/2009 11:30**	**Received: 02/23/2009 08:50**							
Total Organic Carbon	1258.9	20.00	mg/kg	1	L903214	03/17/200	03/17/200	EPA 415.1	
J189C1 (0902067-18) Solid	**Sampled: 02/19/2009 11:05**	**Received: 02/23/2009 08:50**							
Total Organic Carbon	1640.0	20.00	mg/kg	1	L903214	03/17/200	03/17/200	EPA 415.1	
J189C3 (0902067-19) Solid	**Sampled: 02/19/2009 12:15**	**Received: 02/23/2009 08:50**							
Total Organic Carbon	10613	200.00	mg/kg	10	L903214	03/17/200	03/17/200	EPA 415.1	
J189C4 (0902067-20) Solid	**Sampled: 02/19/2009 11:50**	**Received: 02/23/2009 08:50**							
Total Organic Carbon	112.20	20.00	mg/kg	1	L903214	03/17/200	03/17/200	EPA 415.1	

Nicki Perrone For Orlette Johnson, Project Manager

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

WCH-Hanford, Inc. 2620 Fermi Avenue Richland WA 99354	Project: RC 116 Project Number: [none] Project Manager: Joan Kessner	Reported: 03/24/2009 12:04

Wet Chemistry
Lionville Laboratory

12/5/09

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
J189J9 (0902067-21) Solid	**Sampled: 02/19/2009 14:12**	**Received: 02/23/2009 08:50**							
Total Organic Carbon	1604.0	20.00	mg/kg	1	1903214	03/17/200	03/17/200	EPA 415.1	
J189K2 (0902067-22) Solid	**Sampled: 02/19/2009 14:00**	**Received: 02/23/2009 08:50**							
Total Organic Carbon	481.63	20.00	mg/kg	1	1903214	03/17/200	03/17/200	EPA 415.1	
J189K4 (0902067-23) Solid	**Sampled: 02/19/2009 15:00**	**Received: 02/23/2009 08:50**							
Total Organic Carbon	263.24	20.00	mg/kg	1	1903214	03/17/200	03/17/200	EPA 415.1	
J189K5 (0902067-24) Solid	**Sampled: 02/19/2009 14:35**	**Received: 02/23/2009 08:50**							
Total Organic Carbon	1401.7	20.00	mg/kg	1	1903214	03/17/200	03/17/200	EPA 415.1	

Nicki Perrone For Orlette Johnson, Project Manager

Appendix 4

Laboratory Narrative and Chain-of-Custody Documentation

264 Welsh Pool Road
Exton, Pennsylvania 19341
Phone (610) 280-3000
Fax (610) 280-3041

Case Narrative

Client: WC-HANFORD RC-116
LVL#: 0902067 K-1544

W.O.#: 60049-001-001-0001-00
Date Received: 02-23-09

INORGANIC NARRATIVE

1. This narrative covers the analysis of 22 solid samples.

2. The samples were prepared and analyzed in accordance with the method indicated on the data summary report.

   Lionville Lab (LvL) is NELAP accredited by the State of Pennsylvania. For a complete list of accrediting authorities and the corresponding analytes/methods, please contact your Project Manager. LvL certifies that all test results meet the requirements of NELAC with any exception noted in the following statements.

3. Sample holding times as required by the method and/or contract were met.

4. The results presented in this report are derived from samples that met LvL's sample acceptance policy.

5. The method blank was within the method criteria.

6. The Laboratory Control Sample (LCS) was within the laboratory control limits.

7. The matrix spike recovery was within the 75-125% control limits.

8. The replicate analysis was within the 20% Relative Percent Difference (RPD) control limit.

9. Total Organic Carbon samples are dried prior to analysis.

10. I certify that this sample data package is in compliance with SOW requirements, both technically and for completeness, other than the conditions detailed above. Release of the data contained in this hard copy package has been authorized by the Laboratory Manager or a designee, as verified by the following signature.

Iain Daniels
Laboratory Manager
Lionville Laboratory

5/1/09
Date

ujp/r02.067

The results presented in this report relate only to the analytical testing and conditions of the samples at receipt and during storage. All pages of this report are integral parts of the analytical data. Therefore, this report should only be reproduced in its entirety or [illegible] pages.

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-116-1372	Page 1 of 1

Collector [illegible]	Company Contact JOAN KESSNER	Telephone No. 375-4686	Project Coordinator KESSNER JH
Project Designation Columbia River Component of the RCBRA - Sediment	Sampling Location SHID 3 SSD		SAF No. RC-116
Ice Chest No. WCH-08-013, 022, 072	Field Logbook No. EL-1610-1	COA BFSCRC6520	Method of Shipment FED EX
Shipped To EBERLINE SERVICES (TONVILLE)	Offsite Property No. N/A		Bill of Lading/Air Bill No. 796364268296

Price Code 9K

Data Turnaround 45 Days

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

000015

Preservation	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	G/P
No. of Container(s)	1	1	1	1	1	1	1
Volume	1500g	100g	5g	10g	250g	125g	100g
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	[illegible]	See item (2) in Special Instructions	See item (3) in Special Instructions	TOC - 9060	Particle Size (Dry Sieve Only)

Sample No.	Matrix *	Sample Date	Sample Time							
J189D8	OTHER SOLID	2/15/09	0945					X	X	X

CHAIN OF POSSESSION	Date/Time	Sign/Print Names	Date/Time
Relinquished By/Removed From [illegible]	[illegible] 1130	Received By/Stored In [illegible]	[illegible] 1130
Relinquished By/Removed From [illegible]	2/19/09 0810	Received By/Stored In B Dandurand	2/20/09 0810
Relinquished By/Removed From B Dandurand	2/20/09 1200	Received By/Stored In FedEx	2/20/09 1200
Relinquished By/Removed From [illegible]	2-23-09 1045	Received By/Stored In [illegible]	2-23-09 1045
Relinquished By/Removed From [illegible]	2-[illegible]-09 [illegible]	Received By/Stored In	Date/Time
Relinquished By/Removed From [illegible]	2-23-09 0850	Received By/Stored In [illegible]	2-23-09 0850

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) - Americium-241, Antimony-125, Beryllium-7, Cerium-144, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238;
(2) Strontium-89,90 -- Total Sr; Isotopic Thorium (Thorium-232); Isotopic Uranium (Uranium-233/234, Uranium-235, Uranium-238); Isotopic Plutonium
(3) ICP Metals - 6010 (Full List) (Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Titanium, Vanadium, Zinc); Mercury - 7471 (CV)

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location using custody of samples for shipment to lab

Matrix *
[illegible]

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-116-1374 Page 1 of 1

Collector [illegible]	**Company Contact** JOAN KESSNER	**Telephone No.** 375-4688	**Project Coordinator** KESSNER, JH
Project Designation Columbia River Component of the RCBRA - Sediment	**Sampling Location** 300-FF-5 SSO		**SAF No.** RC-116
Ice Chest No. WCH-02-013, 022, 072	**Field Logbook No.** EL-1631-1	**COA** BSSCRC6520	**Method of Shipment** FED EX
Shipped To EBERLINE SERVICES (OAK RIDGE)	**Offsite Property No.** N/A		**Bill of Lading/Air Bill No.** 796361268296

Price Code 9K

Data Turnaround 45 Days

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

Preservation	None	None	None	None	Cool 4C	Cool 4C	None			
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	G/P			
No. of Container(s)	1	1	1		1	1	1			
Volume	1500g	100g	10g	10g	250g	[illegible]	1000g			
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Technetium-99	See item (2) in Special Instructions	See item (3) in Special Instructions	[illegible]	Particle Size (Dry Sieve) D422			

9100016

Sample No.	Matrix *	Sample Date	Sample Time										
J18SF0	OTHER SOLID	[illegible]	[illegible]					X	X	X			

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
[illegible]	[illegible] 11:00	Rob B	[illegible] 11:20
Rob B	2/20/09 0800	B Woodward	2/20/09 0800
B Woodward	2/20/09 1200	Fed Ex	2/20/07 1200
[illegible]	2/21/09 1045	[illegible]	2/21/09 1045
[illegible]	2/23/09 0850	[illegible]	2/23/09 0850

SPECIAL INSTRUCTIONS

(1) Gamma Spectroscopy - Full List (Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238);
(2) Strontium-89/90 - Total Sr, Isotopic Thorium (Thorium-232), Isotopic Uranium (Uranium-233/234, Uranium-235, Uranium-238), Isotopic Plutonium;
(3) ICP Metals - 6010 (Full List) (Aluminum, Antimony, Arsenic, Barium, Beryllium, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Titanium, Vanadium, Zinc); Mercury - 7471 (CVAA)

Sample unavailable to remove samples from controlled storage. Shipper removed samples from storage location using custody of samples for shipment to lab

Matrix *

[illegible]

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Washington Closure Hanford | **CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST** | RC-116-1330 | Page 2 of 2

Collector BM	Company Contact JOAN KESSNER Telephone No. 375-4688	Project Coordinator KESSNER, JH	Price Code 9K Data Turnaround 45 Days
Project Designation Columbia River Component of the RCBRA - Sediment	Sampling Location HA-2 SSD	SAF No. RC-116	
Ice Chest No. WCH-08-013,672,027	Field Logbook No. EL-1631-1 COA RESCRC6520	Method of Shipment FED EX	
Shipped To EBERLINE SERVICES LIONVILLE	Offsite Property No. N/A	Bill of Lading/Air Bill No. 796361208296	

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

0000017

Preservation	Cool 4C	Cool 4C	None
Type of Container	G	aG	G/P
No. of Container(s)	2	1	1
Volume	125mL 5	125g	1000g
SAMPLE ANALYSIS	See attached for Special Instructions	TPH - WTPH-D	Particle Size (Dry Sieve) D422

Sample No.	Matrix *	Sample Date	Sample Time			
J18585	OTHER SOLID	2/10/09	921	X	X	X

CHAIN OF POSSESSION	Date/Time	Sign/Print Names	Date/Time
Relinquished By/Removed From Boyd	2/10/09 1620	Received By/Stored In Fac A	2/10/09 1620
Relinquished By/Removed From Fac A	2/20/09 0800	Received By/Stored In D Heidelberg	2/20/09 0800
Relinquished By/Removed From D Heidelberg	2/20/09 1200	Received By/Stored In FedEx	2/20/09 1200
Relinquished By/Removed From	2/21/09 1045	Received By/Stored In	2/21/09 1045
Relinquished By/Removed From FedEx	2/23/09 0850	Received By/Stored In	2/23/09 0850
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time

SPECIAL INSTRUCTIONS

5 add ESOP

(1) TPH-Diesel Range - WTPH-D+ {Total petroleum hydrocarbons - diesel range; Total petroleum hydrocarbons - motor oil (high boiling)}

Sampler unavailable to remove samples
from controlled storage. Shipper removed
samples from storage location taking custody
of samples for shipment to lab

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Washington Closure Hanford	**CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST**	RC-116-1331	Page 3 of 3

Collector B M	Company Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator KESSNER, JM	Price Code 9K
Project Designation Columbia River Component of the RI/FS/BRA - Sediment	Sampling Location HA- 4 SSB		SAF No. RC-116	Data Turnaround 45 Days
Ice Chest No. WCH-08-013, 072, 022	Field Logbook No. EL-1051-1	COA 3ESCRC6520	Method of Shipment FEDEX	
Shipped To ESL BLINE SERVICES (HORSVILLE)	Offsite Property No. N/A		Bill of Lading/Air Bill No. 796360120829 6	

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

00018

Preservation	Cool 4C	Cool 4C	None
Type of Container	G	aG	G/P
No. of Container(s)	1	1	1
Volume	125ml 5	125g	1000g
SAMPLE ANALYSIS	See attached/Special Instructions	TPH - DIESEL	Particle Size (Dry Sieve) ONLY

Sample No.	Matrix *	Sample Date	Sample Time			
J18986	OTHER SOLID	2/19/09	1000	X	X	X

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
B Markow	2/19/09 1630	Fr A	2/19/09 1630
Fr A	2/20/09 0800	D. Heidelberg	2/20/09 0800
D Heidelberg	2/20/09 1200	Fedex	2/20/09 1200
	2-21-09 1045		2-21-09 1045
	2-23-09 0850		2-23-09 0850

SPECIAL INSTRUCTIONS

5 and #509

(1) TPH Diesel Range - WTPH-D - {TPH-D, petroleum hydrocarbons - diesel range; Total petroleum hydrocarbons - motor oil (high boiling)}

Sampler unavailable to remove samples from outdated storage. Shipper (position) samples from storage location taking custody of samples for shipment to lab

Matrix *

S = Soil
SE = Sediment
SO = Solid
SL = Sludge
W = Water
O = Oil
A = Air
DS = Drum Solids
DL = Drum Liquids
T = Tissue
WI = Wipe
L = Liquid
V = Vegetation
X = Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Washington Closure Hanford	**CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST**	RC-116-1332	Page 2 of 2
Collector BM	Company Contact JOAN KESSNER Telephone No. 375-4685	Project Coordinator KESSNER, JH	Price Code 9K Data Turnaround **45 Days**
Project Designation Columbia River Component of the RCBRA - Sediment	Sampling Location HA- 6 SSD	SAF No. RC-116	
Ice Chest No. WCH-08-013,012,022	Field Logbook No. EL-1651-1 COA BFSCRC6520	Method of Shipment FED EX	
Shipped To EBERLINE SERVICES (RICHMOND)	Offsite Property No. N/A	Bill of Lading/Air Bill No. 796561208296	

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

Preservation	Cool 4C	Cool 4C	None	
Type of Container	G	aG	G/P	
No. of Container(s)	1	1	1	
Volume	125mL 5	125g	1000g	
SAMPLE ANALYSIS	See item (1) in Special Instructions	TOC - 9060	Percent Solid (Dry Sample) - D2216	

Sample No.	Matrix *	Sample Date	Sample Time				
J18967	OTHER SOLID	2/19/09	1050	X	X	X	

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
[illegible]	2/19/09 1130	Eric A	2/19/09 1630
Eric A	2/20/09 0800	D. Heidelberg	2/20/09 0800
D. Heidelberg	2/20/09 1200	Fedex	2/20/09 1200
[illegible]	2-23-09/0845	[illegible]	2-23-09/0845
[illegible]	2-23-09/0850	[illegible]	2-23-09/0850

SPECIAL INSTRUCTIONS

5 2509.40

(1) TPH Diesel Range - WTPH-Dx ; {Total petroleum hydrocarbons - diesel range; Total petroleum hydrocarbons - motor oil (high boiling)}

Sample(s) unavailable to remove samples from controlled storage. Shipped samples from storage location [illegible] samples for shipment to lab

Matrix *
[illegible]

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

0000019

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-116-1333 Page 2 of 2

Collector: [illegible]

Company Contact: JOAN KESSNER

Telephone No.: 375 4688

Project Coordinator: KESSNER, JH

Price Code: 9K

Data Turnaround: 45 Days

Project Designation: Columbia River Component of the RCBRA - Sediment

Sampling Location: IIA & SSD

SAF No.: RC-116

Ice Chest No.: WCH-08-013, 072, 022

Field Logbook No.: EL-1631-1

COA: BESCR06S50

Method of Shipment: FED EX

Shipped To: EBERLINE SERVICES ([illegible])

Offsite Property No.: N/A

Bill of Lading/Air Bill No.: 796361208296

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

000020

Preservation	Cool 4C	Cool 4C	None
Type of Container	G	aG	G/P
No. of Container(s)	1	1	1
Volume	125mL	125g	250g
SAMPLE ANALYSIS	See item (5) in Special Instructions	[illegible]	Particle Size (Dry Sieve) D422

Sample No.	Matrix *	Sample Date	Sample Time			
J14988	OTHER SOLID	2/19/09	1046	X	X	X

CHAIN OF POSSESSION	Date/Time	Sign/Print Names	Date/Time
Relinquished By/Removed From [illegible]	2/19/09 1630	Received By/Stored In [illegible]	2/19/09 1630
Relinquished By/Removed From [illegible]	2/20/09 0800	Received By/Stored In D. Hellberg	2/20/09 0800
Relinquished By/Removed From D. Hellberg	2/20/09 1200	Received By/Stored In FedEx	2/20/09 1200
Relinquished By/Removed From	2-23-09/1045	Received By/Stored In	2-23-09/1045
Relinquished By/Removed From	2-23-09/0850	Received By/Stored In	2-23-09/0850
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time

SPECIAL INSTRUCTIONS

5 [illegible]

(5) TPH Diesel Range - WTPH-Dx {Total petroleum hydrocarbons - Diesel range; Total petroleum hydrocarbons - motor oil (high boiling)}

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab.

Matrix *

LABORATORY SECTION | Received By | Title | Date/Time

FINAL SAMPLE DISPOSITION | Disposal Method | Disposed By | Date/Time

WCH-EE-011

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-116-1335 Page 2 of 2

Collector LS

Company Contact JOAN KESSNER

Telephone No. 373-4688

Project Coordinator KESSNER, JH

Price Code 9K

Data Turnaround 45 Days

Project Designation Columbia River Component of the RI/FS - Sediment

Sampling Location HA-18 SSD

SAF No. RC-116

Ice Chest No. WCH-08-013, 022, 072

Field Logbook No. EL-1606-1

COA RESCRC6520

Method of Shipment FEDEX

Shipped To EBERLINE SERVICES OAK RIDGE

Offsite Property No. N/A

Bill of Lading/Air Bill No. 796361208296

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

Preservation	[illegible]	[illegible]	[illegible]
Type of Container	G	G	G
No. of Container(s)	1	1	1
Volume	125mL	125g	100g
SAMPLE ANALYSIS	5 Semivolatile Organic Compounds	[illegible]	Pesticide [illegible]

Sample No.	Matrix *	Sample Date	Sample Time			
J18990	OTHER SOLID	2/19/09	1022	X	X	X

CHAIN OF POSSESSION Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
[illegible]	2-19-09 1630	RB	2-19-09 1630
RB	2/20/09 0800	BLDollwood	2/20/09 0800
BLDollwood	2/20/09 1200	FedEx	2/20/09 1200
[illegible]	2-21-09 1045	[illegible]	2-21-09 1045
[illegible]	2-23-09 1000	[illegible]	2-23-09 1000

SPECIAL INSTRUCTIONS

5 and [illegible]

(1) TPH-Diesel Range - WTPH D + (Total petroleum hydrocarbons - diesel range; Total petroleum hydrocarbons - motor oil (high boiling))

Sampler was not able to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab.

Matrix *

LABORATORY SECTION Received By Title Date/Time

FINAL SAMPLE DISPOSITION Disposal Method Disposed By Date/Time

WCH-EE-011

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-116-1336

Page 2 of 3

Collector L. [illegible]	Company Contact JOAN KESSNER	Telephone No 375-4688	Project Coordinator KESSNER, JH
Price Code 9K	Data Turnaround 45 Days		
Project Designation Columbia River Component of the RCBRA - Sediment	Sampling Location HA- / SSD		SAF No. RC-116
Ice Chest No WCH-08-015, 022, 072	Field Logbook No. EL-1631-1	COA HLSCRC6320	Method of Shipment FEDEX
Shipped To EBERLINE SERVICES [✓ TENNESSEE]	Offsite Property No. N/A		Bill of Lading/Air Bill No. 796361262256

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

Preservation	Cool 4C	Cool 4C	None
Type of Container	aG	aG	G/P
No. of Container(s)	1	1	1
Volume	125ml 5	125g	1000g
SAMPLE ANALYSIS	Semivolatiles - Special Requirement	TOC - 9060	Particle Size (Dry Sieve) D422

Sample No.	Matrix *	Sample Date	Sample Time			
J18991	OTHER SOLID	2/19/09	0900	X	X	X

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Gretton	2-19-09 1650	Pat B	2-19-09 1650
Pat B	2/20/09 0800	B Woodward	2/20/09 0800
B Woodward	2/20/09 1200	Fed Ex	2/20/09 1200
[illegible]	2-23-09 1045	[illegible]	2-23-09 1045
[illegible]	2-23-09 0850	[illegible]	2-23-09 1030

SPECIAL INSTRUCTIONS

5 ±0.5g

(1) TPH-Diesel Range - WTPH-D - (Total petroleum hydrocarbons - diesel range; Total petroleum hydrocarbons - motor oil (high boiling))

Samples unavailable to remove purposes from controlled storage. Shipper removed samples from storage location using custody 4 samples for shipment to lab.

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION — Received By — Title — Date/Time

FINAL SAMPLE DISPOSITION — Disposal Method — Disposed By — Date/Time

WCH-EC-011

Washington Closure Hanford	**CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST**	RC-116-1337	Page 3 of 5
Collector	Company Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator KESSNER, JH
Project Designation Columbia River Component of the RCBRA - Sediment	Sampling Location HA-5 SSD		SAF No. RC-116
Ice Chest No. WCH-08-013, 022, 072	Field Logbook No. EL-1631-1	COA BESCRC6520	Method of Shipment FED EX
Shipped To EBERLINE SERVICES (ROSSVILLE)	Offsite Property No. N/A		Bill of Lading/Air Bill No. 796361208296

Price Code 9K

Data Turnaround 45 Days

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

Preservation	Cool 4C	Cool 4C	None
Type of Container	G	aG	G/P
No. of Container(s)	1	1	1
Volume	[illegible] 5	125g	1000g
SAMPLE ANALYSIS	[illegible] pH [illegible]	[illegible] 418.1	Particle Size (Dry Sieve) [illegible]

Sample No.	Matrix *	Sample Date	Sample Time			
J18992	OTHER SOLID	2/15/09	[illegible]	X	X	X

CHAIN OF POSSESSION Sign/Print Names

Relinquished By/Removed From	Date/Time 2/15/09 1430	Received By/Stored In	Date/Time 2/15/09 1630
Relinquished By/Removed From Rob B	Date/Time 2/20/09 0800	Received By/Stored In B Woodward	Date/Time 2/20/09 0800
Relinquished By/Removed From B Woodward	Date/Time 2/20/09 1200	Received By/Stored In Fed Ex	Date/Time 2/20/09 1200
Relinquished By/Removed From	Date/Time 2-21-09 1045	Received By/Stored In	Date/Time 2-21-09 1045
Relinquished By/Removed From	Date/Time 2-23-09 1050	Received By/Stored In	Date/Time 2-23-09 1050
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time

SPECIAL INSTRUCTIONS

5 AM 2509

pH; TPH Diesel Range - WTPH Dx (Total petroleum hydrocarbons - diesel range; Total petroleum hydrocarbons - motor oil (high boiling))

Samples [illegible] to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab

Matrix *

[illegible]

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EF-011

0000023

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-116-1350 Page 2 of 2

Collector BM	Company Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator KESSNER, JH
Project Designation Columbia River Component of the RCBRA - Sediment	Sampling Location BL-3 SSD		SAF No. RC-116
Ice Chest No. WAH-08-013, 072, 022	Field Logbook No. EL-1631-1	COA BESCRC6520	Method of Shipment FED EX
Shipped To EBERLINE SERVICES [illegible]	Offsite Property No. N/A		Bill of Lading/Air Bill No. 796361208296

Price Code 9K

Data Turnaround 45 Days

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

1200024

			Preservation	Cool 4C	Cool 4C	None
			Type of Container	G	aG	G/P
			No. of Container(s)	1	1	1
			Volume	125mL 5	125g	1000g
SAMPLE ANALYSIS				See item (1) in Special Instructions	TPH - [illegible]	Particle Size (Dry Sieve) [illegible]
Sample No.	Matrix *	Sample Date	Sample Time			
J16985	OTHER SOLID	2/4/09	1128	X	X	X

CHAIN OF POSSESSION	Date/Time	Sign/Print Names	Date/Time
Relinquished By/Removed From	2/4/09	Received By/Stored In Eric A	2/4/09 1630
Relinquished By/Removed From Eric A	2/20/09 0800	Received By/Stored In D. Hedelberg	2/20/09 0800
Relinquished By/Removed From D. Hedelberg	2/20/09 1200	Received By/Stored In Fed Ex	2/20/09 1200
Relinquished By/Removed From Fed Ex	2-21-09 1045	Received By/Stored In	2-21-09 1045
Relinquished By/Removed From	2-23-09 0850	Received By/Stored In	2-23-09 0850
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time

SPECIAL INSTRUCTIONS

5 2-5-09

(1) TPH Diesel Range - WTPH D ... (Total petroleum hydrocarbons - diesel range; Total petroleum hydrocarbons - motor oil (high boiling))

Shipper unavailable to remove samples from controlled storage. Shipper removes samples from storage location taking custody of samples for shipment to lab.

Matrix *

S = Soil
SE = Sediment
SO = Solid
SL = Sludge
W = Water
O = Oil
A = Air
DS = Drum Solids
DL = Drum Liquids
T = Tissue
WI = Wipe
L = Liquid
V = Vegetation
X = Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EL-011

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-116-1351 | Page 2 of 2

Collector	Company Contact JOAN KESSNER	Telephone No. 373-4655	Project Coordinator KESSNER, JH
Project Designation Columbia River Component of the RCBRA - Sediment	Sampling Location BL- 5 SSD		SAF No. RC-116
Ice Chest No. WCH-08-013, 072, 022	Field Logbook No. EL-1651-1	COA BESTRC0520	Method of Shipment FEDEX
Shipped To EBERLINE SERVICES [✓ LIONSVILLE]	Offsite Property No. N/A		Bill of Lading/Air Bill No. 796361208296

Price Code 9K

Data Turnaround 45 Days

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

0000025

Preservation	Cool 4C	Cool 4C	None
Type of Container	G	aG	CP
No. of Container(s)	1	1	1
Volume	125mL	125g	1000g
SAMPLE ANALYSIS	See item (5) in Special Instructions	TOC - 415.1	Particle Size (Dry Sieve) - D422

Sample No.	Matrix *	Sample Date	Sample Time			
J189B6	OTHER SOLID	12/15/07	1154	X	X	X

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time 2/19/09 1620	Received By/Stored In	Date/Time 2/19/09 1620
Relinquished By/Removed From	Date/Time 2/20/09 0800	Received By/Stored In D Heidelberg	Date/Time 2/20/09 0800
Relinquished By/Removed From D Heidelberg	Date/Time 2/20/09 1200	Received By/Stored In Fedex	Date/Time 2/20/09 1200
Relinquished By/Removed From	Date/Time 2/23/09/1045	Received By/Stored In	Date/Time 2/23/09/1045
Relinquished By/Removed From	Date/Time 2/23/09/0800	Received By/Stored In	Date/Time 2/23/09/0800
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time

SPECIAL INSTRUCTIONS

5 add 2509

(5) TPH Diesel Range - WTPH-D + (Total petroleum hydrocarbons - diesel range; Total petroleum hydrocarbons - motor oil (high boiling))

Sampler unavailable to remove samples from controlled storage. Sampler removed samples from storage location taking custody of samples for shipment to lab.

Matrix *

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-051

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-116-1352 | Page 2 of 2

Collector BA	**Company Contact** JOAN KESSNER	**Telephone No.** 375-4614	**Project Coordinator** KESSNER, JH
Project Designation Columbia River Component of the RCBRA - Sediment	**Sampling Location** BH - 8 SSD		**SAF No.** RC-116
Ice Chest No. WCH-08-013, 072, 022	**Field Logbook No.** EL-1611-1	**COA** RESCRC0420	**Method of Shipment** FED EX
Shipped To EBERLINE SERVICES (OAK RIDGE)	**Offsite Property No.** N/A		**Bill of Lading/Air Bill No.** 796361208296

Price Code 9K

Data Turnaround 45 Days

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

9200026

Preservation	Cool 4C	Cool 4C	None
Type of Container	G	aG	G/P
No. of Container(s)	1	1	1
Volume	125mL 5	125g	1000g
SAMPLE ANALYSIS	See item (1) in Special Instructions	TOC - 415.1	Particle Size (Dry Sieve) (MT)

Sample No.	Matrix *	Sample Date	Sample Time			
J18997	OTHER SOLID	2/15/05	1323	X	X	X

CHAIN OF POSSESSION	Date/Time	Sign/Print Names	Date/Time
Relinquished By/Removed From BA	2/16/05 1650	Received By/Stored In Eric A	2/16/05 1630
Relinquished By/Removed From Eric A 7/20/09	0800	Received By/Stored In D. Hellberg	7/20/09 0800
Relinquished By/Removed From D. Hellberg	7/20/09 1200	Received By/Stored In FedEx 7/20/09	1200
Relinquished By/Removed From	2-23-09 1045	Received By/Stored In	2-23-09 1045
Relinquished By/Removed From	2-23-09 1050	Received By/Stored In	2-23-09 1050
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time

SPECIAL INSTRUCTIONS

[illegible]

(1) TPH-Diesel Range - WTPH-D - (Total petroleum hydrocarbons - diesel range; Total petroleum hydrocarbons - Diesel Oil High Boiling)

Sample unavailable to remove for pre-PCO quarantine storage. Shipper removed samples from storage location taking custody of samples for shipment to lab

Matrix *
S = Soil
SE = Sediment
SO = Solid
SL = Sludge
W = Water
O = Oil
A = Air
DS = Drum Solids
DL = Drum Liquids
T = Tissue
WI = Wipe
L = Liquid
V = Vegetation
X = Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EF-011

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-116-1353	Page 1 of 1

Collector RA	Company Contact JOAN KESSNER Telephone No. 375-4688	Project Coordinator KESSNER, JH	Price Code 9K
Project Designation Columbia River Component of the RCBRA - Sediment	Sampling Location RL-X SSD	SAF No. RC-116	Data Turnaround 45 Days
Ice Chest No. WCH-08-012, 072, 022	Field Logbook No. EL-1630-1 COA RESCRC0520	Method of Shipment FED EX	
Shipped To EBERLINE SERVICES (DONVILLE)	Offsite Property No. N/A	Bill of Lading/Air Bill No. 796361208296	

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

000027

Preservation	Cool 4C	Cool 4C	None	
Type of Container	aG	aG	G/P	
No. of Container(s)	1	1	1	
Volume	125mL 5	125g	1000g	
SAMPLE ANALYSIS	See sample (list in) Special Instructions	TOC - 415.1	Particle Size (Dry Sieve) D422	

Sample No.	Matrix *	Sample Date	Sample Time			
J18908	OTHER SOLID	2/19/05	1236	X	X	X

CHAIN OF POSSESSION	Date/Time	Sign/Print Names	Date/Time
Relinquished By/Removed From B Markus Bullinger	2/16/09 1630	Received By/Stored In Eric A	2/16/09 1630
Relinquished By/Removed From Eric A 2/20/09,	0800	Received By/Stored In D Hellenberg DH	2/20/09 0800
Relinquished By/Removed From D Hellenberg DH	2/20/09 1200	Received By/Stored In Fedex	2/20/09 1200
Relinquished By/Removed From [illegible]	2-23-09/1045	Received By/Stored In [illegible]	2-23-09/1045
Relinquished By/Removed From Fedex	2-23-09/0850	Received By/Stored In [illegible]	2-23-09/0850
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time

SPECIAL INSTRUCTIONS

5 4/13 2509

(1) TPH-Diesel Range - WA 8015 (TPH-D) ; Total petroleum hydrocarbons - diesel range, Total petroleum hydrocarbons - motor oil (high boiling)

Sampler unavailable to remove samples from controlled storage. Shipper retrieved samples from storage location taking custody of samples for shipment to lab.

Matrix *

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-116-1354 | Page 2 of 2

Collector: BM	Company Contact: JOAN KESSNER Telephone No.: 375-4688	Project Coordinator: KESSNER, JH	Price Code: 9K Data Turnaround: 45 Days
Project Designation: Columbia River Component of the RCBRA - Sediment	Sampling Location: BL-7 SSD	SAF No.: RC-116	
Ice Chest No.: WCH-08-03,072,022	Field Logbook No.: EL-1651-1 COA: BESCRC6520	Method of Shipment: FED EX	
Shipped To: EBERLINE SERVICES (DONVILLE)	Offsite Property No.: N/A	Bill of Lading/Air Bill No.: 796361208296	

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

Preservation	Cool 4C	Cool 4C	None
Type of Container	G	aG	G/P
No. of Container(s)	1	1	1
Volume	125ml 5	125g	100g
SAMPLE ANALYSIS	See sample-specific Special Instructions	TPH - 418.1	Particle Size (Dry Sieve) D422

Sample No.	Matrix *	Sample Date	Sample Time			
J18989	OTHER SOLID	2/6/09	1200	X	X	X

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
B. H. BVL	2/6/09 1630	Fez A	2/6/09 1630
Fez A	2/20/09 0800	D. Heidelberg	2/20/09 0900
D. Heidelberg	2/20/09 1200	Fedex	2/20/09 1200
	2-21-09 1045		2-21-09 1045
	2-23-09 1050		2-23-09 1050

SPECIAL INSTRUCTIONS

5 ml/d 2509

(1) TPH Diesel Range - WTPH-D (Total petroleum hydrocarbons - diesel range, Total petroleum hydrocarbons - motor oil (high boiling))

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location during custody of samples for shipment to lab.

Matrix *

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Washington Closure Hanford	**CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST**	RC-116-1355	Page 1 of 1

Collector	Company Contact JOAN KESSNER	Telephone No. 375-4668	Project Coordinator KESSNER, JH	Price Code 9K	Data Turnaround 45 Days
Project Designation Columbia River Component of the RCBRA - Sediment	Sampling Location HI SSD		SAF No. RC-116		
Ice Chest No. WCH-08-013,022,072	Field Logbook No. EL-1651-1	COA BESCRC6520	Method of Shipment FEDEX		
Shipped To EBERLINE SERVICES (RICHMOND)	Offsite Property No. N/A		Bill of Lading/Air Bill No. 7963612-08226		

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

0900029

Preservation	[illegible]	[illegible]	[illegible]
Type of Container	G	P	G/P
No. of Container(s)	1	1	1
Volume	125mL 5	15g	1000g
SAMPLE ANALYSIS	Gas energy/Alpha Spectroscopy	TOC - 415.1	Particle Size (Dry Sieve) 1987

Sample No.	Matrix *	Sample Date	Sample Time			
J189C0	OTHER SOLID	2/19/09	1154	X	X	X

CHAIN OF POSSESSION	Date/Time	Sign/Print Names	Date/Time
Relinquished By/Removed From	2/19/09 1130	Received By/Stored In	2/19/09 1130
Relinquished By/Removed From Ral B	2/20/09 0800	Received By/Stored In BW Blackwood	2/20/09 0800
Relinquished By/Removed From BW Blackwood	2/20/09 1200	Received By/Stored In FedEx	2/20/09 1200
Relinquished By/Removed From	2-21-09 1045	Received By/Stored In	2-21-09 1045
Relinquished By/Removed From	2-23-09 0850	Received By/Stored In	2-23-09 0850
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time

SPECIAL INSTRUCTIONS
5 ml 2509
pH TPH-Diesel Range - WTPH SO - (Diesel petroleum hydrocarbons - diesel range), Total petroleum hydrocarbons - motor oil (high boiling)

Sampler unable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab

Matrix *
[illegible]

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-CC-011

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-116-1356

Page 2 of 2

Collector [illegible]	Company Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator KESSNER, JH
Project Designation Columbia River Component of the RCBRA - Sediment	Sampling Location BL-7 SSD		SAF No. RC 116
Ice Chest No. WCH-08-013, 022, 072	Field Logbook No. EL 1631-3	COA DESCRC6520	Method of Shipment FEDEX
Shipped To EBERLINE SERVICES (TRONVILLE)	Offsite Property No. N/A		Bill of Lading/Air Bill No. 796361208296

Price Code 9K

Data Turnaround 45 Days

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

0000030

Preservation	Cool 4C	Cool 4C	None
Type of Container	G	aG	G/P
No. of Container(s)	1	1	1
Volume	125ml 5	125g	1000g
SAMPLE ANALYSIS	[illegible] Special Instructions	TOC - 9060	Particle Size (Dry Sieve) [illegible]

Sample No.	Matrix *	Sample Date	Sample Time			
J189C1	OTHER SOLID	2/19/09	1105	X	X	X

CHAIN OF POSSESSION Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
[illegible]	[illegible] 1130	[illegible]	2-19-09 1130
MOF B	2/20/09 0800	BW Pursued	2/20/09 0800
B W Pursued	2/20/09 1200	Fed Ex	2/20/09 1200
[illegible]	2-21-09 1045	[illegible]	2-21-09 1045
[illegible]	2-23-09 1050	[illegible]	2-23-09 0850

SPECIAL INSTRUCTIONS

5 [illegible] 2-5-09

(1) TPH Diesel Range - WTPH D+ (Total petroleum hydrocarbons - diesel range, Total petroleum hydrocarbons - motor oil (high boiling))

Sample unavailable to remove samples from controlled storage. Sample removed samples from storage location [illegible] custody of samples for shipment to lab

Matrix *

[illegible]

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Washington Closure Hanford	**CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST**	RC-116-1358	Page 2 of 2
Collector [illegible]	Company Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator KESSNER, JH
Price Code 9K	Data Turnaround 45 Days		
Project Designation Columbia River Component of the RCBRA - Sediment	Sampling Location BI - C - SSD		SAF No. RC-116
Ice Chest No. WCH-08-013,092,022	Field Logbook No. EL-1630-3	COA UESTRC0520	Method of Shipment FEDEX
Shipped To EBERLINE SERVICES [✓ RICHMOND]	Offsite Property No. N/A	Bill of Lading/Air Bill No. 7963612082 96	

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

T30001

Preservation		Cool 4C	Cool 4C	None	
Type of Container		G	aG	GP	
No. of Container(s)		1	1	1	
Volume		125mL 5	125g	100g	
SAMPLE ANALYSIS		See sample Form Special Instructions	NWTPH - Dx	Particle Size (Dry Sieve) D422	
Sample No.	**Matrix ***	**Sample Date**	**Sample Time**		
J169C3	OTHER SOLID	[illegible]	[illegible]	X	X	X

CHAIN OF POSSESSION	Date/Time	Sign/Print Names Received By/Stored In	Date/Time
Relinquished By/Removed From [illegible]	[illegible]	Received By/Stored In [illegible] B	[illegible]
Relinquished By/Removed From [illegible] B	2/20/09 0300	Received By/Stored In D. Heidelberg	2/20/09 0800
Relinquished By/Removed From D. Heidelberg	2/20/09 1200	Received By/Stored In Felger/Bielet	1200
Relinquished By/Removed From [illegible]	2-23-09/1045	Received By/Stored In [illegible]	2-23-09/1045
Relinquished By/Removed From [illegible]	2-23-09/1008	Received By/Stored In [illegible]	2-23-09 1030
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time

SPECIAL INSTRUCTIONS

5 JA 2 F09

TPH Diesel Range - WTPH-Dx (Total petroleum hydrocarbons - diesel range; Total petroleum hydrocarbons - motor oil (high boiling))

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab.

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-116-1359 | Page 2 of 3

Collector [illegible]	Company Contact JOAN KESSNER	Telephone No. 375-4685	Project Coordinator KESSNER, JH
Project Designation Columbia River Component of the RC RIRA - Sediment	Sampling Location RI - 4 SSD		SAF No. RC-116
Ice Chest No. WCH-02-013,022,072	Field Logbook No. EL-1631-1	COA BESYRC6521	Method of Shipment FED EX
Shipped To EBERLINE SERVICES [✓ LIONVILLE]	Offsite Property No. N/A		Bill of Lading/Air Bill No. 792361208296

Price Code 9K

Data Turnaround 45 Days

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

Preservation	Cool 4C	Cool 4C	None
Type of Container	G	aG	G/P
No. of Container(s)	1	1	1
Volume	125mL 5	125g	500g

SAMPLE ANALYSIS

Sample No.	Matrix *	Sample Date	Sample Time	See item (1) in Special Instructions	TOC - 415.1	Particle Size (Dry Sieve) 9421
J169C4	OTHER SOLID	2/18/09	1150	X	X	X

CHAIN OF POSSESSION	Date/Time	Sign/Print Names	Date/Time
Relinquished By/Removed From [illegible]	2/18/09 1150	Received By/Stored In Ref B	2/18/09 1150
Relinquished By/Removed From Ref B 2/20/09	0800	Received By/Stored In BL Woodland 2/20/09	0800
Relinquished By/Removed From BL Woodland 2/20/09	1200	Received By/Stored In Fed Ex 2/20/09	1200
Relinquished By/Removed From [illegible]	2-23-09 1045	Received By/Stored In [illegible]	2-23-09 1045
Relinquished By/Removed From [illegible]	2-23-09 1050	Received By/Stored In [illegible]	2-23-09 1050
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time

SPECIAL INSTRUCTIONS

5 JD 2.5.09

(1) TPH-Diesel Range - WTPH-D+ (Total petroleum hydrocarbons - diesel range; Total petroleum hydrocarbons - motor oil (high boiling))

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab.

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH EE-011

E0000032

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-116-1392	Page 2 of 3

Collector BA	Company Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator KESSNER, JH
Project Designation Columbia River Component of the RCBRA - Sediment	Sampling Location SP- 2 SSD		SAF No. RC-116
Ice Chest No. WCH-GX-12, 32, 22	Field Logbook No. EL-1631-1	COA HESCHC6520	Method of Shipment FEDEX
Shipped To LIBERTINE SERVICES (LIONVILLE)	Offsite Property No. N/A		Bill of Lading/Air Bill No. 8636 1208296

Price Code 9K

Data Turnaround 45 Days

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

Preservation	Cool 4C	Cool 4C	None
Type of Container	G	aG	G/P
No. of Container(s)	1	3	1
Volume	125ml 5	125g	400g
SAMPLE ANALYSIS	See item (1) in Special Instructions	TOC - 415.1	Particle Size (Dry Sieve)

Sample No.	Matrix *	Sample Date	Sample Time			
J18JJ9	OTHER SOLID	2/19/09	1412	X	X	X

CHAIN OF POSSESSION	Date/Time	Sign/Print Names	Date/Time
Relinquished By/Removed From Bellef	2/19/09 1630	Received By/Stored In	2/19/09 1630
Relinquished By/Removed From	2/20/09 0800	Received By/Stored In D. Hesselberg	2/20/09 0800
Relinquished By/Removed From D. Hesselberg	2/20/09 1200	Received By/Stored In Fedex	2/20/09 1200
Relinquished By/Removed From	2-21-09 1045	Received By/Stored In	2-21-09 1045
Relinquished By/Removed From FedEx	2-23-09 1080	Received By/Stored In	2-23-09 1080
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time

SPECIAL INSTRUCTIONS

6 All TPH

(1) TPH-Diesel Range - WTPH-D {Total petroleum hydrocarbons - diesel range; Total petroleum hydrocarbons - motor oil (high boiling)}

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location, taking custody of samples for shipment to lab.

Matrix *
S = Soil
SE = Sediment
SO = Solid
SL = Sludge
W = Water
O = Oil
A = Air
DS = Drum Solids
DL = Drum Liquids
T = Tissue
WI = Wipe
L = Liquid
V = Vegetation
X = Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-116-1395 Page 2 of 3

Collector LS	Company Contact JOAN KESSNER	Telephone No. 375-4688
Project Designation Columbia River Component of the RCBRA - Soil	Sampling Location SP-1 SSD	
Ice Chest No. WCH-08-013, 072, 022	Field Logbook No. EL-1631-1	COA RESCRC6520
Shipped To EBERLINE SERVICES (JONSVILLE)	Offsite Property No. N/A	

Project Coordinator: KESSNER JH

Price Code: 9K

Data Turnaround: 45 Days

SAF No.: RC-116

Method of Shipment: FED EX

Bill of Lading/Air Bill No. 796361208296

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

Preservation	Cool 4C	Cool 4C	None
Type of Container	G	aG	G/P
No. of Container(s)	1	1	1
Volume	125mL	125g	1000g
SAMPLE ANALYSIS	See item (1) in Special Instructions	TPH - WTPH D	Pattern Size (Dry Sieve) D422

Sample No.	Matrix *	Sample Date	Sample Time			
J185K7	OTHER SOLID	2/19/09	1400	X	X	X

000234

CHAIN OF POSSESSION

Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
	2/19/09 / 1650	RLS	2/19/09 / 1650
	2/20/09 0700		2/20/09 0700
	2/20/09 1200	Fedex 2/20/09	1200
	2.21.09 / 1045		2.21.09 / 1045
	2.23.09 / 0850		2.23.09 / 0850

SPECIAL INSTRUCTIONS

5/14/09

☑ TPH-Diesel Range - WTPH D - {Total petroleum hydrocarbons - diesel range; Total petroleum hydrocarbons - motor oil (high boiling)}

Sampler unavailable to remove samples from controlled storage. Shipper removing samples from storage location taking custody of samples for shipment to lab

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-013

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-116-1397 Page 1 of 1

Collector ( )	**Company Contact** JOAN KESSNER	**Telephone No** 373-4688	**Project Coordinator** KESSNER, JH
Project Designation Columbia River Component of the RCBRA - Sediment	**Sampling Location** SP-7 SSD		**SAF No.** RC-116
Ice Chest No. EC 0H-08-013, 072, 007	**Field Logbook No.** EL-1621-1	**COA** 0ESCRC0530	**Method of Shipment** FED EX
Shipped To EBERLINE SERVICES (OAK RIDGE)	**Offsite Property No.** N/A		**Bill of Lading/Air Bill No.** ~~[illegible]~~ BS 2/20 796361208296

Price Code 9K

Data Turnaround 45 Days

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

		Preservation	Cool 6°C	Cool 6C	None							
		Type of Container	G	aG	G/P							
		No. of Container(s)	1	1	1							
		Volume	125mL 5	250g	1000g							
SAMPLE ANALYSIS			See item (1) in Special Instructions	EPA 415.1	Grain Size (ASTM D422)							
Sample No.	**Matrix ***	**Sample Date**	**Sample Time**									
J18K84	OTHER SOLID	2/19/09	1530	X	X	X						

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
	2/19/09 1530	B.L.B	2/19/09 1530
B.L.B	2/20/09 0800	D. He Dellberghe	2/20/09 0800
D. He Dellberghe	2/20/09 1200	FedEx	2/20/09 1200
	2-23-09 1045		2-23-09 1045
	2-23-09 1050		2-23-09 1050

SPECIAL INSTRUCTIONS

5 AB 2909

(1) TPH-Diesel Range - WTPH-Dx {Total petroleum hydrocarbons - diesel range; Total petroleum hydrocarbons - motor oil (high boiling)}

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab.

Matrix *

S = Soil
SE = Sediment
SO = Solid
SL = Sludge
W = Water
O = Oil
A = Air
DS = Drum Solids
DL = Drum Liquids
T = Tissue
WI = Wipe
L = Liquid
V = Vegetation
X = Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-FE-011

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-116-1398 | Page 2 of 2

Collector [illegible]	Company Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator KESSNER, JH
Project Designation Columbia River Component of the RCBRA - Sediment	Sampling Location SP-5 SSO		SAF No. RC 116
Ice Chest No. WH-08-013/072/022	Field Logbook No. EL-1631-1	COA RESCRD6530	Method of Shipment FEDEX
Shipped To EBERLINE SERVICES [✓ RICHMOND]	Offsite Property No. N/A		Bill of Lading/Air Bill No. 796361208296

Price Code 9K

Data Turnaround 45 Days

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

Preservation	Cool 4C	Cool 4C	None
Type of Container	G	aG	G/P
No. of Container(s)	1	1	1
Volume	125mL 5	125g	1000g
SAMPLE ANALYSIS	[illegible]	[illegible]	Particle Size (Dry Sieve) [illegible]

Sample No.	Matrix *	Sample Date	Sample Time			
J109K5	OTHER SOLID	2/19/09	1425	X	X	X

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
[illegible]	[illegible]	R.F.B	[illegible]
R.F.B 2/20/09	0800	[illegible]	2/20/09 0800
[illegible]	2/20/09 1100	Fedex 2/20/09	1100
[illegible]	2-23-09/1045	[illegible]	2-23-09/1045
[illegible]	2-23-09/0850	[illegible]	2-23-09/0850
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time

SPECIAL INSTRUCTIONS

[illegible]

(1) TPH-Diesel Range - WTPH-D - {Total petroleum hydrocarbons - diesel range; Total petroleum hydrocarbons - motor oil (high boiling)}

Sample unavailable at remove samples from consulted storage. Shipper removed samples from storage location taking custody of samples for shipment to lab.

Matrix *

[illegible]

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

000036

[illegible]

Appendix 5

Data Validation Supporting Documentation

GENERAL CHEMISTRY ANALYSIS DATA VALIDATION CHECKLIST

VALIDATION LEVEL	A	B	[✓ C]	D	E
PROJECT: BCRAG			DATA PACKAGE: K1544		
VALIDATOR: ELR	LAB: LCT			DATE: 11/26/01	
			SDG: K1544		
ANALYSES PERFORMED					
Anions/IC	[✓ TOC]	TOX	TPH-418.1	Oil and Grease	Alkalinity
Ammonia	BOD/COD	Chloride	Chromium-VI	pH	NO_3/NO_2
Sulfate	TDS	TKN	Phosphate		
SAMPLES/MATRIX					
J189D8	J189F0	J18985	J18986	J18987	J18988
J18990	J18991	J18992	J189B5	J189B6	J189B2
J189B4	J189B7	J189C0	J189C1	J189C3	J189C4
J189J9	J189K2	J189K4	J189K5		
					solid

1. **DATA PACKAGE COMPLETENESS AND CASE NARRATIVE**

Technical verification documentation present? .... Yes [✓ No] N/A

Comments:

2. **INSTRUMENT PERFORMANCE AND CALIBRATIONS (Levels D and E)**

Initial calibrations performed on all instruments? .... Yes No [✓ N/A]

Initial calibrations acceptable? .... Yes No [✓ N/A]

ICV and CCV checks performed on all instruments? .... Yes No [✓ N/A]

ICV and CCV checks acceptable? .... Yes No [✓ N/A]

Standards traceable? .... Yes No [✓ N/A]

Standards expired? .... Yes No [✓ N/A]

Calculation check acceptable? .... Yes No [✓ N/A]

Comments:

GENERAL CHEMISTRY ANALYSIS DATA VALIDATION CHECKLIST

3. BLANKS (Levels B, C, D, and E)

ICB and CCB checks performed for all applicable analyses? (Levels D, E) ... Yes No [✓ N/A]

ICB and CCB results acceptable? (Levels D, E) ... Yes No [✓ N/A]

Laboratory blanks analyzed? ... [✓ Yes] No N/A

Laboratory blank results acceptable? ... [✓ Yes] No N/A

Field blanks analyzed? (Levels C, D, E) ... Yes [✓ No] N/A

Field blank results acceptable? (Levels C, D, E) ... Yes No [✓ N/A]

Transcription/calculation errors? (Levels D, E) ... Yes No [✓ N/A]

Comments: No FB

4. ACCURACY (Levels C, D, and E)

Spike samples analyzed? ... [✓ Yes] No N/A

Spike recoveries acceptable? ... [✓ Yes] No N/A

Sike standards NIST traceable? (Levels D, E) ... Yes No [✓ N/A]

Spike standards expired? (Levels D, E) ... Yes No [✓ N/A]

LCS/BSS samples analyzed? ... [✓ Yes] No N/A

LCS/BSS results acceptable? ... [✓ Yes] No N/A

Standards traceable? (Levels D, E) ... Yes No [✓ N/A]

Standards expired? (Levels D, E) ... Yes No [✓ N/A]

Transcription/calculation errors? (Levels D, E) ... Yes No [✓ N/A]

Performance audit sample(s) analyzed? ... Yes [✓ No] N/A

Performance audit sample results acceptable? ... Yes No [✓ N/A]

Comments: NO PAS

GENERAL CHEMISTRY ANALYSIS DATA VALIDATION CHECKLIST

5. PRECISION (Levels C, D, and E)

Duplicate RPD values acceptable? .... [✓ Yes] No N/A

Duplicate results acceptable? .... [✓ Yes] No N/A

MS/MSD standards NIST traceable? (Levels D, E) .... Yes No [✓ N/A]

MS/MSD standards expired? (Levels D, E) .... Yes No [✓ N/A]

Field duplicate RPD values acceptable? .... Yes No [✓ N/A]

Field split RPD values acceptable? .... Yes No [✓ N/A]

Transcription/calculation errors? (Levels D, E) .... Yes No [✓ N/A]

Comments:

6. HOLDING TIMES (all levels)

Samples properly preserved? .... [✓ Yes] No N/A

Sample holding times acceptable? .... [✓ Yes] No N/A

Comments:

GENERAL CHEMISTRY ANALYSIS DATA VALIDATION CHECKLIST

7. RESULT QUANTITATION AND DETECTION LIMITS (all levels)

Results reported for all requested analyses? .... [✓ Yes] No N/A

Results supported in the raw data? (Levels D, E) .... Yes No [✓ N/A]

Samples properly prepared? (Levels D, E) .... Yes No [✓ N/A]

Detection limits meet RDL? .... [✓ Yes] No N/A

Transcription/calculation errors? (Levels D, E) .... Yes No [✓ N/A]

Comments:

Appendix 8

Additional Documentation Requested by Client

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

WC-Hanford, Inc	Project: RC-116	
2620 Fermi Avenue	Project Number: [none]	**Reported:**
Richland WA, 99354	Project Manager: Joan Kessner	04/24/2009 12:04

Wet Chemistry - Quality Control

Lionville Laboratory

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch L903214 - Default Prep GenChem										
Blank (L903214-BLK2)				Prepared & Analyzed: 03/17/2009						
Total Organic Carbon	7.18	20.00	mg/kg							
LCS (L903214-BS1)				Prepared & Analyzed: 03/17/2009						
Total Organic Carbon	404.41	20.00	mg/kg	400.00		101	80-120			
Duplicate (L903214-DUP1)		Source: 0902067-03		Prepared & Analyzed: 03/17/2009						
Total Organic Carbon	660.10	20.00	mg/kg		646.39			2.10	20	
Matrix Spike (L903214-MS1)		Source: 0902067-03		Prepared & Analyzed: 03/17/2009						
Total Organic Carbon	8921.9	20.00	mg/kg	7841.1	646.39	106	75-125			

Nicki Perrone For Orlette Johnson, Project Manager

Date 7 December 2009
To: Washington Closure Hanford (technical representative)
From: ELR Consultants
Project: Columbia River Component of the RCBRA - Sediment
Subject: Semivolatile/DRO - Data Package No. K1544-LLI

INTRODUCTION

This memo presents the results of data validation on Data Package No. K1544 prepared by Lionville Laboratory Inc. (LLI). A list of samples validated along with the analyses reported and the method of analysis is provided in the following table.

analyses reported and the method of analysis is provided in the following table

Sample ID	Sample Date	Media	Validation	Anaysis
J18985	2/19/09	Solid	C	See note 1
J18986	2/19/09	Solid	C	See note 1
J18987	2/19/09	Solid	C	See note 1
J18988	2/19/09	Solid	C	See note 1
J18990	2/19/09	Solid	C	See note 1
J18991	2/19/09	Solid	C	See note 1
J18992	2/19/09	Solid	C	See note 1
J189B5	2/19/09	Solid	C	See note 1
J189B6	2/19/09	Solid	C	See note 1
J189B7	2/19/09	Solid	C	See note 1
J189B8	2/19/09	Solid	C	See note 1
J189B9	2/19/09	Solid	C	See note 1
J189C0	2/19/09	Solid	C	See note 1
J189C1	2/19/09	Solid	C	See note 1
J189C3	2/19/09	Solid	C	See note 1
J189C4	2/19/09	Solid	C	See note 1
J189J9	2/19/09	Solid	C	See note 1
J189K2	2/19/09	Solid	C	See note 1
J189K4	2/19/09	Solid	C	See note 1
J189K5	2/19/09	Solid	C	See note 1

1 – Semivolatiles by 8270 & diesel range organics by 8015B.

Data validation was conducted in accordance with the Washington Closure Hanford (WCH) validation statement of work and the Remedial Investigation Work Plan for Hanford Site Releases to the Columbia River (DOE/RL-2008-11, Rev. 0, September 2008). Appendices 1 through 6 provide the following information as indicated below.

Appendix 1. Glossary of Data Reporting Qualifiers
Appendix 2. Summary of Data Qualification
Appendix 3. Qualified Data Summary and Annotated Laboratory Reports
Appendix 4. Laboratory Narrative and Chain-of-Custody Documentation
Appendix 5. Data Validation Supporting Documentation
Appendix 6. Additional Data Requested by Client

DATA QUALITY OBJECTIVES

- **Holding Times & Sample Preservation**

Analytical holding times were assessed to ascertain whether the holding time requirements were met by the laboratory. The holding time requirements are as follows: Samples must be extracted within 14 days of the date of sample collection and analyzed within 40 days from the date of extraction.

If holding times are exceeded, but not by greater than two times the limit, all associated sample results are qualified as estimates and flagged "J" for detects and "UJ" for non-detects. If holding times are exceeded by greater than two times the limit, all associated detectable sample results are qualified as estimates and flagged "J" and all non-detects are rejected and flagged "UR".

All holding times were acceptable.

- **Method Blanks**

Method blank analyses are conducted to determine the extent of laboratory contamination introduced through sampling, sample preparation and analysis. At least one acceptable method blank analysis must be conducted for every 20 samples. No contaminants should be present in the method blank. Analytical results for analytes present in any sample at less than five times the concentration of that analyte found in the associated blank are qualified as non-detects and flagged "U". Common laboratory contaminants present in samples at less than ten times the concentration of that analyte found in the associated blank are qualified as non-detects. If a sample result is less than the CRQL and is less than five times (or less than ten times for lab contaminants) the highest associated blank result, the sample result value is raised to the CRQL level and qualified as undetected "U".

Due to method blank contamination, all motor oil results were qualified as undetected and flagged "U".

All other method blank results were acceptable.

Field Blanks

No field blanks were submitted for analysis.

Accuracy

Matrix Spike/Matrix Spike Duplicate & Blank Spike Recoveries

Matrix spike/matrix spike duplicate analyses are used to assess the analytical accuracy of the reported data and the effect of the matrix on the ability to accurately quantify sample concentrations. Matrix spike/matrix spike duplicate analyses are performed in duplicate using five compounds for which percent recoveries must be within a range of 50-150% or within laboratory control limits. If spike recoveries are outside control limits, detected sample results less than five times the spike concentration are qualified as estimates and flagged "J". Undetected sample results with spike recoveries below control limits are qualified as estimates and flagged "UJ". Undetected sample results are not qualified if the spike recovery is above control limits. Sample results greater than five times the spike concentration require no qualification.

Due to the lack of a matrix spike, matrix spike duplicate and LCS analysis, all motor oil results were qualified as estimates and flagged "J".

Due to LCS (60%) and matrix spike (63%) recoveries outside QC limits, all diesel range organic results were qualified as estimates and flagged "J".

Due to matrix spike recoveries outside QC limits, all 4-chloroanaline (43%), hexachlorocyclopentadiene (27%) and pentachlorophenol (34%) results were qualified as estimates and flagged "J".

Due to a matrix spike duplicate recovery outside QC limits (36%), all hexachlorocyclopentadiene results were qualified as estimates and flagged "J".

Due to an LCS recovery outside QC limits, all 2,4-dimethylphenol (47%), 2,4-dinitrophenol (39%), 4-chloroanaline (45%), hexachlorocyclopentadiene (17%) and pentachlorophenol (46%) results were qualified as estimates and flagged "J".

All other accuracy results were acceptable.

Surrogate Recovery

The analyses of surrogate compounds provide a measure of performance for individual samples. Matrix-specific surrogate compound recovery control windows have been established by the EPA CLP program. If two surrogates of the same class of compounds (base/neutral or acid) are out of control limits, all associated sample results greater than the contract required quantitation limit (CRQL) are qualified as estimates and flagged "J". Sample results less than the CRQL and below the lower control limit are qualified as estimates and flagged "UJ". Sample results less than the CRQL with recoveries above the upper control limit require no qualification. If a surrogate recovery is less than 10%, detects are qualified as estimates and flagged "J" and nondetects are rejected and flagged "UR".

All surrogate results were acceptable.

- **Precision**

Matrix Spike/Matrix Spike Duplicate Samples

Matrix spike (MS)/matrix spike duplicate (MSD) results provide matrix-specific information on the precision of the method for specific target compound classes. Precision is expressed by the relative percent difference (RPD) between the recoveries of duplicate matrix spike analyses performed on a sample. Samples results must be within RPD limits of +/-30%. If RPD values are out of specification and the sample concentration is less than five times the spike concentration, all associated detected sample results are qualified as estimates and flagged "J". If RPD values are out of specification and the sample concentration is greater than five times the spike concentration, no qualification is required.

Due to RPDs outside QC limits, all 1,2-dichlorobenzene (35%), 1,3-dichlorobenzene (78%), 1,4-dichlorobenzene (33%), 2,4,5-trichlorophenol (31%), 2,4,6-trichlorophenol (45%), 2,4-dichlorophenol (31%), 2,4-dinitrophenol (50%), 2-chlorophenol (42%), 2-methylphenol (41%), 3,3-dichlorobenzidine (32%), 4,6 dinitro-2-methylphenol (32%), 4-chloro-3-methylphenol (31%), 4-chloroanaline (36%), 4-methylphenol (44%), 4-nitrophenol (31%), bis(2-chloroethyl)ether (34%), bis(2-chloroisopropyl)ether (37%), hexachloroethane (39%), n-nitroso-n-propylamine (39%), pentachlorophenol (59%), phenathrene (35%) and phenol (43%) results were qualified as estimates and flagged "J"

Due to the lack of a matrix spike and matrix spike duplicate analysis, all motor oil results were qualified as estimates and flagged "J".

All other precision results were acceptable.

Field Duplicate Samples

No field duplicates were submitted for analysis

- **Analytical Detection Levels**

Reported analytical detection levels are compared against the required quantitation limits (RQL's) to ensure that laboratory detection levels meet the required criteria. Five-hundred twelve semivolatile analytes exceeded the RQL. Under the WCH statement of work, no qualification is required. All other analytes met the RQL.

Completeness

Data package No K1544 was submitted for validation and verified for completeness. Completeness is based on the percentage of data determined to be valid (i.e., not rejected). The completion percentage was 100%.

MAJOR DEFICIENCIES

None found.

MINOR DEFICIENCIES

The following minor deficiencies were noted:

- Due to method blank contamination, all motor oil results were qualified as undetected and flagged "U".
- Due to the lack of a matrix spike, matrix spike duplicate and LCS analysis, all motor oil results were qualified as estimates and flagged "J".
- Due to LCS (60%) and matrix spike (63%) recoveries outside QC limits, all diesel range organic results were qualified as estimates and flagged "J".
- Due to matrix spike recoveries outside QC limits, all 4-chloroanaline (43%), hexachlorocyclopentadiene (27%) and pentachlorophenol (34%) results were qualified as estimates and flagged "J".
- Due to a matrix spike duplicate recovery outside QC limits (36%), all hexachlorocyclopentadione results were qualified as estimates and flagged "J".
- Due to an LCS recovery outside QC limits, all 2,4-dimethylphenol (47%), 2,4-dinitrophenol (39%), 4-chloroanaline (45%), hexachlorocyclopentadiene (17%) and pentachlorophenol (46%) results were qualified as estimates and flagged "J".
- Due to RPDs outside QC limits, all 1,2-dichlorobenzene (35%), 1,3-dichlorobenzene (79%), 1,4-dichlorobenzene (33%), 2,4,5-trichlorophenol (31%), 2,4,6-trichlorophenol (45%), 2,4-dichlorophenol (31%), 2,4-dinitrophenol (50%), 2-chlorophenol (42%), 2-methylphenol (41%), 3,3-dichlorobenzidine (32%), 4,6-dinitro-2-methylphenol (32%), 4-chloro-3-methylphenol (31%), 4-chloroanaline (36%), 4-methylphenol (44%), 4 nitrophenol (31%), bis(2-chloroethyl)ether (34%), bis(2-chloroisopropyl)ether (37%), hexachloroethane (39%), n-nitroso-n-propylamine (39%), pentachlorophenol (59%), phenathrene (35%) and phenol (43%) results were qualified as estimates and flagged "J"

Data flagged "J" indicates that the associated concentration is an estimate, but under the WCH statement of work, the data may be usable for decision-making purposes. All other validated results are considered accurate within the standard error associated with the methods.

Five-hundred twelve semivolatile analytes exceeded the RQL. Under the WCH statement of work, no qualification is required.

REFERENCES

Washington Closure Hanford Contract #S00W307A00 (March 2008), *Data Validation Services*.

DOE/RL-2008-11, Rev 0, *Remedial Investigation Work Plan for Hanford Site Releases to the Columbia River*, September 2008.

Appendix 1

Glossary of Data Reporting Qualifiers

Qualifiers which may be applied by data validators in compliance with the WCH validation SOW are as follows:

U - Indicates the compound or analyte was analyzed for and not detected in the sample. The value reported is the same quantitation limit corrected for sample dilution and moisture content by the laboratory.

UJ - Indicates the compound or analyte was analyzed for and not detected in the sample. Due to a minor QC deficiency identified during the data validation, the associated quantitation limit is an estimate.

J - Indicates the compound or analyte was analyzed for and detected. Due to a minor QC deficiency identified during the data validation, the associated quantitation limit is an estimate.

R - Indicates the compound or analyte was analyzed for, detected, and due to an identified major QC deficiency, the data are unusable.

UR - Indicates the compound or analyte was analyzed for and not detected in the sample. Additionally, the data is unusable due to an identified major QC deficiency.

NJ - Indicates presumptive evidence of a compound at an estimated value. The data may not be valid for some specific applications (i.e., usable for decision-making purposes).

N - Indicates presumptive evidence of a compound. The data may not be valid for some specific applications usable for decision-making purposes).

Appendix 2

Summary of Data Qualification

SEMIVOLATILE/DRO ORGANIC DATA QUALIFICATION SUMMARY*

SDG: K1640	REVIEWER: ELR	Project: RCBRA	QC Issue
COMPOUND	QUALIFIER	SAMPLES AFFECTED	REASON
Motor oil	U	All	Method blank contamination
Motor oil	J	All	No MS, MSD or LCS analysis
Diesel range organics	J	All	LCS & MS recovery
4-chloroanaline hexachlorocyclopentadiene pentachlorophenol	J	All	MS recovery
hexachlorocyclopentadiene	J	All	MSD recovery
2,4-dimethylphenol 2,4-dinitrophenol 4-chloroanaline hexachlorocyclopentadiene pentachlorophenol	J	All	LCS recovery
1,2-dichlorobenzene 1,3-dichlorobenzene 1,4-dichlorobenzene 2,4,5-trichlorophenol 2,4,6-trichlorophenol 2,4-dichlorophenol 2,4-dinitrophenol 2-chlorophenol 2-methylphenol 3,3-dichlorobenzidine 4,6-dinitro-2-methylphenol 4-chloro-3-methylphenol 4-chloroanaline 4-methylphenol 4-nitrophenol bis(2-chloroethyl)ether bis(2-chloroisopropyl)ether hexachloroethane n-nitroso-n-propylamine pentachlorophenol phenathrene phenol	J	All	RPD

* - The Qualified Data Summary Table includes laboratory applied "U" qualifiers not specifically identified here. The laboratory applied "U" qualifiers are included to minimize misinterpretation of results contained in the table.

Appendix 3

Qualified Data Summary and Annotated Laboratory Reports

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

WC-Hanford, Inc 2620 Fermi Avenue Richland WA, 99354	Project: RC-116 Project Number: [none] Project Manager: Joan Kessner	Reported: 05/11/2009 10:17

J18985

0902067-05 (Solid)

Lionville Laboratory

Semivolatile Organic Compounds by SW846 8270C

Analyte	Result	Reporting Limit	Qualifier	Units	Dilution	Batch	Prepared	Analyzed	Method
1,2,4-Trichlorobenzene	330	330	U	ug/kg wet	1	L903018	03/05/2009	03/26/2009	8270C
1,2-Dichlorobenzene	330	330	U J	"	"	"	"	"	"
1,3-Dichlorobenzene	330	330	U J	"	"	"	"	"	"
1,4-Dichlorobenzene	330	330	U J	"	"	"	"	"	"
2,4,5-Trichlorophenol	330	330	U J	"	"	"	"	"	"
2,4,6-Trichlorophenol	330	330	U J	"	"	"	"	"	"
2,4-Dichlorophenol	330	330	U J	"	"	"	"	"	"
2,4-Dimethylphenol	330	330	U J	"	"	"	"	"	"
2,4-Dinitrophenol	1650	1650	U J	"	"	"	"	"	"
2,4-Dinitrotoluene	330	330	U	"	"	"	"	"	"
2,6-Dinitrotoluene	330	330	U	"	"	"	"	"	"
2-Chloronaphthalene	330	330	U	"	"	"	"	"	"
2-Chlorophenol	330	330	U J	"	"	"	"	"	"
2-Methylnaphthalene	330	330	U	"	"	"	"	"	"
2-Methylphenol	330	330	U J	"	"	"	"	"	"
2-Nitroaniline	1650	1650	U	"	"	"	"	"	"
2-Nitrophenol	330	330	U	"	"	"	"	"	"
3,3'-Dichlorobenzidine	660	660	U J	"	"	"	"	"	"
3-Nitroaniline	1650	1650	U	"	"	"	"	"	"
4,6-Dinitro-2-methylphenol	330	330	U J	"	"	"	"	"	"
4-Bromophenyl Phenyl Ether	330	330	U	"	"	"	"	"	"
4-Chloro-3-methylphenol	330	330	U J	"	"	"	"	"	"
4-Chloroaniline	330	330	U J	"	"	"	"	"	"
4-Chlorophenyl Phenyl Ether	330	330	U	"	"	"	"	"	"
4-Methylphenol	330	330	U J	"	"	"	"	"	"
4-Nitroaniline	1650	1650	U	"	"	"	"	"	"
4-Nitrophenol	1650	1650	U J	"	"	"	"	"	"
Acenaphthene	330	330	U	"	"	"	"	"	"
Acenaphthylene	330	330	U	"	"	"	"	"	"
Anthracene	330	330	U	"	"	"	"	"	"
Benz[a]anthracene	330	330	U	"	"	"	"	"	"
Benzo[a] pyrene	330	330	U	"	"	"	"	"	"
Benzo[b] fluoranthene	330	330	U	"	"	"	"	"	"
Benzo[g,h,i] perylene	330	330	U	"	"	"	"	"	"
Benzo[k] fluoranthene	330	330	U	"	"	"	"	"	"
Bis(2-chloroethoxy) methane	330	330	U	"	"	"	"	"	"
Bis(2-chloroethyl) ether	330	330	U J	"	"	"	"	"	"
Bis(2-chloroisopropyl) ether	330	330	U J	"	"	"	"	"	"
Bis(2-ethylhexyl) phthalate	330	330	U	"	"	"	"	"	"
Butyl Benzyl Phthalate	330	330	U	"	"	"	"	"	"
Carbazole	330	330	U	"	"	"	"	"	"
Chrysene	330	330	U	"	"	"	"	"	"
Dibenz[a,h]anthracene	330	330	U	"	"	"	"	"	"

LVL
LIONVILLE LABORATORY

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610 280-3041

WC-Hanford, Inc 2620 Fermi Avenue Richland WA, 99354	Project: RC-116 Project Number: [none] Project Manager: Joan Kessner	**Reported:** 05/11/2009 10:17

J18985

0902067-05 (Solid)

Analyte	Result	Reporting Limit	Qualifier	Units	Dilution	Batch	Prepared	Analyzed	Method

Lionville Laboratory

Semivolatile Organic Compounds by SW846 8270C

Analyte	Result	Reporting Limit	Qualifier	Units	Dilution	Batch	Prepared	Analyzed	Method
Dibenzofuran	330	330	U	ug/kg wet	1	1903018	03/05/2009	03/26/2009	8270C
Diethyl Phthalate	330	330	U	"	"	"	"	"	"
Dimethyl Phthalate	330	330	U	"	"	"	"	"	"
Di-n-butyl Phthalate	330	330	U	"	"	"	"	"	"
Di-n-octyl Phthalate	330	330	U	"	"	"	"	"	"
Fluoranthene	330	330	U	"	"	"	"	"	"
Fluorene	330	330	U	"	"	"	"	"	"
Hexachlorobenzene	330	330	U	"	"	"	"	"	"
Hexachlorobutadiene	330	330	U	"	"	"	"	"	"
Hexachlorocyclopentadiene	330	330	U J	"	"	"	"	"	"
Hexachloroethane	330	330	U J	"	"	"	"	"	"
Indeno[1,2,3-cd]pyrene	330	330	U	"	"	"	"	"	"
Isophorone	330	330	U	"	"	"	"	"	"
Naphthalene	330	330	U	"	"	"	"	"	"
Nitrobenzene	330	330	U	"	"	"	"	"	"
N-Nitrosodi-n-propylamine	330	330	U J	"	"	"	"	"	"
N-Nitrosodiphenylamine	330	330	U	"	"	"	"	"	"
Pentachlorophenol	1650	1650	U J	"	"	"	"	"	"
Phenanthrene	330	330	U J	"	"	"	"	"	"
Phenol	330	330	U J	"	"	"	"	"	"
Pyrene	330	330	U	"	"	"	"	"	"
TIC:Unknown 4	**462**		B, J	"	"	"	"	"	"
TIC:Unknown 3	**246**		J, N M 5-11-09	"	"	"	"	"	"
TIC:Unknown 2	**313000**		B, J	"	"	"	"	"	"
TIC:Unknown 1	**5320**		J, N	"	"	"	"	"	"
TIC:Aldol Condensate 1	**278**		J A	"	"	"	"	"	"
Surrogate: 2-Fluorophenol		55 %			*25-121*	"	"	"	"
Surrogate: Phenol-d5		62 %			*24-113*	"	"	"	"
Surrogate: Nitrobenzene-d5		67 %			*23-120*	"	"	"	"
Surrogate: 2-Fluorobiphenyl		69 %			*30-115*	"	"	"	"
Surrogate: 2,4,6-Tribromophenol		50 %			*19-122*	"	"	"	"
Surrogate: p-Terphenyl-d14		78 %			*18-137*	"	"	"	"

LVL

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
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WC-Hanford, Inc. 2620 Fermi Avenue Richland WA, 99354	Project: RC-116 Project Number: [none] Project Manager: Joan Kessner	Reported: 05/11/2009 10:17

J18986

0902067-06 (Solid)

V 12/9/09

Analyte	Result	Reporting Limit	Qualifier	Units	Dilution	Batch	Prepared	Analyzed	Method

Lionville Laboratory

Semivolatile Organic Compounds by SW846 8270C

Analyte	Result	Reporting Limit	Qualifier	Units	Dilution	Batch	Prepared	Analyzed	Method
1,2,4-Trichlorobenzene	330	330	U	ug/kg wet	1	1903038	03/05/2009	03/26/2009	8270C
1,2-Dichlorobenzene	330	330	U J	"	"	"	"	"	"
1,3-Dichlorobenzene	330	330	U J	"	"	"	"	"	"
1,4-Dichlorobenzene	330	330	U J	"	"	"	"	"	"
2,4,5-Trichlorophenol	330	330	U J	"	"	"	"	"	"
2,4,6-Trichlorophenol	330	330	U J	"	"	"	"	"	"
2,4-Dichlorophenol	330	330	U J	"	"	"	"	"	"
2,4-Dimethylphenol	330	330	U J	"	"	"	"	"	"
2,4-Dinitrophenol	1650	1650	U J	"	"	"	"	"	"
2,4-Dinitrotoluene	330	330	U	"	"	"	"	"	"
2,6-Dinitrotoluene	330	330	U	"	"	"	"	"	"
2-Chloronaphthalene	330	330	U	"	"	"	"	"	"
2-Chlorophenol	330	330	U J	"	"	"	"	"	"
2-Methylnaphthalene	330	330	U	"	"	"	"	"	"
2-Methylphenol	330	330	U J	"	"	"	"	"	"
2-Nitroaniline	1650	1650	U	"	"	"	"	"	"
2-Nitrophenol	330	330	U	"	"	"	"	"	"
3,3'-Dichlorobenzidine	660	660	U J	"	"	"	"	"	"
3-Nitroaniline	1650	1650	U	"	"	"	"	"	"
4,6-Dinitro-2-methylphenol	330	330	U J	"	"	"	"	"	"
4-Bromophenyl Phenyl Ether	330	330	U	"	"	"	"	"	"
4-Chloro-3-methylphenol	330	330	U J	"	"	"	"	"	"
4-Chloroaniline	330	330	U J	"	"	"	"	"	"
4-Chlorophenyl Phenyl Ether	330	330	U	"	"	"	"	"	"
4-Methylphenol	330	330	U J	"	"	"	"	"	"
4-Nitroaniline	1650	1650	U	"	"	"	"	"	"
4-Nitrophenol	1650	1650	U J	"	"	"	"	"	"
Acenaphthene	330	330	U	"	"	"	"	"	"
Acenaphthylene	330	330	U	"	"	"	"	"	"
Anthracene	330	330	U	"	"	"	"	"	"
Benz[a]anthracene	330	330	U	"	"	"	"	"	"
Benzo[a] pyrene	330	330	U	"	"	"	"	"	"
Benzo[b] fluoranthene	330	330	U	"	"	"	"	"	"
Benzo[g,h,i] perylene	330	330	U	"	"	"	"	"	"
Benzo[k] fluoranthene	330	330	U	"	"	"	"	"	"
Bis(2-chloroethoxy) methane	330	330	U	"	"	"	"	"	"
Bis(2-chloroethyl) ether	330	330	U J	"	"	"	"	"	"
Bis(2-chloroisopropyl) ether	330	330	U J	"	"	"	"	"	"
Bis(2-ethylhexyl) phthalate	330	330	U	"	"	"	"	"	"
Butyl Benzyl Phthalate	330	330	U	"	"	"	"	"	"
Carbazole	330	330	U	"	"	"	"	"	"
Chrysene	330	330	U	"	"	"	"	"	"
Dibenz[a,h]anthracene	330	330	U	"	"	"	"	"	"
Dibenzofuran	330	330	U	"	"	"	"	"	"

764 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

WC-Hanford, Inc	Project: RC-116	
2620 Fermi Avenue	Project Number: [none]	Reported:
Richland WA, 99354	Project Manager: Joan Kessner	05/11/2009 10:17

J18986
0902067-06 (Solid)

12/5/09

Analyte	Result	Reporting Limit	Qualifier	Units	Dilution	Batch	Prepared	Analyzed	Method

Lionville Laboratory

Semivolatile Organic Compounds by SW846 8270C

Analyte	Result	Reporting Limit	Qualifier	Units	Dilution	Batch	Prepared	Analyzed	Method
Diethyl Phthalate	330	330	U	ug/kg wet	1	0902038	03/03/2009	03/26/2009	8270C
Dimethyl Phthalate	330	330	U	"	"	"	"	"	"
Di-n-butyl Phthalate	330	330	U	"	"	"	"	"	"
Di-n-octyl Phthalate	330	330	U	"	"	"	"	"	"
Fluoranthene	330	330	U	"	"	"	"	"	"
Fluorene	330	330	U	"	"	"	"	"	"
Hexachlorobenzene	330	330	U	"	"	"	"	"	"
Hexachlorobutadiene	330	330	U	"	"	"	"	"	"
Hexachlorocyclopentadiene	330	330	U J	"	"	"	"	"	"
Hexachloroethane	330	330	U J	"	"	"	"	"	"
Indeno[1,2,3-cd]pyrene	330	330	U	"	"	"	"	"	"
Isophorone	330	330	U	"	"	"	"	"	"
Naphthalene	330	330	U	"	"	"	"	"	"
Nitrobenzene	330	330	U	"	"	"	"	"	"
N-Nitrosodi-n-propylamine	330	330	U J	"	"	"	"	"	"
N-Nitrosodiphenylamine	330	330	U	"	"	"	"	"	"
Pentachlorophenol	1650	1650	U J	"	"	"	"	"	"
Phenanthrene	330	330	U J	"	"	"	"	"	"
Phenol	330	330	U J	"	"	"	"	"	"
Pyrene	330	330	U	"	"	"	"	"	"
TIC:Unknown 3	**1530**		B, J	"	"	"	"	"	"
TIC:Unknown 2	**190000**		B, J N	"	"	"	"	"	"
TIC:Unknown 1	**2610**		J ~~N~~ S 11-09	"	"	"	"	"	"
TIC: Alkane 1	**458**		J	"	"	"	"	"	"
TIC:Unknown 4	**1050**		B, J	"	"	"	"	"	"
Surrogate: 2-Fluorophenol		55 %			*25-121*	"	"	"	"
Surrogate: Phenol-d5		59 %			*24-113*	"	"	"	"
Surrogate: Nitrobenzene-d5		55 %			*23-120*	"	"	"	"
Surrogate: 2-Fluorobiphenyl		62 %			*30-115*	"	"	"	"
Surrogate: 2,4,6-Tribromophenol		77 %			*19-122*	"	"	"	"
Surrogate: p-Terphenyl-d14		75 %			*18-137*	"	"	"	"

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WC-Hanford, Inc 2620 Fermi Avenue Richland WA, 99354	Project: RC-116 Project Number: [none] Project Manager: Joan Kessner	**Reported:** 05/11/2009 10:17

J18987
0902067-07 (Solid)

K 12/5/09

Lionville Laboratory

Analyte	Result	Reporting Limit	Qualifier	Units	Dilution	Batch	Prepared	Analyzed	Method
Semivolatile Organic Compounds by SW846 8270C									
1,2,4-Trichlorobenzene	330	330	U	ug/kg wet	1	L903038	03/05/2009	03/26/2009	8270C
1,2-Dichlorobenzene	330	330	U J	"	"	"	"	"	"
1,3-Dichlorobenzene	330	330	U J	"	"	"	"	"	"
1,4-Dichlorobenzene	330	330	U J	"	"	"	"	"	"
2,4,5-Trichlorophenol	330	330	U J	"	"	"	"	"	"
2,4,6-Trichlorophenol	330	330	U J	"	"	"	"	"	"
2,4-Dichlorophenol	330	330	U J	"	"	"	"	"	"
2,4-Dimethylphenol	330	330	U J	"	"	"	"	"	"
2,4-Dinitrophenol	1650	1650	U J	"	"	"	"	"	"
2,4-Dinitrotoluene	330	330	U	"	"	"	"	"	"
2,6-Dinitrotoluene	330	330	U	"	"	"	"	"	"
2-Chloronaphthalene	330	330	U	"	"	"	"	"	"
2-Chlorophenol	330	330	U J	"	"	"	"	"	"
2-Methylnaphthalene	330	330	U	"	"	"	"	"	"
2-Methylphenol	330	330	U J	"	"	"	"	"	"
2-Nitroaniline	1650	1650	U	"	"	"	"	"	"
2-Nitrophenol	330	330	U	"	"	"	"	"	"
3,3'-Dichlorobenzidine	660	660	U J	"	"	"	"	"	"
3-Nitroaniline	1650	1650	U	"	"	"	"	"	"
4,6-Dinitro-2-methylphenol	330	330	U J	"	"	"	"	"	"
4-Bromophenyl Phenyl Ether	330	330	U	"	"	"	"	"	"
4-Chloro-3-methylphenol	330	330	U J	"	"	"	"	"	"
4-Chloroaniline	330	330	U J	"	"	"	"	"	"
4-Chlorophenyl Phenyl Ether	330	330	U	"	"	"	"	"	"
4-Methylphenol	330	330	U J	"	"	"	"	"	"
4-Nitroaniline	1650	1650	U	"	"	"	"	"	"
4-Nitrophenol	1650	1650	U J	"	"	"	"	"	"
Acenaphthene	330	330	U	"	"	"	"	"	"
Acenaphthylene	330	330	U	"	"	"	"	"	"
Anthracene	330	330	U	"	"	"	"	"	"
Benz[a]anthracene	330	330	U	"	"	"	"	"	"
Benzo[a] pyrene	330	330	U	"	"	"	"	"	"
Benzo[b] fluoranthene	330	330	U	"	"	"	"	"	"
Benzo[g,h,i] perylene	330	330	U	"	"	"	"	"	"
Benzo[k] fluoranthene	330	330	U	"	"	"	"	"	"
Bis(2-chloroethoxy) methane	330	330	U	"	"	"	"	"	"
Bis(2-chloroethyl) ether	330	330	U J	"	"	"	"	"	"
Bis(2-chloroisopropyl) ether	330	330	U J	"	"	"	"	"	"
Bis(2-ethylhexyl) phthalate	**936**	330		"	"	"	"	"	"
Butyl Benzyl Phthalate	**66.3**	330	J	"	"	"	"	"	"
Carbazole	330	330	U	"	"	"	"	"	"
Chrysene	330	330	U	"	"	"	"	"	"
Dibenz[a,h]anthracene	330	330	U	"	"	"	"	"	"
Dibenzofuran	330	330	U	"	"	"	"	"	"

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
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WC-Hanford, Inc.
2620 Fermi Avenue
Richland WA, 99354

Project: 8C-116
Project Number: [none]
Project Manager: Joan Kessner

Reported:
05/11/2009 10:17

J18987
0902067-07 (Solid)

V 12/5/09

Analyte	Result	Reporting Limit	Qualifier	Units	Dilution	Batch	Prepared	Analyzed	Method

Lionville Laboratory

Semivolatile Organic Compounds by SW846 8270C

Analyte	Result	Reporting Limit	Qualifier	Units	Dilution	Batch	Prepared	Analyzed	Method
Diethyl Phthalate	330	330	U	ug/kg wet	1	1903038	03/03/2009	03/26/2009	8270C
Dimethyl Phthalate	330	330	U	"	"	"	"	"	"
Di-n-butyl Phthalate	330	330	U	"	"	"	"	"	"
Di-n-octyl Phthalate	330	330	U	"	"	"	"	"	"
Fluoranthene	330	330	U	"	"	"	"	"	"
Fluorene	330	330	U	"	"	"	"	"	"
Hexachlorobenzene	330	330	U	"	"	"	"	"	"
Hexachlorobutadiene	330	330	U	"	"	"	"	"	"
Hexachlorocyclopentadiene	330	330	U J	"	"	"	"	"	"
Hexachloroethane	330	330	U J	"	"	"	"	"	"
Indeno[1,2,3-cd]pyrene	330	330	U	"	"	"	"	"	"
Isophorone	330	330	U	"	"	"	"	"	"
Naphthalene	330	330	U	"	"	"	"	"	"
Nitrobenzene	330	330	U	"	"	"	"	"	"
N-Nitrosodi-n-propylamine	330	330	U J	"	"	"	"	"	"
N-Nitrosodiphenylamine	330	330	U	"	"	"	"	"	"
Pentachlorophenol	1650	1650	U J	"	"	"	"	"	"
Phenanthrene	330	330	U J	"	"	"	"	"	"
Phenol	330	330	U J	"	"	"	"	"	"
Pyrene	330	330	U	"	"	"	"	"	"
TIC:Unknown 3	**570**		J, ~~N~~ A	"	"	"	"	"	"
TIC:Unknown 2	**218000**		B, J S 11-59	"	"	"	"	"	"
TIC:Unknown 1	**7320**		J, ~~N~~	"	"	"	"	"	"
TIC:Aldol Condensate 1	**280**		J A	"	"	"	"	"	"
TIC:Unknown 4	**173**		J, ~~N~~	"	"	"	"	"	"
Surrogate: 2-Fluorophenol		64 %			*25-121*	"	"	"	"
Surrogate: Phenol-d5		72 %			*24-113*	"	"	"	"
Surrogate: Nitrobenzene-d5		76 %			*23-120*	"	"	"	"
Surrogate: 2-Fluorobiphenyl		77 %			*30-115*	"	"	"	"
Surrogate: 2,4,6-Tribromophenol		52 %			*19-122*	"	"	"	"
Surrogate: p-Terphenyl-d14		83 %			*18-137*	"	"	"	"

LVL
LIONVILLE LABORATORY

264 Welsh Pool Road
Exton, PA 19341
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WC-Hanford, Inc. 2620 Fermi Avenue Richland WA, 99354	Project: RC-116 Project Number: [none] Project Manager: Joan Kessner	**Reported:** 03/11/2009 10:17

J18988
0902067-08 (Solid)

K 12/5/09

Analyte	Result	Reporting Limit	Qualifier	Units	Dilution	Batch	Prepared	Analyzed	Method

Lionville Laboratory

Semivolatile Organic Compounds by SW846 8270C

Analyte	Result	Reporting Limit	Qualifier	Units	Dilution	Batch	Prepared	Analyzed	Method
1,2,4-Trichlorobenzene	330	330	U	ug/Kg wet	1	1903038	03/05/2009	03/26/2009	8270C
1,2-Dichlorobenzene	330	330	U J	"	"	"	"	"	"
1,3-Dichlorobenzene	330	330	U J	"	"	"	"	"	"
1,4-Dichlorobenzene	330	330	U J	"	"	"	"	"	"
2,4,5-Trichlorophenol	330	330	U J	"	"	"	"	"	"
2,4,6-Trichlorophenol	330	330	U J	"	"	"	"	"	"
2,4-Dichlorophenol	330	330	U J	"	"	"	"	"	"
2,4-Dimethylphenol	330	330	U J	"	"	"	"	"	"
2,4-Dinitrophenol	1650	1650	U J	"	"	"	"	"	"
2,4-Dinitrotoluene	330	330	U	"	"	"	"	"	"
2,6-Dinitrotoluene	330	330	U	"	"	"	"	"	"
2-Chloronaphthalene	330	330	U	"	"	"	"	"	"
2-Chlorophenol	330	330	U J	"	"	"	"	"	"
2-Methylnaphthalene	330	330	U	"	"	"	"	"	"
2-Methylphenol	330	330	U J	"	"	"	"	"	"
2-Nitroaniline	1650	1650	U	"	"	"	"	"	"
2-Nitrophenol	330	330	U	"	"	"	"	"	"
3,3'-Dichlorobenzidine	660	660	U J	"	"	"	"	"	"
3-Nitroaniline	1650	1650	U	"	"	"	"	"	"
4,6-Dinitro-2-methylphenol	330	330	U J	"	"	"	"	"	"
4-Bromophenyl Phenyl Ether	330	330	U	"	"	"	"	"	"
4-Chloro-3-methylphenol	330	330	U J	"	"	"	"	"	"
4-Chloroaniline	330	330	U J	"	"	"	"	"	"
4-Chlorophenyl Phenyl Ether	330	330	U	"	"	"	"	"	"
4-Methylphenol	330	330	U J	"	"	"	"	"	"
4-Nitroaniline	1650	1650	U	"	"	"	"	"	"
4-Nitrophenol	1650	1650	U J	"	"	"	"	"	"
Acenaphthene	330	330	U	"	"	"	"	"	"
Acenaphthylene	330	330	U	"	"	"	"	"	"
Anthracene	330	330	U	"	"	"	"	"	"
Benz[a]anthracene	330	330	U	"	"	"	"	"	"
Benzo[a] pyrene	330	330	U	"	"	"	"	"	"
Benzo[b] fluoranthene	330	330	U	"	"	"	"	"	"
Benzo[g,h,i] perylene	330	330	U	"	"	"	"	"	"
Benzo[k] fluoranthene	330	330	U	"	"	"	"	"	"
Bis(2-chloroethoxy) methane	330	330	U	"	"	"	"	"	"
Bis(2-chloroethyl) ether	330	330	U J	"	"	"	"	"	"
Bis(2-chloroisopropyl) ether	330	330	U J	"	"	"	"	"	"
Bis(2-ethylhexyl) phthalate	**114**	330	J	"	"	"	"	"	"
Butyl Benzyl Phthalate	330	330	U	"	"	"	"	"	"
Carbazole	330	330	U	"	"	"	"	"	"
Chrysene	330	330	U	"	"	"	"	"	"
Dibenz[a,h]anthracene	330	330	U	"	"	"	"	"	"
Dibenzofuran	330	330	U	"	"	"	"	"	"

264 Welsh Pool Road
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WC-Hanford, Inc 2620 Fermi Avenue Richland WA, 99354	Project: RC-116 Project Number: [none] Project Manager: Joan Kessner	Reported: 05/11/2009 10:17

J18988
0902067-08 (Solid)

12/5/09

Analyte	Result	Reporting Limit	Qualifier	Units	Dilution	Batch	Prepared	Analyzed	Method

Lionville Laboratory

Semivolatile Organic Compounds by SW846 8270C

Analyte	Result	Reporting Limit	Qualifier	Units	Dilution	Batch	Prepared	Analyzed	Method
Diethyl Phthalate	330	330	U	ug/kg wet	1	1903018	03/05/2009	03/26/2009	8270C
Dimethyl Phthalate	330	330	U	"	"	"	"	"	"
Di-n-butyl Phthalate	330	330	U	"	"	"	"	"	"
Di-n-octyl Phthalate	330	330	U	"	"	"	"	"	"
Fluoranthene	330	330	U	"	"	"	"	"	"
Fluorene	330	330	U	"	"	"	"	"	"
Hexachlorobenzene	330	330	U	"	"	"	"	"	"
Hexachlorobutadiene	330	330	U	"	"	"	"	"	"
Hexachlorocyclopentadiene	330	330	U	"	"	"	"	"	"
Hexachloroethane	330	330	U J	"	"	"	"	"	"
Indeno[1,2,3-cd]pyrene	330	330	U J	"	"	"	"	"	"
Isophorone	330	330	U	"	"	"	"	"	"
Naphthalene	330	330	U	"	"	"	"	"	"
Nitrobenzene	330	330	U	"	"	"	"	"	"
N-Nitrosodi-n-propylamine	330	330	U	"	"	"	"	"	"
N-Nitrosodiphenylamine	330	330	U J	"	"	"	"	"	"
Pentachlorophenol	1650	1650	U	"	"	"	"	"	"
Phenanthrene	330	330	U J	"	"	"	"	"	"
Phenol	330	330	U J	"	"	"	"	"	"
Pyrene	330	330	U J	"	"	"	"	"	"
TIC:Unknown 3	**286**		J, N M	"	"	"	"	"	"
TIC:Unknown 2	**185000**		D, J 5-11-09	"	"	"	"	"	"
TIC:Alkane 2	**380**		J	"	"	"	"	"	"
TIC:Alkane 1	**204**		J	"	"	"	"	"	"
TIC:Unknown 1	**4280**		J, N	"	"	"	"	"	"
Surrogate: 2-Fluorophenol		*71 %*			*25-121*	"	"	"	"
Surrogate: Phenol-d5		*58 %*			*24-113*	"	"	"	"
Surrogate: Nitrobenzene-d5		*78 %*			*23-120*	"	"	"	"
Surrogate: 2-Fluorobiphenyl		*82 %*			*30-115*	"	"	"	"
Surrogate: 2,4,6-Tribromophenol		*57 %*			*19-122*	"	"	"	"
Surrogate: p-Terphenyl-d14		*96 %*			*18-137*	"	"	"	"

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WC-Hanford, Inc 2620 Fermi Avenue Richland WA, 99354	Project: RC-116 Project Number: [none] Project Manager: Joan Kessner	Reported: 05/11/2009 10:17

J18990

0902067-09 (Solid)

12/5/09

Analyte	Result	Reporting Limit	Qualifier	Units	Dilution	Batch	Prepared	Analyzed	Method

Lionville Laboratory

Semivolatile Organic Compounds by SW846 8270C

Analyte	Result	Reporting Limit	Qualifier	Units	Dilution	Batch	Prepared	Analyzed	Method
1,2,4-Trichlorobenzene	330	330	U	ug/kg wet	1	9C03018	03/05/2009	03/26/2009	8270C
1,2-Dichlorobenzene	330	330	U J	"	"	"	"	"	"
1,3-Dichlorobenzene	330	330	U J	"	"	"	"	"	"
1,4-Dichlorobenzene	330	330	U J	"	"	"	"	"	"
2,4,5-Trichlorophenol	330	330	U J	"	"	"	"	"	"
2,4,6-Trichlorophenol	330	330	U J	"	"	"	"	"	"
2,4-Dichlorophenol	330	330	U J	"	"	"	"	"	"
2,4-Dimethylphenol	330	330	U J	"	"	"	"	"	"
2,4-Dinitrophenol	1650	1650	U J	"	"	"	"	"	"
2,4-Dinitrotoluene	330	330	U	"	"	"	"	"	"
2,6-Dinitrotoluene	330	330	U	"	"	"	"	"	"
2-Chloronaphthalene	330	330	U	"	"	"	"	"	"
2-Chlorophenol	330	330	U J	"	"	"	"	"	"
2-Methylnaphthalene	330	330	U	"	"	"	"	"	"
2-Methylphenol	330	330	U J	"	"	"	"	"	"
2-Nitroaniline	1650	1650	U	"	"	"	"	"	"
2-Nitrophenol	330	330	U	"	"	"	"	"	"
3,3'-Dichlorobenzidine	660	660	U J	"	"	"	"	"	"
3-Nitroaniline	1650	1650	U	"	"	"	"	"	"
4,6-Dinitro-2-methylphenol	330	330	U J	"	"	"	"	"	"
4-Bromophenyl Phenyl Ether	330	330	U	"	"	"	"	"	"
4-Chloro-3-methylphenol	330	330	U J	"	"	"	"	"	"
4-Chloroaniline	330	330	U J	"	"	"	"	"	"
4-Chlorophenyl Phenyl Ether	330	330	U	"	"	"	"	"	"
4-Methylphenol	330	330	U J	"	"	"	"	"	"
4-Nitroaniline	1650	1650	U	"	"	"	"	"	"
4-Nitrophenol	1650	1650	U J	"	"	"	"	"	"
Acenaphthene	330	330	U	"	"	"	"	"	"
Acenaphthylene	330	330	U	"	"	"	"	"	"
Anthracene	330	330	U	"	"	"	"	"	"
Benz[a]anthracene	330	330	U	"	"	"	"	"	"
Benzo[a] pyrene	330	330	U	"	"	"	"	"	"
Benzo[b] fluoranthene	330	330	U	"	"	"	"	"	"
Benzo[g,h,i] perylene	330	330	U	"	"	"	"	"	"
Benzo[k] fluoranthene	330	330	U	"	"	"	"	"	"
Bis(2-chloroethoxy) methane	330	330	U	"	"	"	"	"	"
Bis(2-chloroethyl) ether	330	330	U J	"	"	"	"	"	"
Bis(2-chloroisopropyl) ether	330	330	U J	"	"	"	"	"	"
Bis(2-ethylhexyl) phthalate	330	330	U	"	"	"	"	"	"
Butyl Benzyl Phthalate	330	330	U	"	"	"	"	"	"
Carbazole	330	330	U	"	"	"	"	"	"
Chrysene	330	330	U	"	"	"	"	"	"
Dibenz[a,h]anthracene	330	330	U	"	"	"	"	"	"
Dibenzofuran	330	330	U	"	"	"	"	"	"

208 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

WC-Hanford, Inc. 2620 Fermi Avenue Richland WA, 99354	Project: RCS-11A Project Number: [none] Project Manager: Joan Kessner	Reported: 05/11/2009 10:17

J18990
0902067-09 (Solid)

V 12/5/09

Lionville Laboratory

Semivolatile Organic Compounds by SW846 8270C

Analyte	Result	Reporting Limit	Qualifier	Units	Dilution	Batch	Prepared	Analyzed	Method
Diethyl Phthalate	330	330	U	ug/kg wet	1	L903038	03/05/2009	03/26/2009	8270C
Dimethyl Phthalate	330	330	U	-	-	-	-	-	-
Di-n-butyl Phthalate	330	330	U	-	-	-	-	-	-
Di-n-octyl Phthalate	330	330	U	-	-	-	-	-	-
Fluoranthene	330	330	U	-	-	-	-	-	-
Fluorene	330	330	U	-	-	-	-	-	-
Hexachlorobenzene	330	330	U	-	-	-	-	-	-
Hexachlorobutadiene	330	330	U	-	-	-	-	-	-
Hexachlorocyclopentadiene	330	330	U J	-	-	-	-	-	-
Hexachloroethane	330	330	U J	-	-	-	-	-	-
Indeno[1,2,3-cd]pyrene	330	330	U	-	-	-	-	-	-
Isophorone	330	330	U	-	-	-	-	-	-
Naphthalene	330	330	U	-	-	-	-	-	-
Nitrobenzene	330	330	U	-	-	-	-	-	-
N-Nitrosodi-n-propylamine	330	330	U J	-	-	-	-	-	-
N-Nitrosodiphenylamine	330	330	U	-	-	-	-	-	-
Pentachlorophenol	1650	1650	U J	-	-	-	-	-	-
Phenanthrene	330	330	U J	-	-	-	-	-	-
Phenol	330	330	U J	-	-	-	-	-	-
Pyrene	330	330	U	-	-	-	-	-	-
TIC: Unknown 3	**10400**		J, ~~N~~ M	-	-	-	-	-	-
TIC: Unknown 4	**1730**		D, J [illegible]	-	-	-	-	-	-
TIC: Unknown 2	**195000**		D, J	-	-	-	-	-	-
TIC: Unknown 1	**4860**		J, ~~N~~	-	-	-	-	-	-
TIC: Unknown 5	**623**		J	-	-	-	-	-	-
Surrogate: 2-Fluorophenol		*50 %*			*25-121*	-	-	-	-
Surrogate: Phenol-d5		*59 %*			*24-113*	-	-	-	-
Surrogate: Nitrobenzene-d5		*62 %*			*23-120*	-	-	-	-
Surrogate: 2-Fluorobiphenyl		*64 %*			*30-115*	-	-	-	-
Surrogate: 2,4,6-Tribromophenol		*50 %*			*19-122*	-	-	-	-
Surrogate: p-Terphenyl-d14		*73 %*			*18-137*	-	-	-	-

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

WC Hanford, Inc
2620 Fermi Avenue
Richland WA, 99354

Project: RC 116
Project Number: [none]
Project Manager: Joan Kessner

Reported:
03/31/2009 10:17

J18991
0902067-10 (Solid)

12/5/09

Lionville Laboratory

Semivolatile Organic Compounds by SW846 8270C

Analyte	Result	Reporting Limit	Qualifier	Units	Dilution	Batch	Prepared	Analyzed	Method
1,2,4-Trichlorobenzene	330	330	U	ug/kg wet	1	9031018	03/05/2009	03/20/2009	8270C
1,2-Dichlorobenzene	330	330	U J	"	"	"	"	"	"
1,3-Dichlorobenzene	330	330	U J	"	"	"	"	"	"
1,4-Dichlorobenzene	330	330	U J	"	"	"	"	"	"
2,4,5-Trichlorophenol	330	330	U J	"	"	"	"	"	"
2,4,6-Trichlorophenol	330	330	U J	"	"	"	"	"	"
2,4-Dichlorophenol	330	330	U J	"	"	"	"	"	"
2,4-Dimethylphenol	330	330	U J	"	"	"	"	"	"
2,4-Dinitrophenol	1650	1650	U J	"	"	"	"	"	"
2,4-Dinitrotoluene	330	330	U	"	"	"	"	"	"
2,6-Dinitrotoluene	330	330	U	"	"	"	"	"	"
2-Chloronaphthalene	330	330	U	"	"	"	"	"	"
2-Chlorophenol	330	330	U J	"	"	"	"	"	"
2-Methylnaphthalene	330	330	U	"	"	"	"	"	"
2-Methylphenol	330	330	U J	"	"	"	"	"	"
2-Nitroaniline	1650	1650	U	"	"	"	"	"	"
2-Nitrophenol	330	330	U	"	"	"	"	"	"
3,3'-Dichlorobenzidine	660	660	U J	"	"	"	"	"	"
3-Nitroaniline	1650	1650	U	"	"	"	"	"	"
4,6-Dinitro-2-methylphenol	330	330	U J	"	"	"	"	"	"
4-Bromophenyl Phenyl Ether	330	330	U	"	"	"	"	"	"
4-Chloro-3-methylphenol	330	330	U J	"	"	"	"	"	"
4-Chloroaniline	330	330	U J	"	"	"	"	"	"
4-Chlorophenyl Phenyl Ether	330	330	U	"	"	"	"	"	"
4-Methylphenol	330	330	U J	"	"	"	"	"	"
4-Nitroaniline	1650	1650	U	"	"	"	"	"	"
4-Nitrophenol	1650	1650	U J	"	"	"	"	"	"
Acenaphthene	330	330	U	"	"	"	"	"	"
Acenaphthylene	330	330	U	"	"	"	"	"	"
Anthracene	330	330	U	"	"	"	"	"	"
Benz[a]anthracene	330	330	U	"	"	"	"	"	"
Benzo[a] pyrene	330	330	U	"	"	"	"	"	"
Benzo[b] fluoranthene	330	330	U	"	"	"	"	"	"
Benzo[g,h,i] perylene	330	330	U	"	"	"	"	"	"
Benzo[k] fluoranthene	330	330	U	"	"	"	"	"	"
Bis(2-chloroethoxy) methane	330	330	U	"	"	"	"	"	"
Bis(2-chloroethyl) ether	330	330	U J	"	"	"	"	"	"
Bis(2-chloroisopropyl) ether	330	330	U J	"	"	"	"	"	"
Bis(2-ethylhexyl) phthalate	124	330	J	"	"	"	"	"	"
Butyl Benzyl Phthalate	330	330	U	"	"	"	"	"	"
Carbazole	330	330	U	"	"	"	"	"	"
Chrysene	330	330	U	"	"	"	"	"	"
Dibenz[a,h]anthracene	330	330	U	"	"	"	"	"	"
Dibenzofuran	330	330	U	"	"	"	"	"	"

204 Welsh Pool Road
Exton, PA 19341
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WC-Hanford, Inc 2620 Fermi Avenue Richland WA, 99354	Project: RCS116 Project Number: [none] Project Manager: Joan Kessner	**Reported:** 05/11/2009 10:17

J18991
0902067-10 (Solid)

Vr 12/5/09

Lionville Laboratory

Semivolatile Organic Compounds by SW846 8270C

Analyte	Result	Reporting Limit	Qualifier	Units	Dilution	Batch	Prepared	Analyzed	Method
Diethyl Phthalate	330	330	U	ug/kg wet	1	9030038	03/03/2009	03/26/2009	8270C
Dimethyl Phthalate	330	330	U	"	"	"	"	"	"
Di-n-butyl Phthalate	330	330	U	"	"	"	"	"	"
Di-n-octyl Phthalate	330	330	U	"	"	"	"	"	"
Fluoranthene	330	330	U	"	"	"	"	"	"
Fluorene	330	330	U	"	"	"	"	"	"
Hexachlorobenzene	330	330	U	"	"	"	"	"	"
Hexachlorobutadiene	330	330	U	"	"	"	"	"	"
Hexachlorocyclopentadiene	330	330	U J	"	"	"	"	"	"
Hexachloroethane	330	330	U J	"	"	"	"	"	"
Indeno[1,2,3-cd]pyrene	330	330	U	"	"	"	"	"	"
Isophorone	330	330	U	"	"	"	"	"	"
Naphthalene	330	330	U	"	"	"	"	"	"
Nitrobenzene	330	330	U	"	"	"	"	"	"
N-Nitrosodi-n-propylamine	330	330	U J	"	"	"	"	"	"
N-Nitrosodiphenylamine	330	330	U	"	"	"	"	"	"
Pentachlorophenol	1650	1650	U J	"	"	"	"	"	"
Phenanthrene	330	330	U J	"	"	"	"	"	"
Phenol	330	330	U J	"	"	"	"	"	"
Pyrene	330	330	U	"	"	"	"	"	"
TIC:Unknown 4	**2420**		B, J M	"	"	"	"	"	"
TIC:Unknown 3	**11100**		J, M 3-11-09	"	"	"	"	"	"
TIC:Unknown 2	**224000**		B, J	"	"	"	"	"	"
TIC:Unknown 1	**6470**		J, M	"	"	"	"	"	"
TIC:Unknown 5	**1480**		B, J	"	"	"	"	"	"
Surrogate: 2-Fluorophenol		*63 %*			*25-121*	"	"	"	"
Surrogate: Phenol-d5		*78 %*			*24-113*	"	"	"	"
Surrogate: Nitrobenzene-d5		*83 %*			*23-120*	"	"	"	"
Surrogate: 2-Fluorobiphenyl		*86 %*			*30-115*	"	"	"	"
Surrogate: 2,4,6-Tribromophenol		*64 %*			*19-122*	"	"	"	"
Surrogate: p-Terphenyl-d14		*90 %*			*18-137*	"	"	"	"

208 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
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WCH-Hanford, Inc 2620 Fermi Avenue Richland WA, 99354	Project: RC-116 Project Number: [none] Project Manager: Joan Kessner	**Reported:** 03/11/2009 10:17

J18992

0902067-11 (Solid)

Lionville Laboratory

12/5/09

Analyte	Result	Reporting Limit	Qualifier	Units	Dilution	Batch	Prepared	Analyzed	Method
Semivolatile Organic Compounds by SW846 8270C									
1,2,4-Trichlorobenzene	330	330	U	ug/kg wet	1	1903038	03/05/2009	03/26/2009	8270C
1,2-Dichlorobenzene	330	330	U J	"	"	"	"	"	"
1,3-Dichlorobenzene	330	330	U J	"	"	"	"	"	"
1,4-Dichlorobenzene	330	330	U J	"	"	"	"	"	"
2,4,5-Trichlorophenol	330	330	U J	"	"	"	"	"	"
2,4,6-Trichlorophenol	330	330	U J	"	"	"	"	"	"
2,4-Dichlorophenol	330	330	U J	"	"	"	"	"	"
2,4-Dimethylphenol	330	330	U J	"	"	"	"	"	"
2,4-Dinitrophenol	1650	1650	U J	"	"	"	"	"	"
2,4-Dinitrotoluene	330	330	U	"	"	"	"	"	"
2,6-Dinitrotoluene	330	330	U	"	"	"	"	"	"
2-Chloronaphthalene	330	330	U	"	"	"	"	"	"
2-Chlorophenol	330	330	U J	"	"	"	"	"	"
2-Methylnaphthalene	330	330	U	"	"	"	"	"	"
2-Methylphenol	330	330	U J	"	"	"	"	"	"
2-Nitroaniline	1650	1650	U	"	"	"	"	"	"
2-Nitrophenol	330	330	U	"	"	"	"	"	"
3,3'-Dichlorobenzidine	660	660	U J	"	"	"	"	"	"
3-Nitroaniline	1650	1650	U	"	"	"	"	"	"
4,6-Dinitro-2-methylphenol	330	330	U J	"	"	"	"	"	"
4-Bromophenyl Phenyl Ether	330	330	U	"	"	"	"	"	"
4-Chloro-3-methylphenol	330	330	U J	"	"	"	"	"	"
4-Chloroaniline	330	330	U J	"	"	"	"	"	"
4-Chlorophenyl Phenyl Ether	330	330	U	"	"	"	"	"	"
4-Methylphenol	330	330	U J	"	"	"	"	"	"
4-Nitroaniline	1650	1650	U	"	"	"	"	"	"
4-Nitrophenol	1650	1650	U J	"	"	"	"	"	"
Acenaphthene	330	330	U	"	"	"	"	"	"
Acenaphthylene	330	330	U	"	"	"	"	"	"
Anthracene	330	330	U	"	"	"	"	"	"
Benz[a]anthracene	330	330	U	"	"	"	"	"	"
Benzo[a] pyrene	330	330	U	"	"	"	"	"	"
Benzo[b] fluoranthene	330	330	U	"	"	"	"	"	"
Benzo[g,h,i] perylene	330	330	U	"	"	"	"	"	"
Benzo[k] fluoranthene	330	330	U	"	"	"	"	"	"
Bis(2-chloroethoxy) methane	330	330	U	"	"	"	"	"	"
Bis(2-chloroethyl) ether	330	330	U J	"	"	"	"	"	"
Bis(2-chloroisopropyl) ether	330	330	U J	"	"	"	"	"	"
Bis(2-ethylhexyl) phthalate	330	330	U	"	"	"	"	"	"
Butyl Benzyl Phthalate	330	330	U	"	"	"	"	"	"
Carbazole	330	330	U	"	"	"	"	"	"
Chrysene	330	330	U	"	"	"	"	"	"
Dibenz[a,h]anthracene	330	330	U	"	"	"	"	"	"
Dibenzofuran	330	330	U	"	"	"	"	"	"

264 Welsh Pool Road
Exton, PA 19341
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WC Hanford, Inc.
2620 Fermi Avenue
Richland WA, 99354

Project: RC 116
Project Number: [none]
Project Manager: Joan Kessner

Reported:
05/11/2009 10:17

J18992
0902067-11 (Solid)

12/3/09

Analyte	Result	Reporting Limit	Qualifier	Units	Dilution	Batch	Prepared	Analyzed	Method
Lionville Laboratory									
Semivolatile Organic Compounds by SW846 8270C									
Diethyl Phthalate	330	330	U	ug/kg wet	1	[illegible]	03/05/2009	03/26/2009	8270C
Dimethyl Phthalate	330	330	U	"	"	"	"	"	"
Di-n-butyl Phthalate	330	330	U	"	"	"	"	"	"
Di-n-octyl Phthalate	330	330	U	"	"	"	"	"	"
Fluoranthene	330	330	U	"	"	"	"	"	"
Fluorene	330	330	U	"	"	"	"	"	"
Hexachlorobenzene	330	330	U	"	"	"	"	"	"
Hexachlorobutadiene	330	330	U	"	"	"	"	"	"
Hexachlorocyclopentadiene	330	330	U J	"	"	"	"	"	"
Hexachloroethane	330	330	U J	"	"	"	"	"	"
Indeno[1,2,3-cd]pyrene	330	330	U	"	"	"	"	"	"
Isophorone	330	330	U	"	"	"	"	"	"
Naphthalene	330	330	U	"	"	"	"	"	"
Nitrobenzene	330	330	U	"	"	"	"	"	"
N-Nitrosodi-n-propylamine	330	330	U J	"	"	"	"	"	"
N-Nitrosodiphenylamine	330	330	U	"	"	"	"	"	"
Pentachlorophenol	1650	1650	U J	"	"	"	"	"	"
Phenanthrene	330	330	U J	"	"	"	"	"	"
Phenol	330	330	U J	"	"	"	"	"	"
Pyrene	330	330	U	"	"	"	"	"	"
TIC:Unknown 5	**2200**		B, J M	"	"	"	"	"	"
TIC:Unknown 4	**3110**		B, J [illegible]	"	"	"	"	"	"
TIC:Unknown 3	**11500**		J N	"	"	"	"	"	"
TIC:Unknown 2	**190000**		B, J	"	"	"	"	"	"
TIC:Unknown 1	**4040**		J N	"	"	"	"	"	"
Surrogate: 2-Fluorophenol		*60 %*		*25-121*		"	"	"	"
Surrogate: Phenol-d5		*70 %*		*24-113*		"	"	"	"
Surrogate: Nitrobenzene-d5		*74 %*		*23-120*		"	"	"	"
Surrogate: 2-Fluorobiphenyl		*77 %*		*30-115*		"	"	"	"
Surrogate: 2,4,6-Tribromophenol		*51 %*		*19-122*		"	"	"	"
Surrogate: p-Terphenyl-d14		*53 %*		*18-137*		"	"	"	"

WC-Hanford, Inc	Project: RC-116	
2620 Fermi Avenue	Project Number: [none]	Reported:
Richland WA, 99354	Project Manager: Joan Kessner	03/11/2009 10:17

J189H5

0902067-12 (Solid)

12/5/09

Analyte	Result	Reporting Limit	Qualifier	Units	Dilution	Batch	Prepared	Analyzed	Method

Lionville Laboratory

Semivolatile Organic Compounds by SW846 8270C

Analyte	Result	Reporting Limit	Qualifier	Units	Dilution	Batch	Prepared	Analyzed	Method
1,2,4-Trichlorobenzene	330	330	U	ug/kg wet	1	1903038	03/05/2009	01/27/2009	8270C
1,2-Dichlorobenzene	330	330	U J	"	"	"	"	"	"
1,3-Dichlorobenzene	330	330	U J	"	"	"	"	"	"
1,4-Dichlorobenzene	330	330	U J	"	"	"	"	"	"
2,4,5-Trichlorophenol	330	330	U J	"	"	"	"	"	"
2,4,6-Trichlorophenol	330	330	U J	"	"	"	"	"	"
2,4-Dichlorophenol	330	330	U J	"	"	"	"	"	"
2,4-Dimethylphenol	330	330	U J	"	"	"	"	"	"
2,4-Dinitrophenol	1650	1650	U J	"	"	"	"	"	"
2,4-Dinitrotoluene	330	330	U	"	"	"	"	"	"
2,6-Dinitrotoluene	330	330	U	"	"	"	"	"	"
2-Chloronaphthalene	330	330	U	"	"	"	"	"	"
2-Chlorophenol	330	330	U J	"	"	"	"	"	"
2-Methylnaphthalene	330	330	U	"	"	"	"	"	"
2-Methylphenol	330	330	U J	"	"	"	"	"	"
2-Nitroaniline	1650	1650	U	"	"	"	"	"	"
2-Nitrophenol	330	330	U	"	"	"	"	"	"
3,3'-Dichlorobenzidine	660	660	U J	"	"	"	"	"	"
3-Nitroaniline	1650	1650	U	"	"	"	"	"	"
4,6-Dinitro-2-methylphenol	330	330	U J	"	"	"	"	"	"
4-Bromophenyl Phenyl Ether	330	330	U	"	"	"	"	"	"
4-Chloro-3-methylphenol	330	330	U J	"	"	"	"	"	"
4-Chloroaniline	330	330	U J	"	"	"	"	"	"
4-Chlorophenyl Phenyl Ether	330	330	U	"	"	"	"	"	"
4-Methylphenol	330	330	U J	"	"	"	"	"	"
4-Nitroaniline	1650	1650	U	"	"	"	"	"	"
4-Nitrophenol	1650	1650	U J	"	"	"	"	"	"
Acenaphthene	330	330	U	"	"	"	"	"	"
Acenaphthylene	330	330	U	"	"	"	"	"	"
Anthracene	330	330	U	"	"	"	"	"	"
Benz[a]anthracene	330	330	U	"	"	"	"	"	"
Benzo[a] pyrene	330	330	U	"	"	"	"	"	"
Benzo[b] fluoranthene	330	330	U	"	"	"	"	"	"
Benzo[g,h,i] perylene	330	330	U	"	"	"	"	"	"
Benzo[k] fluoranthene	330	330	U	"	"	"	"	"	"
Bis(2-chloroethoxy) methane	330	330	U	"	"	"	"	"	"
Bis(2-chloroethyl) ether	330	330	U J	"	"	"	"	"	"
Bis(2-chloroisopropyl) ether	330	330	U J	"	"	"	"	"	"
Bis(2-ethylhexyl) phthalate	330	330	U	"	"	"	"	"	"
Butyl Benzyl Phthalate	330	330	U	"	"	"	"	"	"
Carbazole	330	330	U	"	"	"	"	"	"
Chrysene	330	330	U	"	"	"	"	"	"
Dibenz[a,h]anthracene	330	330	U	"	"	"	"	"	"
Dibenzofuran	330	330	U	"	"	"	"	"	"

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

WC Hanford, Inc 2620 Fermi Avenue Richland WA 99354	Project: RC-116 Project Number: [none] Project Manager: Joan Kessner	Reported: 05/11/2009 10:17

J189B5
0902067-12 (Solid)

12/5/09

Analyte	Result	Reporting Limit	Qualifier	Units	Dilution	Batch	Prepared	Analyzed	Method

Lionville Laboratory

Semivolatile Organic Compounds by SW846 8270C

Analyte	Result	Reporting Limit	Qualifier	Units	Dilution	Batch	Prepared	Analyzed	Method
Diethyl Phthalate	330	330	U	ug/kg wet	1	0903038	03/09/2009	03/23/2009	8270C
Dimethyl Phthalate	330	330	U	"	"	"	"	"	"
Di-n-butyl Phthalate	330	330	U	"	"	"	"	"	"
Di-n-octyl Phthalate	330	330	U	"	"	"	"	"	"
Fluoranthene	330	330	U	"	"	"	"	"	"
Fluorene	330	330	U	"	"	"	"	"	"
Hexachlorobenzene	330	330	U	"	"	"	"	"	"
Hexachlorobutadiene	330	330	U	"	"	"	"	"	"
Hexachlorocyclopentadiene	330	330	U J	"	"	"	"	"	"
Hexachloroethane	330	330	U J	"	"	"	"	"	"
Indeno[1,2,3-cd]pyrene	330	330	U	"	"	"	"	"	"
Isophorone	330	330	U	"	"	"	"	"	"
Naphthalene	330	330	U	"	"	"	"	"	"
Nitrobenzene	330	330	U	"	"	"	"	"	"
N-Nitrosodi-n-propylamine	330	330	U J	"	"	"	"	"	"
N-Nitrosodiphenylamine	330	330	U	"	"	"	"	"	"
Pentachlorophenol	1650	1650	U J	"	"	"	"	"	"
Phenanthrene	330	330	U J	"	"	"	"	"	"
Phenol	330	330	U J	"	"	"	"	"	"
Pyrene	330	330	U	"	"	"	"	"	"
TIC:Unknown 5	**1260**		B, J	"	"	"	"	"	"
TIC:Unknown 4	**601**		J M	"	"	"	"	"	"
TIC:Unknown 2	**273000**		B, J 5-11-09	"	"	"	"	"	"
TIC:Unknown 1	**9210**		J	"	"	"	"	"	"
TIC:Unknown 3	**595**		J	"	"	"	"	"	"
Surrogate: 2-Fluorophenol		*61 %*			*25-121*	"	"	"	"
Surrogate: Phenol-d5		*66 %*			*24-113*	"	"	"	"
Surrogate: Nitrobenzene-d5		*71 %*			*23-120*	"	"	"	"
Surrogate: 2-Fluorobiphenyl		*71 %*			*30-115*	"	"	"	"
Surrogate: 2,4,6-Tribromophenol		*67 %*			*19-122*	"	"	"	"
Surrogate: p-Terphenyl-d14		*74 %*			*18-137*	"	"	"	"

WC-Hanford, Inc
2620 Fermi Avenue
Richland WA, 99354

Project: RC-116
Project Number: [none]
Project Manager: Joan Kessner

Reported:
04/11/2009 10:17

J189B6
0902067-13 (Solid)

V 12/5/09

Lionville Laboratory

Semivolatile Organic Compounds by SW846 8270C

Analyte	Result	Reporting Limit	Qualifier	Units	Dilution	Batch	Prepared	Analyzed	Method
1,2,4-Trichlorobenzene	990	990	U	ug/kg wet	5	1901018	03/05/2009	03/28/2009	8270C
1,2-Dichlorobenzene	990	990	U J	-	-	-	-	-	-
1,3-Dichlorobenzene	990	990	U J	-	-	-	-	-	-
1,4-Dichlorobenzene	990	990	U J	-	-	-	-	-	-
2,4,5-Trichlorophenol	990	990	U J	-	-	-	-	-	-
2,4,6-Trichlorophenol	990	990	U J	-	-	-	-	-	-
2,4-Dichlorophenol	990	990	U J	-	-	-	-	-	-
2,4-Dimethylphenol	990	990	U J	-	-	-	-	-	-
2,4-Dinitrophenol	4950	4950	U J	-	-	-	-	-	-
2,4-Dinitrotoluene	990	990	U	-	-	-	-	-	-
2,6-Dinitrotoluene	990	990	U	-	-	-	-	-	-
2-Chloronaphthalene	990	990	U	-	-	-	-	-	-
2-Chlorophenol	990	990	U J	-	-	-	-	-	-
2-Methylnaphthalene	990	990	U	-	-	-	-	-	-
2-Methylphenol	990	990	U J	-	-	-	-	-	-
2-Nitroaniline	4950	4950	U	-	-	-	-	-	-
2-Nitrophenol	990	990	U	-	-	-	-	-	-
3,3'-Dichlorobenzidine	1980	1980	U J	-	-	-	-	-	-
3-Nitroaniline	4950	4950	U	-	-	-	-	-	-
4,6-Dinitro-2-methylphenol	990	990	U J	-	-	-	-	-	-
4-Bromophenyl Phenyl Ether	990	990	U	-	-	-	-	-	-
4-Chloro-3-methylphenol	990	990	U J	-	-	-	-	-	-
4-Chloroaniline	990	990	U J	-	-	-	-	-	-
4-Chlorophenyl Phenyl Ether	990	990	U	-	-	-	-	-	-
4-Methylphenol	990	990	U J	-	-	-	-	-	-
4-Nitroaniline	4950	4950	U	-	-	-	-	-	-
4-Nitrophenol	4950	4950	U J	-	-	-	-	-	-
Acenaphthene	990	990	U	-	-	-	-	-	-
Acenaphthylene	990	990	U	-	-	-	-	-	-
Anthracene	990	990	U	-	-	-	-	-	-
Benz[a]anthracene	990	990	U	-	-	-	-	-	-
Benzo[a] pyrene	990	990	U	-	-	-	-	-	-
Benzo[b] fluoranthene	990	990	U	-	-	-	-	-	-
Benzo[g,h,i] perylene	990	990	U	-	-	-	-	-	-
Benzo[k] fluoranthene	990	990	U	-	-	-	-	-	-
Bis(2-chloroethoxy)methane	990	990	U	-	-	-	-	-	-
Bis(2-chloroethyl) ether	990	990	U J	-	-	-	-	-	-
Bis(2-chloroisopropyl) ether	990	990	U J	-	-	-	-	-	-
Bis(2-ethylhexyl) phthalate	990	990	U	-	-	-	-	-	-
Butyl Benzyl Phthalate	990	990	U	-	-	-	-	-	-
Carbazole	990	990	U	-	-	-	-	-	-
Chrysene	990	990	U	-	-	-	-	-	-
Dibenz[a,h]anthracene	990	990	U	-	-	-	-	-	-
Dibenzofuran	990	990	U	-	-	-	-	-	-

WC Hanford, Inc 2620 Fermi Avenue Richland WA, 99354	Project: RC-116 Project Number: [none] Project Manager: Joan Kessner	Reported: 05/11/2009 10:17

J189B6
0902067-13 (Solid)

12/5/09

Analyte	Result	Reporting Limit	Qualifier	Units	Dilution	Batch	Prepared	Analyzed	Method

Lionville Laboratory

Semivolatile Organic Compounds by SW846 8270C

Analyte	Result	Reporting Limit	Qualifier	Units	Dilution	Batch	Prepared	Analyzed	Method
Diethyl Phthalate	990	990	U	ug/kg wet	5	1903038	03/09/2009	03/28/2009	8270C
Dimethyl Phthalate	990	990	U	"	"	"	"	"	"
Di-n-butyl Phthalate	990	990	U	"	"	"	"	"	"
Di-n-octyl Phthalate	990	990	U	"	"	"	"	"	"
Fluoranthene	990	990	U	"	"	"	"	"	"
Fluorene	990	990	U	"	"	"	"	"	"
Hexachlorobenzene	990	990	U	"	"	"	"	"	"
Hexachlorobutadiene	990	990	U	"	"	"	"	"	"
Hexachlorocyclopentadiene	990	990	U J	"	"	"	"	"	"
Hexachloroethane	990	990	U J	"	"	"	"	"	"
Indeno[1,2,3-cd]pyrene	990	990	U	"	"	"	"	"	"
Isophorone	990	990	U	"	"	"	"	"	"
Naphthalene	990	990	U	"	"	"	"	"	"
Nitrobenzene	990	990	U	"	"	"	"	"	"
N-Nitrosodi-n-propylamine	990	990	U J	"	"	"	"	"	"
N-Nitrosodiphenylamine	990	990	U	"	"	"	"	"	"
Pentachlorophenol	4950	4950	U J	"	"	"	"	"	"
Phenanthrene	990	990	U J	"	"	"	"	"	"
Phenol	990	990	U J	"	"	"	"	"	"
Pyrene	990	990	U	"	"	"	"	"	"
TIC:Unknown 4	**1500**		J, D, ~~#~~	"	"	"	"	"	"
TIC:Unknown 3	**1620**		J, D, ~~#~~ 3-31-09	"	"	"	"	"	"
TIC:Unknown 1	**10300**		J, ~~#~~, D	"	"	"	"	"	"
TIC:Alkane 1	**2420**		J, D	"	"	"	"	"	"
TIC:Unknown 2	**614000**		B, J, D	"	"	"	"	"	"
Surrogate: 2-Fluorophenol		*67 %*			*25-121*	"	"	"	"
Surrogate: Phenol-d5		*71 %*			*24-113*	"	"	"	"
Surrogate: Nitrobenzene-d5		*70 %*			*23-120*	"	"	"	"
Surrogate: 2-Fluorobiphenyl		*78 %*			*30-115*	"	"	"	"
Surrogate: 2,4,6-Tribromophenol		*71 %*			*19-122*	"	"	"	"
Surrogate: p-Terphenyl-d14		*89 %*			*18-137*	"	"	"	"

WC Hanford, Inc 2620 Fermi Avenue Richland WA, 99354	Project: RC-116 Project Number: [none] Project Manager: Joan Kessner	Reported: 05/11/2009 10:17

J189B7
0902067-14 (Solid)

12/5/09

Lionville Laboratory

Semivolatile Organic Compounds by SW846 8270C

Analyte	Result	Reporting Limit	Qualifier	Units	Dilution	Batch	Prepared	Analyzed	Method
1,2,4-Trichlorobenzene	330	330	U	ug/kg wet	1	1903018	03/05/2009	03/27/2009	8270C
1,2-Dichlorobenzene	330	330	U J	"	"	"	"	"	"
1,3-Dichlorobenzene	330	330	U J	"	"	"	"	"	"
1,4-Dichlorobenzene	330	330	U J	"	"	"	"	"	"
2,4,5-Trichlorophenol	330	330	U J	"	"		"	"	"
2,4,6-Trichlorophenol	330	330	U J	"	"	"	"	"	"
2,4-Dichlorophenol	330	330	U J	"	"	"	"	"	"
2,4-Dimethylphenol	330	330	U J	"	"	"	"	"	"
2,4-Dinitrophenol	1650	1650	U J	"	"	"	"	"	"
2,4-Dinitrotoluene	330	330	U	"	"	"	"	"	"
2,6-Dinitrotoluene	330	330	U	"	"	"	"	"	"
2-Chloronaphthalene	330	330	U	"	"	"	"	"	"
2-Chlorophenol	330	330	U J	"	"	"	"	"	"
2-Methylnaphthalene	330	330	U	"	"	"	"	"	"
2-Methylphenol	330	330	U J	"	"	"	"	"	"
2-Nitroaniline	1650	1650	U	"	"	"	"	"	"
2-Nitrophenol	330	330	U	"	"	"	"	"	"
3,3'-Dichlorobenzidine	660	660	U J	"	"	"	"	"	"
3-Nitroaniline	1650	1650	U	"	"	"	"	"	"
4,6-Dinitro-2-methylphenol	330	330	U J	"	"	"	"	"	"
4-Bromophenyl Phenyl Ether	330	330	U	"	"	"	"	"	"
4-Chloro-3-methylphenol	330	330	U J	"	"	"	"	"	"
4-Chloroaniline	330	330	U J	"	"	"	"	"	"
4-Chlorophenyl Phenyl Ether	330	330	U	"	"	"	"	"	"
4-Methylphenol	330	330	U J	"	"	"	"	"	"
4-Nitroaniline	1650	1650	U	"	"	"	"	"	"
4-Nitrophenol	1650	1650	U J	"	"	"	"	"	"
Acenaphthene	330	330	U	"	"	"	"	"	"
Acenaphthylene	330	330	U	"	"	"	"	"	"
Anthracene	330	330	U	"	"	"	"	"	"
Benz[a]anthracene	330	330	U	"	"	"	"	"	"
Benzo[a] pyrene	330	330	U	"	"	"	"	"	"
Benzo[b] fluoranthene	330	330	U	"	"	"	"	"	"
Benzo[g,h,i] perylene	330	330	U	"	"	"	"	"	"
Benzo[k] fluoranthene	330	330	U	"	"	"	"	"	"
Bis(2-chloroethoxy) methane	330	330	U	"	"	"	"	"	"
Bis(2-chloroethyl) ether	330	330	U J	"	"	"	"	"	"
Bis(2-chloroisopropyl) ether	330	330	U J	"	"	"	"	"	"
Bis(2-ethylhexyl) phthalate	330	330	U	"	"	"	"	"	"
Butyl Benzyl Phthalate	330	330	U	"	"	"	"	"	"
Carbazole	330	330	U	"	"	"	"	"	"
Chrysene	330	330	U	"	"	"	"	"	"
Dibenz[a,h]anthracene	330	330	U	"	"	"	"	"	"
Dibenzofuran	330	330	U	"	"	"	"	"	"

WC Hanford, Inc	Project: RC-116	
2620 Fermi Avenue	Project Number: [none]	**Reported:**
Richland WA, 99354	Project Manager: Joan Kessner	05/11/2009 10:17

J189B7
0902067-14 (Solid)

12/5/09

Lionville Laboratory

Semivolatile Organic Compounds by SW846 8270C

Analyte	Result	Reporting Limit	Qualifier	Units	Dilution	Batch	Prepared	Analyzed	Method
Diethyl Phthalate	330	330	U	ug/kg wet	1	L9C1038	03/05/2009	03/27/2009	8270C
Dimethyl Phthalate	330	330	U	"	"	"	"	"	"
Di-n-butyl Phthalate	330	330	U	"	"	"	"	"	"
Di-n-octyl Phthalate	330	330	U	"	"	"	"	"	"
Fluoranthene	330	330	U	"	"	"	"	"	"
Fluorene	330	330	U	"	"	"	"	"	"
Hexachlorobenzene	330	330	U	"	"	"	"	"	"
Hexachlorobutadiene	330	330	U	"	"	"	"	"	"
Hexachlorocyclopentadiene	330	330	U J	"	"	"	"	"	"
Hexachloroethane	330	330	U J	"	"	"	"	"	"
Indeno[1,2,3-cd]pyrene	330	330	U	"	"	"	"	"	"
Isophorone	330	330	U	"	"	"	"	"	"
Naphthalene	330	330	U	"	"	"	"	"	"
Nitrobenzene	330	330	U	"	"	"	"	"	"
N-Nitrosodi-n-propylamine	330	330	U J	"	"	"	"	"	"
N-Nitrosodiphenylamine	330	330	U	"	"	"	"	"	"
Pentachlorophenol	1650	1650	U J	"	"	"	"	"	"
Phenanthrene	330	330	U J	"	"	"	"	"	"
Phenol	330	330	U J	"	"	"	"	"	"
Pyrene	330	330	U	"	"	"	"	"	"
TIC:Unknown 2	142000		B, J M	"	"	"	"	"	"
TIC:Alkane 1	566		J	"	"	"	"	"	"
TIC:Unknown 1	2,320		J	"	"	"	"	"	"
TIC:Unknown 3	644		B, J	"	"	"	"	"	"
Surrogate: 2-Fluorophenol		57 %			25-121	"	"	"	"
Surrogate: Phenol-d5		61 %			24-113	"	"	"	"
Surrogate: Nitrobenzene-d5		63 %			23-120	"	"	"	"
Surrogate: 2-Fluorobiphenyl		63 %			30-115	"	"	"	"
Surrogate: 2,4,6-Tribromophenol		77 %			19-122	"	"	"	"
Surrogate: p-Terphenyl-d14		67 %			18-137	"	"	"	"

WC-Hanford, Inc	Project: BC-116	
2620 Fermi Avenue	Project Number: [none]	Reported:
Richland WA, 99354	Project Manager: Joan Kessner	03/11/2009 10:17

J189BR
0902067-15 (Solid)

12/5/09

Lionville Laboratory

Semivolatile Organic Compounds by SW846 8270C

Analyte	Result	Reporting Limit	Qualifier	Units	Dilution	Batch	Prepared	Analyzed	Method
1,2,4-Trichlorobenzene	330	330	U	ug/kg wet	1	1903008	03/03/2009	03/07/2009	8270C
1,2-Dichlorobenzene	330	330	U J	"	"	"	"	"	"
1,3-Dichlorobenzene	330	330	U J	"	"	"	"	"	"
1,4-Dichlorobenzene	330	330	U J	"	"	"	"	"	"
2,4,5-Trichlorophenol	330	330	U J	"	"	"	"	"	"
2,4,6-Trichlorophenol	330	330	U J	"	"	"	"	"	"
2,4-Dichlorophenol	330	330	U J	"	"	"	"	"	"
2,4-Dimethylphenol	330	330	U J	"	"	"	"	"	"
2,4-Dinitrophenol	1650	1650	U J	"	"	"	"	"	"
2,4-Dinitrotoluene	330	330	U	"	"	"	"	"	"
2,6-Dinitrotoluene	330	330	U	"	"	"	"	"	"
2-Chloronaphthalene	330	330	U	"	"	"	"	"	"
2-Chlorophenol	330	330	U J	"	"	"	"	"	"
2-Methylnaphthalene	330	330	U	"	"	"	"	"	"
2-Methylphenol	330	330	U J	"	"	"	"	"	"
2-Nitroaniline	1650	1650	U	"	"	"	"	"	"
2-Nitrophenol	330	330	U	"	"	"	"	"	"
3,3'-Dichlorobenzidine	660	660	U J	"	"	"	"	"	"
3-Nitroaniline	1650	1650	U	"	"	"	"	"	"
4,6-Dinitro-2-methylphenol	330	330	U J	"	"	"	"	"	"
4-Bromophenyl Phenyl Ether	330	330	U	"	"	"	"	"	"
4-Chloro-3-methylphenol	330	330	U J	"	"	"	"	"	"
4-Chloroaniline	330	330	U J	"	"	"	"	"	"
4-Chlorophenyl Phenyl Ether	330	330	U	"	"	"	"	"	"
4-Methylphenol	330	330	U J	"	"	"	"	"	"
4-Nitroaniline	1650	1650	U	"	"	"	"	"	"
4-Nitrophenol	1650	1650	U J	"	"	"	"	"	"
Acenaphthene	330	330	U	"	"	"	"	"	"
Acenaphthylene	330	330	U	"	"	"	"	"	"
Anthracene	330	330	U	"	"	"	"	"	"
Benz[a]anthracene	330	330	U	"	"	"	"	"	"
Benzo[a] pyrene	330	330	U	"	"	"	"	"	"
Benzo[b] fluoranthene	330	330	U	"	"	"	"	"	"
Benzo[g,h,i] perylene	330	330	U	"	"	"	"	"	"
Benzo[k] fluoranthene	330	330	U	"	"	"	"	"	"
Bis(2-chloroethoxy) methane	330	330	U	"	"	"	"	"	"
Bis(2-chloroethyl) ether	330	330	U J	"	"	"	"	"	"
Bis(2-chloroisopropyl) ether	330	330	U J	"	"	"	"	"	"
Bis(2-ethylhexyl) phthalate	330	330	U	"	"	"	"	"	"
Butyl Benzyl Phthalate	330	330	U	"	"	"	"	"	"
Carbazole	330	330	U	"	"	"	"	"	"
Chrysene	330	330	U	"	"	"	"	"	"
Dibenz[a,h]anthracene	330	330	U	"	"	"	"	"	"
Dibenzofuran	330	330	U	"	"	"	"	"	"

WC-Hanford Inc 2620 Fermi Avenue Richland WA, 99354	Project: RC-116 Project Number: [none] Project Manager: Joan Kessner	Reported: 05/11/2009 10:17

J189H8
0902067-15 (Solid)

V 12/5/09

Analyte	Result	Reporting Limit	Qualifier	Units	Dilution	Batch	Prepared	Analyzed	Method

Lionville Laboratory

Semivolatile Organic Compounds by SW846 8270C

Analyte	Result	Reporting Limit	Qualifier	Units	Dilution	Batch	Prepared	Analyzed	Method
Diethyl Phthalate	330	330	U	ug/kg wet	1	1901018	03/05/2009	03/27/2009	8270C
Dimethyl Phthalate	330	330	U	"	"	"	"	"	"
Di-n-butyl Phthalate	330	330	U	"	"	"	"	"	"
Di-n-octyl Phthalate	330	330	U	"	"	"	"	"	"
Fluoranthene	330	330	U	"	"	"	"	"	"
Fluorene	330	330	U	"	"	"	"	"	"
Hexachlorobenzene	330	330	U	"	"	"	"	"	"
Hexachlorobutadiene	330	330	U	"	"	"	"	"	"
Hexachlorocyclopentadiene	330	330	U J	"	"	"	"	"	"
Hexachloroethane	330	330	U J	"	"	"	"	"	"
Indeno(1,2,3-cd)pyrene	330	330	U	"	"	"	"	"	"
Isophorone	330	330	U	"	"	"	"	"	"
Naphthalene	330	330	U	"	"	"	"	"	"
Nitrobenzene	330	330	U	"	"	"	"	"	"
N-Nitrosodi-n-propylamine	330	330	U J	"	"	"	"	"	"
N-Nitrosodiphenylamine	330	330	U	"	"	"	"	"	"
Pentachlorophenol	1650	1650	U J	"	"	"	"	"	"
Phenanthrene	330	330	U J	"	"	"	"	"	"
Phenol	330	330	U J	"	"	"	"	"	"
Pyrene	330	330	U	"	"	"	"	"	"
TIC:Unknown 5	**2830**		N, J	"	"	"	"	"	"
TIC:Unknown 4	**3080**		N, J	"	"	"	"	"	"
TIC:Unknown 3	**11900**		N, J	"	"	"	"	"	"
TIC:Unknown 2	**215000**		N, J	"	"	"	"	"	"
TIC:Unknown 1	**3260**		N, J	"	"	"	"	"	"
Surrogate: 2-Fluorophenol		59 %			*25-121*	"	"	"	"
Surrogate: Phenol-d5		72 %			*24-113*	"	"	"	"
Surrogate: Nitrobenzene-d5		76 %			*23-120*	"	"	"	"
Surrogate: 2-Fluorobiphenyl		78 %			*30-115*	"	"	"	"
Surrogate: 2,4,6-Tribromophenol		55 %			*19-122*	"	"	"	"
Surrogate: p-Terphenyl-d14		87 %			*18-137*	"	"	"	"

AA
5-11-09

WC-Hanford, Inc	Project: RC-116	
2620 Fermi Avenue	Project Number: [none]	Reported:
Richland WA, 99354	Project Manager: Joan Kessner	05/11/2009 10:17

J189389
0902067-16 (Solid)

12/5/09

Analyte	Result	Reporting Limit	Qualifier	Units	Dilution	Batch	Prepared	Analyzed	Method

Lionville Laboratory

Semivolatile Organic Compounds by SW846 8270C

Analyte	Result	Reporting Limit	Qualifier	Units	Dilution	Batch	Prepared	Analyzed	Method
1,2,4-Trichlorobenzene	330	330	U	ug/kg wet	1	1903048	03/05/2009	03/26/2009	8270C
1,2-Dichlorobenzene	330	330	U J	"	"	"	"	"	"
1,3-Dichlorobenzene	330	330	U J	"	"	"	"	"	"
1,4-Dichlorobenzene	330	330	U J	"	"	"	"	"	"
2,4,5-Trichlorophenol	330	330	U J	"	"	"	"	"	"
2,4,6-Trichlorophenol	330	330	U J	"	"	"	"	"	"
2,4-Dichlorophenol	330	330	U J	"	"	"	"	"	"
2,4-Dimethylphenol	330	330	U J	"	"	"	"	"	"
2,4-Dinitrophenol	1650	1650	U J	"	"	"	"	"	"
2,4-Dinitrotoluene	330	330	U	"	"	"	"	"	"
2,6-Dinitrotoluene	330	330	U	"	"	"	"	"	"
2-Chloronaphthalene	330	330	U	"	"	"	"	"	"
2-Chlorophenol	330	330	U J	"	"	"	"	"	"
2-Methylnaphthalene	330	330	U	"	"	"	"	"	"
2-Methylphenol	330	330	U J	"	"	"	"	"	"
2-Nitroaniline	1650	1650	U	"	"	"	"	"	"
2-Nitrophenol	330	330	U	"	"	"	"	"	"
3,3'-Dichlorobenzidine	660	660	U J	"	"	"	"	"	"
3-Nitroaniline	1650	1650	U	"	"	"	"	"	"
4,6-Dinitro-2-methylphenol	330	330	U J	"	"	"	"	"	"
4-Bromophenyl Phenyl Ether	330	330	U	"	"	"	"	"	"
4-Chloro-3-methylphenol	330	330	U J	"	"	"	"	"	"
4-Chloroaniline	330	330	U J	"	"	"	"	"	"
4-Chlorophenyl Phenyl Ether	330	330	U	"	"	"	"	"	"
4-Methylphenol	330	330	U J	"	"	"	"	"	"
4-Nitroaniline	1650	1650	U	"	"	"	"	"	"
4-Nitrophenol	1650	1650	U J	"	"	"	"	"	"
Acenaphthene	330	330	U	"	"	"	"	"	"
Acenaphthylene	330	330	U	"	"	"	"	"	"
Anthracene	330	330	U	"	"	"	"	"	"
Benz[a]anthracene	330	330	U	"	"	"	"	"	"
Benzo[a] pyrene	330	330	U	"	"	"	"	"	"
Benzo[b] fluoranthene	330	330	U	"	"	"	"	"	"
Benzo[g,h,i] perylene	330	330	U	"	"	"	"	"	"
Benzo[k] fluoranthene	330	330	U	"	"	"	"	"	"
Bis(2-chloroethoxy) methane	330	330	U	"	"	"	"	"	"
Bis(2-chloroethyl) ether	330	330	U J	"	"	"	"	"	"
Bis(2-chloroisopropyl) ether	330	330	U J	"	"	"	"	"	"
Bis(2-ethylhexyl) phthalate	330	330	U	"	"	"	"	"	"
Butyl Benzyl Phthalate	330	330	U	"	"	"	"	"	"
Carbazole	330	330	U	"	"	"	"	"	"
Chrysene	330	330	U	"	"	"	"	"	"
Dibenz[a,h]anthracene	330	330	U	"	"	"	"	"	"
Dibenzofuran	330	330	U	"	"	"	"	"	"

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

WC-Hanford, Inc 2620 Fermi Avenue Richland WA, 99354	Project: RC 116 Project Number: [none] Project Manager: Joan Kessner		Reported: 05/11/2009 10:17

J189B9
0902067-16 (Solid)

ꟻw 12/5/09

Analyte	Result	Reporting Limit	Qualifier	Units	Dilution	Batch	Prepared	Analyzed	Method
			Lionville Laboratory						
Semivolatile Organic Compounds by SW846 8270C									
Diethyl Phthalate	330	330	U	ug/kg wet	1	[illegible]	03/05/2009	03/26/2009	8270C
Dimethyl Phthalate	330	330	U	"	"	"	"	"	"
Di-n-butyl Phthalate	330	330	U	"	"	"	"	"	"
Di-n-octyl Phthalate	330	330	U	"	"	"	"	"	"
Fluoranthene	330	330	U	"	"	"	"	"	"
Fluorene	330	330	U	"	"	"	"	"	"
Hexachlorobenzene	330	330	U	"	"	"	"	"	"
Hexachlorobutadiene	330	330	U	"	"	"	"	"	"
Hexachlorocyclopentadiene	330	330	U J	"	"	"	"	"	"
Hexachloroethane	330	330	U J	"	"	"	"	"	"
Indeno[1,2,3-cd]pyrene	330	330	U	"	"	"	"	"	"
Isophorone	330	330	U	"	"	"	"	"	"
Naphthalene	330	330	U	"	"	"	"	"	"
Nitrobenzene	330	330	U	"	"	"	"	"	"
N-Nitrosodi-n-propylamine	330	330	U J	"	"	"	"	"	"
N-Nitrosodiphenylamine	330	330	U	"	"	"	"	"	"
Pentachlorophenol	1650	1650	U J	"	"	"	"	"	"
Phenanthrene	330	330	U J	"	"	"	"	"	"
Phenol	330	330	U J	"	"	"	"	"	"
Pyrene	330	330	U	"	"	"	"	"	"
TIC:Unknown 4	**8090**		J,N 4	"	"	"	"	"	"
TIC:Unknown 3	**170000**		J,N 5-11-09	"	"	"	"	"	"
TIC:Unknown 2	**62400**		N,J	"	"	"	"	"	"
TIC:Unknown 1	**1770**		J,N	"	"	"	"	"	"
TIC:Unknown 5	**697**		J,N	"	"	"	"	"	"
Surrogate: 2-Fluorophenol		*52 %*			*25-121*	"	"	"	"
Surrogate: Phenol-d5		*54 %*			*24-113*	"	"	"	"
Surrogate: Nitrobenzene-d5		*58 %*			*23-120*	"	"	"	"
Surrogate: 2-Fluorobiphenyl		*61 %*			*30-115*	"	"	"	"
Surrogate: 2,4,6-Tribromophenol		*58 %*			*19-122*	"	"	"	"
Surrogate: p-Terphenyl-d14		*69 %*			*18-137*	"	"	"	"

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

WCH-Hanford, Inc	Project: [illegible]	
2620 Fermi Avenue	Project Number: [none]	Reported:
Richland WA, 99354	Project Manager: Joan Kessner	05/11/2009 10:17

J189C0

0902067-17 (Solid)

12/5/09

Analyte	Result	Reporting Limit	Qualifier	Units	Dilution	Batch	Prepared	Analyzed	Method

Lionville Laboratory

Semivolatile Organic Compounds by SW846 8270C

Analyte	Result	Reporting Limit	Qualifier	Units	Dilution	Batch	Prepared	Analyzed	Method
1,2,4-Trichlorobenzene	660	660	U	ug/kg wet	5	1903018	03/05/2009	03/26/2009	8270C
1,2-Dichlorobenzene	660	660	U J	"	"	"	"	"	"
1,3-Dichlorobenzene	660	660	U J	"	"	"	"	"	"
1,4-Dichlorobenzene	660	660	U J	"	"	"	"	"	"
2,4,5-Trichlorophenol	660	660	U J	"	"	"	"	"	"
2,4,6-Trichlorophenol	660	660	U J	"	"	"	"	"	"
2,4-Dichlorophenol	660	660	U J	"	"	"	"	"	"
2,4-Dimethylphenol	660	660	U J	"	"	"	"	"	"
2,4-Dinitrophenol	3300	3300	U J	"	"	"	"	"	"
2,4-Dinitrotoluene	660	660	U	"	"	"	"	"	"
2,6-Dinitrotoluene	660	660	U	"	"	"	"	"	"
2-Chloronaphthalene	660	660	U	"	"	"	"	"	"
2-Chlorophenol	660	660	U J	"	"	"	"	"	"
2-Methylnaphthalene	660	660	U	"	"	"	"	"	"
2-Methylphenol	660	660	U J	"	"	"	"	"	"
2-Nitroaniline	3300	3300	U	"	"	"	"	"	"
2-Nitrophenol	660	660	U	"	"	"	"	"	"
3,3'-Dichlorobenzidine	1320	1320	U J	"	"	"	"	"	"
3-Nitroaniline	3300	3300	U	"	"	"	"	"	"
4,6-Dinitro-2-methylphenol	660	660	U J	"	"	"	"	"	"
4-Bromophenyl Phenyl Ether	660	660	U	"	"	"	"	"	"
4-Chloro-3-methylphenol	660	660	U J	"	"	"	"	"	"
4-Chloroaniline	660	660	U J	"	"	"	"	"	"
4-Chlorophenyl Phenyl Ether	660	660	U	"	"	"	"	"	"
4-Methylphenol	660	660	U J	"	"	"	"	"	"
4-Nitroaniline	3300	3300	U	"	"	"	"	"	"
4-Nitrophenol	3300	3300	U J	"	"	"	"	"	"
Acenaphthene	660	660	U	"	"	"	"	"	"
Acenaphthylene	660	660	U	"	"	"	"	"	"
Anthracene	660	660	U	"	"	"	"	"	"
Benz[a]anthracene	660	660	U	"	"	"	"	"	"
Benzo[a] pyrene	660	660	U	"	"	"	"	"	"
Benzo[b] fluoranthene	660	660	U	"	"	"	"	"	"
Benzo[g,h,i] perylene	660	660	U	"	"	"	"	"	"
Benzo[k] fluoranthene	660	660	U	"	"	"	"	"	"
Bis(2-chloroethoxy) methane	660	660	U	"	"	"	"	"	"
Bis(2-chloroethyl) ether	660	660	U J	"	"	"	"	"	"
Bis(2-chloroisopropyl) ether	660	660	U J	"	"	"	"	"	"
Bis(2-ethylhexyl) phthalate	660	660	U	"	"	"	"	"	"
Butyl Benzyl Phthalate	660	660	U	"	"	"	"	"	"
Carbazole	660	660	U	"	"	"	"	"	"
Chrysene	660	660	U	"	"	"	"	"	"
Dibenz[a,h]anthracene	660	660	U	"	"	"	"	"	"
Dibenzofuran	660	660	U	"	"	"	"	"	"

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
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WCH Hanford, Inc 2620 Fermi Avenue Richland WA, 99354	Project: RC-116 Project Number: [none] Project Manager: Joan Kessner	Reported: 03/11/2009 10:17

J189C0
0902067-17 (Solid)

12/5/09

Analyte	Result	Reporting Limit	Qualifier	Units	Dilution	Batch	Prepared	Analyzed	Method

Lionville Laboratory

Semivolatile Organic Compounds by SW846 8270C

Analyte	Result	Reporting Limit	Qualifier	Units	Dilution	Batch	Prepared	Analyzed	Method
Diethyl Phthalate	660	660	U	ug/kg wet	2	9010318	01/05/2009	01/26/2009	8270C
Dimethyl Phthalate	660	660	U	"	"	"	"	"	"
Di-n-butyl Phthalate	660	660	U	"	"	"	"	"	"
Di-n-octyl Phthalate	660	660	U	"	"	"	"	"	"
Fluoranthene	660	660	U	"	"	"	"	"	"
Fluorene	660	660	U	"	"	"	"	"	"
Hexachlorobenzene	660	660	U	"	"	"	"	"	"
Hexachlorobutadiene	660	660	U	"	"	"	"	"	"
Hexachlorocyclopentadiene	660	660	U J	"	"	"	"	"	"
Hexachloroethane	660	660	U J	"	"	"	"	"	"
Indeno[1,2,3-cd]pyrene	660	660	U	"	"	"	"	"	"
Isophorone	660	660	U	"	"	"	"	"	"
Naphthalene	660	660	U	"	"	"	"	"	"
Nitrobenzene	660	660	U	"	"	"	"	"	"
N-Nitrosodi-n-propylamine	660	660	U J	"	"	"	"	"	"
N-Nitrosodiphenylamine	660	660	U	"	"	"	"	"	"
Pentachlorophenol	3300	3300	U J	"	"	"	"	"	"
Phenanthrene	660	660	U J	"	"	"	"	"	"
Phenol	660	660	U J	"	"	"	"	"	"
Pyrene	660	660	U	"	"	"	"	"	"
TIC: Unknown 4	**1480**		J, D, ~~B~~ M	"	"	"	"	"	"
TIC: Unknown 3	**965**		J, D, ~~B~~ 5-11-09	"	"	"	"	"	"
TIC: Unknown 2	**641000**		B, J, D	"	"	"	"	"	"
TIC: Unknown 1	**4050**		J, D, ~~B~~	"	"	"	"	"	"
TIC: Aldol Condensate 1	**836**		J, D	"	"	"	"	"	"
Surrogate: 2-Fluorophenol		53 %			25-121	"	"	"	"
Surrogate: Phenol-d5		59 %			24-113	"	"	"	"
Surrogate: Nitrobenzene-d5		66 %			23-120	"	"	"	"
Surrogate: 2-Fluorobiphenyl		76 %			30-115	"	"	"	"
Surrogate: 2,4,6-Tribromophenol		75 %			19-122	"	"	"	"
Surrogate: p-Terphenyl-d14		86 %			18-137	"	"	"	"

204 Welsh Pool Road
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WC Hanford, Inc
2620 Fermi Avenue
Richland WA, 99354

Project: RC-116
Project Number: [none]
Project Manager: Joan Kessner

Reported:
03/11/2009 10:17

J189C1
0902067-18 (Solid)

K 2/5/09

Analyte	Result	Reporting Limit	Qualifier	Units	Dilution	Batch	Prepared	Analyzed	Method
Lionville Laboratory									
Semivolatile Organic Compounds by SW846 8270C									
1,2,4-Trichlorobenzene	990	990	U	ug/kg wet	3	[illegible]	01/05/2009	01/26/2009	8270C
1,2-Dichlorobenzene	990	990	U J	"	"	"	"	"	"
1,3-Dichlorobenzene	990	990	U J	"	"	"	"	"	"
1,4-Dichlorobenzene	990	990	U J	"	"	"	"	"	"
2,4,5-Trichlorophenol	990	990	U J	"	"	"	"	"	"
2,4,6-Trichlorophenol	990	990	U J	"	"	"	"	"	"
2,4-Dichlorophenol	990	990	U J	"	"	"	"	"	"
2,4-Dimethylphenol	990	990	U J	"	"	"	"	"	"
2,4-Dinitrophenol	4950	4950	U J	"	"	"	"	"	"
2,4-Dinitrotoluene	990	990	U	"	"	"	"	"	"
2,6-Dinitrotoluene	990	990	U	"	"	"	"	"	"
2-Chloronaphthalene	990	990	U	"	"	"	"	"	"
2-Chlorophenol	990	990	U J	"	"	"	"	"	"
2-Methylnaphthalene	990	990	U	"	"	"	"	"	"
2-Methylphenol	990	990	U J	"	"	"	"	"	"
2-Nitroaniline	4950	4950	U	"	"	"	"	"	"
2-Nitrophenol	990	990	U	"	"	"	"	"	"
3,3'-Dichlorobenzidine	1980	1980	U J	"	"	"	"	"	"
3-Nitroaniline	4950	4950	U	"	"	"	"	"	"
4,6-Dinitro-2-methylphenol	990	990	U J	"	"	"	"	"	"
4-Bromophenyl Phenyl Ether	990	990	U	"	"	"	"	"	"
4-Chloro-3-methylphenol	990	990	U J	"	"	"	"	"	"
4-Chloroaniline	990	990	U J	"	"	"	"	"	"
4-Chlorophenyl Phenyl Ether	990	990	U	"	"	"	"	"	"
4-Methylphenol	990	990	U J	"	"	"	"	"	"
4-Nitroaniline	4950	4950	U	"	"	"	"	"	"
4-Nitrophenol	4950	4950	U J	"	"	"	"	"	"
Acenaphthene	990	990	U	"	"	"	"	"	"
Acenaphthylene	990	990	U	"	"	"	"	"	"
Anthracene	990	990	U	"	"	"	"	"	"
Benz[a]anthracene	990	990	U	"	"	"	"	"	"
Benzo[a] pyrene	990	990	U	"	"	"	"	"	"
Benzo[b] fluoranthene	990	990	U	"	"	"	"	"	"
Benzo[g,h,i] perylene	990	990	U	"	"	"	"	"	"
Benzo[k] fluoranthene	990	990	U	"	"	"	"	"	"
Bis(2-chloroethoxy) methane	990	990	U	"	"	"	"	"	"
Bis(2-chloroethyl) ether	990	990	U J	"	"	"	"	"	"
Bis(2-chloroisopropyl) ether	990	990	U J	"	"	"	"	"	"
Bis(2-ethylhexyl) phthalate	990	990	U	"	"	"	"	"	"
Butyl Benzyl Phthalate	990	990	U	"	"	"	"	"	"
Carbazole	990	990	U	"	"	"	"	"	"
Chrysene	990	990	U	"	"	"	"	"	"
Dibenz[a,h]anthracene	990	990	U	"	"	"	"	"	"
Dibenzofuran	990	990	U	"	"	"	"	"	"

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

WC-Hanford, Inc	Project: RC-116	
2620 Fermi Avenue	Project Number: [none]	Reported:
Richland WA, 99354	Project Manager: Joan Kessner	05/11/2009 10:17

J189C1
0902067-18 (Solid)

12/5/09

Analyte	Result	Reporting Limit	Qualifier	Units	Dilution	Batch	Prepared	Analyzed	Method

Lionville Laboratory

Semivolatile Organic Compounds by SW846 8270C

Analyte	Result	Reporting Limit	Qualifier	Units	Dilution	Batch	Prepared	Analyzed	Method
Diethyl Phthalate	990	990	U	ug/kg wet	5	L903038	03/05/2009	03/26/2009	8270C
Dimethyl Phthalate	990	990	U	"	"	"	"	"	"
Di-n-butyl Phthalate	990	990	U	"	"	"	"	"	"
Di-n-octyl Phthalate	990	990	U	"	"	"	"	"	"
Fluoranthene	990	990	U	"	"	"	"	"	"
Fluorene	990	990	U	"	"	"	"	"	"
Hexachlorobenzene	990	990	U	"	"	"	"	"	"
Hexachlorobutadiene	990	990	U	"	"	"	"	"	"
Hexachlorocyclopentadiene	990	990	U J	"	"	"	"	"	"
Hexachloroethane	990	990	U J	"	"	"	"	"	"
Indeno[1,2,3-cd]pyrene	990	990	U	"	"	"	"	"	"
Isophorone	990	990	U	"	"	"	"	"	"
Naphthalene	990	990	U	"	"	"	"	"	"
Nitrobenzene	990	990	U	"	"	"	"	"	"
N-Nitrosodi-n-propylamine	990	990	U J	"	"	"	"	"	"
N-Nitrosodiphenylamine	990	990	U	"	"	"	"	"	"
Pentachlorophenol	4950	4950	U J	"	"	"	"	"	"
Phenanthrene	990	990	U J	"	"	"	"	"	"
Phenol	990	990	U J	"	"	"	"	"	"
Pyrene	990	990	U	"	"	"	"	"	"
TIC:Unknown 5	**6200**		J, D ~~N~~ *	"	"	"	"	"	"
TIC:Unknown 4	**2590**		J, D ~~N~~ J 0.64	"	"	"	"	"	"
TIC:Unknown 3	**1350**		J, D ~~N~~	"	"	"	"	"	"
TIC:Unknown 2	**1290000**		B, J, D	"	"	"	"	"	"
TIC:Unkdown 1	**19100**		J, D, ~~N~~	"	"	"	"	"	"
Surrogate: 2-Fluorophenol		%	U		*25-121*	"	"	"	"
Surrogate: Phenol-d5		53 %			*24-113*	"	"	"	"
Surrogate: Nitrobenzene-d5		62 %			*23-120*	"	"	"	"
Surrogate: 2-Fluorobiphenyl		73 %			*30-115*	"	"	"	"
Surrogate: 2,4,6-Tribromophenol		37 %			*19-122*	"	"	"	"
Surrogate: p-Terphenyl-d14		75 %			*18-137*	"	"	"	"

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
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WC-Hanford, Inc	Project: RC-116	
2620 Fermi Avenue	Project Number: [none]	**Reported:**
Richland WA, 99354	Project Manager: Joan Kessner	03/13/2009 10:12

J189C3
0902067-39 (Solid)

12/5/09

Analyte	Result	Reporting Limit	Qualifier	Units	Dilution	Batch	Prepared	Analyzed	Method

Lionville Laboratory

Semivolatile Organic Compounds by SW846 8270C

Analyte	Result	Reporting Limit	Qualifier	Units	Dilution	Batch	Prepared	Analyzed	Method
1,2,4-Trichlorobenzene	990	990	U	ug/kg wet	1	L903034	03/05/2009	03/08/2009	8270C
1,2-Dichlorobenzene	990	990	U J	"	"	"	"	"	"
1,3-Dichlorobenzene	990	990	U J	"	"	"	"	"	"
1,4-Dichlorobenzene	990	990	U J	"	"	"	"	"	"
2,4,5-Trichlorophenol	990	990	U J	"	"	"	"	"	"
2,4,6-Trichlorophenol	990	990	U J	"	"	"	"	"	"
2,4-Dichlorophenol	990	990	U J	"	"	"	"	"	"
2,4-Dimethylphenol	990	990	U J	"	"	"	"	"	"
2,4-Dinitrophenol	4950	4950	U J	"	"	"	"	"	"
2,4-Dinitrotoluene	990	990	U	"	"	"	"	"	"
2,6-Dinitrotoluene	990	990	U	"	"	"	"	"	"
2-Chloronaphthalene	990	990	U	"	"	"	"	"	"
2-Chlorophenol	990	990	U J	"	"	"	"	"	"
2-Methylnaphthalene	990	990	U	"	"	"	"	"	"
2-Methylphenol	990	990	U J	"	"	"	"	"	"
2-Nitroaniline	4950	4950	U	"	"	"	"	"	"
2-Nitrophenol	990	990	U	"	"	"	"	"	"
3,3'-Dichlorobenzidine	1980	1980	U J	"	"	"	"	"	"
3-Nitroaniline	4950	4950	U	"	"	"	"	"	"
4,6-Dinitro-2-methylphenol	990	990	U J	"	"	"	"	"	"
4-Bromophenyl Phenyl Ether	990	990	U	"	"	"	"	"	"
4-Chloro-3-methylphenol	990	990	U J	"	"	"	"	"	"
4-Chloroaniline	990	990	U J	"	"	"	"	"	"
4-Chlorophenyl Phenyl Ether	990	990	U	"	"	"	"	"	"
4-Methylphenol	990	990	U J	"	"	"	"	"	"
4-Nitroaniline	4950	4950	U	"	"	"	"	"	"
4-Nitrophenol	4950	4950	U J	"	"	"	"	"	"
Acenaphthene	990	990	U	"	"	"	"	"	"
Acenaphthylene	990	990	U	"	"	"	"	"	"
Anthracene	990	990	U	"	"	"	"	"	"
Benz[a]anthracene	990	990	U	"	"	"	"	"	"
Benzo[a] pyrene	990	990	U	"	"	"	"	"	"
Benzo[b] fluoranthene	990	990	U	"	"	"	"	"	"
Benzo[g,h,i] perylene	990	990	U	"	"	"	"	"	"
Benzo[k] fluoranthene	990	990	U	"	"	"	"	"	"
Bis(2-chloroethoxy) methane	990	990	U	"	"	"	"	"	"
Bis(2-chloroethyl) ether	990	990	U J	"	"	"	"	"	"
Bis(2-chloroisopropyl) ether	990	990	U J	"	"	"	"	"	"
Bis(2-ethylhexyl) phthalate	990	990	U	"	"	"	"	"	"
Butyl Benzyl Phthalate	990	990	U	"	"	"	"	"	"
Carbazole	990	990	U	"	"	"	"	"	"
Chrysene	990	990	U	"	"	"	"	"	"
Dibenz[a,h]anthracene	990	990	U	"	"	"	"	"	"
Dibenzofuran	990	990	U	"	"	"	"	"	"

264 Welsh Pool Road
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WC Hanford, Inc	Project: RC-116	
2620 Fermi Avenue	Project Number: [none]	Reported:
Richland WA, 99354	Project Manager: Joan Kessner	05/11/2009 10:17

J189C3
0902067-19 (Solid)

JK 12/5/09

Lionville Laboratory

Semivolatile Organic Compounds by SW846 8270C

Analyte	Result	Reporting Limit	Qualifier	Units	Dilution	Batch	Prepared	Analyzed	Method
Diethyl Phthalate	990	990	U	ug/kg wet	1	1190038	03/05/2009	03/26/2009	8270C
Dimethyl Phthalate	990	990	U	"	"	"	"	"	"
Di-n-butyl Phthalate	990	990	U	"	"	"	"	"	"
Di-n-octyl Phthalate	990	990	U	"	"	"	"	"	"
Fluoranthene	990	990	U	"	"	"	"	"	"
Fluorene	990	990	U	"	"	"	"	"	"
Hexachlorobenzene	990	990	U	"	"	"	"	"	"
Hexachlorobutadiene	990	990	U	"	"	"	"	"	"
Hexachlorocyclopentadiene	990	990	U J	"	"	"	"	"	"
Hexachloroethane	990	990	U J	"	"	"	"	"	"
Indeno[1,2,3-cd]pyrene	990	990	U	"	"	"	"	"	"
Isophorone	990	990	U	"	"	"	"	"	"
Naphthalene	990	990	U	"	"	"	"	"	"
Nitrobenzene	990	990	U	"	"	"	"	"	"
N-Nitrosodi-n-propylamine	990	990	U J	"	"	"	"	"	"
N-Nitrosodiphenylamine	990	990	U	"	"	"	"	"	"
Pentachlorophenol	4950	4950	U J	"	"	"	"	"	"
Phenanthrene	990	990	U J	"	"	"	"	"	"
Phenol	990	990	U J	"	"	"	"	"	"
Pyrene	990	990	U	"	"	"	"	"	"
TIC:Unknown 3	**45100**		J, D, ~~N~~ M	"	"	"	"	"	"
TIC:Unknown 1	**18200**		J, D, ~~N~~ [illegible]	"	"	"	"	"	"
TIC: Alkane 2	**4960**		J, D	"	"	"	"	"	"
TIC: Alkane 1	**2370**		J, D	"	"	"	"	"	"
TIC:Unknown 2	**177000**		J, D, ~~N~~	"	"	"	"	"	"
Surrogate: 2-Fluorophenol		*49 %*			*25-121*	"	"	"	"
Surrogate: Phenol-d5		*55 %*			*24-113*	"	"	"	"
Surrogate: Nitrobenzene-d5		*60 %*			*23-120*	"	"	"	"
Surrogate: 2-Fluorobiphenyl		*73 %*			*30-115*	"	"	"	"
Surrogate: 2,4,6-Tribromophenol		*56 %*			*19-122*	"	"	"	"
Surrogate: p-Terphenyl-d14		*79 %*			*18-137*	"	"	"	"

WC-Hanford, Inc	Project: RC-116	
2620 Fermi Avenue	Project Number: [none]	Reported:
Richland WA, 99354	Project Manager: Joan Kessner	03/31/2009 10:17

J189C4
0902067-20 (Solid)

JL 12/5/09

Lionville Laboratory

Semivolatile Organic Compounds by SW846 8270C

Analyte	Result	Reporting Limit	Qualifier	Units	Dilution	Batch	Prepared	Analyzed	Method
1,2,4-Trichlorobenzene	990	990	U	ug/kg wet	1	1900018	03/05/2009	03/21/2009	8270C
1,2-Dichlorobenzene	990	990	U J	"	"	"	"	"	"
1,3-Dichlorobenzene	990	990	U J	"	"	"	"	"	"
1,4-Dichlorobenzene	990	990	U J	"	"	"	"	"	"
2,4,5-Trichlorophenol	990	990	U J	"	"	"	"	"	"
2,4,6-Trichlorophenol	990	990	U J	"	"	"	"	"	"
2,4-Dichlorophenol	990	990	U J	"	"	"	"	"	"
2,4-Dimethylphenol	990	990	U J	"	"	"	"	"	"
2,4-Dinitrophenol	4950	4950	U J	"	"	"	"	"	"
2,4-Dinitrotoluene	990	990	U	"	"	"	"	"	"
2,6-Dinitrotoluene	990	990	U	"	"	"	"	"	"
2-Chloronaphthalene	990	990	U	"	"	"	"	"	"
2-Chlorophenol	990	990	U J	"	"	"	"	"	"
2-Methylnaphthalene	990	990	U	"	"	"	"	"	"
2-Methylphenol	990	990	U J	"	"	"	"	"	"
2-Nitroaniline	4950	4950	U	"	"	"	"	"	"
2-Nitrophenol	990	990	U	"	"	"	"	"	"
3,3'-Dichlorobenzidine	1980	1980	U J	"	"	"	"	"	"
3-Nitroaniline	4950	4950	U	"	"	"	"	"	"
4,6-Dinitro-2-methylphenol	990	990	U J	"	"	"	"	"	"
4-Bromophenyl Phenyl Ether	990	990	U	"	"	"	"	"	"
4-Chloro-3-methylphenol	990	990	U J	"	"	"	"	"	"
4-Chloroaniline	990	990	U J	"	"	"	"	"	"
4-Chlorophenyl Phenyl Ether	990	990	U	"	"	"	"	"	"
4-Methylphenol	990	990	U J	"	"	"	"	"	"
4-Nitroaniline	4950	4950	U	"	"	"	"	"	"
4-Nitrophenol	4950	4950	U J	"	"	"	"	"	"
Acenaphthene	990	990	U	"	"	"	"	"	"
Acenaphthylene	990	990	U	"	"	"	"	"	"
Anthracene	990	990	U	"	"	"	"	"	"
Benz[a]anthracene	990	990	U	"	"	"	"	"	"
Benzo[a] pyrene	990	990	U	"	"	"	"	"	"
Benzo[b] fluoranthene	990	990	U	"	"	"	"	"	"
Benzo[g,h,i] perylene	990	990	U	"	"	"	"	"	"
Benzo[k] fluoranthene	990	990	U	"	"	"	"	"	"
Bis(2-chloroethoxy) methane	990	990	U	"	"	"	"	"	"
Bis(2-chloroethyl) ether	990	990	U J	"	"	"	"	"	"
Bis(2-chloroisopropyl) ether	990	990	U J	"	"	"	"	"	"
Bis(2-ethylhexyl) phthalate	990	990	U	"	"	"	"	"	"
Butyl Benzyl Phthalate	990	990	U	"	"	"	"	"	"
Carbazole	990	990	U	"	"	"	"	"	"
Chrysene	990	990	U	"	"	"	"	"	"
Dibenz[a,h]anthracene	990	990	U	"	"	"	"	"	"
Dibenzofuran	990	990	U	"	"	"	"	"	"

264 Welsh Pool Road
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WCH Hanford, Inc	Project: RCS-116	
2620 Fermi Avenue	Project Number: [none]	**Reported:**
Richland WA, 99354	Project Manager: Joan Kessner	05/11/2009 10:17

J189C4

0902067-20 (Solid)

YL 12/5/09

Analyte	Result	Reporting Limit	Qualifier	Units	Dilution	Batch	Prepared	Analyzed	Method

Lionville Laboratory

Semivolatile Organic Compounds by SW846 8270C

Analyte	Result	Reporting Limit	Qualifier	Units	Dilution	Batch	Prepared	Analyzed	Method
Diethyl Phthalate	990	990	U	ug/kg wet	1	1903038	03/05/2009	03/27/2009	8270C
Dimethyl Phthalate	990	990	U	"	"	"	"	"	"
Di-n-butyl Phthalate	990	990	U	"	"	"	"	"	"
Di-n-octyl Phthalate	990	990	U	"	"	"	"	"	"
Fluoranthene	990	990	U	"	"	"	"	"	"
Fluorene	990	990	U	"	"	"	"	"	"
Hexachlorobenzene	990	990	U	"	"	"	"	"	"
Hexachlorobutadiene	990	990	U	"	"	"	"	"	"
Hexachlorocyclopentadiene	990	990	U J	"	"	"	"	"	"
Hexachloroethane	990	990	U J	"	"	"	"	"	"
Indeno[1,2,3-cd]pyrene	990	990	U	"	"	"	"	"	"
Isophorone	990	990	U	"	"	"	"	"	"
Naphthalene	990	990	U	"	"	"	"	"	"
Nitrobenzene	990	990	U	"	"	"	"	"	"
N-Nitrosodi-n-propylamine	990	990	U J	"	"	"	"	"	"
N-Nitrosodiphenylamine	990	990	U	"	"	"	"	"	"
Pentachlorophenol	4950	4950	U J	"	"	"	"	"	"
Phenanthrene	990	990	U J	"	"	"	"	"	"
Phenol	990	990	U J	"	"	"	"	"	"
Pyrene	990	990	U	"	"	"	"	"	"
TIC:Unknown 3	**33400**		J, D, ~~N~~ #	"	"	"	"	"	"
TIC:Unknown 2	**147000**		J, D, ~~N~~ 541-95	"	"	"	"	"	"
TIC:Unknown 1	**14500**		J, D, ~~N~~	"	"	"	"	"	"
TIC: Alkane 1	**1590**		J, D	"	"	"	"	"	"
TIC:Unknown 4	**326000**		B, J, D	"	"	"	"	"	"
Surrogate: 2-Fluorophenol		*56 %*			*25-121*	"	"	"	"
Surrogate: Phenol-d5		*58 %*			*24-113*	"	"	"	"
Surrogate: Nitrobenzene-d5		*62 %*			*23-120*	"	"	"	"
Surrogate: 2-Fluorobiphenyl		*72 %*			*30-115*	"	"	"	"
Surrogate: 2,4,6-Tribromophenol		*51 %*			*19-122*	"	"	"	"
Surrogate: p-Terphenyl-d14		*81 %*			*18-137*	"	"	"	"

WC Hanford, Inc	Project: RC 116	
2620 Fermi Avenue	Project Number: [none]	Reported:
Richland WA, 99354	Project Manager: Joan Kessner	03/17/2009 10:17

J18919
0902067-21 (Solid)

12/5/09

Analyte	Result	Reporting Limit	Qualifier	Units	Dilution	Batch	Prepared	Analyzed	Method

Lionville Laboratory

Semivolatile Organic Compounds by SW846 8270C

Analyte	Result	Reporting Limit	Qualifier	Units	Dilution	Batch	Prepared	Analyzed	Method
1,2,4-Trichlorobenzene	990	990	U	ug/kg wet	1	1903018	03/05/2009	03/27/2009	8270C
1,2-Dichlorobenzene	990	990	U J	"	"	"	"	"	"
1,3-Dichlorobenzene	990	990	U J	"	"	"	"	"	"
1,4-Dichlorobenzene	990	990	U J	"	"	"	"	"	"
2,4,5-Trichlorophenol	990	990	U J	"	"	"	"	"	"
2,4,6-Trichlorophenol	990	990	U J	"	"	"	"	"	"
2,4-Dichlorophenol	990	990	U J	"	"	"	"	"	"
2,4-Dimethylphenol	990	990	U J	"	"	"	"	"	"
2,4-Dinitrophenol	4950	4950	U J	"	"	"	"	"	"
2,4-Dinitrotoluene	990	990	U	"	"	"	"	"	"
2,6-Dinitrotoluene	990	990	U	"	"	"	"	"	"
2-Chloronaphthalene	990	990	U	"	"	"	"	"	"
2-Chlorophenol	990	990	U J	"	"	"	"	"	"
2-Methylnaphthalene	990	990	U	"	"	"	"	"	"
2-Methylphenol	990	990	U J	"	"	"	"	"	"
2-Nitroaniline	4950	4950	U	"	"	"	"	"	"
2-Nitrophenol	990	990	U	"	"	"	"	"	"
3,3'-Dichlorobenzidine	1980	1980	U J	"	"	"	"	"	"
3-Nitroaniline	4950	4950	U	"	"	"	"	"	"
4,6-Dinitro-2-methylphenol	990	990	U J	"	"	"	"	"	"
4-Bromophenyl Phenyl Ether	990	990	U	"	"	"	"	"	"
4-Chloro-3-methylphenol	990	990	U J	"	"	"	"	"	"
4-Chloroaniline	990	990	U J	"	"	"	"	"	"
4-Chlorophenyl Phenyl Ether	990	990	U	"	"	"	"	"	"
4-Methylphenol	990	990	U J	"	"	"	"	"	"
4-Nitroaniline	4950	4950	U	"	"	"	"	"	"
4-Nitrophenol	4950	4950	U J	"	"	"	"	"	"
Acenaphthene	990	990	U	"	"	"	"	"	"
Acenaphthylene	990	990	U	"	"	"	"	"	"
Anthracene	990	990	U	"	"	"	"	"	"
Benz[a]anthracene	990	990	U	"	"	"	"	"	"
Benzo[a] pyrene	990	990	U	"	"	"	"	"	"
Benzo[b] fluoranthene	990	990	U	"	"	"	"	"	"
Benzo[g,h,i] perylene	990	990	U	"	"	"	"	"	"
Benzo[k] fluoranthene	990	990	U	"	"	"	"	"	"
Bis(2-chloroethoxy) methane	990	990	U	"	"	"	"	"	"
Bis(2-chloroethyl) ether	990	990	U J	"	"	"	"	"	"
Bis(2-chloroisopropyl) ether	990	990	U J	"	"	"	"	"	"
Bis(2-ethylhexyl) phthalate	990	990	U	"	"	"	"	"	"
Butyl Benzyl Phthalate	990	990	U	"	"	"	"	"	"
Carbazole	990	990	U	"	"	"	"	"	"
Chrysene	990	990	U	"	"	"	"	"	"
Dibenz[a,h]anthracene	990	990	U	"	"	"	"	"	"
Dibenzofuran	990	990	U	"	"	"	"	"	"

264 Welsh Pool Road
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WC-Hanford, Inc	Project: RC 136	
2620 Fermi Avenue	Project Number: [none]	Reported:
Richland WA 99354	Project Manager: Joan Kessner	05/11/2009 10:17

J189J9
0902067-21 (Solid)

12/5/09

Analyte	Result	Reporting Limit	Qualifier	Units	Dilution	Batch	Prepared	Analyzed	Method

Lionville Laboratory

Semivolatile Organic Compounds by SW846 8270C

Analyte	Result	Reporting Limit	Qualifier	Units	Dilution	Batch	Prepared	Analyzed	Method
Diethyl Phthalate	990	990	U	ug/kg wet	3	9C03034	03/05/2009	03/27/2009	8270C
Dimethyl Phthalate	990	990	U	"	"	"	"	"	"
Di-n-butyl Phthalate	990	990	U	"	"	"	"	"	"
Di-n-octyl Phthalate	990	990	U	"	"	"	"	"	"
Fluoranthene	990	990	U	"	"	"	"	"	"
Fluorene	990	990	U	"	"	"	"	"	"
Hexachlorobenzene	990	990	U	"	"	"	"	"	"
Hexachlorobutadiene	990	990	U	"	"	"	"	"	"
Hexachlorocyclopentadiene	990	990	U J	"	"	"	"	"	"
Hexachloroethane	990	990	U J	"	"	"	"	"	"
Indeno(1,2,3-cd)pyrene	990	990	U	"	"	"	"	"	"
Isophorone	990	990	U	"	"	"	"	"	"
Naphthalene	990	990	U	"	"	"	"	"	"
Nitrobenzene	990	990	U	"	"	"	"	"	"
N-Nitrosodi-n-propylamine	990	990	U J	"	"	"	"	"	"
N-Nitrosodiphenylamine	990	990	U	"	"	"	"	"	"
Pentachlorophenol	4950	4950	U J	"	"	"	"	"	"
Phenanthrene	990	990	U J	"	"	"	"	"	"
Phenol	990	990	U J	"	"	"	"	"	"
Pyrene	990	990	U	"	"	"	"	"	"
TIC: Unknown 2	**3650**		J, D, ~~N~~ M	"	"	"	"	"	"
TIC: Unknown 1	**1330**		J, D, ~~N~~ [illegible]	"	"	"	"	"	"
TIC: Unknown 5	**22100**		J, D	"	"	"	"	"	"
TIC: Unknown 4	**10200**		J, D	"	"	"	"	"	"
TIC: Unknown 3	**227000**		B, J, D	"	"	"	"	"	"
Surrogate: 2-Fluorophenol		*59 %*			*25-121*	"	"	"	"
Surrogate: Phenol-d5		*61 %*			*24-113*	"	"	"	"
Surrogate: Nitrobenzene-d5		*64 %*			*23-120*	"	"	"	"
Surrogate: 2-Fluorobiphenyl		*72 %*			*30-115*	"	"	"	"
Surrogate: 2,4,6-Tribromophenol		*55 %*			*19-122*	"	"	"	"
Surrogate: p-Terphenyl-d14		*82 %*			*18-137*	"	"	"	"

WC Hanford, Inc 2620 Fermi Avenue Richland WA 99354	Project: RC-116 Project Number: [none] Project Manager: Joan Kessner	Reported: 05/11/2009 10:17

J189K2

0902067-22 (Solid)

JL 12/5/09

Analyte	Result	Reporting Limit	Qualifier	Units	Dilution	Batch	Prepared	Analyzed	Method

Lionville Laboratory

Semivolatile Organic Compounds by SW846 8270C

Analyte	Result	Reporting Limit	Qualifier	Units	Dilution	Batch	Prepared	Analyzed	Method
1,2,4-Trichlorobenzene	990	990	U	ug/kg wet	3	[illegible]	01/05/2009	01/27/2009	8270C
1,2-Dichlorobenzene	990	990	U J	"	"	"	"	"	"
1,3-Dichlorobenzene	990	990	U J	"	"	"	"	"	"
1,4-Dichlorobenzene	990	990	U J	"	"	"	"	"	"
2,4,5-Trichlorophenol	990	990	U J	"	"	"	"	"	"
2,4,6-Trichlorophenol	990	990	U J	"	"	"	"	"	"
2,4-Dichlorophenol	990	990	U J	"	"	"	"	"	"
2,4-Dimethylphenol	990	990	U J	"	"	"	"	"	"
2,4-Dinitrophenol	4950	4950	U J	"	"	"	"	"	"
2,4-Dinitrotoluene	990	990	U	"	"	"	"	"	"
2,6-Dinitrotoluene	990	990	U	"	"	"	"	"	"
2-Chloronaphthalene	990	990	U	"	"	"	"	"	"
2-Chlorophenol	990	990	U J	"	"	"	"	"	"
2-Methylnaphthalene	990	990	U	"	"	"	"	"	"
2-Methylphenol	990	990	U J	"	"	"	"	"	"
2-Nitroaniline	4950	4950	U	"	"	"	"	"	"
2-Nitrophenol	990	990	U	"	"	"	"	"	"
3,3'-Dichlorobenzidine	1980	1980	U J	"	"	"	"	"	"
3-Nitroaniline	4950	4950	U	"	"	"	"	"	"
4,6-Dinitro-2-methylphenol	990	990	U J	"	"	"	"	"	"
4-Bromophenyl Phenyl Ether	990	990	U	"	"	"	"	"	"
4-Chloro-3-methylphenol	990	990	U J	"	"	"	"	"	"
4-Chloroaniline	990	990	U J	"	"	"	"	"	"
4-Chlorophenyl Phenyl Ether	990	990	U	"	"	"	"	"	"
4-Methylphenol	990	990	U J	"	"	"	"	"	"
4-Nitroaniline	4950	4950	U	"	"	"	"	"	"
4-Nitrophenol	4950	4950	U J	"	"	"	"	"	"
Acenaphthene	990	990	U	"	"	"	"	"	"
Acenaphthylene	990	990	U	"	"	"	"	"	"
Anthracene	990	990	U	"	"	"	"	"	"
Benz[a]anthracene	990	990	U	"	"	"	"	"	"
Benzo[a] pyrene	990	990	U	"	"	"	"	"	"
Benzo[b] fluoranthene	990	990	U	"	"	"	"	"	"
Benzo[g,h,i] perylene	990	990	U	"	"	"	"	"	"
Benzo[k] fluoranthene	990	990	U	"	"	"	"	"	"
Bis(2-chloroethoxy) methane	990	990	U	"	"	"	"	"	"
Bis(2-chloroethyl) ether	990	990	U J	"	"	"	"	"	"
Bis(2-chloroisopropyl) ether	990	990	U J	"	"	"	"	"	"
Bis(2-ethylhexyl) phthalate	990	990	U	"	"	"	"	"	"
Butyl Benzyl Phthalate	990	990	U	"	"	"	"	"	"
Carbazole	990	990	U	"	"	"	"	"	"
Chrysene	990	990	U	"	"	"	"	"	"
Dibenz[a,h]anthracene	990	990	U	"	"	"	"	"	"
Dibenzofuran	990	990	U	"	"	"	"	"	"

WC-Hanford, Inc	Project: BC-116	
2620 Fermi Avenue	Project Number: [none]	**Reported:**
Richland WA, 99354	Project Manager: Joan Kessner	05/11/2009 10:17

J189K2
0902067-22 (Solid)

12/5/09

Analyte	Result	Reporting Limit	Qualifier	Units	Dilution	Batch	Prepared	Analyzed	Method

Lionville Laboratory

Semivolatile Organic Compounds by SW846 8270C

Analyte	Result	Reporting Limit	Qualifier	Units	Dilution	Batch	Prepared	Analyzed	Method
Diethyl Phthalate	990	990	U	ug/kg wet	1	1903048	03/03/2009	03/27/2009	8270C
Dimethyl Phthalate	990	990	U	"	"	"	"	"	"
Di-n-butyl Phthalate	990	990	U	"	"	"	"	"	"
Di-n-octyl Phthalate	990	990	U	"	"	"	"	"	"
Fluoranthene	990	990	U	"	"	"	"	"	"
Fluorene	990	990	U	"	"	"	"	"	"
Hexachlorobenzene	990	990	U	"	"	"	"	"	"
Hexachlorobutadiene	990	990	U	"	"	"	"	"	"
Hexachlorocyclopentadiene	990	990	U J	"	"	"	"	"	"
Hexachloroethane	990	990	U J	"	"	"	"	"	"
Indeno(1,2,3-cd)pyrene	990	990	U	"	"	"	"	"	"
Isophorone	990	990	U	"	"	"	"	"	"
Naphthalene	990	990	U	"	"	"	"	"	"
Nitrobenzene	990	990	U	"	"	"	"	"	"
N-Nitrosodi-n-propylamine	990	990	U J	"	"	"	"	"	"
N-Nitrosodiphenylamine	990	990	U	"	"	"	"	"	"
Pentachlorophenol	4950	4950	U J	"	"	"	"	"	"
Phenanthrene	990	990	U J	"	"	"	"	"	"
Phenol	990	990	U J	"	"	"	"	"	"
Pyrene	990	990	U	"	"	"	"	"	"
TIC:Unknown 4	**248000**		B, J, D N	"	"	"	"	"	"
TIC:Unknown 3	**956**		J, D, ~~N~~ S 11-05	"	"	"	"	"	"
TIC:Unknown 2	**1710**		J, D, ~~N~~	"	"	"	"	"	"
TIC:Unknown 1	**690**		J, D, ~~N~~	"	"	"	"	"	"
TIC:Unknown 5	**1980**		B, J, D	"	"	"	"	"	"
Surrogate: 2-Fluorophenol		70 %			25-121	"	"	"	"
Surrogate: Phenol-d5		70 %			24-113	"	"	"	"
Surrogate: Nitrobenzene-d5		71 %			23-120	"	"	"	"
Surrogate: 2-Fluorobiphenyl		81 %			30-115	"	"	"	"
Surrogate: 2,4,6-Tribromophenol		64 %			19-122	"	"	"	"
Surrogate: p-Terphenyl-d14		99 %			18-137	"	"	"	"

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

WCH-Hanford, Inc 2620 Fermi Avenue Richland WA, 99354	Project: RCT-116 Project Number: [none] Project Manager: Joan Kessner	**Reported:** 05/11/2009 10:17

J189K4
0902067-23 (Solid)

JK 12/5/09

Analyte	Result	Reporting Limit	Qualifier	Units	Dilution	Batch	Prepared	Analyzed	Method

Lionville Laboratory

Semivolatile Organic Compounds by SW846 8270C

Analyte	Result	Reporting Limit	Qualifier	Units	Dilution	Batch	Prepared	Analyzed	Method
1,2,4-Trichlorobenzene	330	330	U	ug/kg wet	1	1903048	03/05/2009	03/26/2009	8270C
1,2-Dichlorobenzene	330	330	U J	-	-	-	-	-	-
1,3-Dichlorobenzene	330	330	U J	-	-	-	-	-	-
1,4-Dichlorobenzene	330	330	U J	-	-	-	-	-	-
2,4,5-Trichlorophenol	330	330	U J	-	-	-	-	-	-
2,4,6-Trichlorophenol	330	330	U J	-	-	-	-	-	-
2,4-Dichlorophenol	330	330	U J	-	-	-	-	-	-
2,4-Dimethylphenol	330	330	U J	-	-	-	-	-	-
2,4-Dinitrophenol	1650	1650	U J	-	-	-	-	-	-
2,4-Dinitrotoluene	330	330	U	-	-	-	-	-	-
2,6-Dinitrotoluene	330	330	U	-	-	-	-	-	-
2-Chloronaphthalene	330	330	U	-	-	-	-	-	-
2-Chlorophenol	330	330	U J	-	-	-	-	-	-
2-Methylnaphthalene	330	330	U	-	-	-	-	-	-
2-Methylphenol	330	330	U J	-	-	-	-	-	-
2-Nitroaniline	1650	1650	U	-	-	-	-	-	-
2-Nitrophenol	330	330	U	-	-	-	-	-	-
3,3'-Dichlorobenzidine	660	660	U J	-	-	-	-	-	-
3-Nitroaniline	1650	1650	U	-	-	-	-	-	-
4,6-Dinitro-2-methylphenol	330	330	U J	-	-	-	-	-	-
4-Bromophenyl Phenyl Ether	330	330	U	-	-	-	-	-	-
4-Chloro-3-methylphenol	330	330	U J	-	-	-	-	-	-
4-Chloroaniline	330	330	U J	-	-	-	-	-	-
4-Chlorophenyl Phenyl Ether	330	330	U	-	-	-	-	-	-
4-Methylphenol	330	330	U J	-	-	-	-	-	-
4-Nitroaniline	1650	1650	U	-	-	-	-	-	-
4-Nitrophenol	1650	1650	U J	-	-	-	-	-	-
Acenaphthene	330	330	U	-	-	-	-	-	-
Acenaphthylene	330	330	U	-	-	-	-	-	-
Anthracene	330	330	U	-	-	-	-	-	-
Benz[a]anthracene	330	330	U	-	-	-	-	-	-
Benzo[a] pyrene	330	330	U	-	-	-	-	-	-
Benzo[b] fluoranthene	330	330	U	-	-	-	-	-	-
Benzo[g,h,i] perylene	330	330	U	-	-	-	-	-	-
Benzo[k] fluoranthene	330	330	U	-	-	-	-	-	-
Bis(2-chloroethoxy) methane	330	330	U	-	-	-	-	-	-
Bis(2-chloroethyl) ether	330	330	U J	-	-	-	-	-	-
Bis(2-chloroisopropyl) ether	330	330	U J	-	-	-	-	-	-
Bis(2-ethylhexyl) phthalate	330	330	U	-	-	-	-	-	-
Butyl Benzyl Phthalate	330	330	U	-	-	-	-	-	-
Carbazole	330	330	U	-	-	-	-	-	-
Chrysene	330	330	U	-	-	-	-	-	-
Dibenz[a,h]anthracene	330	330	U	-	-	-	-	-	-
Dibenzofuran	330	330	U	-	-	-	-	-	-

WC Hanford, Inc 2020 Fermi Avenue Richland WA, 99354	Project: RC-116 Project Number: [none] Project Manager: Joan Kessner	Reported: 05/11/2009 10:17

J189K4
0902067-23 (Solid)

12/5/09

Analyte	Result	Reporting Limit	Qualifier	Units	Dilution	Batch	Prepared	Analyzed	Method
			Lionville Laboratory						
Semivolatile Organic Compounds by SW846 8270C									
Diethyl Phthalate	330	330	U	ug/kg wet	1	[illegible]	03/05/2009	03/26/2009	8270C
Dimethyl Phthalate	330	330	U	"	"	"	"	"	"
Di-n-butyl Phthalate	330	330	U	"	"	"	"	"	"
Di-n-octyl Phthalate	330	330	U	"	"	"	"	"	"
Fluoranthene	330	330	U	"	"	"	"	"	"
Fluorene	330	330	U	"	"	"	"	"	"
Hexachlorobenzene	330	330	U	"	"	"	"	"	"
Hexachlorobutadiene	330	330	U	"	"	"	"	"	"
Hexachlorocyclopentadiene	330	330	U J	"	"	"	"	"	"
Hexachloroethane	330	330	U J	"	"	"	"	"	"
Indeno[1,2,3-cd]pyrene	330	330	U	"	"	"	"	"	"
Isophorone	330	330	U	"	"	"	"	"	"
Naphthalene	330	330	U	"	"	"	"	"	"
Nitrobenzene	330	330	U	"	"	"	"	"	"
N-Nitrosodi-n-propylamine	330	330	U J	"	"	"	"	"	"
N-Nitrosodiphenylamine	330	330	U	"	"	"	"	"	"
Pentachlorophenol	1650	1650	U J	"	"	"	"	"	"
Phenanthrene	330	330	U J	"	"	"	"	"	"
Phenol	330	330	U J	"	"	"	"	"	"
Pyrene	330	330	U	"	"	"	"	"	"
TIC:Unknown 4	**830**		J, N M	"	"	"	"	"	"
TIC:Unknown 2	**4100**		J, N [illegible]	"	"	"	"	"	"
TIC:Unknown 1	**228**		J, N	"	"	"	"	"	"
TIC: Aldol Condensate 1	**495**		J, A	"	"	"	"	"	"
TIC:Unknown 3	**268000**		B, J	"	"	"	"	"	"
Surrogate: 2-Fluorophenol		*51 %*			*25-121*	"	"	"	"
Surrogate: Phenol-d5		*55 %*			*24-113*	"	"	"	"
Surrogate: Nitrobenzene-d5		*64 %*			*23-120*	"	"	"	"
Surrogate: 2-Fluorobiphenyl		*70 %*			*30-115*	"	"	"	"
Surrogate: 2,4,6-Tribromophenol		*58 %*			*19-122*	"	"	"	"
Surrogate: p-Terphenyl-d14		*80 %*			*18-137*	"	"	"	"

264 Welsh Pool Road
Exton, PA 19341
Phone: 610 280-3000
Fax: 610 280-3041

WF-Hanford, Inc.
2620 Fermi Avenue
Richland WA, 99354

Project: RCT-110
Project Number: [none]
Project Manager: Joan Kessner

Reported:
03/17/2009 10:12

J189K5
0902067-24 (Solid)

K 12/5/09

Lionville Laboratory

Semivolatile Organic Compounds by SW846 8270C

Analyte	Result	Reporting Limit	Qualifier	Units	Dilution	Batch	Prepared	Analyzed	Method
1,2,4-Trichlorobenzene	990	990	U	ug/kg wet	1	1903018	03/05/2009	03/28/2009	8270C
1,2-Dichlorobenzene	990	990	U J	"	"	"	"	"	"
1,3-Dichlorobenzene	990	990	U J	"	"	"	"	"	"
1,4-Dichlorobenzene	990	990	U J	"	"	"	"	"	"
2,4,5-Trichlorophenol	990	990	U J	"	"	"	"	"	"
2,4,6-Trichlorophenol	990	990	U J	"	"	"	"	"	"
2,4-Dichlorophenol	990	990	U J	"	"	"	"	"	"
2,4-Dimethylphenol	990	990	U J	"	"	"	"	"	"
2,4-Dinitrophenol	4950	4950	U J	"	"	"	"	"	"
2,4-Dinitrotoluene	990	990	U	"	"	"	"	"	"
2,6-Dinitrotoluene	990	990	U	"	"	"	"	"	"
2-Chloronaphthalene	990	990	U	"	"	"	"	"	"
2-Chlorophenol	990	990	U J	"	"	"	"	"	"
2-Methylnaphthalene	990	990	U	"	"	"	"	"	"
2-Methylphenol	990	990	U J	"	"	"	"	"	"
2-Nitroaniline	4950	4950	U	"	"	"	"	"	"
2-Nitrophenol	990	990	U	"	"	"	"	"	"
3,3'-Dichlorobenzidine	1980	1980	U J	"	"	"	"	"	"
3-Nitroaniline	4950	4950	U	"	"	"	"	"	"
4,6-Dinitro-2-methylphenol	990	990	U J	"	"	"	"	"	"
4-Bromophenyl Phenyl Ether	990	990	U	"	"	"	"	"	"
4-Chloro-3-methylphenol	990	990	U J	"	"	"	"	"	"
4-Chloroaniline	990	990	U J	"	"	"	"	"	"
4-Chlorophenyl Phenyl Ether	990	990	U	"	"	"	"	"	"
4-Methylphenol	990	990	U J	"	"	"	"	"	"
4-Nitroaniline	4950	4950	U	"	"	"	"	"	"
4-Nitrophenol	4950	4950	U J	"	"	"	"	"	"
Acenaphthene	990	990	U	"	"	"	"	"	"
Acenaphthylene	990	990	U	"	"	"	"	"	"
Anthracene	990	990	U	"	"	"	"	"	"
Benz[a]anthracene	990	990	U	"	"	"	"	"	"
Benzo[a] pyrene	990	990	U	"	"	"	"	"	"
Benzo[b] fluoranthene	990	990	U	"	"	"	"	"	"
Benzo[g,h,i] perylene	990	990	U	"	"	"	"	"	"
Benzo[k] fluoranthene	990	990	U	"	"	"	"	"	"
Bis(2-chloroethoxy) methane	990	990	U	"	"	"	"	"	"
Bis(2-chloroethyl) ether	990	990	U J	"	"	"	"	"	"
Bis(2-chloroisopropyl) ether	990	990	U J	"	"	"	"	"	"
Bis(2-ethylhexyl) phthalate	990	990	U	"	"	"	"	"	"
Butyl Benzyl Phthalate	990	990	U	"	"	"	"	"	"
Carbazole	990	990	U	"	"	"	"	"	"
Chrysene	990	990	U	"	"	"	"	"	"
Dibenz[a,h]anthracene	990	990	U	"	"	"	"	"	"
Dibenzofuran	990	990	U	"	"	"	"	"	"

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

WC-Hanford, Inc	Project: RC-116	
2620 Fermi Avenue	Project Number: [none]	**Reported:**
Richland WA, 99354	Project Manager: Joan Kessner	03/11/2009 10:17

J189K5
0902067-24 (Solid)

12/5/09

Analyte	Result	Reporting Limit	Qualifier	Units	Dilution	Batch	Prepared	Analyzed	Method

Lionville Laboratory

Semivolatile Organic Compounds by SW846 8270C

Analyte	Result	Reporting Limit	Qualifier	Units	Dilution	Batch	Prepared	Analyzed	Method
Diethyl Phthalate	990	990	U	ug/kg wet	5	L903038	03/05/2009	03/10/2009	8270C
Dimethyl Phthalate	990	990	U	"	"	"	"	"	"
Di-n-butyl Phthalate	990	990	U	"	"	"	"	"	"
Di-n-octyl Phthalate	990	990	U	"	"	"	"	"	"
Fluoranthene	990	990	U	"	"	"	"	"	"
Fluorene	990	990	U	"	"	"	"	"	"
Hexachlorobenzene	990	990	U	"	"	"	"	"	"
Hexachlorobutadiene	990	990	U	"	"	"	"	"	"
Hexachlorocyclopentadiene	990	990	U J	"	"	"	"	"	"
Hexachloroethane	990	990	U J	"	"	"	"	"	"
Indeno[1,2,3-cd]pyrene	990	990	U	"	"	"	"	"	"
Isophorone	990	990	U	"	"	"	"	"	"
Naphthalene	990	990	U	"	"	"	"	"	"
Nitrobenzene	990	990	U	"	"	"	"	"	"
N-Nitrosodi-n-propylamine	990	990	U J	"	"	"	"	"	"
N-Nitrosodiphenylamine	990	990	U	"	"	"	"	"	"
Pentachlorophenol	4950	4950	U J	"	"	"	"	"	"
Phenanthrene	990	990	U J	"	"	"	"	"	"
Phenol	990	990	U J	"	"	"	"	"	"
Pyrene	990	990	U	"	"	"	"	"	"
TIC:Unknown 4	**5120**		B, J, D M	"	"	"	"	"	"
TIC:Unknown 2	**178000**		B, J, D [illegible]	"	"	"	"	"	"
TIC:Unknown 1	**3210**		J, D, B	"	"	"	"	"	"
TIC:Unknown 3	**5310**		B, J, D	"	"	"	"	"	"
TIC:Unknown 5	**2620**		B, J, D	"	"	"	"	"	"
Surrogate: 2-Fluorophenol		*61 %*			*25-121*	"	"	"	"
Surrogate: Phenol-d5		*73 %*			*24-113*	"	"	"	"
Surrogate: Nitrobenzene-d5		*61 %*			*23-120*	"	"	"	"
Surrogate: 2-Fluorobiphenyl		*76 %*			*30-115*	"	"	"	"
Surrogate: 2,4,6-Tribromophenol		*68 %*			*19-122*	"	"	"	"
Surrogate: p-Terphenyl-d14		*93 %*			*18-137*	"	"	"	"

264 Welsh Pool Road
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Phone: 610-280-3000
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WC-Hanford Inc	Project: RC-116	
2620 Fermi Avenue	Project Number: [none]	Reported:
Richland WA, 99354	Project Manager: Joan Kessner	03/05/2009 11:33

J18985

0902067-05 (Solid)

✓ 12/5/09

Analyte	Result	Reporting Limit	Qualifier	Units	Dilution	Batch	Prepared	Analyzed	Method

Lionville Laboratory

Extractable Petroleum Hydrocarbons by SW846 8015									
Diesel Range Organics	5100	1800	D J	mg/kg wet	1	L9C1017	03/03/2009	03/11/2009	SW846 8015M
Motor Oil	**17900**	18000	UJ	"	"	"	"	"	"
Surrogate: o-Terphenyl		99.5 %			*50-150*	"	"	"	"

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

WCH-Hanford, Inc 2620 Fermi Avenue Richland WA, 99354	Project: RC-116 Project Number: [none] Project Manager: John Kessner	**Reported:** 05/05/2009 13:33

J18986

0902067-06 (Solid)

12/5/09

Analyte	Result	Reporting Limit	Qualifier	Units	Dilution	Batch	Prepared	Analyzed	Method

Lionville Laboratory

Extractable Petroleum Hydrocarbons by SW846 8015

Analyte	Result	Reporting Limit	Qualifier	Units	Dilution	Batch	Prepared	Analyzed	Method
Diesel Range Organics	3300	3300	U J	ug/kg wet	1	9030337	01/05/2009	01/13/2009	SW846 8015M
Motor Oil	**25400**	10000	UJ	"	"	"	"	"	"
Surrogate: o-Terphenyl		*84 %*			*49-129*	"	"	"	"

208 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

WC Hanford, Inc 2620 Fermi Avenue Richland WA, 99354	Project: RC-116 Project Number: [none] Project Manager: Joan Kessner	Reported: 05/05/2009 13:33

J18987

0902067-07 (Solid)

12/5/09

Analyte	Result	Reporting Limit	Qualifier	Units	Dilution	Batch	Prepared	Analyzed	Method
			Lionville Laboratory						
Extractable Petroleum Hydrocarbons by SW846 8015									
Diesel Range Organics	3300	3300	U J	ug/kg wet	1	1903037	03/05/2009	03/11/2009	SW846 8015M
Motor Oil	30400	13000	UJ	"	"	"	"	"	"
Surrogate: o-Terphenyl		97 %			59-129	"	"	"	"

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

WC-Hanford, Inc 2620 Fermi Avenue Richland WA, 99354	Project: RC-116 Project Number: [none] Project Manager: Joan Kessner	**Reported:** 05/05/2009 13:13

J18998

0902067-08 (Solid) JK 12/5/09

Analyte	Result	Reporting Limit	Qualifier	Units	Dilution	Batch	Prepared	Analyzed	Method

Lionville Laboratory

Extractable Petroleum Hydrocarbons by SW846 8015

Analyte	Result	Reporting Limit	Qualifier	Units	Dilution	Batch	Prepared	Analyzed	Method
Diesel Range Organics	3300	3300	UJ	ug/kg wet	1	9903037	03/05/2009	03/11/2009	SW846 8015M
Motor Oil	**17500**	10000	UJ	"	"	"	"	"	"
Surrogate: o-Terphenyl		86 %			30-120	"	"	"	"

364 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

WC Hanford Inc 2620 Fermi Avenue Richland WA, 99354	Project: RC-116 Project Number: [none] Project Manager: Joan Kessner	Reported: 03/05/2009 13:11

J18990

0902067-09 (Solid)

VL 12/5/09

Analyte	Result	Reporting Limit	Qualifier	Units	Dilution	Batch	Prepared	Analyzed	Method

Lionville Laboratory

Extractable Petroleum Hydrocarbons by SW846 8015

Analyte	Result	Reporting Limit	Qualifier	Units	Dilution	Batch	Prepared	Analyzed	Method
Diesel Range Organics	1300	1300	U J	mg/kg wet	1	1903037	03/05/2009	03/13/2009	SW846 8015M
Motor Oil	**22900**	10000	OJ	"	"	"	"	"	"
Surrogate: p-Terphenyl		70 %			39-129	"	"	"	"

WC Hanford, Inc 2620 Fermi Avenue Richland WA, 99354	Project: RC-116 Project Number: [none] Project Manager: Joan Kessner	**Reported:** 05/05/2009 11:31

J18991
0902067-10 (Solid)

K 12/5/09

Analyte	Result	Reporting Limit	Qualifier	Units	Dilution	Batch	Prepared	Analyzed	Method
			Lionville Laboratory						
Extractable Petroleum Hydrocarbons by SW846 8015									
Diesel Range Organics	3300	3300	U J	ug/kg wet	1	1903037	03/05/2009	03/13/2009	SW846 8015M
Motor Oil	17200	10000	UJ	"	"	"	"	"	"
Surrogate: p-Terphenyl		*91 %*			*10-129*	"	"	"	"

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

WC Hanford, Inc 2620 Fermi Avenue Richland WA 99354	Project: RC-116 Project Number: [none] Project Manager: Joan Kessner	Reported: 05/05/2009 13:33

J18992

0902067-11 (Solid)

ɣ 12/5/09

Analyte	Result	Reporting Limit	Qualifier	Units	Dilution	Batch	Prepared	Analyzed	Method
			Lionville Laboratory						
Extractable Petroleum Hydrocarbons by SW846 8015									
Diesel Range Organics	3300	3300	U J	ug/kg wet	1	0903037	03/09/2009	03/11/2009	SW846 8015M
Motor Oil	**12400**	10000	UJ	"	-	-	-	-	"
Surrogate: o-Terphenyl		*84 %*			*49-129*	"	-	"	"

000058

WC-Hanford, Inc 2620 Fermi Avenue Richland WA, 99354	Project: RC 116 Project Number: [none] Project Manager: Joan Kessner	Reported: 05/05/2009 13:11

J189B5
0902067-12 (Solid)

Jh 12/5/09

Analyte	Result	Reporting Limit	Qualifier	Units	Dilution	Batch	Prepared	Analyzed	Method
Lionville Laboratory									
Extractable Petroleum Hydrocarbons by SW846 8015									
Diesel Range Organics	3300	3300	U J	mg/kg wet	1	1903037	03/05/2009	03/13/2009	SW846 8015M
Motor Oil	**16800**	10000	UJ	"	"	"	"	"	"
Surrogate: o-Terphenyl		88 %			20-129	"	"	"	"

000059

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

WCH Babcock, Inc 2620 Fermi Avenue Richland WA 99354	Project: RCC-116 Project Number: [none] Project Manager: Joan Kessner	Reported 05/05/2009 13:13

J189B6
0902067-13 (Solid)

12/5/09

Analyte	Result	Reporting Limit	Qualifier	Units	Dilution	Batch	Prepared	Analyzed	Method
Lionville Laboratory									
Extractable Petroleum Hydrocarbons by SW846 8015									
Diesel Range Organics	3300	3300	UJ	ug/kg wet	1	0903037	03/03/2009	03/11/2009	SW846 8015M
Motor Oil	**25000**	10000	UJ	"	"	"	"	"	"
Surrogate: o-Terphenyl		72 %			39-129	"	"	"	"

000060

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

WC Hanford, Inc 2620 Fermi Avenue Richland WA, 99354	Project: RCS-116 Project Number: [none] Project Manager: Joan Kessner	**Reported:** 03/05/2009 11:11

J189B7

0902067-14 (Solid)

12/5/09

Analyte	Result	Reporting Limit	Qualifier	Units	Dilution	Batch	Prepared	Analyzed	Method
Lionville Laboratory									
Extractable Petroleum Hydrocarbons by SW846 8015									
Diesel Range Organics	3300	3300	U J	mg/kg wet	1	1900917	03/09/2009	03/11/2009	SW846 8015M
Motor Oil	10000	10000	U J	"	"	"	"	"	"
Surrogate: p-Terphenyl		79 %			39-129	"	"	"	"

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

WC-Hanford, Inc. 2620 Fermi Avenue Richland WA, 99354	Project: RC-116 Project Number: [none] Project Manager: Joan Kessner	**Reported:** 03/05/2009 11:33

J18988

0902067-15 (Solid)

12/5/05

Analyte	Result	Reporting Limit	Qualifier	Units	Dilution	Batch	Prepared	Analyzed	Method
Lionville Laboratory									
Extractable Petroleum Hydrocarbons by SW846 8015									
Diesel Range Organics	3300	3300	U J	mg/kg wet	1	9C01037	03/03/2009	03/13/2009	SW846 8015M
Motor Oil	**5250**	10000	J UJ	"	"	"	"	"	"
Surrogate: o-Terphenyl		*67 %*			*39-129*	"	"	"	"

364 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

WC Hanford, Inc 2620 Fermi Avenue Richland WA, 99354	Project: RC-116 Project Number: [none] Project Manager: Joan Kessner	Reported: 05/05/2009 13:33

J189B9

0902067-16 (Solid)

12/5/09

Analyte	Result	Reporting Limit	Qualifier	Units	Dilution	Batch	Prepared	Analyzed	Method
			Lionville Laboratory						
Extractable Petroleum Hydrocarbons by SW846 8015									
Diesel Range Organics	3300	3300	U J	ug/kg wet	1	0903017	03/05/2009	03/13/2009	SW846 8015M
Motor Oil	**27900**	10000	U J	"	"	"	"	"	"
Surrogate: o-Terphenyl		*109 %*			30-129	"	"	"	"

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

WC Hanford, Inc
2620 Fermi Avenue
Richland WA, 99354

Project: RC-116
Project Number: [none]
Project Manager: Joan Kessner

Reported:
05/05/2009 [illegible]

J189C0
0902067-17 (Solid)

12/5/09

Analyte	Result	Reporting Limit	Qualifier	Units	Dilution	Batch	Prepared	Analyzed	Method
Lionville Laboratory									
Extractable Petroleum Hydrocarbons by SW846 8015									
Diesel Range Organics	3300	3300	U J	ug/kg wet	1	0903047	03/05/2009	03/13/2009	SW846 8015M
Motor Oil	**15100**	10000	U J	"	"	"	"	"	"
Surrogate: p-Terphenyl		72 %			30-120	"	"	"	"

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

WC-Hanford, Inc 2620 Fermi Avenue Richland WA, 99354	Project: RC-116 Project Number: (none) Project Manager: Joan Kessner	**Reported:** 05/05/2009 16:06

J189C1

0902067-18 (Solid)

12/5/09

Analyte	Result	Reporting Limit	Qualifier	Units	Dilution	Batch	Prepared	Analyzed	Method

Lionville Laboratory

Extractable Petroleum Hydrocarbons by SW846 8015

Analyte	Result	Reporting Limit	Qualifier	Units	Dilution	Batch	Prepared	Analyzed	Method
Diesel Range Organics	3300	3300	UJ	ug/kg wet	1	1903037	03/05/2009	03/13/2009	SW846 8015M
Motor Oil	**34100**	10000	Z UJ	-	-	-	-	-	-
Surrogate: p-Terphenyl		96 %			39-129	-	-	-	-

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

WCH Hanford, Inc 2620 Fermi Avenue Richland WA, 99354	Project: RC-116 Project Number: [none] Project Manager: Joan Kessner	**Reported:** 05/05/2009 13:33

J189C3

0902067-19 (Solid) 12/5/09

Analyte	Result	Reporting Limit	Qualifier	Units	Dilution	Batch	Prepared	Analyzed	Method
			Lionville Laboratory						
Extractable Petroleum Hydrocarbons by SW846 8015									
Diesel Range Organics	3300	3300	U J	ug/kg wet	1	9030317	03/05/2009	03/13/2009	SW846 8015M
Motor Oil	**83000**	10000	UJ	"	"	"	"	"	"
Surrogate: o-Terphenyl		*88 %*			*39-129*	"	"	"	"

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

WC Hanford, Inc 2620 Fermi Avenue Richland WA 99354	Project: RC-116 Project Number: [none] Project Manager: Joan Kessner	Reported: 03/03/2009 11:33

J189C4

0902067-20 (Solid)

12/5/09

Analyte	Result	Reporting Limit	Qualifier	Units	Dilution	Batch	Prepared	Analyzed	Method
Lionville Laboratory									
Extractable Petroleum Hydrocarbons by SW846 8015									
Diesel Range Organics	3300	1100	UJ	ug/kg wet	1	L903037	03/05/2009	03/13/2009	SW846 8015M
Motor Oil	34700	18000	OJ	"	"	"	"	"	"
Surrogate: o-Terphenyl		86 %			39-129	"	"	"	"

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

WCH Hanford, Inc
2620 Fermi Avenue
Richland WA, 99354

Project: RC-116
Project Number: [none]
Project Manager: Joan Kessner

Reported:
03/05/2009 13:33

J189J9
0902067-21 (Solid)

12/5/09

Analyte	Result	Reporting Limit	Qualifier	Units	Dilution	Batch	Prepared	Analyzed	Method
			Lionville Laboratory						
Extractable Petroleum Hydrocarbons by SW846 8015									
Diesel Range Organics	3300	3300	UJ	ug/kg wet	1	1903047	03/05/2009	03/04/2009	SW846 8015M
Motor Oil	**69400**	10000	UJ	"	"	"	"	"	"
Surrogate: o-Terphenyl		*93 %*			*30-150*	"	"	"	"

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

WCHanford, Inc.
2620 Fermi Avenue
Richland WA 99354

Project: RC-110
Project Number: [none]
Project Manager: Joan Kessner

Reported:
05/05/2009 13:33

J189K2

0902067-22 (Solid)

12/5/09

Analyte	Result	Reporting Limit	Qualifier	Units	Dilution	Batch	Prepared	Analyzed	Method
			Lionville Laboratory						
Extractable Petroleum Hydrocarbons by SW846 8015									
Diesel Range Organics	1300	1300	UJ	mg/kg wet	1	1903017	03/09/2009	03/14/2009	SW846 8015M
Motor Oil	**67000**	10800	UJ	"	"	"	"	"	"
Surrogate: o-Terphenyl		*100 %*			*10-139*	"	"	"	"

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

WC Hanford, Inc
2620 Fermi Avenue
Richland WA, 99354

Project: RC-116
Project Number: [none]
Project Manager: Joan Kessner

Reported:
03/05/2009 13:33

J189K4
0902067-23 (Solid)

12/5/09

Analyte	Result	Reporting Limit	Qualifier	Units	Dilution	Batch	Prepared	Analyzed	Method
Lionville Laboratory									
Extractable Petroleum Hydrocarbons by SW846 8015									
Diesel Range Organics	3300	3300	U J	mg/kg wet	1	1903017	03/05/2009	03/14/2009	SW846 8015M
Motor Oil	**28000**	10000	UJ	"	"	"	"	"	"
Surrogate: o-Terphenyl		*111 %*			*30-120*	"	"	"	"

WC-Hanford, Inc
2620 Fermi Avenue
Richland WA, 99354

Project: RC-116
Project Number: [none]
Project Manager: Joan Kessner

Reported:
05/05/2009 13:13

J189K5
09D2067-24 (Solid)

Vl 12/5/07

Analyte	Result	Reporting Limit	Qualifier	Units	Dilution	Batch	Prepared	Analyzed	Method
Lionville Laboratory									
Extractable Petroleum Hydrocarbons by SW846 8015									
Diesel Range Organics	3300	3300	UJ	ug/kg wet	1	9D03037	04/05/2009	04/14/2009	SW846 8015M
Motor Oil	**38100**	10000	UJ	"	"	"	"	"	"
Surrogate: o-Terphenyl		*87 %*			*39-129*	"	"	"	"

Appendix 4

Laboratory Narrative and Chain-of-Custody Documentation

264 Welsh Pool Road
Exton, Pennsylvania 19341
Phone (610) 280-3000
Fax (610) 280-3041

Case Narrative

Client: WC-HANFORD RC-116
LVL #: 0902067
SDG# K1544 **SAF#** RC-116

W.O. #: 60049-001-001-0001-00
Date Received: 02-21-2009

SEMIVOLATILE

Twenty (20) solid samples were collected on 02-19-2009.

The samples and their associated QC samples were extracted according to Lionville Laboratory SOPs based on SW 846 method 3540C on 03-05-2009 and analyzed according to criteria set forth in Lionville Laboratory SOPs based on SW 846 Method 8270C for TCL Semivolatile target compounds on 03-26,27,28-2009.

All solid samples are reported on a wet weight basis. The following is a summary of QC results accompanying the sample results. Lionville Laboratory (LVL) certifies that all test results meet the requirements of NELAC except as noted below:

1. Discrepancies from the Sample acceptance policy have been recorded on the Sample Receipt Checklist.
2. Samples were extracted and analyzed within holding time.
3. Non-target compounds were detected in these samples.
4. The following samples required dilution due to matrix: Sample J189C0 required a 2-fold instrument dilution; and Samples J189B6, J189C1, J189C3, J189C4, J189J9, J189K2, and J189K5 required 3-fold instrument dilutions. Reporting limits have been adjusted to reflect the necessary dilutions.
5. Two (2) of one hundred forty-four (144) surrogate recoveries were outside acceptance criteria. However, surrogate acceptance criteria were met for sample L903038-MS1 (i.e., no more than one outlier per fraction (acid and base neutral) and no recoveries less than 10%). The surrogate recovery criteria were not met for sample J189C1. A copy of the Sample Discrepancy Report (SDR# 09MS079) has been enclosed.
6. Three (3) of one hundred twenty-eight (128) matrix spike recoveries were outside acceptance criteria. A copy of the Sample Discrepancy Report (SDR# 09MS079) has been enclosed.
7. Six (6) of sixty-four (64) blank spike recoveries were outside acceptance criteria. A copy of the Sample Discrepancy Report (SDR# 09MS079) has been enclosed.
8. The method blank was below the reporting limit for all target compounds.
9. All initial calibrations associated with this data set were within acceptance criteria.

[illegible]

The results presented in this report relate only to the analytical testing and conditions of the samples at receipt and during storage. All pages of this report are integral parts of the analytical data. Therefore, this report should only be reproduced in its entirety of 107 pages.

10 All continuing calibration standards analyzed prior to sample extracts were within acceptance criteria.

11. Internal standard area and retention time criteria were met.

12. Manual integrations are performed according to SOP QA-125 to produce quality data with the utmost integrity. All manual integrations are required to be technically valid and properly documented. Appropriate technical flags are defined in the Glossary ("Technical Flags For Manual Integration").

13. LVL is NELAP accredited by the State of Pennsylvania. For a complete listing of accrediting authorities and the corresponding analytes/methods, please contact your Project Manager.

14. I certify that this sample data package is in compliance with SOW requirements, both technically and for completeness, other than the conditions detailed above. Release of the data contained in this hard-copy data package has been authorized by the Laboratory Manager or a designee as verified by the following signature.

Iain Daniels
Laboratory Manager
Lionville Laboratory

5/12/09
Date

Lionville Laboratory Sample Discrepancy Report (SDR)

SDR # 0910579

Initiator: [illegible]
Date: 9/1/09
Client: WA Hanford RL WL

Batch: 0901067
Samples: JT99C1 BS/MS/MSD
Method: [✓ SW846]/MCAWW/CLP

Parameter: [illegible]
Matrix: Solid
Prep Batch: 09J0339

1. Reason for SDR

a. COC Discrepancy

Tech Profile Error
Transcription Error
Client Request
Wrong Test Code
Sampler Error on C-O-C
Other

b. General Discrepancy

_ Missing Sample/Extract*
Hold Time Exceeded
Improper Bottle Type
Container Broken
Insufficient Sample*
Not Amenable to Analysis
_ Wrong Sample Pulled
Preservation Wrong
_ Label ID's Illegible
Received Past Hold

Note* Verified by [Log-in] or (Prep Group) (circle) signature/date

c. Problem (Include all relevant specific results; attach data if necessary)

(1) Low [illegible] Fluorophenol surrogate in sample JT99C1. All other surrogates within criteria (2) Several spike recoveries outside acceptance criteria in BS/MS/MSD.

2. Known or Probable Causes(s)

(1) Interferent eluting at same RT as surrogate (2) [illegible] that [illegible] decomposition in the gas chromatograph, [illegible] structures, [illegible] decomposition, other spikes. All surrogates within acceptance criteria.

3. Discussion and Proposed Action

Other Description: Narrate

_ Re-log
_ Entire Batch
_ Following Samples
Re-leach
_ Re-extract
_ Re-digest
Revise EDD
Change Test Code to
_ Place On/Take Off Hold (circle)

4. Project Manager Instructions. signature/date 9/1/09

✓ Concur with Proposed Action
Disagree with Proposed Action, See Instruction
_ Include in Case Narrative
Client Contacted:
Date/Person
Add
_ Cancel

5. Final Action. signature/date 9/11/09

Other Explanation:

Verified re-[log][leach][extract][digest][analysis] (circle)
✓ Included in Case Narrative
Hard Copy COC Revised
_ Electronic COC Revised
EDD Corrections Completed

When Final Action has been recorded, forward original to QA for diposition.

Route
Lab Manager: Daniels
✓ Project Mgr (circle): [✓ Johnson] / Stone
_ Sample Prep (circle): Ford
_ Log-in: King

Route
_ Metals: Welsh /
_ Inorganic: Perrone /
GC/LC: Carey /
MS VOA: Rubino /
✓ MS BNA: [✓ Garden] /
_ Other:

QA-139 A 0208

000075

LVL
LIONVILLE LABORATORY
A division of [illegible] Corporation

264 Welsh Pool Road
Exton, Pennsylvania 19341
Phone (610) 280-3000
Fax (610) 280-3041

Case Narrative

Client: WC-HANFORD RC-116
LVL #: 0902067
SDG/SAF # K1544 / RC-116

W.O. #: 60049-001-001-0001-00
Date Received: 02-21-2009

DIESEL RANGE ORGANICS

Twenty (20) solid samples were collected on 02-19-2009.

The samples and their associated QC samples were extracted on 03-05-2009 and analyzed according to Lionville Laboratory SOPs based on SW846, 3rd Edition procedure on 03-13,14-2009. The extraction procedure was based on method 3540C and the extracts were analyzed based on method 8015B for DRO.

All soil samples are reported on a dry weight basis unless requested by the client, required by the method, or noted otherwise. The following is a summary of QC results accompanying the sample results. Lionville Laboratory Inc (LvL) certifies that all test results meet the requirements of NELAC except as noted below:

1. All required holding time for extraction and analysis have been met.
2. The method blank contained Motor Oil Range Organics (MORO) at a level above the quantitation limit. Samples contain MORO in the range of 1 to 5 times the level in the blank. Although there is no client specified reporting limit, the blank result is above the normal quantitation limit, therefore all sample results should be considered as maximum values.
3. One (1) of twenty-four (24) surrogate recoveries was outside acceptance criteria. However, the surrogate acceptance criteria were met (i.e., no more than one outlier per sample).
4. All blank spike recoveries were within acceptance criteria.
5. All matrix spike recoveries were within acceptance criteria.
6. All initial calibrations associated with this data set were within acceptance criteria.
7. All continuing calibration standards analyzed prior to sample extracts were within acceptance criteria.

8. LvL is NELAP accredited by the State of Pennsylvania. For a complete listing of accrediting authorities and the corresponding analytes/methods, please contact your Project Manager.

9. I certify that this sample data package is in compliance with SOW requirements, both technically and for completeness, other than the conditions detailed above. Release of the data contained in this hard-copy data package has been authorized by the laboratory Manager or a designee, as verified by the following signature.

Inin Daniels
Laboratory Manager
Lionville Laboratory

5/11/09
Date

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-116-1330

Page 1 of 2

Collector: B M	Company Contact: JOAN KESSNER Telephone No.: 375-4688	Project Coordinator: KESSNER, JM	Price Code: 9K Data Turnaround: 45 Days
Project Designation: Columbia River Component of the RCBRA - Sediment	Sampling Location: HA-2 SSD	SAF No.: RC-116	
Ice Chest No.: WCH-08-013, 022, 072	Field Logbook No.: EL-1631-1 COA: BESCRC6530	Method of Shipment: FED EX	
Shipped To: EBERLINE SERVICES (OAK RIDGE)	Offsite Property No.: N/A	Bill of Lading/Air Bill No.: 796361208296	

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

8200078

Preservation	None	None	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	None
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	aG	aG	G	-
No. of Container(s)	1	1	1	1	1	1	1	1	2	1
Volume	1500g	100g	10g	10g	150g	250g	125g	250g	250g	1
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Technetium-99	See item (2) in Special Instructions	See item (3) in Special Instructions	PCBs - 8082	Pesticides - 8081	Semi-VOA - 8270A (TCL)	See item (4) in Special Instructions	-

Sample No.	Matrix *	Sample Date	Sample Time										
J18885	OTHER SOLID	2/17/09	921					X	X	X	X	X	

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab.

CHAIN OF POSSESSION	Sign/Print Names		
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
B Berg	2/17/09 1430	Erin A	2/17/09 1630
Erin A	2/20/09 0800	D Heidelberg	2/20/09 0800
D Heidelberg	2/20/09 1200	Fedex 2/20/09	1200
	2-21-09 1045		2-21-09 1045
	2-23-09 0850		2-23-09 0850

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) {Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238}

(2) Strontium-89,90 - Total Sr; Isotopic Thorium {Thorium-228...}; Isotopic Uranium {Uranium-233/234, Uranium-235, Uranium-238}; Isotopic Plutonium

(3) ICP Metals - 6010 (Full List) {Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc}; Mercury - 7471 - (CV)

(4) VOA - 8260A (TCL) {1,1,1-Trichloroethane, 1,1,2,2-Tetrachloroethane, 1,1,2-Trichloroethane, 1,1-Dichloroethane, 1,1-Dichloroethene, 1,2-Dichloroethane, 1,2-Dichloropropane, 2-Butanone, 2-Hexanone, 4-Methyl-2-Pentanone, Acetone, Benzene, Bromodichloromethane, Bromoform, Bromomethane, Carbon disulfide, Carbon tetrachloride, Chlorobenzene, Chloroethane, Chloroform, Chloromethane, cis-1,2-Dichloroethylene, cis-1,3-Dichloropropene, Dibromochloromethane, Ethylbenzene, Methylene chloride, Styrene, Tetrachloroethene, Toluene, trans-1,2-Dichloroeth

Matrix *

S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-116-1330 | Page 2 of 2

Collector: BM

Company Contact: JOAN KESSNER

Telephone No.: 375-4688

Project Coordinator: KESSNER, JH

Price Code: 9K

Data Turnaround: 45 Days

Project Designation: Columbia River Component of the RCBRA - Sediment

Sampling Location: HA- 2 SSD

SAF No.: RC-116

Ice Chest No.: WCH-08-013,672,027

Field Logbook No.: EL-1631-1

COA: BESCRCGS20

Method of Shipment: FED EX

Shipped To: EBERLINE SERVICES (LIONVILLE)

Offsite Property No.: N/A

Bill of Lading/Air Bill No.: 796361208296

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

Preservation	Cool 4C	Cool 4C	None
Type of Container	G	aG	G/P
No. of Container(s)	1	1	1
Volume	125mL 5	125g	1000g
SAMPLE ANALYSIS	See item (1) in Special Instructions	TOC - 415.1	Particle Size (Dry Sieve) - Outs

Sample No.	Matrix *	Sample Date	Sample Time			
J18985	OTHER SOLID	2/19/09	921	X	X	X

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
B Boyl	2/19/09 1620	Frey	2/19/09 1620
Frey	2/20/09 0800	D Heidelberg	2/20/09 0800
D Heidelberg	2/20/09 1200	FedEx	2/20/09 1200
FedEx	2-21-09 1045		2-21-09 1045
FedEx	2-23-09 0850		2-23-09 0850

SPECIAL INSTRUCTIONS

5 add 2.8.09

☑ (1) TPH-Diesel Range - WTPH-D = {Total petroleum hydrocarbons - diesel range, Total petroleum hydrocarbons - motor oil (high boiling)}

Sampler unavailable to remove samples
from controlled storage. Shipper removed
samples from storage location using custody
al samples for shipment to lab

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION — Received By | Title | Date/Time

FINAL SAMPLE DISPOSITION — Disposal Method | Disposed By | Date/Time

WCH-EE-011

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-136-1331 Page 1 of 1

Collector: BA	Company Contact: JOAN KESSNER Telephone No.: 375-4688	Project Coordinator: KESSNER, JH	Price Code: 9K Data Turnaround: 45 Days
Project Designation: Columbia River Component of the RCBRA - Sediment	Sampling Location: HA-4 SSD	SAF No.: RC-116	
Ice Chest No.: WCH-08-013, 022, 072	Field Logbook No.: EL-1631-1 COA: BESCRCA520	Method of Shipment: FED EX	
Shipped To: EBERLINE SERVICES (LIONVILLE)	Offsite Property No.: N/A	Bill of Lading/Air Bill No.: 796361208296	

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

0800000

Preservation	None	None	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	None
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	aG	aG	G	-
No. of Container(s)	1	1	1	1	1	1	1	1	1	1
Volume	1500g	100g	10g	50g	250g	250g	125g	250g	250g	[illegible]
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Technetium-99	See item (2) in Special Instructions	See item (3) in Special Instructions	PCBs - 8082	Pesticides - 8081	Semi-VOA - 8270A (TCL)	See item (4) in Special Instructions	-

Sample No.	Matrix *	Sample Date	Sample Time										
J18986	OTHER SOLID	2/17/09	1200					X	X	X	X	X	

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location using custody of samples for shipment to lab

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
B-Tyl	2/17/09 1620	Eric A	2/18/09 630
Eric A	2/20/09 0800	D. Hellberg	2/20/09 0800
D. Hellberg	2/20/09 1200	FedEx	2/20/09 1200
	2-21-09 1045		2-21-09 1045
	2-23-09 1050		2-23-09 10

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) (Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238)
(2) Strontium-89,90 - Total Sr, Isotopic Thorium (Thorium-232), Isotopic Uranium (Uranium-233/234, Uranium-235, Uranium-238), Isotopic Plutonium
(3) ICP Metals - 6010 (Full List) (Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc); Mercury - 7471 - (CV)
(4) VOA - 8260A (TCL) (1,1,1-Trichloroethane, 1,1,2,2-Tetrachloroethane, 1,1,2-Trichloroethane, 1,1-Dichloroethane, 1,1-Dichloroethene, 1,2-Dichloroethane, 1,2-Dichloropropane, 2-Butanone, 2-Hexanone, 4-Methyl-2-Pentanone, Acetone, Benzene, Bromodichloromethane, Bromoform, Bromomethane, Carbon disulfide, Carbon tetrachloride, Chlorobenzene, Chloroethane, Chloroform, Chloromethane, cis-1,2-Dichloroethylene, cis-1,3-Dichloropropene, Dibromochloromethane, Ethylbenzene, Methylene chloride, Styrene, Tetrachloroethene, Toluene, trans-1,2-Dichloroethylene

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-116-1331

Page 2 of 2

Collector: BC

Company Contact: JOAN KESSNER

Telephone No.: 375-4688

Project Coordinator: KESSNER, JH

Price Code: 9K

Data Turnaround: 45 Days

Project Designation: Columbia River Component of the RCBRA - Sediment

Sampling Location: HA- 64 SSD

SAF No.: RC-116

Ice Chest No.: WCH-08-013, 072, 022

Field Logbook No.: EL-1631-1

COA: BESRC6520

Method of Shipment: FED EX

Shipped To: EBERLINE SERVICES/ LIONVILLE

Offsite Property No.: N/A

Bill of Lading/Air Bill No.: 796361208296

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

E80000

Preservation	Cool 4C	Cool 4C	None
Type of Container	G	aG	G/P
No. of Container(s)	1	1	1
Volume	125mL 5	125g	1000g
SAMPLE ANALYSIS	See item (1) in Special Instructions	TOC - 415.1	Particle Size (Dry Sieve) - D422

Sample No.	Matrix *	Sample Date	Sample Time			
J18986	OTHER SOLID	2/19/09	1000	X	X	X

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Michael Betzl	2/19/09 1630	E. A.	2/19/09 1630
Eric A	2/20/09 0800	D. Heitelberg	2/20/09 0800
D. Heitelberg	2/20/09 1200	Fedex	2/20/09 1200
	2-21-09 1045		2-21-09 1045
	2-23-09 0850		2-23-09/0850

SPECIAL INSTRUCTIONS

5 and #509

(1) TPH-Diesel Range - WTPH-D = (Total petroleum hydrocarbons - diesel range, Total petroleum hydrocarbons - motor oil (high boiling))

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab.

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

9906996825

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-116-1332	Page 1 of 2

Collector: B

Company Contact: JOAN KESSNER

Telephone No.: 375-4685

Project Coordinator: KESSNER, JH

Price Code: 9K

Data Turnaround: 45 Days

Project Designation: Columbia River Component of the RCBRA - Sediment

Sampling Location: HA- 6 SSD

SAF No.: RC-116

Ice Chest No.: WCH-08-013, 022, 072

Field Logbook No.: EL-1631-1

COA: BESCRC6520

Method of Shipment: FED EX

Shipped To: EBERLINE SERVICES [✓ LIONVILLE]

Offsite Property No.: N/A

Bill of Lading/Air Bill No.: 796361208296

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

			Preservation	None	None	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	None
			Type of Container	G/P	G/P	G/P	G/P	G/P	aG	aG	aG	G	
			No. of Container(s)	1	1	1	1	1	1	1	1	1	1
			Volume	1500g	100g	10g	10g	250g	250g	125g	250g	250g	1'
SAMPLE ANALYSIS				See item (1) in Special Instructions	Carbon-14	Technetium-99	See item (2) in Special Instructions	See item (3) in Special Instructions	PCBs - 8082	Pesticides - 8081	Semi-VOA - 8270A (TCL)	See item (4) in Special Instructions	
Sample No.	Matrix *	Sample Date	Sample Time										
J18987	OTHER SOLID	2/14/05	1030					X	X	X	X	X	

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab

CHAIN OF POSSESSION	Date/Time	Sign/Print Names	Date/Time
Relinquished By/Removed From B Mayl	2/14/05 1630	Received By/Stored In Eric A	2/14/05 1630
Relinquished By/Removed From Eric A	2/20/09 0800	Received By/Stored In D Heidelberg	2/20/09 0800
Relinquished By/Removed From D Heidelberg	2/20/09 1200	Received By/Stored In FedEx	2/20/09 1200
Relinquished By/Removed From FedEx	2-21-09 1045	Received By/Stored In	2-21-09 1045
Relinquished By/Removed From FedEx	2-23-09 0850	Received By/Stored In	2-23-09 0850
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) [Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238]

(2) Strontium-89,90 - Total Sr; Isotopic Thorium [Thorium-232]; Isotopic Uranium [Uranium-233/234, Uranium-235, Uranium-238]; Isotopic Plutonium

(3) ICP Metals - 6010 (Full List) [Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc]; Mercury - 7471 - (CV)

(4) VOA - 8260A (TCL) [1,1,1-Trichloroethane, 1,1,2,2-Tetrachloroethane, 1,1,2-Trichloroethane, 1,1-Dichloroethane, 1,1-Dichloroethene, 1,2-Dichloroethane, 1,2-Dichloropropane, 2-Butanone, 2-Hexanone, 4-Methyl-2-Pentanone, Acetone, Benzene, Bromodichloromethane, Bromoform, Bromomethane, Carbon disulfide, Carbon tetrachloride, Chlorobenzene, Chloroethane, Chloroform, Chloromethane, cis-1,2-Dichloroethylene, cis-1,3-Dichloropropene, Dibromochloromethane, Ethylbenzene, Methylene chloride, Styrene, Tetrachloroethene, Toluene, trans-1,2-Dichloroethylene

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-116-1332 Page 2 of 7

Collector BM	Company Contact JOAN KESSNER	Telephone No. 375-4659	Project Coordinator KESSNER, JH
Project Designation Columbia River Component of the RCBRA - Sediment	Sampling Location HA-6 SSD		SAF No. RC-116
Ice Chest No. WCH-08-013, 092, 022	Field Logbook No. EL-1631-1	COA DESCRC6120	Method of Shipment FED EX
Shipped To CHERLINE SERVICES [✓ LIONVILLE]	Offsite Property No. N/A		Bill of Lading/Air Bill No. 796360208296

Price Code 9K

Data Turnaround 45 Days

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

Preservation	Cool 4C	Cool 4C	None
Type of Container	G	aG	G/P
No. of Container(s)	1	1	1
Volume	125mL 5	125g	1000g
SAMPLE ANALYSIS	See item (1) in Special Instructions	TOC - 415.1	Percent Sand (Dry Sieve) - D422

Sample No.	Matrix *	Sample Date	Sample Time			
J18987	OTHER SOLID	2/15/09	1050	X	X	X

CHAIN OF POSSESSION Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
B. Ed GL	2/15/09 1120	Eric A	2/15/09 1630
Eric A	2/20/09 0800	D Heidelberg	2/20/09 0800
D. Heidelberg	2/20/09 1200	Fedex 2/20/09	1200
Fedex	2-21-09/1045		2-21-09/1045
Fedex	2-23-09/0850	D. Smith	2-23-09/0850

SPECIAL INSTRUCTIONS
5 ≥ 509.10
(1) TPH Diesel Range - WTPH-D + (Total petroleum hydrocarbons - diesel range, Total petroleum hydrocarbons - motor oil (high boiling))

Samples unavailable to remove from controlled storage. Shipper removed samples from storage location using custody of samples for shipment to lab.

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

3900053

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-116-1333 | Page 2 of 2

Collector	Company Contact JOAN KESSNER	Telephone No. 373-4688	Project Coordinator KESSNER, JH
Project Designation Columbia River Component of the RCBRA - Sediment	Sampling Location HA-8 SSD		SAF No. RC-116
Ice Chest No. WCH-08-013, 032, 022	Field Logbook No. EL-1631-1	COA BESCRC6620	Method of Shipment FED EX
Shipped To EBERLINE SERVICES [✓ LIONVILLE]	Offsite Property No. N/A		Bill of Lading/Air Bill No. 8963 6120 8296

Price Code 9K

Data Turnaround 45 Days

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

4800084

Preservation	Cool 4C	Cool 4C	None
Type of Container	G	aG	G/P
No. of Container(s)	1	1	1
Volume	125mL 5	125g	1000g
SAMPLE ANALYSIS	See item (1) in Special Instructions	TOC - 415.1	Particle Size (Dry Sieve) D422

Sample No.	Matrix *	Sample Date	Sample Time			
J16986	OTHER SOLID	2/19/09	1046	X	X	X

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
	2/19/09 1630		2/19/09 1630
	2-20-09 0800	D Heilelberg	2/20/09 0800
D Heilelberg	2/20/09 1200	FedEx	2/20/09 1200
	2-21-09 1045		2-21-09 1045
	2-23-09 0850		2-23-09 0850

SPECIAL INSTRUCTIONS

5 JH 2-6-09

(1) TPH-Diesel Range - WTPH-D - (Total petroleum hydrocarbons - diesel range, Total petroleum hydrocarbons - motor oil (high boiling))

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

[illegible]

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-116-1333 | Page 1 of 2

Collector BK	Company Contact JOAN KESSNER	Telephone No. 375 4688	Project Coordinator KESSNER, JH
Project Designation Columbia River Component of the RCBRA - Sediment	Sampling Location HA- X SSD		SAF No. RC-116
Ice Chest No. WCH-08-013,022,072	Field Logbook No. EL-1631-1	COA BE5CRC6320	Method of Shipment FED EX
Shipped To EBERLINE SERVICES [✓ RICHMOND]	Offsite Property No. N/A		Bill of Lading/Air Bill No. 796361208296 ~~WCH-08-01PH~~ 2/16/09

Price Code **9K** | Data Turnaround **45 Days**

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

			Preservation	None	None	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	None
			Type of Container	G/P	G/P	G/P	G/P	G/P	aG	aG	aG	G	-
			No. of Container(s)	1	1	1	1	1	1	1	1		1
			Volume	1500g	150g	10g	10g	350g	150g	125g	250g	2x5g	1*
SAMPLE ANALYSIS				See item (1) in Special Instructions	Carbon-14	Technetium-99	See item (2) in Special Instructions	See item (3) in Special Instructions	PCBs - 8082	Pesticides - 8081	Semi-VOA - 8270A (TCL)	See item (4) in Special Instructions	-
Sample No.	Matrix *	Sample Date	Sample Time										
J18988	OTHER SOLID	2/16/09	1046					X	X	X	X	X	

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location, taking custody of samples for shipment to lab

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
BK	2/16/09 1630	Eric A	2/16/09 1630
Eric A	2/20/09 0800	D. Heidelberg	2/20/09 0800
D. Heidelberg	2/20/09 1200	FedEx	2/20/09 1200
FedEx	2-21-09 1045		2-21-09 1045
FedEx	2-23-09 1025		2-23-09 1025

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) [Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238]
(2) Strontium-89,90 – Total Sr; Isotopic Thorium (Thorium-232); Isotopic Uranium [Uranium-233/234, Uranium-235, Uranium-238]; Isotopic Plutonium
(3) ICP Metals - 6010 (Full List) [Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc]; Mercury - 7471 - (CV)
(4) VOA - 8260A (TCL) [1,1,1-Trichloroethane, 1,1,2,2-Tetrachloroethane, 1,1,2-Trichloroethane, 1,1-Dichloroethane, 1,1-Dichloroethene, 1,2-Dichloroethane, 1,2-Dichloropropane, 2-Butanone, 2-Hexanone, 4-Methyl-2-Pentanone, Acetone, Benzene, Bromodichloromethane, Bromoform, Bromomethane, Carbon disulfide, Carbon tetrachloride, Chlorobenzene, Chloroethane, Chloroform, Chloromethane, cis-1,2-Dichloroethylene, cis-1,3-Dichloropropene, Dibromochloromethane, Ethylbenzene, Methylenechloride, Styrene, Tetrachloroethene, Toluene, trans-1,2-Dichloroethylene

Matrix *

[illegible]

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Washington Closure Hanford	**CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST**	RC-116-1335	Page 1 of 2
Collector LS	Company Contact JOAN KESSNER — Telephone No. 375-4688	Project Coordinator KESSNER, JH	Price Code 9K — Data Turnaround 45 Days
Project Designation Columbia River Component of the RCBRA - Sediment	Sampling Location HA-? SSD	SAF No. RC-116	
Ice Chest No. WCH-08-013, 022, 022	Field Logbook No. EL-1631-1 — COA BESCRC6520	Method of Shipment FED EX	
Shipped To EBERLINE SERVICES (LIONVILLE)	Offsite Property No. N/A	Bill of Lading/Air Bill No. 796361208296	

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

Preservation	None	None	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	None
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	aG	aG	G	-
No. of Container(s)	1	1	1	1	1	1	1	1	1	1
Volume	1500g	100g	10g	10g	250g	250g	125g	250g	250g	[illegible]
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Technetium-99	See item (2) in Special Instructions	See item (3) in Special Instructions	PCBs - 8082	Pesticides 8081	Semi VOA - 8270 (TCL)	See item (4) in Special Instructions	-

Sample No.	Matrix *	Sample Date	Sample Time										
J18590	OTHER SOLID	2/19/09	1030					X	X	X	X	X	

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab.

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
	2-19-09 / 1630	Rel B	2/19/09 / 1630
Kit 2/20/09	0800	B Woodward	2/20/09 0800
B Woodward	2/20/09 1200	Fed Ex	2/20/09 1200
FedEx	2-21-09 / 1045		2-21-09/1045
FedEx	2-23-09 /0850		2-23-09 /0850

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) {Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238}

(2) Strontium-89,90 - Total Sr, Isotopic Thorium {Thorium-232}, Isotopic Uranium {Uranium-233/234, Uranium-235, Uranium-238}, Isotopic Plutonium

(3) ICP Metals - 6010 (Full List) {Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc}; Mercury - 7471 - (CV)

(4) VOA - 8260A (TCL) {1,1,1-Trichloroethane, 1,1,2,2-Tetrachloroethane, 1,1,2-Trichloroethane, 1,1-Dichloroethane, 1,1-Dichloroethene, 1,2-Dichloroethane, 1,2-Dichloropropane, 2-Butanone, 2-Hexanone, 4-Methyl-2-Pentanone, Acetone, Benzene, Bromodichloromethane, Bromoform, Bromomethane, Carbon disulfide, Carbon tetrachloride, Chlorobenzene, Chloroethane, Chloroform, Chloromethane, cis-1,2-Dichloroethylene, cis-1,3-Dichloropropene, Dibromochloromethane,

Matrix * [illegible]

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

9801086

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-116-1335

Page 2 of 2

Collector LS	Company Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator KESSNER, JH
Project Designation Columbia River Component of the RCBRA - Sediment	Sampling Location HA-18 SSD		SAF No. RC-116
Ice Chest No. WCH-08-013, 022, 072	Field Logbook No. EL-1631-1	COA BESCRC6530	Method of Shipment FED EX
Shipped To EBERLINE SERVICES [✓ RICHMOND]	Offsite Property No. N/A		Bill of Lading/Air Bill No. 796361208296

Price Code 9K

Data Turnaround 45 Days

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

240000

Preservation	Cool 4C	Cool 4C	None							
Type of Container	G	aG	GP							
No. of Container(s)	1	1	1							
Volume	125mL	125g	1000g							
SAMPLE ANALYSIS	5 See item (5) in Special Instructions	TOC - 415.1	Particle Size (Dry Sieve) - D422							

Sample No.	Matrix *	Sample Date	Sample Time										
J18990	OTHER SOLID	2/19/09	1022	X	X	X							

CHAIN OF POSSESSION	Date/Time	Sign/Print Names	Date/Time
Relinquished By/Removed From L [illegible]	2-19-09 / 1630	Received By/Stored In RB	2-19-09 / 1630
Relinquished By/Removed From RB	2/20/09 0800	Received By/Stored In B L Woodward	2/20/09 0800
Relinquished By/Removed From B L Woodward	2/20/09 1200	Received By/Stored In Fed Ex	2/20/09 1200
Relinquished By/Removed From	2-21-09 1045	Received By/Stored In	2-21-09 1045
Relinquished By/Removed From	2-23-09 1085	Received By/Stored In	2-23-09 1085
Relinquished By/Removed From		Received By/Stored In	

SPECIAL INSTRUCTIONS

5 [illegible]

(5) TPH-Diesel Range - WTPH-D + (Total petroleum hydrocarbons - diesel range, Total petroleum hydrocarbons - motor oil (high boiling))

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-116-1336

Page 1 of 2

Collector: L Smith/Dn

Company Contact: JOAN KESSNER

Telephone No.: 375-4688

Project Coordinator: KESSNER, JH

Price Code: 9K

Data Turnaround: 45 Days

Project Designation: Columbia River Component of the RCBRA - Sediment

Sampling Location: HA- / SSD

SAF No.: RC-116

Ice Chest No.: WH-08-03, 022, 072

Field Logbook No.: EL-1631-1

COA: BESCRC6520

Method of Shipment: FED EX

Shipped To: EBERLINE SERVICES (JONVILLE)

Offsite Property No.: N/A

Bill of Lading/Air Bill No.: 796361268296

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

Preservation	None	None	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	None
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	aG	aG	G	-
No. of Container(s)	1	1	1	1	1	1	1	1	1	1
Volume	1500g	100g	30g	10g	250g	250g	125g	250g	250g	1'
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Technetium-99	See item (2) in Special Instructions	See item (3) in Special Instructions	PCBs - 8082	Pesticides - 8081	Semi-VOA - 8270A (TCL)	See item (4) in Special Instructions	-

Sample No.	Matrix *	Sample Date	Sample Time										
J18981	OTHER SOLID	2/19/09	0940					X	X	X	X	X	

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
L Smith	2-19-09 / 1630	Ref B	2/19/09 1630
Ref B	2/20/09 0800	B Woodward	2/20/09 0800
B Woodward	2/20/09 1200	FedEx	2/20/09 1200
FedEx	2-21-09 / 1045	S	2-21-09 / 1045
FedEx	2-23-09 / 0850		2-23-09 / 0850

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) {Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238}
(2) Strontium-89,90 - Total Sr; Isotopic Thorium {Thorium-232}; Isotopic Uranium {Uranium-233/234, Uranium-235, Uranium-238}; Isotopic Plutonium
(3) ICP Metals - 6010 (Full List) {Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc}; Mercury - 7471 - (CV)
(4) VOA - 8260A (TCL) {1,1,1-Trichloroethane, 1,1,2,2-Tetrachloroethane, 1,1,2-Trichloroethane, 1,1-Dichloroethane, 1,1-Dichloroethene, 1,2-Dichloroethane, 1,2-Dichloropropane, 2-Butanone, 2-Hexanone, 4-Methyl-2-Pentanone, Acetone, Benzene, Bromodichloromethane, Bromoform, Bromomethane, Carbon disulfide, Carbon tetrachloride, Chlorobenzene, Chloroethane, Chloroform, Chloromethane, cis-1,2-Dichloroethylene, cis-1,3-Dichloropropene, Dibromochloromethane,

Matrix *
S = Soil
SE = Sediment
SO = Solid
SL = Sludge
W = Water
O = Oil
A = Air
DS = Drum Solids
DL = Drum Liquids
T = Tissue
WI = Wipe
L = Liquid
V = Vegetation
X = Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-116-1336

Page 1 of 1

Collector L Stratton	Company Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator KESSNER, JH
Project Designation Columbia River Component of the RCBRA - Sediment	Sampling Location HA- / SSD		SAP No. RC-116
Ice Chest No. WCH-08-013, 022, 072	Field Logbook No. EL-1633-5	COA BESCRC6520	Method of Shipment FED EX
Shipped To EBERLINE SERVICES [✓ LIONVILLE]	Offsite Property No. N/A		Bill of Lading/Air Bill No. 796361268296

Price Code 9K

Data Turnaround 45 Days

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

Preservation	Cool 4C	Cool 4C	None							
Type of Container	G	aG	G/P							
No. of Container(s)	1	1	1							
Volume	125mL S	125g	1000g							
SAMPLE ANALYSIS	See item (1) in Special Instructions	TOC - 415.1	Particle Size (Dry Sieve) - D422							

Sample No.	Matrix *	Sample Date	Sample Time										
J18991	OTHER SOLID	2/19/09	0940	X	X	X							

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
J Shelton	2-19-09 1650	Ref B	2-19-09 1630
Ref B	2/20/09 0800	B Woodward	2/20/09 0800
B Woodward	2/20/09 1200	Fed Ex	2/20/09 1200
	2-21-09 1045		2-21-09 1045
	2-23-09 1050		2-23-09 1050

SPECIAL INSTRUCTIONS

5 ~~##~~ 2509

(1) TPH-Diesel Range - WTPH-D = (Total petroleum hydrocarbons - diesel range, Total petroleum hydrocarbons - motor oil (high boiling))

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Washington Closure Hanford	**CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST**	RC-116-1337	Page 1 of 2

Collector L.S	Company Contact JOAN KESSNER	Telephone No. 373-4458	Project Coordinator KESSNER, JH
Project Designation Columbia River Component of the RCBRA - Sediment	Sampling Location HA- 5 SSD		SAF No. RC-116
Ice Chest No. WCH-08-08, 022, 072	Field Logbook No. EL-1631-1	COA DESCRC6520	Method of Shipment FED EX
Shipped To EBERLINE SERVICES (LIONVILLE)	Offsite Property No. N/A		Bill of Lading/Air Bill No. 796361208296

Price Code 9K

Data Turnaround 45 Days

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

0600090

Preservation	None	None	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	None
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	aG	aG	G	-
No. of Container(s)	1	1	1	1	1	1	1	1	1	1
Volume	1500g	100g	10g	10g	250g	250g	125g	250g	250g	-
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Technetium-99	See item (2) in Special Instructions	See item (3) in Special Instructions	PCBs - 8082	Pesticides - 8081	Semi-VOA - 8270A (TCL)	See item (4) in Special Instructions	-

Sample No.	Matrix *	Sample Date	Sample Time										
J18592	OTHER SOLID	2/19/09	1015					X	X	X	X	X	

Samples unavailable to remove samples from controlled storage. Shipper retrieved samples from storage location using custody of samples for shipment to lab

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
	2-19-09 / 1630	Rif B	2-19-09 / 1630
Rif B	2/20/09 0800	B Woodward	2/20/09 0800
B Woodward	2/20/09 1200	Fed Ex	2/20/09 1200
FedEx	2-21-09 1045		2-21-09 1045
FedEx	2-23-09 0850		2-23-09 0850

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) {Americium-241, Antimony-125, Beryllium-7, Cerium-144, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238}

(2) Strontium-89,90 - Total Sr; Isotopic Thorium {Thorium-232}; Isotopic Uranium {Uranium-233/234, Uranium-235, Uranium-238}; Isotopic Plutonium

(3) ICP Metals - 6010 (Full List) {Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc}; Mercury - 7471 - (CV)

(4) VOA - 8260A (TCL) {1,1,1-Trichloroethane, 1,1,2,2-Tetrachloroethane, 1,1,2-Trichloroethane, 1,1-Dichloroethane, 1,1-Dichloroethene, 1,2-Dichloroethane, 1,2-Dichloropropane, 2-Butanone, 2-Hexanone, 4-Methyl-2-Pentanone, Acetone, Benzene, Bromodichloromethane, Bromoform, Bromomethane, Carbon disulfide, Carbon tetrachloride, Chlorobenzene, Chloroethane, Chloroform, Chloromethane, cis-1,2-Dichloroethylene, cis-1,3-Dichloropropene, Dibromochloromethane, Ethylbenzene, Methylenechloride, Styrene, Tetrachloroethene, Toluene, trans-1,2-Dichloroethylene

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-116-1337

Page 1 of 1

Collector CJ

Company Contact JOAN KESSNER

Telephone No. 375-4688

Project Coordinator KESSNER, JH

Price Code 9K

Data Turnaround 45 Days

Project Designation Columbia River Component of the RCBRA - Sediment

Sampling Location HA- 5 SSD

SAF No. RC-116

Ice Chest No. WCH-08-013, 022, 022

Field Logbook No. EL-1631-1

COA BESCRC6520

Method of Shipment FED EX

Shipped To EBERLINE SERVICES (LIONVILLE)

Offsite Property No. N/A

Bill of Lading/Air Bill No. 796361208296

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

Preservation	Cool 4C	Cool 4C	None
Type of Container	G	aG	G/P
No. of Container(s)	1	1	1
Volume	225mL 5	125g	1000g
SAMPLE ANALYSIS	See item (1) in Special Instructions	TOC - 415.1	Particle Size (Dry Sieve) - D422

Sample No.	Matrix *	Sample Date	Sample Time			
J18992	OTHER SOLID	2/15/09	12:15	X	X	X

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
	2 15 09/1630		2 15 09/1630
Kat B	2/20/09 0800	B Woodward	2/20/09 0800
B Woodward	2/20/09 1200	Fed Ex	2/20/09 1200
	2-21-09 1045		2-21-09 1045
	2-23-09 / 0850		2-23-09 / 0850

SPECIAL INSTRUCTIONS

5 4/0 2009

(1) TPH-Diesel Range - WTPH-D = (Total petroleum hydrocarbons - diesel range, Total petroleum hydrocarbons - motor oil (high boiling))

Sample unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

1600091

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-116-1350

Page 1 of 2

Collector: BA

Company Contact: JOAN KESSNER

Telephone No.: 375-4688

Project Coordinator: KESSNER, JR

Price Code: 9K

Data Turnaround: 45 Days

Project Designation: Columbia River Component of the RCBRA - Sediment

Sampling Location: BL- 3 SSD

SAF No: RC-116

Ice Chest No.: WCH-08-013,072,022

Field Logbook No.: EL-1631-1

COA: RESCRC6520

Method of Shipment: FED EX

Shipped To: EBERLINE SERVICES [✓ LIONVILLE]

Offsite Property No.: N/A

Bill of Lading/Air Bill No.: 796361208296

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

Preservation	None	None	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	None
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	aG	aG	G	-
No. of Container(s)	1	1	1	1	1	1	1	1	1	1
Volume	1500g	100g	10g	10g	250g	250g	125g	250g	250g	1
SAMPLE ANALYSIS	See item (1) in Special Instructions	[illegible]	[illegible]	See item (2) in Special Instructions	See item (3) in Special Instructions	PCBs - 8082	Pesticides - 8081	Semi-VOA - 8270A (TCL)	See item (4) in Special Instructions	-

Sample No.	Matrix *	Sample Date	Sample Time										
J189B5	OTHER SOLID	2/19/09	1128					X	X	X	X	X	

Sample unavailable to remove samples from controlled storage. Shipper removed samples from storage location using custody of samples for shipment to lab

CHAIN OF POSSESSION	Date/Time	Sign/Print Names Received By/Stored In	Date/Time
Relinquished By/Removed From: B Mahar	2/19/09 1620	Eric A	2/19/09 1620
Relinquished By/Removed From: Eric A	2/20/09 0700	D. Heidelberg	2/20/09 0800
Relinquished By/Removed From: D. Heidelberg	2/20/09 1200	Fedex	2/20/09 1200
Relinquished By/Removed From: Fedex	2-21-09/1045	Received By/Stored In:	2-21-09/1045
Relinquished By/Removed From:	2-23-09/0850	Received By/Stored In:	2-23-09/0850
Relinquished By/Removed From:	Date/Time	Received By/Stored In:	Date/Time

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) (Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238)

(2) Strontium-89,90 – Total Sr; Isotopic Thorium (Thorium-232); Isotopic Uranium (Uranium-233/234, Uranium-235, Uranium-238); Isotopic Plutonium

(3) ICP Metals - 6010 (Full List) (Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc); Mercury - 7471 - (CV)

(4) VOA - 8260A (TCL); 1,1,1-Trichloroethane, 1,1,2,2-Tetrachloroethane, 1,1,2-Trichloroethane, 1,1-Dichloroethane, 1,1-Dichloroethene, 1,2-Dichloroethane, 1,2-Dichloropropane, 2-Butanone, 2-Hexanone, 4-Methyl-2-Pentanone, Acetone, Benzene, Bromodichloromethane, Bromoform, Bromomethane, Carbon disulfide, Carbon tetrachloride, Chlorobenzene, Chloroethane, Chloroform, Chloromethane, cis-1,2-Dichloroethylene, cis-1,3-Dichloropropene, Dibromochloromethane, [illegible]

Matrix *

S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-116-1350

Page 2 of 2

Collector: BM

Company Contact: JOAN KESSNER

Telephone No.: 375-4688

Project Coordinator: KESSNER, JH

Price Code: 9K

Data Turnaround: 45 Days

Project Designation: Columbia River Component of the RCBRA - Sediment

Sampling Location: BL-3 SSD

SAF No.: RC-116

Ice Chest No.: WCH-08-013, 072, 022

Field Logbook No.: EL-1630-1

COA: BESCRC0520

Method of Shipment: FED EX

Shipped To: EBERLINE SERVICES (ONVILLE)

Offsite Property No.: N/A

Bill of Lading/Air Bill No.: 796361208296

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

Preservation	Cool 4C	Cool 4C	None
Type of Container	G	aG	G/P
No. of Container(s)	1	1	1
Volume	125mL 5	125g	1000g
SAMPLE ANALYSIS	See item (1) in Special Instructions	TOC - 9151	Particle Size (Dry Sieve) - D422

Sample No.	Matrix *	Sample Date	Sample Time			
J18985	OTHER SOLID	2/16/09	~~1118~~ 1128	X	X	X

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
B Maylon BM	2/16/09 1030	Fes A	2/16/09 1630
Fes A	2/20/09 0800	D. Heidelberg	2/20/09 0800
D. Heidelberg	2/20/09 1200	Fed Ex	2/20/09 1200
Fed Ex	2-21-09 1045		2-21-09 1045
	2-23-09/0850		2-23-09/0850

SPECIAL INSTRUCTIONS

5 [illegible] 2-5-09

(1) TPH-Diesel Range - WTPH-D + (Total petroleum hydrocarbons - diesel range, Total petroleum hydrocarbons - motor oil (high boiling))

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab.

Matrix *

S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-116-1351 | Page 2 of 2

Collector: Ross	Company Contact: JOAN KESSNER	Telephone No.: 375-4688	Project Coordinator: KESSNER, JH
Price Code: 9K	Data Turnaround: 45 Days		
Project Designation: Columbia River Component of the RCBRA - Sediment	Sampling Location: BL-5 SSD		SAF No.: RC-116
Ice Chest No.: WCH-08-013,072,022	Field Logbook No.: EL-1611-1	COA: BESCRC0S20	Method of Shipment: FED EX
Shipped To: EBERLINE SERVICES [✓ LIONVILLE]	Offsite Property No.: N/A		Bill of Lading/Air Bill No.: 796361208296

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

000094

		Preservation	Cool 4C	Cool 4C	None
		Type of Container	G	aG	G/P
		No. of Container(s)	1	1	1
		Volume	125ml	125g	1000g
SAMPLE ANALYSIS			See item (1) in Special Instructions 5	TOC - 4111	Particle Size (Dry Sieve) - D422
Sample No.	**Matrix ***	**Sample Date**	**Sample Time**			
J18908	OTHER SOLID	2/15/09	1154	X	X	X

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
[illegible]	2/19/09 1620	Eric A	2/19/09 1620
Eric A	2/20/09 0800	D Heidelberg [illegible]	2/20/09 0800
D Heidelberg [illegible]	2/20/09 1700	Fedex	2/20/09 1700
[illegible]	2-21-09/1045	[illegible]	2-21-09/1045
[illegible]	2-23-09/0850	[illegible]	2-23-09/0850

SPECIAL INSTRUCTIONS

5 AH 2-6-09

(1) TPH-Diesel Range - WTPH-D+ {Total petroleum hydrocarbons - diesel range, Total petroleum hydrocarbons - motor oil (high boiling)}

Samplers unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab

Matrix *

S = Soil
SE = Sediment
SO = Solid
SL = Sludge
W = Water
O = Oil
A = Air
DS = Drum Solids
DL = Drum Liquids
T = Tissue
WI = Wipe
L = Liquid
V = Vegetation
X = Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

[illegible]

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-116-1351

Page 1 of 2

Collector: BM

Company Contact: JOAN KESSNER

Telephone No.: 375-4688

Project Coordinator: KESSNER, JH

Price Code: 9K

Data Turnaround: 45 Days

Project Designation: Columbia River Component of the RCBRA - Sediment

Sampling Location: BL- 5 SSD

SAF No.: RC-116

Ice Chest No.: WCH08-013, 072, 022

Field Logbook No.: EL-1631-1

COA: BESCRC6570

Method of Shipment: FED EX

Shipped To: EBERLINE SERVICES (LIONVILLE)

Offsite Property No.: N/A

Bill of Lading/Air Bill No.: 796361208996

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

000095

Preservation	None	None	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	[illegible]
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	aG	aG	G	[illegible]
No. of Container(s)	1	1	1	1	1	1	1	1	1	1
Volume	1500g	100g	10g	10g	250g	250g	125g	250g	250g	1
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Technetium-99	See item (2) in Special Instructions	See item (3) in Special Instructions	PCBs - 8082	Pesticides - 8081	Semi-VOA - 8270A (TCL)	See item (4) in Special Instructions	

Sample No.	Matrix *	Sample Date	Sample Time										
J18R96	OTHER SOLID	2/19/09	1154					X	X	X	X	X	

Samples are available to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab

CHAIN OF POSSESSION

Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
	2/19/09 1630		2/19/09 1630
Eric A	2/20/09 0800	D Heidelberg	2/20/09 0800
	2/20/09 1200	FedEx	2/20/09 1200
FedEx	2-21-09 / 1045		2-21-09 / 1045
FedEx	2-23-09 / 0850		2-23-09 / 0850

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) [Americium-241, Antimony-125, Beryllium-7, Cerium-144, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238]
(2) Strontium-89,90 – Total Sr; Isotopic Thorium {Thorium-232}; Isotopic Uranium {Uranium-233/234, Uranium-235, Uranium-238}; Isotopic Plutonium
(3) ICP Metals - 6010 (Full List) [Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc]; Mercury - 7471 - (CV)
(4) VOA - 8260A (TCL) [1,1,1-Trichloroethane, 1,1,2,2-Tetrachloroethane, 1,1,2-Trichloroethane, 1,1-Dichloroethane, 1,1-Dichloroethene, 1,2-Dichloroethane, 1,2-Dichloropropane, 2-Butanone, 2-Hexanone, 4-Methyl-2-Pentanone, Acetone, Benzene, Bromodichloromethane, Bromoform, Bromomethane, Carbon disulfide, Carbon tetrachloride, Chlorobenzene, Chloroethane, Chloroform, Chloromethane, cis-1,2-Dichloroethylene, cis-1,3-Dichloropropene, Dibromochloromethane, [illegible]

Matrix *

[illegible]

LABORATORY SECTION	Received By		Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method		Disposed By	Date/Time

WCH-EE-011

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-116-1352 | Page 2 of 2

Collector: BA

Company Contact: JOAN KESSNER | Telephone No.: 375 4688

Project Coordinator: KESSNER, JH

Price Code: 9K

Data Turnaround: 45 Days

Project Designation: Columbia River Component of the RCBRA - Sediment

Sampling Location: BL- 8 SSD

SAF No.: RC-116

Ice Chest No.: WCH-08-013, 072, 022

Field Logbook No.: EL-1630-1

COA: BESCRC6520

Method of Shipment: FED EX

Shipped To: EBERLINE SERVICES (LIONVILLE)

Offsite Property No.: N/A

Bill of Lading/Air Bill No.: 796361208296

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

9600000

		Preservation	Cool 4C	Cool 4C	None	
		Type of Container	G	aG	G/P	
		No. of Container(s)	1	1	1	
		Volume	125mL 5	125g	1000g	
SAMPLE ANALYSIS			See sample list Special Instructions	TOC - 415.1	Particle Size (Dry Sieve) D422	
Sample No.	Matrix *	Sample Date	Sample Time			
J169B7	OTHER SOLID	2/15/09	1323	X	X	X

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
[illegible]	2/15/09 1630	Eric A	2/15/09 1630
Eric A	2/20/09 0800	D. Ho [illegible]	2/20/09 0800
D Ho [illegible]	2/20/09 1200	Fedex	2/20/09 1200
Fed Ex	2-21-09 1045	[illegible]	2-21-09 1045
Fed Ex	2-23-09 1050	[illegible]	2-23-09 1050

SPECIAL INSTRUCTIONS
5 ml 2 109
(1) TPH-Diesel Range - WTPH-D + (Total petroleum hydrocarbons - diesel range, Total petroleum hydrocarbons - motor oil (high boiling))

Sampler unavailable to retrieve samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab

Matrix *
[illegible]

LABORATORY SECTION — Received By: — Title: — Date/Time:

FINAL SAMPLE DISPOSITION — Disposal Method: — Disposed By: — Date/Time:

WCH-EF-011

372996854

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-116-1352	Page 1 of 1

Collector: B. [illegible]

Company Contact: JOAN KESSNER

Telephone No.: 375-4688

Project Coordinator: KESSNER, JH

Price Code: 9K

Data Turnaround: 45 Days

Project Designation: Columbia River Component of the RCBRA - Sediment

Sampling Location: BL-97 SSD

SAF No.: RC-116

Ice Chest No.: WCH-08-013, 072, 022

Field Logbook No.: EL-1631-1

COA: BESCRC6570

Method of Shipment: FED EX

Shipped To: EBERLINE SERVICES [✓ LIONVILLE]

Offsite Property No.: N/A

Bill of Lading/Air Bill No.: 796301208296

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

2600000

Preservation	None	None	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	None
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	aG	aG	G	-
No. of Container(s)	1	1	1	1	1	1	1	1	1	1
Volume	1500g	100g	50g	10g	250g	250g	125g	250g	250g	1
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Technetium-99	See item (2) in Special Instructions	See item (3) in Special Instructions	PCBs - 8082	Pesticides 8081	Semi-VOA 8270A (TCL)	See item (4) in Special Instructions	-

Sample No.	Matrix *	Sample Date	Sample Time										
J18987	OTHER SOLID	2/19/09	1323					X	X	X	X	X	

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
B. [illegible]	2/19/09 1630	Eric A	2/19/09 1630
Eric A	2/20/09 0800	D. Heidelberg	2/20/09 0800
D. Heidelberg	2/20/09 1200	Fedex	2/20/09 1200
[illegible]	2-21-09 1045	[illegible]	2-21-09 1045
[illegible]	2-23-09 1000	[illegible]	2-23-09 0850

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) {Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238}
(2) Strontium-89,90 - Total Sr, Isotopic Thorium {Thorium-232}, Isotopic Uranium {Uranium-233/234, Uranium-235, Uranium-238}; Isotopic Plutonium
(3) ICP Metals - 6010 (Full List) {Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc}, Mercury - 7471 - (CV)
(4) VOA - 8260A (TCL) {1,1,1-Trichloroethane, 1,1,2,2-Tetrachloroethane, 1,1,2-Trichloroethane, 1,1-Dichloroethane, 1,1-Dichloroethene, 1,2-Dichloroethane, 1,2-Dichloropropane, 2-Butanone, 2-Hexanone, 4-Methyl-2-Pentanone, Acetone, Benzene, Bromodichloromethane, Bromoform, Bromomethane, Carbon disulfide, Carbon tetrachloride, Chlorobenzene, Chloroethane, Chloroform, Chloromethane, cis-1,2-Dichloroethylene, cis-1,3-Dichloropropene, Dibromochloromethane, Ethylbenzene, Methylene chloride, Styrene, Tetrachloroethene, Toluene, trans-1,2-Dichloroethylene

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-116-1353 Page 1 of 1

Collector BM	Company Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator KESSNER, JH
Project Designation Columbia River Component of the RCBRA - Sediment	Sampling Location BL- 8 SSD		SAF No. RC-116
Ice Chest No. WCH-08-013, 072, 022	Field Logbook No. EL-1630-1	COA BESCRC6520	Method of Shipment FED EX
Shipped To EBERLINE SERVICES [✓ LIONVILLE]	Offsite Property No. N/A		Bill of Lading/Air Bill No. 796612082960

Price Code 9K

Data Turnaround 45 Days

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

Preservation	Cool 4C	Cool 4C	None
Type of Container	G	aG	G/P
No. of Container(s)	1	1	1
Volume	125mL 5	125g	1000g
SAMPLE ANALYSIS	See item (1) in Special Instructions	TOC - 415.1	Particle Size (Dry Sieve) - [illegible]

Sample No.	Matrix *	Sample Date	Sample Time			
J18988	OTHER SOLID	2/16/09	1236	X	X	X

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
B Marlin Rollings	2/16/09 1630	Eric A	2/16/09 1630
Eric A	2/20/09 0800	D Hellberg	2/20/09 0800
D Hellberg	2/20/09 1200	Fed Ex	2/20/09 1200
	2-21-09 1045		2-21-09 1045
	2-23-09 0850		2-23-09 0850

SPECIAL INSTRUCTIONS

[illegible] 2 5 09

(1) TPH-Diesel Range - WTPH-D + (Total petroleum hydrocarbons - diesel range, Total petroleum hydrocarbons - motor oil (high boiling))

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab.

Matrix *

S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Washington Closure Hanford	**CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST**	RC-116-1353	Page 1 of 2
Collector BA	Company Contact JOAN KESSNER	Telephone No. 375-4684	Project Coordinator KESSNER, JB
Project Designation Columbia River Component of the RCBRA - Sediment	Sampling Location BL-8 SSD	SAF No. RC-136	Price Code 9K Data Turnaround 45 Days
Ice Chest No. WCH-08-013, 012, 072	Field Logbook No. EL-1631-1	COA BESCRC6120	Method of Shipment FED EX
Shipped To EBERLINE SERVICES [✓ LIONVILLE]	Offsite Property No. N/A		Bill of Lading/Air Bill No. 796361208296

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

Preservation	None	None	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	None
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	aG	aG	G	-
No. of Container(s)	1	1	1	1	1	1	1	1	1	1
Volume	1500g	100g	10g	10g	250g	250g	125g	250g	250g	[illegible]
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Technetium-99	See item (2) in Special Instructions	See item (3) in Special Instructions	PCBs - 8082	Pesticides - 8081	Semi-VOA - 8270A (TCL)	See item (4) in Special Instructions	

Sample No.	Matrix *	Sample Date	Sample Time										
J18SB8	OTHER SOLID	2/16/09	1256					X	X	X	X	X	

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location during custody of samples for shipment to lab.

CHAIN OF POSSESSION Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
B Hyde BHG	2/16/09 1630	Eric A	2/16/09 1630
Eric A	2/20/09 0800	D Heidelberg WSD	2/20/09 0800
D Heidelberg WSD	2/20/09 1200	FedEx	2/20/09 1200
FedEx	2-21-09 1045		2-21-09 1045
FedEx	2-23-09 1025		2-23-09 1050

SPECIAL INSTRUCTIONS

(1) Gamma Spec - ILF List (Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238)
(2) Strontium-89,90 -- Total Sr, Isotopic Thorium (Thorium-232), Isotopic Uranium (Uranium-233/234, Uranium-235, Uranium-238), Isotopic Plutonium
(3) ICP Metals - 6010 (Full List) (Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc), Mercury - 7471 - (CV)
(4) VOA - 8260A (TCL) (1,1,1-Trichloroethane, 1,1,2,2-Tetrachloroethane, 1,1,2-Trichloroethane, 1,1-Dichloroethane, 1,1-Dichloroethene, 1,2-Dichloroethane, 1,2-Dichloropropane, 2-Butanone, 2-Hexanone, 4-Methyl-2-Pentanone, Acetone, Benzene, Bromodichloromethane, Bromoform, Bromomethane, Carbon disulfide, Carbon tetrachloride, Chlorobenzene, Chloroethane, Chloroform, Chloromethane, cis-1,2-Dichloroethylene, cis-1,3-Dichloropropene, Dibromochloromethane, [illegible]

Matrix *
[illegible]

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-116-1354

Page 2 of 2

Collector BM	Company Contact JOAN KESSNER	Telephone No. 375-4638	Project Coordinator KESSNER, JH
Project Designation Columbia River Component of the RCBRA - Sediment	Sampling Location BL-7 SSD		SAF No. RC-116
Ice Chest No. WCH-08-03,072,022	Field Logbook No. EL-1631-1	COA BESCRC6520	Method of Shipment FED EX
Shipped To EBERLINE SERVICES [✓ LIONVILLE]	Offsite Property No. N/A		Bill of Lading/Air Bill No. 796361208296

Price Code 9K

Data Turnaround 45 Days

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

0010100

Preservation	Cool 4C	Cool 4C	None
Type of Container	G	aG	G/P
No. of Container(s)	1	1	1
Volume	125mL 5	125g	1000g
SAMPLE ANALYSIS	Soil pH - Special Instructions	TOC - 9060	Particle Size (Dry Sieve) D422

Sample No.	Matrix *	Sample Date	Sample Time			
J18989	OTHER SOLID	2/19/09	1220	X	X	X

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
B M Beigh	2/19/09 1630	Fr A	2/19/09 1630
Fr A	2/20/09 0800	D. Hellelberg	2/20/09 0900
D. Hellelberg	2/20/09 1200	FedEx	2/20/09 1200
	2-21-09 1045		2-21-09 1045
	2-23-09 1050		2-23-09 1050

SPECIAL INSTRUCTIONS

5 MA 2509

(7) TPH-Diesel Range - WTPH D+ (Total petroleum hydrocarbons - diesel range, Total petroleum hydrocarbons - motor oil (high boiling))

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab

Matrix *
S = Soil
SE = Sediment
SO = Solid
SL = Sludge
W = Water
O = Oil
A = Air
DS = Drum Solids
DL = Drum Liquids
T = Tissue
WI = Wipe
L = Liquid
V = Vegetation
X = Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposal By	Date/Time

WCH-EE-011

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-116-1354 Page 1 of 2

Collector: 3M	Company Contact: JOAN KESSNER Telephone No.: 375-4688	Project Coordinator: KESSNER, JH	Price Code: 9K
Project Designation: Columbia River Component of the RCBRA - Sediment	Sampling Location: BL-7 SSD	SAF No.: RC-116	Data Turnaround: 45 Days
Ice Chest No.: WCH-08-013, 072, 022	Field Logbook No.: EL-1631-2	COA: 8ESCRC6520	Method of Shipment: FED EX
Shipped To: FIREBLINE SERVICES (LIONVILLE)	Offsite Property No.: N/A		Bill of Lading/Air Bill No.: 796361268296

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

0001013

Preservation	None	None	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	None
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	aG	aG	G	-
No. of Container(s)	1	1	1	1	1	1	1	1	1	1
Volume	1500g	100g	10g	10g	250g	250g	125g	250g	250g	--
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Technetium-99	See item (2) in Special Instructions	See item (3) in Special Instructions	PCBs - 8082	Pesticides 8081	Semi-VOA 8270A (TCL)	See item (4) in Special Instructions	-

Sample No.	Matrix *	Sample Date	Sample Time										
J18989	OTHER SOLID	2/18/09	0270					X	X	X	X	X	

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab.

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
3M	2/18/09 10[illegible]	Eric A	2/19/09 1020
Eric A	2/20/09 0800	D Heidelberg	2/20/09 0800
D Heidelberg	2/20/09 1200	FedEx	2/20/09 1200
FedEx	2-23-09/1045	[illegible]	2-23-09/1045
FedEx	2-23-09/0850	[illegible]	2-23-09/0850

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full Lab) {Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238}

(2) Strontium-89,90 - Total Sr; Isotopic Thorium {Thorium-232}; Isotopic Uranium {Uranium-233/234, Uranium-235, Uranium-238}; Isotopic Plutonium

(3) ICP Metals - 6010 (Full List) {Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc}; Mercury - 7471 - (CV)

(4) VOA - 8260A (TCL) {1,1,1-Trichloroethane, 1,1,2,2-Tetrachloroethane, 1,1,2-Trichloroethane, 1,1-Dichloroethane, 1,1-Dichloroethene, 1,2-Dichloroethane, 1,2-Dichloropropane, 2-Butanone, 2-Hexanone, 4-Methyl-2-Pentanone, Acetone, Benzene, Bromodichloromethane, Bromoform, Bromomethane, Carbon disulfide, Carbon tetrachloride, Chlorobenzene, Chloroethane, Chloroform, Chloromethane, cis-1,2-Dichloroethylene, cis-1,3-Dichloropropene, Dibromochloromethane, Ethylbenzene, Methylene chloride, Styrene, Tetrachloroethene, Toluene, trans-1,2-Dichloroethylene

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-116-1355 | Page 1 of 2

Collector: CS	Company Contact: JOAN KESSNER	Telephone No.: 375-4688	Project Coordinator: KESSNER, JH
Price Code: 9K	Data Turnaround: 45 Days		SAF No.: RC-116
Project Designation: Columbia River Component of the RCBRA - Sediment	Sampling Location: DL-2 SSD		
Ice Chest No.: WCH-08-013, 022, 032	Field Logbook No.: EL-1631-1	COA: HESCRC6520	Method of Shipment: FED EX
Shipped To: EBERLINE SERVICES RICHMOND	Offsite Property No.: N/A		Bill of Lading/Air Bill No.: 7963 6120 8296

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

000102

		Preservation		None	None	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	None
		Type of Container		G/P	G/P	G/P	G/P	G/P	aG	aG	aG	G	-
		No. of Container(s)		1	1	1	1	1	1	1	1	1	1
		Volume		1500g	100g	10g	10g	250g	250g	125g	250g	250g	1
SAMPLE ANALYSIS				See item (1) in Special Instructions	Carbon-14	Technetium-99	See item (2) in Special Instructions	See item (3) in Special Instructions	TPH - 8015	Pesticides - 8081	Semi-VOA - 8270A (TCL)	See item (4) in Special Instructions	-
Sample No.	Matrix *	Sample Date	Sample Time										
J183C0	OTHER SOLID	2/19/09	1130					X	X	X	X	X	

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab.

CHAIN OF POSSESSION	Date/Time	Sign/Print Names	Date/Time
Relinquished By/Removed From		Received By/Stored In	
[illegible]	2/19/09 1630	RefB	2/19/09 / 1630
Relinquished By/Removed From: Ref B	2/20/09 0800	Received By/Stored In: BDrndlund	2/20/09 0800
Relinquished By/Removed From: BDrndlund	2/20/09 1200	Received By/Stored In: FedEx	2/20/09 1200
Relinquished By/Removed From: FedEx	2-21-09/1045	Received By/Stored In: [illegible]	2-21-09/1045
Relinquished By/Removed From: FedEx	2-23-09/0850	Received By/Stored In: [illegible]	2-23-09/0850
Relinquished By/Removed From		Received By/Stored In	

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) {Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238}
(2) Strontium-89,90 -- Total Sr; Isotopic Thorium {Thorium-232}; Isotopic Uranium {Uranium-233/234, Uranium-235, Uranium-238}; Isotopic Plutonium
(3) ICP Metals - 6010 (Full List) {Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc}; Mercury - 7471 - (CV)
(4) VOA - 8260A (TCL) {1,1,1-Trichloroethane, 1,1,2,2-Tetrachloroethane, 1,1,2-Trichloroethane, 1,1-Dichloroethane, 1,1-Dichloroethene, 1,2-Dichloroethane, 1,2-Dichloropropane, 2-Butanone, 2-Hexanone, 4-Methyl-2-Pentanone, Acetone, Benzene, Bromodichloromethane, Bromoform, Bromomethane, Carbon disulfide, Carbon tetrachloride, Chlorobenzene, Chloroethane, Chloroform, Chloromethane, cis-1,2-Dichloroethylene, cis-1,3-Dichloropropene, Dibromochloromethane, [illegible]

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCHEE-011

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-116-1355 | Page 2 of 2

Collector ZS	Company Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator KESSNER, JH
Project Designation Columbia River Component of the RCBRA - Sediment	Sampling Location BL-2-SSD		SAF No. RC-116
Ice Chest No. WCH-08-013,022,072	Field Logbook No. BL-1630-1	COA BESCRC6520	Method of Shipment FED EX
Shipped To EBERLINE SERVICES (LIONVILLE)	Offsite Property No. N/A		Bill of Lading/Air Bill No. 796361208296

Price Code 9K

Data Turnaround 45 Days

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

0010103

Preservation	Cool 4C	Cool 4C	None
Type of Container	G	aG	G/P
No. of Container(s)	5	1	1
Volume	125mL 5	125g	1000g
SAMPLE ANALYSIS	See item (3) in Special Instructions	TOC - 415.1	Particle Size (Dry Sieve - D422)

Sample No.	Matrix *	Sample Date	Sample Time			
J189C0	OTHER SOLID	2/11/09	1130	X	X	X

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
	2-15-09 / 1630	RJ B	2-15-09 / 1630
Rot 13	2/20/09 0800	B Woodward	2/20/09 0800
B Woodward	2/20/09 1200	Fed Ex	2/20/09 1200
	2-21-09 / 1045		2-21-09 / 1045
	2-23-09 / 0850		2-23-09 / 0850

SPECIAL INSTRUCTIONS

5 J/O 25 #7

(3) TPH-Diesel Range - WTPH-D + (Total petroleum hydrocarbons - diesel range, Total petroleum hydrocarbons - motor oil (high boiling))

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location during custody of samples for shipment to lab.

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-116-1356 Page 1 of 1

Collector: LS	Company Contact: JOAN KESSNER · Telephone No.: 375-4688	Project Coordinator: KESSNER, JK
Price Code: 9K	Data Turnaround: 45 Days	
Project Designation: Columbia River Component of the RCBRA - Sediment	Sampling Location: BL-1 SSD	SAF No.: RC-116
Ice Chest No.: WCH-08-013, 022, 072	Field Logbook No.: EL-1631-1 · COA: BESCRC6530	Method of Shipment: FED EX
Shipped To: EBERLINE SERVICES-LIONVILLE	Offsite Property No.: N/A	Bill of Lading/Air Bill No.: 796361208296

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

0001004

Preservation	None	None	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	None
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	aG	aG	G	
No. of Container(s)	1	1	1	1	1	1	1	1	1	1
Volume	1500g	100g	10g	10g	250g	250g	125g	250g	250g	
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Technetium-99	See item (2) in Special Instructions	See item (3) in Special Instructions	PCBs - 8082	Pesticides - 8081	Semi-VOA - 8270A (TCL)	See item (4) in Special Instructions	

Sample No.	Matrix *	Sample Date	Sample Time										
J189C1	OTHER SOLID	2/19/09	1105					X	X	X	X	X	

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
	2-19-09 1630	R B	2/19/09 1650
R B	2/20/09 0800	B Underwood	2/20/09 0800
B Underwood	2/20/09 1200	FedEx	2/20/09 1200
	2-21-09 1045		2-21-09 1045
	2-23-09 1050		2-23-09 1050

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab.

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) {Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238}
(2) Strontium-89,90 -- Total Sr; Isotopic Thorium {Thorium-232}; Isotopic Uranium {Uranium-233/234, Uranium-235, Uranium-238}; Isotopic Plutonium
(3) ICP Metals - 6010 (Full List) {Aluminum, Antimony, Arsenic, Barium, Beryllium, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc}; Mercury - 7471 - (CV)
(4) VOA - 8260A (TCL) {1,1,1-Trichloroethane, 1,1,2,2-Tetrachloroethane, 1,1,2-Trichloroethane, 1,1-Dichloroethane, 1,1-Dichloroethene, 1,2-Dichloroethane, 1,2-Dichloropropane, 2-Butanone, 2-Hexanone, 4-Methyl-2-Pentanone, Acetone, Benzene, Bromodichloromethane, Bromoform, Bromomethane, Carbon disulfide, Carbon tetrachloride, Chlorobenzene, Chloroethane, Chloroform, Chloromethane, cis-1,2-Dichloroethylene, cis-1,3-Dichloropropene, Dibromochloromethane, Ethylbenzene, Methylene chloride, Styrene, Tetrachloroethene, Toluene,

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EF-011

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-116-1356

Page 1 of 2

Collector (,)	Company Contact JOAN KESSNER	Telephone No. 375-4644
Project Designation Columbia River Component of the RCBRA - Sediment	Sampling Location BC / SSD	
Ice Chest No. WCH-08-013, 022, 072	Field Logbook No. EL-1631-1	COA BESCRCA520
Shipped To EBERLINE SERVICES [✓ LIONVILLE]	Offsite Property No. N/A	

Project Coordinator KESSNER, JH	Price Code 9K
SAF No. RC-116	Data Turnaround **45 Days**
Method of Shipment FED EX	
Bill of Lading/Air Bill No. 796361208296	

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

S01000

Preservation	Cool 4C	Cool 4C	None
Type of Container	G	aG	G/P
No. of Container(s)	1	1	1
Volume	125mL 5	125g	1000g
SAMPLE ANALYSES	See item (1) in Special Instructions	TOC - 415.1	Particle Size (Dry Sieve) D422

Sample No.	Matrix *	Sample Date	Sample Time			
J189C1	OTHER SOLID	2/16/09	1105	X	X	X

CHAIN OF POSSESSION

Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
	2-16-09 / 1620		2-16-09 / 1630
Ref B	2/20/09 0800	Bill Dillwood	2/20/09 0800
Bill Dillwood	2/20/09 1200	Fed Ex	2/20/09 1200
	2-21-09 / 1045		2-21-09 / 1045
	2-23-09 1030		2-23-09 0830

SPECIAL INSTRUCTIONS

5 2.5.09

(1) TPH-Diesel Range - WTPH D + (Total petroleum hydrocarbons - diesel range, Total petroleum hydrocarbons - motor oil (high boiling))

Samples unavailable to remove samples
from controlled storage. Shipper removed
samples from storage location taking custody
of samples for shipment to lab

Matrix *

S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Washington Closure Hanford	**CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST**	RC-116-1358	Page 1 of 1
Collector JS	Company Contact JOAN KESSNER Telephone No. 375-4688	Project Coordinator KESSNER, JH	Price Code 9K Data Turnaround 45 Days
Project Designation Columbia River Component of the RCBRA - Sediment	Sampling Location BL-6 SSD	SAF No. RC-116	
Ice Chest No. WCH-08-013, 092, 027	Field Logbook No. EL-1631-F COA RFSCRC6510	Method of Shipment FED EX	
Shipped To EBERLINE SERVICES (LIONVILLE)	Offsite Property No. N/A	Bill of Lading/Air Bill No. 796361208296	

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

9010000

Preservation	Cool 4C	Cool 4C	None
Type of Container	G	aG	G/P
No. of Container(s)	1	1	1
Volume	125mL 5	125g	1000g
SAMPLE ANALYSIS	See item (1) in Special Instructions	TOC - 415.1	Particle Size (Dry Sieve) - D422

Sample No.	Matrix *	Sample Date	Sample Time			
J189C3	OTHER SOLID	2/19/09	12:15	X	X	X

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
	2-19-09 / 1630	R. B.	2-19-09 / 1630
Rob B	2/20/09 0800	D. Heidelberg	2/20/09 0800
D. Heidelberg	2/20/09 1200	Geleen/Spd/FE	1200
	2-21-09 / 1045		2-21-09 / 1045
FedEx	2-23-09 / 0850		2-23-09 / 0850

SPECIAL INSTRUCTIONS

5 JSB 2-F09

(1) TPH-Diesel Range - WTPH-D + {Total petroleum hydrocarbons - diesel range, Total petroleum hydrocarbons - motor oil (high boiling)}

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab.

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-116-135R

Page 1 of 1

Collector: LS

Company Contact: JOAN KESSNER

Telephone No.: 375-4688

Project Coordinator: KESSNER, JH

Price Code: 9K

Data Turnaround: 45 Days

Project Designation: Columbia River Component of the RCBRA - Sediment

Sampling Location: BL-6 SSD

SAF No.: RC-116

Ice Chest No.: WCH-08-013/08-2022

Field Logbook No.: EL-1631-1

COA: HESCRC6530

Method of Shipment: FED EX

Shipped To: EBERLINE SERVICES LIONVILLE

Offsite Property No.: N/A

Bill of Lading/Air Bill No.: 796361208296

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

Preservation	None	None	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	None
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	aG	aG	G	*
No. of Container(s)	1	1	1	1	1	1	1	1	1	1
Volume	1500g	100g	10g	10g	250g	250g	125g	250g	250g	1*
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Technetium-99	See item (2) in Special Instructions	See item (3) in Special Instructions	PCBs - 8082	Pesticides 8081	Semi-VOA 8270A (TCL)	See item (4) in Special Instructions	*

Sample No.	Matrix *	Sample Date	Sample Time										
J185C3	OTHER SOLID	2/19/09	1315					X	X	X	X	X	

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
	2-19-09 1630		2-19-09 1630
RoG B	2/20/09 0800	D. Hedberg LS	2/20/09 0800
D. Hedberg LS	2/20/09 1200	FedEx 2/20/09	1200
	2-21-09 1045		2-21-09 1045
	2-23-09 1050		2-23-09 1050

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) (Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238)
(2) Strontium-89,90 -- Total Sr, Isotopic Thorium (Thorium-232), Isotopic Uranium (Uranium-233/234, Uranium-235, Uranium-238), Isotopic Plutonium
(3) ICP Metals - 6010 (Full List) (Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc), Mercury - 7471 - (CV)
(4) VOA - 8260A (TCL) (1,1,1-Trichloroethane, 1,1,2,2-Tetrachloroethane, 1,1,2-Trichloroethane, 1,1-Dichloroethane, 1,1-Dichloroethene, 1,2-Dichloroethane, 1,2-Dichloropropane, 2-Butanone, 2-Hexanone, 4-Methyl-2-Pentanone, Acetone, Benzene, Bromodichloromethane, Bromoform, Bromomethane, Carbon disulfide, Carbon tetrachloride, Chlorobenzene, Chloroethane, Chloroform, Chloromethane, cis-1,2-Dichloroethylene, cis-1,3-Dichloropropene, Dibromochloromethane, [illegible]

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-116-1359 Page 1 of 1

Collector LS	Company Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator KESSNER, JH
Project Designation Columbia River Component of the RCBRA - Sediment	Sampling Location BL-44 SSD		SAF No. RC-116
Ice Chest No. WCH-08-013, 022, 072	Field Logbook No. EL-1630-1	COA BESCRC6520	Method of Shipment FED EX
Shipped To EBERLINE SERVICES [✓ LIONVILLE]	Offsite Property No. N/A		Bill of Lading/Air Bill No. 796361208296

Price Code 9K

Data Turnaround
45 Days

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

0001608

Preservation	None	None	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	None
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	aG	aG	G	-
No. of Container(s)	1	1	1	1	1	1	1	1	1	1
Volume	1500g	100g	10g	10g	250g	250g	125g	250g	250g	1*
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Technetium-99	See item (2) in Special Instructions	See item (3) in Special Instructions	PCBs - 8082	Pesticides 8081	Semi-VOA - 8270A (TCL)	See item (4) in Special Instructions	-

Sample No.	Matrix *	Sample Date	Sample Time										
J189C4	OTHER SOLID	2/19/09	1150					X	X	X	X	X	

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location using custody of samples for shipment to [illegible]

CHAIN OF POSSESSION	Date/Time	Sign/Print Names	Date/Time
Relinquished By/Removed From LS	2/19/09 / 1636	Received By/Stored In RLB	2/19/09 / 1636
Relinquished By/Removed From Ref. B 2/20/09	0800	Received By/Stored In D Hedalen	2/20/09 0800
Relinquished By/Removed From D Hedalen	2/20/09 1200	Received By/Stored In Fed Ex 2/20/09	1200
Relinquished By/Removed From	2-21-09 / 1045	Received By/Stored In	2-21-09 / 1045
Relinquished By/Removed From Fed Ex	2-23-09 / 0850	Received By/Stored In	2-23-09 / 0850
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) [Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238];
(2) Strontium-89,90 -- Total Sr; Isotopic Thorium (Thorium 232); Isotopic Uranium [Uranium 233/234, Uranium 235, Uranium 238]; Isotopic Plutonium
(3) ICP Metals - 6010 (Full List) [Aluminum, Antimony, Arsenic, Barium, Beryllium, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc]; Mercury - 7471 - (CV)
(4) VOA - 8260A (TCL) [1,1,1-Trichloroethane, 1,1,2,2-Tetrachloroethane, 1,1,2-Trichloroethane, 1,1-Dichloroethane, 1,1-Dichloroethene, 1,2-Dichloroethane, 1,2-Dichloropropane, 2-Butanone, 2-Hexanone, 4-Methyl-2-Pentanone, Acetone, Benzene, Bromodichloromethane, Bromoform, Bromomethane, Carbon disulfide, Carbon tetrachloride, Chlorobenzene, Chloroethane, Chloroform, Chloromethane, cis-1,2-Dichloroethylene, cis-1,3-Dichloropropene, Dibromochloromethane,

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Washington Closure Hanford	**CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST**	RC-116-1359	Page 1 of 2
Collector L S	Company Contact JOAN KESSNER Telephone No. 375-4688	Project Coordinator KESSNER, JH	Price Code 9K Data Turnaround 45 Days
Project Designation Columbia River Component of the RCBRA - Sediment	Sampling Location BL-4 SSD	SAF No. RC-116	
Ice Chest No. WCH-08-013,022,072	Field Logbook No. EL-1631-1 COA BESCRC6520	Method of Shipment FED EX	
Shipped To EBERLINE SERVICES (LIONVILLE)	Offsite Property No. N/A	Bill of Lading/Air Bill No. 797361208296	

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

601000

Preservation	Cool 4C	Cool 4C	None
Type of Container	G	aG	G/P
No. of Container(s)	1	1	1
Volume	125mL 5	125g	1000g
SAMPLE ANALYSIS	See sample Special Instructions	TOC - 415.1	Particle Size (Dry Sieve) D422

Sample No.	Matrix *	Sample Date	Sample Time			
J18BC4	OTHER SOLID	2/14/09	1150	X	X	X

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
L Hall —	2-15-09 1150	K B	2-15-09 / 1230
K B 2/20/09	0800	B Woodlund	2/20/09 0800
B Woodlund	2/20/09 1200	Fed Ex	2/20/09 1200
	2-21-09 1045		2-21-09 1045
Fed Ex	2-23-09 1085		2-23-09 1085

SPECIAL INSTRUCTIONS

5 40 2509

** TPH-Diesel Range - WTPH-D + (Total petroleum hydrocarbons - diesel range, Total petroleum hydrocarbons - motor oil (high boiling));

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST		RC-116-1392	Page 1 of 1
Collector B	Company Contact JOAN KESSNER Telephone No. 375-4688	Project Coordinator KESSNER, JH	Price Code 9K	Data Turnaround 45 Days
Project Designation Columbia River Component of the RCBRA - Sediment	Sampling Location SP-7 SSO	SAF No. RC-116		
Ice Chest No. WCH-08-13, 32, 22	Field Logbook No. EL-1631-1 COA BESCRC6520	Method of Shipment FED EX		
Shipped To COERLINE SERVICES [✓ LIONVILLE]	Offsite Property No. N/A	Bill of Lading/Air Bill No. 7963601208296		

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

000110

Preservation				Cool 4C	Cool 4C	None		
Type of Container				G	aG	G/P		
No. of Container(s)				[illegible]	1	1		
Volume				125ml 5	125g	1000g		
SAMPLE ANALYSIS				See item (1) in Special Instructions	TOC - 415.1	Particle Size (Dry Sieve) - DAFF		
Sample No.	Matrix *	Sample Date	Sample Time					
J185J9	OTHER SOLID	2/12/09	1412	X	X	X		

CHAIN OF POSSESSION		Sign/Print Names	
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
B. Mayer Bldg	2/12/09 1610	Eric A	2/12/09 1620
Eric A	2/20/09 0800	D. Hesselberg	2/20/09 0800
D. Hesselberg	2/20/09 1200	FedEx	2/20/09 1200
	2-23-09 1045		2-23-09 1045
FedEx	2-23-09 1055		2-23-09 1055

SPECIAL INSTRUCTIONS

[illegible]

(1) TPH-Diesel Range - WTPH D+ (Total petroleum hydrocarbons - diesel range; Total petroleum hydrocarbons - motor oil (high boiling))

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location (during custody) of samples for shipment to lab

Matrix *
S = Soil
SE = Sediment
SO = Solid
SL = Sludge
W = Water
O = Oil
A = Air
DS = Drum Solids
DL = Drum Liquids
T = Tissue
WI = Wipe
L = Liquid
V = Vegetation
X = Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Washington Closure Hanford	**CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST**	RC-116-1392	Page 1 of 2
Collector BM	Company Contact JOAN KESSNER Telephone No. 375-4688	Project Coordinator KESSNER, JH	Price Code 9K Data Turnaround 45 Days
Project Designation Columbia River Component of the RCBRA - Sediment	Sampling Location SP-2 SSD	SAF No. RC-116	
Ice Chest No. WAH-08-012, 072022	Field Logbook No. EL-1631-1 COA BESCRC6520	Method of Shipment FED EX	
Shipped To EBERLINE SERVICES (LIONVILLE)	Offsite Property No. N/A	Bill of Lading/Air Bill No. 796361208296	

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

E11000

Preservation	None	None	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	None
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	aG	aG	G	-
No. of Container(s)	1	1	1	1	1	1	1	1	1	-
Volume	1500g	100g	10g	10g	250g	250g	125g	250g	250g	1-
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Technetium-99	See item (2) in Special Instructions	See item (3) in Special Instructions	PCBs - 8082	Pesticides - 8081	Semi-VOA - 8270A (TCL)	See item (4) in Special Instructions	-

Sample No.	Matrix *	Sample Date	Sample Time										
J189J9	OTHER SOLID	2/19/09	142					X	X	X	X	X	

Sampler unavailable to remove sample(s) from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab

CHAIN OF POSSESSION Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
BM	2/19/09 1630	Eric A	2/19/09 1630
Eric A	2/20/09 0800	D Heidelberg	2/20/09 0800
D Heidelberg	2/20/09 1200	Fed Ex	2/20/09 1200
	2-21-09/1045		2-21-09/1045
	2-23-09 0850		2-23-09 0850

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) {Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238}
(2) Strontium-89,90 - Total Sr; Isotopic Thorium {Thorium-232}; Isotopic Uranium {Uranium-233/234, Uranium-235, Uranium-238}; Isotopic Plutonium
(3) ICP Metals - 6010 (Full List) {Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc}; Mercury - 7471 - (LV)
(4) VOA - 8260A (TCL) {1,1,1-Trichloroethane, 1,1,2,2-Tetrachloroethane, 1,1,2-Trichloroethane, 1,1-Dichloroethane, 1,1-Dichloroethene, 1,2-Dichloroethane, 1,2-Dichloropropane, 2-Butanone, 2-Hexanone, 4-Methyl-2-Pentanone, Acetone, Benzene, Bromodichloromethane, Bromoform, Bromomethane, Carbon disulfide, Carbon tetrachloride, Chlorobenzene, Chloroethane, Chloroform, Chloromethane, cis-1,2-Dichloroethylene, cis-1,3-Dichloropropene, Dibromochloromethane,

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

3265896637

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-116-1395

Page 1 of 1

Collector: L S

Company Contact: JOAN KESSNER

Telephone No.: 375-4688

Project Coordinator: KESSNER, JH

Price Code: 9K

Data Turnaround: 45 Days

Project Designation: Columbia River Component of the RCBRA - Sediment

Sampling Location: SP- 1 SSD

SAF No.: RC-116

Ice Chest No.: WCH-08-013,072,022

Field Logbook No.: EL-1631/-1

COA: BESCRC6520

Method of Shipment: FED EX

Shipped To: EBERLINE SERVICES (LIONVILLE)

Offsite Property No.: N/A

Bill of Lading/Air Bill No.: 796361 208296

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

Preservation	None	None	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	None
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	aG	aG	G	-
No. of Container(s)	1	1	1	1	1	1	1	1	1	1
Volume	1500g	300g	10g	10g	250g	250g	125g	250g	250g	1*
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon 14	Technetium-99	See item (2) in Special Instructions	See item (3) in Special Instructions	PCBs - 8082	Pesticides - 8081	Semi-VOA - 8270A (TCL)	See item (4) in Special Instructions	-

Sample No.	Matrix *	Sample Date	Sample Time										
J189K2	OTHER SOLID	2/19/09	1400					X	X	X	X	X	

Sampler unable to/is to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab

CHAIN OF POSSESSION	Sign/Print Names		
Relinquished By/Removed From: L Spiller	Date/Time: 2-19-09/1630	Received By/Stored In:	Date/Time: 2-19-09/1630
Relinquished By/Removed From:	Date/Time: 2/20/09 0800	Received By/Stored In: D. Hellberg	Date/Time: 2/20/09 0820
Relinquished By/Removed From: D. Hellberg	Date/Time: 2/20/09 1200	Received By/Stored In: FedEx	Date/Time: 2/20/09 1200
Relinquished By/Removed From: FedEx	Date/Time: 2-21-09 1045	Received By/Stored In:	Date/Time: 2-21-09/1045
Relinquished By/Removed From: FedEx	Date/Time: 2-23-09/0850	Received By/Stored In:	Date/Time: 2-23-09/0850
Relinquished By/Removed From:	Date/Time:	Received By/Stored In:	Date/Time:

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) {Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238}
(2) Strontium-89,90 – Total Sr, Isotopic Thorium {Thorium-232}, Isotopic Uranium {Uranium-233/234, Uranium-235, Uranium-238}, Isotopic Plutonium
(3) ICP Metals - 6010 (Full List) {Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc}; Mercury - 7471 - (CV)
(4) VOA - 8260A (TCL) {1,1,1-Trichloroethane, 1,1,2,2-Tetrachloroethane, 1,1,2-Trichloroethane, 1,1-Dichloroethane, 1,1-Dichloroethene, 1,2-Dichloroethane, 1,2-Dichloropropane, 2-Butanone, 2-Hexanone, 4-Methyl-2-Pentanone, Acetone, Benzene, Bromodichloromethane, Bromoform, Bromomethane, Carbon disulfide, Carbon tetrachloride, Chlorobenzene, Chloroethane, Chloroform, Chloromethane, cis-1,2-Dichloroethylene, cis-1,3-Dichloropropene, Dibromochloromethane,

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION
Received By:
Title:
Date/Time:

FINAL SAMPLE DISPOSITION
Disposal Method:
Disposed By:
Date/Time:

WCH-EE-011

Washington Closure Hanford	**CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST**	RC-116-1395	Page 2 of 2
Collector: LS	Company Contact: JOAN KESSNER Telephone No.: 375-4681	Project Coordinator: KESSNER, JH	Price Code: 9K Data Turnaround: 45 Days
Project Designation: Columbia River Component of the RCBRA - Sediment	Sampling Location: SP-1 SSO	SAF No.: RC-116	
Ice Chest No. WCH-08-013, 072, 022	Field Logbook No.: EL-1631-1 COA: HESCRC6320	Method of Shipment: FED EX	
Shipped To: EBERLINE SERVICES (LIONVILLE)	Offsite Property No.: N/A	Bill of Lading/Air Bill No. 796361208296	

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

	Cool 4C	Cool 4C	None
Preservation	Cool 4C	Cool 4C	None
Type of Container	G	aG	G/P
No. of Container(s)	1	1	1
Volume	125mL 5	125g	1000g
SAMPLE ANALYSIS	Semivoa/Pest Special Selections	TOC - 4.3.5	Particle Size (Dry Sieve) Only

Sample No.	Matrix *	Sample Date	Sample Time			
J19K82	OTHER SOLID	2/19/09	1400	X	X	X

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
[illegible]	2.19.09/1630	RJB	2.19.09/1630
RJB	2/20/09 0700	Dale Vollberg	2/20/09 0700
Dale Vollberg	2/20/09 1200	Fedex 2/20/09	1200
[illegible]	2.21.08/1045	[illegible]	2.21.08/1045
[illegible]	2.23.09/1000	[illegible]	2.23.09/1000

SPECIAL INSTRUCTIONS

5 JM 2.9.09

☒ TPH-Diesel Range - WTPH D+ (Total petroleum hydrocarbons - diesel range, Total petroleum hydrocarbons - motor oil (high boiling))

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab.

Matrix *

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-116-1397 | Page 1 of 1

Collector LS	Company Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator KESSNER, JH
Project Designation Columbia River Component of the RCBRA - Sediment	Sampling Location SP-7 SSD		SAF No. RC-116
Ice Chest No. WCH08-013, 072, 022	Field Logbook No. EL-1633-1	COA BESCRC6520	Method of Shipment FED EX
Shipped To EBERLINE SERVICES (LIONVILLE)	Offsite Property No. N/A		Bill of Lading/Air Bill No. 796361208296

Price Code 9K

Data Turnaround 45 Days

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

000114

Preservation	None	None	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	None
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	aG	aG	G	-
No. of Container(s)	1	1	1	1	1	1	1	1	1	1
Volume	1500g	100g	10g	10g	250g	250g	125g	250g	250g	1?
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Technetium-99	See item (2) in Special Instructions	See item (3) in Special Instructions	PCBs - 8082	Pesticides - 8081	Semi-VOA 8270A (TCL)	See item (4) in Special Instructions	-

Sample No.	Matrix *	Sample Date	Sample Time										
J189K4	OTHER SOLID	2/19/09	1500					X	X	X	X	X	

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab.

CHAIN OF POSSESSION Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
C. Martinez	2/19/09 / 1630	Ref. B	2/19/09 / 1630
Ref. B	2/20/09 0600	D. Hesselberg	2/20/09 0600
D. Hesselberg	2/20/09 1200	Fedex	2/20/09 1200
	2-21-09 / 1045		2-21-09 / 1045
	2-23-09 / 1050		2-23-09 / 1050

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) (Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238);

(2) Strontium-89,90 -- Total Sr, Isotopic Thorium (Thorium-232), Isotopic Uranium (Uranium-233/234, Uranium-235, Uranium-238), Isotopic Plutonium

(3) ICP Metals - 6010 (Full List) (Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc); Mercury - 7471 - (CV)

(4) VOA - 8260A (TCL) (1,1,1-Trichloroethane, 1,1,2,2-Tetrachloroethane, 1,1,2-Trichloroethane, 1,1-Dichloroethane, 1,1-Dichloroethene, 1,2-Dichloroethane, 1,2-Dichloropropane, 2-Butanone, 2-Hexanone, 4-Methyl-2-Pentanone, Acetone, Benzene, Bromodichloromethane, Bromoform, Bromomethane, Carbon disulfide, Carbon tetrachloride, Chlorobenzene, Chloroethane, Chloroform, Chloromethane, cis-1,2-Dichloroethylene, cis-1,3-Dichloropropene, Dibromochloromethane, Ethylbenzene, Methylenechloride, Styrene, Tetrachloroethene, Toluene, trans-1,2-Dichloroeth

Matrix *
[illegible]

LABORATORY SECTION	Received By	Title	Date/Time

FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-116-1397 | Page 1 of 1

Collector C. G	Company Contact JOAN KESSNER	Telephone No. 375-4633	Project Coordinator KESSNER, JH
Project Designation Columbia River Component of the RCBRA - Sediment	Sampling Location SP-9 SSD		SAP No. RC-116
Ice Chest No. WCH-08-013, 072, 017	Field Logbook No. EL-1631-1	COA DESCRC6520	Method of Shipment FED EX
Shipped To EBERLINE SERVICES [✓ LIONVILLE]	Offsite Property No. N/A		Bill of Lading/Air Bill No. ~~[illegible]~~ 796361208296

Price Code 9K

Data Turnaround 45 Days

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

00115

Preservation	Cool 4C	Cool 4C	None
Type of Container	G	aG	G/P
No. of Container(s)	1	1	1
Volume	125mL 5	125g	1000g
SAMPLE ANALYSIS	See item (1) in Special Instructions	TOC - 415.1	Particle Size - Dry Sieve - D422

Sample No.	Matrix *	Sample Date	Sample Time			
J18SK4	OTHER SOLID	2/19/09	1500	X	X	X

CHAIN OF POSSESSION Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
	2-19-09/1630	R. G.	2-19-09/1630
R. G.	2/20/09 0800	D. Hedelberg	2/20/09 0800
D. Hedelberg	2/20/09 1200	FedEx	2/20/09 1200
FedEx	2-21-09/1045		2-21-09/1045
FedEx	2-23-09/0850		2-23-09/0850

SPECIAL INSTRUCTIONS
5 AB 2909
(1) TPH-Diesel Range - WTPH-D + (Total petroleum hydrocarbons - diesel range, Total petroleum hydrocarbons - motor oil (high boiling))

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab.

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-ES-011

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-116-1398 Page 1 of 2

Collector: LC

Company Contact: JOAN KESSNER Telephone No. 375-4688

Project Coordinator: KESSNER, JH

Price Code: 9K

Data Turnaround: 45 Days

Project Designation: Columbia River Component of the RCBRA - Sediment

Sampling Location: SP-3 SSD

SAF No.: RC-116

Ice Chest No.: WCH-08-013, 072, 027

Field Logbook No.: EL-1610-1

COA: R45CRC6520

Method of Shipment: FED EX

Shipped To: EBERLINE SERVICES [✓ LIONVILLE]

Offsite Property No.: N/A

Bill of Lading/Air Bill No.: 7963612082096

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

				Preservation	None	None	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	None
				Type of Container	G/P	G/P	G/P	G/P	G/P	aG	aG	aG	G	
				No. of Container(s)	1	1	1	1	1	1	1	1	1	1
				Volume	1500g	100g	10g	10g	250g	250g	125g	250g	250g	1
SAMPLE ANALYSIS					See item (1) in Special Instructions	Carbon-14	Technetium-99	See item (2) in Special Instructions	See item (3) in Special Instructions	PCBs - 8082	Pesticides - 8081	Semi-VOA - 8270A (TCL)	See item (4) in Special Instructions	
Sample No.	Matrix *	Sample Date	Sample Time										
J189K5	OTHER SOLID	2/19/09	1425						X	X	X	X	X	

Sampler unavailable to retrieve samples from controlled storage. Shipper removed samples from storage location using custody of samples for shipment to lab.

CHAIN OF POSSESSION	Date/Time	Sign/Print Names	Date/Time
Relinquished By/Removed From	2-19-09 / 1630	Received By/Stored In R/B	2-19-09 / 1630
Relinquished By/Removed From R/B	2/20/09 0800	Received By/Stored In D. Heidelberger	2/20/09 0800
Relinquished By/Removed From D. Heidelberger	2/20/09 1200	Received By/Stored In FedEx	2/20/09 1200
Relinquished By/Removed From FedEx	2-21-09 / 1045	Received By/Stored In	2-21-09 / 1045
Relinquished By/Removed From	2-23-09 / 0850	Received By/Stored In	2-23-09 / 0850
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time

SPECIAL INSTRUCTIONS

(1) Gamma Spec - {Full List} {Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238}

(2) Strontium-89,90 -- Total Sr, Isotopic Thorium {Thorium-232}, Isotopic Uranium {Uranium-233/234, Uranium-235, Uranium-238}, Isotopic Plutonium

(3) ICP Metals - 6010 (Full List) {Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc}, Mercury - 7471 - (CV)

(4) VOA - 8260A (TCL) {1,1,1-Trichloroethane, 1,1,2,2-Tetrachloroethane, 1,1,2-Trichloroethane, 1,1-Dichloroethane, 1,1-Dichloroethene, 1,2-Dichloroethane, 1,2-Dichloropropane, 2-Butanone, 2-Hexanone, 4-Methyl-2-Pentanone, Acetone, Benzene, Bromodichloromethane, Bromoform, Bromomethane, Carbon disulfide, Carbon tetrachloride, Chlorobenzene, Chloroethane, Chloroform, Chloromethane, cis-1,2-Dichloroethylene, cis-1,3-Dichloropropene, Dibromochloromethane,

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION: Received By / Title / Date/Time

FINAL SAMPLE DISPOSITION: Disposal Method / Disposed By / Date/Time

WCH-EE-011

Washington Closure Hanford	**CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST**	RC-116-1398	Page 2 of 2

Collector: L.S

Company Contact: JOAN KESSNER

Telephone No.: 375-4688

Project Coordinator: KESSNER, JH

Price Code: 9K

Data Turnaround: 45 Days

Project Designation: Columbia River Component of the RCBRA - Sediment

Sampling Location: SP-3 SSD

SAF No.: RC-116

Ice Chest No.: WCH-08-013 032 022

Field Logbook No.: EL-1631-1

COA: HENCR06520

Method of Shipment: FED EX

Shipped To: EBERLINE SERVICES [✓ LIONVILLE]

Offsite Property No.: N/A

Bill of Lading/Air Bill No.: 796361208296

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

0001172

Preservation	Cool 4C	Cool 4C	None
Type of Container	G	aG	G/P
No. of Container(s)	1	1	1
Volume	125mL 5	125g	1000g
SAMPLE ANALYSIS	Sieve sample to 2 mm - Sample preparation	TPH - 418.1	Particle Size (Dry Sieve) - D422

Sample No.	Matrix *	Sample Date	Sample Time			
J189K5	OTHER SOLID	2/19/09	1425	X	X	X

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
	2-19-09/1430	RL B	2-19-09/1630
RL B	2/20/09 0800		2/20/09 0800
	2/20/09 1100	Fedex	2/20/09 1200
	2-23-09/1045		2-23-09/1045
	2-23-09/0850		2-23-09/0850

SPECIAL INSTRUCTIONS

5 ddd 2 9 09

(1) TPH-Diesel Range - WTPH-D + (Total petroleum hydrocarbons - diesel range; Total petroleum hydrocarbons - motor oil (high boiling))

Sample unavailable to remove samples from controlled storage. Sample removes samples from storage location during custody of samples for shipment to lab

Matrix *

S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EF-011

Appendix 6

Data Validation Supporting Documentation

HNF-20433 REV 0

GC/MS ORGANIC DATA VALIDATION CHECKLIST

VALIDATION LEVEL:	A	B	C	D	E

PROJECT: RCRA		DATA PACKAGE: K1544	
VALIDATOR: FLR	LAB: LLI	DATE: 11/27/09	
		SDG: K1544	

ANALYSES PERFORMED					
SW-846 8260		SW-846 8260 (TCLP)	[✓ SW-846 8270]	8015B	SW-846 8270 (TCLP)

SAMPLES/MATRIX					
J19795	J19786	J19787	J19789	J19790	J19791
J19792	J19B05	J197B6	J19B87	J197B8	J19BB7
J19BC0	J19BC1	J19BC3	J19BC4	J19B15	J19BE2
J197C4	J19BE5				
					solid

1. **DATA PACKAGE COMPLETENESS AND CASE NARRATIVE**

Technical verification documentation present? .... Yes [✓ No] N/A

Comments:

2. **INSTRUMENT TUNING AND CALIBRATION (Levels D and E)**

GC/MS tuning/performance check acceptable? .... Yes No [✓ N/A]

Initial calibrations acceptable? .... Yes No [✓ N/A]

Continuing calibrations acceptable? .... Yes No [✓ N/A]

Standards traceable? .... Yes No [✓ N/A]

Standards expired? .... Yes No [✓ N/A]

Calculation check acceptable? .... Yes No [✓ N/A]

Comments:

GC/MS ORGANIC DATA VALIDATION CHECKLIST

3. BLANKS (Levels B, C, D, and E)

Calibration blanks analyzed? (Levels D, E) .... Yes No [✓ N/A]

Calibration blank results acceptable? (Levels D, E) .... Yes No [✓ N/A]

Laboratory blanks analyzed? .... [✓ Yes] No N/A

Laboratory blank results acceptable? .... Yes [✓ No] N/A

Field/trip blanks analyzed? (Levels C, D, E) .... Yes [✓ No] N/A

Field/trip blank results acceptable? (Levels C, D, E) .... Yes No [✓ N/A]

Transcription/calculation errors? (Levels D, E) .... Yes No [✓ N/A]

Comments: Mehcl - U all   no FB

4. ACCURACY (Levels C, D, and E)

Surrogates/system monitoring compounds analyzed? .... [✓ Yes] No N/A

Surrogate/system monitoring compound recoveries acceptable? .... Yes [✓ No] N/A

Surrogates traceable? (Levels D, E) .... Yes No [✓ N/A]

Surrogates expired? (Levels D, E) .... Yes No [✓ N/A]

MS/MSD samples analyzed? .... [✓ Yes] No N/A

MS/MSD results acceptable? .... Yes [✓ No] N/A

MS/MSD standards NIST traceable? (Levels D, E) .... Yes No [✓ N/A]

MS/MSD standards? (Levels D, E) .... Yes No [✓ N/A]

LCS/BSS samples analyzed? .... [✓ Yes] No N/A

LCS/BSS results acceptable? .... Yes [✓ No] N/A

Standards traceable? (Levels D, E) .... Yes No [✓ N/A]

Standards expired? (Levels D, E) .... Yes No [✓ N/A]

Transcription/calculation errors? (Levels D, E) .... Yes No [✓ N/A]

Performance audit sample(s) analyzed? .... Yes [✓ No] N/A

Performance audit sample results acceptable? .... Yes No [✓ N/A]

Comments: Surr - [illegible] - J   MO - No MS, MSD, or LCS

MS - DRO - J all DRO ~~[illegible]~~

LCS - DRO - J all DRO

SV - LCS - Semi - J all MSD - low

MS - Blank   No PA

GC/MS ORGANIC DATA VALIDATION CHECKLIST

5. PRECISION (Levels C, D, and E)

MS/MSD samples analyzed? .... [✓ Yes] No N/A

MS/MSD RPD values acceptable? .... Yes [✓ No] N/A

MS/MSD standards NIST traceable? (Levels D, E) .... Yes No [✓ N/A]

MS/MSD standards expired? (Levels D, E) .... Yes No [✓ N/A]

Field duplicate RPD values acceptable? .... Yes No [✓ N/A]

Field split RPD values acceptable? .... Yes No [✓ N/A]

Transcription/calculation errors? (Levels D, E) .... Yes No [✓ N/A]

Comments: ZZ out – J all

6. SYSTEM PERFORMANCE (Levels D and E)

Internal standards analyzed? .... Yes No [✓ N/A]

Internal standard areas acceptable? .... Yes No [✓ N/A]

Internal standard retention times acceptable? .... Yes No [✓ N/A]

Standards traceable? .... Yes No [✓ N/A]

Standards expired? .... Yes No [✓ N/A]

Transcription/calculation errors? .... Yes No [✓ N/A]

Comments:

7. HOLDING TIMES (all levels)

Samples properly preserved? .... [✓ Yes] No N/A

Sample holding times acceptable? .... [✓ Yes] No N/A

Comments:

GC/MS ORGANIC DATA VALIDATION CHECKLIST

8. COMPOUND IDENTIFICATION, QUANTITATION, AND DETECTION LIMITS (all levels)

Compound identification acceptable? (Levels D, E) .... Yes No [✓ N/A]
Compound quantitation acceptable? (Levels D, E) .... Yes No [✓ N/A]
Results reported for all requested analyses? .... [✓ Yes] No N/A
Results supported in the raw data? (Levels D, E) .... Yes No [✓ N/A]
Samples properly prepared? (Levels D, E) .... Yes No [✓ N/A]
Laboratory properly identified and coded all TIC? (Levels D, E) .... Yes No [✓ N/A]
Detection limits meet RDL? .... Yes [✓ No] N/A
Transcription/calculation errors? (Levels D, E) .... Yes No [✓ N/A]

Comments: S12 ent

9. SAMPLE CLEANUP (Levels D and E)

GPC cleanup performed? .... Yes No [✓ N/A]
GPC check performed? .... Yes No [✓ N/A]
GPC check recoveries acceptable? .... Yes No [✓ N/A]
GPC calibration performed? .... Yes No [✓ N/A]
GPC calibration check performed? .... Yes No [✓ N/A]
GPC calibration check retention times acceptable? .... Yes No [✓ N/A]
Check/calibration materials traceable? .... Yes No [✓ N/A]
Check/calibration materials Expired? .... Yes No [✓ N/A]
Analytical batch QC given similar cleanup? .... Yes No [✓ N/A]
Transcription/Calculation Errors? .... Yes No [✓ N/A]

Comments:

Appendix 6

Additional Documentation Requested by Client

Semivolatile Organic Compounds by SW846 8270C - Quality Control

Lionville Laboratory

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch L903038 - SW 3540C										
Blank (L903038-BLK1)				Prepared: 03/05/2009 Analyzed: 03/26/2009						
1,2,4-Trichlorobenzene	ND	330	ug/kg wet							U
1,2-Dichlorobenzene	ND	330	"							U
1,3-Dichlorobenzene	ND	330	"							U
1,4-Dichlorobenzene	ND	330	"							U
2,4,5-Trichlorophenol	ND	330	"							U
2,4,6-Trichlorophenol	ND	330	"							U
2,4-Dichlorophenol	ND	330	"							U
2,4-Dimethylphenol	ND	330	"							U
2,4-Dinitrophenol	ND	1650	"							U
2,4-Dinitrotoluene	ND	330	"							U
2,6-Dinitrotoluene	ND	330	"							U
2-Chloronaphthalene	ND	330	"							U
2-Chlorophenol	ND	330	"							U
2-Methylnaphthalene	ND	330	"							U
2-Methylphenol	ND	330	"							U
2-Nitroaniline	ND	1650	"							U
2-Nitrophenol	ND	330	"							U
3,3'-Dichlorobenzidine	ND	660	"							U
3-Nitroaniline	ND	1650	"							U
4,6-Dinitro-2-methylphenol	ND	330	"							U
4-Bromophenyl Phenyl Ether	ND	330	"							U
4-Chloro-3-methylphenol	ND	330	"							U
4-Chloroaniline	ND	330	"							U
4-Chlorophenyl Phenyl Ether	ND	330	"							U
4-Methylphenol	ND	330	"							U
4-Nitroaniline	ND	1650	"							U
4-Nitrophenol	ND	1650	"							U
Acenaphthene	ND	330	"							U
Acenaphthylene	ND	330	"							U
Anthracene	ND	330	"							U
Benz[a]anthracene	ND	330	"							U
Benzo[a] pyrene	ND	330	"							U
Benzo[b] fluoranthene	ND	330	"							U
Benzo[g,h,i] perylene	ND	330	"							U
Benzo[k] fluoranthene	ND	330	"							U
Bis(2-chloroethoxy) methane	ND	330	"							U
Bis(2-chloroethyl) ether	ND	330	"							U
Bis(2-chloroisopropyl) ether	ND	330	"							U
Bis(2-ethylhexyl) phthalate	ND	330	"							U
Butyl Benzyl Phthalate	ND	330	"							U
Carbazole	ND	330	"							U
Chrysene	ND	330	"							U
Dibenz[a,h]anthracene	ND	330	"							U
Dibenzofuran	ND	330	"							U

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Fax: 610-280-3041

WC Hanford, Inc	Project: RC-116	
2620 Fermi Avenue	Project Number: [none]	Reported:
Richland WA 99354	Project Manager: Joan Kessner	05/11/2009 10:17

Semivolatile Organic Compounds by SW846 8270C - Quality Control

Lionville Laboratory

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch L903038 - SW 3540C										
Blank (L903038-BLK1)				Prepared: 03/05/2009 Analyzed: 03/26/2009						
Diethyl Phthalate	ND	330	ug/kg wet							U
Dimethyl Phthalate	ND	330	"							U
Di-n-butyl Phthalate	ND	330	"							U
Di-n-octyl Phthalate	ND	330	"							U
Fluoranthene	ND	330	"							U
Fluorene	ND	330	"							U
Hexachlorobenzene	ND	330	"							U
Hexachlorobutadiene	ND	330	"							U
Hexachlorocyclopentadiene	ND	330	"							U
Hexachloroethane	ND	330	"							U
Indeno(1,2,3-cd)pyrene	ND	330	"							U
Isophorone	ND	330	"							U
Naphthalene	ND	330	"							U
Nitrobenzene	ND	330	"							U
N-Nitrosodi-n-propylamine	ND	330	"							U
N-Nitrosodiphenylamine	ND	330	"							U
Pentachlorophenol	ND	1650	"							U
Phenanthrene	ND	330	"							U
Phenol	ND	330	"							U
Pyrene	ND	330	"							U
TIC Unknown 3	2580		"							J
TIC Unknown 2	3550		"							J
TIC Unknown 1	87500		"							J
TIC Unknown 5	2120		"							J
TIC Unknown 4	1320		"							J
Surrogate: 2-Fluorophenol	*1570*		"	*2500.0*		*63*	*25-121*			
Surrogate: Phenol-d5	*1670*		"	*2500.0*		*67*	*24-113*			
Surrogate: Nitrobenzene-d5	*1160*		"	*1666.7*		*69*	*23-120*			
Surrogate: 2-Fluorobiphenyl	*1180*		"	*1666.7*		*71*	*30-115*			
Surrogate: 2,4,6-Tribromophenol	*1110*		"	*2500.0*		*44*	*19-122*			
Surrogate: p-Terphenyl-d14	*1270*		"	*1666.7*		*78*	*18-137*			

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Richland WA, 99354	Project Manager: Joan Kessner	05/11/2009 10:17

Semivolatile Organic Compounds by SW846 8270C - Quality Control

Lionville Laboratory

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch L903038 - SW 3540C										
LCS (L903038-BS1)				Prepared: 03/05/2009 Analyzed: 03/26/2009						
1,2,4-Trichlorobenzene	1070	330	ug/kg wet	2000.0		54	60-120			
1,2-Dichlorobenzene	1220	330	"	2000.0		61	50-110			
1,3-Dichlorobenzene	1160	330	"	2000.0		58	50-110			
1,4-Dichlorobenzene	1170	330	"	2000.0		59	50-120			
2,4,5-Trichlorophenol	1310	330	"	2000.0		66	50-110			
2,4,6-Trichlorophenol	1210	330	"	2000.0		60	50-110			
2,4-Dichlorophenol	1140	330	"	2000.0		57	45-110			
2,4-Dimethylphenol	938	330	"	2000.0		47	30-120			
2,4-Dinitrophenol	778	1650	"	2000.0		39	20-130			J
2,4-Dinitrotoluene	1330	330	"	2000.0		66	60-130			
2,6-Dinitrotoluene	1310	330	"	2000.0		66	50-140			
2-Chloronaphthalene	1300	330	"	2000.0		65	50-130			
2-Chlorophenol	1200	330	"	2000.0		60	50-110			
2-Methylnaphthalene	1130	330	"	2000.0		56	60-100			
2-Methylphenol	1200	330	"	2000.0		60	60-120			
2-Nitroaniline	1340	1650	"	2000.0		67	60-130			J
2-Nitrophenol	1130	330	"	2000.0		56	50-110			
3,3'-Dichlorobenzidine	1160	660	"	2000.0		58	20-140			
3-Nitroaniline	1310	1650	"	2000.0		65	40-130			J
4,6-Dinitro-2-methylphenol	1180	330	"	2000.0		59	30-140			
4-Bromophenyl Phenyl Ether	1310	330	"	2000.0		66	50-120			
4-Chloro-3-methylphenol	1180	330	"	2000.0		59	60-130			
4-Chloroaniline	892	330	"	2000.0		45	20-130			
4-Chlorophenyl Phenyl Ether	1430	330	"	2000.0		72	50-120			
4-Methylphenol	1250	330	"	2000.0		62	60-130			
4-Nitroaniline	1240	1650	"	2000.0		62	50-120			J
4-Nitrophenol	1200	1650	"	2000.0		60	30-140			J
Acenaphthene	1320	330	"	2000.0		66	60-110			
Acenaphthylene	1310	330	"	2000.0		65	60-110			
Anthracene	1350	330	"	2000.0		68	60-130			
Benz[a]anthracene	1340	330	"	2000.0		67	50-130			
Benzo[a] pyrene	1270	330	"	2000.0		63	50-130			
Benzo[b] fluoranthene	1350	330	"	2000.0		67	60-130			
Benzo[g,h,i] perylene	1250	330	"	2000.0		62	60-140			
Benzo[k] fluoranthene	1310	330	"	2000.0		65	50-130			
Bis(2-chloroethoxy) methane	1300	330	"	2000.0		65	40-140			
Bis(2-chloroethyl) ether	1340	330	"	2000.0		67	40-110			
Bis(2-chloroisopropyl) ether	1360	330	"	2000.0		68	40-120			
Bis(2-ethylhexyl) phthalate	1670	330	"	2000.0		84	50-150			
Butyl Benzyl Phthalate	1580	330	"	2000.0		79	50-150			
Carbazole	1280	330	"	2000.0		64	60-120			
Chrysene	1340	330	"	2000.0		67	50-130			
Dibenz[a,h]anthracene	1270	330	"	2000.0		64	50-130			
Dibenzofuran	1330	330	"	2000.0		67	60-130			

WCH-Hanford, Inc	Project: RC-116	
2620 Fermi Avenue	Project Number: [none]	**Reported:**
Richland WA, 99354	Project Manager: Joan Kessner	03/11/2009 10:17

Semivolatile Organic Compounds by SW846 8270C - Quality Control

Lionville Laboratory

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch L903038 - SW 3540C										
LCS (L903038-BS1)				Prepared: 03/05/2009 Analyzed: 03/26/2009						
Diethyl Phthalate	1470	330	ug/kg wet	2000.0		74	50-130			
Dimethyl Phthalate	1450	330	"	2000.0		72	50-140			
Di-n-butyl Phthalate	1550	330	"	2000.0		77	40-150			
Di-n-octyl Phthalate	1600	330	"	2000.0		80	50-150			
Fluoranthene	1370	330	"	2000.0		69	50-130			
Fluorene	1310	330	"	2000.0		66	60-130			
Hexachlorobenzene	1330	330	"	2000.0		67	60-130			
Hexachlorobutadiene	1140	330	"	2000.0		57	40-130			
Hexachlorocyclopentadiene	348	330	"	2000.0		17	20-100			
Hexachloroethane	1140	330	"	2000.0		57	50-110			
Indeno(1,2,3-cd)pyrene	1240	330	"	2000.0		62	60-140			
Isophorone	1060	330	"	2000.0		53	60-120			
Naphthalene	1130	330	"	2000.0		57	40-130			
Nitrobenzene	1130	330	"	2000.0		56	50-110			
N-Nitrosodi-n-propylamine	1370	330	"	2000.0		68	50-130			
N-Nitrosodiphenylamine	1300	330	"	2000.0		65	50-130			
Pentachlorophenol	929	1650	"	2000.0		46	10-130			J
Phenanthrene	1350	330	"	2000.0		67	60-130			
Phenol	1370	330	"	2000.0		68	50-130			
Pyrene	1350	330	"	2000.0		68	50-140			
Surrogate: 2-Fluorophenol	*1240*		"	*2000.0*		*62*	*25-121*			
Surrogate: Phenol-d5	*1220*		"	*2000.0*		*61*	*24-113*			
Surrogate: Nitrobenzene-d5	*953*		"	*1666.7*		*57*	*23-120*			
Surrogate: 2-Fluorobiphenyl	*1100*		"	*1666.7*		*66*	*30-115*			
Surrogate: 2,4,6-Tribromophenol	*1340*		"	*2000.0*		*67*	*19-122*			
Surrogate: p-Terphenyl-d14	*1140*		"	*1666.7*		*68*	*18-137*			
Matrix Spike (L903038-MS1)		Source: 0902067-05		Prepared: 03/05/2009 Analyzed: 03/26/2009						
1,2,4-Trichlorobenzene	1210	330	ug/kg wet	2000.0	ND	61	60-120			
1,2-Dichlorobenzene	1380	330	"	2000.0	ND	69	50-110			
1,3-Dichlorobenzene	1310	330	"	2000.0	ND	65	50-110			
1,4-Dichlorobenzene	1310	330	"	2000.0	ND	65	40-120			
2,4,5-Trichlorophenol	1500	330	"	2000.0	ND	75	40-130			
2,4,6-Trichlorophenol	1410	330	"	2000.0	ND	71	50-110			
2,4-Dichlorophenol	1300	330	"	2000.0	ND	65	45-110			
2,4-Dimethylphenol	1100	330	"	2000.0	ND	55	30-120			
2,4-Dinitrophenol	1200	1650	"	2000.0	ND	60	20-120			J
2,4-Dinitrotoluene	1550	330	"	2000.0	ND	78	60-130			
2,6-Dinitrotoluene	1470	330	"	2000.0	ND	74	50-140			
2-Chloronaphthalene	1440	330	"	2000.0	ND	72	50-130			
2-Chlorophenol	1380	330	"	2000.0	ND	69	50-130			
2-Methylnaphthalene	1280	330	"	2000.0	ND	64	60-100			
2-Methylphenol	1420	330	"	2000.0	ND	71	60-120			
2-Nitroaniline	1560	1650	"	2000.0	ND	78	60-130			J

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WC Hanford, Inc	Project: RC-116	
2620 Fermi Avenue	Project Number: [none]	Reported:
Richland WA, 99354	Project Manager: Joan Kessner	03/11/2009 10:17

Semivolatile Organic Compounds by SW846 8270C - Quality Control

Linnville Laboratory

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch L903038 - SW 3540C										
Matrix Spike (L903038-MS1)		Source: 0902067-05		Prepared: 03/05/2009 Analyzed: 03/26/2009						
2-Nitrophenol	1280	330	ug/kg wet	2000.0	ND	64	50-130			
3,3'-Dichlorobenzidine	1190	660	"	2000.0	ND	60	20-140			
3-Nitroaniline	1390	1650	"	2000.0	ND	70	40-130			
4,6-Dinitro-2-methylphenol	1610	330	"	2000.0	ND	80	30-140			
4-Bromophenyl Phenyl Ether	1510	330	"	2000.0	ND	76	50-120			
4-Chloro-3-methylphenol	1360	330	"	2000.0	ND	68	60-130			
4-Chloroaniline	864	330	"	2000.0	ND	43	20-120			
4-Chlorophenyl Phenyl Ether	1610	330	"	2000.0	ND	81	50-120			
4-Methylphenol	1440	330	"	2000.0	ND	72	60-130			
4-Nitroaniline	1470	1650	"	2000.0	ND	74	50-120			
4-Nitrophenol	1620	1650	"	2000.0	ND	81	40-140			
Acenaphthene	1440	330	"	2000.0	ND	72	60-130			
Acenaphthylene	1460	330	"	2000.0	ND	73	60-130			
Anthracene	1540	330	"	2000.0	ND	77	60-130			
Benz[a]anthracene	1520	330	"	2000.0	ND	76	50-130			
Benzo[a] pyrene	1440	330	"	2000.0	ND	72	50-130			
Benzo[b] fluoranthene	1480	330	"	2000.0	ND	74	60-130			
Benzo[g,h,i] perylene	1360	330	"	2000.0	ND	68	60-140			
Benzo[k] fluoranthene	1530	330	"	2000.0	ND	76	50-130			
Bis(2-chloroethoxy) methane	1440	330	"	2000.0	ND	72	40-130			
Bis(2-chloroethyl) ether	1550	330	"	2000.0	ND	77	50-130			
Bis(2-chloroisopropyl) ether	1580	330	"	2000.0	ND	79	50-120			
Bis(2-ethylhexyl) phthalate	1800	330	"	2000.0	ND	90	50-150			
Butyl Benzyl Phthalate	1630	330	"	2000.0	ND	81	50-150			
Carbazole	1490	330	"	2000.0	ND	74	60-120			
Chrysene	1510	330	"	2000.0	ND	75	50-130			
Dibenz[a,h]anthracene	1430	330	"	2000.0	ND	71	50-140			
Dibenzofuran	1500	330	"	2000.0	ND	75	60-130			
Diethyl Phthalate	1700	330	"	2000.0	ND	85	50-130			
Dimethyl Phthalate	1660	330	"	2000.0	ND	83	50-140			
Di-n-butyl Phthalate	1720	330	"	2000.0	ND	86	40-150			
Di-n-octyl Phthalate	1770	330	"	2000.0	ND	89	50-150			
Fluoranthene	1570	330	"	2000.0	ND	79	50-130			
Fluorene	1480	330	"	2000.0	ND	74	60-130			
Hexachlorobenzene	1550	330	"	2000.0	ND	78	60-130			
Hexachlorobutadiene	1310	330	"	2000.0	ND	66	40-110			
Hexachlorocyclopentadiene	547	330	"	2000.0	ND	27	20-100			
Hexachloroethane	1320	330	"	2000.0	ND	66	50-110			
Indeno(1,2,3-cd)pyrene	1390	330	"	2000.0	ND	70	60-140			
Isophorone	1190	330	"	2000.0	ND	59	60-120			
Naphthalene	1260	330	"	2000.0	ND	63	40-130			
Nitrobenzene	1260	330	"	2000.0	ND	63	50-110			
N-Nitrosodi-n-propylamine	1580	330	"	2000.0	ND	79	50-130			
N-Nitrosodiphenylamine	1510	330	"	2000.0	ND	75	50-130			

WC-Hanford, Inc	Project: RC 116	
2620 Fermi Avenue	Project Number: [none]	Reported:
Richland WA, 99354	Project Manager: Joan Kessner	03/11/2009 10:17

Semivolatile Organic Compounds by SW846 8270C - Quality Control

Lionville Laboratory

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch L903038 - SW 3540C										
Matrix Spike (L903038-MS1)	Source: 0902067-05			Prepared: 03/05/2009 Analyzed: 03/26/2009						
Pentachlorophenol	666	1650	ug/kg wet	2000.0	ND	33	30-130			J
Phenanthrene	1510	330	"	2000.0	ND	76	60-130			
Phenol	1460	330	"	2000.0	ND	73	50-130			
Pyrene	1460	330	"	2000.0	ND	73	50-140			
1,2-Dinitrobenzene	1570		"	2000.0	0.00	79	0-200			
1,2-Diphenylhydrazine	1450	330	"	2000.0	ND	73	0-200			
1,3-Dinitrobenzene	1600	330	"	2000.0	ND	80	0-200			
1,4-Dinitrobenzene	1520	330	"	2000.0	ND	76	0-200			
1-Methylnaphthalene	1220		"	2000.0	0.00	61	0-200			
2,3,4,6-Tetrachlorophenol	1140	330	"	2000.0	ND	57	50-110			
2,3,5,6-Tetrachlorophenol	1020		"	2000.0	0.00	51	50-110			
Acetophenone	1230	330	"	2000.0	ND	61	0-200			
Aniline	676	330	"	2000.0	ND	34	0-200			
Benzidine	ND	1650	"	2000.0	ND		0-200			U
Benzoic Acid	161	1650	"	2000.0	ND	8	0-200			J
Benzyl alcohol	1580	330	"	2000.0	ND	79	0-200			
Bis(2-ethylhexyl) adipate	1410	330	"	2000.0	ND	71	40-140			
N-Nitrosodimethylamine	1380	330	"	2000.0	ND	69	0-200			
Pyridine	802	330	"	2000.0	ND	40	0-200			
Surrogate: 2-Fluorophenol	*1700*		"	*2500.0*		*68*	*25-121*			
Surrogate: Phenol-d5	*1810*		"	*2500.0*		*72*	*24-113*			
Surrogate: Nitrobenzene-d5	*1090*		"	*1666.7*		*65*	*23-120*			
Surrogate: 2-Fluorobiphenyl	*1270*		"	*1666.7*		*76*	*30-115*			
Surrogate: 2,4,6-Tribromophenol	*1810*		"	*2500.0*		*73*	*19-122*			
Surrogate: p-Terphenyl-d14	*1250*		"	*1666.7*		*75*	*18-137*			
Matrix Spike Dup (L903038-MSD1)	Source: 0902067-05			Prepared: 03/05/2009 Analyzed: 03/26/2009						
1,2,4-Trichlorobenzene	1530	330	ug/kg wet	2000.0	ND	76	60-120	23	40	
1,2-Dichlorobenzene	1960	330	"	2000.0	ND	98	50-110	35	40	
1,3-Dichlorobenzene	3030	330	"	2000.0	ND	151	50-110	79	40	
1,4-Dichlorobenzene	1820	330	"	2000.0	ND	91	50-120	33	40	
2,4,5-Trichlorophenol	2060	330	"	2000.0	ND	103	50-110	31	40	
2,4,6-Trichlorophenol	2230	330	"	2000.0	ND	111	50-110	45	40	
2,4-Dichlorophenol	1770	330	"	2000.0	ND	89	45-110	31	40	
2,4-Dimethylphenol	1380	330	"	2000.0	ND	69	30-120	22	40	
2,4-Dinitrophenol	2000	1650	"	2000.0	ND	100	20-120	50	40	
2,4-Dinitrotoluene	2030	330	"	2000.0	ND	101	60-130	28	40	
2,6-Dinitrotoluene	1910	330	"	2000.0	ND	95	50-140	26	40	
2-Chloronaphthalene	1840	330	"	2000.0	ND	92	50-130	24	40	
2-Chlorophenol	2100	330	"	2000.0	ND	105	50-130	42	40	
2-Methylnaphthalene	1640	330	"	2000.0	ND	82	60-100	24	40	
2-Methylphenol	2150	330	"	2000.0	ND	107	60-120	41	40	
2-Nitroaniline	1980	1650	"	2000.0	ND	99	60-130	24	40	
2-Nitrophenol	1640	330	"	2000.0	ND	82	50-130	25	40	

Semivolatile Organic Compounds by SW846 8270C - Quality Control

Lionville Laboratory

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch L903038 - SW 3540C										
Matrix Spike Dup (L903038-MSD1)		**Source: 0902067-05**		**Prepared: 03/05/2009**	**Analyzed: 03/26/2009**					
3,3'-Dichlorobenzidine	1650	660	ug/kg wet	2000.0	ND	83	20-140	17	40	
3-Nitroaniline	1800	1650	"	2000.0	ND	90	40-130	25	40	
4,6-Dinitro-2-methylphenol	2230	330	"	2000.0	ND	111	40-140	12	40	
4-Bromophenyl Phenyl Ether	1970	330	"	2000.0	ND	99	50-120	26	40	
4-Chloro-3-methylphenol	1850	330	"	2000.0	ND	91	60-110	11	40	
4-Chloroaniline	1240	330	"	2000.0	ND	62	20-120	36	40	
4-Chlorophenyl Phenyl Ether	2070	330	"	2000.0	ND	104	50-120	24	40	
4-Methylphenol	2240	330	"	2000.0	ND	112	60-130	44	40	
4-Nitroaniline	1850	1650	"	2000.0	ND	92	50-120	23	40	
4-Nitrophenol	2220	1650	"	2000.0	ND	111	40-140	31	40	
Acenaphthene	1870	330	"	2000.0	ND	93	60-110	26	40	
Acenaphthylene	1820	330	"	2000.0	ND	91	60-110	22	40	
Anthracene	1950	330	"	2000.0	ND	97	65-130	23	40	
Benz[a]anthracene	1980	330	"	2000.0	ND	99	50-130	26	40	
Benzo[a] pyrene	1920	330	"	2000.0	ND	96	50-130	28	20	
Benzo[b] fluoranthene	2010	330	"	2000.0	ND	101	60-130	30	20	
Benzo[g,h,i] perylene	1680	330	"	2000.0	ND	84	60-140	20	20	
Benzo[k] fluoranthene	1950	330	"	2000.0	ND	98	50-130	24	20	
Bis(2-chloroethoxy) methane	1820	330	"	2000.0	ND	91	40-140	27	40	
Bis(2-chloroethyl) ether	2180	330	"	2000.0	ND	109	50-130	14	40	
Bis(2-chloroisopropyl) ether	2330	330	"	2000.0	ND	116	50-120	17	40	
Bis(2-ethylhexyl) phthalate	2250	330	"	2000.0	ND	112	50-150	22	40	
Butyl Benzyl Phthalate	1860	330	"	2000.0	ND	93	50-150	13	40	
Carbazole	1810	330	"	2000.0	ND	90	60-120	19	40	
Chrysene	1930	330	"	2000.0	ND	97	50-130	25	40	
Dibenz[a,h]anthracene	1820	330	"	2000.0	ND	91	50-140	24	40	
Dibenzofuran	1900	330	"	2000.0	ND	95	60-130	23	40	
Diethyl Phthalate	2140	330	"	2000.0	ND	107	50-130	23	40	
Dimethyl Phthalate	2060	330	"	2000.0	ND	103	50-140	21	40	
Di-n-butyl Phthalate	2110	330	"	2000.0	ND	105	40-150	20	40	
Di-n-octyl Phthalate	2320	330	"	2000.0	ND	116	50-150	27	40	
Fluoranthene	2060	330	"	2000.0	ND	103	50-130	27	40	
Fluorene	1880	330	"	2000.0	ND	94	60-130	24	40	
Hexachlorobenzene	2060	330	"	2000.0	ND	103	60-130	28	40	
Hexachlorobutadiene	1770	330	"	2000.0	ND	89	40-130	30	40	
Hexachlorocyclopentadiene	717	330	"	2000.0	ND	36	20-100	27	40	
Hexachloroethane	1960	330	"	2000.0	ND	98	50-110	39	40	
Indeno[1,2,3-cd]pyrene	1760	330	"	2000.0	ND	88	60-140	23	40	
Isophorone	1530	330	"	2000.0	ND	77	60-120	25	40	
Naphthalene	1600	330	"	2000.0	ND	80	40-130	24	40	
Nitrobenzene	1550	330	"	2000.0	ND	78	50-110	21	40	
N-Nitrosodi-n-propylamine	2340	330	"	2000.0	ND	117	50-130	39	40	
N-Nitrosodiphenylamine	1820	330	"	2000.0	ND	91	50-130	19	40	
Pentachlorophenol	1260	1650	"	2000.0	ND	63	30-130	39	40	

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Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

WC Hanford, Inc. 2620 Fermi Avenue Richland WA, 99354	Project: RC 116 Project Number: (none) Project Manager: Joan Kessner	**Reported:** 05/11/2009 10:17

Semivolatile Organic Compounds by SW846 8270C - Quality Control

Lionville Laboratory

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch L903038 - SW 3540C										
Matrix Spike Dup (L903038-MSD1)		**Source: 0903067-05**		**Prepared: 03/03/2009 Analyzed: 03/26/2009**						
Phenanthrene	2150	330	ug/kg wet	2000.0	ND	108	60-130	35	40	
Phenol	2260	330	"	2000.0	ND	113	50-130	43	40	
Pyrene	1710	330	"	2000.0	ND	85	50-140	16	40	
Surrogate: 2-Fluorophenol	*3240*		"	*2500.0*		*130*	*25-121*			
Surrogate: Phenol-d5	*2810*		"	*2500.0*		*112*	*24-113*			
Surrogate: Nitrobenzene-d5	*1370*		"	*1666.7*		*82*	*23-120*			
Surrogate: 2-Fluorobiphenyl	*1610*		"	*1666.7*		*97*	*30-115*			
Surrogate: 2,4,6-Tribromophenol	*2500*		"	*2500.0*		*100*	*19-122*			
Surrogate: p-Terphenyl-d14	*1510*		"	*1666.7*		*91*	*18-137*			

264 Welsh Pool Road
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Phone: 610-280-3000
Fax: 610-280-3041

WC-Hanford Inc. 2620 Fermi Avenue Richland WA, 99354	Project: RC-116 Project Number: [none] Project Manager: Joan Kessner	**Reported:** 03/05/2009 16:06

Extractable Petroleum Hydrocarbons by SW846 8015 - Quality Control

Lionville Laboratory

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch L903037 - SW 3540C										
Blank (L903037-BLK1)				Prepared: 03/05/2009 Analyzed: 03/13/2009						
Diesel Range Organics	ND	3300	ug/kg wet							U
Motor Oil	19300	10000	"							
Surrogate: p-Terphenyl	*5450*		"	*6666.7*		*82*	*39-129*			
LCS (L903037-BS1)				Prepared: 03/05/2009 Analyzed: 03/13/2009						
Diesel Range Organics	40000	3300	ug/kg wet	66667		60	34-104			
Surrogate: p-Terphenyl	*3670*		"	*6666.7*		*55*	*39-129*			
Matrix Spike (L903037-MS1)		**Source: 0902067-05**		Prepared: 03/05/2009 Analyzed: 03/13/2009						
Diesel Range Organics	42000	3300	ug/kg wet	66667	ND	63	34-104			
Surrogate: p-Terphenyl	*5020*		"	*6666.7*		*75*	*39-129*			
Matrix Spike Dup (L903037-MSD1)		**Source: 0902067-05**		Prepared: 03/05/2009 Analyzed: 03/13/2009						
Diesel Range Organics	46000	3300	ug/kg wet	66667	ND	70	34-104	11	40	
Surrogate: p-Terphenyl	*6000*		"	*6666.7*		*90*	*39-129*			

Date: 7 December 2009
To: Washington Closure Hanford Inc. (technical representative)
From: ELR Consulting
Project: Columbia River Component of the RCBRA – Sediment
Subject: Radiochemistry - Data Package No. K1544-EB

INTRODUCTION

This memo presents the results of data validation on Data Package No. K1544 prepared by Eberline Services (EB). A list of samples validated along with the analyses reported and the method of analysis is provided in the following table.

Sample ID	Sample Date	Media	Validation	Anaysis
J18985	2/19/09	Solid	C	See note 1
J18986	2/19/09	Solid	C	See note 1
J18987	2/19/09	Solid	C	See note 1
J18988	2/19/09	Solid	C	See note 1
J18990	2/19/09	Solid	C	See note 1
J18991	2/19/09	Solid	C	See note 1
J18992	2/19/09	Solid	C	See note 1
J189B5	2/19/09	Solid	C	See note 1
J189B6	2/19/09	Solid	C	See note 1
J189B7	2/19/09	Solid	C	See note 1
J189B8	2/19/09	Solid	C	See note 1
J189B9	2/19/09	Solid	C	See note 1
J189C0	2/19/09	Solid	C	See note 1
J189C1	2/19/09	Solid	C	See note 1
J189C3	2/19/09	Solid	C	See note 1
J189C4	2/19/09	Solid	C	See note 1
J189D8	2/19/09	Solid	C	See note 1
J189F0	2/19/09	Solid	C	See note 1
J189J9	2/19/09	Solid	C	See note 1
J189K2	2/19/09	Solid	C	See note 1
J189K4	2/19/09	Solid	C	See note 1
J189K5	2/19/09	Solid	C	See note 1

1 – Carbon-14, total strontium, technetium-99, alpha spectroscopy and gamma spectroscopy

Data validation was conducted in accordance with the Washington Closure Hanford (WCH) validation statement of work and the Remedial Investigation Work Plan for Hanford Site Releases to the Columbia River (DOE/RL-2008-11, Rev. 0, September 2008). Appendices 1 through 6 provide the following information as indicated below:

Appendix 1. Glossary of Data Reporting Qualifiers
Appendix 2. Summary of Data Qualification
Appendix 3. Qualified Data Summary and Annotated Laboratory Reports
Appendix 4. Laboratory Narrative and Chain-of-Custody Documentation
Appendix 5. Data Validation Supporting Documentation
Appendix 6. Additional Data Requested by Client

DATA QUALITY PARAMETERS

- **Holding Times**

Holding times are calculated from Chain-of-Custody forms to determine the validity of the results. The maximum holding time for radiochemical analysis is 6 months.

All holding times were acceptable.

Preparation (Method) Blanks

Laboratory Blanks

Blank samples are analyzed to determine if positive results are due to laboratory reagent, sample container, or detector contamination. If blank analysis results indicate the presence of an analyte above the minimum detectable activity (MDA), the following qualifiers are applied: All positive sample results less than five times the highest blank concentration are qualified as estimates and flagged "J"; sample results below the MDA are qualified as undetected and flagged "U"; sample results above the MDA and greater than five times the highest blank concentration are not qualified.

All blank results were acceptable.

Field (Equipment) Blank

No field blanks were submitted for analysis.

- **Accuracy**

Accuracy is evaluated from laboratory control sample (LCS) or blank spike sample (BSS) batch samples and spiked samples from the analytical batch. Measured activities are compared to the known added amounts. The acceptable LCS or BSS and matrix spike (MS) recovery range is 70-130%. In addition, samples may be spiked with a radiochemical tracer to assist in isolating the radioisotope of interest with the yield of the tracer being used in calculating sample activity. The acceptable range for tracer recovery is 20% to 105%. Spike sample results outside the above ranges result in associated sample results being qualified as estimates, or not qualified, depending on the activity of the individual sample. Results are rejected for LCS/BSS recoveries of less than 30% and tracer recoveries of less than 20%, and tracer recoveries of greater than 115% for detected results.

Due to the lack of an LCS analysis, all thorium-228 (aspec) and thorium-232 (aspec) results were qualified as estimates and flagged "J".

Due to the lack of a matrix spike analysis, all carbon-14 results were qualified as estimates and flagged "J".

All other accuracy results were acceptable

Laboratory Duplicates

Analytical precision is expressed by the relative percent differences (RPD) between the recoveries of duplicate matrix spike analyses performed on a sample in the analytical batch. Precision may alternatively be assessed using unspiked duplicate analyses performed on a sample in the analytical batch. If both sample and replicate activities (concentrations) are greater than five times the contract required detection limit (CRDL) and the RPD is less than 30%, no qualification is required. If either activity (concentration) is less than five times the CRDL, the RPD control limit is less than or equal to two times the CRDL. If the RPD is outside the applicable control limit, associated results are qualified as estimated detects or estimated non-detects.

Due to an RPD outside QC limits (33%), all thorium-228 (gea) results in samples J18985, J18986, J18987, J18988, J18990, J18991, J18992, J189B5, J189B6, J189B7 and J189B8 were qualified as estimates and flagged "J".

All other duplicate results were acceptable.

Field Duplicates

No field duplicates were submitted for analysis.

- **Detection Levels**

Reported analytical detection levels for undetected analytes are compared against the project RQLs to ensure that laboratory detection levels meet the required criteria. One analyte exceeded the RQL. Under the WCH statement of work, no qualification is required. All other analytes met the RQL

- **Completeness**

Data package No. K1544 was submitted for validation and verified for completeness. Completeness is based on the percentage of data determined to be valid (i.e., not rejected). The completion percentage was 100%.

MAJOR DEFICIENCIES

None found,

MINOR DEFICIENCIES

The following minor deficiency was noted:

- Due to the lack of an LCS analysis, all thorium-228 (aspec) and thorium-232 (aspec) results were qualified as estimates and flagged "J".
- Due to the lack of a matrix spike analysis, all carbon-14 results were qualified as estimates and flagged "J".
- Due to an RPD outside QC limits (33%), all thorium-228 (gea) results in samples J18985, J18986, J18987, J18988, J18990, J18991, J18992, J189B5, J189B6, J189B7 and J189B8 were qualified as estimates and flagged "J".

Data flagged "J" indicates that the associated concentration is an estimate, but under the WCH statement of work, the data may be usable for decision-making purposes. All other validated results are considered accurate within the standard error associated with the methods.

One analyte exceeded the RQL. Under the WCH statement of work, no qualification is required.

REFERENCES

Washington Closure Hanford Contract #S00W307A00 (March 2008), *Data Validation Services*.

DOE/RL-2008-11, Rev.0, *Remedial Investigation Work Plan for Hanford Site Releases to the Columbia River*, September 2008.

Appendix 1

Glossary of Data Reporting Qualifiers

Qualifiers which may be applied by data validators in compliance with the WCH statement of work are as follows:

U - Indicates the compound or analyte was analyzed for and not detected above the minimum detectable activity (MDA) in the sample. The value reported is the sample result corrected for sample dilution and moisture content by the laboratory. The data is usable for decision making purposes

UJ - Indicates the compound or analyte was analyzed for and not detected at concentrations above the minimum detectable activity (MDA) in the sample. Due to a minor QC deficiency identified during the data validation, the associated quantitation limit is an estimate, but is usable for decision making purposes.

J - Indicates the compound or analyte was analyzed for and detected. Due to a minor QC deficiency identified during the data validation, the associated concentration is an estimate, but the data are usable for decision-making purposes.

R - Indicates the compound or analyte was analyzed for, detected, and due to an identified major QC deficiency, the data are unusable.

UR - Indicates the compound or analyte was analyzed for and not detected in the sample. Additionally, the data is unusable due to an identified major QC deficiency.

Appendix 2

Summary of Data Qualification

RADIOCHEMISTRY DATA QUALIFICATION SUMMARY*

SDG: K1544	**REVIEWER:** **ELR**	**Project:** **RCBRA**	**QC Issue**
COMPOUND	QUALIFIER	SAMPLES AFFECTED	REASON
Thorium-228 Thorium-232	J	All	No LCS analysis
Carbon-14	J	All	No MS analysis RPD
Thorium-228 (gea)	J	J18985, J18986 J18987, J18988 J18990, J18991 J18992, J189B5 J189B6, J189B7 J189B8	

* - The Qualified Data Summary Table includes laboratory applied "U" qualifiers not specifically identified here. The laboratory applied "U" qualifiers are included to minimize misinterpretation of results contained in the table.

Appendix 3

Qualified Data Summary and Annotated Laboratory Reports

EBERLINE ANALYTICAL/RICHMOND

SAMPLE DELIVERY GROUP K1544

7316-001

J10985

DATA SHEET

SDG	7316	Client/Case no	Hanford SDG K1544
Contact	N. Joseph Verville	Contract	No. S00W23SA00
Lab sample id	R902077-01	Client sample id	J10985
Dept sample id	7316-001	Location/Matrix	HA-29SD SOLID
Received	02/23/09	Collected/Weight	02/19/09 09:21 1710 g
% solids	100.0	Custody/SAF No	RC 116-1330 RC-116

LK 12/5/05

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALIFIERS	TEST
Carbon 14	14762-75-5	0.064	1.9	3.18	50.0	U J	C
Total Strontium	SR-RAD	0.172	0.37	0.720	1.00	U	SR
Technetium 99	14133-76-7	0.045	0.17	0.318	15.0	U	TC
Thorium 228	14274-82-9	0.729	0.20	0.260	1.00	J	TH
Thorium 230	14269-63-7	0.587	0.28	0.214	1.00		TH
Thorium 232	TH-232	0.587	0.28	0.214	1.00	J	TH
Uranium 233/234	U-233/234	0.446	0.10	0.041	1.00		U
Uranium 235	15117-96-1	0.048	0.041	0.052	1.00	U	U
Uranium 238	U-238	0.355	0.091	0.062	1.00		U
Plutonium 238	13981-16-3	0.010	0.035	0.068	1.00	U	PU
Plutonium 239/240	PU-239/240	-0.003	0.014	0.033	1.00	U	PU
Potassium 40	13966-00-2	12.2	0.37	0.073			GAM
Cobalt 60	10198-40-0	U		0.007	0.050	U	GAM
Cesium 137	10045-97-3	0.034	0.008	0.009	0.100		GAM
Radium 226	13982-63-3	0.397	0.018	0.014	0.100		GAM
Radium 228	15262-20-1	0.593	0.033	0.030	0.200		GAM
Europium 152	14683-23-9	U		0.020	0.100	U	GAM
Europium 154	15585-10-1	U		0.021	0.100	U	GAM
Europium 155	14391-16-3	U		0.029	0.100	U	GAM
Thorium 228	14274-82-9	0.728	0.010	0.016		J	GAM
Thorium 232	TH-232	0.593	0.033	0.030			GAM
Uranium 235	15117-96-1	U		0.048		U	GAM
Uranium 238	U-238	U		1.21		U	GAM
Americium 241	14596-10-2	U		0.031		U	GAM
Beryllium 7	13966-02-4	U		0.125		U	GAM
Ruthenium 106	13967-48-1	U		0.054		U	GAM
Antimony 125	14234-35-6	U		0.016		U	GAM
Cesium 134	3967-70-9	U		0.009		U	GAM

ColumbiaRiverComp.ofRCBRA Sediment

Lab id	EBRLNE
Protocol	Hanford1
Version	Ver 1.0
Form	DVD-DS
Version	3.06
Report date	04/14/09

EBERLINE ANALYTICAL/RICHMOND

SAMPLE DELIVERY GROUP K1544

7316-002

J18986

DATA SHEET

SDG	7316	Client/Case no	Hanford SDG K1544
Contact	M. Joseph Verville	Contract	No. 500W435A00
Lab sample id	R902077-02	Client sample id	J18986
Dept sample id	7316-002	Location/Matrix	HA-40SD SOLID
Received	02/23/09	Collected/Weight	02/19/09 10:10 1005 g
% solids	100.0	Custody/SAF No	RC 116-1111 RC-116

12/5/09

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Carbon 14	14762-75-5	-0.058	1.7	2.91	50.0	U J	C
Total Strontium	SR-RAD	0.002	0.14	0.295	1.00	U	SR
Technetium 99	14133-76-7	0.173	0.16	0.166	15.0	U	TC
Thorium 228	14274-82-9	0.875	0.40	0.440	1.00	J	TH
Thorium 230	14269-63-7	0.595	0.32	0.304	1.00		TH
Thorium 232	TH-232	1.03	0.41	0.103	1.00	J	TH
Uranium 233/234	U-233/234	0.629	0.12	0.079	1.00		U
Uranium 235	15117-96-1	0.013	0.040	0.063	1.00	U	U
Uranium 238	U-238	0.530	0.11	0.067	1.00		U
Plutonium 238	13981-16-3	0.005	0.038	0.076	1.00	U	PU
Plutonium 239/240	PU-239/240	0.014	0.028	0.058	1.00	U	PU
Potassium 40	13966-00-2	11.2	0.77	0.095			GAM
Cobalt 60	10198-40-0	U		0.010	0.050	U	GAM
Cesium 137	10045-97-3	0.037	0.010	0.012	0.100		GAM
Radium 226	13982-63-3	0.530	0.032	0.020	0.100		GAM
Radium 228	15262-20-1	0.846	0.057	0.045	0.200		GAM
Europium 152	14683-23-9	U		0.026	0.100	U	GAM
Europium 154	15585-10-1	U		0.033	0.100	U	GAM
Europium 155	14391-16-3	U		0.048	0.100	U	GAM
Thorium 228	14274-82-9	0.813	0.020	0.013		J	GAM
Thorium 232	TH-232	0.846	0.057	0.045			GAM
Uranium 235	15117-96-1	U		0.078		U	GAM
Uranium 238	U-238	U		1.11		U	GAM
Americium 241	14596-10-2	U		0.032		U	GAM
Beryllium 7	13966-02-4	U		0.095		U	GAM
Ruthenium 106	13967-48-1	U		0.080		U	GAM
Antimony 125	14234-35-6	U		0.021		U	GAM
Cesium 134	13967-70-9	U		0.014		U	GAM

ColumbiaRiverComp.ofRCBRA-Sediment

Lab id EBRLNE
Protocol Hanford1
Version Ver 1.0
Form DVD-DS
Version 1.06
Report date 04/13/09

EBERLINE ANALYTICAL/RICHMOND

SAMPLE DELIVERY GROUP K1544

7316-003

J18987

DATA SHEET

SDG	7316	Client/Case no	Hanford SDG K1544
Contact	N. Joseph Verville	Contract	No. 500W235A00
Lab sample id	8902077-01	Client sample id	J18987
Dept sample id	7316-003	Location/Matrix	HA-65SD SOLID
Received	02/23/09	Collected/Weight	02/19/09 10:30 1206 g
% Solids	100.0	Custody/SAF No	RC-116 1132 RC-116

lr 12/5/09

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Carbon 14	14762-75-5	0	1.8	2.99	50.0	U J	C
Total Strontium	SR-RAD	0.057	0.16	0.315	1.00	U	SR
Technetium 99	14133-76-7	0.237	0.22	0.342	15.0	U	TC
Thorium 228	14274-82-9	0.505	0.34	0.465	1.00	J	TH
Thorium 230	14269-63-7	0.252	0.25	0.321	1.00	U	TH
Thorium 232	TH-232	0.501	0.34	0.421	1.00	J	TH
Uranium 233/234	U-233/234	0.334	0.084	0.064	1.00		U
Uranium 235	15117-96-1	0.010	0.020	0.019	1.00	U	U
Uranium 238	U-238	0.293	0.076	0.032	1.00		U
Plutonium 238	13981-16-3	0.019	0.037	0.061	1.00	U	PU
Plutonium 239/240	PU-239/240	0.007	0.015	0.036	1.00	U	PU
Potassium 40	13966-00-2	12.1	0.27	0.112			GAM
Cobalt 60	10198-40-0	U		0.013	0.050	U	GAM
Cesium 137	10045-97-3	0.036	0.011	0.014	0.100		GAM
Radium 226	13982-63-3	0.435	0.074	0.021	0.100		GAM
Radium 228	15262-20-1	0.577	0.052	0.048	0.200		GAM
Europium 152	14683-23-9	U		0.029	0.100	U	GAM
Europium 154	15585-10-1	U		0.039	0.100	U	GAM
Europium 155	14391-16-3	U		0.035	0.100	U	GAM
Thorium 228	14274-82-9	0.533	0.016	0.016		J	GAM
Thorium 232	TH-232	0.577	0.052	0.048			GAM
Uranium 235	15117-96-1	U		0.064		U	GAM
Uranium 238	U-238	U		1.43		U	GAM
Americium 241	14596-10-2	U		0.092		U	GAM
Beryllium 7	13966-02-4	U		0.112		U	GAM
Ruthenium 106	13967-48-1	U		0.088		U	GAM
Antimony 125	14234-35-6	U		0.026		U	GAM
Cesium 134	3967-70-9	U		0.014		U	GAM

ColumbiaRiverComp.ofRCBRA-Sediment

Lab id	EBRLNE
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E B E R L I N E   A N A L Y T I C A L / R I C H M O N D

SAMPLE DELIVERY GROUP K1544

7316-004

J18988

D A T A   S H E E T

SDG	7316	Client/Case no	Hanford	SDG K1544
Contact	N. Joseph Verville	Contract	NO S00W735A00	
Lab sample id	8902077-04	Client sample id	J18988	
Dept sample id	7316-004	Location/Matrix	HA-8SSD	SOLID
Received	02/21/09	Collected/Weight	02/19/09 10:45	1799 g
% solids	100.0	Custody/SAF No	HC-116-1333	HC-116

VK 12/5/09

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Carbon 14	14762-75-5	1.44	1.8	3.00	50.0	U J	C
Total Strontium	SR-RAD	0.091	0.34	0.651	1.00	U	SR
Technetium 99	14133-76-7	0.117	0.16	0.446	15.0	U	TC
Thorium 228	14274-82-9	0.773	0.34	0.321	1.00	J	TH
Thorium 230	14269-63-7	0.502	0.34	0.320	1.00		TH
Thorium 232	TH-232	0.769	0.34	0.256	1.00	J	TH
Uranium 233/234	U-233/234	0.429	0.099	0.052	1.00		U
Uranium 235	15117-96-1	0.033	0.040	0.050	1.00	U	U
Uranium 238	U 238	0.446	0.099	0.052	1.00		U
Plutonium 238	13981-16-3	0.012	0.054	0.099	1.00	U	PU
Plutonium 239/240	PU-239/240	U	0.015	0.042	1.00	U	PU
Potassium 40	13966-00-2	10.8	0.18	0.119			GAM
Cobalt 60	10198-40-0	U		0.011	0.050	U	GAM
Cesium 137	10045-97-3	0.025	0.012	0.012	0.100		GAM
Radium 226	13982-63-3	0.500	0.033	0.020	0.100		GAM
Radium 228	15262-20-1	0.908	0.051	0.042	0.200		GAM
Europium 152	14683-23-9	U		0.030	0.100	U	GAM
Europium 154	15585-10-1	U		0.018	0.100	U	GAM
Europium 155	14391-16-3	U		0.062	0.100	U	GAM
Thorium 228	14274-82-9	0.966	0.023	0.016		J	GAM
Thorium 232	TH-232	0.908	0.051	0.042			GAM
Uranium 235	15117-96-1	U		0.072		U	GAM
Uranium 238	U 238	U		1.30		U	GAM
Americium 241	14596-10-2	U		0.019		U	GAM
Beryllium 7	13966 02 4	U		0.106		U	GAM
Ruthenium 106	13967-48-1	U		0.093		U	GAM
Antimony 125	14234-35-6	U		0.025		U	GAM
Cesium 134	3967-70-9	U		0.016		U	GAM

ColumbiaRiverComp.ofRCBRA-Sediment

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EBERLINE ANALYTICAL/RICHMOND

SAMPLE DELIVERY GROUP K1544

7316-005

J18990

DATA SHEET

SDG	7316	Client/Case no	Hanford SDG K1544
Contact	N. Joseph Verville	Contract	No. 500W235A00
Lab sample id	R902077-05	Client sample id	J18990
Dept sample id	7316-005	Location/Matrix	HA-188D SOLID
Received	02/23/09	Collected/Weight	02/19/09 10:00 1731 g
% Solids	100.0	Custody/SAF No	RC-116 1335 RC-116

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ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Carbon 14	14762-75-5	1.06	1.9	3.11	50.0	U J	C
Total Strontium	SR-RAD	-0.007	0.17	0.332	1.00	U	SR
Technetium 99	14133-76-7	0.044	0.23	0.348	15.0	U	TC
Thorium 228	14274-82-9	0.394	0.26	0.163	1.00	J	TH
Thorium 230	14269-63-7	0.425	0.26	0.250	1.00		TH
Thorium 232	TH-232	0.523	0.26	0.250	1.00	J	TH
Uranium 233/234	U-233/234	0.427	0.12	0.078	1.00		U
Uranium 235	15117-96-1	0	0.031	0.074	1.00	U	U
Uranium 238	U-238	0.485	0.12	0.049	1.00		U
Plutonium 238	13981-16-3	0.013	0.065	0.118	1.00	U	PU
Plutonium 239/240	PU-239/240	-0.005	0.028	0.067	1.00	U	PU
Potassium 40	13966-00-2	12.4	0.22	0.085			GAM
Cobalt 60	10198-40-0	U		0.010	0.050	U	GAM
Cesium 137	10045-97-3	0.047	0.007	0.008	0.100		GAM
Radium 226	13982-63-3	0.457	0.024	0.019	0.100		GAM
Radium 228	15262-20-1	0.758	0.043	0.040	0.200		GAM
Europium 152	14683-23-9	U		0.022	0.100	U	GAM
Europium 154	15585-10-1	U		0.032	0.100	U	GAM
Europium 155	14391-16-3	U		0.046	0.100	U	GAM
Thorium 228	14274-82-9	0.756	0.015	0.012		J	GAM
Thorium 232	TH-232	0.758	0.043	0.040			GAM
Uranium 235	15117-96-1	U		0.065		U	GAM
Uranium 238	U-238	U		1.70		U	GAM
Americium 241	14596-10-2	U		0.014		U	GAM
Beryllium 7	13966-02-4	U		0.093		U	GAM
Ruthenium 106	13967-48-1	U		0.077		U	GAM
Antimony 125	14234-35-6	U		0.020		U	GAM
Cesium 134	13967-70-9	U		0.013		U	GAM

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SAMPLE DELIVERY GROUP K1544

7316-006 J18991

DATA SHEET

SDG	7316	Client/Case no	Hanford	SDG K1544
Contact	N. Joseph Verville	Contract	No. 500W235A00	
Lab sample id	F902077-06	Client sample id	J18991	
Dept sample id	7316-006	Location/Matrix	HA 1000	SOLID
Received	02/23/09	Collected/Weight	02/19/09 09:40	1645 g
% solids	100.0	Custody/SAF No	RC-116-1336	RC-116

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ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Carbon 14	14762-75-5	0.894	2.0	3.31	50.0	UJ	C
Total Strontium	SR RAD	0.009	0.15	0.314	1.00	U	SR
Technetium 99	14133-76-7	0.095	0.21	0.443	15.0	U	TC
Thorium 228	14274-82-9	0.600	0.30	0.159	1.00	J	TH
Thorium 230	14269-63-7	0.561	0.30	0.286	1.00		TH
Thorium 232	TH-232	0.449	0.23	0.286	1.00	J	TH
Uranium 233/234	U-233/234	0.450	0.21	0.157	1.00		U
Uranium 235	15117-96-1	0.025	0.050	0.190	1.00	U	U
Uranium 238	U-238	0.430	0.21	0.457	1.00		U
Plutonium 238	13981-16-3	0.012	0.058	0.101	1.00	U	PU
Plutonium 239/240	PU-239/240	0.021	0.025	0.040	1.00	U	PU
Potassium 40	13966-00-2	11.5	0.65	0.081			GAM
Cobalt 60	10198-40-0	U		0.008	0.050	U	GAM
Cesium 137	10045-97-3	0.045	0.009	0.009	0.100		GAM
Radium 226	13982-63-3	0.371	0.026	0.017	0.100		GAM
Radium 228	15262-20-1	0.512	0.043	0.033	0.200		GAM
Europium 152	14683-23-9	U		0.022	0.100	U	GAM
Europium 154	15585-10-1	U		0.026	0.100	U	GAM
Europium 155	14391-16-3	U		0.043	0.100	U	GAM
Thorium 228	14274-82-9	0.550	0.014	0.031		J	GAM
Thorium 232	TH-232	0.572	0.043	0.033			GAM
Uranium 235	15117-96-1	U		0.051		U	GAM
Uranium 238	U-238	U		0.955		U	GAM
Americium 241	14596-10-2	U		0.053		U	GAM
Beryllium 7	13966-02-4	U		0.079		U	GAM
Ruthenium 106	13967-48-1	U		0.065		U	GAM
Antimony 125	14234-35-6	U		0.019		U	GAM
Cesium 134	3967 70 9	U		0.041		U	GAM

ColumbiaRiverComp.ofRCBRA-Sediment

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EBERLINE ANALYTICAL/RICHMOND

SAMPLE DELIVERY GROUP K1544

7316-007

J18992

DATA SHEET

SDG	7316	Client/Case no	Hanford SDG K1544
Contact	N. Joseph Verville	Contract	No. 500H235A00
Lab sample id	R902077-07	Client sample id	J18992
Dept sample id	7316 007	Location/Matrix	UA-SSSD SOLID
Received	02/23/09	Collected/Weight	02/19/09 10:15 1680 g
% solids	100.0	Custody/SAF No	RC-116-1337 RC-116

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ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Carbon 14	14762-75-5	0.260	1.7	2.97	50.0	U J	C
Total Strontium	SR-RAD	-0.017	0.16	0.334	1.00	U	SR
Technetium 99	14133-76-7	0.078	0.35	0.402	15.0	U	TC
Thorium 228	14274-82-9	0.805	0.36	0.268	1.00	J	TH
Thorium 230	14269-63-7	0.872	0.36	0.267	1.00		TH
Thorium 232	TH-232	1.13	0.43	0.367	1.00	J	TH
Uranium 233/234	U-233/234	0.462	0.11	0.066	1.00		U
Uranium 235	15117-96-1	-0.008	0.033	0.080	1.00	U	U
Uranium 238	U-238	0.468	0.11	0.053	1.00		U
Plutonium 238	13981-16-3	0.018	0.036	0.070	1.00	U	PU
Plutonium 239/240	PU 239/240	-0.005	0.018	0.050	1.00	U	PU
Potassium 40	13966-00-2	11.5	0.93	0.224			GAM
Cobalt 60	10198-40-0	U		0.023	0.050	U	GAM
Cesium 137	10045-97-3	0.049	0.020	0.024	0.100		GAM
Radium 226	13982-63-3	0.526	0.054	0.045	0.100		GAM
Radium 228	15262-20-1	0.985	0.13	0.110	0.200		GAM
Europium 152	14683-23-9	U		0.057	0.100	U	GAM
Europium 154	15585-10-1	U		0.069	0.100	U	GAM
Europium 155	14391-16-3	U		0.093	0.100	U	GAM
Thorium 228	14274-82-9	0.843	0.034	0.029		J	GAM
Thorium 232	TH-232	0.985	0.13	0.110			GAM
Uranium 235	15117-96-1	U		0.115		U	GAM
Uranium 238	U-238	U		3.48		U	GAM
Americium 241	14596-10-2	U		0.072		U	GAM
Beryllium 7	13966-02-4	U		0.233		U	GAM
Ruthenium 106	13967-48-1	U		0.191		U	GAM
Antimony 125	14234-35-6	U		0.048		U	GAM
Cesium 134	3967-70-9	U		0.031		U	GAM

ColumbiaRiverComp.ofRCBRA-Sediment

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SAMPLE DELIVERY GROUP K1544

7316-008

J18985

DATA SHEET

SDG	7316	Client/Case no	Hanford SDG K1544
Contact	M. Joseph Verville	Contract	No. 300W235A00
Lab sample id	R902077-00	Client sample id	J18985
Dept sample id	7316-008	Location/Matrix	BL-3SSD SOLID
Received	02/23/09	Collected/Weight	02/19/09 11:20 1937 g
% solids	100.0	Custody/SAP No	BC-116-1350 BC 116

12/5/09

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Carbon 14	14762-75-5	-0.757	1.6	3.02	50.0	U J	C
Total Strontium	SR-RAD	0.061	0.30	0.599	1.00	U	SR
Technetium 99	14133-76-7	0.036	0.18	0.390	15.0	U	TC
Thorium 228	14274-82-9	0.806	0.32	0.297	1.00	J	TH
Thorium 230	14269-63-7	0.556	0.31	0.236	1.00		TH
Thorium 232	TH-232	0.927	0.32	0.236	1.00	J	TH
Uranium 233/234	U-233/234	0.486	0.11	0.045	1.00		U
Uranium 235	15117-96-1	0.014	0.029	0.055	1.00	U	U
Uranium 238	U-238	0.379	0.096	0.057	1.00		U
Plutonium 238	13981-16-3	-0.006	0.037	0.075	1.00	U	PU
Plutonium 239/240	PU-239/240	0	0.012	0.047	1.00	U	PU
Potassium 40	13966-00-2	12.0	0.53	0.220			GAM
Cobalt 60	10198-40-0	U		0.022	0.050	U	GAM
Cesium 137	10045-97-3	U		0.027	0.100	U	GAM
Radium 226	13982-63-3	0.487	0.048	0.041	0.100		GAM
Radium 228	15262-20-1	0.935	0.11	0.096	0.200		GAM
Europium 152	14683-23-9	U		0.053	0.100	U	GAM
Europium 154	15585-10-1	U		0.074	0.100	U	GAM
Europium 155	14391-16-3	U		0.055	0.100	U	GAM
Thorium 228	14274-82-9	0.891	0.033	0.020		J	GAM
Thorium 232	TH-232	0.935	0.11	0.096			GAM
Uranium 235	15117-96-1	U		0.122		U	GAM
Uranium 238	U 238	U		2.59		U	GAM
Americium 241	14596-10-2	U		0.031		U	GAM
Beryllium 7	13966-02-4	U		0.210		U	GAM
Ruthenium 106	13967-48-1	U		0.181		U	GAM
Antimony 125	14234-35-6	U		0.047		U	GAM
Cesium 134	13967-70-9	U		0.030		U	GAM

ColumbiaRiverComp,ofRCBRA-Sediment

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SAMPLE DELIVERY GROUP K1544

7316-009

J18906

DATA SHEET

SDG	7316	Client/Case no	Hanford SDG_K1544
Contact	N. Joseph Verville	Contract	No. 500W735A00
Lab sample id	K902077 02	Client sample id	J18906
Dept sample id	7316-009	Location/Matrix	BL 5550 SOLID
Received	02/23/09	Collected/Weight	02/19/09 11:54 2283 g
% solids	100.0	Custody/SAF No	RC 116-1351 RC-116

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ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Carbon 14	14762-75-5	0.712	1.7	2.96	50.0	U J	C
Total Strontium	SR-RAD	0.042	0.16	0.326	1.00	U	SR
Technetium 99	14133-76-7	0.126	0.29	0.357	15.0	U	TC
Thorium 228	14274-82-9	0.490	0.13	0.418	1.00	J	TH
Thorium 230	14269-63-7	0.586	0.33	0.249	1.00		TH
Thorium 232	TH-232	0.391	0.20	0.249	1.00	J	TH
Uranium 233/234	U-233/234	0.260	0.081	0.044	1.00		U
Uranium 235	15117-96-1	0.021	0.028	0.053	1.00	U	U
Uranium 238	U-238	0.415	0.10	0.044	1.00		U
Plutonium 238	13981-16-3	0.007	0.037	0.066	1.00	U	PU
Plutonium 239/240	PU-239/240	0.004	0.015	0.028	1.00	U	PU
Potassium 40	13966-00-2	8.80	0.65	0.152			GAM
Cobalt 60	10198-40-0	U		0.011	0.050	U	GAM
Cesium 137	10045-97-3	0.025	0.016	0.018	0.100		GAM
Radium 226	13982-63-3	0.468	0.036	0.027	0.100		GAM
Radium 228	15262-20-1	0.567	0.070	0.064	0.200		GAM
Europium 152	14683-23-9	U		0.044	0.100	U	GAM
Europium 154	15585-10-1	U		0.051	0.100	U	GAM
Europium 155	14391-16-3	U		0.051	0.100	U	GAM
Thorium 228	14274-82-9	0.564	0.034	0.023		J	GAM
Thorium 232	TH-232	0.567	0.070	0.064			GAM
Uranium 235	15117-96-1	U		0.106		U	GAM
Uranium 238	U-238	U		1.94		U	GAM
Americium 241	14596-10-2	U		0.111		U	GAM
Beryllium 7	13966-02-4	U		0.159		U	GAM
Ruthenium 106	13967-48-1	U		0.123		U	GAM
Antimony 125	14234-35-6	U		0.038		U	GAM
Cesium 134	13967-70-9	U		0.022		U	GAM

ColumbiaRiverComp.ofRCBRA-Sediment

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SAMPLE DELIVERY GROUP K1544

7316-010

J189B7

DATA SHEET

SDG	7116	Client/Case no	Hanford SDG K1544
Contact	N. Joseph Verville	Contract	No. 200WX35A00
Lab sample id	8903077-10	Client sample id	J189B7
Dept sample id	7116 010	Location/Matrix	BL-955D SOLID
Received	02/23/09	Collected/Weight	02/19/09 13:23 1785 g
% solids	100.0	Custody/SAF No	RC-116 1152 RC-116

VL 12/5/09

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Carbon 14	14762-75-5	0.303	1.8	3.03	50.0	U J	C
Total Strontium	SR-RAD	0.192	0.22	0.399	1.00	U	SR
Technetium 99	14133-76-7	0.054	0.24	0.389	15.0	U	TC
Thorium 228	14274-82-9	0.426	0.29	0.392	1.00	J	TH
Thorium 230	14269-63-7	1.10	0.43	0.270	1.00		TH
Thorium 232	TH-232	0.353	0.21	0.270	1.00	J	TH
Uranium 233/234	U-233/234	0.244	0.069	0.037	1.00		U
Uranium 235	15117-96-1	-0.006	0.012	0.045	1.00	U	U
Uranium 238	U 238	0.234	0.069	0.037	1.00		U
Plutonium 238	13981-16-3	0.036	0.036	0.055	1.00	U	PU
Plutonium 239/240	PU-239/240	-0.004	0.018	0.043	1.00	U	PU
Potassium 40	13966-00-2	8.73	0.34	0.172			GAM
Cobalt 60	10198-40-0	U		0.016	0.050	U	GAM
Cesium 137	10045-97-3	0.024	0.014	0.016	0.100		GAM
Radium 226	13982-63-3	0.337	0.030	0.026	0.100		GAM
Radium 228	15262-20-1	0.492	0.063	0.063	0.200		GAM
Europium 152	14683-23-9	U		0.033	0.100	U	GAM
Europium 154	15585-10-1	U		0.052	0.100	U	GAM
Europium 155	14391-16-3	U		0.039	0.100	U	GAM
Thorium 228	14274-82-9	0.448	0.020	0.017		J	GAM
Thorium 232	TH-232	0.492	0.063	0.063			GAM
Uranium 235	15117-96-1	U		0.072		U	GAM
Uranium 238	U-238	U		1.66		U	GAM
Americium 241	14596-10-2	U		0.022		U	GAM
Beryllium 7	13966-02-4	U		0.123		U	GAM
Ruthenium 106	13967-48-1	U		0.107		U	GAM
Antimony 125	14234-35-6	U		0.010		U	GAM
Cesium 134	3967-70-9	U		0.021		U	GAM

ColumbiaRiverComp.ofRCBRA-Sediment

Lab id	EBERLINE
Protocol	Hanford1
Version	Ver 1.0
Form	DVD-DS
Version	3.06
Report date	04/14/09

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EBERLINE ANALYTICAL/RICHMOND

SAMPLE DELIVERY GROUP K1544

7316-011

J189B8

DATA SHEET

SDG	7316	Client/Case no	Hanford SDG K1544
Contact	M. Joseph Verville	Contract	No. 200W235A00
Lab sample id	R902027-11	Client sample id	J189B8
Dept sample id	7316-011	Location/Matrix	UL-888D SOLID
Received	02/23/09	Collected/Weight	04/19/09 12:56 1954 g
% solids	100.0	Custody/SAF No	RC 116 1353 RC-116

12/5/09

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Carbon 14	14762-75-5	1.69	1.8	3.01	50.0	U J	C
Total Strontium	SR RAD	-0.076	0.15	0.313	1.00	U	SR
Technetium 99	14133-76-7	0.012	0.19	0.530	15.0	U	TC
Thorium 228	14274-82-9	1.18	0.51	0.464	1.00	J	TH
Thorium 230	14269-63-7	0.460	0.34	0.320	1.00		TH
Thorium 232	TH-232	0.919	0.43	0.120	1.00	J	TH
Uranium 233/234	U-233/234	0.474	0.097	0.042	1.00		U
Uranium 235	15117-96-1	0.047	0.032	0.040	1.00		U
Uranium 238	U-238	0.413	0.088	0.033	1.00		U
Plutonium 238	13981-16-3	0	0.025	0.055	1.00	U	PU
Plutonium 239/240	PU 239/240	0.004	0.016	0.032	1.00	U	PU
Potassium 40	13966-00-2	9.56	0.29	0.114			GAM
Cobalt 60	10198-40-0	U		0.014	0.050	U	GAM
Cesium 137	10045-97-3	0.051	0.017	0.018	0.100		GAM
Radium 226	13982-63-3	0.584	0.032	0.028	0.100		GAM
Radium 228	15262-20-1	1.04	0.071	0.064	0.200		GAM
Europium 152	14683-23-9	U		0.045	0.100	U	GAM
Europium 154	15585-10-1	U		0.044	0.100	U	GAM
Europium 155	14391-16-3	U		0.084	0.100	U	GAM
Thorium 228	14274-82-9	1.11	0.027	0.021		J	GAM
Thorium 232	TH-232	1.04	0.071	0.064			GAM
Uranium 235	15117-96-1	U		0.113		U	GAM
Uranium 238	U-238	U		1.64		U	GAM
Americium 241	14596-10-2	U		0.074		U	GAM
Beryllium 7	13966-02-4	U		0.144		U	GAM
Ruthenium 106	13967-48-1	U		0.110		U	GAM
Antimony 125	14234-35-6	U		0.034		U	GAM
Cesium 134	3967-70-9	U		0.021		U	GAM

ColumbiaRiverComp.ofRCBRA Sediment

Lab id	EBRLNE
Protocol	Hanford1
Version	Ver 1.0
Form	DVD-DS
Version	3.06
Report date	04/14/09

EBERLINE ANALYTICAL/RICHMOND

SAMPLE DELIVERY GROUP K1544

7315-001 J189B9

DATA SHEET

SDG	7315	Client/Case no	Hanford SDG K1544
Contact	N. Joseph Verville	Contract No.	300W215600
Lab sample id	R902076-01	Client sample id	J189B9
Dept sample id	7315.001	Location/Matrix	BL-7 SOO SOLID
Received	02/23/09	Collected/Weight	02/19/09 12:30 1769 g
% solids	100.0	Custody/SAF No	RC-116-1354 RC_116

Vr 12/15/09

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Carbon 14	14762-75-5	-0.127	2.0	3.36	50.0	U J	C
Total Strontium	SR-RAD	0.062	0.15	0.299	1.00	U	SR
Technetium 99	14133-76-7	0.269	0.12	0.323	15.0	U	TC
Thorium 228	14274-82-9	0.641	0.36	0.438	1.00	J	TH
Thorium 230	14269-63-7	0.852	0.36	0.272	1.00		TH
Thorium 232	TH-232	0.426	0.22	0.272	1.00	J	TH
Uranium 233/234	U-233/234	0.654	0.22	0.169	1.00		U
Uranium 235	15117-96-1	0.193	0.11	0.164	1.00		U
Uranium 238	U-238	0.707	0.22	0.115	1.00		U
Plutonium 238	13981-16-3	0.034	0.14	0.259	1.00	U	PU
Plutonium 239/240	PU-239/240	0	0.068	0.258	1.00	U	PU
Potassium 40	13966-00-2	10.5	0.16	0.072			GAM
Cobalt 60	10198-40-0	0.017	0.006	0.007	0.050		GAM
Cesium 137	10045-97-3	0.199	0.006	0.006	0.100		GAM
Radium 226	13982-63-3	0.463	0.018	0.015	0.100		GAM
Radium 228	15262-20-1	0.594	0.031	0.028	0.200		GAM
Europium 152	14683-23-7	0.181	0.014	0.019	0.100		GAM
Europium 154	15585-10-1	U		0.028	0.100	U	GAM
Europium 155	14391-16-3	U		0.034	0.100	U	GAM
Thorium 228	14274-82-9	0.671	0.012	0.011			GAM
Thorium 232	TH-232	0.594	0.031	0.028			GAM
Uranium 235	15117-96-1	U		0.074		U	GAM
Uranium 238	U-238	U		0.756		U	GAM
Americium 241	14596-10-2	U		0.042		U	GAM
Beryllium 7	13966-02-4	U		0.066		U	GAM
Ruthenium 106	13967-48-1	U		0.054		U	GAM
Antimony 125	14234-35-6	U		0.015		U	GAM
Cesium 134	13967-70-9	U		0.009		U	GAM

ColumbiaRiverComp.ofRCBRA-Sediment

Lab id EBERLINE
Protocol Hanford
Version Ver 1.0
Form DVD-DS
Version 3.06
Report date 04/13/09

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EBERLINE ANALYTICAL/RICHMOND

SAMPLE DELIVERY GROUP K1544

7315-002

J189C0

DATA SHEET

SDG	7315	Client/Case no	Hanford — SDG K1544
Contact	N. Joseph Verville	Contract	No. S00W215A00
Lab sample id	8902076-02	Client sample id	J189C0
Dept sample id	7315-002	Location/Matrix	BL-2 SOD — SOLID
Received	02/23/09	Collected/Weight	02/19/09 11:30 — 2175 g
% solids	100.0	Custody/SAF No	RC-116-1355 — RC 116

12/5/09

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Carbon 14	14762-75-5	-0.587	2.0	3.44	50.0	U J	C
Total Strontium	SR-RAD	0.021	0.13	0.259	1.00	U	SR
Technetium 99	14133-76-7	0.258	0.14	0.341	15.0	U	TC
Thorium 228	14274-82-9	0.658	0.35	0.383	1.00	J	TH
Thorium 230	14269-63-7	0.483	0.35	0.330	1.00		TH
Thorium 232	TH-232	0.828	0.35	0.264	1.00	J	TH
Uranium 233/234	U-233/234	0.400	0.18	0.168	1.00		U
Uranium 235	15117-96-1	0.027	0.053	0.204	1.00	U	U
Uranium 238	U-238	0.573	0.22	0.168	1.00		U
Plutonium 238	13981-16-3	0.078	0.16	0.299	1.00	U	PU
Plutonium 239/240	PU-239/240	0	0.078	0.299	1.00	U	PU
Potassium 40	13966-00-2	10.8	0.71	0.087			GAM
Cobalt 60	10198-40-0	U		0.009	0.050	U	GAM
Cesium 137	10045-97-3	0.033	0.011	0.012	0.100		GAM
Radium 226	13982-63-3	0.496	0.029	0.018	0.100		GAM
Radium 228	15262-20-1	0.810	0.051	0.039	0.200		GAM
Europium 152	14683-23-9	U		0.023	0.100	U	GAM
Europium 154	15585-10-1	U		0.031	0.100	U	GAM
Europium 155	14391-16-3	U		0.043	0.100	U	GAM
Thorium 228	14274-82-9	0.762	0.018	0.012			GAM
Thorium 232	TH-232	0.810	0.051	0.039			GAM
Uranium 235	15117-96-1	U		0.084		U	GAM
Uranium 238	U-238	U		3.03		U	GAM
Americium 241	14596-10-2	U		0.030		U	GAM
Beryllium 7	13966-02-4	U		0.094		U	GAM
Ruthenium 106	13967-48-1	U		0.074		U	GAM
Antimony 125	14234-35-6	U		0.020		U	GAM
Cesium 134	13967-70-9	U		0.011		U	GAM

ColumbiaRiverComp.ofRCRA-Sediment

Lab id	EBERLINE
Protocol	Hanford1
Version	Ver 1.0
Form	DVD-DS
Version	1.05
Report date	04/13/09

EBERLINE ANALYTICAL/RICHMOND

SAMPLE DELIVERY GROUP K1544

7315-003

J189C1

DATA SHEET

SDG	7315	Client/Case no	Hanford SDG K1544
Contact	N. Joseph Verville	Contract No.	500W235A00
Lab sample id	8902076-03	Client sample id	J189C1
Dept sample id	7315-003	Location/Matrix	BL-1 SED SOLID
Received	02/23/09	Collected/Weight	02/19/09 11:05 2197 g
% solids	100.0	Custody/SAF No	KC-116-1356 KC-116

12/5/09

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Carbon 14	14762-75-5	0.412	1.8	3.11	50.0	U J	C
Total Strontium	SR-RAD	-0.046	0.12	0.261	1.00	U	SR
Technetium 99	14133-76-7	0.263	0.16	0.150	15.0	U	TC
Thorium 228	14274-82-9	0.776	0.38	0.343	1.00	J	TH
Thorium 230	14269-63-7	0.248	0.25	0.296	1.00	U	TH
Thorium 232	TH-232	0.619	0.28	0.237	1.00	J	TH
Uranium 233/234	U-233/234	0.328	0.17	0.132	1.00		U
Uranium 235	15117-96-1	0.021	0.042	0.160	1.00	U	U
Uranium 238	U-238	0.380	0.17	0.137	1.00		U
Plutonium 238	13981-16-3	-0.029	0.058	0.222	1.00	U	PU
Plutonium 239/240	PU-239/240	0	0.058	0.222	1.00	U	PU
Potassium 40	13966-00-2	10.0	0.24	0.110			GAM
Cobalt 60	10198-40-0	U		0.012	0.050	U	GAM
Cesium 137	10045-97-3	0.041	0.012	0.013	0.100		GAM
Radium 226	13982-63-3	0.442	0.023	0.022	0.100		GAM
Radium 228	15262-20-1	0.642	0.054	0.050	0.200		GAM
Europium 152	14683-23-9	U		0.027	0.100	U	GAM
Europium 154	15585-10-1	U		0.039	0.100	U	GAM
Europium 155	14391-16-3	U		0.034	0.100	U	GAM
Thorium 228	14274-82-9	0.435	0.016	0.015			GAM
Thorium 232	TH-232	0.642	0.054	0.050			GAM
Uranium 235	15117-96-1	U		0.094		U	GAM
Uranium 238	U-238	U		1.31		U	GAM
Americium 241	14596-10-2	U		0.088		U	GAM
Beryllium 7	13966-02-4	U		0.110		U	GAM
Ruthenium 106	13967-48-1	U		0.086		U	GAM
Antimony 125	14234-35-6	U		0.024		U	GAM
Cesium 134	3967-70-9	U		0.014		U	GAM

ColumbiaRiverComp.ofRCRRA-Sediment

Lab id	EBRLNE
Protocol	Hanford1
Version	Ver 1.0
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EBERLINE ANALYTICAL/RICHMOND

SAMPLE DELIVERY GROUP K1544

7315 004

J189C3

DATA SHEET

SDG	7315	Client/Case no	Hanford	SDG K1544
Contact	N. Joseph Verville	Contract	No. 500W235A00	
Lab sample id	R902076 04	Client sample id	J189C3	
Dept sample id	7315-004	Location/Matrix	UL-6 SSD	SOLID
Received	02/23/09	Collected/Weight	02/19/09 12:15	1809 g
% solids	100.0	Custody/SAF No	RC-116-1358	RC-116

✓ 12/5/09

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Carbon 14	14762-75-5	-1.63	1.9	3.25	50.0	U J	C
Total Strontium	SR-RAD	0.044	0.12	0.256	1.00	U	SR
Technecium 99	14133-76-7	0.320	0.20	0.347	15.0	U	TC
Thorium 228	14274-82-9	0.549	0.28	0.127	1.00	J	TH
Thorium 230	14269-63-7	0.548	0.35	0.328	1.00		TH
Thorium 232	TH-232	0.445	0.28	0.262	1.00	J	TH
Uranium 233/234	U-233/234	0.427	0.22	0.204	1.00		U
Uranium 235	15117-96-1	0	0.065	0.247	1.00	U	U
Uranium 238	U-238	0.374	0.22	0.204	1.00		U
Plutonium 238	13981-16-3	0.032	0.13	0.244	1.00	U	PU
Plutonium 239/240	PU-239/240	0	0.063	0.243	1.00	U	PU
Potassium 40	13966-00-2	7.10	0.33	0.098			GAM
Cobalt 60	10198-40-0	U		0.009	0.050	U	GAM
Cesium 137	10045-97-3	0.067	0.011	0.010	0.100		GAM
Radium 226	13982-63-3	0.422	0.010	0.017	0.100		GAM
Radium 228	15262-20-1	0.540	0.046	0.038	0.200		GAM
Europium 152	14683-23-9	U		0.024	0.100	U	GAM
Europium 154	15585-10-1	U		0.031	0.100	U	GAM
Europium 155	14391-16-3	U		0.036	0.100	U	GAM
Thorium 228	14274-82-9	0.563	0.019	0.012			GAM
Thorium 232	TH-232	0.540	0.046	0.038			GAM
Uranium 235	15117-96-1	U		0.053		U	GAM
Uranium 238	U-238	U		1.09		U	GAM
Americium 241	14596-10-2	U		0.013		U	GAM
Beryllium 7	13966-02-4	U		0.090		U	GAM
Ruthenium 106	13967-48-1	U		0.077		U	GAM
Antimony 125	14234-35-6	U		0.021		U	GAM
Cesium 134	13967-70-9	U		0.012		U	GAM

ColumbiaRiverComp.ofRCBRA-Sediment

Lab id	EBRLNE
Protocol	Hanford1
Version	Ver 1.0
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EBERLINE ANALYTICAL/RICHMOND

SAMPLE DELIVERY GROUP K1544

7315-005

J189C4

DATA SHEET

SDG	7315	Client/Case no	Hanford SDG K1544
Contact	N. Joseph Verville	Contract	No. 500N235A00
Lab sample id	R902076-05	Client sample id	J189C4
Dept sample id	7315-005	Location/Matrix	BL-4 SED SOLID
Received	02/23/09	Collected/Weight	02/19/09 11:50 1746 g
% solids	100.0	Custody/SAF No	RC-116-1359 RC 116

K 12/3/09

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALIFIERS	TEST
Carbon 14	14762-75-5	0.354	1.8	3.12	50.0	U J	C
Total Strontium	SR-RAD	0.118	0.16	0.297	1.00	U	SR
Technetium 99	14133-76-7	0.238	0.14	0.349	15.0	U	TC
Thorium 228	14274-82-9	1.04	0.51	0.599	1.00	J	TH
Thorium 230	14269-63-7	0.997	0.42	0.310	1.00		TH
Thorium 232	TH-232	1.33	0.51	0.318	1.00	J	TH
Uranium 233/234	U-233/234	0.991	0.30	0.185	1.00		U
Uranium 235	15117-96-1	0.088	0.12	0.224	1.00	U	U
Uranium 238	U-238	0.870	0.30	0.185	1.00		U
Plutonium 238	13981-16-3	0	0.073	0.279	1.00	U	PU
Plutonium 239/240	PU-239/240	0	0.073	0.279	1.00	U	PU
Potassium 40	13966-00-2	10.1	0.19	0.090			GAM
Cobalt 60	10198-40-0	U		0.009	0.050	U	GAM
Cesium 137	10045-97-3	0.032	0.012	0.013	0.100		GAM
Radium 226	13982-63-3	0.642	0.024	0.018	0.100		GAM
Radium 228	15262-20-1	1.26	0.051	0.043	0.200		GAM
Europium 152	14683-23-9	U		0.025	0.100	U	GAM
Europium 154	15585-10-1	U		0.029	0.100	U	GAM
Europium 155	14391-16-3	U		0.071	0.100	U	GAM
Thorium 228	14274-82-9	1.36	0.017	0.013			GAM
Thorium 232	TH-232	1.26	0.051	0.043			GAM
Uranium 235	15117-96-1	U		0.088		U	GAM
Uranium 238	U-238	U		1.86		U	GAM
Americium 241	14596-10-2	U		0.016		U	GAM
Beryllium 7	13966-02-4	U		0.093		U	GAM
Ruthenium 106	13967-48-1	U		0.074		U	GAM
Antimony 125	14234-35-6	U		0.021		U	GAM
Cesium 134	3967-70-9	U		0.014		U	GAM

ColumbiaRiverComp.ofRCBRA-Sediment

Lab id	EBERLINE
Protocol	Hanford1
Version	Ver 1.0
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EBERLINE ANALYTICAL/RICHMOND

SAMPLE DELIVERY GROUP K1544

7315 006 J189D8

DATA SHEET

SDG	7315	Client/Case no	Hanford SDG_K1544
Contact	N. Joseph Verville	Contract No.	00W235A00
Lab sample id	E902076-06	Client sample id	J189D8
Dept sample id	7315 006	Location/Matrix	300D-3_SSD SOLID
Received	02/24/09	Collected/Weight	02/13/09 08:45 1662 g
% solids	100.0	Custody/SAF No	RC 116 1178 RC-116

12/5/09

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Carbon 14	14762-75-5	0.419	1.9	1.16	50.0	U J	C
Total Strontium	SR-RAD	-0.155	0.098	0.252	1.00	U	SR
Technetium 99	14133-76-7	0.276	0.13	0.174	15.0	U	TC
Thorium 228	14274-82-9	1.16	0.45	0.348	1.00	J	TH
Thorium 230	14269-63-7	0.652	0.37	0.277	1.00		TH
Thorium 232	TH-232	0.761	0.37	0.277	1.00	J	TH
Uranium 233/234	U-233/234	0.424	0.18	0.135	1.00		U
Uranium 235	15117-96-1	0	0.043	0.104	1.00	U	U
Uranium 238	U-238	0.547	0.22	0.135	1.00		U
Plutonium 238	13981-16-3	-0.031	0.063	0.240	1.00	U	PU
Plutonium 239/240	PU-239/240	0	0.063	0.240	1.00	U	PU
Potassium 40	13966-00-2	12.6	0.61	0.078			GAM
Cobalt 60	10198-40-0	U		0.008	0.050	U	GAM
Cesium 137	10045-97-3	0.040	0.008	0.009	0.100		GAM
Radium 226	13982-63-3	0.540	0.026	0.017	0.100		GAM
Radium 228	15262-20-1	0.857	0.043	0.033	0.200		GAM
Europium 152	14683-23-9	U		0.023	0.100	U	GAM
Europium 154	15585-10-1	U		0.027	0.100	U	GAM
Europium 155	14391-16-3	U		0.050	0.100	U	GAM
Thorium 228	14274-82-9	0.874	0.015	0.012			GAM
Thorium 232	TH-232	0.857	0.043	0.033			GAM
Uranium 235	15117-96-1	U		0.056		U	GAM
Uranium 238	U-238	U		2.10		U	GAM
Americium 241	14596-10-2	U		0.059		U	GAM
Beryllium 7	13966-02-4	U		0.104		U	GAM
Ruthenium 106	13967-48-1	U		0.068		U	GAM
Antimony 125	14234-35-6	U		0.020		U	GAM
Cesium 134	13967-70-9	U		0.012		U	GAM

ColumbiaRiverComp.ofRCIRA-Sediment

Lab id	EBRLNE
Protocol	Hanford1
Version	Ver 1.0
Form	DVD DS
Version	3.06
Report date	04/13/09

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EBERLINE ANALYTICAL/RICHMOND

SAMPLE DELIVERY GROUP K1544

7315-007

J189F0

DATA SHEET

SDG	7315	Client/Case no	Hanford SDG K1544
Contact	N. Joseph Melville	Contract No.	800W215A00
Lab sample id	R902076-07	Client sample id	J189F0
Dept sample id	7315-007	Location/Matrix	300D 5 SED SOLID
Received	02/21/02	Collected/Weight	02/19/02 09:10 1740 g
% solids	100.0	Custody/SAF No	RC 116-1174 RC 116

12/5/02

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Carbon 14	14762-75-5	-0.788	1.8	3.08	50.0	U J	C
Total Strontium	SR-RAD	0.068	0.14	0.276	1.00	U	SR
Technetium 99	14133-76-7	0.279	0.12	0.352	15.0	U	TC
Thorium 228	14274-82-9	0.777	0.12	0.238	1.00	J	TH
Thorium 230	14269-63-7	0.682	0.31	0.237	1.00		TH
Thorium 232	TH-232	0.868	0.32	0.237	1.00	J	TH
Uranium 233/234	U-233/234	0.422	0.18	0.135	1.00		U
Uranium 235	15117-96-1	0.021	0.043	0.163	1.00	U	U
Uranium 238	U-238	0.458	0.18	0.135	1.00		U
Plutonium 238	13981-16-3	0.035	0.14	0.334	1.00	U	PU
Plutonium 239/240	PU-239/240	0	0.070	0.266	1.00	U	PU
Potassium 40	13966-00-2	12.0	0.33	0.123			GAM
Cobalt 60	10198-40-0	U		0.012	0.050	U	GAM
Cesium 137	10045-97-3	0.117	0.016	0.017	0.100		GAM
Radium 226	13982-63-3	0.526	0.034	0.010	0.100		GAM
Radium 228	15262-20-1	0.860	0.075	0.074	0.200		GAM
Europium 152	14683-23-9	U		0.042	0.100	U	GAM
Europium 154	15585-10-1	U		0.040	0.100	U	GAM
Europium 155	14391-16-3	U		0.069	0.100	U	GAM
Thorium 228	14274-82-9	0.913	0.026	0.022			GAM
Thorium 232	TH-232	0.860	0.075	0.074			GAM
Uranium 235	15117-96-1	U		0.114		U	GAM
Uranium 238	U-238	U		4.00		U	GAM
Americium 241	14596-10-2	U		0.082		U	GAM
Beryllium 7	13966-02-4	U		0.166		U	GAM
Ruthenium 106	13967-48-1	U		0.113		U	GAM
Antimony 125	14234-35-6	U		0.037		U	GAM
Cesium 134	13967-70-9	U		0.022		U	GAM

ColumbiaRiverComp.ofRCBRA Sediment

Lab id	EBRLNE
Protocol	Hanford1
Version	Ver 1.0
Form	DVD-DS
Version	1.06
Report date	04/13/02

EBERLINE ANALYTICAL/RICHMOND

SAMPLE DELIVERY GROUP K1544

7315-008

J18909

DATA SHEET

SDG 7315
Contact N. Joseph Verville
Client/Case no Hanford
SDG K1544
Contract No. [illegible]

Lab sample id R902076-00
Dept sample id 7315 008
Received 02/21/09
% solids 100.0
Client sample id J18909
Location/Matrix CP 2 SED
SOLID
Collected/Weight 02/19/09 14:12 2005 g
Custody/SAF No RC-116-1192 RC-116

✓ 12/5/09

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Carbon 14	14762-75-5	1.81	1.9	1.46	50.0	U J	C
Total Strontium	SR-RAD	0.009	0.11	0.268	1.00	U	SR
Technetium 99	14133-76-7	0.104	0.16	0.357	15.0	U	TC
Thorium 228	14274-82-9	0.785	0.31	0.313	1.00	J	TH
Thorium 230	14269-63-7	0.522	0.33	0.249	1.00		TH
Thorium 232	TH-232	0.750	0.34	0.249	1.00	J	TH
Uranium 233/234	U-233/234	0.295	0.14	0.133	1.00		U
Uranium 235	15117-96-1	0.031	0.042	0.161	1.00	U	U
Uranium 238	U-238	0.416	0.18	0.113	1.00		U
Plutonium 238	13981-16-3	0.025	0.10	0.240	1.00	U	PU
Plutonium 239/240	PU-239/240	0	0.050	0.191	1.00	U	PU
Potassium 40	13966-00-2	10.0	0.81	0.172			GAM
Cobalt 60	10198-40-0	U		0.020	0.050	U	GAM
Cesium 137	10045-97-3	U		0.019	0.100	U	GAM
Radium 226	13982-63-3	0.406	0.048	0.041	0.100		GAM
Radium 228	15262-20-1	0.706	0.10	0.090	0.200		GAM
Europium 152	14683-23-9	U		0.050	0.100	U	GAM
Europium 154	15585-10-1	U		0.066	0.100	U	GAM
Europium 155	14391-16-3	U		0.110	0.100	U	GAM
Thorium 228	14274-82-9	0.647	0.040	0.036			GAM
Thorium 232	TH-232	0.706	0.10	0.090			GAM
Uranium 235	15117-96-1	U		0.106		U	GAM
Uranium 238	U-238	U		2.37		U	GAM
Americium 241	14596-10-2	U		0.064		U	GAM
Beryllium 7	13966-02-4	U		0.204		U	GAM
Ruthenium 106	13967-48-1	U		0.156		U	GAM
Antimony 125	14234-35-6	U		0.043		U	GAM
Cesium 134	13967-70-9	U		0.029		U	GAM

ColumbiaRiverComp.ofRCBRA-Sediment

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD DS
Version 1.00
Report date 04/13/09

E B E R L I N E   A N A L Y T I C A L / R I C H M O N D

SAMPLE DELIVERY GROUP K1544

7315-009 J189K2

DATA SHEET

SDG 7315	Client/Case no	Hanford	SDG K1544	
Contact	N. Joseph Verville	Contract No.	300W335A00	
Lab sample id	8902076-09	Client sample id	J189K2	
Dept sample id	7315-009	Location/Matrix	CP-1 SED	SOLID
Received	02/21/09	Collected/Weight	02/19/09 14:00	2325 g
% solids	100.0	Custody/SAP No	RC 116-1195	RC-116

12/5/09

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Carbon 14	14762-75-5	-0.541	2.0	3.36	50.0	U J	C
Total Strontium	SR-RAD	-0.053	0.12	0.258	1.00	U	SR
Technetium 99	14133-76-7	0.250	0.11	0.171	15.0	U	TC
Thorium 228	14274-82-9	0.699	0.37	0.282	1.00	J	TH
Thorium 230	14269-63-7	0.801	0.37	0.287	1.00		TH
Thorium 232	TH-232	0.845	0.37	0.281	1.00	J	TH
Uranium 233/234	U-233/234	0.506	0.19	0.121	1.00		U
Uranium 235	15117-96-1	0.019	0.038	0.146	1.00	U	U
Uranium 238	U-238	0.427	0.16	0.121	1.00		U
Plutonium 238	13981-16-3	0.034	0.047	0.180	1.00	U	PU
Plutonium 239/240	PU-239/240	0	0.047	0.180	1.00	U	PU
Potassium 40	13966-00-2	11.4	0.55	0.296			GAM
Cobalt 60	10198-40-0	U		0.027	0.050	U	GAM
Cesium 137	10045-97-3	U		0.027	0.100	U	GAM
Radium 226	13982-63-3	0.521	0.055	0.052	0.100		GAM
Radium 228	15262-20-1	0.752	0.10	0.100	0.200		GAM
Europium 152	14683-23-9	U		0.064	0.100	U	GAM
Europium 154	15585-10-1	U		0.095	0.100	U	GAM
Europium 155	14391-16-3	U		0.081	0.100	U	GAM
Thorium 228	14274-82-9	0.828	0.038	0.036			GAM
Thorium 232	TH-232	0.752	0.10	0.100			GAM
Uranium 235	15117-96-1	U		0.144		U	GAM
Uranium 238	U-238	U		3.11		U	GAM
Americium 241	14596-10-2	U		0.214		U	GAM
Beryllium 7	13966-02-4	U		0.254		U	GAM
Ruthenium 106	13967-48-1	U		0.202		U	GAM
Antimony 125	14234-35-6	U		0.059		U	GAM
Cesium 134	3967-70-9	U		0.032		U	GAM

ColumbiaRiverComp.ofRCBRA-Sediment

Lab id EBERLNE
Protocol Hanford1
Version Ver 1.0
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Version 3.06
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E B E R L I N E   A N A L Y T I C A L / R I C H M O N D

SAMPLE DELIVERY GROUP K1544

7315-010 J189K4

DATA SHEET

SDG 7315 Client/Case no Hanford SDG_K1544
Contact N. Joseph Verville Contract No. 200W235A00

Lab sample id E902026-10 Client sample id J189K4
Dept sample id 7315 010 Location/Matrix SP 9 SED SOLID
Received 02/24/09 Collected/Weight 02/19/09 15:00 1004 g
% solids 100.0 Custody/SAF No RC-116-1197 RC-116

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Carbon 14	14762-75-5	0.449	1.9	3.16	50.0	U J	C
Total Strontium	SR-RAD	-0.059	0.11	0.246	1.00	U	SR
Technetium 99	14133-76-7	0.304	0.14	0.371	15.0	U	TC
Thorium 228	14274-82-9	0.824	0.40	0.300	1.00	J	TH
Thorium 230	14269-63-7	0.666	0.43	0.300	1.00		TH
Thorium 232	TH-232	0.548	0.32	0.300	1.00	J	TH
Uranium 233/234	U-233/234	0.503	0.21	0.160	1.00		U
Uranium 235	15117-96-1	0.051	0.051	0.194	1.00	U	U
Uranium 238	U-238	0.294	0.17	0.160	1.00		U
Plutonium 238	13981-16-3	0.026	0.10	0.200	1.00	U	PU
Plutonium 239/240	PU-239/240	0	0.052	0.200	1.00	U	PU
Potassium 40	13966-00-2	9.77	0.49	0.206			GAM
Cobalt 60	10198-40-0	U		0.021	0.050	U	GAM
Cesium 137	10045-97-3	0.069	0.023	0.022	0.100		GAM
Radium 226	13982-63-3	0.370	0.047	0.040	0.100		GAM
Radium 228	15262-20-1	0.542	0.098	0.091	0.200		GAM
Europium 152	14683-23-9	U		0.050	0.100	U	GAM
Europium 154	15585-10-1	U		0.067	0.100	U	GAM
Europium 155	14391-16-3	U		0.051	0.100	U	GAM
Thorium 228	14274-82-9	0.516	0.029	0.027			GAM
Thorium 232	TH-232	0.542	0.098	0.091			GAM
Uranium 235	15117-96-1	U		0.114		U	GAM
Uranium 238	U-238	U		2.32		U	GAM
Americium 241	14596-10-2	U		0.026		U	GAM
Beryllium 7	13966-02-4	U		0.199		U	GAM
Ruthenium 106	13967-48-1	U		0.163		U	GAM
Antimony 125	14234-35-6	U		0.046		U	GAM
Cesium 134	13967-70-9	U		0.026		U	GAM

ColumbiaRiverComp.ofRCBRA-Sediment

12/5/09

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD_DS
Version 3.06
Report date 04/13/09

EBERLINE ANALYTICAL/RICHMOND

SAMPLE DELIVERY GROUP K1544

7315-011 J189K5

DATA SHEET

SDG	7315	Client/Case no	Hanford SDG K1544
Contact	N. Joseph Verville	Contract	No. 000W835A00
Lab sample id	R802076-11	Client sample id	J189K5
Dept sample id	7315 011	Location/Matrix	SP-3 SSD SOLID
Received	02/23/09	Collected/Weight	02/19/09 14:25 2212 g
% solids	100.0	Custody/SAF No	RC-116-1198 RC-116

12/5/09

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Carbon 14	14762-75-5	-1.59	2.0	3.43	50.0	U J	C
Total Strontium	SR-RAD	-0.103	0.11	0.269	1.00	U	SR
Technetium 99	14133-76-7	0.190	0.12	0.347	15.0	U	TC
Thorium 228	14274-82-9	0.600	0.40	0.510	1.00	J	TH
Thorium 230	14269-63-7	0.332	0.27	0.318	1.00		TH
Thorium 232	TH-232	0.631	0.27	0.254	1.00	J	TH
Uranium 233/234	U 233/234	0.353	0.19	0.100	1.00		U
Uranium 235	15117-96-1	0.028	0.057	0.218	1.00	U	U
Uranium 238	U-238	0.447	0.19	0.180	1.00		U
Plutonium 238	13981-16-3	-0.036	0.036	0.171	1.00	U	PU
Plutonium 239/240	PU-239/240	0	0.036	0.137	1.00	U	PU
Potassium 40	13966-00-2	11.2	0.42	0.194			GAM
Cobalt 60	10198-40-0	U		0.018	0.050	U	GAM
Cesium 137	10045-97-3	U		0.016	0.100	U	GAM
Radium 226	13982-63-3	0.469	0.038	0.032	0.100		GAM
Radium 228	15262-20-1	0.720	0.090	0.083	0.200		GAM
Europium 152	14683-23-9	U		0.045	0.100	U	GAM
Europium 154	15585-10-1	U		0.064	0.100	U	GAM
Europium 155	14391-16-3	U		0.093	0.100	U	GAM
Thorium 228	14274-82-9	0.704	0.028	0.023			GAM
Thorium 232	TH-232	0.720	0.090	0.083			GAM
Uranium 235	15117-96-1	U		0.102		U	GAM
Uranium 238	U-238	U		2.01		U	GAM
Americium 241	14596-10-2	U		0.028		U	GAM
Beryllium 7	13966-02-4	U		0.168		U	GAM
Ruthenium 106	13967-48-1	U		0.144		U	GAM
Antimony 125	14234-35-6	U		0.040		U	GAM
Cesium 134	13967-70-9	U		0.025		U	GAM

ColumbiaRiverComp.ofRCBRA-Sediment

Lab id EBRLNE
Protocol Hanford1
Version Ver 1.0
Form DVD DS
Version 3.06
Report date 04/13/09

Appendix 4

Laboratory Narrative and Chain-of-Custody Documentation

Eberline Analytical
W.O. No. R9-02-077-7316

Washington Closure Hanford
SDG K1544

Case Narrative | **Page 1 of 1**

1.0 GENERAL

Washington Closure Hanford (WCH) Sample Delivery Group K1544 was composed of eleven solid (other solid) samples designated under SAF No. RC-116 with a Project Designation of: Columbia River Component of the RCBRA – Sediment.

The samples were received as stated on the Chain-of-Custody documents. Any discrepancies are noted on the Eberline Analytical Sample Receipt Checklist. The results were sent to WCH via e-mail April 9, 2009.

2.0 ANALYSIS NOTES

2.1 Carbon-14 Analysis

No problems were encountered during the course of the analyses.

2.2 Strontium-90 Analysis

No problems were encountered during the course of the analyses.

2.3 Technetium-99 Analysis

The Tc-99m tracer yield for sample J18985 was 109%, greater than the upper control limit of 105% but less than the absolute limit of 140%. No other problems were encountered during the course of the analyses.

2.4 Isotopic Thorium Analysis

No problems were encountered during the course of the analyses.

2.5 Isotopic Uranium Analysis

No problems were encountered during the course of the analyses.

2.6 Isotopic Plutonium Analysis

No problems were encountered during the course of the analyses.

2.7 Gamma Spectroscopy

No problems were encountered during the course of the analyses.

"I certify that this data package is in compliance with the SOW, both technically and for completeness, for other than the conditions detailed above. Release of the data obtained in this hard copy data package has been authorized by the Laboratory Manager or a designee, as verified by the following signature."

4/9/09

N. Joseph Verville
Senior Program Manager

Date

1.0 GENERAL

Washington Closure Hanford (WCH) Sample Delivery Group K1544 was composed of eleven solid (other solid) samples designated under SAF No. RC-116 with a Project Designation of: Columbia River Component of the RCBRA - Sediment.

The samples were received as stated on the Chain-of-Custody documents. Any discrepancies are noted on the Eberline Analytical Sample Receipt Checklist. The results were sent to WCH via e-mail April 7, 2009.

2.0 ANALYSIS NOTES

2.1 Carbon-14 Analysis

No problems were encountered during the course of the analyses.

2.2 Strontium-90 Analysis

No problems were encountered during the course of the analyses.

2.3 Technetium-99 Analysis

The Tc-99m tracer yield for samples J189B9 (106%), J189C0 (106%), J189K2 (108%), the QC LCS (108%), the QC blank (110%) and the duplicate analysis of J189B9 (107%) were all greater than the upper control limit of 105%, but less than the absolute limit of 140%. No other problems were encountered during the course of the analyses.

2.4 Isotopic Thorium Analysis

No problems were encountered during the course of the analyses.

2.5 Isotopic Uranium Analysis

No problems were encountered during the course of the analyses.

2.6 Isotopic Plutonium Analysis

No problems were encountered during the course of the analyses.

2.7 Gamma Spectroscopy

No problems were encountered during the course of the analyses.

"I certify that this data package is in compliance with the SOW, both technically and for completeness, for other than the conditions detailed above. Release of the data obtained in this hard copy data package has been authorized by the Laboratory Manager or a designee, as verified by the following signature."

N. Joseph Verville
Senior Program Manager

Date

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-116-1330 | Page 1 of 1

Collector: [illegible]

Company Contact: JOAN KESSNER | Telephone No.: 375-4688

Project Coordinator: KESSNER, JH

Price Code: 9K | Data Turnaround: 45 Days

Project Designation: Columbia River Component of the RCBRA - Segment

Sampling Location: HA- ~~4-66~~ 2 5SD K7549 (73Ш)

SAF No.: RC-116

Ice Chest No.: WCH-08-025

Field Logbook No.: EL-1631-1

COA: [illegible]

Method of Shipment: FED EX

Shipped To: ~~EBERLINE SERVICES~~ [illegible]

Offsite Property No.: N/A

Bill of Lading/Air Bill No.: 797357529024

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

S300000

			Preservation	None	None	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	None
			Type of Container	G/P	G/P	G/P	G/P	G/P	aG	aG	aG	G	[illegible]
			No. of Container(s)	1	1	1	1	1	1	1	1	1	1
			Volume	1500g	100g	10g	10g	250g	250g	125g	250g	250g	1L
SAMPLE ANALYSIS				See item (1) in Special Instructions	Carbon-14	Technetium-99	See item (2) in Special Instructions	See item (3) in Special Instructions	PCBs - 8082	Pesticides [illegible]	Semi-VOA - 8270A (TCL)	See item (4) in Special Instructions	
Sample No.	Matrix *	Sample Date	Sample Time										
J18985	OTHER SOLID	2/19/09	0721	X	X	X	X						

Samples are available to remove samples from continued storage. Shipper removed samples from storage location using a [illegible] of samples for shipment to lab.

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
[illegible]	2/19/09 1600	Fr - A	2/19/09 1630
Fr A	2/20/09 0800	B Woodward	2/20/09 0800
B Woodward	2/20/09 1200	Fed Ex	2/20/09 1200
FED EX		[illegible]	02/23/09 0930

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) (Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238)

(2) Strontium-89,90 - Total Sr; Isotopic Thorium (Thorium-232); Isotopic Uranium (Uranium-233/234, Uranium-235, Uranium-238); Isotopic Plutonium

(3) ICP Metals - 6010 (Full List) (Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Titanium, Vanadium, Zinc); Mercury - 7471 - (CVAA)

(4) VOA - 8260A (TCL) (1,1,1-Trichloroethane, 1,1,2,2-Tetrachloroethane, 1,1,2-Trichloroethane, 1,1-Dichloroethane, 1,1-Dichloroethene, 1,2-Dichloroethane, 1,2-Dichloropropane, 2-Butanone, 2-Hexanone, 4-Methyl-2-Pentanone, Acetone, Benzene, Bromodichloromethane, Bromoform, Bromomethane, Carbon disulfide, Carbon tetrachloride, Chlorobenzene, Chloroethane, Chloroform, Chloromethane, cis-1,2-Dichloroethylene, cis-1,3-Dichloropropene, Dibromochloromethane, [illegible]

Matrix *

[illegible]

LABORATORY SECTION | Received By | Title | Date/Time

FINAL SAMPLE DISPOSITION | Disposal Method | Disposed By | Date/Time

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-116-133 | Page 1 of 7

Collector GM	Company Contact JOAN KESSNER	Telephone No. 375-4658	Project Coordinator KESSNER, JH
Project Designation Columbia River Component of the RCBRA - Sediment	Sampling Location HA- 4 SSD	[illegible]	SAF No. RC-116
Ice Chest No. WCH-08-025	Field Logbook No. EL-1631-1	COA RESCRC6520	Method of Shipment FEDEX
Shipped To [✓ EBERLINE SERVICES] - ONSITE	Offsite Property No. N/A		Bill of Lading/Air Bill No. 797357529024

Price Code 9K

Data Turnaround 45 Days

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

0000036

Preservation	None	None	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	None
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	aG	aG	G	
No. of Container(s)	1	1	1	1	1	1	1	1	1	1
Volume	1500g	100g	10g	10g	250g	250g	125g	250g	250g	1
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Technetium-99	See item (2) in Special Instructions	See item (3) in Special Instructions	PCBs - 8082	Pesticides 8081	Semi-VOA 8270A (TCL)	See item (4) in Special Instructions	-

Sample No.	Matrix *	Sample Date	Sample Time										
J16988	OTHER SOLID	2/11/09	1010	X	X	X	X						

Samples unavailable to remove samples from cool/dry storage. Sample removed 3/3/09 from storage location taking custody of samples for shipment to lab.

CHAIN OF POSSESSION

Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
B. [illegible]	2/16/09 1620	E. [illegible]	2/16/09 1620
R. [illegible]	2/20/09 0810	R. Woodward	2/20/09 0810
R. Woodward	2/20/09 1200	FedEx	2/20/09 1200
FedEx		R. E. [illegible]	02/23/09 0930

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (GEA) {Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238}

(2) Strontium-89/90 - Total Sr; Isotopic Thorium {Thorium-232}; Isotopic Uranium {Uranium-233/234, Uranium-235, Uranium-238}; Isotopic Plutonium

(3) ICP Metals - 6010 (Full List) {Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Titanium, Vanadium, Zinc}; Mercury - 7471 - (CVA)

(4) VOA - 8260A (TCL) {1,1,1-Trichloroethane, 1,1,2,2-Tetrachloroethane, 1,1,2-Trichloroethane, 1,1-Dichloroethane, 1,1-Dichloroethene, 1,2-Dichloroethane, 1,2-Dichloropropane, 2-Butanone, 2-Hexanone, 4-Methyl-2-Pentanone, Acetone, Benzene, Bromodichloromethane, Bromoform, Bromomethane, Carbon disulfide, Carbon tetrachloride, Chlorobenzene, Chloroethane, Chloroform, Chloromethane, cis-1,2-Dichloroethylene, cis-1,3-Dichloropropene, Dibromochloromethane, [illegible]

Matrix *
S = Soil
SE = Sediment
SO = Solid
SL = Sludge
W = Water
O = Oil
A = Air
DS = Drum Solids
DL = Drum Liquids
T = Tissue
WI = Wipe
L = Liquid
V = Vegetation
X = Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-DE-011

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-116-1332 Page 1 of 1

Collector: [illegible]	Company Contact: JOAN KESSNER	Telephone No.: 375-4688	Project Coordinator: KESSNER, JH
Project Designation: Columbia River Component of the RC BRA - Sediment	Sampling Location: HA-6 SSD	K-S 1414 (?3 [illegible])	SAF No.: RC-116
Ice Chest No.: WCH-08-025	Field Logbook No.: EL-1651-1	COA: BESCRC6520	Method of Shipment: FED EX
Shipped To: GENERAL ENGINEERING SERVICES (GEL) [illegible]	Offsite Property No.: N/A		Bill of Lading/Air Bill No.: 7973575 29024

Price Code: 9K

Data Turnaround: 45 Days

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

000037

Preservation	[illegible]	[illegible]	[illegible]	[illegible]	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	None
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	aG	aG	G	[illegible]
No. of Container(s)	1	1	1	1	1	1	1	1	2	1
Volume	1500g	100g	10g	10g	250g	250g	125g	250g	25g	[illegible]
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Technetium-99	See item (2) in Special Instructions	See item (3) in Special Instructions	PCBs - 8082	Pesticides 8081	Semi-VOA 8270 (TCL)	See item (4) in Special Instructions	

Sample No.	Matrix *	Sample Date	Sample Time										
J18997	OTHER SOLID	2/19/09	1030	X	X	X	X						

Sampler unavailable to relinquish samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab.

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
[illegible] BSR-1	2/19/09 1630	Fridge	2/19/09 1630
[illegible]	2/20/09 0800	Bluebox [illegible]	2/20/09 0800
Bluebox [illegible]	2/20/09 1200	Fed Ex	2/20/09 1200
Fed Ex		[illegible]	[illegible] 0930

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) (Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238)
(2) Strontium-89/90 - Total Sr, Isotopic Thorium (Thorium-232), Isotopic Uranium (Uranium-233/234, Uranium-235, Uranium-238), Isotopic Plutonium
(3) ICP Metals - 6010 (Full List) (Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Titanium, Vanadium, Zinc); Mercury - 7471 - (CV)
(4) VOA - 8260A (TCL) (1,1,1-Trichloroethane, 1,1,2,2-Tetrachloroethane, 1,1,2-Trichloroethane, 1,1-Dichloroethane, 1,1-Dichloroethene, 1,2-Dichloroethane, 1,2-Dichloropropane, 2-Butanone, 2-Hexanone, 4-Methyl-2-Pentanone, Acetone, Benzene, Bromodichloromethane, Bromoform, Bromomethane, Carbon disulfide, Carbon tetrachloride, Chlorobenzene, Chloroethane, Chloroform, Chloromethane, cis-1,2-Dichloroethylene, cis-1,3-Dichloropropene, Dibromochloromethane, [illegible]

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-015

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-116-1333

Page 1 of 1

Collector: [illegible]

Company Contact: RYAN KESSNER

Telephone No.: 375-4655

Project Coordinator: KESSNER, JH

Price Code: 9K

Data Turnaround: 45 Days

Project Designation: Columbia River Component of the RCBRA - Sediment

Sampling Location: HA- [✓ SSD] [illegible]

SAF No.: RC-116

Ice Chest No.: WCH-08-025

Field Logbook No.: EL-1631-1

COA: BESCRC6520

Method of Shipment: FED EX

Shipped To: [✓ EBERLINE SERVICES] LIONVILLE

Offsite Property No.: N/A

Bill of Lading/Air Bill No.: 797357529024

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

1000038

			Preservation	None	None	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	None
			Type of Container	G/P	G/P	G/P	G/P	G/P	aG	aG	aG	G	
			No. of Container(s)	1	1	1	1	1	1	1	1	1	1
			Volume	1500g	150g	10g	10g	250g	250g	125g	250g	250g	1L
SAMPLE ANALYSIS				See item (1) in Special Instructions	Carbon-14	Technetium-99	See item (2) in Special Instructions	See item (3) in Special Instructions	PCBs - 8082	Pesticides	Semi-VOA - 8270A (TCL)	See item (4) in Special Instructions	
Sample No.	Matrix *	Sample Date	Sample Time										
J18988	OTHER SOLID	2/19/09	1046	X	X	X	X						

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab.

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
B4-56	2/19/09 1630		2/19/09 1630
Ref A	2/20/09 0800	B Woodward	2/20/09 0800
B Woodward	2/20/09 1200	Fed Ex	2/20/09 1200
FedEx		L.E. [illegible]	02/23/09 0930

SPECIAL INSTRUCTIONS

(1) Gamma Spectroscopy (GEA) {Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238}

(2) Strontium-89/90 - Total Sr; Isotopic Thorium {Thorium-232}; Isotopic Uranium {Uranium-233/234, Uranium-235, Uranium-238}; Isotopic Plutonium

(3) ICP Metals - 6010 (TAL+) {Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Titanium, Vanadium, Zinc}; Mercury - 7471 (CVAA)

(4) VOA - 8260A (TCL) {1,1,1-Trichloroethane, 1,1,2,2-Tetrachloroethane, 1,1,2-Trichloroethane, 1,1-Dichloroethane, 1,1-Dichloroethene, 1,2-Dichloroethane, 1,2-Dichloropropane, 2-Butanone, 2-Hexanone, 4-Methyl-2-Pentanone, Acetone, Benzene, Bromodichloromethane, Bromoform, Bromomethane, Carbon disulfide, Carbon tetrachloride, Chlorobenzene, Chloroethane, Chloroform, Chloromethane, cis-1,2-Dichloroethylene, cis-1,3-Dichloropropene, Dibromochloromethane, Ethylbenzene, Methylene chloride, Styrene, Tetrachloroethene, Toluene, trans-1,2-Dichloroethylene

Matrix *

[illegible]

LABORATORY SECTION — Received By: — Title: — Date/Time:

FINAL SAMPLE DISPOSITION — Disposal Method: — Disposed By: — Date/Time:

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-116-1335 Page 1 of 3

Collector: LS

Company Contact: JOAN KESSNER

Telephone No.: 373-4658

Project Coordinator: KESSNER, JH

Price Code: 9K

Data Turnaround: 45 Days

Project Designation: Columbia River Component of the RI/FS - Sediment

Sampling Location: HA 3 SSD [illegible]

SAF No.: RC-116

Ice Chest No.: WCH-08-025

Field Logbook No.: EL-1651-1

COA: BESCRC6920

Method of Shipment: FED EX

Shipped To: [✓ EBERLINE SERVICES] LIONVILLE

Offsite Property No.: N/A

Bill of Lading/Air Bill No.: 797357529624

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

Preservation	None	None	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	None
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	aG	aG	G	
No. of Container(s)	1	1	1	1	1	1	1	1	1	1
Volume	1500g	10g	10g	10g	250g	150g	125g	250g	250g	1
SAMPLE ANALYSIS	See Item (1) in Special Instructions	Carbon-14	Technetium-99	See Item (2) in Special Instructions	See Item (3) in Special Instructions	PCBs - 8082	Pesticides - 8081	Semi-VOA - 8270 (TCL)	See Item (4) in Special Instructions	

Sample No.	Matrix *	Sample Date	Sample Time										
J18990	OTHER SOLID	2/19/09	1600	X	X	X	X						

Sampler unavailable to remove samples from specialized storage. Shipper removed samples from storage to maintain custody & prepare for shipment to lab.

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
	2/19/09 / 1650		2/19/09 1650
RoEB	2/20/09 0800	B Woodland	2/20/09 0800
B Woodland	2/20/09 1200	FedEx	2/20/09 1200
FedEx		LF [illegible]	02/23/09 0930

SPECIAL INSTRUCTIONS

(1) Gamma Spec - {GEA} {Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Thorium-228, Uranium-235}

(2) Strontium-89,90 - Total Sr, Isotopic Thorium {Thorium-232}, Isotopic Uranium {Uranium-233/234, Uranium-235, Uranium-238}, Isotopic Plutonium

(3) ICP Metals - 6010 (Full List) {Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc}; Mercury - 7471 - (CV)

(4) VOA - 8260A (TCL) {1,1,1-Trichloroethane, 1,1,2,2-Tetrachloroethane, 1,1,2-Trichloroethane, 1,1-Dichloroethane, 1,1-Dichloroethene, 1,2-Dichloroethane, 1,2-Dichloropropane, 2-Butanone, 2-Hexanone, 4-Methyl-2-Pentanone, Acetone, Benzene, Bromodichloromethane, Bromoform, Bromomethane, Carbon disulfide, Carbon tetrachloride, Chlorobenzene, Chloroethane, Chloroform, Chloromethane, cis-1,2-Dichloroethylene, cis-1,3-Dichloropropene, Dibromochloromethane, [illegible]

Matrix *

S = Soil
SE = Sediment
SO = Solid
SL = Sludge
W = Water
O = Oil
A = Air
DS = Drum Solids
DL = Drum Liquids
T = Tissue
WI = Wipe
L = Liquid
V = Vegetation
X = Other

LABORATORY SECTION — Received By — Title — Date/Time

FINAL SAMPLE DISPOSITION — Disposal Method — Disposed By — Date/Time

WCH-EE-011

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-116-1336

Page 1 of 1

Collector L Strathm	**Company Contact** JOAN KESSNER **Telephone No.** 375-4688	**Project Coordinator** KESSNER, JH	**Price Code** 9K **Data Turnaround** 45 Days
Project Designation Columbia River Component of the RCBRA - Sediment	**Sampling Location** HA / SSD RC154-4 (2 S/C)	**SAF No.** RC-116	
Ice Chest No. WCH-08-025	**Field Logbook No.** EL-1651-1 **COA** BESCRLY520	**Method of Shipment** FEDEX	
Shipped To EBERLINE SERVICES - RICHMOND	**Offsite Property No.** N/A	**Bill of Lading/Air Bill No.** 797 357 529024	

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

040000

Preservation	None	None	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	None
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	aG	aG	G	
No. of Container(s)	1	1	1	1	1	1	1	1	1	1
Volume	1500g	100g	10g	10g	250g	250g	125g	250g	250g	
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Technetium-99	See item (2) in Special Instructions	See item (3) in Special Instructions	PCBs - 8082	Pesticides 8081	Semi-VOA 8270A	See item (4) in Special Instructions	

Sample No.	Matrix *	Sample Date	Sample Time										
J18991	OTHER SOLID	2/19/09	0940	X	X	X	X						

Samples transferred to remove samples from concealed storage. Shipper removed samples from storage location using custody of samples for shipment to lab.

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
	2/19/09 / 1130	Ref B	2/19/09 / 1150
RL B	2/20/09 0800	B Woodward	2/20/09 0800
B Woodward	2/20/09 1200	FedEx	2/20/09 1200
FedEx		K. F.	02/23/09 0930

SPECIAL INSTRUCTIONS

(1) Gamma Spec - Full List {Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Thorium-232, Uranium-235, Uranium-238}

(2) Strontium-89,90 - Total Sr; Isotopic Uranium {Uranium-233/234, Uranium-235, Uranium-238}; Isotopic Plutonium

(3) ICP Metals - 6010 (TAL List) {Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc}; Mercury - 7471 - (CV)

(4) VOA - 8260A {1,1,1-Trichloroethane, 1,1,2,2-Tetrachloroethane, 1,1,2-Trichloroethane, 1,1-Dichloroethane, 1,1-Dichloroethene, 1,2-Dichloroethane, 1,2-Dichloropropane, 2-Butanone, 2-Hexanone, 4-Methyl-2-Pentanone, Acetone, Benzene, Bromodichloromethane, Bromoform, Bromomethane, Carbon disulfide, Carbon tetrachloride, Chlorobenzene, Chloroethane, Chloroform, Chloromethane, cis-1,2-Dichloroethylene, cis-1,3-Dichloropropene, Dibromochloromethane, Ethylbenzene, Methylene chloride, Styrene, Tetrachloroethene, Toluene, trans-1,2-Dichloro [illegible]

Matrix *

S = Soil
SE = Sediment
SO = Solid
SL = Sludge
W = Water
O = Oil
A = Air
DS = Drum Solids
DL = Drum Liquids
T = Tissue
WI = Wipe
L = Liquid
V = Vegetation
X = Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-116-1337 | Page 1 of 2

Collector LS	Company Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator KESSNER, JL
Project Designation Columbia River Component of the RCBRA - Sediment	Sampling Location 11A - 5 SSD	K1544 (T-??)	SAF No. RC-116
Ice Chest No. WCH-08-0225	Field Logbook No. EL-1631-1	COA RESC RC 6520	Method of Shipment FED EX
Shipped To (BERKEND SERVICES) KRAUTT	Offsite Property No. N/A		Bill of Lading/Air Bill No. 797357529024

Price Code 9K

Data Turnaround 45 Days

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

E1400041

Preservation	None	None	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	None
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	aG	aG	aG	
No. of Container(s)	1	1	1	1	1	1	1	1	1	1
Volume	1500g	100g	10g	10g	250g	250g	125g	250g	250g	
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Technetium-99	See item (2) in Special Instructions	See item (3) in Special Instructions	PCBs - 8082	Pesticides 8081	Semi-VOA - 8270A (TCL)	See item (4) in Special Instructions	

Sample No.	Matrix *	Sample Date	Sample Time										
J18992	OTHER SOLID	2/19/09	1015	X	X	X	X						

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location using custody of samples for shipment to lab.

CHAIN OF POSSESSION	Date/Time	Sign/Print Names Received By/Stored In	Date/Time
Relinquished By/Removed From	2/19/09 / 1630	Received By/Stored In Ref.	2/19/09 / 1630
Relinquished By/Removed From Ref. B. 2/20/09	0800	Received By/Stored In B. Woodward 2/20/09	0800
Relinquished By/Removed From B. Woodward 2/20/09	1200	Received By/Stored In Fed Ex 2/20/09	1200
Relinquished By/Removed From Fed Ex	Date/Time	Received By/Stored In R.F. UNTERMAN	2/23/09 0930
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time

SPECIAL INSTRUCTIONS

(1) Gamma Spec - Add'l Only (Americium-241, Antimony-125, Beryllium-7, Cerium-144, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238); (2) Strontium-89,90 - Total Sr; Isotopic Thorium (Thorium-232); Isotopic Uranium (Uranium-233/234, Uranium-235, Uranium-238); Isotopic Plutonium (3) ICP Metals - 6010A (TAL) (Aluminum, Antimony, Arsenic, Barium, Beryllium, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Vanadium, Zinc); Mercury - 7471 (CVAA) (4) VOA - 8260A (TCL) (1,1,1-Trichloroethane, 1,1,2,2-Tetrachloroethane, 1,1,2-Trichloroethane, 1,1-Dichloroethane, 1,1-Dichloroethene, 1,2-Dichloroethane, 1,2-Dichloropropane, 2-Butanone, 2-Hexanone, 4-Methyl-2-Pentanone, Acetone, Benzene, Bromodichloromethane, Bromoform, Bromomethane, Carbon disulfide, Carbon tetrachloride, Chlorobenzene, Chloroethane, Chloroform, Chloromethane, cis-1,2-Dichloroethylene, cis-1,3-Dichloropropene, Dibromochloromethane, …

Matrix *

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Washington Closure Hanford | # CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST | RC-116-1350 | Page 1 of 1

Collector BA	Company Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator KESSNER, JH	Price Code 9K
Project Designation Columbia River Component of the RC BRA - Sediment	Sampling Location RE-5 SSD K1544 (7306)		SAF No. RC-116	Data Turnaround 45 Days
Ice Chest No. WCH-08-625	Field Logbook No. EL-1631-1	COA BESCRC6520	Method of Shipment FED EX	
Shipped To EBERLINE SERVICES RICHMOND	Offsite Property No. N/A		Bill of Lading/Air Bill No. 797357529024	

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

260000

Preservation	None	None	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	None
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	aG	aG	G	-
No. of Container(s)	1	1	1	1	1	1	1	1	1	-
Volume	1500g	400g	60g	50g	250g	250g	125g	250g	250g	1
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Technetium-99	See item (2) in Special Instructions	See item (3) in Special Instructions	PCBs - 8082	Pesticides 8081	Semi-VOA 8270A (TCL)	See item (4) in Special Instructions	-

Sample No.	Matrix *	Sample Date	Sample Time										
J18985	OTHER SOLID	2/6/09	1028	X	X	X	X						

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab

CHAIN OF POSSESSION	Date/Time	Sign/Print Names	Date/Time
Relinquished By/Removed From	2/16/09 1130	Received By/Stored In	2/16/09 1630
Relinquished By/Removed From RPA	2/20/09 0800	Received By/Stored In B Dowland	2/20/09 0800
Relinquished By/Removed From B Dowland	2/20/09 1200	Received By/Stored In FedEx	2/20/09 1200
Relinquished By/Removed From FED EX	Date/Time	Received By/Stored In	02/23/09 0930
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time

SPECIAL INSTRUCTIONS

(1) Gamma Spec - GEA (Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238)
(2) Strontium-89/90 - Total Sr; Isotopic Thorium (Thorium-232); Isotopic Uranium (Uranium-233/234, Uranium-235, Uranium-238); Isotopic Plutonium
(3) ICP Metals - 6010 (+ 200.8) (Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Titanium, Vanadium, Zinc); Mercury - 7471 - (CV)
(4) VOA - 8260A (TCL) (1,1,1-Trichloroethane, 1,1,2,2-Tetrachloroethane, 1,1,2-Trichloroethane, 1,1-Dichloroethane, 1,1-Dichloroethene, 1,2-Dichloroethane, 1,2-Dichloropropane, 2-Butanone, 2-Hexanone, 4-Methyl-2-Pentanone, Acetone, Benzene, Bromodichloromethane, Bromoform, Bromomethane, Carbon disulfide, Carbon tetrachloride, Chlorobenzene, Chloroethane, Chloroform, Chloromethane, cis-1,2-Dichloroethylene, cis-1,3-Dichloropropene, Dibromochloromethane, Ethylbenzene, Methylene chloride, Styrene, Tetrachloroethylene, Toluene, trans-1,2-Dichloroethylene

Matrix *
[illegible]

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-116-1351

Page 1 of 2

Collector [illegible]	Company Contact JOAN KESSNER	Telephone No. 375 4688	Project Coordinator KESSNER, JE
Project Designation Columbia River Component of the RCBRA - Sediment	Sampling Location BL 5 SSD	K1549 (734)	SAF No. RC 116
Ice Chest No. WCH-08-025	Field Logbook No. EL-1651-1	COA BESCRC6520	Method of Shipment FED EX
Shipped To (LIONVILLE SERVICES) LIONVILLE	Offsite Property No. N/A		Bill of Lading/Air Bill No. 797357529024

Price Code **9K**

Data Turnaround **45 Days**

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

Preservation	Cool	None	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	None
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	aG	aG	G	[illegible]
No. of Container(s)	1	1	1	1	1	1	1	1	1	1
Volume	1500g	100g	15g	10g	250g	250g	125g	250g	250g	1
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Technetium-99	See item (2) in Special Instructions	See item (3) in Special Instructions	PCBs - 8082	Pesticides 8081	Semi-VOA 8270A (TCL)	See item (4) in Special Instructions	

Sample No.	Matrix *	Sample Date	Sample Time										
J189R8	OTHER SOLID	2/13/09	1154	X	X	X	X						

Sampler unavailable to remove samples from approved storage. Shipper removed samples from storage location taking custody of samples for shipment to lab.

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
[illegible]	2/13/09 1620	Fig A	2/13/09 1620
Rot A	2/20/09 0800	BWoodward	2/20/09 0800
BWoodward	2/20/09 1200	FedEx	2/20/09 1200
FEDEX		[illegible]	02/23/09 09:30

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (GEA) [illegible] Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Thorium-228, Uranium-235)
(2) Strontium-89,90 - Total Sr; Isotopic Thorium (Thorium-232); Isotopic Uranium (Uranium-233/234, Uranium-235, Uranium-238); Isotopic Plutonium
(3) ICP Metals - 6010 (Full List) (Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc); Mercury - 7471 - (CVA)
(4) VOA - 8260A (TCL) (1,1,1-Trichloroethane, 1,1,2,2-Tetrachloroethane, 1,1,2-Trichloroethane, 1,1-Dichloroethane, 1,1-Dichloroethene, 1,2-Dichloroethane, 1,2-Dichloropropane, 2-Butanone, 2-Hexanone, 4-Methyl-2-Pentanone, Acetone, Benzene, Bromodichloromethane, Bromoform, Bromomethane, Carbon disulfide, Carbon tetrachloride, Chlorobenzene, Chloroethane, Chloroform, Chloromethane, cis-1,2-Dichloroethylene, cis-1,3-Dichloropropene, Dibromochloromethane, [illegible]

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

C00043

Washington Closure Hanford	**CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST**	RC-116-1352	Page 1 of 1
Collector: ZSM	Company Contact: JOAN KESSNER / Telephone No. 375-4688	Project Coordinator: KESSNER, JH	Price Code 9K / Data Turnaround 45 Days
Project Designation: Columbia River Component of the RCBRA - Sediment	Sampling Location: BL - T SSU / K1544 (7316)	SAF No. RC-116	
Ice Chest No. WCH-08-025	Field Logbook No. EL-1651-1 / COA BESCRC0520	Method of Shipment FED EX	
Shipped To: (EBERLINE SERVICES) LIONVILLE	Offsite Property No. N/A	Bill of Lading/Air Bill No. 797357529024	

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

000044

			Preservation	None	None	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	None
			Type of Container	G/P	G/P	G/P	G/P	G/P	aG	aG	aG	G	
			No. of Container(s)	1	1	1	1	1	1	1	3	1	2
			Volume	1500g	400g	10g	10g	250g	250g	125g	250g	250g	1
SAMPLE ANALYSIS				See item (1) in Special Instructions	Carbon-14	Technetium-99	See item (2) in Special Instructions	See item (3) in Special Instructions	PCBs - 8082	Pesticides - 8081	Semi-VOA - 8270 (TCL)	See item (4) in Special Instructions	
Sample No.	Matrix *	Sample Date	Sample Time										
J18BR7	OTHER SOLID	2/10/09	1323	X	X	X	X						

Sampler unavailable to remove samples from cold storage. Shipper retrieved samples from storage location taking custody of samples for shipment to lab.

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
BM [illegible]	2/10/09 1630	[illegible]	2/10/09 1630
RCA	2/20/09 0800	B. [illegible]	2/20/09 0800
B. [illegible]	2/20/09 1200	FedEx	2/20/09 1200
FED EX		[illegible]	02/23/09 0930

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Add-on) {Americium-241, Antimony-125, Beryllium-7, Cerium-144, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238}

(2) Strontium-89,90 - Total Sr; Isotopic Thorium {Thorium-228, ...}; Isotopic Uranium {Uranium-233/234, Uranium-235, Uranium-238}; Isotopic Plutonium

(3) ICP Metals - 6010 (Full List) {Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Titanium, Vanadium, Zinc}; Mercury - 7471 - (CV)

(4) VOA - 8260A (TCL) {1,1,1-Trichloroethane, 1,1,2,2-Tetrachloroethane, 1,1,2-Trichloroethane, 1,1-Dichloroethane, 1,1-Dichloroethene, 1,2-Dichloroethane, 1,2-Dichloropropane, 2-Butanone, 2-Hexanone, 4-Methyl-2-Pentanone, Acetone, Benzene, Bromodichloromethane, Bromoform, Bromomethane, Carbon disulfide, Carbon tetrachloride, Chlorobenzene, Chloroethane, Chloroform, Chloromethane, cis-1,2-Dichloroethylene, cis-1,3-Dichloropropene, Dibromochloromethane, Ethylbenzene, [illegible]

Matrix *
S = Soil
SE = Sediment
SO = Solid
SL = Sludge
W = Water
O = Oil
A = Air
DS = Drum Solids
DL = Drum Liquids
T = Tissue
WI = Wipe
L = Liquid
V = Vegetation
X = Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-116-1353 Page 1 of 2

Collector: Egg

Company Contact: JOAN KESSNER Telephone No. 375-4688

Project Coordinator: KESSNER, JH

Price Code: 9K

Data Turnaround: 45 Days

Project Designation: Columbia River Component of the RI/BRA - Sediment

Sampling Location: BL & SSD K1544 (73..)

SAF No.: RC-116

Ice Chest No.: WCH-08-025

Field Logbook No.: EL-1630-1

COA: RESCRC6520

Method of Shipment: FED EX

Shipped To: EBERLINE SERVICES LIONVILLE

Offsite Property No.: N/A

Bill of Lading/Air Bill No.: 797357529024

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

000045

Preservation	None	None	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	None
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	aG	aG	G	-
No. of Container(s)	1	1	1	1	1	1	1	1	1	1
Volume	1.5 Kg	100g	10g	10g	250g	250g	125g	250g	250g	1L
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Technetium-99	See item (2) in Special Instructions	See item (3) in Special Instructions	PCBs - 8082	Pesticides 8081	Semi-VOA 8270A (TCL)	See item (4) in Special Instructions	

Sample No.	Matrix *	Sample Date	Sample Time										
J18098	OTHER SOLID	2/19/09	1256	X	X	X	X						

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab

CHAIN OF POSSESSION

Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Bill [illegible]	2/19/09 1630	Fay A.	2/19/09 1630
[illegible] A	2/20/09 0800	B Woodward	2/20/09 0800
B Woodward	2/20/09 1200	FedEx	2/20/09 1200
Fed Ex		[illegible]	2/23/09 0930

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) {Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Thorium-228, Uranium-238};
(2) Strontium-89,90 - Total Sr; Isotopic Thorium {Thorium-232}; Isotopic Uranium {Uranium-233/234, Uranium-235, Uranium-238}; Isotopic Plutonium
(3) ICP Metals - 6010 (Full List) {Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc}; Mercury - 7471 - (CV)
(4) VOA - 8260A (TCL) {1,1,1-Trichloroethane, 1,1,2,2-Tetrachloroethane, 1,1,2-Trichloroethane, 1,1-Dichloroethane, 1,1-Dichloroethene, 1,2-Dichloroethane, 1,2-Dichloropropane, 2-Butanone, 2-Hexanone, 4-Methyl-2-Pentanone, Acetone, Benzene, Bromodichloromethane, Bromoform, Bromomethane, Carbon disulfide, Carbon tetrachloride, Chlorobenzene, Chloroethane, Chloroform, Chloromethane, cis-1,2-Dichloroethylene, cis-1,3-Dichloropropene, Dibromochloromethane, [illegible]

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION: Received By / Title / Date/Time

FINAL SAMPLE DISPOSITION: Disposal Method / Disposed By / Date/Time

WCH-EE-011

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-116-1354 Page 1 of 2

Collector	Company Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator KESSNER, JH
Price Code 9K	Data Turnaround 45 Days		
Project Designation Columbia River Component of the RCBRA - Sediment	Sampling Location BC-?? SSD K1544 (7315)		SAF No. RC-116
Ice Chest No. WCH-08-025	Field Logbook No. EL-1630-1	COA BESCHC6520	Method of Shipment FED EX
Shipped To EBERLINE SERVICES LRNVILLE	Offsite Property No. N/A		Bill of Lading/Air Bill No. 797357529024

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

Preservation	None	None	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	None
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	aG	aG	G	
No. of Container(s)	1	1	1	1	1	1	1	1	1	1
Volume	1500g	100g	10g	10g	250g	250g	125g	250g	250g	1
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Technetium-99	See item (2) in Special Instructions	See item (3) in Special Instructions	PCBs - 8082	Pesticides - 8081	Semi-VOA - 8270A (TCL)	See item (4) in Special Instructions	

Sample No.	Matrix *	Sample Date	Sample Time										
J18989	OTHER SOLID	2/5/09	1230	X	X	X	X						

Sampler unavailable to retrieve samples from controlled storage. Shipper removed samples from storage location during custody of samples for shipment to lab

CHAIN OF POSSESSION	Date/Time	Sign/Print Names	Date/Time
Relinquished By/Removed From	2/10/09 1630	Received By/Stored In	2/10/09 1630
Relinquished By/Removed From	2/20/09 0800	Received By/Stored In B Woodward	2/20/09 0800
Relinquished By/Removed From B Woodward	2/20/09 1200	Received By/Stored In FedEx	2/20/09 1200
Relinquished By/Removed From FEDEX		Received By/Stored In	02/23/09 0930
Relinquished By/Removed From		Received By/Stored In	
Relinquished By/Removed From		Received By/Stored In	

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) {Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238};
(2) Strontium-89,90 -- Total Sr; Isotopic Thorium {Thorium-232}; Isotopic Uranium {Uranium-233/234, Uranium-235, Uranium-238}; Isotopic Plutonium
(3) ICP Metals - 6010 (Full List) {Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc}; Mercury - 7471 - (CV)
(4) VOA - 8260A (TCL) {1,1,1-Trichloroethane, 1,1,2,2-Tetrachloroethane, 1,1,2-Trichloroethane, 1,1-Dichloroethane, 1,1-Dichloroethene, 1,2-Dichloroethane, 1,2-Dichloropropane, 2-Butanone, 2-Hexanone, 4-Methyl-2-Pentanone, Acetone, Benzene, Bromodichloromethane, Bromoform, Bromomethane, Carbon disulfide, Carbon tetrachloride, Chlorobenzene, Chloroethane, Chloroform, Chloromethane, cis-1,2-Dichloroethylene, cis-1,3-Dichloropropene, Dibromochloromethane, Ethylbenzene, Methylene chloride, Styrene, Tetrachloroethene, Toluene, trans-1,2-Dichloroethylene

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-116-1355 Page 1 of 2

Collector: LS

Company Contact: JOAN KESSNER

Telephone No.: 375 4688

Project Coordinator: KESSNER, JH

Price Code: 9K

Data Turnaround: 45 Days

Project Designation: Columbia River Component of the RCBRA - Sediment

Sampling Location: BL-2-SSD K1544 (73.5)

SAF No.: RC-116

Ice Chest No.: WCH-08-025

Field Logbook No.: EL-1630-1

COA: BESCRE6520

Method of Shipment: FED EX

Shipped To: EBERLINE SERVICES LIONVILLE

Offsite Property No.: N/A

Bill of Lading/Air Bill No.: 797357529024

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

0000427

Preservation	None	None	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	None
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	aG	aG	G	-
No. of Container(s)	1	1	1	1	1	1	1	1	1	1
Volume	1500g	100g	10g	10g	250g	250g	125g	250g	250g	1
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Technetium-99	See item (2) in Special Instructions	See item (3) in Special Instructions	PCBs - 8082	Pesticides 8081	Semi-VOAs 8270A (TCL)	See item (4) in Special Instructions	-

Sample No.	Matrix *	Sample Date	Sample Time										
J189C0	OTHER SOLID	2/19/09	1150	X	X	X	X						

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab.

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
	2/19/09/1630	Ref B	2/19/09/1630
Ref	2/20/09 0800	B Woodward	2/20/09 0800
B Woodward	2/20/09 1200	FedEx	2/20/09 1200
FED EX			02/21/09 0930

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) {Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238}
(2) Strontium-89,90 -- Total Sr; Isotopic Thorium {Thorium-232}; Isotopic Uranium {Uranium-233/234, Uranium-235, Uranium-238}; Isotopic Plutonium
(3) ICP Metals - 6010 (Full List) {Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc}; Mercury - 7471 - (CV)
(4) VOA - 8260A (TCL) {1,1,1-Trichloroethane, 1,1,2,2-Tetrachloroethane, 1,1,2-Trichloroethane, 1,1-Dichloroethane, 1,1-Dichloroethene, 1,2-Dichloroethane, 1,2-Dichloropropane, 2-Butanone, 2-Hexanone, 4-Methyl-2-Pentanone, Acetone, Benzene, Bromodichloromethane, Bromoform, Bromomethane, Carbon disulfide, Carbon tetrachloride, Chlorobenzene, Chloroethane, Chloroform, Chloromethane, cis-1,2-Dichloroethylene, cis-1,3-Dichloropropene, Dibromochloromethane,

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION — Received By — Title — Date/Time

FINAL SAMPLE DISPOSITION — Disposal Method — Disposed By — Date/Time

WCH-EE-011

Washington Closure Hanford | **CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST** | RC-116-1356 | Page 1 of 2

Collector: LS
Company Contact: JOAN KESSNER
Telephone No.: 375-4686
Project Coordinator: KESSNER, JH
Price Code: 9K
Data Turnaround: 45 Days
Project Designation: Columbia River Component of the RCBRA - Sediment
Sampling Location: BL- / SSD K1544 (73/5)
SAF No.: RC-116
Ice Chest No.: WCH-08-025
Field Logbook No.: EL-1631-1
COA: BESCRC6520
Method of Shipment: FED EX
Shipped To: EBERLINE SERVICES LIONVILLE
Offsite Property No.: N/A
Bill of Lading/Air Bill No.: 797357529024

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

000048

			Preservation	None	None	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	None
			Type of Container	G/P	G/P	G/P	G/P	G/P	aG	aG	aG	G	-
			No. of Container(s)	1	1	1	1	1	1	1	1	1	1
			Volume	1500g	100g	10g	20g	250g	250g	125g	250g	250g	1L
SAMPLE ANALYSIS				See item (1) in Special Instructions	Carbon-14	Technetium-99	See item (2) in Special Instructions	See item (3) in Special Instructions	PCBs - 8082	Pesticides - 8081	Semi-VOA 8270A (TCL)	See item (4) in Special Instructions	-
Sample No.	**Matrix ***	**Sample Date**	**Sample Time**										
J18WC1	OTHER SOLID	2/19/09	1105	X	X	X	X						

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab

CHAIN OF POSSESSION Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
	2-19-09/1630	Ref B	2-19-09/1630
Ref B	2/20/09 0800	B Woodward	2/20/09 0800
B Woodward	2/20/09 1200	Fed Ex	2/20/09 1200
FED EX		L.F. [illegible]	2/23/09 0930

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) {Americium-241, Antimony-125, Beryllium-7, Cerium-144, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238}
(2) Strontium-89,90 -- Total Sr; Isotopic Thorium {Thorium-232}; Isotopic Uranium {Uranium-233/234, Uranium-235, Uranium-238}; Isotopic Plutonium
(3) ICP Metals - 6010 (Full List) {Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc}; Mercury - 7471 - (CV)
(4) VOA - 8260A (TCL) {1,1,1-Trichloroethane, 1,1,2,2-Tetrachloroethane, 1,1,2-Trichloroethane, 1,1-Dichloroethane, 1,1-Dichloroethene, 1,2-Dichloroethane, 1,2-Dichloropropane, 2-Butanone, 2-Hexanone, 4-Methyl-2-Pentanone, Acetone, Benzene, Bromodichloromethane, Bromoform, Bromomethane, Carbon disulfide, Carbon tetrachloride, Chlorobenzene, Chloroethane, Chloroform, Chloromethane, cis-1,2-Dichloroethylene, cis-1,3-Dichloropropene, Dibromochloromethane, Ethylbenzene, Methylene chloride, Styrene, Tetrachloroethene, Toluene, trans-1,2-Dichloroethyl

Matrix *
S = Soil
SE = Sediment
SO = Solid
SL = Sludge
W = Water
O = Oil
A = Air
DS = Drum Solids
DL = Drum Liquids
T = Tissue
WI = Wipe
L = Liquid
V = Vegetation
X = Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-116-1358 Page 1 of 2

Collector: L S

Company Contact: JOAN KESSNER

Telephone No.: 375-4688

Project Coordinator: KESSNER, JH

Price Code: 9K

Data Turnaround: 45 Days

Project Designation: Columbia River Component of the RCBRA - Sediment

Sampling Location: BL-6 SSD K1544 (7315)

SAF No.: RC-116

Ice Chest No.: WCH-08-025

Field Logbook No.: EL-1631-1

COA: BESCR0550

Method of Shipment: FED EX

Shipped To: (EBERLINE SERVICES) LIONVILLE

Offsite Property No.: N/A

Bill of Lading/Air Bill No.: 797357529024

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

600009

SAMPLE ANALYSIS

Preservation	None	None	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	None
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	aG	aG	G	-
No. of Container(s)	1	1	1	1	1	1	1	1	1	1
Volume	1500g	100g	10g	10g	250g	250g	125g	250g	250g	1
Sample Analysis	See item (1) in Special Instructions	Carbon-14	Technetium-99	See item (2) in Special Instructions	See item (3) in Special Instructions	PCBs - 8082	Pesticides 8081	Semi-VOA - 8270 (TCL)	See item (4) in Special Instructions	-

Sample No.	Matrix *	Sample Date	Sample Time										
J189C3	OTHER SOLID	2/19/09	1215	X	X	X	X						

Sample unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab.

CHAIN OF POSSESSION

Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
	2/19/09/ 1630	Rob B	2/19/09/ 1630
Rob B	2/20/09 0800	B Woodward	2/20/09 0800
B Woodward	2/20/09 1200	Fed Ex	2/20/09 1200
Fed Ex		LF	2/23/09 0930

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full Lib) {Americium-241, Antimony-125, Beryllium-7, Cerium-144, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238}
(2) Strontium-89,90 - Total Sr, Isotopic Thorium {Thorium-232}, Isotopic Uranium {Uranium-233/234, Uranium-235, Uranium-238}, Isotopic Plutonium
(3) ICP Metals - 6010 (Full List) {Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc}; Mercury - 7471 - (CV)
(4) VOA - 8260A (TCL) {1,1,1-Trichloroethane, 1,1,2,2-Tetrachloroethane, 1,1,2-Trichloroethane, 1,1-Dichloroethane, 1,1-Dichloroethene, 1,2-Dichloroethane, 1,2-Dichloropropane, 2-Butanone, 2-Hexanone, 4-Methyl-2-Pentanone, Acetone, Benzene, Bromodichloromethane, Bromoform, Bromomethane, Carbon disulfide, Carbon tetrachloride, Chlorobenzene, Chloroethane, Chloroform, Chloromethane, cis-1,2-Dichloroethylene, cis-1,3-Dichloropropene, Dibromochloromethane, Ethylbenzene, Methylene chloride, Styrene, Tetrachloroethene, Toluene,

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION Received By Title Date/Time

FINAL SAMPLE DISPOSITION Disposal Method Disposed By Date/Time

WCH-EE-011

Washington Closure Hanford	**CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST**	RC-116-1359	Page 1 of 2
Collector LS	Company Contact JOAN KESSNER; Telephone No. 373-4688	Project Coordinator KESSNER, JH	Price Code 9K; Data Turnaround 45 Days
Project Designation Columbia River Component of the RCBRA - Sediment	Sampling Location BL-4 SSD K1544 (73-5)	SAF No. RC-116	
Ice Chest No. WCH-08-025	Field Logbook No. EL-1611-1; COA BESCRC0520	Method of Shipment FED EX	
Shipped To EBERLINE SERVICES LIONVILLE	Offsite Property No. N/A	Bill of Lading/Air Bill No. 797357529024	

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

0500(X)

Preservation	None	None	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	None
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	aG	aG	G	-
No. of Container(s)	1	1	1	1	1	1	1	1	1	1
Volume	1500g	100g	10g	10g	250g	250g	125g	250g	250g	1
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Technetium-99	See item (2) in Special Instructions	See item (3) in Special Instructions	PCBs - 8082	Pesticides 8081	Semi-VOA 8270A (TCL)	See item (4) in Special Instructions	-

Sample No.	Matrix *	Sample Date	Sample Time										
J189C4	OTHER SOLID	2/19/09	1150	X	X	X	X						

Samples unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab

CHAIN OF POSSESSION		Sign/Print Names	
Relinquished By/Removed From	Date/Time 2-19-09 / 1630	Received By/Stored In Ref B	Date/Time 2-19-09 / 1630
Relinquished By/Removed From Ref B	Date/Time 2/20/09 0800	Received By/Stored In BWoodward	Date/Time 2/20/09 0800
Relinquished By/Removed From BWoodward	Date/Time 2/20/09 1200	Received By/Stored In FedEx	Date/Time 2/20/09 1200
Relinquished By/Removed From Fed Ex	Date/Time	Received By/Stored In	Date/Time 02/23/09 0930
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) {Americium-241, Antimony-125, Beryllium-7, Cerium-144, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238}

(2) Strontium-89,90 - Total Sr; Isotopic Thorium {Thorium-232}; Isotopic Uranium {Uranium-233/234, Uranium-235, Uranium-238}; Isotopic Plutonium

(3) ICP Metals - 6010 (Full List) {Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc}; Mercury - 7471 - (CV)

(4) VOA - 8260A (TCL) {1,1,1-Trichloroethane, 1,1,2,2-Tetrachloroethane, 1,1,2-Trichloroethane, 1,1-Dichloroethane, 1,1-Dichloroethene, 1,2-Dichloroethane, 1,2-Dichloropropane, 2-Butanone, 2-Hexanone, 4-Methyl-2-Pentanone, Acetone, Benzene, Bromodichloromethane, Bromoform, Bromomethane, Carbon disulfide, Carbon tetrachloride, Chlorobenzene, Chloroethane, Chloroform, Chloromethane, cis-1,2-Dichloroethylene, cis-1,3-Dichloropropene, Dibromochloromethane,

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-116-1371

Page 1 of 1

Collector L. Strat	Company Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator KESSNER, JH
Project Designation Columbia River Component of the RCBRA - Sediment	Sampling Location 300D-3 SSD	K1544 (7315)	SAF No. RC-116
Ice Chest No. WCH-08-1525	Field Logbook No. EL-1633-1	COA BESCRC6520	Method of Shipment FED EX
Shipped To (EBERLINE SERVICES) RICHMOND	Offsite Property No. N/A		Bill of Lading/Air Bill No. 797357529024

Price Code 9K

Data Turnaround 45 Days

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

ES00010

Preservation	None	None	None	None	Cool 4C	Cool 4C	None			
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	G/P			
No. of Container(s)	1	1	1	1	1	1	1			
Volume	1500g	100g	10g	10g	250g	125g	1000g			
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Technetium-99	See item (2) in Special Instructions	See item (3) in Special Instructions	TOC - 415.1	Particle Size (Dry Sieve) D422			

Sample No.	Matrix *	Sample Date	Sample Time										
J18908	OTHER SOLID	2/19/09	0845	X	X	X	X						

CHAIN OF POSSESSION Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
L.Stratton	2-19-09/1630	Ref B	2-19-09/1630
Ref B 2/20/09	0800	B Woodward	2/20/09 0800
B Woodward 2/20/09	1200	FedEx 2/20/09	1200
FED EX		LnF Martin	02-24-09 09:50

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) (Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238)
(2) Strontium-89/90 - Total Sr; Isotopic Thorium (Thorium-232); Isotopic Uranium (Uranium-233/234, Uranium-235, Uranium-238); Isotopic Plutonium
(3) ICP Metals - 6010 (Full List) (Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Titanium, Vanadium, Zinc); Mercury - 7471 - (CV)

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab.

Matrix *

S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST		RC-116-1374	Page 1 of 1
Collector L. Stratton	Company Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator KESSNER, JH	Price Code 9K Data Turnaround 45 Days
Project Designation Columbia River Component of the RCBRA - Sediment	Sampling Location 300D-5 SSD KIS4G (73:5)		SAF No. RC 116	
Ice Chest No. WCH-08-025	Field Logbook No. EL-1611-1	COA BESCRC6520	Method of Shipment FED EX	
Shipped To EBERLINE SERVICES RICHMOND (LIONVILLE)	Offsite Property No. N/A		Bill of Lading/Air Bill No. 797357529624	

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

Preservation				None	None	None	None	Cool 4C	Cool 4C	None
Type of Container				G/P	G/P	G/P	G/P	G/P	aG	G/P
No. of Container(s)				1	1	1	1	1	1	1
Volume				1500g	100g	10g	10g	250g	125g	1000g
SAMPLE ANALYSIS				See item (1) in Special Instructions	Carbon-14	Technetium-99	See item (2) in Special Instructions	See item (3) in Special Instructions	TOC - 415.1	Particle Size (Dry Sieve) [illegible]
Sample No.	Matrix *	Sample Date	Sample Time							
J180F0	OTHER SOLID	2/19/09	0910	X	X	X	X			

CHAIN OF POSSESSION	Date/Time	Sign/Print Names	Date/Time
Relinquished By/Removed From	2-19-09 / 1630	Received By/Stored In RFB	2-19-09 / 1630
Relinquished By/Removed From RFB	2/20/09 0800	Received By/Stored In BWoodward	2/20/09 0800
Relinquished By/Removed From BWoodward	2/20/09 1200	Received By/Stored In FedEx	2/20/09 1200
Relinquished By/Removed From Fed Ex		Received By/Stored In M F MATA[illegible]	02/23/09 09[illegible]
Relinquished By/Removed From		Received By/Stored In	
Relinquished By/Removed From		Received By/Stored In	

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) (Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238)
(2) Strontium-89,90 - Total Sr, Isotopic Thorium (Thorium-232); Isotopic Uranium (Uranium-233/234, Uranium-235, Uranium-238), Isotopic Plutonium
(3) ICP Metals - 6010 (Full List) (Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc); Mercury - 7471 - (CV)

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location using custody of samples for shipment to ESS

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Washington Closure Hanford | **CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST** | RC-116-1392 | Page 1 of 1

Collector LJM	Company Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator KESSNER, JH	Price Code 9K Data Turnaround 45 Days
Project Designation Columbia River Component of the RCBRA - Sediment	Sampling Location SP. 2 SSD K1544 (7315)		SAF No. RC-116	
Ice Chest No. WCH-08-025	Field Logbook No. EL-1631-1	COA DESCRC6520	Method of Shipment FED EX	
Shipped To EBERLINE SERVICES RICHMOND	Offsite Property No. N/A		Bill of Lading/Air Bill No. 797357529024	

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

0000153

Preservation	None	None	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	None
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	aG	aG	G	
No. of Container(s)	1	1	1	1	1	1	1	1	1	1
Volume	1500g	100g	10g	10g	750g	250g	125g	250g	250g	1L
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Technetium-99	See item (2) in Special Instructions	See item (3) in Special Instructions	PCBs - 8082	Pesticides 8081	Semi-VOA 8270A (TCL)	See item (4) in Special Instructions	-

Sample No.	Matrix *	Sample Date	Sample Time										
J189J9	OTHER SOLID	2/19/09	1412	X	X	X	X						

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab.

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
	2/19/09 1620		2/19/09 1620
Ref A	2/20/09 0800	B Woodward	2/20/09 0800
B Woodward	2/20/09 1200	Fed Ex	2/20/09 1200
Fed EX		P.F. Mathews	2/23/09 0930

SPECIAL INSTRUCTIONS

(1) Gamma Spec -- Full List (Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238);
(2) Strontium-89,90 -- Total Sr; Isotopic Thorium (Thorium-232); Isotopic Uranium (Uranium-233/234, Uranium-235, Uranium-238); Isotopic Plutonium
(3) ICP Metals - 6010 (Full List) (Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc); Mercury - 7471 - (CV);
(4) VOA - 8260A (TCL) (1,1,1-Trichloroethane, 1,1,2,2-Tetrachloroethane, 1,1,2-Trichloroethane, 1,1-Dichloroethane, 1,1-Dichloroethene, 1,2-Dichloroethane, 1,2-Dichloropropane, 2-Butanone, 2-Hexanone, 4-Methyl-2-Pentanone, Acetone, Benzene, Bromodichloromethane, Bromoform, Bromomethane, Carbon disulfide, Carbon tetrachloride, Chlorobenzene, Chloroethane, Chloroform, Chloromethane, cis-1,2-Dichloroethylene, cis-1,3-Dichloropropene, Dibromochloromethane, Ethylbenzene, Methylene chloride, Styrene, Tetrachloroethene, Toluene, trans-1,2-Dichloroethylene

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-FE-011

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-116-1395

Page 1 of 2

Collector: L Strallon

Company Contact: JOAN KESSNER

Telephone No.: 375-4688

Project Coordinator: KESSNER, JH

Price Code: 9K

Data Turnaround: 45 Days

Project Designation: Columbia River Component of the RCBRA - Sediment

Sampling Location: SP-1 SSD K1544 (7315)

SAF No.: RC-116

Ice Chest No.: WCH-08-025

Field Logbook No.: EL-1631-1

COA: HESCRC6120

Method of Shipment: FED EX

Shipped To: (EBERLINE SERVICES) / LIONVILLE

Offsite Property No.: N/A

Bill of Lading/Air Bill No.: 797357529024

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

E500000

			Preservation	None	None	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	None
			Type of Container	G/P	G/P	G/P	G/P	G/P	aG	aG	aG	G	P
			No. of Container(s)	1	1	1	1	1	1	1	1	1	1
			Volume	1500g	100g	10g	10g	250g	250g	125g	250g	250g	1?
SAMPLE ANALYSIS				See item (1) in Special Instructions	Carbon-14	Technetium-99	See item (2) in Special Instructions	See item (3) in Special Instructions	PCBs - 8082	Pesticides - 8081	Semi-VOA - 8270A (TCL)	See item (4) in Special Instructions	
Sample No.	Matrix *	Sample Date	Sample Time										
J180K2	OTHER SOLID	2/19/09	1400	X	X	X	X						

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location using custody of samples for shipment to lab

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
L Strallon	2/19/09/1630	Ref B	2/19/09/1650
Ref B	2/20/09 0800	B Woodward	2/20/09 0800
B Woodward	2/20/09 1200	Fed Ex	2/20/09 1200
FedEx		[illegible]	2/23/09 0930

SPECIAL INSTRUCTIONS

(1) Gamma Spec - {Full List} {Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238}

(2) Strontium-89,90 -- Total Sr; Isotopic Thorium {Thorium-232}; Isotopic Uranium {Uranium-233/234, Uranium-235, Uranium-238}; Isotopic Plutonium

(3) ICP Metals - 6010 {Full List} {Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc}; Mercury - 7471 - {CV}

(4) VOA - 8260A (TCL) {1,1,1-Trichloroethane, 1,1,2,2-Tetrachloroethane, 1,1,2-Trichloroethane, 1,1-Dichloroethane, 1,1-Dichloroethene, 1,2-Dichloroethane, 1,2-Dichloropropane, 2-Butanone, 2-Hexanone, 4-Methyl-2-Pentanone, Acetone, Benzene, Bromodichloromethane, Bromoform, Bromomethane, Carbon disulfide, Carbon tetrachloride, Chlorobenzene, Chloroethane, Chloroform, Chloromethane, cis-1,2-Dichloroethylene, cis-1,3-Dichloropropene, Dibromochloromethane, Ethylbenzene, Methylene chloride, Styrene, Tetrachloroethene, Toluene, trans-1,2-Dichloroethylene

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Washington Closure Hanford	**CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST**	RC-116-1397	Page 1 of 1
Collector: LS	Company Contact: JOAN KESSNER Telephone No.: 375-4688	Project Coordinator: KESSNER, JH	Price Code: 9K Data Turnaround: 45 Days
Project Designation: Columbia River Component of the RCBRA - Sediment	Sampling Location: SP-4 SSD K1544 (7315)	SAF No.: RC-116	
Ice Chest No.: WCH-08-025	Field Logbook No.: EL-1631-1 COA: BESCRC6520	Method of Shipment: FED EX	
Shipped To: EBERLINE SERVICES LIONVILLE	Offsite Property No.: N/A	Bill of Lading/Air Bill No.: 791357529024	

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

Preservation	None	None	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	None
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	aG	aG	G	-
No. of Container(s)	1	1	1	1	1	1	1	1	1	1
Volume	1500g	100g	10g	15g	250g	250g	125g	250g	250g	1
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Technetium-99	See item (2) in Special Instructions	See item (3) in Special Instructions	PCBs - 8082	Pesticides 8081	Semi-VOA 8270A - TCL	See item (4) in Special Instructions	-

Sample No.	Matrix *	Sample Date	Sample Time										
J18QK4	OTHER SOLID	2/19/09	1500	X	X	X	X						

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab.

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
L Smith C Stall	2-19-09/1630	RfB	2-19-09/1630
RfB	2/20/09 0800	B Woodward	2/20/09 0800
B Woodward	2/20/09 1200	FedEx	2/20/09 1200
FedEx		MF- [illegible]	02/23/09 0930

SPECIAL INSTRUCTIONS

(1) Gamma Spec - {Full List} {Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238}

(2) Strontium-89,90 -- Total Sr, Isotopic Thorium {Thorium-232}, Isotopic Uranium {Uranium-233/234, Uranium-235, Uranium-238}, Isotopic Plutonium

(3) ICP Metals - 6010{Full List} {Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc}, Mercury - 7471 - {CV}

(4) VOA - 8260A (TCL) {1,1,1-Trichloroethane, 1,1,2,2-Tetrachloroethane, 1,1,2-Trichloroethane, 1,1-Dichloroethane, 1,1-Dichloroethene, 1,2-Dichloroethane, 1,2-Dichloropropane, 2-Butanone, 2-Hexanone, 4-Methyl-2-Pentanone, Acetone, Benzene, Bromodichloromethane, Bromoform, Bromomethane, Carbon disulfide, Carbon tetrachloride, Chlorobenzene, Chloroethane, Chloroform, Chloromethane, cis-1,2-Dichloroethylene, cis-1,3-Dichloropropene, Dibromochloromethane, Ethylbenzene, Methylene chloride, Styrene, Tetrachloroethene,

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-116-1398 Page 1 of 2

Collector: C Stratton

Company Contact: JOAN KESSNER Telephone No.: 375-4568

Project Coordinator: KESSNER, JH

Price Code: 9K

Data Turnaround: 45 Days

Project Designation: Columbia River Component of the RCBRA - Sediment

Sampling Location: SP 3 SSD K1544 (7315)

SAF No.: RC-116

Ice Chest No.: WKH-08-025

Field Logbook No.: EL-1630-1

COA: BESCRC6520

Method of Shipment: FEDEX

Shipped To: EBERLINE SERVICES RICHMOND / EBERLINE SERVICES ALIONVILLE

Offsite Property No.: N/A

Bill of Lading/Air Bill No.: 797357529024

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

950000

Preservation	None	None	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	None
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	aG	aG	G	P
No. of Container(s)	1	1	1	1	1	1	5	1	1	5
Volume	1500g	100g	10g	10g	250g	250g	125g	250g	250g	1L
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Technetium-99	See item (2) in Special Instructions	See item (3) in Special Instructions	PCBs - 8082	Pesticides 8081	Semi-VOA 8270A (TCL)	See item (4) in Special Instructions	

Sample No	Matrix *	Sample Date	Sample Time										
J188K5	OTHER SOLID	2/19/09	1425	X	X	X	X						

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab.

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
C Stratton	2/19/09 1630	Ref B	2/19/09 1630
Ref B	2/20/09 0800	B Wrzesinski	2/20/09 0800
B Wrzesinski	2/20/09 1200	FedEx	2/20/09 1200
FedEx		M.F.	02/23/09 0930

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) {Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238}

(2) Strontium-89,90 - Total Sr; Isotopic Thorium {Thorium-232}; Isotopic Uranium {Uranium-233/234, Uranium-235, Uranium-238}; Isotopic Plutonium

(3) ICP Metals - 6010 (Full List) {Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc}; Mercury - 7471 - (CV)

(4) VOA - 8260A (TCL) {1,1,1-Trichloroethane, 1,1,2,2-Tetrachloroethane, 1,1,2-Trichloroethane, 1,1-Dichloroethane, 1,1-Dichloroethene, 1,2-Dichloroethane, 1,2-Dichloropropane, 2-Butanone, 2-Hexanone, 4-Methyl-2-Pentanone, Acetone, Benzene, Bromodichloromethane, Bromoform, Bromomethane, Carbon disulfide, Carbon tetrachloride, Chlorobenzene, Chloroethane, Chloroform, Chloromethane, cis-1,2-Dichloroethylene, cis-1,3-Dichloropropene, Dibromochloromethane, Ethylbenzene, Methylene chloride, Styrene, Tetrachloroethene, Toluene, trans-1,2-Dichloroethylene

Matrix *

S = Soil
SE = Sediment
SO = Solid
SL = Sludge
W = Water
O = Oil
A = Air
DS = Drum Solids
DL = Drum Liquids
T = Tissue
WI = Wipe
L = Liquid
V = Vegetation
X = Other

LABORATORY SECTION — Received By: Title: Date/Time:

FINAL SAMPLE DISPOSITION — Disposal Method: Disposed By: Date/Time:

WCH-EE-011

Appendix 6

Data Validation Supporting Documentation

APPENDIX A

RADIOCHEMICAL DATA VALIDATION CHECKLIST

VALIDATION LEVEL	A	B	[✓ C]	D	E
PROJECT:	QCBRA		DATA PACKAGE:	K1544	
VALIDATOR:	ELR	LAB LLI		DATE: 9/23/05	
			SDG	K1544	
ANALYSES PERFORMED					
Gross Alpha/Beta	☒ Strontium-90	Technetium-99	☒ Alpha Spectroscopy	☒ Gamma Spectroscopy	
Total Uranium	Radium-226	Tritium	X C-14	X Tc-99	
SAMPLES/MATRIX					
J1X9B1	J1X9C0	J1X9C1	J1X9C3	J1X9C4	J1X9D4
J1X9F0	J1X979	J1X9K2	J1X9K4	J1X9K5	J1X9F5
J1X9K6	J1X9K7	J1X9K8	J1X990	J1X9L1	J1X9L2
J1X9D5	J1X9D6	J1X9D7	J1X9D8		
					solid

1. Completeness ☐ N/A

Technical verification forms present? Yes [✓ No] N/A

Comments:

2. Initial Calibration (Levels D, E) ☒ N/A

Instruments/detectors calibrated? Yes No N/A

Initial calibration acceptable? Yes No N/A

Standards NIST traceable? Yes No N/A

Standards Expired? Yes No N/A

Calculation check acceptable? Yes No N/A

Comments:

3. Continuing Calibration (Levels D, E) ☒ N/A

Calibration checked within required frequency? .... Yes No N/A

Calibration check acceptable? .... Yes No N/A

Calibration check standards traceable? .... Yes No N/A

Calibration check standards expired? .... Yes No N/A

Calculation check acceptable? .... Yes No N/A

Comments:

4. Background Counts (Levels D, E) .... ☒ N/A

Background Counts checked within required frequency? .... Yes No N/A

Background Counts acceptable? .... Yes No N/A

Calculation check acceptable? .... Yes No N/A

Comments:

5. Blanks (Levels B, C, D, E) ☐ N/A

Method blank analyzed within required frequency? [✓ Yes] No N/A

Method blank results acceptable? [✓ Yes] No N/A

Analytes detected in method blank? Yes [✓ No] N/A

Field blank(s) analyzed? Yes [✓ No] N/A

Field blank results acceptable? Yes No [✓ N/A]

Analytes detected in field blank(s)? Yes No [✓ N/A]

Transcription/Calculation Errors? (Levels D, E) Yes No [✓ N/A]

Comments: no FB

6. Laboratory Control Samples or Blank Spike Samples (Levels C, D, E) ☐ N/A

LCS /BSS analyzed within required frequency? [✓ Yes] No N/A

LCS/BSS recoveries acceptable? [✓ Yes] No N/A

LCS/BSS traceable? (Levels D,E) Yes No [✓ N/A]

LCS/BSS expired? (Levels D,E) Yes No [✓ N/A]

LCS/BSS levels correct? (Levels D,E) Yes No [✓ N/A]

Transcription/Calculation Errors? (Levels D, E) Yes No [✓ N/A]

Comments: th-228 & th 232 - no LCS - J all

7. Chemical Carrier Recovery (Levels C, D, E) ☒ N/A

Chemical carrier added? Yes No N/A

Chemical recovery acceptable? Yes No N/A

Chemical carrier traceable? (Levels D, E) Yes No N/A

Chemical carrier expired? (Levels D, E) .... Yes No N/A

Transcription/Calculation errors? (Levels D, E) .... Yes No N/A

Comments:

8. Tracer Recovery (Levels C, D, E) .... ☐ N/A

Tracer added? .... [✓ Yes] No N/A

Tracer recovery acceptable? .... [✓ Yes] No N/A

Tracer traceable? (Levels D, E) .... Yes No [✓ N/A]

Tracer expired? (Levels D, E) .... Yes No [✓ N/A]

Transcription/Calculation errors? (Levels D, E) .... Yes No [✓ N/A]

Comments:

9. Matrix Spikes (Levels C, D, E) .... ☐ N/A

Matrix spike analyzed? .... Yes [✓ No] N/A

Spike recoveries acceptable? .... Yes No [✓ N/A]

Spike source traceable? (Levels D, E) .... Yes No [✓ N/A]

Spike source expired? Levels D, E) .... Yes No [✓ N/A]

Transcription/Calculation Errors? (Levels D, E) .... Yes No [✓ N/A]

Comments: C-14 - No MS

10. Duplicates (Levels C, D, E) ☐ N/A

Duplicates Analyzed at required frequency? [✓ Yes] No N/A

RPD Values Acceptable? Yes [✓ No] N/A

Transcription/Calculation Errors? (Levels D, E) Yes No [✓ N/A]

Comments:

th228 (gen) 32% – I (85-138)

11. Field QC Samples (Levels C, D E) ☐ N/A

Field duplicate sample(s) analyzed? Yes [✓ No] N/A

Field duplicate RPD values acceptable? Yes No [✓ N/A]

Field split sample(s) analyzed? Yes [✓ No] N/A

Field split RPD values acceptable? Yes No [✓ N/A]

Performance audit sample(s) analyzed? Yes [✓ No] N/A

Performance audit sample results acceptable? Yes No [✓ N/A]

Comments: no field QC

12. Holding Times (All levels)

Are sample holding times acceptable? [✓ Yes] No N/A

Comments:

13. Results and Detection Limits (All Levels) .... ☐ N/A

Results reported for all required sample analyses? .... [✓ Yes] No N/A
Results supported in raw data? (Levels D, E) .... Yes No [✓ N/A]
Results Acceptable? (Levels D, E) .... Yes No [✓ N/A]
Transcription/Calculation errors? (Levels D, E) .... Yes No [✓ N/A]
MDA's meet required detection limits? .... Yes [✓ No] N/A
Transcription/calculation errors? (Levels D, E) .... Yes No [✓ N/A]
Comments: [illegible]

Appendix 6

Additional Documentation Requested by Client

EBERLINE ANALYTICAL/RICHMOND

SAMPLE DELIVERY GROUP K1544

7316-013 **Method Blank**

METHOD BLANK

95

SDG	7316	Client/Case no	Hanford SDG_K1544
Contact	N. Joseph Verville	Contract	No. S00W215A00
Lab sample id	R902077-13	Client sample id	Method Blank
Dept sample id	7316-013	Material/Matrix	SOLID
		CAS No	RC-116

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Carbon 14	14762-75-5	0.759	1.9	3.30	50.0	U	C
Total Strontium	SR-RAD	0.031	0.17	0.335	1.00	U	SR
Technetium 99	14133-76-7	0.060	0.24	0.350	15.0	U	TC
Thorium 228	14274-82-9	-0.019	0.16	0.433	1.00	U	TH
Thorium 230	14269-63-7	0.273	0.24	0.299	1.00	U	TH
Thorium 232	TH-232	0.039	0.16	0.299	1.00	U	TH
Uranium 233/234	U-233/234	0.005	0.028	0.045	1.00	U	U
Uranium 235	15117-96-1	0.011	0.023	0.043	1.00	U	U
Uranium 238	U-238	0.009	0.019	0.036	1.00	U	U
Potassium 40	13966-00-2	U		0.077		U	GAM
Cobalt 60	10198-40-0	U		0.008	0.050	U	GAM
Cesium 137	10045-97-3	U		0.008	0.100	U	GAM
Radium 226	13982-63-3	U		0.016	0.100	U	GAM
Radium 228	15262-20-1	U		0.037	0.200	U	GAM
Europium 152	14683-23-9	U		0.018	0.100	U	GAM
Europium 154	15585-10-1	U		0.026	0.100	U	GAM
Europium 155	14391-16-3	U		0.015	0.100	U	GAM
Thorium 228	14274-82-9	U		0.011		U	GAM
Thorium 232	TH-232	U		0.037		U	GAM
Uranium 235	15117-96-1	U		0.034		U	GAM
Uranium 238	U-238	U		0.974		U	GAM
Americium 241	14596-10-2	U		0.010		U	GAM
Beryllium 7	13966-02-4	U		0.051		U	GAM
Ruthenium 106	13967-48-1	U		0.057		U	GAM
Antimony 125	14234-35-6	U		0.017		U	GAM
Cesium 134	1967-70-9	U		0.011		U	GAM

ColumbiaRiverComp.ofRCBRA Sediment

Lab id	EBRLNE
Protocol	Hanford1
Version	Ver 1.0
Form	DVD-MB
Version	3.06
Report date	04/14/09

7316-013

Method Blank

BLANK, cont.

SDG	7316	Client/Case no	Hanford SDG K1544
Contact	N. Joseph Verville	Contract	No. C00W235A00
Lab sample id	E902077-13	Client sample id	Method Blank
Dept sample id	7316-013	Material/Matrix	SOLID
		SAF No	RC-116

QC BLANK #69106

Lab id	EBRLNE
Protocol	Hanford1
Version	Ver 1.0
Form	DVD_DS
Version	1.06
Report date	04/14/02

EBERLINE ANALYTICAL/RICHMOND

SAMPLE DELIVERY GROUP K1544

7316-016

Method Blank

METHOD BLANK

SDG	7316	Client/Case no	Hanford SDG_K1544
Contact	N. Joseph Verville	Contract	No. 500W315600
Lab sample id	E902077-16	Client sample id	Method Blank
Dept sample id	7316-016	Material/Matrix	SOLID
		SAF No	RC-116

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Plutonium 238	13981-16-3	0	0.042	0.085	1.00	U	PU
Plutonium 239/240	PU-239/240	0.008	0.017	0.032	1.00	U	PU

ColumbiaRiverComp.ofRCBRA-Sediment

QC-BLANK #69359

Lab id	EBRLNE
Protocol	Hanford1
Version	Ver 1.0
Form	DVD-DS
Version	1.06
Report date	04/14/09

EBERLINE ANALYTICAL/RICHMOND

SAMPLE DELIVERY GROUP [illegible]

[illegible]

Lab Control Sample

LAB CONTROL SAMPLE

SDG 9116
Contact N. Joseph Verville

Lab sample id [illegible]
Dept sample id [illegible]

Client/Case no Hanford [illegible]
Contract No. [illegible]

Client sample id Lab Control Sample
Material/Matrix [illegible]
SAF No [illegible]

ANALYTE	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALIFIERS	TEST	ADDED pCi/g	2σ ERR pCi/g	REC %	3σ LMTS (TOTAL)	PROTOCOL LIMITS
Carbon 14	1610	[illegible]	2.45	50.0		C	1600	[illegible]	101	[illegible]-117	80-120
Total Strontium	[illegible]	0.60	0.258	1.00		SR	10.5	0.40	104	[illegible] 119	80 120
Technetium 99	129	[illegible]	0.370	15.0		TC	130	4.8	[illegible]	[illegible] 119	80-120
Thorium 230	[illegible]	[illegible]	0.345	1.00		TH	41.6	1.7	[illegible]	81-119	80-120
Uranium 233/234	[illegible]	0.52	[illegible]	1.00		U	[illegible]	[illegible]	[illegible]	85 115	80 120
Uranium 235	7.45	0.46	[illegible]	1.00		U	7.84	0.31	95	84-116	80 120
Uranium 238	[illegible]	0.55	[illegible]	[illegible]		U	10.5	0.42	[illegible]	[illegible]	80-120
Cobalt 60	0.134	[illegible]	[illegible]	0.050		GAM	[illegible]	[illegible]	[illegible]	[illegible] 119	80-120
Cesium 137	[illegible]	0.030	[illegible]	0.100		GAM	[illegible]	0.016	102	83-117	80-120

ColumbiaRiverComp [illegible]

[illegible]

LAB CONTROL SAMPLES
Page 1
SUMMARY DATA SECTION
Page 13

Lab id EBERLINE
Protocol Hanford1
Version Ver 1.0
Form DVD-LCS
Version 1.06
Report date [illegible]

EBERLINE ANALYTICAL/RICHMOND

SAMPLE DELIVERY GROUP [illegible]

7116-015

Lab Control Sample

LAB CONTROL SAMPLE

SDG	7116	Client/Case no	Hanford [illegible]
Contact	[illegible]	Contact	[illegible]
Lab sample id	[illegible]	Client sample id	Lab Control Sample
Dept sample id	7116-015	Material/Matrix	SOLID
		SAS No	[illegible]

ANALYTE	RESULT pCi/g	2s ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALIFIERS	TEST	ADDED pCi/g	2s ERR pCi/g	REC %	1s LMTS (TOTAL)	PROTOCOL LIMITS
Plutonium 238	[illegible]	0.80	[illegible]	1.00		[illegible]	[illegible]	0.46	[illegible]	85-115	80-120
Plutonium 239/240	[illegible]	[illegible]	[illegible]	1.00		[illegible]	[illegible]	[illegible]	[illegible]	85-115	80-120

ColumbiaRiverComp [illegible] Sediment

[illegible]

LAB CONTROL SAMPLES

Page 2

SUMMARY DATA SECTION

Page 14

Lab id [illegible]

Protocol Hanford

Version Ver 1.0

Form DVD-LCS

Version 3.06

Report date [illegible]

EBERLINE ANALYTICAL/RICHMOND

SAMPLE DELIVERY GROUP [illegible]

[illegible] [illegible]

DUPLICATE

SDG [illegible]
Contact [illegible]
Client SAS no [illegible]
Contract no [illegible]

DUPLICATE
Lab sample id [illegible]
Dept sample id [illegible]
% moisture [illegible]

ORIGINAL
Lab sample id [illegible]
Dept sample id [illegible]
Received [illegible]
% moisture [illegible]

Client sample id [illegible]
Location/Matrix [illegible] SOLID
Collected/Weight [illegible]
Custody/SAF no [illegible]

ANALYTE	DUPLICATE pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALIFIERS	TEST	ORIGINAL pCi/g	2σ ERR (COUNT)	MDA pCi/g	QUALIFIERS	RPD %	3σ TOT	DER σ
Carbon 14	[illegible]	[illegible]	2.52	50.0	U	C	[illegible]	1.5	1.38	U			0.4
Total Strontium	[illegible]	0.16	0.128	1.00	U	SR	[illegible]	0.37	0.720	U			[illegible]
Technetium 99	[illegible]	[illegible]	0.174	15.0	U	99	[illegible]	[illegible]	[illegible]	U			[illegible]
Thorium 228	0.548	0.12	[illegible]	1.00		TH	[illegible]	0.24	0.264		26	[illegible]	[illegible]
Thorium 230	[illegible]	[illegible]	[illegible]	1.00		TH	[illegible]	0.28	[illegible]		[illegible]	[illegible]	[illegible]
Thorium 232	[illegible]	[illegible]	[illegible]	1.00		TH	[illegible]	0.24	0.219		[illegible]	124	[illegible]
Uranium 233/234	[illegible]	0.10	[illegible]	1.00		U	[illegible]	[illegible]	[illegible]		[illegible]	[illegible]	[illegible]
Uranium 235	[illegible]	0.040	[illegible]	1.00	U	U	[illegible]	[illegible]	[illegible]	U			[illegible]
Uranium 238	[illegible]	[illegible]	[illegible]	1.00		U	[illegible]	0.091	0.062		4	58	[illegible]
Potassium 40	12.1	[illegible]	[illegible]			GAM	[illegible]	[illegible]	0.071		1	15	[illegible]
Cobalt 60	0		[illegible]	[illegible]	U	GAM	0		[illegible]	U			[illegible]
Cesium 137	[illegible]	[illegible]	[illegible]	[illegible]		GAM	[illegible]	[illegible]	[illegible]		[illegible]	[illegible]	[illegible]
Radium 226	[illegible]	[illegible]	[illegible]	[illegible]		GAM	[illegible]	[illegible]	[illegible]		[illegible]	[illegible]	[illegible]
Radium 228	[illegible]	[illegible]	[illegible]	[illegible]		GAM	[illegible]	[illegible]	[illegible]		[illegible]	[illegible]	[illegible]
Europium 152	0		[illegible]	[illegible]	U	GAM	0		[illegible]	U			[illegible]
Europium 154	0		0.027	0.100	U	GAM	0		0.031	U			[illegible]
Europium 155	0		[illegible]	[illegible]	U	GAM	0		[illegible]	U			[illegible]
Thorium 228	[illegible]	[illegible]	[illegible]			GAM	[illegible]	[illegible]	[illegible]		[illegible]	[illegible]	[illegible]
Thorium 232	[illegible]	[illegible]	[illegible]			GAM	[illegible]	[illegible]	[illegible]		[illegible]	[illegible]	0.1
Uranium 235	0		[illegible]		U	GAM	0		[illegible]	U			[illegible]
Uranium 238	0		[illegible]		U	GAM	0		[illegible]	U			0
Americium 241	0		[illegible]		U	GAM	0		[illegible]	U			[illegible]
Beryllium 7	0		[illegible]		U	GAM	0		[illegible]	U			[illegible]
Ruthenium 106	0		[illegible]		U	GAM	0		0.254	U			[illegible]
Antimony 125	0		[illegible]		U	GAM	0		[illegible]	U			[illegible]
Cesium 134	0		0.011		U	GAM	0		0.009	U			[illegible]

[illegible]

Lab id [illegible]
Protocol [illegible]
Version [illegible]
Form [illegible]
Version [illegible]
Report date [illegible]

EBERLINE ANALYTICAL/RICHMOND

SAMPLE DELIVERY GROUP #1544

7116 014

J18V85

DUPLICATE, cont.

SDG	[illegible]			Client/Case no	[illegible]
Contract	[illegible]			Contract	[illegible]
	DUPLICATE		ORIGINAL		
Lab sample id	[illegible]	Lab sample id	[illegible]	Client sample id	J18V85
Dept sample id	7116-014	Dept sample id	7116-001	Location/Matrix	[illegible] SOLID
		Received	[illegible]	Collected/Volume	[illegible]
% solids	100.0	% solids	100.0	Custody/SAF No	[illegible]

QC batch [illegible]

Lab id EBERLINE
Protocol [illegible]
Version Ver 1.0
Form DVD-DUP
Version 1.06
Report date [illegible]

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EBERLINE ANALYTICAL/RICHMOND

SAMPLE DELIVERY GROUP [illegible]

[illegible]

[illegible]

DUPLICATE

SDG	[illegible]			Client/Case no	Hanford [illegible]
Contact	[illegible]			Contract	[illegible]
	DUPLICATE		ORIGINAL		
Lab sample id	[illegible]	Lab sample id	[illegible]	Client sample id	[illegible]
Dept sample id	[illegible]	Dept sample id	[illegible]	Location/Matrix	[illegible]
		Received	[illegible]	Collected/Weight	[illegible]
% solids	[illegible]	% solids	[illegible]	Custody/SAF No	[illegible]

ANALYTE	DUPLICATE pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALIFIERS	TEST	ORIGINAL pCi/g	2σ ERR (COUNT)	MDA pCi/g	QUALIFIERS	RPD %	3σ TOT	DER σ
Plutonium 238	[illegible]	0.011	[illegible]	[illegible]	U	PU	[illegible]	[illegible]	[illegible]	U			[illegible]
Plutonium 239/240	[illegible]	[illegible]	[illegible]	[illegible]	U	PU	[illegible]	[illegible]	[illegible]	U			[illegible]

ColumbiaRiverComp[illegible] sediment

QC-[illegible]

DUPLICATES
Page 1
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Lab id	[illegible]
Protocol	Hanford
Version	Ver 1.0
Form	DVD-DUP
Version	[illegible]
Report date	[illegible]

EBERLINE ANALYTICAL/RICHMOND

SAMPLE DELIVERY GROUP K1544

7315-013

Method Blank

METHOD BLANK

SDG	7315	Client/Case no	Hanford	SDG K1544
Contact	N. Joseph Verville	Contract	No. 800W235A00	
Lab sample id	8902076.13	Client sample id	Method Blank	B7
Dept sample id	7315-013	Material/Matrix		SOLID
		SAF No	RC-116	

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Carbon 14	14762-75-5	0.295	2.1	1.46	50.0	U	C
Total Strontium	SR-RAD	-0.075	0.11	0.244	1.00	U	SR
Technetium 99	14133-76-7	0.284	0.16	0.325	15.0	U	TC
Thorium 228	14274-82-9	0.090	0.12	0.371	1.00	U	TH
Thorium 230	14269-63-7	0.170	0.18	0.288	1.00	U	TH
Thorium 232	TH-232	0	0.060	0.230	1.00	U	TH
Uranium 233/234	U-233/234	0.029	0.058	0.221	1.00	U	U
Uranium 235	15117-96-1	0	0.070	0.267	1.00	U	U
Uranium 238	U-238	0.029	0.058	0.221	1.00	U	U
Potassium 40	13966-00-2	U		0.245		U	GAM
Cobalt 60	10198-40-0	U		0.008	0.050	U	GAM
Cesium 137	10045-97-3	U		0.007	0.100	U	GAM
Radium 226	13982-63-3	U		0.016	0.100	U	GAM
Radium 228	15262-20-1	U		0.035	0.200	U	GAM
Europium 152	14683-23-9	U		0.073	0.100	U	GAM
Europium 154	15585-10-1	U		0.024	0.100	U	GAM
Europium 155	14391-16-3	U		0.036	0.100	U	GAM
Thorium 228	14274-82-9	U		0.017		U	GAM
Thorium 232	TH-232	U		0.015		U	GAM
Uranium 235	15117-96-1	U		0.038		U	GAM
Uranium 238	U-238	U		0.897		U	GAM
Americium 241	14596-10-2	U		0.010		U	GAM
Beryllium 7	13966-02-4	U		0.052		U	GAM
Ruthenium 106	13967-48-1	U		0.061		U	GAM
Antimony 125	14234-35-6	U		0.019		U	GAM
Cesium 134	13967-70-9	U		0.010		U	GAM

ColumbiaRiverComp.ofRCRA Sediment

Lab id	EBERLINE
Protocol	Hanford
Version	Ver 1.0
Form	DVD-DS
Version	3.06
Report date	04/13/99

BLANK, cont.

SDG 7315
Contact N. Joseph Verville
Client/Case no Hanford
SDG K1544
Contract No. 300W235A00

Lab sample id 9902076-11
Dept sample id 7315 014
Client sample id Method Blank
Material/Matrix SOLID
SAF No RC 116

QC-BLANK #69103

Lab id	EBRLNE
Protocol	Hanford1
Version	Ver 1.0
Form	DVD DG
Version	1.06
Report date	04/11/99

EBERLINE ANALYTICAL/RICHMOND

SAMPLE DELIVERY GROUP K1544

7315-016

Method Blank

METHOD BLANK

SDG	7315	Client/Case no	Hanford SDG X1544
Contact	N. Joseph Verville	Contract	No. 500W235A90
Lab sample id	R902076-16	Client sample id	Method Blank
Dept sample id	7315-016	Material/Matrix	SOLID
		SAF No	RC-116

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Plutonium 238	13981-16-3	0	0.17	0.147	1.00	U	PU
Plutonium 239/240	PU-239/240	-0.028	0.066	0.216	1.00	U	PU

ColumbiaRiverComp.ofRCBRA-Sediment

QC-BLANK #69320

METHOD BLANKS
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Lab id EBRLNE
Protocol HanfordI
Version Ver 1.0
Form DVD DS
Version 1.06
Report date 04/13/09

EBERLINE ANALYTICAL/RICHMOND

SAMPLE DELIVERY GROUP [illegible]

[illegible] Lab Control Sample

LAB CONTROL SAMPLE

SDG [illegible]	Client/Case no Hanford [illegible]
Contact [illegible]	Contract No. [illegible]
Lab sample id [illegible]	Client sample id Lab Control Sample
Dept sample id [illegible]	Matrix/Location [illegible]
	SAF No. [illegible]

ANALYTE	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALIFIERS	TEST	ADDED pCi/g	2σ ERR pCi/g	REC %	3σ LMTS (TOTAL)	PROTOCOL LIMITS
Carbon 14	1590	35	1.28	50.0		C	1560	62	102	84-116	80-120
Total Strontium	9.89	2.54	0.230	1.00		80	7.74	0.17	128	80-120	80-120
Technetium 99	94.7	2.5	0.162	15.0		99	104	4.4	91	78-122	80-120
Thorium 230	54.5	1.5	0.247	1.00		TH	57.8	1.5	93	81-119	80-120
Uranium 233/234	12.6	1.5	0.243	1.00		U	9.28	0.11	134	77-123	80-120
Uranium 235	[illegible]	1.2	0.229	1.00		U	9.54	0.10	98	71-129	80-120
Uranium 238	9.44	1.4	0.717	1.00		U	10.1	0.40	92	76-124	80-120
Cobalt 60	0.240	0.048	0.011	0.050		GAM	0.242	0.020	99	84-116	80-120
Cesium 137	0.302	0.039	0.015	0.100		GAM	0.286	0.012	105	84-116	80-120

[illegible] Sediment

QC LCS [illegible]

LAB CONTROL SAMPLES

Page 1

SUMMARY DATA SECTION

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Lab id EBERLINE
Protocol Hanford
Version Ver 1.0
Form DVD-LCS
Version [illegible]
Report date [illegible]

EBERLINE ANALYTICAL/RICHMOND

SAMPLE DELIVERY GROUP [illegible]

[illegible]

Lab Control Sample

LAB CONTROL SAMPLE

SDG [illegible]

Contact [illegible]

Lab sample id [illegible]

Dept sample id [illegible]

Client/Case no. [illegible]

Contract [illegible]

Client sample id Lab Control Sample

Material/Matrix [illegible] SOLID

SAF No. [illegible]

ANALYTE	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALIFIERS	TEST	ADDED pCi/g	2σ ERR pCi/g	REC %	3σ LMTS (TOTAL)	PROTOCOL LIMITS
Plutonium 238	11.2	[illegible]	[illegible]	1.00		PU	11.6	[illegible]	97	[illegible]	80-120
Plutonium 239/240	12.[illegible]	1.5	0.[illegible]	1.00		PU	11.9	[illegible]	98	[illegible]	80-120

[illegible]

[illegible]

LAB CONTROL SAMPLES
Page 2
SUMMARY DATA SECTION
Page [illegible]

Lab id [illegible]
Protocol [illegible]
Version Ver 1.0
Form [illegible]
Version [illegible]
Report date [illegible]

EBERLINE ANALYTICAL/RICHMOND

SAMPLE DELIVERY GROUP [illegible]

[illegible]

[illegible]

DUPLICATE

SDG	[illegible]			Client Name ID	Hanford [illegible]
Contact	N. Joseph Verville			Contract	[illegible]
DUPLICATE		ORIGINAL			
Lab sample ID	[illegible]	Lab sample ID	[illegible]	Client sample ID	[illegible]
Dept sample ID	[illegible]	Dept sample ID	[illegible]	Location/Matrix	[illegible] SOLID
		Received	[illegible]	Collected/Weight	[illegible]
% moisture	[illegible]	% solids	[illegible]	Custody/SAF No	[illegible]

ANALYTE	DUPLICATE pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI FIERS	TEST	ORIGINAL pCi/g	2σ ERR (COUNT)	MDA pCi/g	QUALI FIERS	RPD %	3σ TOT	DER σ
Carbon 14	0.744	1.8	1.16	50.0	U	C	[illegible]	2.0	3.16	U			0.5
Total Strontium	0.064	0.12	0.257	1.00	U	SR	0.061	2.15	0.299	U			0.2
Technetium 99	0.215	0.25	0.129	15.0	U	TC	0.269	0.22	0.423	U			0.4
Thorium 228	0.960	0.40	0.414	1.00		TH	0.611	0.26	0.418		19	101	1.1
Thorium 230	0.586	0.40	0.317	1.00		TH	1.452	0.16	0.212		[illegible]	93	0.2
Thorium 232	0.521	0.24	0.250	1.00		TH	0.426	0.25	0.272		20	109	0.6
Uranium 233/234	0.727	0.17	0.243	1.00		U	0.654	0.22	0.169		10	86	0.3
Uranium 235	0.096	0.076	0.291	1.00	U	U	0.151	0.11	0.154		87	164	[illegible]
Uranium 238	0.650	0.32	0.240	1.00		U	0.707	0.22	0.115		7	87	0.2
Potassium 40	9.80	1.01	0.192			GAM	10.5	0.16	0.377		6	15	1.0
Cobalt 60	0		0.024	0.050	U	GAM	0.017	0.006	0.007		14	242	0.6
Cesium 137	0.174	0.124	0.026	0.100		GAM	0.194	0.006	0.006		11	25	2.8
Radium 226	0.450	1.066	0.118	0.100		GAM	0.467	0.018	0.015		[illegible]	22	0.3
Radium 228	0.484	0.090	0.090	0.200		GAM	0.594	0.011	0.028		19	50	2.9
Europium 152	0.182	0.019	0.052	0.100		GAM	0.161	0.014	0.019		1	17	[illegible]
Europium 154	0		0.018	0.100	U	GAM	0		0.028	U			1.1
Europium 155	0		0.051	0.100	U	GAM	0		0.014	U			[illegible]
Thorium 228	0.499	0.031	0.029			GAM	0.671	0.012	0.011		29	17	[illegible]
Thorium 232	0.489	1.059	0.040			GAM	0.594	0.011	0.028		19	[illegible]	[illegible]
Uranium 235	0		0.109		U	GAM	0		0.074	U			0.5
Uranium 238	0		2.56		U	GAM	0		0.796	U			1.6
Americium 241	0		1.066		U	GAM	0		0.032	U			0.5
Beryllium 7	0		0.266		U	GAM	0		0.166	U			1.6
Ruthenium 106	0		0.164		U	GAM	0		0.354	U			2.2
Antimony 125	0		0.045		U	GAM	0		0.015	U			1.2
Cesium 134	0		0.012		U	GAM	0		0.005	U			1.4

[illegible]

Lab id	EBERLINE
Protocol	Hanford
Version	Ver 1.0
Form	DVD-DUP
Version	3.06
Report date	[illegible]

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SAMPLE DELIVERY GROUP K1544

7115-014 [illegible]

DUPLICATE, cont.

SDG	7115			Client/Case no	Hanford SDG K1544
Contact	M. Joseph Verville			Contract	[illegible]
	DUPLICATE		ORIGINAL		
Lab sample id	[illegible]	Lab sample id	[illegible]-01	Client sample id	[illegible]
Dept sample id	7115-014	Dept sample id	7115-001	Location/Matrix	[illegible] SOLID
		Received	[illegible]	Collected/Weight	[illegible]
% solids	100.0	% solids	100.0	Custody/SAF no	[illegible]

QC-DUP#1 [illegible]

DUPLICATES
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000079

Lab id [illegible]
Protocol Hanford
Version Ver 1.0
Form DVD-DUP
Version [illegible]
Report date [illegible]

EBERLINE ANALYTICAL/RICHMOND

SAMPLE DELIVERY GROUP [illegible]

[illegible]

[illegible]

DUPLICATE

SDG	[illegible]			Client/Case no	Hanford [illegible]
Contact	N. Joseph Verville			Contract	[illegible]
	DUPLICATE		ORIGINAL		
Lab sample id	[illegible]	Lab sample id	[illegible]	Client sample id	[illegible]
Dept sample id	[illegible]	Dept sample id	[illegible]	Location/Matrix	[illegible] SOLID
		Received	[illegible]	Collected/Weight	[illegible]
% solids	100.0	% solids	[illegible]	Custody/SAF No	[illegible]

ANALYTE	DUPLICATE pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALIFIERS	TEST	ORIGINAL pCi/g	2σ ERR (COUNT)	MDA pCi/g	QUALIFIERS	RPD %	3σ TOT	DER σ
Plutonium 238	[illegible]	[illegible]	[illegible]	1.00	U	PU	[illegible]	[illegible]	[illegible]	U			[illegible]
Plutonium 239/240	[illegible]	[illegible]	[illegible]	1.00	U	PU	0	[illegible]	0.250	U	-		[illegible]

[illegible]

QC DUPL [illegible]

DUPLICATES

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Lab id [illegible]

Protocol [illegible]

Version [illegible]

Form [illegible]

Version [illegible]

Report date [illegible]

Date: 7 December 2009
To: Washington Closure Hanford (technical representative)
From: ELR Consultants
Project: Columbia River Component of the RCBRA - Sediment
Subject: PCB/Pesticide - Data Package No. K1544 LLI

INTRODUCTION

This memo presents the results of data validation on Data Package No. K1544 prepared by Lionville Laboratory Inc. (LLI). A list of samples validated along with the analyses reported and the method of analysis is provided in the following table.

Sample ID	Sample Date	Media	Validation	Analysis
J18985	2/19/09	Solid	C	See note 1
J18986	2/19/09	Solid	C	See note 1
J18987	2/19/09	Solid	C	See note 1
J18988	2/19/09	Solid	C	See note 1
J18990	2/19/09	Solid	C	See note 1
J18991	2/19/09	Solid	C	See note 1
J18992	2/19/09	Solid	C	See note 1
J189B5	2/19/09	Solid	C	See note 1
J189B6	2/19/09	Solid	C	See note 1
J189B7	2/19/09	Solid	C	See note 1
J189B8	2/19/09	Solid	C	See note 1
J189B9	2/19/09	Solid	C	See note 1
J189C0	2/19/09	Solid	C	See note 1
J189C1	2/19/09	Solid	C	See note 1
J189C3	2/19/09	Solid	C	See note 1
J189C4	2/19/09	Solid	C	See note 1
J189J9	2/19/09	Solid	C	See note 1
J189K2	2/19/09	Solid	C	See note 1
J189K4	2/19/09	Solid	C	See note 1
J189K5	2/19/09	Solid	C	See note 1

1 - PCBs by 8082 and pesticides by 8081A

Data validation was conducted in accordance with the Washington Closure Hanford (WCH) validation statement of work and the *Remedial Investigation Work Plan for Hanford Site Releases to the Columbia River* (DOE/RL-2008-11, Rev. 0, September 2008). Appendices 1 through 6 provide the following information as indicated below:

Appendix 1. Glossary of Data Reporting Qualifiers
Appendix 2. Summary of Data Qualification
Appendix 3. Qualified Data Summary and Annotated Laboratory Reports
Appendix 4. Laboratory Narrative and Chain-of-Custody Documentation
Appendix 5. Data Validation Supporting Documentation
Appendix 6. Additional Data Requested by Client

DATA QUALITY OBJECTIVES

· Holding Times & Sample Preservation

Sample data were assessed to ascertain whether the holding time requirements were met by the laboratory. The holding time requirements are as follows: Soil samples must be extracted within 14 days of the date of sample collection and analyzed within 40 days from the date of extraction.

If holding times are exceeded by less than or equal to twice times the limit, all associated sample results are qualified as estimates and flagged "J" for detects and "UJ" for non-detects. If holding times are exceeded by greater than two times the limit, all associated detected sample results are qualified as estimates and flagged "J" and all non-detects are rejected and flagged "UR".

All holding times were acceptable.

Method Blank

Method blank analyses are performed to determine the extent of laboratory contamination introduced through sampling, sample preparation or analysis. At least one method blank analysis must be conducted for every 20 samples. Method blanks should not contain target compounds at a concentration greater than required quantitation limit (RQL). If target compounds are present, sample results less than five times the blank concentration are qualified as undetected and flagged "U". If the sample result is less than five times the blank concentration and less than RQL, the result is qualified as undetected and elevated to the RQL.

All method blank results were acceptable.

Field Blanks

No field blanks were submitted for analysis.

· Accuracy

Matrix Spike & Laboratory Control Sample

Matrix spike (MS) and laboratory control sample (LCS) analyses are used to assess the analytical accuracy of the reported data. The matrix spike is used to assess the effect of the matrix on the ability to accurately quantify sample concentrations. Recoveries must fall within the range of 70% to 130%. If spike recoveries are outside control limits, detected sample results less than five times the spike concentration are qualified as estimates and flagged "J". Non-detected sample results with spike recoveries outside control limits are qualified as estimates and flagged "UJ". Sample results greater than five times the spike concentration require no qualification.

Due to the lack of a matrix spike and matrix spike duplicate analysis, all toxaphene results were qualified as estimates and flagged "J".

All other accuracy results were acceptable.

Surrogate Recovery

The analysis of surrogate compounds provides a measure of performance for individual samples. Matrix-specific surrogate compound recovery control windows have been established by the laboratory. When a surrogate compound recovery is outside the control window, all positively identified target compounds associated with the unacceptable surrogate recoveries are qualified as estimates and flagged "J". Non-detected compounds with surrogate recoveries less than the lower control limit are qualified as having an estimated detection limit and flagged "UJ". Non-detected compounds with surrogate recoveries above the upper control limit require no qualification.

All surrogate results were acceptable.

- **Precision**

Matrix Spike/Matrix Spike Duplicate Samples

Matrix spike/matrix spike duplicate results provide matrix-specific information on the precision of the method for specific target compound classes. Precision is expressed as the relative percent difference (RPD) between the recoveries of duplicate matrix spike analyses performed on a sample. For soil samples, results must be within RPD limits of plus/minus 30%. If RPD values are out of specification and the sample concentration is less than five times the spike concentration, all associated detected sample results are qualified as estimates and flagged "J". If RPD values are out of specification and the sample concentration is greater than five times the spike concentration, no qualification is required

Due to the lack of a matrix spike and matrix spike duplicate analysis, all toxaphene results were qualified as estimates and flagged "J".

All other precision results were acceptable.

Field Duplicate Samples

No field duplicates were submitted for analysis.

Analytical Detection Levels

Reported analytical detection levels are compared against the project specific RQLs to ensure that laboratory detection levels meet the required criteria. All analytes met the RQL

Completeness

Data Package No. K1544 was submitted for validation and verified for completeness. Completeness is based on the percentage of data determined to be valid (i.e., not rejected). The completion percentage was 100%.

MAJOR DEFICIENCIES

None found

MINOR DEFICIENCIES

The following minor deficiency was noted:

- Due to the lack of a matrix spike and matrix spike duplicate analysis, all toxaphene results were qualified as estimates and flagged "J".

Data flagged "J" indicates that the associated concentration is an estimate, but under the WCH statement of work, the data may be usable for decision-making purposes. All other validated results are considered accurate within the standard error associated with the methods.

REFERENCES

Washington Closure Hanford Contract #S00W307A00 (March 2008), *Data Validation Services*.

DOE/RL-2008-11, Rev.0, *Remedial Investigation Work Plan for Hanford Site Releases to the Columbia River*, September 2008.

Appendix 1

Glossary of Data Reporting Qualifiers

Qualifiers which may be applied by data validators in compliance with the procedures herein are as follows:

U - Indicates the compound or analyte was analyzed for and not detected in the sample. The value reported is the sample quantitation limit corrected for sample dilution and moisture content by the laboratory

UJ - Indicates the compound or analyte was analyzed for and not detected in the sample. Due to a minor QC deficiency identified during the data validation, the associated quantitation limit is an estimate.

J - Indicates the compound or analyte was analyzed for and detected. Due to a minor QC deficiency identified during the data validation, the associated quantitation limit is an estimate.

R - Indicates the compound or analyte was analyzed for, detected, and due to an identified major QC deficiency, the data are unusable.

UR - Indicates the compound or analyte was analyzed for and not detected in the sample. Additionally, the data is unusable due to an identified major QC deficiency.

NJ - Indicates presumptive evidence of a compound at an estimated value. The data may not be valid for some specific applications (i.e., usable for decision-making purposes).

N - Indicates presumptive evidence of a compound. The data may not be valid for some specific applications (i.e., usable for decision-making purposes).

Appendix 2

Summary of Data Qualification

PCB/PESTICIDE DATA QUALIFICATION SUMMARY*

SDG: K1544	**REVIEWER: ELR**	**Project: RCBRA**	**QC Issue**
COMPOUND	QUALIFIER	SAMPLES AFFECTED	REASON
Toxaphene	J	All	No MS, MSD or LCS analysis

* - The Qualified Data Summary Table includes laboratory applied "U" qualifiers not specifically identified here. The laboratory applied "U" qualifiers are included to minimize misinterpretation of results contained in the table.

Appendix 3

Qualified Data Summary and Annotated Laboratory Reports

264 Welsh Pool Road
Exton, PA 19341
Phone 610-280-3000
Fax: 610-280-3041

WC Hanford, Inc
2620 Fermi Avenue
Richland WA, 99354

Project: RC-136
Project Number: [none]
Project Manager: Joan Kessner

Reported:
05/01/2009 11:53

J18985
9092067-05 (Solid)

Analyte	Result	Reporting Limit	Qualifier	Units	Dilution	Batch	Prepared	Analyzed	Method
Lionville Laboratory									
Polychlorinated Biphenyls by SW846 8082									
Aroclor 1016	13.3	13.3	U	ug/kg wet	1	9C01024	03/04/2009	03/16/2009	8082
Aroclor 1221	13.3	13.3	U	"	"	"	"	"	"
Aroclor 1232	13.3	13.3	U	"	"	"	"	"	"
Aroclor 1242	13.3	13.3	U	"	"	"	"	"	"
Aroclor 1248	13.3	13.3	U	"	"	"	"	"	"
Aroclor 1254	13.3	13.3	U	"	"	"	"	"	"
Aroclor 1260	13.3	13.3	U	"	"	"	"	"	"
Surrogate: Decachlorobiphenyl		*98 %*			*33-144*	"	"	"	"
Surrogate: Tetrachloro-meta-xylene		*97 %*			*32-141*	"	"	"	"

V
rl 6/09

208 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

WC Hanford, Inc 2620 Fermi Avenue Richland WA, 99354	Project: RC-116 Project Number: [none] Project Manager: Joan Kessner	Reported: 05/01/2009 11:11

J18986

0902067-06 (Solid)

Analyte	Result	Reporting Limit	Qualifier	Units	Dilution	Batch	Prepared	Analyzed	Method

Lionville Laboratory

Polychlorinated Biphenyls by SW846 8082

Analyte	Result	Reporting Limit	Qualifier	Units	Dilution	Batch	Prepared	Analyzed	Method
Aroclor 1016	13.3	13.3	U	ug/kg wet	1	0903028	03/04/2009	03/16/2009	8082
Aroclor 1221	13.3	13.3	U	"	"	"	"	"	"
Aroclor 1232	13.3	13.3	U	"	"	"	"	"	"
Aroclor 1242	13.3	13.3	U	"	"	"	"	"	"
Aroclor 1248	13.3	13.3	U	"	"	"	"	"	"
Aroclor 1254	13.3	13.3	U	"	"	"	"	"	"
Aroclor 1260	13.3	13.3	U	"	"	"	"	"	"
Surrogate: Decachlorobiphenyl		*90 %*			*41-144*	"	"	"	"
Surrogate: Tetrachloro-meta-xylene		*87 %*			*52-141*	"	"	"	"

12/6/09

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

WC Hanford, Inc 2620 Fermi Avenue Richland WA 99354	Project: RC-116 Project Number: [none] Project Manager: Joan Kessner	**Reported:** 05/01/2009 11:14

J18987

P902067-07 (Solid)

Analyte	Result	Reporting Limit	Qualifier	Units	Dilution	Batch	Prepared	Analyzed	Method

Lionville Laboratory

Polychlorinated Biphenyls by SW846 8082

Analyte	Result	Reporting Limit	Qualifier	Units	Dilution	Batch	Prepared	Analyzed	Method
Aroclor 1016	**70.0**	13.3		ug/kg wet	1	P9D0028	04/04/2009	04/16/2009	8082
Aroclor 1221	13.3	13.3	U	"	"	"	"	"	"
Aroclor 1232	13.3	13.3	U	"	"	"	"	"	"
Aroclor 1242	13.3	13.3	U	"	"	"	"	"	"
Aroclor 1248	13.3	13.3	U	"	"	"	"	"	"
Aroclor 1254	**193**	13.3		"	"	"	"	"	"
Aroclor 1260	**92.4**	13.3		"	"	"	"	"	"
Surrogate: Decachlorobiphenyl		*91 %*			*45-141*	"	"	"	"
Surrogate: Tetrachloro-meta-xylene		*80 %*			*52-141*	"	"	"	"

12/6/09

204 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

WCI-Hanford Inc 2620 Fermi Avenue Richland WA, 99354	Project: RC-116 Project Number: [none] Project Manager: Joan Kessner	**Reported:** 05/01/2009 11:33

J18988

0902067-08 (Solid)

Analyte	Result	Reporting Limit	Qualifier	Units	Dilution	Batch	Prepared	Analyzed	Method

Lionville Laboratory

Polychlorinated Biphenyls by SW846 8082

Analyte	Result	Reporting Limit	Qualifier	Units	Dilution	Batch	Prepared	Analyzed	Method
Aroclor 1016	13.3	13.3	U	ug/kg wet	1	1903028	03/04/2009	03/16/2009	8082
Aroclor 1221	13.3	13.3	U	"	"	"	"	"	"
Aroclor 1232	13.3	13.3	U	"	"	"	"	"	"
Aroclor 1242	13.3	13.3	U	"	"	"	"	"	"
Aroclor 1248	13.3	13.3	U	"	"	"	"	"	"
Aroclor 1254	13.3	13.3	U	"	"	"	"	"	"
Aroclor 1260	13.3	13.3	U	"	"	"	"	"	"
Surrogate: Decachlorobiphenyl		*93 %*			*43-144*	"	"	"	"
Surrogate: Tetrachloro-meta-xylene		*94 %*			*52-141*	"	"	"	"

12/6/09

264 Welsh Pool Road
Exton, PA 19341
Phone: 610.280.3000
Fax: 610.280.3041

WC Hanford Inc
2620 Fermi Avenue
Richland WA, 99354

Project: RCS 116
Project Number: [none]
Project Manager: Joan Kessner

Reported:
05/01/2009 11:43

J18990

0902067-09 (Solid)

Analyte	Result	Reporting Limit	Qualifier	Units	Dilution	Batch	Prepared	Analyzed	Method
Lionville Laboratory									
Polychlorinated Biphenyls by SW846 8082									
Aroclor 1016	13.3	13.3	U	ug/kg wet	1	1901028	03/04/2009	03/06/2009	8082
Aroclor 1221	13.3	13.3	U	"	"	"	"	"	"
Aroclor 1232	13.3	13.3	U	"	"	"	"	"	"
Aroclor 1242	13.3	13.3	U	"	"	"	"	"	"
Aroclor 1248	13.3	13.3	U	"	"	"	"	"	"
Aroclor 1254	13.3	13.3	U	"	"	"	"	"	"
Aroclor 1260	13.3	13.3	U	"	"	"	"	"	"
Surrogate: Decachlorobiphenyl		*70 %*			*35-144*	"	"	"	"
Surrogate: Tetrachloro-meta-xylene		*85 %*			*37-141*	"	"	"	"

12/6/09

264 Welsh Pool Road
Exton, PA 19341
Phone: 610 280 3000
Fax: 610 280 3041

WC Hanford, Inc.
2620 Fermi Avenue
Richland WA, 99354

Project: RC-116
Project Number: [none]
Project Manager: Joan Kessner

Reported:
03/11/2009 11:33

J18991

0902067-10 (Solid)

Analyte	Result	Reporting Limit	Qualifier	Units	Dilution	Batch	Prepared	Analyzed	Method
Lionville Laboratory									
Polychlorinated Biphenyls by SW846 8082									
Aroclor 1016	13.3	13.3	U	ug/kg wet	1	B903078	03/04/2009	03/11/2009	8082
Aroclor 1221	13.3	13.3	U	"	"	"	"	"	"
Aroclor 1232	13.3	13.3	U	"	"	"	"	"	"
Aroclor 1242	13.3	13.3	U	"	"	"	"	"	"
Aroclor 1248	13.3	13.3	U	"	"	"	"	"	"
Aroclor 1254	13.3	13.3	U	"	"	"	"	"	"
Aroclor 1260	13.3	13.3	U	"	"	"	"	"	"
Surrogate: Decachlorobiphenyl		*97 %*			*43-144*	"	"	"	"
Surrogate: Tetrachloro-meta-xylene		*85 %*			*53-141*	"	"	"	"

12/6/05

204 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

WCH Hanford Inc 2620 Fermi Avenue Richland WA 99354	Project: RC-316 Project Number: [none] Project Manager: Joan Kessner	Reported: 05/01/2009 11:33

J18992

0902067-11 (Solid)

Analyte	Result	Reporting Limit	Qualifier	Units	Dilution	Batch	Prepared	Analyzed	Method
Lionville Laboratory									
Polychlorinated Biphenyls by SW846 8082									
Aroclor 1016	13.3	13.3	U	ug/kg wet	1	0903028	03/06/2009	03/17/2009	8082
Aroclor 1221	13.3	13.3	U	"	"	"	"	"	"
Aroclor 1232	13.3	13.3	U	"	"	"	"	"	"
Aroclor 1242	13.3	13.3	U	"	"	"	"	"	"
Aroclor 1248	13.3	13.3	U	"	"	"	"	"	"
Aroclor 1254	**6.57**	13.3	J	"	"	"	"	"	"
Aroclor 1260	13.3	13.3	U	"	"	"	"	"	"
Surrogate: Decachlorobiphenyl		*[illegible] %*			*43-141*	"	"	"	"
Surrogate: Tetrachloro-meta-xylene		*53 %*			*52-141*	"	"	"	"

12/1/09

WC Hanford Inc	Project: 8C-116	
2620 Fermi Avenue	Project Number: [none]	
Richland WA, 99354	Project Manager: Joan Kessner	**Reported:** 05/01/2009 11:33

J189B5

0902867-12 (Solid)

Analyte	Result	Reporting Limit	Qualifier	Units	Dilution	Batch	Prepared	Analyzed	Method
			Lionville Laboratory						
Polychlorinated Biphenyls by SW846 8082									
Aroclor 1016	13.3	13.3	U	ug/kg wet	1	0903028	03/08/2009	03/17/2009	8082
Aroclor 1221	13.3	13.3	U	"	"	"	"	"	"
Aroclor 1232	13.3	13.3	U	"	"	"	"	"	"
Aroclor 1242	13.3	13.3	U	"	"	"	"	"	"
Aroclor 1248	13.3	13.3	U	"	"	"	"	"	"
Aroclor 1254	13.3	13.3	U	"	"	"	"	"	"
Aroclor 1260	13.3	13.3	U	"	"	"	"	"	"
Surrogate: Decachlorobiphenyl		86 %			33-144	"	"	"	"
Surrogate: Tetrachloro-meta-xylene		78 %			52-141	"	"	"	"

12/6/09

204 Watch Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

WC-Hanford, Inc. 2620 Fermi Avenue Richland WA, 99354	Project: RCI-116 Project Number: [none] Project Manager: John Kessner	Reported: 05/01/2009 11:35

J189H6

0902067-13 (Solid)

Analyte	Result	Reporting Limit	Qualifier	Units	Dilution	Batch	Prepared	Analyzed	Method
Lionville Laboratory									
Polychlorinated Biphenyls by SW846 8082									
Aroclor 1016	13.3	13.3	U	ug/kg wet	1	1903078	03/04/2009	03/17/2009	8082
Aroclor 1221	13.3	13.3	U	"	"	"	"	"	"
Aroclor 1232	13.3	13.3	U	"	"	"	"	"	"
Aroclor 1242	13.3	13.3	U	"	"	"	"	"	"
Aroclor 1248	13.3	13.3	U	"	"	"	"	"	"
Aroclor 1254	13.3	13.3	U	"	"	"	"	"	"
Aroclor 1260	13.3	13.3	U	"	"	"	"	"	"
Surrogate: Decachlorobiphenyl		*92 %*			*43-144*	"	"	"	"
Surrogate: Tetrachloro-meta-xylene		*84 %*			*52-111*	"	"	"	"

12/4/09

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

WC-Hanford, Inc
2620 Fermi Avenue
Richland WA 99354

Project: RC 116
Project Number: [none]
Project Manager: Joan Kessner

Reported:
03/13/2009 11:33

J189B7

0902067-14 (Solid)

Analyte	Result	Reporting Limit	Qualifier	Units	Dilution	Batch	Prepared	Analyzed	Method
Lionville Laboratory									
Polychlorinated Biphenyls by SW846 8082									
Aroclor 1016	13.3	13.3	U	ug/kg wet	1	[illegible]	03/04/2009	03/12/2009	8082
Aroclor 1221	13.3	13.3	U	"	"	"	"	"	"
Aroclor 1232	13.3	13.3	U	"	"	"	"	"	"
Aroclor 1242	13.3	13.3	U	"	"	"	"	"	"
Aroclor 1248	13.3	13.3	U	"	"	"	"	"	"
Aroclor 1254	13.3	13.3	U	"	"	"	"	"	"
Aroclor 1260	13.3	13.3	U	"	"	"	"	"	"
Surrogate: Decachlorobiphenyl		*93 %*			*43-144*	"	"	"	"
Surrogate: Tetrachloro-meta-xylene		*84 %*			*42-111*	"	"	"	"

12/1/09

WCH - Hanford, Inc.
2620 Fermi Avenue
Richland WA 99354

Project: RC-116
Project Number: [none]
Project Manager: Joan Kessner

Reported:
05/01/2009 11:33

J189B8

0902067-15 (Solid)

Analyte	Result	Reporting Limit	Qualifier	Units	Dilution	Batch	Prepared	Analyzed	Method
Lionville Laboratory									
Polychlorinated Biphenyls by SW846 8082									
Aroclor 1016	13.3	13.3	U	ug/kg wet	1	9030028	03/04/2009	03/17/2009	8082
Aroclor 1221	13.3	13.3	U	"	"	"	"	"	"
Aroclor 1232	13.3	13.3	U	"	"	"	"	"	"
Aroclor 1242	13.3	13.3	U	"	"	"	"	"	"
Aroclor 1248	13.3	13.3	U	"	"	"	"	"	"
Aroclor 1254	13.3	13.3	U	"	"	"	"	"	"
Aroclor 1260	13.3	13.3	U	"	"	"	"	"	"
Surrogate: Decachlorobiphenyl		*92 %*			*41-144*	"	"	"	"
Surrogate: Tetrachloro-meta-xylene		*81 %*			*52-141*	"	"	"	"

12/6/09

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

WCH Hanford, Inc 2620 Fermi Avenue Richland WA, 99354	Project: RC-116 Project Number: [none] Project Manager: Joan Kessner	Reported: 05/01/2009 13:34

J189B9

0902067-16 (Solid)

Analyte	Result	Reporting Limit	Qualifier	Units	Dilution	Batch	Prepared	Analyzed	Method

Lionville Laboratory

Polychlorinated Biphenyls by SW846 8082

Analyte	Result	Reporting Limit	Qualifier	Units	Dilution	Batch	Prepared	Analyzed	Method
Aroclor 1016	13.3	13.3	U	ug/kg wet	1	L9C0028	03/09/2009	03/17/2009	8082
Aroclor 1221	13.3	13.3	U	"	"	"	"	"	"
Aroclor 1232	13.3	13.3	U	"	"	"	"	"	"
Aroclor 1242	13.3	13.3	U	"	"	"	"	"	"
Aroclor 1248	13.3	13.3	U	"	"	"	"	"	"
Aroclor 1254	13.3	13.3	U	"	"	"	"	"	"
Aroclor 1260	13.3	13.3	U	"	"		"	"	"
Surrogate: Decachlorobiphenyl		*93 %*			*45-134*	"	"	"	"
Surrogate: Tetrachloro-meta-xylene		*84 %*			*52-141*	"	"		"

12/6/09

204 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

WCH Hanford, Inc.
2620 Fermi Avenue
Richland WA, 99354

Project: RCS-116
Project Number: [none]
Project Manager: Joan Kessner

Reported:
05/01/2009 11:33

J189C0

0902067-17 (Solid)

Analyte	Result	Reporting Limit	Qualifier	Units	Dilution	Batch	Prepared	Analyzed	Method

Lionville Laboratory

Polychlorinated Biphenyls by SW846 8082

Analyte	Result	Reporting Limit	Qualifier	Units	Dilution	Batch	Prepared	Analyzed	Method
Aroclor 1016	13.3	13.3	U	ug/kg wet	1	1903023	03/04/2009	03/11/2009	8082
Aroclor 1221	13.3	13.3	U	"	"	"	"	"	"
Aroclor 1232	13.3	13.3	U	"	"	"	"	"	"
Aroclor 1242	13.3	13.3	U	"	"	"	"	"	"
Aroclor 1248	13.3	13.3	U	"	"	"	"	"	"
Aroclor 1254	13.3	13.3	U	"	"	"	"	"	"
Aroclor 1260	13.3	13.3	U	"	"	"	"	"	"
Surrogate: Decachlorobiphenyl		95 %			41-144	"	"	"	"
Surrogate: Tetrachloro-meta-xylene		83 %			52-141	"	"	"	"

12/6/09

204 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

WCH Hanford, Inc 2620 Fermi Avenue Richland WA, 99354	Project: RC-116 Project Number: [none] Project Manager: Joan Kessner	**Reported:** 05/01/2009 11:33

J189C1
0902067-18 (Solid)

Analyte	Result	Reporting Limit	Qualifier	Units	Dilution	Batch	Prepared	Analyzed	Method

Lionville Laboratory

Polychlorinated Biphenyls by SW846 8082

Analyte	Result	Reporting Limit	Qualifier	Units	Dilution	Batch	Prepared	Analyzed	Method
Aroclor 1016	13.3	13.3	U	ug/kg wet	1	9030028	03/04/2009	03/12/2009	8082
Aroclor 1221	13.3	13.3	U	"	"	"	"	"	"
Aroclor 1232	13.3	13.3	U	"	"	"	"	"	"
Aroclor 1242	13.3	13.3	U	"	"	"	"	"	"
Aroclor 1248	13.3	13.3	U	"	"	"	"	"	"
Aroclor 1254	13.3	13.3	U	"	"	"	"	"	"
Aroclor 1260	13.3	13.3	U	"	"	"	"	"	"
Surrogate: Decachlorobiphenyl			*90 %*		*33-144*	"	"	"	"
Surrogate: Tetrachloro-meta-xylene			*82 %*		*52-141*	"	"	"	"

✓ 12/1/09

WCH Hanford Inc 2620 Fermi Avenue Richland WA 99354	Project: RC-116 Project Number: [none] Project Manager: Joan Kessner	Reported: 05/01/2009 11:51

J189C3

0902067-19 (Solid)

Analyte	Result	Reporting Limit	Qualifier	Units	Dilution	Batch	Prepared	Analyzed	Method

Lionville Laboratory

Polychlorinated Biphenyls by SW846 8082

Analyte	Result	Reporting Limit	Qualifier	Units	Dilution	Batch	Prepared	Analyzed	Method
Aroclor 1016	13.3	13.3	U	ug/kg wet	1	9030028	03/04/2009	03/17/2009	8082
Aroclor 1221	13.3	13.3	U	"	"	"	"	"	"
Aroclor 1232	13.3	13.3	U	"	"	"	"	"	"
Aroclor 1242	13.3	13.3	U	"	"	"	"	"	"
Aroclor 1248	13.3	13.3	U	"	"	"	"	"	"
Aroclor 1254	13.3	13.3	U	"	"	"	"	"	"
Aroclor 1260	13.3	13.3	U	"	"	"	"	"	"
Surrogate: Decachlorobiphenyl		98 %			*33-144*	"	"	"	"
Surrogate: Tetrachloro-meta-xylene		87 %			*52-147*	"	"	"	"

12/6/09

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

WCH Hanford, Inc 2620 Fermi Avenue Richland WA, 99354	Project: RC-116 Project Number: [none] Project Manager: Joan Kessner	**Reported:** 03/31/2009 11:33

J1R9C4

0902067-20 (Solid)

Analyte	Result	Reporting Limit	Qualifier	Units	Dilution	Batch	Prepared	Analyzed	Method

Lionville Laboratory

Polychlorinated Biphenyls by SW846 8082

Analyte	Result	Reporting Limit	Qualifier	Units	Dilution	Batch	Prepared	Analyzed	Method
Aroclor 1016	13.3	13.3	U	ug/kg wet	1	1903028	03/04/2009	03/17/2009	8082
Aroclor 1221	13.3	13.3	U	"	"	"	"	"	"
Aroclor 1232	13.3	13.3	U	"	"	"	"	"	"
Aroclor 1242	13.3	13.3	U	"	"	"	"	"	"
Aroclor 1248	13.3	13.3	U	"	"	"	"	"	"
Aroclor 1254	13.3	13.3	U	"	"	"	"	"	"
Aroclor 1260	13.3	13.3	U	"	"	"	"	"	"
Surrogate: Decachlorobiphenyl		90 %			43-144	"	"	"	"
Surrogate: Tetrachloro-meta-xylene		78 %			52-147	"	"	"	"

12/6/05

WC-Hanford, Inc 2620 Fermi Avenue Richland WA, 99354	Project: RC-116 Project Number: [none] Project Manager: Joan Kessner	Reported: 05/01/2009 11:33

J189J9

0902067-21 (Solid)

Analyte	Result	Reporting Limit	Qualifier	Units	Dilution	Batch	Prepared	Analyzed	Method

Lionville Laboratory

Polychlorinated Biphenyls by SW846 8082

Analyte	Result	Reporting Limit	Qualifier	Units	Dilution	Batch	Prepared	Analyzed	Method
Aroclor 1016	13.3	13.3	U	ug/kg wet	1	9031028	03/04/2009	03/17/2009	8082
Aroclor 1221	13.3	13.3	U	"	"	"	"	"	"
Aroclor 1232	13.3	13.3	U	"	"	"	"	"	"
Aroclor 1242	13.3	13.3	U	"	"	"	"	"	"
Aroclor 1248	13.3	13.3	U	"	"	"	"	"	"
Aroclor 1254	13.3	13.3	U	"	"	"	"	"	"
Aroclor 1260	13.3	13.3	U	"	"	"	"	"	"
Surrogate: Decachlorobiphenyl		*97 %*			*43-144*	"	"	"	"
Surrogate: Tetrachloro-meta-xylene		*82 %*			*52-141*	"	"	"	"

12/6/05

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

WCH Hanford Inc
2620 Fermi Avenue
Richland WA, 99354

Project: RC 116
Project Number: [none]
Project Manager: Joan Kessner

Reported:
05/01/2009 11:15

J189K2

0902067-22 (Solid)

Analyte	Result	Reporting Limit	Qualifier	Units	Dilution	Batch	Prepared	Analyzed	Method
Lionville Laboratory									
Polychlorinated Biphenyls by SW846 8082									
Aroclor 1016	13.3	13.3	U	ug/kg wet	1	1W03026	03/04/2009	03/17/2009	8082
Aroclor 1221	13.3	13.3	U	"	"	"	"	"	"
Aroclor 1232	13.3	13.3	U	"	"	"	"	"	"
Aroclor 1242	13.3	13.3	U	"	"	"	"	"	"
Aroclor 1248	13.3	13.3	U	"	"	"	"	"	"
Aroclor 1254	13.3	13.3	U	"	"	"	"	"	"
Aroclor 1260	13.3	13.3	U	"	"	"	"	"	"
Surrogate: Decachlorobiphenyl		*84 %*			*43-144*	"	"	"	"
Surrogate: Tetrachloro-meta-xylene		*75 %*			*37-147*	"	"	"	"

12/6/05

764 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

WC Hanford, Inc
2620 Fermi Avenue
Richland WA 99354

Project: RC-116
Project Number: [none]
Project Manager: Joan Kessner

Reported:
05/05/2009 11:31

J189K4

0902067-23 (Solid)

Analyte	Result	Reporting Limit	Qualifier	Units	Dilution	Batch	Prepared	Analyzed	Method
Lionville Laboratory									
Polychlorinated Biphenyls by SW846 8082									
Aroclor 1016	13.3	13.3	U	ug/kg wet	1	9030028	03/04/2009	03/17/2009	8082
Aroclor 1221	13.3	13.3	U	"	"	"	"	"	"
Aroclor 1232	13.3	13.3	U	"	"	"	"	"	"
Aroclor 1242	13.3	13.3	U	"	"	"	"	"	"
Aroclor 1248	13.3	13.3	U	"	"	"	"	"	"
Aroclor 1254	13.3	13.3	U	"	"	"	"	"	"
Aroclor 1260	13.3	13.3	U	"	"	"	"	"	"
Surrogate: Decachlorobiphenyl		*91 %*			*44-144*	"	"	"	"
Surrogate: Tetrachloro-meta-xylene		*84 %*			*52-141*	"	"	"	"

V 12/1/09

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Phone: 610-280-3000
Fax: 610-280-3041

WC Hanford, Inc 2620 Fermi Avenue Richland WA, 99354	Project: RC-116 Project Number: [none] Project Manager: Joan Kessner	Reported: 05/01/2009 11:11

J189K5

0902067-24 (Solid)

Analyte	Result	Reporting Limit	Qualifier	Units	Dilution	Batch	Prepared	Analyzed	Method

Lionville Laboratory

Polychlorinated Biphenyls by SW846 8082

Analyte	Result	Reporting Limit	Qualifier	Units	Dilution	Batch	Prepared	Analyzed	Method
Aroclor 1016	13.3	13.3	U	ug/kg wet	1	[illegible]	03/10/2009	03/13/2009	8082
Aroclor 1221	13.3	13.3	U	"	"	"	"	"	"
Aroclor 1232	13.3	13.3	U	"	"	"	"	"	"
Aroclor 1242	13.3	13.3	U	"	"	"	"	"	"
Aroclor 1248	13.3	13.3	U	"	"	"	"	"	"
Aroclor 1254	13.3	13.3	U	"	"	"	"	"	"
Aroclor 1260	13.3	13.3	U	"	"	"	"	"	"
Surrogate: Decachlorobiphenyl		*96 %*			*43-144*	"	"	"	"
Surrogate: Tetrachloro-meta-xylene		*85 %*			*52-141*	"	"	"	"

12/1/09

WC-Hanford, Inc. 2620 Fermi Avenue Richland WA, 99354	Project: RC-116 Project Number: [none] Project Manager: Joan Kessner		Reported: 05-05-2009 08:56

J18095
0902067-05 (Solid)

Analyte	Result	Reporting Limit	Qualifier	Units	Dilution	Batch	Prepared	Analyzed	Method
Lionville Laboratory									
Organochlorine Pesticides by SW846 8081A									
alpha-BHC	1.33	1.33	U	ug/kg wet	1	L9C0028	03/03/2009	03/25/2009	8081A
gamma-BHC	1.33	1.33	U	"	"	"	"	"	"
beta-BHC	1.33	1.33	U	"	"	"	"	"	"
delta-BHC	1.33	1.33	U	"	"	"	"	"	"
Heptachlor	1.33	1.33	U	"	"	"	"	"	"
Aldrin	1.33	1.33	U	"	"	"	"	"	"
Heptachlor epoxide	1.33	1.33	U	"	"	"	"	"	"
gamma-Chlordane	1.33	1.33	U	"	"	"	"	"	"
alpha-Chlordane	1.33	1.33	U	"	"	"	"	"	"
Endosulfan I	1.33	1.33	U	"	"	"	"	"	"
4,4'-DDE	1.33	1.33	U	"	"	"	"	"	"
Dieldrin	1.33	1.33	U	"	"	"	"	"	"
Endrin	1.33	1.33	U	"	"	"	"	"	"
4,4'-DDD	1.33	1.33	U	"	"	"	"	"	"
Endosulfan II	1.33	1.33	U	"	"	"	"	"	"
4,4'-DDT	1.33	1.33	U	"	"	"	"	"	"
Endrin aldehyde	1.33	1.33	U	"	"	"	"	"	"
Endosulfan sulfate	1.33	1.33	U	"	"	"	"	"	"
Methoxychlor	1.33	1.33	U	"	"	"	"	"	"
Endrin ketone	1.33	1.33	U	"	"	"	"	"	"
Toxaphene	26.6	26.6	U J	"	"	"	"	"	"
Surrogate: Tetrachloro-meta-xylene		*129 %*			*28-166*	"	"	"	"
Surrogate: Decachlorobiphenyl		*130 %*			*37-151*	"	"	"	"

12/6/09

208 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

WCH Hanford, Inc 2620 Fermi Avenue Richland WA, 99354	Project: RL-116 Project Number: [none] Project Manager: Joan Kessner	Reported: 03/05/2009 08:56

J18986
0902067-06RE2 (Solid)

Analyte	Result	Reporting Limit	Qualifier	Units	Dilution	Batch	Prepared	Analyzed	Method

Lionville Laboratory

Organochlorine Pesticides by SW846 8081A

Analyte	Result	Reporting Limit	Qualifier	Units	Dilution	Batch	Prepared	Analyzed	Method
alpha-BHC	1.33	1.33	U	ug/kg wet	4	1903028	03/04/2009	03/03/2009	8081A
gamma-BHC	1.33	1.33	U	"	"	"	"	"	"
beta-BHC	1.33	1.33	U	"	"	"	"	"	"
delta-BHC	1.33	1.33	U	"	"	"	"	"	"
Heptachlor	1.33	1.33	U	"	"	"	"	"	"
Aldrin	1.33	1.33	U	"	"	"	"	"	"
Heptachlor epoxide	1.33	1.33	U	"	"	"	"	"	"
gamma-Chlordane	1.33	1.33	U	"	"	"	"	"	"
alpha-Chlordane	1.33	1.33	U	"	"	"	"	"	"
Endosulfan I	1.33	1.33	U	"	"	"	"	"	"
4,4'-DDE	1.33	1.33	U	"	"	"	"	"	"
Dieldrin	1.33	1.33	U	"	"	"	"	"	"
Endrin	1.33	1.33	U	"	"	"	"	"	"
4,4'-DDD	1.33	1.33	U	"	"	"	"	"	"
Endosulfan II	1.33	1.33	U	"	"	"	"	"	"
4,4'-DDT	1.33	1.33	U	"	"	"	"	"	"
Endrin aldehyde	1.33	1.33	U	"	"	"	"	"	"
Endosulfan sulfate	1.33	1.33	U	"	"	"	"	"	"
Methoxychlor	1.33	1.33	U	"	"	"	"	"	"
Endrin ketone	1.33	1.33	U	"	"	"	"	"	"
Toxaphene	20.0	20.0	U J	"	"	"	"	"	"
Surrogate: Tetrachloro-meta-xylene		77.1 %		25-160		"	"	"	"
Surrogate: Decachlorobiphenyl		94.2 %		47-153		"	"	"	"

12/6/09

208 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

WC Hanford, Inc 2620 Fermi Avenue Richland WA 99354	Project: RC-116 Project Number: [none] Project Manager: Joan Kessner	Reported: 05/05/2009 08:56

J18987

0902067-07RE1 (Solid)

Analyte	Result	Reporting Limit	Qualifier	Units	Dilution	Batch	Prepared	Analyzed	Method

Lionville Laboratory

Organochlorine Pesticides by SW846 8081A

Analyte	Result	Reporting Limit	Qualifier	Units	Dilution	Batch	Prepared	Analyzed	Method
alpha-BHC	1.33	1.33	U	ug/kg wet	4	0903028	03/09/2009	03/27/2009	8081A
gamma-BHC	1.33	1.33	U	"	"	"	"	"	"
beta-BHC	1.33	1.33	U	"	"	"	"	"	"
delta-BHC	1.33	1.33	U	"	"	"	"	"	"
Heptachlor	1.33	1.33	U	"	"	"	"	"	"
Aldrin	1.33	1.33	U	"	"	"	"	"	"
Heptachlor epoxide	1.33	1.33	U	"	"	"	"	"	"
gamma-Chlordane	1.33	1.33	U	"	"	"	"	"	"
alpha-Chlordane	1.33	1.33	U	"	"	"	"	"	"
Endosulfan I	1.33	1.33	U	"	"	"	"	"	"
4,4'-DDE	1.33	1.33	U	"	"	"	"	"	"
Dieldrin	1.33	1.33	U	"	"	"	"	"	"
Endrin	1.33	1.33	U	"	"	"	"	"	"
4,4'-DDD	1.33	1.33	U	"	"	"	"	"	"
Endosulfan II	1.33	1.33	U	"	"	"	"	"	"
4,4'-DDT	1.33	1.33	U	"	"	"	"	"	"
Endrin aldehyde	1.33	1.33	U	"	"	"	"	"	"
Endosulfan sulfate	1.33	1.33	U	"	"	"	"	"	"
Methoxychlor	1.33	1.33	U	"	"	"	"	"	"
Endrin ketone	1.33	1.33	U	"	"	"	"	"	"
Toxaphene	20.0	20.0	U J	"	"	"	"	"	"
Surrogate: Tetrachloro-meta-xylene		*123 %*			*28-166*	"	"	"	"
Surrogate: Decachlorobiphenyl		*111 %*			*37-153*	"	"	"	"

12/6/05

208 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

WCH Hanford, Inc. 2620 Fermi Avenue Richland WA, 99354	Project: RC-116 Project Number: [none] Project Manager: John Kessner	Reported: 03/05/2009 08:56

J16988

0902067-08RE1 (Solid)

Lionville Laboratory

Organochlorine Pesticides by SW846 8081A

Analyte	Result	Reporting Limit	Qualifier	Units	Dilution	Batch	Prepared	Analyzed	Method
alpha-BHC	1.33	1.33	U	ug/kg wet	1	9030028	03/04/2009	03/23/2009	8081A
gamma-BHC	1.33	1.33	U	"	"	"	"	"	"
beta-BHC	1.33	1.33	U	"	"	"	"	"	"
delta-BHC	1.33	1.33	U	"	"	"	"	"	"
Heptachlor	1.33	1.33	U	"	"	"	"	"	"
Aldrin	1.33	1.33	U	"	"	"	"	"	"
Heptachlor epoxide	1.33	1.33	U	"	"	"	"	"	"
gamma-Chlordane	1.33	1.33	U	"	"	"	"	"	"
alpha-Chlordane	1.33	1.33	U	"	"	"	"	"	"
Endosulfan I	1.33	1.33	U	"	"	"	"	"	"
4,4'-DDE	1.33	1.33	U	"	"	"	"	"	"
Dieldrin	1.33	1.33	U	"	"	"	"	"	"
Endrin	1.33	1.33	U	"	"	"	"	"	"
4,4'-DDD	1.33	1.33	U	"	"	"	"	"	"
Endosulfan II	1.33	1.33	U	"	"	"	"	"	"
4,4'-DDT	1.33	1.33	U	"	"	"	"	"	"
Endrin aldehyde	1.33	1.33	U	"	"	"	"	"	"
Endosulfan sulfate	1.33	1.33	U	"	"	"	"	"	"
Methoxychlor	1.33	1.33	U	"	"	"	"	"	"
Endrin ketone	1.33	1.33	U	"	"	"	"	"	"
Toxaphene	20.0	20.0	U J	"	"	"	"	"	"
Surrogate: Tetrachloro-meta-xylene		*120 %*		*28-166*		"	"	"	"
Surrogate: Decachlorobiphenyl		*113 %*		*37-153*		"	"	"	"

12/4/09

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

WCH Hanford Inc
2620 Fermi Avenue
Richland WA, 99354

Project: RC-116
Project Number: [none]
Project Manager: Joan Kessner

Reported:
05/05/2009 08:56

J18990
0902067-09RE1 (Solid)

Lionville Laboratory

Organochlorine Pesticides by SW846 8081A

Analyte	Result	Reporting Limit	Qualifier	Units	Dilution	Batch	Prepared	Analyzed	Method
alpha-BHC	1.33	1.33	U	ug/kg wet	1	0903028	03/04/2009	03/27/2009	8081A
gamma-BHC	1.33	1.33	U	"	"	"	"	"	"
beta-BHC	1.33	1.33	U	"	"	"	"	"	"
delta-BHC	1.33	1.33	U	"	"	"	"	"	"
Heptachlor	1.33	1.33	U	"	"	"	"	"	"
Aldrin	1.33	1.33	U	"	"	"	"	"	"
Heptachlor epoxide	1.33	1.33	U	"	"	"	"	"	"
gamma-Chlordane	1.33	1.33	U	"	"	"	"	"	"
alpha-Chlordane	1.33	1.33	U	"	"	"	"	"	"
Endosulfan I	1.33	1.33	U	"	"	"	"	"	"
4,4'-DDE	1.33	1.33	U	"	"	"	"	"	"
Dieldrin	1.33	1.33	U	"	"	"	"	"	"
Endrin	1.33	1.33	U	"	"	"	"	"	"
4,4'-DDD	1.33	1.33	U	"	"	"	"	"	"
Endosulfan II	1.33	1.33	U	"	"	"	"	"	"
4,4'-DDT	1.33	1.33	U	"	"	"	"	"	"
Endrin aldehyde	1.33	1.33	U	"	"	"	"	"	"
Endosulfan sulfate	1.33	1.33	U	"	"	"	"	"	"
Methoxychlor	1.33	1.33	U	"	"	"	"	"	"
Endrin ketone	1.33	1.33	U	"	"	"	"	"	"
Toxaphene	20.0	20.0	U J	"	"	"	"	"	"
Surrogate: Tetrachloro-meta-xylene		*122 %*		*28-168*		"	"	"	"
Surrogate: Decachlorobiphenyl		*115 %*		*37-153*		"	"	"	"

12/1/09

204 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

WC Hanford, Inc
2620 Fermi Avenue
Richland WA, 99354

Project: RC-146
Project Number: [none]
Project Manager: Joan Kessner

Reported:
05/05/2009 08:56

J18991

0902067-10RE1 (Solid)

Lionville Laboratory

Organochlorine Pesticides by SW846 8081A

Analyte	Result	Reporting Limit	Qualifier	Units	Dilution	Batch	Prepared	Analyzed	Method
alpha-BHC	1.33	1.33	U	ug/kg wet	4	9030228	03/24/2009	03/27/2009	8081A
gamma-BHC	1.33	1.33	U	"	"	"	"	"	"
beta-BHC	1.33	1.33	U	"	"	"	"	"	"
delta-BHC	1.33	1.33	U	"	"	"	"	"	"
Heptachlor	1.33	1.33	U	"	"	"	"	"	"
Aldrin	1.33	1.33	U	"	"	"	"	"	"
Heptachlor epoxide	1.33	1.33	U	"	"	"	"	"	"
gamma-Chlordane	1.33	1.33	U	"	"	"	"	"	"
alpha-Chlordane	1.33	1.33	U	"	"	"	"	"	"
Endosulfan I	1.33	1.33	U	"	"	"	"	"	"
4,4'-DDE	1.33	1.33	U	"	"	"	"	"	"
Dieldrin	1.33	1.33	U	"	"	"	"	"	"
Endrin	1.33	1.33	U	"	"	"	"	"	"
4,4'-DDD	1.33	1.33	U	"	"	"	"	"	"
Endosulfan II	1.33	1.33	U	"	"	"	"	"	"
4,4'-DDT	1.33	1.33	U	"	"	"	"	"	"
Endrin aldehyde	1.33	1.33	U	"	"	"	"	"	"
Endosulfan sulfate	1.33	1.33	U	"	"	"	"	"	"
Methoxychlor	1.33	1.33	U	"	"	"	"	"	"
Endrin ketone	1.33	1.33	U	"	"	"	"	"	"
Toxaphene	20.0	20.0	U J	"	"	"	"	"	"
Surrogate: Tetrachloro-meta-xylene		*[illegible] %*			*28-166*	"	"	"	"
Surrogate: Decachlorobiphenyl		*122 %*			*37-153*	"	"	"	"

12/6/05

204 Welsh Pool Road
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Phone: 610-280-3000
Fax: 610-280-3041

WC Hanford, Inc 2620 Fermi Avenue Richland WA, 99354	Project: RC-116 Project Number: [none] Project Manager: John Kessner	**Reported:** 05/05/2009 08:56

J18992
0902067-11RE1 (Solid)

Lionville Laboratory

Organochlorine Pesticides by SW846 8081A

Analyte	Result	Reporting Limit	Qualifier	Units	Dilution	Batch	Prepared	Analyzed	Method
alpha-BHC	1.33	1.33	U	ug/kg wet	1	9010028	01/06/2009	01/22/2009	8081A
gamma-BHC	1.33	1.33	U	"	"	"	"	"	"
beta-BHC	1.33	1.33	U	"	"	"	"	"	"
delta-BHC	1.33	1.33	U	"	"	"	"	"	"
Heptachlor	1.33	1.33	U	"	"	"	"	"	"
Aldrin	1.33	1.33	U	"	"	"	"	"	"
Heptachlor epoxide	1.33	1.33	U	"	"	"	"	"	"
gamma-Chlordane	1.33	1.33	U	"	"	"	"	"	"
alpha-Chlordane	1.33	1.33	U	"	"	"	"	"	"
Endosulfan I	1.33	1.33	U	"	"	"	"	"	"
4,4'-DDE	1.33	1.33	U	"	"	"	"	"	"
Dieldrin	1.33	1.33	U	"	"	"	"	"	"
Endrin	1.33	1.33	U	"	"	"	"	"	"
4,4'-DDD	1.33	1.33	U	"	"	"	"	"	"
Endosulfan II	1.33	1.33	U	"	"	"	"	"	"
4,4'-DDT	1.33	1.33	U	"	"	"	"	"	"
Endrin aldehyde	1.33	1.33	U	"	"	"	"	"	"
Endosulfan sulfate	1.33	1.33	U	"	"	"	"	"	"
Methoxychlor	1.33	1.33	U	"	"	"	"	"	"
Endrin ketone	1.33	1.33	U	"	"	"	"	"	"
Toxaphene	20.0	20.0	U J	"	"	"	"	"	"
Surrogate: Tetrachloro-meta-xylene		*121 %*		*38-166*		"	"	"	"
Surrogate: Decachlorobiphenyl		*109 %*		*37-153*		"	"	"	"

12/5/05

208 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

WC-Hanford, Inc.
2620 Fermi Avenue
Richland WA, 99354

Project: RCBRA
Project Number: [none]
Project Manager: Joan Kessner

Reported:
05/05/2009 08:56

J189B5

0902067-12RE1 (Solid)

Analyte	Result	Reporting Limit	Qualifier	Units	Dilution	Batch	Prepared	Analyzed	Method
Lionville Laboratory									
Organochlorine Pesticides by SW846 8081A									
alpha-BHC	1.33	1.33	U	ug/kg wet	1	1903078	03/04/2009	03/27/2009	8081A
gamma-BHC	1.33	1.33	U	"	"	"	"	"	"
beta-BHC	1.33	1.33	U	"	"	"	"	"	"
delta-BHC	1.33	1.33	U	"	"	"	"	"	"
Heptachlor	1.33	1.33	U	"	"	"	"	"	"
Aldrin	1.33	1.33	U	"	"	"	"	"	"
Heptachlor epoxide	1.33	1.33	U	"	"	"	"	"	"
gamma-Chlordane	1.33	1.33	U	"	"	"	"	"	"
alpha-Chlordane	1.33	1.33	U	"	"	"	"	"	"
Endosulfan I	1.33	1.33	U	"	"	"	"	"	"
4,4'-DDE	1.33	1.33	U	"	"	"	"	"	"
Dieldrin	1.33	1.33	U	"	"	"	"	"	"
Endrin	1.33	1.33	U	"	"	"	"	"	"
4,4'-DDD	1.33	1.33	U	"	"	"	"	"	"
Endosulfan II	1.33	1.33	U	"	"	"	"	"	"
4,4'-DDT	1.33	1.33	U	"	"	"	"	"	"
Endrin aldehyde	1.33	1.33	U	"	"	"	"	"	"
Endosulfan sulfate	1.33	1.33	U	"	"	"	"	"	"
Methoxychlor	1.33	1.33	U	"	"	"	"	"	"
Endrin ketone	1.33	1.33	U	"	"	"	"	"	"
Toxaphene	20.0	20.0	U J	"	"	"	"	"	"
Surrogate: Tetrachloro-meta-xylene		*77.0 %*			*28-166*	"	"	"	"
Surrogate: Decachlorobiphenyl		*102 %*			*37-153*	"	"	"	"

12/6/09

208 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

WC Hanford, Inc. 2620 Fermi Avenue Richland WA, 99354	Project: RC-116 Project Number: [none] Project Manager: Joan Kessner	Reported: 03/05/2009 08:56

J189B6

0902067-13 (Solid)

Lionville Laboratory

Analyte	Result	Reporting Limit	Qualifier	Units	Dilution	Batch	Prepared	Analyzed	Method
Organochlorine Pesticides by SW846 8081A									
alpha-BHC	3.33	3.33	U	ug/kg wet	10	1903028	03/04/2009	03/11/2009	8081A
gamma-BHC	3.33	3.33	U	"	"	"	"	"	"
beta-BHC	3.33	3.33	U	"	"	"	"	"	"
delta-BHC	3.33	3.33	U	"	"	"	"	"	"
Heptachlor	3.33	3.33	U	"	"	"	"	"	"
Aldrin	3.33	3.33	U	"	"	"	"	"	"
Heptachlor epoxide	3.33	3.33	U	"	"	"	"	"	"
gamma-Chlordane	3.33	3.33	U	"	"	"	"	"	"
alpha-Chlordane	3.33	3.33	U	"	"	"	"	"	"
Endosulfan I	3.33	3.33	U	"	"	"	"	"	"
4,4'-DDE	3.33	3.33	U	"	"	"	"	"	"
Dieldrin	3.33	3.33	U	"	"	"	"	"	"
Endrin	3.33	3.33	U	"	"	"	"	"	"
4,4'-DDD	3.33	3.33	U	"	"	"	"	"	"
Endosulfan II	3.33	3.33	U	"	"	"	"	"	"
4,4'-DDT	3.33	3.33	U	"	"	"	"	"	"
Endrin aldehyde	3.33	3.33	U	"	"	"	"	"	"
Endosulfan sulfate	3.33	3.33	U		"	"	"	"	"
Methoxychlor	3.33	3.33	U	"	"	"	"	"	"
Endrin ketone	3.33	3.33	U	"	"	"		"	"
Toxaphene	50.0	50.0	U	"	"	"	"	"	"
Surrogate: Tetrachloro-meta-xylene		*112 %*			*38-166*	"	"	"	"
Surrogate: Decachlorobiphenyl		*107 %*			*37-153*	"	"	"	"

VL
12/6/09

208 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

WC Hanford, Inc.	Project: RC 116	
2620 Fermi Avenue	Project Number: [none]	Reported:
Richland WA, 99354	Project Manager: Joan Kessner	09/15/2009 08:56

J189B7

0902067-14 (Solid)

Analyte	Result	Reporting Limit	Qualifier	Units	Dilution	Batch	Prepared	Analyzed	Method

Lionville Laboratory

Organochlorine Pesticides by SW846 8081A

Analyte	Result	Reporting Limit	Qualifier	Units	Dilution	Batch	Prepared	Analyzed	Method
alpha-BHC	1.33	1.33	U	ug/kg wet	4	9I01078	09/04/2009	09/11/2009	8081A
gamma-BHC	1.33	1.33	U	"	"	"	"	"	"
beta-BHC	1.33	1.33	U	"	"	"	"	"	"
delta-BHC	1.33	1.33	U	"	"	"	"	"	"
Heptachlor	1.33	1.33	U	"	"	"	"	"	"
Aldrin	1.33	1.33	U	"	"	"	"	"	"
Heptachlor epoxide	1.33	1.33	U	"	"	"	"	"	"
gamma-Chlordane	1.33	1.33	U	"	"	"	"	"	"
alpha-Chlordane	1.33	1.33	U	"	"	"	"	"	"
Endosulfan I	1.33	1.33	U	"	"	"	"	"	"
4,4'-DDE	1.33	1.33	U	"	"	"	"	"	"
Dieldrin	1.33	1.33	U	"	"	"	"	"	"
Endrin	1.33	1.33	U	"	"	"	"	"	"
4,4'-DDD	1.33	1.33	U	"	"	"	"	"	"
Endosulfan II	1.33	1.33	U	"	"	"	"	"	"
4,4'-DDT	1.33	1.33	U	"	"	"	"	"	"
Endrin aldehyde	1.33	1.33	U	"	"	"	"	"	"
Endosulfan sulfate	1.33	1.33	U	"	"	"	"	"	"
Methoxychlor	1.33	1.33	U	"	"	"	"	"	"
Endrin ketone	1.33	1.33	U	"	"	"	"	"	"
Toxaphene	20.0	20.0	U J	"	"	"	"	"	"
Surrogate: Tetrachloro-meta-xylene		*107 %*		*28-166*		"	"	"	"
Surrogate: Decachlorobiphenyl		*105 %*		*37-154*		"	"	"	"

12/6/09

204 Welsh Pool Road
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Phone: 610-280-3000
Fax: 610-280-3041

[illegible] Hanford, Inc 2620 Fermi Avenue Richland WA 99354	Project: RC-LIG Project Number: [none] Project Manager: Joan Kessner	**Reported:** 05/05/2009 08:56

J189B8

0902067-15 (Solid)

Lionville Laboratory

Organochlorine Pesticides by SW846 8081A

Analyte	Result	Reporting Limit	Qualifier	Units	Dilution	Batch	Prepared	Analyzed	Method
alpha-BHC	1.33	1.33	U	ug/kg wet	1	1903028	03/04/2009	03/11/2009	8081A
gamma-BHC	1.33	1.33	U	"	"	"	"	"	"
beta-BHC	1.33	1.33	U	"	"	"	"	"	"
delta-BHC	1.33	1.33	U	"	"	"	"	"	"
Heptachlor	1.33	1.33	U	"	"	"	"	"	"
Aldrin	1.33	1.33	U	"	"	"	"	"	"
Heptachlor epoxide	1.33	1.33	U	"	"	"	"	"	"
gamma-Chlordane	1.33	1.33	U	"		"	"	"	"
alpha-Chlordane	1.33	1.33	U	"	"	"	"	"	"
Endosulfan I	1.33	1.33	U	"	"	"	"	"	"
4,4'-DDE	1.33	1.33	U	"	"	"	"	"	"
Dieldrin	1.33	1.33	U	"	"	"		"	"
Endrin	1.33	1.33	U	"	"	"	"	"	"
4,4'-DDD	1.33	1.33	U	"	"	"	"	"	"
Endosulfan II	1.33	1.33	U	"	"	"	"	"	"
4,4'-DDT	1.33	1.33	U	"	"	"	"	"	"
Endrin aldehyde	1.33	1.33	U	"	"	"	"	"	"
Endosulfan sulfate	1.33	1.33	U	"	"	"	"	"	"
Methoxychlor	1.33	1.33	U	"	"	"	"	"	"
Endrin ketone	1.33	1.33	U	"	"	"	"	"	"
Toxaphene	20.0	20.0	U J	"	"	"	"	"	"
Surrogate: Tetrachloro-meta-xylene		*111 %*			*28-166*	"	"	"	"
Surrogate: Decachlorobiphenyl		*106 %*			*37-151*	"	"	"	"

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12/6/05

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

WC Hanford, Inc 2620 Fermi Avenue Richland WA 99354	Project: RC-116 Project Number: [none] Project Manager: Joan Kessner	**Reported:** 05/05/2009 08:56

J189B9

0902067-16 (Solid)

Analyte	Result	Reporting Limit	Qualifier	Units	Dilution	Batch	Prepared	Analyzed	Method

Lionville Laboratory

Organochlorine Pesticides by SW846 8081A

alpha-BHC	1.33	1.33	U	ug/kg wet	1	1903028	03/04/2009	03/31/2009	8081A
gamma-BHC	1.33	1.33	U	"	"	"	"	"	"
beta-BHC	1.33	1.33	U	"	"	"	"	"	"
delta-BHC	1.33	1.33	U	"	"	"	"	"	"
Heptachlor	1.33	1.33	U	"	"	"	"	"	"
Aldrin	1.33	1.33	U	"	"	"	"	"	"
Heptachlor epoxide	1.33	1.33	U	"	"	"	"	"	"
gamma-Chlordane	1.33	1.33	U	"	"	"	"	"	"
alpha-Chlordane	1.33	1.33	U	"	"	"	"	"	"
Endosulfan I	1.33	1.33	U	"	"	"	"	"	"
4,4'-DDE	1.33	1.33	U	"	"	"	"	"	"
Dieldrin	1.33	1.33	U	"	"	"	"	"	"
Endrin	1.33	1.33	U	"	"	"	"	"	"
4,4'-DDD	1.33	1.33	U	"	"	"	"	"	"
Endosulfan II	1.33	1.33	U	"	"	"	"	"	"
4,4'-DDT	1.33	1.33	U	"	"	"	"	"	"
Endrin aldehyde	1.33	1.33	U	"	"	"	"	"	"
Endosulfan sulfate	1.33	1.33	U	"	"	"	"	"	"
Methoxychlor	1.33	1.33	U	"	"	"	"	"	"
Endrin ketone	1.33	1.33	U	"	"	"	"	"	"
Toxaphene	20.0	20.0	U J	"	"	"	"	"	"
Surrogate: Tetrachloro-meta-xylene		*106 %*			*38-106*	"	"	"	"
Surrogate: Decachlorobiphenyl		*90.1 %*			*37-133*	"	"	"	"

12/6/05

204 Welsh Pool Road
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Fax: 610-280-3041

WC Hanford, Inc
2620 Fermi Avenue
Richland WA, 99354

Project: RC-116
Project Number: [none]
Project Manager: Joan Kessner

Reported:
05/05/2009 08:58

J189C0
0902067-17 (Solid)

Lionville Laboratory

Organochlorine Pesticides by SW846 8081A

Analyte	Result	Reporting Limit	Qualifier	Units	Dilution	Batch	Prepared	Analyzed	Method
alpha-BHC	3.33	3.33	U	ug/kg wet	10	L903026	03/04/2009	03/31/2009	8081A
gamma-BHC	3.33	3.33	U	"	"	"	"	"	"
beta-BHC	3.33	3.33	U	"	"	"	"	"	"
delta-BHC	3.33	3.33	U	"	"	"	"	"	"
Heptachlor	3.33	3.33	U	"	"	"	"	"	"
Aldrin	3.33	3.33	U	"	"	"	"	"	"
Heptachlor epoxide	3.33	3.33	U	"	"	"	"	"	"
gamma-Chlordane	3.33	3.33	U	"	"	"	"	"	"
alpha-Chlordane	3.33	3.33	U	"	"	"	"	"	"
Endosulfan I	3.33	3.33	U	"	"	"	"	"	"
4,4'-DDE	3.33	3.33	U	"	"	"	"	"	"
Dieldrin	3.33	3.33	U	"	"	"	"	"	"
Endrin	3.33	3.33	U	"	"	"	"	"	"
4,4'-DDD	3.33	3.33	U	"	"	"	"	"	"
Endosulfan II	3.33	3.33	U	"	"	"	"	"	"
4,4'-DDT	3.33	3.33	U	"	"	"	"	"	"
Endrin aldehyde	3.33	3.33	U	"	"	"	"	"	"
Endosulfan sulfate	3.33	3.33	U	"	"	"	"	"	"
Methoxychlor	3.33	3.33	U	"	"	"	"	"	"
Endrin ketone	3.33	3.33	U	"	"	"	"	"	"
Toxaphene	50.0	50.0	U J	"	"	"	"	"	"
Surrogate: Tetrachloro-meta-xylene		97.4 %			38-166	"	"	"	"
Surrogate: Decachlorobiphenyl		80.2 %			37-153	"	"	"	"

12/4/09

WC Hanford, Inc
2620 Fermi Avenue
Richland WA, 99354

Project: RC-EIb
Project Number: [none]
Project Manager: Joan Kessner

Reported:
05/05/2009 08:56

J1B9C1
0902067-18 (Solid)

Analyte	Result	Reporting Limit	Qualifier	Units	Dilution	Batch	Prepared	Analyzed	Method
Lionville Laboratory									
Organochlorine Pesticides by SW846 8081A									
alpha-BHC	3.33	3.33	U	ug/kg wet	10	0903028	03/04/2009	03/31/2009	8081A
gamma-BHC	3.33	3.33	U	"	"	"	"	"	"
beta-BHC	3.33	3.33	U	"	"	"	"	"	"
delta-BHC	3.33	3.33	U	"	"	"	"	"	"
Heptachlor	3.33	3.33	U	"	"	"	"	"	"
Aldrin	3.33	3.33	U	"	"	"	"	"	"
Heptachlor epoxide	3.33	3.33	U	"	"	"	"	"	"
gamma-Chlordane	3.33	3.33	U	"	"	"	"	"	"
alpha-Chlordane	3.33	3.33	U	"	"	"	"	"	"
Endosulfan I	3.33	3.33	U	"	"	"	"	"	"
4,4'-DDE	3.33	3.33	U	"	"	"	"	"	"
Dieldrin	3.33	3.33	U	"	"	"	"	"	"
Endrin	3.33	3.33	U	"	"	"	"	"	"
4,4'-DDD	3.33	3.33	U	"	"	"	"	"	"
Endosulfan II	3.33	3.33	U	"	"	"	"	"	"
4,4'-DDT	3.33	3.33	U	"	"	"	"	"	"
Endrin aldehyde	3.33	3.33	U	"	"	"	"	"	"
Endosulfan sulfate	3.33	3.33	U	"	"	"	"	"	"
Methoxychlor	3.33	3.33	U	"	"	"	"	"	"
Endrin ketone	3.33	3.33	U	"	"	"	"	"	"
Toxaphene	500	500	U J	"	"	"	"	"	"
Surrogate: Tetrachloro-meta-xylene		*101 %*			*28-166*	"	"	"	"
Surrogate: Decachlorobiphenyl		*90.0 %*			*17-153*	"	"	"	"

12/6/09

264 Welsh Pool Road
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Fax: 610-280-3041

WC Hanford, Inc 2620 Fermi Avenue Richland WA 99354	Project: RC-116 Project Number: [none] Project Manager: Joan Kessner	**Reported:** 03/03/2009 08:56

J189C3

0902067-19 (Solid)

Analyte	Result	Reporting Limit	Qualifier	Units	Dilution	Batch	Prepared	Analyzed	Method

Lionville Laboratory

Organochlorine Pesticides by SW846 8081A

Analyte	Result	Reporting Limit	Qualifier	Units	Dilution	Batch	Prepared	Analyzed	Method
alpha-BHC	3.33	3.33	U	ug/kg wet	10	1902028	02/04/2009	02/11/2009	8081A
gamma-BHC	3.33	3.33	U	"	"	"	"	"	"
beta-BHC	3.33	3.33	U	"	"	"	"	"	"
delta-BHC	3.33	3.33	U	"	"	"	"	"	"
Heptachlor	3.33	3.33	U	"	"	"	"	"	"
Aldrin	3.33	3.33	U	"	"	"	"	"	"
Heptachlor epoxide	3.33	3.33	U	"	"	"	"	"	"
gamma-Chlordane	3.33	3.33	U	"	"	"	"	"	"
alpha-Chlordane	3.33	3.33	U	"	"	"	"	"	"
Endosulfan I	3.33	3.33	U	"	"	"	"	"	"
4,4'-DDE	3.33	3.33	U	"	"	"	"	"	"
Dieldrin	3.33	3.33	U	"	"	"	"	"	"
Endrin	3.33	3.33	U	"	"	"	"	"	"
4,4'-DDD	3.33	3.33	U	"	"	"	"	"	"
Endosulfan II	3.33	3.33	U	"	"	"	"	"	"
4,4'-DDT	3.33	3.33	U	"	"	"	"	"	"
Endrin aldehyde	3.33	3.33	U	"	"	"	"	"	"
Endosulfan sulfate	3.33	3.33	U	"	"	"	"	"	"
Methoxychlor	3.33	3.33	U	"	"	"	"	"	"
Endrin ketone	3.33	3.33	U	"	"	"	"	"	"
Toxaphene	50.0	50.0	U J	"	"	"	"	"	"
Surrogate: Tetrachloro-meta-xylene		*100 %*			*28-166*	"	"	"	"
Surrogate: Decachlorobiphenyl		*90.4 %*			*15-153*	"	"	"	"

12/1/09

WCH Hanford, Inc 2620 Fermi Avenue Richland WA, 99354	Project: RC-116 Project Number: [none] Project Manager: Joan Kessner	Reported: 03/09/2009 08:56

J189C4

0902067-20 (Solid)

Lionville Laboratory

Organochlorine Pesticides by SW846 8081A

Analyte	Result	Reporting Limit	Qualifier	Units	Dilution	Batch	Prepared	Analyzed	Method
alpha-BHC	1.33	1.33	U	ug/kg wet	1	0903078	03/04/2009	03/11/2009	8081A
gamma-BHC	1.33	1.33	U	"	"	"	"	"	"
beta-BHC	1.33	1.33	U	"	"	"	"	"	"
delta-BHC	1.33	1.33	U	"	"	"	"	"	"
Heptachlor	1.33	1.33	U	"	"	"	"	"	"
Aldrin	1.33	1.33	U	"	"	"	"	"	"
Heptachlor epoxide	1.33	1.33	U	"	"	"	"	"	"
gamma-Chlordane	1.33	1.33	U	"	"	"	"	"	"
alpha-Chlordane	1.33	1.33	U	"	"	"	"	"	"
Endosulfan I	1.33	1.33	U	"	"	"	"	"	"
4,4'-DDE	1.33	1.33	U	"	"	"	"	"	"
Dieldrin	1.33	1.33	U	"	"	"	"	"	"
Endrin	1.33	1.33	U	"	"	"	"	"	"
4,4'-DDD	1.33	1.33	U	"	"	"	"	"	"
Endosulfan II	1.33	1.33	U	"	"	"	"	"	"
4,4'-DDT	1.33	1.33	U	"	"	"	"	"	"
Endrin aldehyde	1.33	1.33	U	"	"	"	"	"	"
Endosulfan sulfate	1.33	1.33	U	"	"	"	"	"	"
Methoxychlor	1.33	1.33	U	"	"	"	"	"	"
Endrin ketone	1.33	1.33	U	"	"	"	"	"	"
Toxaphene	20.0	20.0	U UJ	"	"	"	"	"	"
Surrogate: Tetrachloro-meta-xylene		*94.7 %*			*28-166*	"	"	"	"
Surrogate: Decachlorobiphenyl		*88.6 %*			*37-154*	"	"	"	"

12/6/09

264 Welsh Pool Road
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Phone: 610-280-3000
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WC Hanford, Inc
2620 Fermi Avenue
Richland WA, 99354

Project: RC 116
Project Number: [none]
Project Manager: Joan Kessner

Reported:
03/05/2009 08:56

J189J9
0902067-21 (Solid)

Analyte	Result	Reporting Limit	Qualifier	Units	Dilution	Batch	Prepared	Analyzed	Method
Lionville Laboratory									
Organochlorine Pesticides by SW846 8081A									
alpha-BHC	3.33	3.33	U	ug/kg wet	10	1903028	03/04/2009	03/11/2009	8081A
gamma-BHC	3.33	3.33	U	"	"	"	"	"	"
beta-BHC	3.33	3.33	U	"	"	"	"	"	"
delta-BHC	3.33	3.33	U	"	"	"	"	"	"
Heptachlor	3.33	3.33	U	"	"	"	"	"	"
Aldrin	3.33	3.33	U	"	"	"	"	"	"
Heptachlor epoxide	3.33	3.33	U	"	"	"	"	"	"
gamma-Chlordane	3.33	3.33	U	"	"	"	"	"	"
alpha-Chlordane	3.33	3.33	U	"	"	"	"	"	"
Endosulfan I	3.33	3.33	U	"	"	"	"	"	"
4,4'-DDE	3.33	3.33	U	"	"	"	"	"	"
Dieldrin	3.33	3.33	U	"	"	"	"	"	"
Endrin	3.33	3.33	U	"	"	"	"	"	"
4,4'-DDD	3.33	3.33	U	"	"	"	"	"	"
Endosulfan II	3.33	3.33	U	"	"	"	"	"	"
4,4'-DDT	3.33	3.33	U	"	"	"	"	"	"
Endrin aldehyde	3.33	3.33	U	"	"	"	"	"	"
Endosulfan sulfate	3.33	3.33	U	"	"	"	"	"	"
Methoxychlor	3.33	3.33	U	"	"	"	"	"	"
Endrin ketone	3.33	3.33	U	"	"	"	"	"	"
Toxaphene	50.0	50.0	U J	"	"	"	"	"	"
Surrogate: Tetrachloro-meta-xylene		*109 %*			*28-166*	"	"	"	"
Surrogate: Decachlorobiphenyl		*96.2 %*			*37-153*	"	"	"	"

12/4/05

WCH Hanford, Inc.	Project: RC-116	
2620 Fermi Avenue	Project Number: [none]	Reported:
Richland WA, 99354	Project Manager: Joan Kessner	03/05/2009 08:56

J189K2
0902067-22 (Solid)

Analyte	Result	Reporting Limit	Qualifier	Units	Dilution	Batch	Prepared	Analyzed	Method

Lionville Laboratory

Organochlorine Pesticides by SW846 8081A

Analyte	Result	Reporting Limit	Qualifier	Units	Dilution	Batch	Prepared	Analyzed	Method
alpha-BHC	3.33	3.33	U	ug/kg wet	10	1903028	03/04/2009	03/17/2009	8081A
gamma-BHC	3.33	3.33	U	"	"	"	"	"	"
beta-BHC	3.33	3.33	U	"	"	"	"	"	"
delta-BHC	3.33	3.33	U	"	"	"	"	"	"
Heptachlor	3.33	3.33	U	"	"	"	"	"	"
Aldrin	3.33	3.33	U	"	"	"	"	"	"
Heptachlor epoxide	3.33	3.33	U	"	"	"	"	"	"
gamma-Chlordane	3.33	3.33	U	"	"	"	"	"	"
alpha-Chlordane	3.33	3.33	U	"	"	"	"	"	"
Endosulfan I	3.33	3.33	U	"	"	"	"	"	"
4,4'-DDE	3.33	3.33	U	"	"	"	"	"	"
Dieldrin	3.33	3.33	U	"	"	"	"	"	"
Endrin	3.33	3.33	U	"	"	"	"	"	"
4,4'-DDD	3.33	3.33	U	"	"	"	"	"	"
Endosulfan II	3.33	3.33	U	"	"	"	"	"	"
4,4'-DDT	3.33	3.33	U	"	"	"	"	"	"
Endrin aldehyde	3.33	3.33	U	"	"	"	"	"	"
Endosulfan sulfate	3.33	3.33	U	"	"	"	"	"	"
Methoxychlor	3.33	3.33	U	"	"	"	"	"	"
Endrin ketone	3.33	3.33	U	"	"	"	"	"	"
Toxaphene	50.0	50.0	U J	"	"	"	"	"	"
Surrogate: Tetrachloro-meta-xylene		*101 %*			*28-166*	"	"	"	"
Surrogate: Decachlorobiphenyl		*104 %*			*37-153*	"	"	"	"

12/6/09

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

WC-Hanford Inc. 2620 Fermi Avenue Richland WA, 99354	Project: RC 116 Project Number: [none] Project Manager: Joan Kessner	**Reported:** 03/13/2009 08:56

J189K4

0902067-25 (Solid)

Analyte	Result	Reporting Limit	Qualifier	Units	Dilution	Batch	Prepared	Analyzed	Method
				Lionville Laboratory					
Organochlorine Pesticides by SW846 8081A									
alpha-BHC	3.33	3.33	U	ug/kg wet	10	L903026	03/04/2009	03/11/2009	8081A
gamma-BHC	3.33	3.33	U	"	"	"	"	"	"
beta-BHC	3.33	3.33	U	"	"	"	"	"	"
delta-BHC	3.33	3.33	U	"	"	"	"	"	"
Heptachlor	3.33	3.33	U	"	"	"	"	"	"
Aldrin	3.33	3.33	U	"	"	"	"	"	"
Heptachlor epoxide	3.33	3.33	U	"	"	"	"	"	"
gamma-Chlordane	3.33	3.33	U	"	"	"	"	"	"
alpha-Chlordane	3.33	3.33	U	"	"	"	"	"	"
Endosulfan I	3.33	3.33	U	"	"	"	"	"	"
4,4'-DDE	3.33	3.33	U	"	"	"	"	"	"
Dieldrin	3.33	3.33	U	"	"	"	"	"	"
Endrin	3.33	3.33	U	"	"	"	"	"	"
4,4'-DDD	3.33	3.33	U	"	"	"	"	"	"
Endosulfan II	3.33	3.33	U	"	"	"	"	"	"
4,4'-DDT	3.33	3.33	U	"	"	"	"	"	"
Endrin aldehyde	3.33	3.33	U	"	"	"	"	"	"
Endosulfan sulfate	3.33	3.33	U	"	"	"	"	"	"
Methoxychlor	3.33	3.33	U	"	"	"	"	"	"
Endrin ketone	3.33	3.33	U	"	"	"	"	"	"
Toxaphene	50.0	50.0	U J	"	"	"	"	"	"
Surrogate: Tetrachloro-meta-xylene		*113 %*			*28-166*	"	"	"	"
Surrogate: Decachlorobiphenyl		*103 %*			*17-151*	"	"	"	"

12/6/09

WC Hanford Inc	Project: RC-116	
2620 Fermi Avenue	Project Number: [none]	Reported:
Richland WA 99354	Project Manager: Joan Kessner	03/05/2009 08:56

J189K5

0902867-24 (Solid)

Analyte	Result	Reporting Limit	Qualifier	Units	Dilution	Batch	Prepared	Analyzed	Method

Lionville Laboratory

Organochlorine Pesticides by SW846 8081A

Analyte	Result	Reporting Limit	Qualifier	Units	Dilution	Batch	Prepared	Analyzed	Method
alpha-BHC	3.33	3.33	U	ug/kg wet	10	9B03028	03/03/2009	03/11/2009	8081A
gamma-BHC	3.33	3.33	U	"	"	"	"	"	"
beta-BHC	3.33	3.33	U	"	"	"	"	"	"
delta-BHC	3.33	3.33	U	"	"	"	"	"	"
Heptachlor	3.33	3.33	U	"	"	"	"	"	"
Aldrin	3.33	3.33	U	"	"	"	"	"	"
Heptachlor epoxide	3.33	3.33	U	"	"	"	"	"	"
gamma-Chlordane	3.33	3.33	U	"	"	"	"	"	"
alpha-Chlordane	3.33	3.33	U	"	"	"	"	"	"
Endosulfan I	3.33	3.33	U	"	"	"	"	"	"
4,4'-DDE	3.33	3.33	U	"	"	"	"	"	"
Dieldrin	3.33	3.33	U	"	"	"	"	"	"
Endrin	3.33	3.33	U	"	"	"	"	"	"
4,4'-DDD	3.33	3.33	U	"	"	"	"	"	"
Endosulfan II	3.33	3.33	U	"	"	"	"	"	"
4,4'-DDT	3.33	3.33	U	"	"	"	"	"	"
Endrin aldehyde	3.33	3.33	U	"	"	"	"	"	"
Endosulfan sulfate	3.33	3.33	U	"	"	"	"	"	"
Methoxychlor	3.33	3.33	U	"	"	"	"	"	"
Endrin ketone	3.33	3.33	U	"	"	"	"	"	"
Toxaphene	50.0	50.0	U UJ	"	"	"	"	"	"
Surrogate: Tetrachloro-meta-xylene		*103 %*			*28-166*	"	"	"	"
Surrogate: Decachlorobiphenyl		*96.4 %*			*47-153*	"	"	"	"

JK
12/6/08

Appendix 4

Laboratory Narrative and Chain-of-Custody Documentation

Case Narrative

Client: WC HANFORD RC 116
LVL #: 0902067
SDG/SAF # K1544 / RC-116

W.O. #: 60049-001-001-0001-00
Date Received: 02-21-2009

PCBs

Twenty (20) solid samples were collected on 02-19-2009.

The samples and associated QC samples were extracted on 03-04-2009 and analyzed according to Lionville Laboratory SOPs based on SW846, 3rd Edition procedure on 03-16,17-2009. The extraction procedure was based on method 3540C and the extracts were analyzed based on method 8082.

The following is a summary of the QC results accompanying the sample results. All solid samples are reported on a dry weight basis. Lionville Laboratory (LvL) certifies that all test results meet the requirements of NELAC except as noted below:

1. All required holding times for extraction and analysis have been met.
2. The samples and their associated QC samples received Copper-Sulfur and Sulfuric Acid cleanups according to Lionville Laboratory SOPs based on SW846 methods 3660A and 3665A respectively.
3. The method blank was below the reporting limits for all target compounds.
4. All obtainable surrogate recoveries were within acceptance criteria.
5. All blank spike recoveries were within acceptance criteria.
6. All matrix spike recoveries were within acceptance criteria.
7. All initial calibrations associated with this data set were within acceptance criteria.
8. All continuing calibration standards analyzed prior to sample extracts were within acceptance criteria.

9. LvL is NELAP accredited by the State of Pennsylvania. For a complete listing of accrediting authorities and the corresponding analytes/methods, please contact your Project Manager

10. I certify that this sample data package is in compliance with SOW requirements, both technically and for completeness, other than the conditions detailed above. Release of the data contained in this hard-copy data package has been authorized by the laboratory manager or a designee as verified by the following signature

Judy Stone
Kim Daniels
Laboratory Manager
Lionville Laboratory

5/6/07
Date

Case Narrative

Client: WC-HANFORD RC-116
LVL #: 0902067
SDG/SAF # K1544 /RC-116

W.O. #: 60049-001-001-0001-00
Date Received: 02-21-2009

CHLORINATED PESTICIDES

Twenty (20) solid samples were collected on 02-19-2009.

The samples and their associated QC samples were extracted on 03-04-2009 and analyzed according to Lionville Laboratory SOPs based on SW846, 3rd Edition procedure on 03-25,27,31-2009 and 04-03-2009. The extraction procedure was based on method 3540C and the extracts were analyzed based on method 8081A.

All soil samples are reported on a wet weight basis. The following is a summary of the QC results accompanying the sample results. Lionville Laboratory (LvL) certifies that all test results meet the requirements of NELAC except as noted below;

1. All required holding times for extraction and analysis have been met.
2. The method blank was below the reporting limit for all target compounds.
3. All obtainable surrogate recoveries were within acceptance criteria.
4. All blank spike recoveries were within acceptance criteria.
5. Three (3) of forty (40) matrix spike recoveries were outside acceptance criteria. A copy of the Sample Discrepancy Report (SDR# 09GC078) has been enclosed.
6. All samples required between a 4-fold and 10-fold instrument dilution due to the matrix. Reporting limits have been adjusted to reflect the necessary dilutions.
7. All initial calibrations associated with this data set were within acceptance criteria.
8. All continuing calibration standards analyzed prior to sample extracts were within acceptance criteria.

9. LvL is NELAP accredited by the State of Pennsylvania. For a complete listing of accrediting authorities and the corresponding analytes/methods, please contact your Project Manager.

10. I certify that this sample data package is in compliance with SOW requirements, both technically and for completeness, other than the conditions detailed above. Release of the data contained in this hard-copy data package has been authorized by the laboratory manager or a designee, as verified by the following signature.

Iain Daniels
Laboratory Manager
Lionville Laboratory

5/7/09
Date

Lionville Laboratory Sample Discrepancy Report (SDR)

SDR #: 0960016

Initiator: Robert Carden
Date: 5/5/09
Client: [illegible]
Batch: 09RU07
Samples: 008
Method: [illegible]
Parameter: 8081A
Matrix: Solid
Prep Batch: L9020[illegible]

1. Reason for SDR

a. COC Discrepancy
- _ Tech Profile Error
- _ Transcription Error
- _ Client Request
- _ Wrong Test Code
- _ Sampler Error on C-O-C
- _ Other ____

b. General Discrepancy
- _ Missing Sample/Extract*
- _ Hold Time Exceeded
- _ Improper Bottle Type
- _ Container Broken
- _ Insufficient Sample*
- _ Not Amenable to Analysis
- _ Wrong Sample Pulled
- _ Preservation Wrong
- _ Label ID's Illegible
- _ Received Past Hold

Note* Verified by [Log-In] or [Prep Group] (circle) signature/date ____

c. Problem (Include all relevant specific results; attach data if necessary)

Several spike recoveries elevated in MS (beta-BHC, Endrin, Methoxychlor). Recoveries in BS/MSD within criteria

BS good.

2. Known or Probable Causes(s)

3. Discussion and Proposed Action
- _ Re-log
  - _ Entire Batch
  - _ Following Samples ____
- _ Re-leach
- _ Re-extract
- _ Re-digest
- _ Revise EDD
- _ Change Test Code to ____
- _ Place On/Take Off Hold (circle)

Other Description:

Narrate.

All samples are non detect so possible high bias has no impact on data. JD

4. Project Manager Instructions. signature/date JD 5/7
- ✓ Concur with Proposed Action
- _ Disagree with Proposed Action. See Instructions
- ✓ Include in Case Narrative
- _ Client Contacted.
  Date/Person ____ ____
- _ Add
- _ Cancel

5. Final Action signature/date 5/11/09
- ✓ Verified re-[log][leach][extract][digest][✓ Analysis] (circle)
- ✓ Included in Case Narrative
- _ Hard Copy COC Revised
- _ Electronic COC Revised
- _ EDD Corrections Completed

Other Explanation

When Final Action has been recorded, forward original to QA for diposition.

Route
- _ Lab Manager Daniels
- 1 Project Mgr (circle) [✓ Johnson] / Stone
- _ Sample Prep (circle) Ford
- _ Log In King

Route
- _ Metals Walsh / ____
- _ Inorganic Perrone / ____
- 2 QC/LC [✓ Coffey] / ____
- _ MS VOA Rubino / ____
- _ MS BNA Carden / ____
- _ Other ____

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-116-1330

Page 1 of 1

Collector: B

Company Contact: JOAN KESSNER

Telephone No.: 375-4688

Project Coordinator: KESSNER, JH

Price Code: 9K

Data Turnaround: 45 Days

Project Designation: Columbia River Component of the RCBRA - Sediment

Sampling Location: HA-2 SSD

SAF No.: RC-116

Ice Chest No.: WCH-08-013, 022, 072

Field Logbook No.: EL-1631-1

COA: BESCRC6520

Method of Shipment: FED EX

Shipped To: EBERLINE SERVICES, RICHMOND

Offsite Property No.: N/A

Bill of Lading/Air Bill No.: 796360208296

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

Preservation	None	None	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	None
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	aG	aG	G	-
No. of Container(s)	1	1	1	1	1	1	1	1	1	1
Volume	1500g	100g	10g	10g	250g	250g	125g	250g	250g	-
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Technetium-99	See item (2) in Special Instructions	See item (3) in Special Instructions	PCBs - 8082	Pesticides - 8081	Semi-VOA - 8270A (TCL)	See item (4) in Special Instructions	-

Sample No.	Matrix *	Sample Date	Sample Time										
J16585	OTHER SOLID	2/19/09	921					X	X	X	X	X	

Sampler available to remove samples from controlled storage. Shipper removes samples from storage location taking custody of samples for shipment to lab.

CHAIN OF POSSESSION

Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
B. Bishop	2/19/09 1130	Ecoig A	2/19/09 1630
Ecoig A	2/20/09 0800	D Heidelberg ISS	2/20/09 0800
D Heidelberg ISS	2/20/09 1200	Fedex	2/20/09 1200
	2.21.09 1055		2.21.09 1045
	2.23.09 0850		2.23.09 0850

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) {Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238}

(2) Strontium-89,90 -- Total Sr; Isotopic Thorium {Thorium-232}; Isotopic Uranium {Uranium-233/234, Uranium-235, Uranium-238}; Isotopic Plutonium

(3) ICP Metals - 6010 (Full List) {Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Titanium, Vanadium, Zinc}; Mercury - 7471 - (CV)

(4) VOA - 8260A (TCL) {1,1,1-Trichloroethane, 1,1,2,2-Tetrachloroethane, 1,1,2-Trichloroethane, 1,1-Dichloroethane, 1,1-Dichloroethene, 1,2-Dichloroethane, 1,2-Dichloropropane, 2-Butanone, 2-Hexanone, 4-Methyl-2-Pentanone, Acetone, Benzene, Bromodichloromethane, Bromoform, Bromomethane, Carbon disulfide, Carbon tetrachloride, Chlorobenzene, Chloroethane, Chloroform, Chloromethane, cis-1,2-Dichloroethylene, cis-1,3-Dichloropropene, Dibromochloromethane, Ethylbenzene, Methylene chloride, Styrene, Tetrachloroethene, Toluene, trans-1,2-Dichloroethene

Matrix *

S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION: Received By / Title / Date/Time

FINAL SAMPLE DISPOSITION: Disposal Method / Disposed By / Date/Time

WCH-EE-011

Washington Closure Hanford | **CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST** | RC-116-1331 | Page 1 of 2

Collector: BA

Company Contact: JOAN KESSNER
Telephone No: 375-4688
Project Coordinator: KESSNER, JH
Price Code: 9K
Data Turnaround: 45 Days

Project Designation: Columbia River Component of the RCBRA - Sediment
Sampling Location: HA-4 SSD
SAF No.: RC-116

Ice Chest No.: WCH-08-013, 022, 072
Field Logbook No.: EL-1631-1
COA: BFSCHC6520
Method of Shipment: FED EX

Shipped To: EBERLINE SERVICES [✓ LIONVILLE]
Offsite Property No.: N/A
Bill of Lading/Air Bill No.: 796361208276

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

Preservation	None	None	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	None
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	aG	aG	G	-
No. of Container(s)	1	1	1	1	1	1	1	1	1	1
Volume	1500g	10g	10g	10g	250g	250g	125g	250g	250g	-
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Technetium-99	See item (2) in Special Instructions	See item (3) in Special Instructions	PCBs - 8082	Pesticides 8081	Semi-VOA 8270A; TCL	See item (4) in Special Instructions	-

Sample No.	Matrix *	Sample Date	Sample Time										
J18586	OTHER SOLID	2/19/09	1010					X	X	X	X	X	

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location using custody of samples for shipment to lab.

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
	2/19/09 1620	Eric A	2/19/09 1630
Eric A	2/20/09 0800	D. Heidelberg	2/20/09 0800
D. Heidelberg	2/20/09 1200	Fedex	2/20/09 1200
	2-21-09 1045		2-21-09 1045
	2-23-09 1050		2-23-09 1050

SPECIAL INSTRUCTIONS

(1) Gamma Spec - {Full Lab} (Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238}
(2) Strontium-89,90 - Total Sr; Isotopic Thorium {Thorium-232}; Isotopic Uranium {Uranium-233/234, Uranium-235, Uranium-238}; Isotopic Plutonium
(3) ICP Metals - 6010 {Full List} (Aluminum, Antimony, Arsenic, Barium, Beryllium, [illegible], Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc}; Mercury - 7471 - (CV)
(4) VOA - 8260A (TCL) {1,1,1-Trichloroethane, 1,1,2,2-Tetrachloroethane, 1,1,2-Trichloroethane, 1,1-Dichloroethane, 1,1-Dichloroethene, 1,2-Dichloroethane, 1,2-Dichloropropane, 2-Butanone, 2-Hexanone, 4-Methyl-2-Pentanone, Acetone, Benzene, Bromodichloromethane, Bromoform, Bromomethane, Carbon disulfide, Carbon tetrachloride, Chlorobenzene, Chloroethane, Chloroform, Chloromethane, cis-1,3-Dichloropropylene, trans-1,3-Dichloropropene, Dibromochloromethane, Ethylbenzene, Methylene chloride, Styrene, Tetrachloroethene, Toluene, trans-1,2-Dichloroethene

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION — Received By: Title: Date/Time:

FINAL SAMPLE DISPOSITION — Disposal Method: Disposed By: Date/Time:

WCH-EE-011

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST		RC-116-1332	Page 2 of 2
Collector B	Company Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator KESSNER, JH	Price Code 9K Data Turnaround 45 Days
Project Designation Columbia River Component of the RCBRA - Sediment	Sampling Location HA-6 SSD		SAF No. RC-116	
Ice Chest No. WCH-08-613, 022, 072	Field Logbook No. EL-1637-1	COA DESCRC6510	Method of Shipment FED EX	
Shipped To EBERLINE SERVICES [✓ LIONVILLE]	Offsite Property No. N/A		Bill of Lading/Air Bill No. 796361208296	

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

Preservation	None	None	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	None
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	aG	aG	G	*
No. of Container(s)	1	1	1	1	1	1	1	1	1	1
Volume	1500g	400g	10g	10g	250g	250g	125g	250g	250g	1*
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Technetium-99	See item (2) in Special Instructions	See item (3) in Special Instructions	PCBs - 8082	Pesticides - 8081	Semi-VOA - 8270A (TCL)	See item (4) in Special Instructions	-

Sample No.	Matrix *	Sample Date	Sample Time										
J18987	OTHER SOLID	2/19/09	1030					X	X	X	X	X	

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab

CHAIN OF POSSESSION	Date/Time	Sign/Print Names	Date/Time
Relinquished By/Removed From B Ayl 2/19/09 1620		Received By/Stored In Eric A	2/19/09 1630
Relinquished By/Removed From Eric A	2/20/09 0800	Received By/Stored In D. Heidelberg	2/20/09 0800
Relinquished By/Removed From D Heidelberg	2/20/09 1200	Received By/Stored In Fed ex 2/20/09	1200
Relinquished By/Removed From FedEx	2-21-09 1045	Received By/Stored In	2-21-09 1045
Relinquished By/Removed From FedEx	2-23-09 1030	Received By/Stored In	2-23-09 1030
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time

SPECIAL INSTRUCTIONS

(1) Gamma Spec - {Full List} {Americium-241, Antimony-125, Beryllium-7, Cerium-144, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238}

(2) Strontium-89,90 - Total Sr, Isotopic Thorium {Thorium-232}, Isotopic Uranium {Uranium-233/234, Uranium-235, Uranium-238}, Isotopic Plutonium

(3) ICP Metals - 6010 {Full List} {Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Titanium, Vanadium, Zinc}; Mercury - 7471 - (CV);

(4) VOA - 8260A {TCL} {1,1,1-Trichloroethane, 1,1,2,2-Tetrachloroethane, 1,1,2-Trichloroethane, 1,1-Dichloroethane, 1,1-Dichloroethene, 1,2-Dichloroethane, 1,2-Dichloropropane, 2-Butanone, 2-Hexanone, 4-Methyl-2-Pentanone, Acetone, Benzene, Bromodichloromethane, Bromoform, Bromomethane, Carbon disulfide, Carbon tetrachloride, Chlorobenzene, Chloroethane, Chloroform, Chloromethane, cis-1,2-Dichloroethylene, cis-1,3-Dichloropropene, Dibromochloromethane, Ethylbenzene, Methylene chloride, Styrene, Tetrachloroethene, Toluene, trans-1,2-Dichloroethylene

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-116-1333 Page 1 of 1

Collector BV	Company Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator KESSNER, JH
Project Designation Columbia River Component of the RCBRA - Sediment	Sampling Location HA- 78 SSD		SAF No. RC-126
Ice Chest No. WCH-08013,022,092	Field Logbook No. EL-1631-1	COA RESCRC6520	Method of Shipment FED EX
Shipped To EBERLINE SERVICES [✓ LIONVILLE]	Offsite Property No. N/A		Bill of Lading/Air Bill No. 796361208296 ~~WCH-08-01PH~~ 2/20/09

Price Code 9K

Data Turnaround 45 Days

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

Preservation	None	None	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	None
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	aG	aG	G	*
No. of Container(s)	1	1	1	1	1	1	1	1	1	1
Volume	1500g	500g	15g	50g	250g	250g	125g	250g	250g	*
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Technetium-99	See item (2) in Special Instructions	See item (3) in Special Instructions	PCBs - 8082	Pesticides - 8081	Semi-VOA - 8270A (TCL)	See item (4) in Special Instructions	*

Sample No.	Matrix *	Sample Date	Sample Time										
J18988	OTHER SOLID	2/17/09	1056					X	X	X	X	X	

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage and is taking custody of samples for shipment to lab.

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
B. Hinkle BH ML	2/16/09 1630	Fay A	2/16/09 1630
Fay A	2/20/09 0800	D. Heidelberg	2/20/09 0800
D. Heidelberg	2/20/09 1200	FedEx	2/20/09 1200
FedEx	2-21-09 1045		2-21-09 1045
FedEx	2-23-09 0850		2-23-09 0850

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) {Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238}

(2) Strontium-89,90 - Total Sr; Isotopic Thorium {Thorium-232}; Isotopic Uranium {Uranium-233/234, Uranium-235, Uranium-238}; Isotopic Plutonium

(3) ICP Metals - 6010 (Full List) {Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc}; Mercury - 7471 - (CV)

(4) VOA - 8260A (TCL) {1,1,1-Trichloroethane, 1,1,2,2-Tetrachloroethane, 1,1,2-Trichloroethane, 1,1-Dichloroethane, 1,1-Dichloroethene, 1,2-Dichloroethane, 1,2-Dichloropropane, 2-Butanone, 2-Hexanone, 4-Methyl-2-Pentanone, Acetone, Benzene, Bromodichloromethane, Bromoform, Bromomethane, Carbon disulfide, Carbon tetrachloride, Chlorobenzene, Chloroethane, Chloroform, Chloromethane, cis-1,2-Dichloroethylene, cis-1,3-Dichloropropene, Dibromochloromethane, [illegible]

Matrix *

S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Washington Closure Hanford	**CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST**	RC-116-1335	Page 1 of 2
Collector LS	Company Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator KESSNER, JH
Project Designation Columbia River Component of the RCBRA - Sediment	Sampling Location HA-3 SSD	SAF No. RC-116	Price Code 9K Data Turnaround 45 Days
Ice Chest No. WCH-08-013, 022, 072	Field Logbook No. EL-1617-1	COA BESCRC6520	Method of Shipment FED EX
Shipped To EBERLINE SERVICES [✓ LIONVILLE]	Offsite Property No. N/A		Bill of Lading/Air Bill No. 7963 6612 6829 6

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

0900010

Preservation	None	None	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	None
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	aG	aG	G	[illegible]
No. of Container(s)		1	1	1	1	1	1	1	1	1
Volume	1500g	100g	10g	10g	250g	250g	125g	250g	250g	[illegible]
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Technetium-99	See item (2) in Special Instructions	See item (3) in Special Instructions	PCBs - 8082	Pesticides - 8081	Semi-VOAs - 8270 (TCL)	See item (4) in Special Instructions	-

Sample No.	Matrix *	Sample Date	Sample Time										
J16990	OTHER SOLID	2/19/09	1000					X	X	X	X	X	

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab.

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time 2/19/09 1630	Received By/Stored In Rick B.	Date/Time 2/19/09 1630
Relinquished By/Removed From Kit 2/20/09	Date/Time 0830	Received By/Stored In BL Bedlund 2/20/09	Date/Time 0830
Relinquished By/Removed From BL Bedlund 2/20/09	Date/Time 1200	Received By/Stored In Fed Ex 2/20/09	Date/Time 1200
Relinquished By/Removed From FedEx	Date/Time 2-21-09 / 1045	Received By/Stored In	Date/Time 2-21-09/1045
Relinquished By/Removed From FedEx	Date/Time 2-23-09 / 1050	Received By/Stored In	Date/Time 2-23-09/1055
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) (Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238)

(2) Strontium-89,90 - Total Sr, Isotopic Thorium (Thorium-232), Isotopic Uranium (Uranium-233/234, Uranium-235, Uranium-238), Isotopic Plutonium

(3) ICP Metals - 6010 (Full List) (Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc), Mercury - 7471 - (CV)

(4) VOA - 8260A (TCL) (1,1,1-Trichloroethane, 1,1,2,2-Tetrachloroethane, 1,1,2-Trichloroethane, 1,1-Dichloroethane, 1,1-Dichloroethene, 1,2-Dichloroethane, 1,2-Dichloropropane, 2-Butanone, 2-Hexanone, 4-Methyl-2-Pentanone, Acetone, Benzene, Bromodichloromethane, Bromoform, Bromomethane, Carbon disulfide, Carbon tetrachloride, Chlorobenzene, Chloroethane, Chloroform, Chloromethane, cis-1,2-Dichloroethylene, cis-1,3-Dichloropropene, Dibromochloromethane, [illegible]

Matrix *

[illegible]

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-013

Washington Closure Hanford	**CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST**	RC-116-1336	Page 1 of 2
Collector L Smith	Company Contact JOAN KESSNER Telephone No. 375-4688	Project Coordinator KESSNER, JH	Price Code 9K Data Turnaround **45 Days**
Project Designation Columbia River Component of the RCBRA - Sediment	Sampling Location HA- / SSD	SAF No. RC-116	
Ice Chest No. WCH-08-03, 022, 072	Field Logbook No. EL-1631-1 COA RESCRC5520	Method of Shipment FED EX	
Shipped To EBERLINE SERVICES (LIONVILLE)	Offsite Property No. N/A	Bill of Lading/Air Bill No. 796361268296	

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

E900061

Preservation	None	None	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	None
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	aG	aG	G	[illegible]
No. of Container(s)	1	1	1	1	1	1	1	1	1	1
Volume	1500g	100g	10g	30g	250g	250g	125g	250g	250g	[illegible]
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Technetium-99	See item (2) in Special Instructions	See item (3) in Special Instructions	PCBs - 8082	Pesticides - 8081	Semi-VOA - 8270A (TCL)	See item (4) in Special Instructions	

Sample No.	Matrix *	Sample Date	Sample Time										
J18K01	OTHER SOLID	2/19/09	0940					X	X	X	X	X	

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location using custody of samples for shipment to lab

CHAIN OF POSSESSION Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
L Smith	2/19/09 / 1630	R B	2/19/09 1630
R B	2/20/09 0800	B Woodward	2/20/09 0800
B Woodward	2/20/09 1200	FedEx	2/20/09 1200
	2-23-09 / 1045		2-23-09 / 1045
	2-23-09 / 0850		2-23-09 / 0850

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) (Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238)

(2) Strontium-89,90 -- Total Sr; Isotopic Thorium (Thorium-232); Isotopic Uranium (Uranium-233/234, Uranium-235, Uranium-238); Isotopic Plutonium

(3) ICP Metals - 6010 (Full List); Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc; Mercury - 7471 - (CV)

(4) VOA - 8260A (TCL) (1,1,1-Trichloroethane, 1,1,2,2-Tetrachloroethane, 1,1,2-Trichloroethane, 1,1-Dichloroethane, 1,1-Dichloroethene, 1,2-Dichloroethane, 1,2-Dichloropropane, 2-Butanone, 2-Hexanone, 4-Methyl-2-Pentanone, Acetone, Benzene, Bromodichloromethane, Bromoform, Bromomethane, Carbon disulfide, Carbon tetrachloride, Chlorobenzene, Chloroethane, Chloroform, Chloromethane, cis-1,2-Dichloroethylene, cis-1,3-Dichloropropene, Dibromochloromethane, Ethylbenzene, Methylene chloride, Styrene, Tetrachloroethene, Toluene, trans-1,2-Dichloroethylene

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-116-1337

Page 1 of 2

Collector: LS

Company Contact: JOAN KESSNER

Telephone No.: 375-4698

Project Coordinator: KESSNER, JH

Price Code: 9K

Data Turnaround: 45 Days

Project Designation: Columbia River Component of the RCBRA - Sediment

Sampling Location: HA-5 SSD

SAF No.: RC-116

Ice Chest No.: WCH-08-013, 022, 072

Field Logbook No.: EL-1637-1

COA: RESCRC6520

Method of Shipment: FED EX

Shipped To: EBERLINE SERVICES [✓ LIONVILLE]

Offsite Property No.: N/A

Bill of Lading/Air Bill No.: 796361208296

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

			Preservation	None	None	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	None
			Type of Container	G/P	G/P	G/P	G/P	G/P	aG	aG	aG	G	[illegible]
			No. of Container(s)	1	1	1	1	1	1	1	1	1	1
			Volume	1500g	100g	10g	20g	250g	250g	125g	250g	250g	1
SAMPLE ANALYSIS				See item (1) in Special Instructions	Carbon-14	Technetium-99	See item (2) in Special Instructions	See item (3) in Special Instructions	PCBs - 8082	Pesticides 8081	Semi - VOA 8270	See item (4) in Special Instructions	
Sample No.	Matrix *	Sample Date	Sample Time										
J10992	OTHER SOLID	2/19/09	1015					X	X	X	X	X	

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location being custody of samples for shipment to lab

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
	2-19-09/1630	Ref B	2-19-09/1630
Ref B	2/20/09 0800	Bloodlund	2/20/09 0800
Bloodlund	2/20/09 1200	Fed Ex	2/20/09 1200
Fed Ex	2-21-09 1045		2-21-09 1045
Fed Ex	2-23-09 0800		2-23-09 1080

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) {Americium-241, Antimony-125, Beryllium-7, Cerium-144, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238}

(2) Strontium-89,90 -- Total Sr, Isotopic Thorium {Thorium-232}, Isotopic Uranium {Uranium-233/234, Uranium-235, Uranium-238}, Isotopic Plutonium

(3) ICP Metals - 6010 (Full List) {Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc}, Mercury - 7471 - (CV)

(4) VOA - 8260A (TCL) {1,1,1-Trichloroethane, 1,1,2,2-Tetrachloroethane, 1,1,2-Trichloroethane, 1,1-Dichloroethane, 1,1-Dichloroethene, 1,2-Dichloroethane, 1,2-Dichloropropane, 2-Butanone, 2-Hexanone, 4-Methyl-2-Pentanone, Acetone, Benzene, Bromodichloromethane, Bromoform, Bromomethane, Carbon disulfide, Carbon tetrachloride, Chlorobenzene, Chloroethane, Chloroform, Chloromethane, cis-1,2-Dichloroethylene, cis-1,3-Dichloropropene, Dibromochloromethane, Ethylbenzene, Methylene chloride, Styrene, Tetrachloroethene, Toluene, trans-1,3-Dichloropropene

Matrix *

S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION — Received By — Title — Date/Time

FINAL SAMPLE DISPOSITION — Disposal Method — Disposed By — Date/Time

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-116-1350 Page 1 of 2

Collector BM	Company Contact JOAN KESSNER	Telephone No. 371-4683	Project Coordinator KESSNER, JH
Project Designation Columbia River Component of the RCBRA - Sediment	Sampling Location HL-3 SSD		SAF No. RC-116
Ice Chest No. WCH-08-013,072,022	Field Logbook No. EL-1631-1	COA SESCRC6520	Method of Shipment FED EX
Shipped To EBERLINE SERVICES [✓ LIONVILLE]	Offsite Property No. N/A		Bill of Lading/Air Bill No. 796361 208296

Price Code 9K

Data Turnaround 45 Days

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

Preservation	None	None	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	None
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	aG	aG	G	-
No. of Container(s)	1	1	1	1	1	1	1	1	1	1
Volume	1500g	500g	10g	10g	250g	250g	125g	750g	250g	1*
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Technetium-99	See item (2) in Special Instructions	See item (3) in Special Instructions	PCBs - 8082	Pesticides 8081	Semi-VOA 8270A (TCL)	See item (4) in Special Instructions	-

Sample No	Matrix *	Sample Date	Sample Time										
J18965	OTHER SOLID	2/19/09	1128					X	X	X	X	X	

Sampler unavailable to remove samples from secured storage. Shipper removed samples from storage location taking custody of samples for shipment to lab

CHAIN OF POSSESSION	Sign/Print Names		
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
B Maher BH	2/19/09 1630	Eric A	2/19/09 1630
Eric A	2/20/09 0800	D Heidelberg DH	2/20/09 0800
D Heidelberg DH	2/20/09 1200	Fedex	2/20/09 1200
	2-21-09 / 1045		2-21-09 / 1045
	2-23-09 / 0850		2-23-09 / 0850

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) [Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238]

(2) Strontium-89,90 - Total Sr, Isotopic Thorium (Thorium-232), Isotopic Uranium (Uranium-233/234, Uranium-235, Uranium-238), Isotopic Plutonium

(3) ICP Metals - 6010 (Full List) [Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc]; Mercury - 7471 - (CV)

(4) VOA - 8260A (TCL) [1,1,1-Trichloroethane, 1,1,2,2-Tetrachloroethane, 1,1,2-Trichloroethane, 1,1-Dichloroethane, 1,1-Dichloroethene, 1,2-Dichloroethane, 1,2-Dichloropropane, 2-Butanone, 2-Hexanone, 4-Methyl-2-Pentanone, Acetone, Benzene, Bromodichloromethane, Bromoform, Bromomethane, Carbon disulfide, Carbon tetrachloride, Chlorobenzene, Chloroethane, Chloroform, Chloromethane, cis-1,2-Dichloroethylene, cis-1,3-Dichloropropene, Dibromochloromethane, Ethylbenzene, Methylene chloride, Styrene, Tetrachloroethene, Toluene, trans-1,2-Dichloroethene

Matrix *

S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH EE-011

Washington Closure Hanford | **CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST** | RC-116-1351 | Page 1 of 2

Collector: BM	Company Contact: JOAN KESSNER	Telephone No.: 375-4588	Project Coordinator: KESSNER, JH
Project Designation: Columbia River Component of the RCBRA - Sediment	Sampling Location: BL- 5 SSD		SAF No.: RC-116
Ice Chest No.: WCH 08-013, 072, 022	Field Logbook No.: EL-1631-1	COA: DESCRO6520	Method of Shipment: FED EX
Shipped To: EBERLINE SERVICES [✓ LIONVILLE]	Offsite Property No.: N/A		Bill of Lading/Air Bill No.: 796361208866

Price Code: 9K

Data Turnaround: 45 Days

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

Preservation	None	None	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	None
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	aG	aG	G	*
No. of Container(s)	1	1	1	2	1	1	1	1	1	*
Volume	≥500g	100g	10g	10g	250g	250g	125g	250g	250g	*
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Technetium-99	See item (2) in Special Instructions	See item (3) in Special Instructions	PCBs - 8082	Pesticides - 8081	Semi-VOA - 8270A (TCL)	See item (4) in Special Instructions	*

Sample No.	Matrix *	Sample Date	Sample Time										
J16980	OTHER SOLID	2/19/09	1154					X	X	X	X	X	

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage for and taking custody of samples for shipment to lab

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
	2/19/09 1620		2/19/09 1620
Eric A	2/20/09 0800		2/20/09 0800
	2/20/09 1200		2/20/09 1200
	2-21-09 / 1045		2-21-09 / 1045
	2-23-09 / 0850		2-23-09 / 0850

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) {Americium-241, Antimony-125, Beryllium-7, Cerium-144, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238};
(2) Strontium-89,90 – Total Sr; Isotopic Thorium {Thorium-232}; Isotopic Uranium {Uranium-233/234, Uranium-235, Uranium-238}; Isotopic Plutonium
(3) ICP Metals - 6010 (Full List) {Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc}; Mercury - 7471 - (CV);
(4) VOA - 8260A (TCL) {1,1,1-Trichloroethane, 1,1,2,2-Tetrachloroethane, 1,1,2-Trichloroethane, 1,1-Dichloroethane, 1,1-Dichloroethene, 1,2-Dichloroethane, 1,2-Dichloropropane, 2-Butanone, 2-Hexanone, 4-Methyl-2-Pentanone, Acetone, Benzene, Bromodichloromethane, Bromoform, Bromomethane, Carbon disulfide, Carbon tetrachloride, Chlorobenzene, Chloroethane, Chloroform, Chloromethane, cis-1,2-Dichloroethylene, cis-1,3-Dichloropropene, Dibromochloromethane, Ethylbenzene, Methylenechloride, Styrene, Tetrachloroethene, Toluene, trans-1,2-Dichloroethylene

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Washington Closure Hanford | **CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST** | RC-116-1352 | Page 1 of 1

Collector BM	Company Contact JOAN KESSNER Telephone No. 375-4688	Project Coordinator KESSNER, JH	Price Code 9K Data Turnaround 45 Days
Project Designation Columbia River Component of the RCBRA - Sediment	Sampling Location BL ~~4~~ 7 SSD	SAF No. RC-116	
Ice Chest No. WCH-08, 013, 072, 027	Field Logbook No. EL-1631-1 COA BESCRC5520	Method of Shipment FED EX	
Shipped To EBERLINE SERVICES [✓ LIONVILLE]	Offsite Property No. N/A	Bill of Lading/Air Bill No. 796360120829 6	

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

S90000

Preservation	None	None	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	None
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	aG	aG	G	P
No. of Container(s)	1	1	1	1	1	1	1	1	1	1
Volume	1500g	100g	40g	10g	250g	250g	125g	250g	250g	1
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Technetium-99	See item (2) in Special Instructions	See item (3) in Special Instructions	PCBs - 8082	Pesticides 8081	Semi-VOA - 8270A (TCL)	See item (4) in Special Instructions	

Sample No.	Matrix *	Sample Date	Sample Time										
J189R7	OTHER SOLID	2/10/09	1323					X	X	X	X	X	

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location using custody of samples for shipment to lab

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
B May — B. Mayfield	2/10/09 1620	Eric A	2/10/09 1620
Eric A	2/20/09 0800	D. Heidelberg	2/20/09 0800
D. Heidelberg	2/20/09 1200	Fedex	2/20/09 1200
	2-21-09 1045		2-21-09 1045
	2-23-09 1040		2-23-09 1050

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) (Americium-241, Antimony-125, Beryllium-7, Cerium-144, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238)
(2) Strontium-89,90 -- Total Sr; Isotopic Thorium (Thorium-232); Isotopic Uranium (Uranium-233/234, Uranium-235, Uranium-238); Isotopic Plutonium.
(3) ICP Metals - 6010 (Full List) (Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc); Mercury - 7471 - (CV)
(4) VOA - 8260A (TCL) (1,1,1-Trichloroethane, 1,1,2,2-Tetrachloroethane, 1,1,2-Trichloroethane, 1,1-Dichloroethane, 1,1-Dichloroethene, 1,2-Dichloroethane, 1,2-Dichloropropane, 2-Butanone, 2-Hexanone, 4-Methyl-2-Pentanone, Acetone, Benzene, Bromodichloromethane, Bromoform, Bromomethane, Carbon disulfide, Carbon tetrachloride, Chlorobenzene, Chloroethane, Chloroform, Chloromethane, cis-1,2-Dichloroethylene, cis-1,3-Dichloropropene, Dibromochloromethane, Ethylbenzene, Methylene chloride, Styrene, Tetrachloroethene, Toluene, trans-1,2-Dichloroethylene

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Washington Closure Hanford	**CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST**	RC-116-1353	Page 1 of 2

Collector BA	Company Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator KESSNER, JH	Price Code 9K
Project Designation Columbia River Component of the RCBRA - Sediment	Sampling Location BL-8 SSD		SAF No. RC-116	Data Turnaround 45 Days
Ice Chest No. WCH-06-012, 022, 072	Field Logbook No. EL-1631-1	COA DESCRC6520	Method of Shipment FED EX	
Shipped To EBERLINE SERVICES (RICHMOND)	Offsite Property No. N/A		Bill of Lading/Air Bill No. 7963 6120 8296	

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

Preservation	None	None	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	None
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	aG	aG	G	-
No. of Container(s)	1	1	1	1	1	1	1	1	1	1
Volume	1500g	100g	10g	10g	250g	250g	125g	250g	25g	1
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon 14	Technetium 99	See item (2) in Special Instructions	See item (3) in Special Instructions	PCBs - 8082	Pesticides 8081	Semi VOA - 8270A (TCL)	See item (4) in Special Instructions	-

Sample No.	Matrix *	Sample Date	Sample Time										
J189B8	OTHER SOLID	2/19/09	1256					X	X	X	X	X	

Sampler was unable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
	2/19/09 1630	Eric A	2/19/09 1630
Eric A	2/20/09 0800	D. Heidelberg	2/20/09 0800
D. Heidelberg	2/20/09 1200	FedEx	2/20/09 1200
	2-21-09 1045		2-21-09 1045
FedEx	2-23-09 0850		2-23-09 0850

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) (Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238)
(2) Strontium-89,90 -- Total Sr; Isotopic Thorium (Thorium-232); Isotopic Uranium (Uranium-233/234, Uranium-235, Uranium-238); Isotopic Plutonium
(3) ICP Metals - 6010 (Full List) (Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc); Mercury - 7471 - (CV)
(4) VOA - 8260A (TCL) (1,1,1-Trichloroethane, 1,1,2,2-Tetrachloroethane, 1,1,2-Trichloroethane, 1,1-Dichloroethane, 1,1-Dichloroethene, 1,2-Dichloroethane, 1,2-Dichloropropane, 2-Butanone, 2-Hexanone, 4-Methyl-2-Pentanone, Acetone, Benzene, Bromodichloromethane, Bromoform, Bromomethane, Carbon disulfide, Carbon tetrachloride, Chlorobenzene, Chloroethane, Chloroform, Chloromethane, cis-1,2-Dichloroethylene, cis-1,3-Dichloropropene, Dibromochloromethane, [illegible]

Matrix *
[illegible]

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-116-1354

Page 1 of 2

Collector 3h	Company Contact JOAN KESSNER	Telephone No. 375-4688
Project Coordinator KESSNER, JH	Price Code 9K	Data Turnaround 45 Days
Project Designation Columbia River Component of the RCBRA - Sediment	Sampling Location BL- 7 SSD	SAF No. RC-116
Ice Chest No. WCH-08-013, 072, 022	Field Logbook No. EL-1630-1	COA RESCRC6520
Method of Shipment FED EX		
Shipped To FIRI ONE SERVICES (JONVILLE)	Offsite Property No. N/A	Bill of Lading/Air Bill No. 796361208296

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

2906000

Preservation	None	None	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	None
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	aG	aG	G	*
No. of Container(s)	1	1	1	1	1	1	1	1	1	1
Volume	1500g	100g	10g	10g	250g	250g	125g	250g	125g	1
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Technetium-99	See item (2) in Special Instructions	See item (3) in Special Instructions	PCBs - 8082	Pesticides 8081	Semi-VOAs 8270A (TCL)	See item (4) in Special Instructions	-

Sample No.	Matrix *	Sample Date	Sample Time										
J16989	OTHER SOLID	2/15/05	220					X	X	X	X	X	

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab

CHAIN OF POSSESSION	Date/Time	Sign/Print Names Received By/Stored In	Date/Time
Relinquished By/Removed From	2/19/09 1600	Received By/Stored In Fr A	2/19/09 1600
Relinquished By/Removed From Fr A	2/20/09 0800	Received By/Stored In D. Hedelberg	2/20/09 0800
Relinquished By/Removed From D. Hedelberg	2/20/09 1200	Received By/Stored In Fedex	2/20/09 1200
Relinquished By/Removed From Fedex	2-21-09 1045	Received By/Stored In	2-21-09 1045
Relinquished By/Removed From	2-23-09 1055	Received By/Stored In	2-23-09 1055
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) [Americium-241, Antimony-125, Beryllium-7, Cerium-144, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238]
(2) Strontium-89,90 - Total Sr; Isotopic Thorium (Thorium-232); Isotopic Uranium (Uranium-233/234, Uranium-235, Uranium-238); Isotopic Plutonium
(3) ICP Metals - 6010 (Full List) [Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc]; Mercury - 7471 - (CV)
(4) VOA - 8260A (TCL) [1,1,1-Trichloroethane, 1,1,2,2-Tetrachloroethane, 1,1,2-Trichloroethane, 1,1-Dichloroethane, 1,1-Dichloroethene, 1,2-Dichloroethane, 1,2-Dichloropropane, 2-Butanone, 2-Hexanone, 4-Methyl-2-Pentanone, Acetone, Benzene, Bromodichloromethane, Bromoform, Bromomethane, Carbon disulfide, Carbon tetrachloride, Chlorobenzene, Chloroethane, Chloroform, Chloromethane, cis-1,2-Dichloroethylene, cis-1,3-Dichloropropene, Dibromochloromethane, [illegible]

Matrix *

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST		RC-116-1355	Page 1 of 2
Collector LS	Company Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator KESSNER, JH	Price Code 9K · Data Turnaround 45 Days
Project Designation Columbia River Component of the RCBRA - Sediment	Sampling Location BI - 2 SS1		SAF No. RC-116	
Ice Chest No. WCH-08-013, 022, 072	Field Logbook No. EL-1651-1	COA BES[illegible]RC6520	Method of Shipment FED EX	
Shipped To EBERLINE SERVICES ([✓ OAK RIDGE])	Offsite Property No. N/A		Bill of Lading/Air Bill No. 7963 6126 8296	

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

Preservation	None	None	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	None
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	aG	aG	G	*
No. of Container(s)	1	1	1	1	1	1	1	1	1	1
Volume	1500g	100g	10g	10g	250g	250g	125g	250g	250g	-
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	[illegible]	See item (2) in Special Instructions	See item (3) in Special Instructions	PCBs - 8082	Pesticides - 8081	Semi-VOA 8270 (TCL)	See item (4) in Special Instructions	-

Sample No.	Matrix *	Sample Date	Sample Time										
J18JC0	OTHER SOLID	2/19/09	1130					X	X	X	X	X	

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment [illegible]

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
[illegible]	2/19/09 1630	Ref B	2/19/09 1630
Ref B	2/20/09 0830	BLoodlund	2/20/09 0830
BLoodlund	2/20/09 1200	FedEx	2/20/09 1200
FedEx	2-21-09 1045	[illegible]	2-21-09 1045
FedEx	2-23-09 0850	[illegible]	2-23-09 0850

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) (Americium-241, Antimony-125, Beryllium-7, Cerium-144, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238)
(2) Strontium-89,90 -- Total Sr, Isotopic Thorium (Thorium-232), Isotopic Uranium (Uranium-233/234, Uranium-235, Uranium-238), Isotopic Plutonium
(3) ICP Metals - 6010 (Full List) (Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc), Mercury - 7471 - (CV)
(4) VOA - 8260A (TCL) (1,1,1-Trichloroethane, 1,1,2,2-Tetrachloroethane, 1,1,2-Trichloroethane, 1,1-Dichloroethane, 1,1-Dichloroethene, 1,2-Dichloroethane, 1,2-Dichloropropane, 2-Butanone, 2-Hexanone, 4-Methyl-2-Pentanone, Acetone, Benzene, Bromodichloromethane, Bromoform, Bromomethane, Carbon disulfide, Carbon tetrachloride, Chlorobenzene, Chloroethane, Chloroform, Chloromethane, cis-1,2-Dichloroethylene, cis-1,3-Dichloropropene, Dibromochloromethane,

Matrix * [illegible]

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Washington Closure Hanford	**CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST**	RC-116-1356	Page 1 of 2
Collector LS	Company Contact JOAN KESSNER Telephone No. 375-4688	Project Coordinator KESSNER, JH	Price Code 9K Data Turnaround 45 Days
Project Designation Columbia River Component of the RCBRA - Sediment	Sampling Location BL-7 SSO	SAF No. RC-116	
Ice Chest No. WCH-08-013,022,072	Field Logbook No. EL-1651-1 COA BESCRC0520	Method of Shipment FED EX	
Shipped To EBERLINE SERVICES (RICHMOND)	Offsite Property No. N/A	Bill of Lading/Air Bill No. 796361208296	

6901060

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

Preservation	None	None	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	None
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	aG	aG	G	*
No. of Container(s)	1	1	1	1	1	1	1	1	1	1
Volume	1500g	100g	10g	10g	250g	250g	125g	250g	250g	1*
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Technetium-99	See item (2) in Special Instructions	See item (3) in Special Instructions	PCBs - 8082	Pesticides - 8081	Semi-VOA - 8270A (TCL)	See item (4) in Special Instructions	*

Sample No.	Matrix *	Sample Date	Sample Time										
J19901	OTHER SOLID	2/19/09	1125					X	X	X	X	X	

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment.

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
L Watson	2-19-09 1630	R B	2-19-09 1630
Kurt B	2/20/09 0800	B Woodward	2/20/09 0800
B Woodward	2/20/09 1200	FedEx	2/20/09 1200
	2-21-09 1045		2-21-09 1045
	2-23-09 1050		2-23-09 1050

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) {Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238}

(2) Strontium-89,90 - Total Sr, Isotopic Thorium {Thorium-232}, Isotopic Uranium {Uranium-233/234, Uranium-235, Uranium-238}, Isotopic Plutonium

(3) ICP Metals - 6010 (Full List) {Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc}; Mercury - 7471 - (CV);

(4) VOA - 8260A (TCL) {1,1,1-Trichloroethane, 1,1,2,2-Tetrachloroethane, 1,1,2-Trichloroethane, 1,1-Dichloroethane, 1,1-Dichloroethene, 1,2-Dichloroethane, 1,2-Dichloropropane, 2-Butanone, 2-Hexanone, 4-Methyl-2-Pentanone, Acetone, Benzene, Bromodichloromethane, Bromoform, Bromomethane, Carbon disulfide, Carbon tetrachloride, Chlorobenzene, Chloroethane, Chloroform, Chloromethane, cis-1,2-Dichloroethylene, cis-1,3-Dichloropropene, Dibromochloromethane,

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-116-1358 Page 1 of 1

Collector L.S.	Company Contact JOAN KESSNER	Telephone No. 375 4688	Project Coordinator KESSNER, JH
Price Code 9K	Data Turnaround 45 Days		
Project Designation Columbia River Component of the RCBRA - Sediment	Sampling Location BS-6 SSD		SAF No. RC-116
Ice Chest No. WCH-08-013,08-2622	Field Logbook No. EL-1631-1	COA HESCRC6320	Method of Shipment FED EX
Shipped To EBERLINE SERVICES (DONVILLE)	Offsite Property No. N/A		Bill of Lading/Air Bill No. 796361208296

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

0270000

Preservation	None	None	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	None
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	aG	aG	G	-
No. of Container(s)	2	1	1	1	1	1	1	1	1	-
Volume	1500g	100g	10g	10g	250g	250g	125g	250g	250g	-
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Technetium-99	See item (2) in Special Instructions	See item (3) in Special Instructions	PCBs - 8082	Pesticides 8081	Semi-VOA - 8270A (TCL)	See item (4) in Special Instructions	-

Sample No.	Matrix *	Sample Date	Sample Time										
J185C3	OTHER SOLID	2/19/09	1315					X	X	X	X	X	

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab

CHAIN OF POSSESSION Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
L.S.	2/19/09 1630	R.C.B.	2/19/09 1630
R.C.B.	2/20/09 0800	D. Hedberg	2/20/09 0940
D. Hedberg	2/20/09 1200	Fedex 2/20/09	1200
	2-21-09 1045		2-21-09 1045
	2-23-09 1050		2-23-09 1050

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) {Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238}

(2) Strontium-89,90 -- Total Sr, Isotopic Thorium {Thorium-232}, Isotopic Uranium {Uranium-233/234, Uranium-235, Uranium-238}, Isotopic Plutonium

(3) ICP Metals - 6010 (Full List) {Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc}, Mercury - 7471 - (CV)

(4) VOA - 8260A (TCL) {1,1,1-Trichloroethane, 1,1,2,2-Tetrachloroethane, 1,1,2-Trichloroethane, 1,1-Dichloroethane, 1,1-Dichloroethene, 1,2-Dichloroethane, 1,2-Dichloropropane, 2-Butanone, 2-Hexanone, 4-Methyl-2-Pentanone, Acetone, Benzene, Bromodichloromethane, Bromoform, Bromomethane, Carbon disulfide, Carbon tetrachloride, Chlorobenzene, Chloroethane, Chloroform, Chloromethane, cis-1,2-Dichloroethylene, cis-1,3-Dichloropropene, Dibromochloromethane, Ethylbenzene, Methylene chloride, Styrene, Tetrachloroethene, Toluene, trans-1,2-Dichloroethylene

Matrix *

S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-116-1359 Page 1 of 2

Collector: LS

Company Contact: JOAN KESSNER Telephone No.: 375-4688

Project Coordinator: KESSNER, JH

Price Code: 9K

Data Turnaround: 45 Days

Project Designation: Columbia River Component of the RCBRA - Sediment

Sampling Location: BIz 4 SSD

SAF No.: RC-116

Ice Chest No.: WCH-08-013, 027, 072

Field Logbook No.: EL-1641-01

COA: BESCRC6520

Method of Shipment: FED EX

Shipped To: LIONVILLE [✓ LIONVILLE] — EBERLINE SERVICES

Offsite Property No.: N/A

Bill of Lading/Air Bill No.: 796361208296

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

1201074

Preservation		None	None	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	None
Type of Container		G/P	G/P	G/P	G/P	G/P	aG	aG	aG	G	*
No. of Container(s)		1	1	1	1	1	1	1	1	1	1
Volume		1500g	100g	10g	10g	250g	250g	125g	250g	250g	*
SAMPLE ANALYSIS		See item (1) in Special Instructions	Carbon-14	Technetium-99	See item (2) in Special Instructions	See item (3) in Special Instructions	PCBs - 8082	Pesticides - 8081	Semi-VOA - 8270A (TCL)	See item (4) in Special Instructions	*

Sample No.	Matrix *	Sample Date	Sample Time										
J189C6	OTHER SOLID	2/19/09	1150					X	X	X	X	X	

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location during custody of samples for shipment to lab

CHAIN OF POSSESSION Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
LWilly —	2/19/09 / 1530	Ruf B	2/19/09 / 1630
Ref. B 2/20/09	0800	D Heidelberg	2/20/09 0800
D. Heidelberg	2/20/09 1200	Fedex 2/20/09	1200
Fedex	2-21-09 1045		2-21-09 1045
FedEx	2-23-09 1085		2-23-09 1085

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) {Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238};
(2) Strontium-89,90 - Total Sr; Isotopic Thorium {Thorium-232}; Isotopic Uranium {Uranium-233/234, Uranium-235, Uranium-238}; Isotopic Plutonium
(3) ICP Metals - 6010 (Full List) {Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Titanium, Vanadium, Zinc}; Mercury - 7471 - (CV);
(4) VOA - 8260A (TCL) {1,1,1-Trichloroethane, 1,1,2,2-Tetrachloroethane, 1,1,2-Trichloroethane, 1,1-Dichloroethane, 1,1-Dichloroethene, 1,2-Dichloroethane, 1,2-Dichloropropane, 2-Butanone, 2-Hexanone, 4-Methyl-2-Pentanone, Acetone, Benzene, Bromodichloromethane, Bromoform, Bromomethane, Carbon disulfide, Carbon tetrachloride, Chlorobenzene, Chloroethane, Chloroform, Chloromethane, cis-1,2-Dichloroethylene, cis-1,3-Dichloropropene, Dibromochloromethane, Ethylbenzene, Methylene chloride, Styrene, Tetrachloroethene, Toluene, trans-1,2-Dichloroethylene

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Washington Closure Hanford	**CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST**	RC-116-1392	Page 1 of 1

Collector BM	Company Contact JOAN KESSNER	Telephone No. 375-4683	Project Coordinator KESSNER, JH
Project Designation Columbia River Component of the RCBRA - Sediment	Sampling Location SP-7 SSD		SAF No. RC-116
Ice Chest No. WCH-08-013, 097, 022	Field Logbook No. EL-1631-1	COA RESCRC6520	Method of Shipment FED EX
Shipped To CORELINE SERVICES [✓ LIONVILLE]	Offsite Property No. N/A		Bill of Lading/Air Bill No. 796361208296

Price Code **9K**

Data Turnaround **45 Days**

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

2250000

Preservation	None	None	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	None
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	aG	aG	G	-
No. of Container(s)	1	1	1	1	1	1	1	1	1	1
Volume	1500g	100g	10g	10g	250g	250g	125g	250g	250g	[illegible]
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Technetium-99	See item (2) in Special Instructions	See item (3) in Special Instructions	PCBs - 8082	Pesticides - 8081	Semi-VOA - 8270A (TCL)	See item (4) in Special Instructions	-

Sample No.	Matrix *	Sample Date	Sample Time										
J18993	OTHER SOLID	2/19/09	1412					X	X	X	X	X	

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location during custody of samples for shipment to lab

CHAIN OF POSSESSION Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
B Markee	2/19/09 1630	Eric A	2/19/09 1630
Eric A 2/24/09	0800	D Heidelberg	2/24/09 0800
D Heidelberg	2/24/09 1200	FedEx	2/24/09 1200
	2-21-09/1045		2-21-09/1045
	2-23-09/1055		2-23-09/1055

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) (Americium-241, Antimony-125, Beryllium-7, Cerium-144, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238)
(2) Strontium-89,90 – Total Sr; Isotopic Thorium (Thorium-232); Isotopic Uranium (Uranium-233/234, Uranium-235, Uranium-238); Isotopic Plutonium
(3) ICP Metals - 6010 (Full List) (Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc); Mercury - 7471 - (CV)
(4) VOA - 8260A (TCL) (1,1,1-Trichloroethane, 1,1,2,2-Tetrachloroethane, 1,1,2-Trichloroethane, 1,1-Dichloroethane, 1,1-Dichloroethene, 1,2-Dichloroethane, 1,2-Dichloropropane, 2-Butanone, 2-Hexanone, 4-Methyl-2-Pentanone, Acetone, Benzene, Bromodichloromethane, Bromoform, Bromomethane, Carbon disulfide, Carbon tetrachloride, Chlorobenzene, Chloroethane, Chloroform, Chloromethane, cis-1,2-Dichloroethylene, cis-1,3-Dichloropropene, Dibromochloromethane

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-017

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-116-1395

Page 1 of 2

Collector: L.S.

Company Contact: JOAN KESSNER

Telephone No.: 375-4688

Project Coordinator: KESSNER, JH

Price Code: 9K

Data Turnaround: 45 Days

Project Designation: Columbia River Component of the RCBRA - Sediment

Sampling Location: SP-1 SSD

SAF No.: RC-116

Ice Chest No.: WCH-08-013, 072, 022

Field Logbook No.: EL-1631-1

COA: BESCRC6320

Method of Shipment: FED EX

Shipped To: EBERLINE SERVICES [illegible]

Offsite Property No.: N/A

Bill of Lading/Air Bill No.: 796361 268296

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

0000723

Preservation	None	None	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	None
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	aG	aG	G	-
No. of Container(s)	1	1	1	1	[illegible]	1	[illegible]	[illegible]	1	-
Volume	1500g	10g	10g	40g	250g	250g	125g	250g	250g	-
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Technetium-99	See item (2) in Special Instructions	See item (3) in Special Instructions	PCBs - 8082	Pesticides - 8081	Semi VOA 8270A (TCL)	See item (4) in Special Instructions	-

Sample No.	Matrix *	Sample Date	Sample Time										
J18982	OTHER SOLID	2/19/09	1400					X	X	X	X	X	

Samples were placed in [illegible] from controlled storage. Shipper removed samples from storage location using [illegible] of samples for shipment to lab.

CHAIN OF POSSESSION	Date/Time	Sign/Print Names	Date/Time
Relinquished By/Removed From: L. Stanley	2-19-09/1650	Received By/Stored In: R. B.	2-19-09/1650
Relinquished By/Removed From: R.E.B.	2/20/09 0800	Received By/Stored In: D. Hellberg	2/20/09 0800
Relinquished By/Removed From: D. Hellberg	2/20/09 1140	Received By/Stored In: FedEx	2/20/09 1200
Relinquished By/Removed From: FedEx	2-21-09 1045	Received By/Stored In:	2-21-09/1045
Relinquished By/Removed From: FedEx	2-23-09/0850	Received By/Stored In:	2-23-09/0850
Relinquished By/Removed From:		Received By/Stored In:	

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) [Americium-241, Antimony-125, Beryllium-7, Cerium-144, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238]
(2) Strontium-89,90 -- Total Sr, Isotopic Thorium (Thorium-232), Isotopic Uranium (Uranium-233/234, Uranium-235, Uranium-238), Isotopic Plutonium
(3) ICP Metals - 6010 (Full List) [Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc], Mercury - 7471 - (CV)
(4) VOA - 8260A (TCL) [1,1,1-Trichloroethane, 1,1,2,2-Tetrachloroethane, 1,1,2-Trichloroethane, 1,1-Dichloroethane, 1,1-Dichloroethene, 1,2-Dichloroethane, 1,2-Dichloropropane, 2-Butanone, 2-Hexanone, 4-Methyl-2-Pentanone, Acetone, Benzene, Bromodichloromethane, Bromoform, Bromomethane, Carbon disulfide, Carbon tetrachloride, Chlorobenzene, Chloroethane, Chloroform, Chloromethane, cis-1,2-Dichloroethylene, cis-1,3-Dichloropropene, Dibromochloromethane, Ethylbenzene, Methylene chloride, Styrene, Tetrachloroethene, Toluene, trans-1,2-Dichloroethylene, [illegible]

Matrix *

[illegible]

LABORATORY SECTION — Received By: | Title: | Date/Time:

FINAL SAMPLE DISPOSITION — Disposal Method: | Disposed By: | Date/Time:

WCH-EE-011

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-116-1397 Page 3 of 4

Collector: LS

Company Contact: JOAN KESSNER Telephone No. 375-4685

Project Coordinator: KESSNER, JH

Price Code: 9K

Data Turnaround: 45 Days

Project Designation: Columbia River Component of the RCBRA - Sediment

Sampling Location: SP-7 SSD

SAF No.: RC-116

Ice Chest No.: WCH-08-013, 072, 022

Field Logbook No.: EL-1631-1

COA: BESCRC6520

Method of Shipment: FED EX

Shipped To: EBERLINE SERVICES [✓ LIONVILLE]

Offsite Property No.: N/A

Bill of Lading/Air Bill No.: 796361208296

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

0000024

Preservation	None	None	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	None
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	aG	aG	G	[illegible]
No. of Container(s)	1	1	1	1	1	1	1	1	1	1
Volume	1500g	100g	10g	10g	250g	250g	125g	250g	250g	[illegible]
SAMPLE ANALYSES	See item (1) in Special Instructions	Carbon-14	Technetium-99	See item (2) in Special Instructions	See item (3) in Special Instructions	PCBs - 8082	Pesticides 8081	Semi-VOA 8270A; TCL	See item (4) in Special Instructions	[illegible]

Sample No.	Matrix *	Sample Date	Sample Time										
J18SK4	OTHER SOLID	2-15-09	1500					X	X	X	X	X	

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab.

CHAIN OF POSSESSION Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
LS	2-16-09 / 1630	R.B.	2-16-09 / 1630
Ref. B	2/20/09 0800	D. Heidelberg	2/20/09 0800
D. Heidelberg	2/20/09 1200	Fedex 2/20/09	1200
[illegible]	2-21-09 / 1045	[illegible]	2-21-09 / 1045
[illegible]	2-23-09 / 1050	[illegible]	2-23-09 / 1050

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) {Americium-241, Antimony-125, Beryllium-7, Cerium-144, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238}
(2) Strontium-89,90 - Total Sr, Isotopic Thorium {Thorium-232}, Isotopic Uranium {Uranium-233/234, Uranium-235, Uranium-238}, Isotopic Plutonium
(3) ICP Metals - 6010 (Full List) {Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc}, Mercury - 7471 - (CV)
(4) VOA - 8260A; TCL {1,1,1-Trichloroethane, 1,1,2,2-Tetrachloroethane, 1,1,2-Trichloroethane, 1,1-Dichloroethane, 1,1-Dichloroethene, 1,2-Dichloroethane, 1,2-Dichloropropane, 2-Butanone, 2-Hexanone, 4-Methyl-2-Pentanone, Acetone, Benzene, Bromodichloromethane, Bromoform, Bromomethane, Carbon disulfide, Carbon tetrachloride, Chlorobenzene, Chloroethane, Chloroform, Chloromethane, cis-1,2-Dichloroethylene, cis-1,3-Dichloropropene, Dibromochloromethane, Ethyl Benzene, Methylene chloride, Styrene, Tetrachloroethene, Toluene, [illegible]

Matrix *
[illegible]

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-015

Washington Closure Hanford	**CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST**	**RC-116-1398**	Page 1 of 1
Collector LS	Company Contact JOAN KESSNER	Telephone No. 375 4688	Project Coordinator KESSNER, JH
Project Designation Columbia River Component of the RCBRA - Sediment	Sampling Location SP 3 SSD	SAF No. RC-116	Price Code 9K Data Turnaround 45 Days
Ice Chest No. 2001-08-013, 072, 027	Field Logbook No. EL-1631-1	COA BESTRC6520	Method of Shipment FED EX
Shipped To EBERLINE SERVICES [✓ LIONVILLE]	Offsite Property No. N/A	Bill of Lading/Air Bill No. 796361208209 6	

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

Preservation	None	None	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	None
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	aG	aG	G	-
No. of Container(s)	1	1	1	1	1	1	1	1	1	1
Volume	1500g	100g	1Kg	10g	250g	250g	125g	250g	250g	-
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Technetium-99	See item (2) in Special Instructions	See item (3) in Special Instructions	PCBs - 8082	Pesticides - 8081	Semi-VOA - 8270A (TCL)	See item (4) in Special Instructions	-

Sample No.	Matrix *	Sample Date	Sample Time										
J18KS	OTHER SOLID	2/13/09	1435					X	X	X	X	X	

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab.

CHAIN OF POSSESSION Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
[illegible]	2-19-09 1630	Rel. B	2-19-09 1640
Rel. B	2/20/09 0800	D. Hedelberg	2/20/09 0800
D. Hedelberg	2/20/09 1200	FedEx	2/20/09 1200
[illegible]	2-21-09 1045	[illegible]	2-21-09 1045
[illegible]	2-23-09 1050	[illegible]	2-23-09 1050

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) (Americium-241, Antimony-125, Beryllium-7, Cerium-144, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238)
(2) Strontium-89,90 -- Total Sr, Isotopic Thorium (Thorium-232), Isotopic Uranium (Uranium-233/234, Uranium-235, Uranium-238), Isotopic Plutonium
(3) ICP Metals - 6010 (TAL List) {Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc}; Mercury - 7471 - (CV)
(4) VOA - 8260A (TCL) {1,1,1-Trichloroethane, 1,1,2,2-Tetrachloroethane, 1,1,2-Trichloroethane, 1,1-Dichloroethane, 1,1-Dichloroethene, 1,2-Dichloroethane, 1,2-Dichloropropane, 2-Butanone, 2-Hexanone, 4-Methyl-2-Pentanone, Acetone, Benzene, Bromodichloromethane, Bromoform, Bromomethane, Carbon disulfide, Carbon tetrachloride, Chlorobenzene, Chloroethane, Chloroform, Chloromethane, cis-1,2-Dichloroethylene, cis-1,3-Dichloropropene, Dibromochloromethane, Ethylbenzene, Methylene chloride, Styrene, Tetrachloroethene, Toluene, trans-1,3-Dichloropropene

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Appendix 5

Data Validation Supporting Documentation

PCB DATA VALIDATION CHECKLIST

VALIDATION LEVEL:	A	B	[✓ C]	D	E

PROJECT	RCBRA	DATA PACKAGE:	K1544
VALIDATOR: ELR	LAB LLI	DATE	11/26/07
		SDG:	K1544

ANALYSES PERFORMED

[✓ SW-846 8081]	SW-846 8081 (TCLP)	[✓ SW-846 8082]	SW-846 8081 (TCLP)		

SAMPLES/MATRIX

J18985	J18986	J18987	J18988	J18990
J18991	J18992	J189B5	J189B6	J189B7
J189B8	J189B9	J189C0	J189C1	J189C3
J189C4	J189J5	J189K2	J189K4	J189K5
				solid

1. DATA PACKAGE COMPLETENESS AND CASE NARRATIVE

Technical verification documentation present? .... Yes [✓ No] N/A

Comments: ____________________

2. INSTRUMENT PERFORMANCE AND CALIBRATIONS (Levels D and E)

Initial calibrations acceptable? .... Yes No [✓ N/A]

Continuing calibrations acceptable? .... Yes No [✓ N/A]

Standards traceable? .... Yes No [✓ N/A]

Standards expired? .... Yes No [✓ N/A]

Calculation check acceptable? .... Yes No [✓ N/A]

DDT and endrin breakdowns acceptable? .... Yes No [✓ N/A]

Comments: ____________________

PCB DATA VALIDATION CHECKLIST

3. BLANKS (Levels B, C, D, and E)

Calibration blanks analyzed? (Levels D, E) .... Yes No [✓ N/A]

Calibration blank results acceptable? (Levels D, E) .... Yes No [✓ N/A]

Laboratory blanks analyzed? .... [✓ Yes] No N/A

Laboratory blank results acceptable? .... [✓ Yes] No N/A

Field/trip blanks analyzed? (Levels C, D, E) .... Yes [✓ No] N/A

Field/trip blank results acceptable? (Levels C, D, E) .... Yes No [✓ N/A]

Transcription/calculation errors? (Levels D, E) .... Yes No [✓ N/A]

Comments:

4. ACCURACY (Levels C, D, and E)

Surrogates analyzed? .... [✓ Yes] No N/A

Surrogate recoveries acceptable? .... [✓ Yes] No N/A

Surrogates traceable? (Levels D, E) .... Yes No [✓ N/A]

Surrogates expired? (Levels D, E) .... Yes No [✓ N/A]

MS/MSD samples analyzed? .... [✓ Yes] No N/A

MS/MSD results acceptable? .... [✓ Yes] No N/A

MS/MSD standards NIST traceable? (Levels D, E) .... Yes No [✓ N/A]

MS/MSD standards expired? (Levels D, E) .... Yes No [✓ N/A]

LCS/BSS samples analyzed? .... [✓ Yes] No N/A

LCS/BSS results acceptable? .... [✓ Yes] No N/A

Standards traceable? (Levels D, E) .... Yes No [✓ N/A]

Standards expired? (Levels D, E) .... Yes No [✓ N/A]

Transcription/calculation errors? (Levels D, E) .... Yes No [✓ N/A]

Performance audit sample(s) analyzed? .... Yes [✓ No] N/A

Performance audit sample results acceptable? .... Yes No [✓ N/A]

Comments: [illegible] No PAS

[illegible] - 120 - MS/MSD/LCS - J-ulf

~~[illegible] 522 - J-ulf~~

11/24

PCB DATA VALIDATION CHECKLIST

5. PRECISION (Levels C, D, and E)

Duplicate RPD values acceptable? [✓ Yes] No N/A

Duplicate results acceptable? [✓ Yes] No N/A

MS/MSD standards NIST traceable? (Levels D, E) Yes No [✓ N/A]

MS/MSD standards expired? (Levels D, E) Yes No [✓ N/A]

Field duplicate RPD values acceptable? Yes No [✓ N/A]

Field split RPD values acceptable? Yes No [✓ N/A]

Transcription/calculation errors? (Levels D, E) Yes No [✓ N/A]

Comments: [illegible] MS/MSD - Jul

6. SYSTEM PERFORMANCE (Levels D and E)

Chromatographic performance acceptable? Yes No [✓ N/A]

Positive results resolved acceptably? Yes No [✓ N/A]

Comments:

7. HOLDING TIMES (all levels)

Samples properly preserved? [✓ Yes] No N/A

Sample holding times acceptable? [✓ Yes] No N/A

Comments:

PCB DATA VALIDATION CHECKLIST

8. COMPOUND IDENTIFICATION, QUANTITATION, AND DETECTION LIMITS (all levels)

Compound identification acceptable? (Levels D, E) .... Yes No [✓ N/A]

Compound quantitation acceptable? (Levels D, E) .... Yes No [✓ N/A]

Results reported for all requested analyses? .... [✓ Yes] No N/A

Results supported in the raw data? (Levels D, E) .... Yes No [✓ N/A]

Samples properly prepared? (Levels D, E) .... Yes No [✓ N/A]

Detection limits meet RDL? .... [✓ Yes] [✓ No] N/A

Transcription/calculation errors? (Levels D, E) .... Yes No [✓ N/A]

Comments: [illegible]

9. SAMPLE CLEANUP (Levels D and E)

Florisil ® (or other absorbent) cleanup performed? .... Yes No [✓ N/A]

Lot check performed? .... Yes No [✓ N/A]

Check recoveries acceptable? .... Yes No [✓ N/A]

GPC cleanup performed? .... Yes No [✓ N/A]

GPC check performed? .... Yes No [✓ N/A]

GPC check recoveries acceptable? .... Yes No [✓ N/A]

GPC calibration performed? .... Yes No [✓ N/A]

GPC calibration check performed? .... Yes No [✓ N/A]

GPC calibration check retention times acceptable? .... Yes No [✓ N/A]

Check/calibration materials traceable? .... Yes No [✓ N/A]

Check/calibration materials Expired? .... Yes No [✓ N/A]

Analytical batch QC given similar cleanup? .... Yes No [✓ N/A]

Transcription/Calculation Errors? .... Yes No [✓ N/A]

Comments:

Appendix 6

Additional Documentation Requested by Client

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

WCH-Hanford, Inc 2620 Fermi Avenue Richland WA, 99354	Project: RC-116 Project Number: [none] Project Manager: Joan Kessner	Reported: 05/05/2009 08:56

Organochlorine Pesticides by SW846 8081A - Quality Control

Lionville Laboratory

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch L903028 - SW 3540C										
Blank (L903028-BLK1)				Prepared: 03/04/2009 Analyzed: 03/25/2009						
alpha-BHC	ND	0.333	ug/kg wet							U
gamma-BHC	ND	0.333	"							U
beta-BHC	ND	0.333	"							U
delta-BHC	ND	0.333	"							U
Heptachlor	ND	0.333	"							U
Aldrin	ND	0.333	"							U
Heptachlor epoxide	ND	0.333	"							U
gamma-Chlordane	ND	0.333	"							U
alpha-Chlordane	ND	0.333	"							U
Endosulfan I	ND	0.333	"							U
4,4'-DDE	ND	0.333	"							U
Dieldrin	ND	0.333	"							U
Endrin	ND	0.333	"							U
4,4'-DDD	ND	0.333	"							U
Endosulfan II	ND	0.333	"							U
4,4'-DDT	ND	0.333	"							U
Endrin aldehyde	ND	0.333	"							U
Endosulfan sulfate	ND	0.333	"							U
Methoxychlor	ND	0.333	"							U
Endrin ketone	ND	0.333	"							U
Toxaphene	ND	5.00	"							U
Surrogate: Tetrachloro-meta-xylene	*36.7*		"	*33.333*		*110*	*38-166*			
Surrogate: Decachlorobiphenyl	*38.4*		"	*33.333*		*115*	*47-153*			
LCS (L903028-BS1)				Prepared: 03/04/2009 Analyzed: 03/25/2009						
alpha-BHC	38.8	0.333	ug/kg wet	33.333		116	61-142			
gamma-BHC	39.8	0.333	"	33.333		119	65-145			
beta-BHC	39.9	0.333	"	33.333		120	71-134			
delta-BHC	29.1	0.333	"	33.333		87.2	53-144			
Heptachlor	35.2	0.333	"	33.333		106	70-138			
Aldrin	38.9	0.333	"	33.333		117	70-143			
Heptachlor epoxide	40.6	0.333	"	33.333		122	72-140			
gamma-Chlordane	38.2	0.333	"	33.333		115	74-140			
alpha-Chlordane	37.2	0.333	"	33.333		112	74-138			
Endosulfan I	35.0	0.333	"	33.333		105	81-141			
4,4'-DDE	44.3	0.333	"	33.333		133	82-145			
Dieldrin	41.6	0.333	"	33.333		125	70-144			
Endrin	47.1	0.333	"	33.333		142	73-167			
4,4'-DDD	35.6	0.333	"	33.333		107	77-148			
Endosulfan II	33.8	0.333	"	33.333		101	80-140			
4,4'-DDT	39.6	0.333	"	33.333		119	82-142			
Endrin aldehyde	36.5	0.333	"	33.333		110	59-151			
Endosulfan sulfate	36.7	0.333	"	33.333		108	77-135			
Methoxychlor	42.6	0.333	"	33.333		128	75-136			

Organochlorine Pesticides by SW846 8081A - Quality Control

Lionville Laboratory

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch L903028 - SW 3540C										
LCS (L903028-BS1)				Prepared: 03/04/2009 Analyzed: 03/25/2009						
Endrin ketone	38.5	0.333	ug/kg wet	33.333		116	83-114			
Surrogate: Tetrachloro-meta-xylene	*41.8*		"	*33.333*		*125*	*28-166*			
Surrogate: Decachlorobiphenyl	*36.2*		"	*33.333*		*108*	*37-151*			
Matrix Spike (L903028-MS1)		**Source: 0902067-05**		Prepared: 03/04/2009 Analyzed: 03/25/2009						
alpha-BHC	38.5	1.33	ug/kg wet	33.333	ND	116	61-142			D
gamma-BHC	39.0	1.33	"	33.333	ND	117	65-142			D
beta-BHC	45.2	1.33	"	33.333	ND	* 136	71-134			D
delta-BHC	20.5	1.33	"	33.333	ND	61.5	53-141			D
Heptachlor	41.8	1.33	"	33.333	ND	126	70-138			D
Aldrin	41.7	1.33	"	33.333	ND	125	70-143			D
Heptachlor epoxide	41.9	1.33	"	33.333	ND	126	72-140			D
gamma-Chlordane	45.1	1.33	"	33.333	ND	135	74-140			D
alpha-Chlordane	45.4	1.33	"	33.333	ND	136	74-138			D
Endosulfan I	42.9	1.33	"	33.333	ND	129	81-141			D
4,4'-DDE	48.3	1.33	"	33.333	ND	145	82-145			D
Dieldrin	44.3	1.33	"	33.333	ND	133	79-144			D
Endrin	49.4	1.33	"	33.333	ND	* 148	73-147			D
4,4'-DDD	41.4	1.33	"	33.333	ND	124	77-148			D
Endosulfan II	40.5	1.33	"	33.333	ND	121	80-140			D
4,4'-DDT	38.7	1.33	"	33.333	ND	117	82-142			D
Endrin aldehyde	32.5	1.33	"	33.333	ND	97.4	59-133			D
Endosulfan sulfate	38.8	1.33	"	33.333	ND	116	77-135			D
Methoxychlor	49.0	1.33	"	33.333	ND	* 147	77-136			D
Endrin ketone	44.1	1.33	"	33.333	ND	132	85-134			D
Surrogate: Tetrachloro-meta-xylene	*41.8*		"	*33.333*		*125*	*28-166*			
Surrogate: Decachlorobiphenyl	*43.7*		"	*33.333*		*131*	*37-151*			

Organochlorine Pesticides by SW846 8081A - Quality Control

Lionville Laboratory

Batch L903028 - SW 3540C

Matrix Spike Dup (L903028-MSD3) Source: 0902067-05 Prepared 03/04/2009 Analyzed 03/27/2009

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
alpha-BHC	36.9	1.33	ug/kg wet	33.333	ND	111	61-142	1.24	40	D
gamma-BHC	35.6	1.33	"	33.333	ND	107	65-142	9.02	40	D
beta-BHC	41.2	1.33	"	33.333	ND	124	71-134	9.10	40	D
delta-BHC	21.4	1.33	"	33.333	ND	64.3	51-144	4.45	40	D
Heptachlor	40.7	1.33	"	33.333	ND	122	70-138	2.06	40	D
Aldrin	36.8	1.33	"	33.333	ND	110	70-133	12.4	40	D
Heptachlor epoxide	38.1	1.33	"	33.333	ND	114	72-140	9.41	40	D
gamma-Chlordane	41.3	1.33	"	33.333	ND	124	74-140	8.95	40	D
alpha-Chlordane	41.3	1.33	"	33.333	ND	124	74-138	9.47	40	D
Endosulfan I	39.3	1.33	"	33.333	ND	118	81-141	8.75	40	D
4,4'-DDE	37.3	1.33	"	33.333	ND	112	82-145	9.46	40	D
Dieldrin	40.3	1.33	"	33.333	ND	121	79-144	9.46	40	D
Endrin	45.0	1.33	"	33.333	ND	135	73-147	9.52	40	D
4,4'-DDD	37.7	1.33	"	33.333	ND	113	77-148	9.57	40	D
Endosulfan II	37.3	1.33	"	33.333	ND	112	80-140	8.71	40	D
4,4'-DDT	40.8	1.33	"	33.333	ND	122	82-142	11.3	40	D
Endrin aldehyde	29.7	1.33	"	33.333	ND	89.0	50-133	9.01	40	D
Endosulfan sulfate	34.3	1.33	"	33.333	ND	103	77-135	11.7	40	D
Methoxychlor	45.2	1.33	"	33.333	ND	136	77-136	8.14	40	D
Endrin ketone	40.2	1.33	"	33.333	ND	121	85-134	9.25	40	D
Surrogate: Tetrachloro-meta-xylene	*39.7*		"	*33.333*		*119*	*38-166*			
Surrogate: Decachlorobiphenyl	*38.1*		"	*33.333*		*114*	*37-151*			

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

WC-Hanford, Inc 2620 Fermi Avenue Richland WA, 99354	Project: RC-116 Project Number: [none] Project Manager: Joan Kessner	**Reported:** 05/01/2009 11:33

Polychlorinated Biphenyls by SW846 8082 - Quality Control

Lionville Laboratory

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch L903028 - SW 3540C										
Blank (L903028-BLK2)				Prepared: 03/04/2009 Analyzed: 03/16/2009						
Aroclor 1016	ND	13.3	ug/kg wet							U
Aroclor 1260	ND	13.3	"							U
Surrogate: Decachlorobiphenyl	*30.8*		"	*33.333*		*92*	*43-144*			
Surrogate: Tetrachloro-meta-xylene	*29.3*		"	*33.333*		*88*	*52-141*			
LCS (L903028-BS2)				Prepared: 03/04/2009 Analyzed: 03/16/2009						
Aroclor 1016	126	13.3	ug/kg wet	166.67		76	50-138			
Aroclor 1260	134	13.3	"	166.67		80	50-148			
Surrogate: Decachlorobiphenyl	*29.6*		"	*33.333*		*89*	*43-144*			
Surrogate: Tetrachloro-meta-xylene	*28.8*		"	*33.333*		*86*	*52-141*			
Matrix Spike (L903028-MS2)	**Source: 0902067-05**			Prepared: 03/04/2009 Analyzed: 03/16/2009						
Aroclor 1016	124	13.3	ug/kg wet	166.67	ND	74	50-138			
Aroclor 1260	130	13.3	"	166.67	ND	78	50-148			
Surrogate: Decachlorobiphenyl	*30.4*		"	*33.333*		*91*	*43-144*			
Surrogate: Tetrachloro-meta-xylene	*27.3*		"	*33.333*		*82*	*52-141*			
Matrix Spike Dup (L903028-MSD2)	**Source: 0902067-05**			Prepared: 03/04/2009 Analyzed: 03/16/2009						
Aroclor 1016	128	13.3	ug/kg wet	166.67	ND	77	50-138	3	40	
Aroclor 1260	148	13.3	"	166.67	ND	89	50-148	13	40	
Surrogate: Decachlorobiphenyl	*34.0*		"	*33.333*		*102*	*43-144*			
Surrogate: Tetrachloro-meta-xylene	*32.0*		"	*33.333*		*96*	*52-141*			

F.2 GROUNDWATER UPWELLING DATA VALIDATION

F.2.1 Pore Water

F.2.1.1 SDG J00565

SAF-RC-114
Columbia River Component of the RCBRA – Pore Water – Phase II
FINAL VALIDATION PACKAGE

COMPLETE COPY OF VALIDATION PACKAGE TO:

Kathy Wendt H4-21 KW 10/13/09
INITIAL/DATE

COMMENTS:

SDG J00565 **SAF-RC-114**

Date: 12 October 2009
To: Washington Closure Hanford Inc. (technical representative)
From: ELR Consulting
Project: Columbia River Component of the RCBRA – Pore Water – Phase II
Subject: Wet Chemistry - Data Package No. J00565-TAL

INTRODUCTION

This memo presents the results of data validation on Data Package No. J00565 prepared by TestAmerica Laboratory Inc. (TAL). A list of samples validated along with the analyses reported and the method of analysis is provided in the following table.

Sample ID	Sample Date	Media	Validation	Analyte
J19512	8/30/09	Water	C	See note 1
J19514	8/30/09	Water	C	See note 1
J19518	8/30/09	Water	C	See note 1

1 = Chromium VI by 7196A.

Data validation was conducted in accordance with the Washington Closure Hanford (WCH) validation statement of work and the Remedial Investigation Work Plan for Hanford Site Releases to the Columbia River (DOE/RL-2008-11, Rev. 0, September 2008). Appendices 1 through 6 provide the following information as indicated below:

Appendix 1. Glossary of Data Reporting Qualifiers
Appendix 2. Summary of Data Qualification
Appendix 3. Annotated Laboratory Reports
Appendix 4. Laboratory Narrative and Chain-of-Custody Documentation
Appendix 5. Data Validation Supporting Documentation
Appendix 6. Additional Documentation Requested by Client

DATA QUALITY PARAMETERS

- **Holding Times**

Analytical holding times for metals are assessed to ascertain whether the holding time requirements were met by the laboratory. The holding time requirements are as follows: Soil samples must be analyzed within 24 hours for chromium VI.

If holding times are exceeded, but not by greater than two times the limit, all associated sample results are qualified as estimates and flagged "J" for detects and "UJ" for non-detects. If holding times are exceeded by greater than two times the limit, all associated detectable sample results are qualified as estimates and flagged "J" and all non-detects are rejected and flagged "UR".

All holding times were acceptable.

- **Method Blanks**

Method Blanks

Method blank analyses are performed to determine the extent of laboratory contamination introduced through sampling, sample preparation and analysis. At least one acceptable method blank analysis must be conducted for every 20 samples. No contaminants should be present in the method blank All blank results must fall below the contract required detection limit (CRQL) to be acceptable.

All method blank results were acceptable.

Field (Equipment) Blank

No field blanks were submitted for analysis.

- **Accuracy**

Matrix Spike and Laboratory Control Sample

Matrix spike (MS) and laboratory control sample (LCS) analyses are used to assess the analytical accuracy of the reported data. The matrix spike is used to assess the effect of the matrix on the ability to accurately quantify sample concentrations. Recoveries must fall within the range of 65% to 135%. Samples with a recovery of less than 30% and a sample result below the IDL are rejected and flagged "UR". Samples with a recovery of 30% to 69% and a sample result less than the IDL are qualified "UJ". Samples with a recovery of greater than 130% or less than 70% and a sample result greater than the IDL are qualified as estimates and flagged "J". Finally, for samples with a recovery greater than 130% and a sample result less than the IDL, no qualification is required.

All accuracy results were acceptable.

Precision

Laboratory Duplicate Samples

Analytical precision is expressed by the relative percent differences (RPD) between the recoveries of matrix spike duplicate (MSD) analyses performed on a sample in the analytical batch. Precision may alternatively be assessed using unspiked duplicate analyses performed on a sample in the analytical batch. If both sample and replicate activities (concentrations) are greater than five times the CRDL and the RPD is less than 35%, no qualification is required. If either activity (concentration) is less than five times the CRDL, the RPD control limit is less than or equal to two times the CRDL. If the RPD is outside the applicable control limit, associated results are qualified as estimated detects or estimated non-detects.

All laboratory duplicate results were acceptable.

Field Duplicate

No field duplicates were submitted for analysis.

- **Analytical Detection Levels**

Reported analytical detection levels are compared against the required quantitation limits (RQLs) to ensure that laboratory detection levels meet the required criteria All analytes met the RQL.

- **Completeness**

Data package J00565 was submitted for validation and verified for completeness. Completeness is based on the percentage of data determined to be valid (i.e., not rejected). The completion percentage was 100%.

MAJOR DEFICIENCIES

None found.

MINOR DEFICIENCIES

None found.

REFERENCES

Washington Closure Hanford Contract #S00W307A00 (March 2008). *Data Validation Services.*

DOE/RL-2008-11, Rev.0, *Remedial Investigation Work Plan for Hanford Site Releases to the Columbia River*, September 2008.

Appendix 1

Glossary of Data Reporting Qualifiers

Qualifiers which may be applied by data validators in compliance with WCH validation SOW are as follows:

U - Indicates the compound or analyte was analyzed for and not detected in the sample. The value reported is the sample quantitation limit corrected for sample dilution and moisture content by the laboratory.

UJ - Indicates the compound or analyte was analyzed for and not detected in the sample. Due to a minor QC deficiency identified during the data validation, the associated quantitation limit is an estimate.

J - Indicates the compound or analyte was analyzed for and detected. Due to a minor QC deficiency identified during the data validation, the associated concentration is an estimate, but the data are usable for decision-making purposes.

BJ - Applied to inorganic analyses only. Indicates the analyte concentration was greater than the IDL but less than the CRDL and is considered an estimated value.

R - Indicates the compound or analyte was analyzed for, detected, and due to an identified major QC deficiency, the data are unusable.

UR - Indicates the compound or analyte was analyzed for and not detected in the sample. Additionally, the data is unusable due to an identified major QC deficiency.

NJ - Indicates presumptive evidence of a compound at an estimated value. The data may not be valid for some specific applications (i.e., usable for decision-making purposes).

N - Indicates presumptive evidence of a compound. The data may not be valid for some specific applications (i.e., usable for decision-making purposes).

Appendix 2

Summary of Data Qualification

WET CHEMISTRY DATA QUALIFICATION SUMMARY*

SDG: J00565	**REVIEWER:** **ELR**	**Project:** **RCBRA**	**PAGE 1 OF 1**
COMMENTS: No qualifiers assigned			

* - The Qualified Data Summary Table includes laboratory applied "U" qualifiers not specifically identified here. The laboratory applied "U" qualifiers are included to minimize misinterpretation of results contained in the table.

Appendix 3

Annotated Laboratory Reports

Sample Results Summary

TestAmerica TARL

Ordered by Method, Batch No., Client Sample ID.

Date: 28-Sep-09

Report No. : 42357

SDG No: J00585

Batch	Client Id Work Order	Parameter	Result +- Uncertainty (2σ)	Qual	Units	Tracer Yield	MDC or MDA	CRDL	RPD
9243464 7196_CR6									
	J19612								
	LJ3XL1AA	HEXCHROME	1.60E-02 +- 0.0E+00		mg/L	N/A	3.70E-03	3.50E-01	
	J19614								
	LJ3XX1AA	HEXCHROME	2.60E-02 +- 0.0E+00		mg/L	N/A	3.70E-03	3.50E-01	
	J19616								
	LJ3X61AA	HEXCHROME	2.60E-02 +- 0.0E+00		mg/L	N/A	3.70E-03	3.50E-01	
	LJ3X61AE	HEXCHROME	2.70E-02 +- 0.0E+00		mg/L	N/A	3.70E-03	3.50E-01	3.8

No. of Results: 4

10/9/09

TestAmerica RPD - Relative Percent Difference.

rptSTLRchSaSummary2 V5.2.4
A2002

000009

Appendix 4

Laboratory Narrative and Chain-of-Custody Documentation

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

Certificate of Analysis

Washington Hanford Closure
2620 Fermi Avenue
Richland, WA 99354

September 14, 2009

Attention: John Kessner

SAP Number : RC-114
Date SDG Closed : August 31, 2009
Number of Samples : Three (3)
Sample Type : Water
SDG Number : J00565
Data Deliverable : 15-Day / Summary

CASE NARRATIVE

I. Introduction

On August 31, 2009 three water samples were received at TestAmerica for chemistry analysis. Upon receipt, the sample was assigned the following laboratory ID number to correspond with the Washington Closure Hanford (WCH) specific ID:

WCH ID#	TARL ID#	MATRIX	DATE OF RECEIPT
J19514	LJ3XX	WATER	8/31/09
J19512	LJ3X1	WATER	8/31/09
J19518	LJ3X8	WATER	8/31/09

II. Sample Receipt

The sample was received in good condition. There was approximately 150ml of water received for sample J19512 and approximately 100ml of water received for sample J19514. The client was notified by email on 9/1/09. The turn around time was changed from 7 days to 15 days per clients instructions on 8/31/09 phone call. No other anomalies were noted during check-in.

III. Analytical Results/Methodology

The analytical results for this report are presented by laboratory sample ID. Each set of data includes sample identification information, analytical results and the appropriate associated statistical errors.

The requested analyses were:

Chemical Analysis
Hexavalent Chromium by EPA method 7196A

IV. Quality Control

The analytical results for each analysis performed includes a minimum of one laboratory control sample (LCS), one method (reagent) blank, and one duplicate sample analysis. Any exceptions have been noted in the "Comments" section.

QC and sample results are reported in the same units.

V. Comments

Chemical Analysis
Hexavalent Chromium by EPA method 7196A:
The LCS, batch blank, sample, sample duplicate (J19518), sample matrix spike (J19518) and sample matrix spike duplicate (J19518) results are within contractual requirements.

I certify that this Certificate of Analysis is in compliance with the SOW, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hard copy data package has been authorized by the Laboratory Manager, or a designee as verified by the following signature

Reviewed and approved:

Sandra Seger

Sandra Seger
Project Manager

TESTAMERICA

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-114-156	Page 1 of 1

Collector R. Curet	Company Contact JOAN KESSNER	Telephone No. 373-[illegible]	Project Coordinator KESSNER, JH
Project Designation Columbia River Component of the RCBRA - Pore Water - Pb	Sampling Location 100BC- J100BC47		SAF No. RC-114
Ice Chest No.	Field Logbook No. EL-1641	COA BESCRO6320	Method of Shipment GROUND TRANSPORT
Shipped To TestAmerica Incorporated, Richland	Offsite Property No. N/A		Bill of Lading/Air Bill No. N/A

Price Code 7K

Data Turnaround 15 ~~7~~ Days

SCS 9/1/09

POSSIBLE SAMPLE HAZARDS/REMARKS

radioactive near or below background levels

Special Handling and/or Storage

N/A

Preservation	Cool 4C
Type of Container	G/P
No. of Container(s)	1
Volume	500mL
SAMPLE ANALYSIS	Chromium Hex - 7196

000013

LJ3XX

Sample No.	Matrix *	Sample Date	Sample Time	
J18514	WATER	08-30-09	1739	X

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
R. Curet R. Curet	08-30-09 1941	EAS REF E R. Curet R. Curet	08-30-09 1941
EAS LOCKED STORAGE E	8-31-09 0815	BRETT TILLER	8-31-09 0815
BRETT TILLER	8-31-09 0840	8/31/09	840

SPECIAL INSTRUCTIONS

Sampler unavailable to remove samples from controlled storage. Shipper retrieved samples from storage location taking custody of samples for shipment to lab.

15 SCS 9/1/09

Due 9/17/09

J9H310110

J005LES

Matrix *

S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By Angel Garcia	Title Samp Rec Tech	Date/Time 08/31/09 840 am
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

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AMENDED REPORT

TESTAMERICA

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-114-154

Page 1 of 1

Collector R. Cuzzt	Company Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator KESSNER, JH
Project Designation Columbia River Component of the RCBRA - Pore Water - Ph	Sampling Location 100BC- J100BC19		SAF No. RC-114
Ice Chest No.	Field Logbook No. EL-1641	COA HESCRC8320	Method of Shipment GROUND TRANSPORT
Shipped To TestAmerica Incorporated, Richland	Offsite Property No. N/A		Bill of Lading/Air Bill No. N/A

Price Code 7K

Data Turnaround
15 ~~7~~ Days
5k3 9/1/09

POSSIBLE SAMPLE HAZARDS/REMARKS
radioactive near or below background levels

Special Handling and/or Storage
N/A

000014

Preservation	Cool 4C
Type of Container	G/P
No. of Container(s)	1
Volume	500mL
SAMPLE ANALYSIS	Gamma [illegible] - 2194

18

Sample No.	Matrix *	Sample Date	Sample Time	
J19612	WATER	08-30-09	1420	X

LB3X4-1AA

CHAIN OF POSSESSION	Date/Time	Sign/Print Names	Date/Time
Relinquished By/Removed From R. Cuzzt R. Cuzzt	08-30-09 1940	Received By/Stored In EAS REC F R. Cuzzt R. Cuzzt	08-30-09 1940
Relinquished By/Removed From EAS LOCKED STORAGE	8-31-09 0815	Received By/Stored In BRETT TILLER	8-31-09 0815
Relinquished By/Removed From BRETT TILLER	8-31-09 840	Received By/Stored In	8/31/09 840
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time

SPECIAL INSTRUCTIONS
Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab.

Due 9/~~4~~/09 13 5k3 9/1/09
J9H310140
J00565.

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title Samp Rec Tech	Date/Time 8/31/09 840 Am
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

AMENDED REPORT

TESTAMERICA

000015

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AMENDED REPORT

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

Washington Closure Hanford		RC-114-160	Page 1 of 1
Collector Kevin Cranna	Company Contact JOAN KESSNER Telephone No. 375-4688	Project Coordinator KESSNER, JH	Price Code 7K Data Turnaround 15 ~~7~~ Days
Project Designation Columbia River Component of the RCBRA - Pore Water - Ph	Sampling Location 100BC- T100BC6J10	SAF No. RC-114	
Ice Chest No.	Field Logbook No. EL 1639 COA BESCRC6520	Method of Shipment GROUND TRANSPORT	SES91109
Shipped To TestAmerica Incorporated, Richland	Offsite Property No. N/A	Bill of Lading/Air Bill No. N/A	

POSSIBLE SAMPLE HAZARDS/REMARKS

radioactive near or below background levels

Special Handling and/or Storage

N/A

Preservation	Cool 4C
Type of Container	GP
No. of Container(s)	1
Volume	500mL
SAMPLE ANALYSIS	Chromium Hex - 7196

LJ3X8

Sample No.	Matrix *	Sample Date	Sample Time	Chromium Hex - 7196
J19518	WATER	8/10/09	1710	X

CHAIN OF POSSESSION

Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Kevin Cranna	8/10/09 1950	EAS Locked [illegible]	8/10/09 1950
EAS LOCKED STORAGE	8-31-09	BRETT TILLER	8/31/09
BRETT TILLER	8-31-09 8:10	[illegible]	8/31/09 810

SPECIAL INSTRUCTIONS

Sampler unavailable to remove samples from controlled storage. Shipper removes samples from storage location taking custody of samples for shipment to lab.

5 SES91109

Due 9/7/09

J9H310140

J00BLES

Matrix *

S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title Samp Rec Tech	Date/Time 08/31/09 8:49am
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Appendix 5

Data Validation Supporting Documentation

GENERAL CHEMISTRY ANALYSIS DATA VALIDATION CHECKLIST

VALIDATION LEVEL	A	B	[✓ C]	D	E

PROJECT: RCBRA	DATA PACKAGE: J00545
VALIDATOR: ELR	LAB: TAL
	DATE: 10/9/06
	SDG: J00545

ANALYSES PERFORMED

Anions/IC	TOC	TOX	~~TPH-418.1~~	Oil and Grease	Alkalinity
Ammonia	BOD/COD	Chloride	[✓ Chromium-VI]	pH	NO_3/NO_2
Sulfate	TDS	TKN	Phosphate		

SAMPLES/MATRIX

J19512 J19514 J17518

water

1. DATA PACKAGE COMPLETENESS AND CASE NARRATIVE

Technical verification documentation present? .... Yes [✓ No] N/A

Comments:

2. INSTRUMENT PERFORMANCE AND CALIBRATIONS (Levels D and E)

Initial calibrations performed on all instruments? .... Yes No [✓ N/A]

Initial calibrations acceptable? .... Yes No [✓ N/A]

ICV and CCV checks performed on all instruments? .... Yes No [✓ N/A]

ICV and CCV checks acceptable? .... Yes No [✓ N/A]

Standards traceable? .... Yes No [✓ N/A]

Standards expired? .... Yes No [✓ N/A]

Calculation check acceptable? .... Yes No [✓ N/A]

Comments:

GENERAL CHEMISTRY ANALYSIS DATA VALIDATION CHECKLIST

3. BLANKS (Levels B, C, D, and E)

ICB and CCB checks performed for all applicable analyses? (Levels D, E)........ Yes No [✓ N/A]

ICB and CCB results acceptable? (Levels D, E)........ Yes No [✓ N/A]

Laboratory blanks analyzed?........ [✓ Yes] No N/A

Laboratory blank results acceptable?........ [✓ Yes] No N/A

Field blanks analyzed? (Levels C, D, E)........ Yes [✓ No] N/A

Field blank results acceptable? (Levels C, D, E)........ Yes No [✓ N/A]

Transcription/calculation errors? (Levels D, E)........ Yes No [✓ N/A]

Comments: NO FB

4. ACCURACY (Levels C, D, and E)

Spike samples analyzed?........ [✓ Yes] No N/A

Spike recoveries acceptable?........ [✓ Yes] No N/A

Sike standards NIST traceable? (Levels D, E)........ Yes No [✓ N/A]

Spike standards expired? (Levels D, E)........ Yes No [✓ N/A]

LCS/BSS samples analyzed?........ [✓ Yes] No N/A

LCS/BSS results acceptable?........ [✓ Yes] No N/A

Standards traceable? (Levels D, E)........ Yes No [✓ N/A]

Standards expired? (Levels D, E)........ Yes No [✓ N/A]

Transcription/calculation errors? (Levels D, E)........ Yes No [✓ N/A]

Performance audit sample(s) analyzed?........ Yes [✓ No] N/A

Performance audit sample results acceptable?........ Yes No [✓ N/A]

Comments: no PAS

GENERAL CHEMISTRY ANALYSIS DATA VALIDATION CHECKLIST

5. PRECISION (Levels C, D, and E)

Duplicate RPD values acceptable? .... [✓ Yes] No N/A
Duplicate results acceptable? .... [✓ Yes] No N/A
MS/MSD standards NIST traceable? (Levels D, E) .... Yes No [✓ N/A]
MS/MSD standards expired? (Levels D, E) .... Yes No [✓ N/A]
Field duplicate RPD values acceptable? .... Yes No [✓ N/A]
Field split RPD values acceptable? .... Yes No [✓ N/A]
Transcription/calculation errors? (Levels D, E) .... Yes No [✓ N/A]
Comments:

6. HOLDING TIMES (all levels)

Samples properly preserved? .... [✓ Yes] No N/A
Sample holding times acceptable? .... [✓ Yes] No N/A
Comments:

GENERAL CHEMISTRY ANALYSIS DATA VALIDATION CHECKLIST

7. RESULT QUANTITATION AND DETECTION LIMITS (all levels)

Results reported for all requested analyses? .... [✓ Yes] No N/A

Results supported in the raw data? (Levels D, E) .... Yes No [✓ N/A]

Samples properly prepared? (Levels D, E) .... Yes No [✓ N/A]

Detection limits meet RDL? .... [✓ Yes] No N/A

Transcription/calculation errors? (Levels D, E) .... Yes No [✓ N/A]

Comments:

Appendix 6

Additional Documentation Requested by Client

QC Results Summary

TestAmerica TARL

Ordered by Method, Batch No, QC Type,.

Report No. : 42357 **SDG No.: J00565**

Batch Work Order	Parameter	Result +- Uncertainty (2s)	Qual	Units	Tracer Yield	LCS Recovery	Bias	MDC|MDA
7196_CR6								
9243464 MATRIX SPIKE, J19510								
LJ3X81AC	HEXCHROME	2.67E-01 +- 0.0E+00		mg/L	N/A	102%	0.0	3.70E-03
LJ3X81AD	HEXCHROME	2.72E-01 +- 0.0E+00		mg/L	N/A	103%	0.0	3.70E-03
9243464 LCS,								
LJ4FT1AC	HEXCHROME	4.89E-01 +- 0.0E+00		mg/L	N/A	100%	0.0	3.70E-03
9243464 BLANK QC,								
LJ4FT1AA	HEXCHROME	3.70E-03 +- 0.0E+00	U	mg/L	N/A			3.70E-03

No. of Results: 4

Bias - (Result/Expected)-1 as defined by ANSI N13.30.

U Qual - Analyzed for but not detected above limiting criteria. Limit criteria is less than the Mdc/Min or Total Uncert or not identified by gamma scan software.

F.2.1.2 SDG J00585

SAF-RC-114
Columbia River Component of the RCBRA – Pore Water – Phase II
FINAL VALIDATION PACKAGE

COMPLETE COPY OF VALIDATION PACKAGE TO:

Kathy Wendt H4-21 KW 10/12/09
INITIAL/DATE

COMMENTS:

SDG J00585 SAF-RC-114

Date: 12 October 2009
To: Washington Closure Hanford Inc. (technical representative)
From: ELR Consulting
Project: Columbia River Component of the RCBRA – Pore Water – Phase II
Subject: Radiochemistry - Data Package No. J00585-TAL

INTRODUCTION

This memo presents the results of data validation on Data Package No. J00585 prepared by TestAmerica Laboratory Inc. (TAL). A list of samples validated along with the analyses reported and the method of analysis is provided in the following table.

Sample ID	Sample Date	Media	Validation	Analyte
J193H8	9/9/09	Water	C	See note 1
J193H9	9/9/09	Water	C	See note 1
J19588	9/8/09	Water	C	See note 1
J19592	9/8/09	Water	C	See note 1
J19595	9/8/09	Water	C	See note 1
J19596	9/17/09	Water	C	See note 1
J19597	9/20/09	Water	C	See note 1
J19598	9/17/09	Water	C	See note 1
J19599	9/20/09	Water	C	See note 1

1 – Total uranium.

Data validation was conducted in accordance with the Washington Closure Hanford (WCH) validation statement of work and the Remedial Investigation Work Plan for Hanford Site Releases to the Columbia River (DOE/RL-2008-11, Rev. 0, September 2008). Appendices 1 through 6 provide the following information as indicated below:

Appendix 1. Glossary of Data Reporting Qualifiers
Appendix 2 Summary of Data Qualification
Appendix 3. Annotated Laboratory Reports
Appendix 4. Laboratory Narrative and Chain-of-Custody Documentation
Appendix 5. Data Validation Supporting Documentation
Appendix 6. Additional Data Requested by Client

DATA QUALITY PARAMETERS

- **Holding Times**

Holding times are calculated from Chain-of-Custody forms to determine the validity of the results. The maximum holding time for radiochemical analysis is 6 months.

All holding times were acceptable.

- **Preparation (Method) Blanks**

Laboratory Blanks

Blank samples are analyzed to determine if positive results are due to laboratory reagent, sample container, or detector contamination. If blank analysis results indicate the presence of an analyte above the minimum detectable activity (MDA), the following qualifiers are applied: All positive sample results less than five times the highest blank concentration are qualified as estimates and flagged "J"; sample results below the MDA are qualified as undetected and flagged "U"; sample results above the MDA and greater than five times the highest blank concentration are not qualified.

All laboratory blank results were acceptable.

Field (Equipment) Blank

No equipment blanks were submitted for analysis.

- **Accuracy**

Accuracy is evaluated from laboratory control sample (LCS) or blank spike sample (BSS) batch samples and spiked samples from the analytical batch. Measured activities are compared to the known added amounts. The acceptable LCS or BSS and matrix spike (MS) recovery range is 65-135%. In addition, samples may be spiked with a radiochemical tracer to assist in isolating the radioisotope of interest with the yield of the tracer being used in calculating sample activity. The acceptable range for tracer recovery is 20% to 105%. Spike sample results outside the above ranges result in associated sample results being qualified as estimates, or not qualified, depending on the activity of the individual sample. Results are rejected for LCS/BSS recoveries of less than 30% and tracer recoveries of less than 20%, and tracer recoveries of greater than 115% for detected results.

All accuracy results were acceptable.

- **Laboratory Duplicates**

Analytical precision is expressed by the relative percent differences (RPD) between the recoveries of duplicate matrix spike analyses performed on a sample in the analytical batch. Precision may alternatively be assessed using unspiked duplicate analyses performed on a sample in the analytical batch. If both sample and replicate activities (concentrations) are greater than five times the contract required detection limit (CRDL) and the RPD is less than 35%, no qualification is required. If either activity (concentration) is less than five times the CRDL, the RPD control limit is less than or equal to two times the CRDL. If the RPD is outside the applicable control limit, associated results are qualified as estimated detects or estimated non-detects.

All duplicate results were acceptable.

Field Duplicates

No field duplicates were submitted for analysis.

- **Detection Levels**

Reported analytical detection levels for undetected analytes are compared against the project RQLs to ensure that laboratory detection levels meet the required criteria. No RQLs were specified.

- **Completeness**

Data package No. J00585 was submitted for validation and verified for completeness Completeness is based on the percentage of data determined to be valid (i.e., not rejected). The completion percentage was 100%.

MAJOR DEFICIENCIES

None found.

MINOR DEFICIENCIES

None found.

REFERENCES

Washington Closure Hanford Contract #S00W307A00 (March 2008), *Data Validation Services*.

DOE/RL-2008-11, Rev.0, *Remedial Investigation Work Plan for Hanford Site Releases to the Columbia River*, September 2008.

Appendix 1

Glossary of Data Reporting Qualifiers

Qualifiers which may be applied by data validators in compliance with the WCH statement of work are as follows:

U - Indicates the compound or analyte was analyzed for and not detected above the minimum detectable activity (MDA) in the sample. The value reported is the sample result corrected for sample dilution and moisture content by the laboratory. The data is usable for decision making purposes.

UJ - Indicates the compound or analyte was analyzed for and not detected at concentrations above the minimum detectable activity (MDA) in the sample. Due to a minor QC deficiency identified during the data validation, the associated quantitation limit is an estimate, but is usable for decision making purposes.

J - Indicates the compound or analyte was analyzed for and detected. Due to a minor QC deficiency identified during the data validation, the associated concentration is an estimate, but the data are usable for decision-making purposes.

R - Indicates the compound or analyte was analyzed for, detected, and due to an identified major QC deficiency, the data are unusable.

UR - Indicates the compound or analyte was analyzed for and not detected in the sample. Additionally, the data is unusable due to an identified major QC deficiency.

Appendix 2

Summary of Data Qualification

RADIOCHEMISTRY DATA QUALIFICATION SUMMARY*

SDG: J00685	**REVIEWER:** **ELR**	**Project:** **RCBRA**	**PAGE 1 OF 1**
COMMENTS: No qualifiers assigned			

* - The Qualified Data Summary Table includes laboratory applied "U" qualifiers not specifically identified here. The laboratory applied "U" qualifiers are included to minimize misinterpretation of results contained in the table.

Appendix 3

Annotated Laboratory Reports

Sample Results Summary

Date: 30-Sep-09

TestAmerica TARL

Ordered by Method, Batch No., Client Sample ID.

Report No. : 42473

SDG No: J00586

Batch	Client Id Work Order	Parameter	Result +- Uncertainty (2σ)	Qual	Units	Tracer Yield	MDC or MDA	CRDL	RPD
#281478 UTOT_KPA									
	J193H8								
	LLE441AA	TOTAL-URANIUM	6.06E-04 +- 6.8E-05		mg/L		8.38E-06	1.40E-01	
	J193H8 DUP								
	LLE441AC	TOTAL-URANIUM	5.46E-04 +- 6.6E-05		mg/l		8.38E-06	1.40E-01	
	J193H9								
	LLE5F1AA	TOTAL-URANIUM	2.06E-03 +- 3.1E-04		mg/L		8.38E-06	1.40E-01	
	J19588								
	LLE5P1AA	TOTAL-URANIUM	2.68E-02 +- 3.2E-03		mg/L		8.38E-06	1.40E-01	
	J19592								
	LLE541AA	TOTAL-URANIUM	1.35E-03 +- 1.4E-04		mg/L		8.38E-06	1.40E-01	
	J19595								
	LLE6E1AA	TOTAL-URANIUM	5.71E-04 +- 5.8E-05		mg/L		8.38E-06	1.40E-01	
	J19596								
	LLE6Q1AA	TOTAL-URANIUM	4.35E-03 +- 4.5E-04		mg/L		8.38E-06	1.40E-01	
	J19597								
	LLE621AA	TOTAL-URANIUM	2.83E-04 +- 3.0E-05		mg/L		8.38E-06	1.40E-01	
	J19598								
	LLE651AA	TOTAL-URANIUM	1.45E-04 +- 1.5E-05		mg/L		8.38E-06	1.40E-01	
	J19599								
	LLE671AA	TOTAL-URANIUM	1.13E-01 +- 1.3E-02		mg/L		8.38E-06	1.40E-01	

No. of Results: 10

10/9/09

TestAmerica   RPD - Relative Percent Difference.

rpt8TLRchSummary2 V5.2.4
A2002

Appendix 4

Laboratory Narrative and Chain-of-Custody Documentation

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

Certificate of Analysis

TestAmerica Laboratories, Inc.

Washington Hanford Closure
2620 Fermi Avenue
Richland, WA 99354

September 30, 2009

Attention: Joan Kessner

SAF Number : RC-114
Date SDG Closed : September 24, 2009
Number of Samples : Nine (9)
Sample Type : Water
SDG Number : J00585
Data Deliverable : 7-Day / Summary

CASE NARRATIVE

I. Introduction

On September 24, 2009 nine water samples were received at TestAmerica for radiochemical analysis. Upon receipt, the samples were assigned the following laboratory ID number to correspond with the Washington Closure Hanford (WCH) specific ID:

WCH ID#	TARL ID#	MATRIX	DATE OF RECEIPT
J193H8	LLE44	WATER	9/24/09
J193H9	LLE5F	WATER	9/24/09
J19588	LLE5P	WATER	9/24/09
J19592	LLE54	WATER	9/24/09
J19595	LLE6B	WATER	9/24/09
J19596	LLE6Q	WATER	9/24/09
J19597	LLE62	WATER	9/24/09
J19598	LLE65	WATER	9/24/09
J19599	LLE67	WATER	9/24/09

II. Sample Receipt

The samples were received in good condition and no anomalies were noted during check-in. TestAmerica was instructed by the client on 9/16/09 that all RC-114 samples received between 9/14/09 and 9/25/09 had a seven day turn around time. The turn around times on the chain of custodies were to be ignored.

III. Analytical Results/Methodology

The analytical results for this report are presented by laboratory sample ID. Each set of data includes sample identification information, analytical results and the appropriate associated statistical errors.

The requested analyses were:

Laser Induced Phosphorimetry
Total Uranium by method RL-KPA-003 (RICH-RC-5058)*

*SOP ID's changed effective 7-01-2008. Attached is a cross reference until SOP ID's are changed in all systems.

IV. Quality Control

The analytical results for each analysis performed includes a minimum of one laboratory control sample (LCS), one method (reagent) blank, and one duplicate sample analysis. Any exceptions have been noted in the "Comments" section.

QC and sample results are reported in the same units.

V. Comments

Total Uranium
Total Uranium by method RL-KPA-003 (RICH-RC-5058):
The LCS, batch blank, samples, sample duplicate (J193H8), and sample matrix spike (J193H9) results are within contractual requirements.

I certify that this Certificate of Analysis is in compliance with the SOW, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hard copy data package has been authorized by the Laboratory Manager, or a designee as verified by the following signature.

Reviewed and approved:

Sandra Seger

Sandra Seger
Project Manager

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-114-96

Page 1 of 1

Collector: Kevin Cramer WCH

Company Contact: JOAN KESSNER

Telephone No.: 373-4448

Project Coordinator: KESSNER, JH

Price Code: 7K

Data Turnaround: 7 Days 45 days 1rq

Project Designation: Columbia River Component of the RCBRA - Pore Water - Ph

Sampling Location: 300A - 390034

SAF No.: RC-114

Ice Chest No.:

Field Logbook No.: EL 1639

COA: BESCRC6520

Method of Shipment: GROUND TRANSPORT

Shipped To: TestAmerica Incorporated, Richland

Offsite Property No.: N/A

Bill of Lading/Air Bill No.: N/A

POSSIBLE SAMPLE HAZARDS/REMARKS

Radioactive near or below background levels

Special Handling and/or Storage

N/A

S00585 Due 10/01/09

J9I240261

Preservation	[illegible]
Type of Container	G/P
No. of Container(s)	1
Volume	100mL

SAMPLE ANALYSIS

Sample No.	Matrix *	Sample Date	Sample Time	Total Uranium	
J193H8	WATER	9/9/09	1242	X	LLE44

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Kevin Cramer	9/9/09 1800	EAS REF E	9/9/09 1800
EAS REF E	9/24/09 1215	SHANNAN JOHNSON	9/24/09 1215
SHANNAN JOHNSON	9/24/09 1230		9/24/09 1230

SPECIAL INSTRUCTIONS

Sampler unavailable to remove sampled from controlled storage. Shipper removed samples from storage location giving custody of samples for shipment to lab.

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION — Received By: Title: Date/Time:

FINAL SAMPLE DISPOSITION — Disposal Method: Disposed By: Date/Time:

WCH-EE-011

Washington Closure Hanford WCH	**CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST**	RC-114-97	Page 1 of 1
Collector Kevin Cranna	Company Contact JOAN KESSNER Telephone No. 375-4688	Project Coordinator KESSNER, JH	Price Code 7K Data Turnaround ~~7~~ Days 45 days
Project Designation Columbia River Component of the RCBRA - Pore Water - Ph	Sampling Location 300A– J30035	SAF No. RC-114	
Ice Chest No.	Field Logbook No. EL 1659 COA BESCRL0520	Method of Shipment GROUND TRANSPORT	
Shipped To TestAmerica Incorporated, Richland	Offsite Property No. N/A	Bill of Lading/Air Bill No. N/A	

POSSIBLE SAMPLE HAZARDS/REMARKS

Radioactive near or below background levels

Special Handling and/or Storage 4°

N/A

J00585 J9I240261

DUE - 10/01/09

Preservation	HNO_3 to pH <2
Type of Container	GP
No. of Container(s)	1
Volume	1000mL

SAMPLE ANALYSIS

				Total Uranium
				LLE5F
Sample No.	**Matrix ***	**Sample Date**	**Sample Time**	
J193H9	WATER	9/9/09	1625	X

CHAIN OF POSSESSION	Date/Time	Sign/Print Names	Date/Time
Relinquished By/Removed From Kevin Cranna	9/9/09 1600	Received By/Stored In EAS REF E	9/9/09 1600
Relinquished By/Removed From EAS REF E 51	9/24/09 1215	Received By/Stored In SHANNAN JOHNSON	9/24/09 1215
Relinquished By/Removed From SHANNAN JOHNSON	9/24/09 1232	Received By/Stored In	9/24/09 1232
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time

SPECIAL INSTRUCTIONS

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab.

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W = Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

TESTAMERICA

29000015

Washington Closure Hanford	**CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST**		**RC-114-223**	Page 1 of 1
Collector Kevin Cranna	Company Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator KESSNER, JH	Price Code 7K / Data Turnaround 7 Days
Project Designation Columbia River Component of the RCBRA - Pore Water - Ph	Sampling Location 300A- T300535		SAF No. RC-114	
Ice Chest No.	Field Logbook No. EL1639	COA BESCRCA520	Method of Shipment GROUND TRANSPORT	
Shipped To TestAmerica Incorporated, Richland	Offsite Property No. N/A		Bill of Lading/Air Bill No. N/A	

POSSIBLE SAMPLE HAZARDS/REMARKS
radioactive near or below background levels

Due-10/1/09

Special Handling and/or Storage
N/A

J00585
J9I240261

Preservation	HNO3 to pH <2
Type of Container	G/P
No. of Container(s)	1
Volume	100mL
SAMPLE ANALYSIS	Total Uranium

LLE SP

Sample No.	Matrix *	Sample Date	Sample Time	Total Uranium
J19588	WATER	9/8/09	1307	X

CHAIN OF POSSESSION Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Kevin Cranna	9/8/09 1645	EAS RF4E	9/8/09 1645
EAS REFAE	9/24/09 1215	SHANNAN JOHNSON	9/24/09 1215
SHANNAN JOHNSON	9/24/09 1230		9/24/09 1230
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time

SPECIAL INSTRUCTIONS

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab.

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

TESTAMERICA

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST		RC-114-227	Page 1 of 1
Collector Kevin Creamer	Company Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator KESSNER, JH	Price Code 7K
Project Designation Columbia River Component of the RCBRA - Pore Water - Ph	Sampling Location 300A - J30037		SAF No. RC-114	Data Turnaround ~~7~~ Days 45 9/24/09
Ice Chest No.	Field Logbook No. EL 1639	COA BESCRCA520	Method of Shipment GROUND TRANSPORT	
Shipped To TestAmerica Incorporated, Richland	Offsite Property No. N/A		Bill of Lading/Air Bill No. N/A	

POSSIBLE SAMPLE HAZARDS/REMARKS

radioactive near or below background levels

Due 10/01/09

Special Handling and/or Storage

N/A

J00585

J9I140261

Preservation	HNO3 to pH <2
Type of Container	G/P
No. of Container(s)	1
Volume	100mL

SAMPLE ANALYSIS

	Total Uranium

LLE54

Sample No.	Matrix *	Sample Date	Sample Time	
J19592	WATER	9/8/09	1458	X

CHAIN OF POSSESSION

Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Kevin Creamer	9/8/09 1645	045 Refer	9/8/09 1645
EAG REFF	9/24/09 1215	SHANNAN JOHNSON	9/24/09 1215
SHANNAN JOHNSON	9/24/09 1230		9/24/09 1230
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time

SPECIAL INSTRUCTIONS

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab.

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

TESTAMERICA

Washington Closure Hanford	**CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST**	RC-114-230	Page 1 of 1
Collector R. Curet	Company Contact JOAN KESSNER Telephone No. 375-4688	Project Coordinator KESSNER, JH	Price Code 7K Data Turnaround 7 Days 45 9/25/09
Project Designation Columbia River Component of the RCBRA - Pore Water - Ph	Sampling Location 300A- 330033	SAF No. RC-114	
Ice Chest No.	Field Logbook No. EL-1641 COA BESCRC6520	Method of Shipment GROUND TRANSPORT	
Shipped To TestAmerica Incorporated, Richland	Offsite Property No. N/A	Bill of Lading/Air Bill No. N/A	

POSSIBLE SAMPLE HAZARDS/REMARKS
radioactive near or below background levels

Due 10/01/09

Special Handling and/or Storage
N/A

J00585
J9I240261

Preservation	HNO3 to pH <2
Type of Container	G/P
No. of Container(s)	1
Volume	100mL

SAMPLE ANALYSIS

	Total Uranium

LLEGE

Sample No.	Matrix *	Sample Date	Sample Time	Total Uranium
J19596	WATER	09-08-09	1330	X

21000013

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
R. Curet R. Curet	09-08-09 1545	EAS REF E	09-08-09 1545
EAS REF E	9/24/09 1215	SHANNAN JOHNSON	9/24/09 1215
SHANNAN JOHNSON	9/24/09 1230		9/24/09 1230

SPECIAL INSTRUCTIONS

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab.

Matrix *

LABORATORY SECTION — Received By — Title — Date/Time

FINAL SAMPLE DISPOSITION — Disposal Method — Disposed By — Date/Time

WCH-EE-011

TESTAMERICA

Washington Closure Hanford	**CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST**	RC-114-231	Page 1 of 1
Collector R. C...	Company Contact: JOAN KESSNER Telephone No.: 373-4028	Project Coordinator KESSNER, JH	Price Code 7K Data Turnaround 7 Days 45 Days
Project Designation Columbia River Component of the RCBRA - Pore Water - Ph	Sampling Location 300A- T 20056	SAF No. RC-114	
Ice Chest No.	Field Logbook No. EL-1641 COA RESCRC6510	Method of Shipment GROUND TRANSPORT	
Shipped To TestAmerica Incorporated, Richland	Offsite Property No. N/A	Bill of Lading/Air Bill No. N/A	

POSSIBLE SAMPLE HAZARDS/REMARKS
radioactive near or below background levels

Due-10/9/09

Special Handling and/or Storage
N/A

J00585
J9I240261

Preservation	HNO3 to pH <2
Type of Container	G/P
No. of Container(s)	1
Volume	100mL
SAMPLE ANALYSIS	Total Uranium

LLEbQ

Sample No.	Matrix *	Sample Date	Sample Time	Total Uranium
J19590	WATER	09-17-09	1125	X

32000015

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
R. C... R. C...	09-17-09 1300	R. S... EAS REF E	09-17-09 1300
EAS REF E	9/24/09 1215	SHANNON JOHNSON	9/24/09 1215
SHANNAN JOHNSON	9/24/09 1230		9/24/09 1230

SPECIAL INSTRUCTIONS

**Holder transferring to custody samples from EAS Refrigerator. EAS custodian removed samples for shipping on ___/___/___

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Washington Closure Hanford	**CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST**	RC-114-232	Page 1 of 1
Collector R. C...	Company Contact JOAN KESSNER Telephone No. 375-4688	Project Coordinator KESSNER, JH	Price Code 7K Data Turnaround 7 Days 45 Days
Project Designation Columbia River Component of the RCBRA - Pore Water - Ph	Sampling Location 300A- J3005D	SAF No. RC-114	
Ice Chest No.	Field Logbook No. EL-1641 COA BESCRCA120	Method of Shipment GROUND TRANSPORT	
Shipped To TestAmerica Incorporated, Richland	Offsite Property No. N/A	Bill of Lading/Air Bill No. N/A	

POSSIBLE SAMPLE HAZARDS/REMARKS
radioactive near or below background levels

Special Handling and/or Storage Due 10/01/09
N/A

500585
J9I240261

			Preservation	HNO3 to pH <2
			Type of Container	G/P
			No. of Container(s)	1
			Volume	100mL
			SAMPLE ANALYSIS	Total Uranium
Sample No.	Matrix *	Sample Date	Sample Time	
J19507	WATER	09-20-09	1345	X

LLE62

CHAIN OF POSSESSION		Sign/Print Names	
Relinquished By/Removed From R. C... R. C...	Date/Time 09-20-09 1432	Received By/Stored In R. C... EAS REF E	Date/Time 09-20-09 1432
Relinquished By/Removed From EAS REF E 81	Date/Time 9/24/09 [illegible]	Received By/Stored In SHANNAN JOHNSON	Date/Time 9/24/09 [illegible]
Relinquished By/Removed From SHANNAN JOHNSON	Date/Time 9/24/09 1230	Received By/Stored In [illegible]	Date/Time 9/24/09 1220
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time

SPECIAL INSTRUCTIONS

samples unavailable to relinquish
removed from EAS Refrigerator. EAS
Custodian removed samples for
shipping on ___/___/___

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

TESTAMERICA

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-114-233 Page 1 of 1

Collector Sam Gilbo	Company Contact JOAN KESSNER	Telephone No. 375-4681	Project Coordinator KESSNER, JH
Project Designation Columbia River Component of the RCBRA - Pore Water - Ph	Sampling Location 300A - I700651		SAF No. RC-114
Ice Chest No.	Field Logbook No. EL-1639	COA BESCRC6330	Method of Shipment GROUND TRANSPORT
Shipped To TestAmerica Incorporated, Richland	Offsite Property No. N/A		Bill of Lading/Air Bill No. N/A

Price Code 7K

Data Turnaround
~~7~~ Days
45 [illegible] 9/09

POSSIBLE SAMPLE HAZARDS/REMARKS
radioactive near or below background levels

Special Handling and/or Storage
N/A

Due 10/2/09

J00585

J9I 240261

Preservation	HNO3 to pH <2
Type of Container	G/P
No. of Container(s)	1
Volume	100mL

SAMPLE ANALYSIS

Total Uranium

LLE65

Sample No.	Matrix *	Sample Date	Sample Time	Total Uranium
J19598	WATER	9-17-09	11:39	X

CHAIN OF POSSESSION

Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Sam Gilbo	9-17-09 / 2:10	Eas Ref E	9-17-09 / 2:10
EAS REF E	9/24/09 12:15	SHANNAN JOHNSON	9/24/09 12:15
SHANNAN JOHNSON	9/24/09 12:38		9/24/09 12:38

SPECIAL INSTRUCTIONS

If staff unavailable to relinquish samples from EAS Refrigerator EAS Custodian removed samples for shipping on ___/___/___

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

900020

TESTAMERICA

Washington Closure Hanford	**CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST**	RC-114-234	Page 1 of 1
Collector Sam Gilles	Company Contact JOAN KESSNER / Telephone No. 375-4688	Project Coordinator KESSNER, JH	Price Code 7K / Data Turnaround 7 Days 45 Day
Project Designation Columbia River Component of the RCBRA - Pore Water - Ph	Sampling Location 300- I7001JX3 4-20-09	SAF No. RC-114	
Ice Chest No. NA	Field Logbook No. EL-1679 / COA BESCRC1520	Method of Shipment GROUND TRANSPORT	
Shipped To TestAmerica Incorporated, Richland	Offsite Property No. N/A	Bill of Lading/Air Bill No. N/A	

POSSIBLE SAMPLE HAZARDS/REMARKS
radioactive near or below background levels

Special Handling and/or Storage
N/A

Due 10/01/09

J00585

J9I240261

Preservation	HNO3 to pH <2
Type of Container	G/P
No. of Container(s)	1
Volume	100mL

SAMPLE ANALYSIS: Total Uranium

LLE67

Sample No.	Matrix *	Sample Date	Sample Time	Total Uranium
J18599	WATER	4-20-09	1:25	X

CHAIN OF POSSESSION	Date/Time	Sign/Print Names	Date/Time
Relinquished By/Removed From Sam Gilles	4-20-09 / 4:08pm	Received By/Stored In EAS Ref. E Gilles	4-20-09 / 4:08pm
Relinquished By/Removed From EAS REF E 5/1	9/24/09 1215	Received By/Stored In SHANNAN JOHNSON	9/24/9 1215
Relinquished By/Removed From SHANNAN JOHNSON	9/24/09 1230	Received By/Stored In Angela Gilbert	9/24/09 1230
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time

SPECIAL INSTRUCTIONS

AHTGW unavailable to transport samples from EAS Refrigerator. EAS Custodian removed samples for shipping on ___/___/___

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

35

I200021

Appendix 5

Data Validation Supporting Documentation

APPENDIX A

RADIOCHEMICAL DATA VALIDATION CHECKLIST

VALIDATION LEVEL:	A	B	[✓ C]	D	E
PROJECT:	KEBBA		DATA PACKAGE:	J00595	
VALIDATOR:	ELR	LAB: TAL		DATE: 10/9/09	
			SDG:	J00595	
ANALYSES PERFORMED					
☒ Gross Alpha/Beta Total Uranium	☐ Strontium 90 ☐ Radium 228	☐ Technetium 99 ☐ Tritium	Alpha Spectroscopy	Gamma Spectroscopy	
SAMPLES/MATRIX					
J19343	J19349	J19588	J19592	J19595	
J19596	J19597	J19598	J19599		
					water

1. Completeness ☐ N/A

Technical verification forms present? Yes [✓ No] N/A

Comments:

2. Initial Calibration (Levels D, E) ☒ N/A

Instruments/detectors calibrated? Yes No N/A

Initial calibration acceptable? Yes No N/A

Standards NIST traceable? Yes No N/A

Standards Expired? Yes No N/A

Calculation check acceptable? Yes No N/A

Comments:

3. Continuing Calibration (Levels D, E) ☒ N/A

Calibration checked within required frequency? .... Yes No N/A

Calibration check acceptable? .... Yes No N/A

Calibration check standards traceable? .... Yes No N/A

Calibration check standards expired? .... Yes No N/A

Calculation check acceptable? .... Yes No N/A

Comments:

4. Background Counts (Levels D, E) .... ☒ N/A

Background Counts checked within required frequency? .... Yes No N/A

Background Counts acceptable? .... Yes No N/A

Calculation check acceptable? .... Yes No N/A

Comments:

5. Blanks (Levels B, C, D, E) ☐ N/A

Method blank analyzed within required frequency? [✓ Yes] No N/A

Method blank results acceptable? [✓ Yes] No N/A

Analytes detected in method blank? Yes [✓ No] N/A

Field blank(s) analyzed? Yes [✓ No] N/A

Field blank results acceptable? Yes No [✓ N/A]

Analytes detected in field blank(s)? Yes No [✓ N/A]

Transcription/Calculation Errors? (Levels D, E) Yes No [✓ N/A]

Comments: NO FB

6. Laboratory Control Samples or Blank Spike Samples (Levels C, D, E) ☐ N/A

LCS /BSS analyzed within required frequency? [✓ Yes] No N/A

LCS/BSS recoveries acceptable? [✓ Yes] No N/A

LCS/BSS traceable? (Levels D,E) Yes No [✓ N/A]

LCS/BSS expired? (Levels D,E) Yes No [✓ N/A]

LCS/BSS levels correct? (Levels D,E) Yes No [✓ N/A]

Transcription/Calculation Errors? (Levels D, E) Yes No [✓ N/A]

Comments:

7. Chemical Carrier Recovery (Levels C, D, E) ☒ N/A

Chemical carrier added? Yes No N/A

Chemical recovery acceptable? Yes No N/A

Chemical carrier traceable? (Levels D, E) Yes No N/A

Chemical carrier expired? (Levels D, E) .... Yes No N/A

Transcription/Calculation errors? (Levels D, E) .... Yes No N/A

Comments: ____________________

8. Tracer Recovery (Levels C, D, E) .... ☒ N/A

Tracer added? .... Yes No N/A

Tracer recovery acceptable? .... Yes No N/A

Tracer traceable? (Levels D, E) .... Yes No N/A

Tracer expired? (Levels D, E) .... Yes No N/A

Transcription/Calculation errors? (Levels D, E) .... Yes No N/A

Comments: ____________________

9. Matrix Spikes (Levels C, D, E) .... ☒ N/A

Matrix spike analyzed? .... Yes No N/A

Spike recoveries acceptable? .... Yes No N/A

Spike source traceable? (Levels D, E) .... Yes No N/A

Spike source expired? Levels D, E) .... Yes No N/A

Transcription/Calculation Errors? (Levels D, E) .... Yes No N/A

Comments: ____________________

10. Duplicates (Levels C, D, E) .... ☐ N/A

Duplicates Analyzed at required frequency? .... [✓ Yes] No N/A

RPD Values Acceptable? .... [✓ Yes] No N/A

Transcription/Calculation Errors? (Levels D, E) .... Yes No [✓ N/A]

Comments:

11. Field QC Samples (Levels C, D E) .... ☐ N/A

Field duplicate sample(s) analyzed? .... Yes [✓ No] N/A

Field duplicate RPD values acceptable? .... Yes No [✓ N/A]

Field split sample(s) analyzed? .... Yes [✓ No] N/A

Field split RPD values acceptable? .... Yes No [✓ N/A]

Performance audit sample(s) analyzed? .... Yes [✓ No] N/A

Performance audit sample results acceptable? .... Yes No [✓ N/A]

Comments: No field QC

12. Holding Times (All levels)

Are sample holding times acceptable? .... [✓ Yes] No N/A

Comments:

13. Results and Detection Limits (All Levels)..☐ N/A

Results reported for all required sample analyses?....................................[✓ Yes] No N/A

Results supported in raw data?(Levels D, E)..Yes No [✓ N/A]

Results Acceptable? (Levels D, E)...Yes No [✓ N/A]

Transcription/Calculation errors? (Levels D, E)..Yes No [✓ N/A]

MDA's meet required detection limits?...Yes No [✓ N/A]

Transcription/calculation errors? (Levels D, E)..Yes No [✓ N/A]

Comments:

Appendix 6

Additional Documentation Requested by Client

QC Results Summary

TestAmerica TARL

Ordered by Method, Batch No, QC Type,.

Date: 30-Sep-09

Report No. : 42473

SDG No.: J00685

Batch Work Order	Parameter	Result +- Uncertainty (2s)	Qual	Units	Tracer Yield	LCS Recovery	Bias	MDC|MDA
UTOT_KPA								
9267478 BLANK QC,								
LLFD11AA	TOTAL-URANIUM	-1.94E-06 +- 2.8E-07	U	mg/L				8.38E-05
9267478 LCS,								
LLFD11AD	TOTAL-URANIUM	3.81E-03 +- 3.9E-04		mg/L		105%	0.1	8.38E-05
LLFD11AC	TOTAL-URANIUM	3.03E-02 +- 4.3E-03		mg/L		100%	0.0	8.38E-05
9267478 MATRIX SPIKE, J193H0								
LLE6F1AC	TOTAL-URANIUM	3.36E-02 +- 4.4E-03		mg/L		92%	-0.1	8.38E-05

No. of Results: 4

TestAmerica | Bias - (Result/Expected)-1 as defined by ANSI N13.30.

rptSTLRchQcSummary V5.2.4 A2002 | U Qual - Analyzed for but not detected above limiting criteria. Limit criteria is less than the Mdc/Mda or Total Uncert or not identified by gamma scan software.

F.2.1.3 SDG J00601

SAF-RC-114
Columbia River Component of the RCBRA – Pore Water – Phase II
FINAL VALIDATION PACKAGE

COMPLETE COPY OF VALIDATION PACKAGE TO:

Kathy Wendt H4-21

COMMENTS:

SDG J00601 **SAF-RC-114**

Date: 9 November 2009
To: Washington Closure Hanford Inc. (technical representative)
From: ELR Consulting
Project: Columbia River Component of the RCBRA – Pore Water – Phase II
Subject: Wet Chemistry - Data Package No. J00601-TAL

INTRODUCTION

This memo presents the results of data validation on Data Package No. J00601 prepared by TestAmerica Laboratory Inc. (TAL). A list of samples validated along with the analyses reported and the method of analysis is provided in the following table.

Sample ID	Sample Date	Media	Validation	Analyte
J19387	10/8/09	Water	C	See note 1
J19426	10/8/09	Water	C	See note 1
J195K2	10/8/09	Water	C	See note 1

1 – Chromium VI by 7196A

Data validation was conducted in accordance with the Washington Closure Hanford (WCH) validation statement of work and the Remedial Investigation Work Plan for Hanford Site Releases to the Columbia River (DOE/RL-2008-11, Rev. 0, September 2008). Appendices 1 through 6 provide the following information as indicated below:

Appendix 1. Glossary of Data Reporting Qualifiers
Appendix 2. Summary of Data Qualification
Appendix 3. Annotated Laboratory Reports
Appendix 4. Laboratory Narrative and Chain-of-Custody Documentation
Appendix 5. Data Validation Supporting Documentation
Appendix 6. Additional Documentation Requested by Client

DATA QUALITY PARAMETERS

Holding Times

Analytical holding times for metals are assessed to ascertain whether the holding time requirements were met by the laboratory. The holding time requirements are as follows: Soil samples must be analyzed within 24 hours for chromium VI.

If holding times are exceeded, but not by greater than two times the limit, all associated sample results are qualified as estimates and flagged "J" for detects and "UJ" for non-detects. If holding times are exceeded by greater than two times the limit, all associated detectable sample results are qualified as estimates and flagged "J" and all non-detects are rejected and flagged "UR".

All holding times were acceptable.

Method Blanks

Method Blanks

Method blank analyses are performed to determine the extent of laboratory contamination introduced through sampling, sample preparation and analysis. At least one acceptable method blank analysis must be conducted for every 20 samples. No contaminants should be present in the method blank. All blank results must fall below the contract required detection limit (CRQL) to be acceptable.

All method blank results were acceptable.

Field (Equipment) Blank

No field blanks were submitted for analysis.

- **Accuracy**

Matrix Spike and Laboratory Control Sample

Matrix spike (MS) and laboratory control sample (LCS) analyses are used to assess the analytical accuracy of the reported data. The matrix spike is used to assess the effect of the matrix on the ability to accurately quantify sample concentrations. Recoveries must fall within the range of 80% to 120%. Samples with a recovery of less than 30% and a sample result below the IDL are rejected and flagged "UR". Samples with a recovery of 30% to 79% and a sample result less than the IDL are qualified "UJ". Samples with a recovery of greater than 120% or less than 80% and a sample result greater than the IDL are qualified as estimates and flagged "J". Finally, for samples with a recovery greater than 120% and a sample result less than the IDL, no qualification is required.

All accuracy results were acceptable

- **Precision**

Laboratory Duplicate Samples

Analytical precision is expressed by the relative percent differences (RPD) between the recoveries of matrix spike duplicate (MSD) analyses performed on a sample in the analytical batch. Precision may alternatively be assessed using unspiked duplicate analyses performed on a sample in the analytical batch. If both sample and replicate activities (concentrations) are greater than five times the CRDL and the RPD is less than 20%, no qualification is required. If either activity (concentration) is less than five times the CRDL, the RPD control limit is less than or equal to two times the CRDL. If the RPD is outside the applicable control limit, associated results are qualified as estimated detects or estimated non-detects.

Due to an RPD outside QC limits (157%), all chromium VI results were qualified as estimates and flagged "J".

All other laboratory duplicate results were acceptable.

Field Duplicate

One set of field duplicates (J19397/J19426) were submitted for analysis. Field blanks are compared using the same criteria as for laboratory duplicates. Under the WCH statement of work, no qualification is required.

Analytical Detection Levels

Reported analytical detection levels are compared against the required quantitation limits (RQLs) to ensure that laboratory detection levels meet the required criteria. All analytes met the RQL.

Completeness

Data package J00601 was submitted for validation and verified for completeness. Completeness is based on the percentage of data determined to be valid (i.e., not rejected) The completion percentage was 100%

MAJOR DEFICIENCIES

None found.

MINOR DEFICIENCIES

The following minor deficiencies were noted:

- Due to an RPD outside QC limits (157%), all chromium VI results were qualified as estimates and flagged "J".

Data flagged "J" indicates that the associated concentration is an estimate, but under the WCH statement of work, the data may be usable for decision-making purposes. All other validated results are considered accurate within the standard error associated with the methods.

REFERENCES

Washington Closure Hanford Contract #S00W307A00 (March 2008). *Data Validation Services*.

DOE/RL-2008-11, Rev 0, *Remedial Investigation Work Plan for Hanford Site Releases to the Columbia River*, September 2008

Appendix 1

Glossary of Data Reporting Qualifiers

Qualifiers which may be applied by data validators in compliance with WCH validation SOW are as follows:

U - Indicates the compound or analyte was analyzed for and not detected in the sample. The value reported is the sample quantitation limit corrected for sample dilution and moisture content by the laboratory.

UJ - Indicates the compound or analyte was analyzed for and not detected in the sample. Due to a minor QC deficiency identified during the data validation, the associated quantitation limit is an estimate.

J - Indicates the compound or analyte was analyzed for and detected. Due to a minor QC deficiency identified during the data validation, the associated concentration is an estimate, but the data are usable for decision-making purposes.

BJ - Applied to inorganic analyses only. Indicates the analyte concentration was greater than the IDL but less than the CRDL and is considered an estimated value.

R - Indicates the compound or analyte was analyzed for, detected, and due to an identified major QC deficiency, the data are unusable.

UR Indicates the compound or analyte was analyzed for and not detected in the sample. Additionally, the data is unusable due to an identified major QC deficiency.

NJ - Indicates presumptive evidence of a compound at an estimated value. The data may not be valid for some specific applications (i.e., usable for decision-making purposes).

N - Indicates presumptive evidence of a compound. The data may not be valid for some specific applications (i.e., usable for decision-making purposes).

Appendix 2

Summary of Data Qualification

WET CHEMISTRY DATA QUALIFICATION SUMMARY*

SDG: J00601	**REVIEWER: ELR**	**Project: RCBRA**	**QC Issue**
COMPOUND	QUALIFIER	SAMPLES AFFECTED	REASON
Chromium VI	J	All	RPD

* - The Qualified Data Summary Table includes laboratory applied "U" qualifiers not specifically identified here. The laboratory applied "U" qualifiers are included to minimize misinterpretation of results contained in the table.

Appendix 3

Annotated Laboratory Reports

Sample Results Summary

Date: 23-Oct-09

TestAmerica TARL

Ordered by Method, Batch No., Client Sample ID.

Report No. : 42582

SDG No. J00601

Batch	Client Id Work Order	Parameter	Result +- Uncertainty (2s)		Qual	Units	Tracer Yield	MDC or MDA	CRDL	RPD
9286208 SRTOT_SEP_PRECIP_GPC										
	J195K2									
	LL97E7AC	~~STRONTIUM~~	6.78E+00	+- 2.0E+00		pCi/L	100%	1.16E+00		
	J195K2 DUP									
	LL97E2AD	STRONTIUM	7.39E+00	+- 2.2E+00	11/7/09	pCi/L	100%	~~1.25E+00~~		~~8.6~~
9282312 7196_CR6										
	J19387									
	LL9631AA	HEXCHROME	3.10E-02	+- 0.0E+00	J	mg/L	N/A	3.70E-03	3.50E-01	
	LL9631AE	HEXCHROME	3.70E-03	+- 0.0E+00	U	mg/L	N/A	3.70E-03	3.50E-01	157.3
	J19420									
	LL9081AA	HEXCHROME	1.90E-02	+- 0.0E+00	J	mg/L	N/A	3.70E-03	3.50E-01	
	J195K2									
	LL97E1AA	HEXCHROME	2.80E-02	+- 0.0E+00	J	mg/L	N/A	3.70E-03	3.50E-01	

No. of Results: 6

11/7/09

TestAmerica RPD - Relative Percent Difference.

rptSTLRchSaSummary2 V5.2.5 A2002

U Qual - Analyzed for but not detected above limiting criteria. Limit criteria is less than the Mdc/Mda or Total Uncert or not identified by gamma scan software.

Appendix 4

Laboratory Narrative and Chain-of-Custody Documentation

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Certificate of Analysis

Washington Hanford Closure
2620 Fermi Avenue
Richland, WA 99354

October 23, 2009

Attention: Joan Kessner

SAF Number	:	RC 114
Date SDG Closed	:	October 9, 2009
Number of Samples	:	Three (3)
Sample Type	:	Water
SDG Number	:	J00601
Data Deliverable	:	15-Day / Summary

CASE NARRATIVE

I. Introduction

On October 9, 2009 three water samples were received at TestAmerica for radiochemistry and chemistry analysis. Upon receipt, the samples were assigned the following laboratory ID number to correspond with the Washington Closure Hanford (WCH) specific ID:

WCH ID#	TARL ID#	MATRIX	DATE OF RECEIPT
J19397	LL963	WATER	10/9/09
J19561	LL968	WATER	10/9/09
J195K2	LL97E	WATER	10/9/09

II. Sample Receipt

The samples were received in good condition and no anomalies were noted during check-in. The client called on September 30, 2009 and instructed TestAmerica to assign a 15 day turn around time to all RC-114 samples received on 10/1/09 or later.

III. Analytical Results/Methodology

The analytical results for this report are presented by laboratory sample ID. Each set of data includes sample identification information, analytical results and the appropriate associated statistical errors.

The requested analyses were:

Gas Proportional Counting
Strontium-90 by method RL-GPC-003 (RICH-RC-5006)*
Chemical Analysis
Hexavalent Chromium by EPA method 7196A

IV. Quality Control

The analytical results for each analysis performed includes a minimum of one laboratory control sample (LCS), one method (reagent) blank, and one duplicate sample analysis. Any exceptions have been noted in the "Comments" section.

QC and sample results are reported in the same units.

V. Comments

Gas Proportional Counting
Strontium-90 by method RL-GPC-003 (RICH-RC-5006):
The sample and sample duplicate were recounted to verify activity. The LCS, batch blank, samples and sample duplicate (J195K2) results are within contractual requirements.

Chemical Analysis
Hexavalent Chromium by EPA method 7196A:
Samples J19397, J19426, J195K2, J19397 MS, J19397 MSD and J19397 DUP were analyzed with a 50ml aliquot due to insufficient sample volume.

Sample J19397 and J19397 DUP did not meet the criteria for the RPD. Suspect that the sample wasn't completely homogenous.

Except as noted, the LCS, batch blank, sample, sample duplicate (J19347), sample matrix spike (J19397) and sample matrix spike duplicate (J19397) results are within contractual requirements.

I certify that this Certificate of Analysis is in compliance with the SOW, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hard copy data package has been authorized by the Laboratory Manager, or a designee as verified by the following signature.

Reviewed and approved,

Sandra Seger

Sandra Seger
Project Manager

Washington Closure Hanford	**CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST**	RC-114-45	Page 1 of 1
Collector Sam Gillo	Company Contact JOAN KESSNER / Telephone No. 375-4688	Project Coordinator KESSNER, JH	Price Code 7K / Data Turnaround 7 Days
Project Designation Columbia River Component of the RCBRA - Pore Water - Pb	Sampling Location LOCH- I100H636	SAF No. RC-114	15day TAT per J. Kessner RO / 45 [illegible] 9/09
Ice Chest No. NA	Field Logbook No. EL-1679 / COA RESCRC4530	Method of Shipment GROUND TRANSPORT 9/30/09 SFS 10/2/09	
Shipped To TestAmerica Incorporated, Richland	Offsite Property No. N/A	Bill of Lading/Air Bill No. N/A	

POSSIBLE SAMPLE HAZARDS/REMARKS

Radioactive near or below background levels

Special Handling and/or Storage

N/A

Preservation	Cool 4C
Type of Container	G/P
No. of Container(s)	1
Volume	500mL 36 SC
SAMPLE ANALYSIS	Chromium Hex - 7196

SDG # J00602
J9J090191
Due 10/23/09

LL963

Sample No.	Matrix *	Sample Date	Sample Time	Chromium Hex - 7196
J19397	WATER	10-8-09	12:46	X

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Sam Gillo	10-8-09 / 15:14	CEIS Ref E	10-8-09 / 15:14
EAS LOCKED STORAGE	10/9/09 830	SHANNAN JOHNSON	10/9/09 830
SHANNAN JOHNSON	10/9/09 840	[illegible]	840

SPECIAL INSTRUCTIONS

Sample unavailable to transport samples from EAS Refrigerator. EAS Custodian [illegible] samples for shipping on [illegible]

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

TESTAMERICA

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-114-145

Page 1 of 1

Collector: Sam G. Tlo

Company Contact: JOAN KESSNER

Telephone No.: 373-4689

Project Coordinator: KESSNER, JH

Price Code: 7K

Data Turnaround: ~~7 Days~~ 45 days

15day TAT per J. Kessner co

Project Designation: Columbia River Component of the RCBRA - Pore Water - F6

Sampling Location: DUPLICATE 100 T1C0 H6J6

SAF No.: RC-114

Ice Chest No.: N/A

Field Logbook No.: EL-1639

COA: RESCRC6520

Method of Shipment: GROUND TRANSPORT 9/30/09 SKS 10/2/09

Shipped To: TestAmerica Incorporated, Richland

Offsite Property No.: N/A

Bill of Lading/Air Bill No.: N/A

POSSIBLE SAMPLE HAZARDS/REMARKS

Radioactive near or below background levels

Special Handling and/or Storage

N/A

DUE - 10/23/09

SDG# J00601

J9J090191

LL968

SAMPLE ANALYSIS

Preservation	Cool 4C
Type of Container	G/P
No. of Container(s)	1
Volume	~~500mL~~ 50mL
	Chromium Hex - 7196

Sample No.	Matrix *	Sample Date	Sample Time	Chromium Hex - 7196
J19426	WATER	10-8-09	12:48	X

CHAIN OF POSSESSION

Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Sam G. Tlo	10-9-09 / 1514	EAS REF	10-9-09 / 1514
EAS REF STORAGE	10/14/09 0830	SHANNAN JOHNSON	10/14/09 0830
SHANNAN JOHNSON	10/14/09 0830		

SPECIAL INSTRUCTIONS

Sampler unavailable to relinquish samples from EAS Refrigerator. EAS Custodian relinquished samples for shipping on 10/14/09

Matrix *

[illegible]

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

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TESTAMERICA

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Washington Closure Hanford | **CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST** | RC-114-297 | Page 1 of 1

Collector R. Cusack	**Company Contact** JOAN KESSNER **Telephone No.** 375-4688	**Project Coordinator** KESSNER, JH
Project Designation Columbia River Component of the RCBRA - Pore Water - Ph	**Sampling Location** 100H- 3100H44	**SAF No.** RC-114
Ice Chest No.	**Field Logbook No.** EL-1641 **COA** RESCRC0570	**Method of Shipment** GROUND TRANSPORT
Shipped To TestAmerica Incorporated, Richland	**Offsite Property No.** N/A	**Bill of Lading/Air Bill No.** N/A

Price Code 7K

Data Turnaround ~~30~~ Days

15 DAY TAT per J. Kessner on 9/30/09

15 [illegible] ESS 10/2/09

POSSIBLE SAMPLE HAZARDS/REMARKS

radioactive near or below background levels

Special Handling and/or Storage

N/A

J00601

J9J090191

TDue-10/23/09

Preservation	Cool 4C	HNO3 to pH <2	
Type of Container	G/P	G/P	
No. of Container(s)	1	1	
Volume	500mL	1000mL	
SAMPLE ANALYSIS	Chromium Hex - 7196	Strontium-89,90 - Total Sr	

Sample No.	Matrix *	Sample Date	Sample Time	Chromium Hex - 7196	Strontium-89,90 - Total Sr
J19KK2	WATER	10-08-09	1435	X	X

LL99E

[illegible]

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
R. Cusack R. Cusack	10-08-09 1511	R. Cusack EASREF E	10-08-09 1511
EAS LOCKED STORAGE E	10/9/09 830	SHANNAN JOHNSON	10/9/09 830
SHANNAN JOHNSON	10/9/09 840		10/9/09 840

SPECIAL INSTRUCTIONS

Sampler unavailable to relinquish samples from EAS Refrigerator. EAS Custodian removed samples for shipping on 10/9/09

Matrix *

S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Appendix 5

Data Validation Supporting Documentation

GENERAL CHEMISTRY ANALYSIS DATA VALIDATION CHECKLIST

VALIDATION LEVEL:	A	B	[✓ C]	D	E
PROJECT: RCBRA			DATA PACKAGE: J00601		
VALIDATOR: ELR		LAB: TAL		DATE:	
			SDG: J00691		
ANALYSES PERFORMED					
Anions/IC	TOC	TOX	TPH-418.1	Oil and Grease	Alkalinity
Ammonia	BOD/COD	Chloride	[✓ Chromium-VI]	pH	NO_3/NO_2
Sulfate	TDS	TKN	Phosphate		
SAMPLES/MATRIX					
J19397 J19426 J195K2					
water					

1. DATA PACKAGE COMPLETENESS AND CASE NARRATIVE

Technical verification documentation present? .... Yes [✓ No] N/A

Comments:

2. INSTRUMENT PERFORMANCE AND CALIBRATIONS (Levels D and E)

Initial calibrations performed on all instruments? .... Yes No [✓ N/A]

Initial calibrations acceptable? .... Yes No [✓ N/A]

ICV and CCV checks performed on all instruments? .... Yes No [✓ N/A]

ICV and CCV checks acceptable? .... Yes No [✓ N/A]

Standards traceable? .... Yes No [✓ N/A]

Standards expired? .... Yes No [✓ N/A]

Calculation check acceptable? .... Yes No [✓ N/A]

Comments:

GENERAL CHEMISTRY ANALYSIS DATA VALIDATION CHECKLIST

3. BLANKS (Levels B, C, D, and E)

ICB and CCB checks performed for all applicable analyses? (Levels D, E) Yes No [✓ N/A]

ICB and CCB results acceptable? (Levels D, E) Yes No [✓ N/A]

Laboratory blanks analyzed? [✓ Yes] No N/A

Laboratory blank results acceptable? [✓ Yes] No N/A

Field blanks analyzed? (Levels C, D, E) Yes [✓ No] N/A

Field blank results acceptable? (Levels C, D, E) Yes No [✓ N/A]

Transcription/calculation errors? (Levels D, E) Yes No [✓ N/A]

Comments: no FB

4. ACCURACY (Levels C, D, and E)

Spike samples analyzed? [✓ Yes] No N/A

Spike recoveries acceptable? [✓ Yes] No N/A

Sike standards NIST traceable? (Levels D, E) Yes No [✓ N/A]

Spike standards expired? (Levels D, E) Yes No [✓ N/A]

LCS/BSS samples analyzed? [✓ Yes] No N/A

LCS/BSS results acceptable? [✓ Yes] No N/A

Standards traceable? (Levels D, E) Yes No [✓ N/A]

Standards expired? (Levels D, E) Yes No [✓ N/A]

Transcription/calculation errors? (Levels D, E) Yes No [✓ N/A]

Performance audit sample(s) analyzed? Yes [✓ No] N/A

Performance audit sample results acceptable? Yes No [✓ N/A]

Comments: no PAS

GENERAL CHEMISTRY ANALYSIS DATA VALIDATION CHECKLIST

5. PRECISION (Levels C, D, and E)

Duplicate RPD values acceptable? .... ~~Yes~~ [✓ No] N/A

Duplicate results acceptable? .... ~~Yes~~ [✓ No] N/A

MS/MSD standards NIST traceable? (Levels D, E) .... Yes No [✓ N/A]

MS/MSD standards expired? (Levels D, E) .... Yes No [✓ N/A]

Field duplicate RPD values acceptable? .... [✓ Yes] No N/A

Field split RPD values acceptable? .... Yes No [✓ N/A]

Transcription/calculation errors? (Levels D, E) .... Yes No [✓ N/A]

Comments: RPD - 152% - J all

6. HOLDING TIMES (all levels)

Samples properly preserved? .... [✓ Yes] No N/A

Sample holding times acceptable? .... [✓ Yes] No N/A

Comments:

GENERAL CHEMISTRY ANALYSIS DATA VALIDATION CHECKLIST

7. RESULT QUANTITATION AND DETECTION LIMITS (all levels)

Results reported for all requested analyses? .... [✓ Yes] No N/A

Results supported in the raw data? (Levels D, E) .... Yes No [✓ N/A]

Samples properly prepared? (Levels D, E) .... Yes No [✓ N/A]

Detection limits meet RDL? .... [✓ Yes] No N/A

Transcription/calculation errors? (Levels D, E) .... Yes No [✓ N/A]

Comments:

Appendix 6

Additional Documentation Requested by Client

Date: 9 November 2009
To: Washington Closure Hanford Inc. (technical representative)
From: ELR Consulting
Project: Columbia River Component of the RCBRA – Pore Water – Phase II
Subject: Radiochemistry - Data Package No. J00601-TAL

INTRODUCTION

This memo presents the results of data validation on Data Package No. J00601 prepared by TestAmerica Laboratory Inc. (TAL). A list of samples validated along with the analyses reported and the method of analysis is provided in the following table.

Sample ID	Sample Date	Media	Validation	Analyte
J195K2	10/8/09	Water	C	Strontium-90

Data validation was conducted in accordance with the Washington Closure Hanford (WCH) validation statement of work and the Remedial Investigation Work Plan for Hanford Site Releases to the Columbia River (DOE/RL-2008-11, Rev. 0, September 2008). Appendices 1 through 6 provide the following information as indicated below:

Appendix 1. Glossary of Data Reporting Qualifiers
Appendix 2. Summary of Data Qualification
Appendix 3. Annotated Laboratory Reports
Appendix 4. Laboratory Narrative and Chain-of-Custody Documentation
Appendix 5. Data Validation Supporting Documentation
Appendix 6. Additional Data Requested by Client

DATA QUALITY PARAMETERS

- **Holding Times**

Holding times are calculated from Chain-of-Custody forms to determine the validity of the results. The maximum holding time for radiochemical analysis is 6 months.

All holding times were acceptable.

- **Preparation (Method) Blanks**

Laboratory Blanks

Blank samples are analyzed to determine if positive results are due to laboratory reagent, sample container, or detector contamination. If blank analysis results indicate the presence of an analyte above the minimum detectable activity (MDA), the following qualifiers are applied. All positive sample results less than five times the highest blank concentration are qualified as estimates and flagged "J"; sample results below the MDA are qualified as undetected and flagged "U"; sample results above the MDA and greater than five times the highest blank concentration are not qualified.

All laboratory blank results were acceptable.

Field (Equipment) Blank

No equipment blanks were submitted for analysis.

- **Accuracy**

Accuracy is evaluated from laboratory control sample (LCS) or blank spike sample (BSS) batch samples and spiked samples from the analytical batch. Measured activities are compared to the known added amounts. The acceptable LCS or BSS and matrix spike (MS) recovery range is 65-135%. In addition, samples may be spiked with a radiochemical tracer to assist in isolating the radioisotope of interest with the yield of the tracer being used in calculating sample activity. The acceptable range for tracer recovery is 20% to 105%. Spike sample results outside the above ranges result in associated sample results being qualified as estimates, or not qualified, depending on the activity of the individual sample. Results are rejected for LCS/BSS recoveries of less than 30% and tracer recoveries of less than 20%, and tracer recoveries of greater than 115% for detected results.

All accuracy results were acceptable.

- **Laboratory Duplicates**

Analytical precision is expressed by the relative percent differences (RPD) between the recoveries of duplicate matrix spike analyses performed on a sample in the analytical batch. Precision may alternatively be assessed using unspiked duplicate analyses performed on a sample in the analytical batch. If both sample and replicate activities (concentrations) are greater than five times the contract required detection limit (CRDL) and the RPD is less than 35%, no qualification is required. If either activity (concentration) is less than five times the CRDL, the RPD control limit is less than or equal to two times the CRDL. If the RPD is outside the applicable control limit, associated results are qualified as estimated detects or estimated non-detects.
All duplicate results were acceptable.

Field Duplicates

No field duplicates were submitted for analyis.

Detection Levels

Reported analytical detection levels for undetected analytes are compared against the project RQLs to ensure that laboratory detection levels meet the required criteria. All analytes met the RQL.

Completeness

Data package No. J00601 was submitted for validation and verified for completeness. Completeness is based on the percentage of data determined to be valid (i.e., not rejected). The completion percentage was 100%.

MAJOR DEFICIENCIES

None found.

MINOR DEFICIENCIES

None found

REFERENCES

Washington Closure Hanford Contract #S00W307A00 (March 2008), *Data Validation Services.*

DOE/RL-2008-11, Rev.0, *Remedial Investigation Work Plan for Hanford Site Releases to the Columbia River*, September 2008.

Appendix 1

Glossary of Data Reporting Qualifiers

Qualifiers which may be applied by data validators in compliance with the WCH statement of work are as follows:

U - Indicates the compound or analyte was analyzed for and not detected above the minimum detectable activity (MDA) in the sample. The value reported is the sample result corrected for sample dilution and moisture content by the laboratory. The data is usable for decision making purposes.

UJ - Indicates the compound or analyte was analyzed for and not detected at concentrations above the minimum detectable activity (MDA) in the sample. Due to a minor QC deficiency identified during the data validation, the associated quantitation limit is an estimate, but is usable for decision making purposes.

J - Indicates the compound or analyte was analyzed for and detected. Due to a minor QC deficiency identified during the data validation, the associated concentration is an estimate, but the data are usable for decision-making purposes.

R - Indicates the compound or analyte was analyzed for, detected, and due to an identified major QC deficiency, the data are unusable.

UR - Indicates the compound or analyte was analyzed for and not detected in the sample. Additionally, the data is unusable due to an identified major QC deficiency.

Appendix 2

Summary of Data Qualification

RADIOCHEMISTRY DATA QUALIFICATION SUMMARY*

SDG: J00601	**REVIEWER:** **ELR**	**Project:** **RCBRA**	**PAGE 1 OF 1**
COMMENTS: No qualifiers assigned			

* - The Qualified Data Summary Table includes laboratory applied "U" qualifiers not specifically identified here. The laboratory applied "U" qualifiers are included to minimize misinterpretation of results contained in the table.

Appendix 3

Annotated Laboratory Reports

Sample Results Summary

TestAmerica TARL

Ordered by Method, Batch No., Client Sample ID.

Date: 23-Oct-09

Report No. : 42582

SDG No: J00601

Batch	Client Id Work Order	Parameter	Result +- Uncertainty (2s)	Qual	Units	Tracer Yield	MDC or MDA	CRDL	RPD
9266208 SRTOT SEP_PRECIP_GPC									
	J195K2								
	LL97E2AC	STRONTIUM	6.78E+00 +- 2.0E+00		pCi/L	100%	1.15E+00		
	J195K2 DUP								
	LL97E2AD	STRONTIUM	7.39E+00 +- 2.2E+00		pCi/L	100%	1.28E+00		8.8
9282312 7196_CR6									
	J19397								
	LL9054AA	HEXCHROME	3.10E-02 +- 0.0E+00		mg/L	N/A	3.70E-03	3.50E-01	
	LL0631AE	HEXCHROME	3.70E-03 +- 0.0E+00	U	mg/L	N/A	3.70E-03	3.50E-01	157.3
	J19428								
	LL8681AA	HEXCHROME	1.80E-02 +- 0.0E+00		mg/L	N/A	3.70E-03	3.50E-01	
	J195K2								
	LL97E1AA	HEXCHROME	2.80E-02 +- 0.0E+00		mg/L	N/A	3.70E-03	3.50E-01	

11/7/09

No. of Results: 6

11/7/09

TestAmerica

rptSTLRchSaSummary2 V5.2.5 A2002

RPD - Relative Percent Difference.

U Qual - Analyzed for but not detected above limiting criteria. Limit criteria is less than the Mdc/Mda or Total Uncert or not identified by gamma scan software.

Appendix 4

Laboratory Narrative and Chain-of-Custody Documentation

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

Certificate of Analysis

Washington Hanford Closure
2620 Fermi Avenue
Richland, WA 99354

October 23, 2009

Attention: Joan Kessner

SAF Number : RC-114
Date SDG Closed : October 9, 2009
Number of Samples : Three (3)
Sample Type : Water
SDG Number : J00601
Data Deliverable : 15-Day / Summary

CASE NARRATIVE

I. Introduction

On October 9, 2009 three water samples were received at TestAmerica for radiochemistry and chemistry analysis. Upon receipt, the samples were assigned the following laboratory ID number to correspond with the Washington Closure Hanford (WCH) specific ID:

WCH ID#	TARL ID#	MATRIX	DATE OF RECEIPT
J19397	LL963	WATER	10/9/09
J19561	LL968	WATER	10/9/09
J195K2	LL97E	WATER	10/9/09

II. Sample Receipt

The samples were received in good condition and no anomalies were noted during check-in. The client called on September 30, 2009 and instructed TestAmerica to assign a 15 day turn around time to all RC-114 samples received on 10/1/09 or later.

III. Analytical Results/Methodology

The analytical results for this report are presented by laboratory sample ID. Each set of data includes sample identification information, analytical results and the appropriate associated statistical errors.

The requested analyses were:

Gas Proportional Counting
Strontium-90 by method RL-GPC-003 (RICH-RC-5006)*
Chemical Analysis
Hexavalent Chromium by EPA method 7196A

IV. Quality Control

The analytical results for each analysis performed includes a minimum of one laboratory control sample (LCS), one method (reagent) blank, and one duplicate sample analysis. Any exceptions have been noted in the "Comments" section.

QC and sample results are reported in the same units.

V. Comments

Gas Proportional Counting
Strontium-90 by method RL-GPC-003 (RICH-RC-5006):
The sample and sample duplicate were recounted to verify activity. The LCS, batch blank, samples and sample duplicate (J195K2) results are within contractual requirements.

Chemical Analysis
Hexavalent Chromium by EPA method 7196A:
Samples J19397, J19426, J195K2, J19397 MS, J19397 MSD and J19397 DUP were analyzed with a 50ml aliquot due to insufficient sample volume.

Sample J19397 and J19397 DUP did not meet the criteria for the RPD. Suspect that the sample wasn't completely homogenous.

Except as noted, the LCS, batch blank, sample, sample duplicate (J19397), sample matrix spike (J19397) and sample matrix spike duplicate (J19397) results are within contractual requirements.

I certify that this Certificate of Analysis is in compliance with the SOW, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hard copy data package has been authorized by the Laboratory Manager, or a designee as verified by the following signature.

Reviewed and approved:

Sandra Seger

Sandra Seger
Project Manager

TESTAMERICA

27

Washington Closure Hanford	**CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST**	RC-114-297	Page 1 of 1
Collector R. Cusack	Company Contact JOAN KESSNER	Telephone No. 375-4686	Project Coordinator KESSNER, JT
Project Designation Columbia River Component of the RCBRA - Pore Water - Fe	Sampling Location 100B- 5100A44		SAF No. RC-114
Ice Chest No.	Field Logbook No. EL-1641	COA BESCRC0630	Method of Shipment GROUND TRANSPORT 9/30/09
Shipped To TestAmerica Incorporated, Richland	Offsite Property No. N/A		Bill of Lading/Air Bill No. N/A

Price Code 7K

Data Turnaround ~~7~~ 15 Days

15 Day TAT per J. Kessner 9/30/09

15 [illegible] 10/2/09

POSSIBLE SAMPLE HAZARDS/REMARKS

radioactive near or below background levels

Special Handling and/or Storage

N/A

J00601

J9J090191

Due-10/23/09

	Cool 4C	HNO3 to pH <2								
Preservation	Cool 4C	HNO3 to pH <2								
Type of Container	G/P	G/P								
No. of Container(s)	1	1								
Volume	500mL	1000mL								
SAMPLE ANALYSIS	Chromium Hex - 7196	Strontium 89/90 - Total Sr								

Sample No.	Matrix *	Sample Date	Sample Time										
J1SSK7	WATER	10-08-09	1439	X	X	LL 975							

CHAIN OF POSSESSION Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
R. Cusack R. Cusack	10-08-09 1511	EASREF 6	10-08-09 1511
EAS LOCKED STORAGE	10/9/09 830	SHANNAN JOHNSON	10/9/09 830
SHANNAN JOHNSON	10/9/09 840		10/9/09 840

SPECIAL INSTRUCTIONS

Sample unavailable to relinquish samples from EAS Refrigerator. EAS Custodian removed samples for shipping on 10/9/09

Matrix *

S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

Appendix 5

Data Validation Supporting Documentation

APPENDIX A

RADIOCHEMICAL DATA VALIDATION CHECKLIST

VALIDATION LEVEL:	A	B	[✓ C]	D	E
PROJECT	RCBRA		DATA PACKAGE:	I00601	
VALIDATOR:	GLR	LAB: TAL		DATE:	11/7/01
			SDG:	I00601	
ANALYSES PERFORMED					
Gross Alpha/Beta	✓ [illegible]	[illegible]	Alpha Spectroscopy	Gamma Spectroscopy	
Total Uranium	✓ Radium-22[illegible]	Tritium			
SAMPLES/MATRIX					
J19E2					
					water

1\. Completeness ☐ N/A

Technical verification forms present? Yes [✓ No] N/A

Comments:

2\. Initial Calibration (Levels D, E) ☒ N/A

Instruments/detectors calibrated? Yes No N/A

Initial calibration acceptable? Yes No N/A

Standards NIST traceable? Yes No N/A

Standards Expired? Yes No N/A

Calculation check acceptable? Yes No N/A

Comments:

3. Continuing Calibration (Levels D, E) ☒ N/A

Calibration checked within required frequency? .... Yes No N/A

Calibration check acceptable? .... Yes No N/A

Calibration check standards traceable? .... Yes No N/A

Calibration check standards expired? .... Yes No N/A

Calculation check acceptable? .... Yes No N/A

Comments:

4. Background Counts (Levels D, E) .... ☒ N/A

Background Counts checked within required frequency? .... Yes No N/A

Background Counts acceptable? .... Yes No N/A

Calculation check acceptable? .... Yes No N/A

Comments:

5. Blanks (Levels B, C, D, E) ☐ N/A

Method blank analyzed within required frequency? [✓ Yes] No N/A

Method blank results acceptable? [✓ Yes] No N/A

Analytes detected in method blank? Yes [✓ No] N/A

Field blank(s) analyzed? Yes [✓ No] N/A

Field blank results acceptable? Yes No [✓ N/A]

Analytes detected in field blank(s)? Yes No [✓ N/A]

Transcription/Calculation Errors? (Levels D, E) Yes No [✓ N/A]

Comments: 129 EB

6. Laboratory Control Samples or Blank Spike Samples (Levels C, D, E) ☐ N/A

LCS /BSS analyzed within required frequency? [✓ Yes] No N/A

LCS/BSS recoveries acceptable? [✓ Yes] No N/A

LCS/BSS traceable? (Levels D,E) Yes No [✓ N/A]

LCS/BSS expired? (Levels D,E) Yes No [✓ N/A]

LCS/BSS levels correct? (Levels D,E) Yes No [✓ N/A]

Transcription/Calculation Errors? (Levels D, E) Yes No [✓ N/A]

Comments:

7. Chemical Carrier Recovery (Levels C, D, E) ☒ N/A

Chemical carrier added? Yes No N/A

Chemical recovery acceptable? Yes No N/A

Chemical carrier traceable? (Levels D, E) Yes No N/A

Chemical carrier expired? (Levels D, E) .... Yes No N/A

Transcription/Calculation errors? (Levels D, E) .... Yes No N/A

Comments:

8. Tracer Recovery (Levels C, D, E) .... ☐ N/A

Tracer added? .... [✓ Yes] No N/A

Tracer recovery acceptable? .... [✓ Yes] No N/A

Tracer traceable? (Levels D, E) .... Yes No [✓ N/A]

Tracer expired? (Levels D, E) .... Yes No [✓ N/A]

Transcription/Calculation errors? (Levels D, E) .... Yes No [✓ N/A]

Comments:

9. Matrix Spikes (Levels C, D, E) .... ☒ N/A

Matrix spike analyzed? .... Yes No N/A

Spike recoveries acceptable? .... Yes No N/A

Spike source traceable? (Levels D, E) .... Yes No N/A

Spike source expired? Levels D, E) .... Yes No N/A

Transcription/Calculation Errors? (Levels D, E) .... Yes No N/A

Comments:

10. Duplicates (Levels C, D, E) .... ☐ N/A

Duplicates Analyzed at required frequency? .... [✓ Yes] No N/A

RPD Values Acceptable? .... [✓ Yes] No N/A

Transcription/Calculation Errors? (Levels D, E) .... Yes No [✓ N/A]

Comments:

11. Field QC Samples (Levels C, D, E) .... ☐ N/A

Field duplicate sample(s) analyzed? .... Yes [✓ No] N/A

Field duplicate RPD values acceptable? .... Yes No [✓ N/A]

Field split sample(s) analyzed? .... Yes [✓ No] N/A

Field split RPD values acceptable? .... Yes No [✓ N/A]

Performance audit sample(s) analyzed? .... Yes [✓ No] N/A

Performance audit sample results acceptable? .... Yes No [✓ N/A]

Comments: no field QC

12. Holding Times (All levels)

Are sample holding times acceptable? .... [✓ Yes] No N/A

Comments:

D. Results and Detection Limits (All Levels) ☐ N/A

Results reported for all required sample analyses? [✓ Yes] No N/A

Results supported in raw data?(Levels D, E) Yes No [✓ N/A]

Results Acceptable? (Levels D, E) Yes No [✓ N/A]

Transcription/Calculation errors? (Levels D, E) Yes No [✓ N/A]

MDA's meet required detection limits? [✓ Yes] No N/A

Transcription/calculation errors? (Levels D, E) Yes No [✓ N/A]

Comments:

Appendix 6

Additional Documentation Requested by Client

QC Results Summary

TestAmerica TARL

Ordered by Method, Batch No, QC Type,.

Date: 23-Oct-09

Report No. : 42582

SDG No.: J0D601

Batch Work Order	Parameter	Result +- Uncertainty (2s)	Qual	Units	Tracer Yield	LCS Recovery	Bias	MDC|MDA
SRTOT_SEP_PRECIP_GPC								
9286208 BLANK QC,								
LMGFH1AA	STRONTIUM	7.48E-01 +- 6.6E-01	U	pCi/L	93%			1.29E+00
9286208 LCS,								
LMGFH1AC	STRONTIUM	2.52E+01 +- 6.8E+00		pCi/L	90%	93%	-0.1	1.38E+00
7196_CR6								
9282312 BLANK QC,								
LMAD81AA	HEXCHROME	3.70E-03 +- 0.0E+00	U	mg/L	N/A			3.70E-03
9282312 LCS,								
LMAD81AC	HEXCHROME	5.20E-01 +- 0.0E+00		mg/L	N/A	104%	0.0	3.70E-03
9282312 MATRIX SPIKE, J10007								
LL9631AC	HEXCHROME	5.36E-01 +- 0.0E+00		mg/L	N/A	102%	0.0	3.70E-03
LL9631AD	HEXCHROME	5.36E-01 +- 0.0E+00		mg/L	N/A	102%	0.0	3.70E-03

No. of Results: 6

TestAmerica Bias - (Result/Expected)-1 as defined by ANSI N13.30.

rptSTLRchQcSummary V5.3.5 A2002 U Qual - Analyzed for but not detected above limiting criteria. Limit criteria is less than the Mdc/Mda or Total Uncert or not identified by gamma scan software.

F.2.1.4 SDG J00603

SAF-RC-114
Columbia River Component of the RCBRA – Pore Water – Phase II
FINAL VALIDATION PACKAGE

COMPLETE COPY OF VALIDATION PACKAGE TO:

Kathy Wendt H4-21

COMMENTS:

SDG J00603 **SAF-RC-114**

Date: 9 November 2009
To: Washington Closure Hanford Inc. (technical representative)
From: ELR Consulting
Project: Columbia River Component of the RCBRA – Pore Water – Phase II
Subject: Wet Chemistry - Data Package No. J00603-TAL

INTRODUCTION

This memo presents the results of data validation on Data Package No. J00603 prepared by TestAmerica Laboratory Inc. (TAL). A list of samples validated along with the analyses reported and the method of analysis is provided in the following table.

Sample ID	Sample Date	Media	Validation	Analyte
J19381	10/12/09	Water	C	See note 1
J19419	10/12/09	Water	C	See note 1
J19526	10/12/09	Water	C	See note 1
J195D6	10/12/09	Water	C	See note 1
J195D7	10/12/09	Water	C	See note 1
J195D8	10/12/09	Water	C	See note 1

1 – Chromium VI by 7196A.

Data validation was conducted in accordance with the Washington Closure Hanford (WCH) validation statement of work and the Remedial Investigation Work Plan for Hanford Site Releases to the Columbia River (DOE/RL-2008-11, Rev. 0, September 2008). Appendices 1 through 6 provide the following information as indicated below:

Appendix 1. Glossary of Data Reporting Qualifiers
Appendix 2 Summary of Data Qualification
Appendix 3. Annotated Laboratory Reports
Appendix 4. Laboratory Narrative and Chain-of-Custody Documentation
Appendix 5. Data Validation Supporting Documentation
Appendix 6. Additional Documentation Requested by Client

DATA QUALITY PARAMETERS

Holding Times

Analytical holding times for metals are assessed to ascertain whether the holding time requirements were met by the laboratory. The holding time requirements are as follows: Soil samples must be analyzed within 24 hours for chromium VI.

If holding times are exceeded, but not by greater than two times the limit, all associated sample results are qualified as estimates and flagged "J" for detects and "UJ" for non-detects. If holding times are exceeded by greater than two times the limit, all associated detectable sample results are qualified as estimates and flagged "J" and all non-detects are rejected and flagged "UR".

All holding times were acceptable.

- **Method Blanks**

Method Blanks

Method blank analyses are performed to determine the extent of laboratory contamination introduced through sampling, sample preparation and analysis. At least one acceptable method blank analysis must be conducted for every 20 samples. No contaminants should be present in the method blank. All blank results must fall below the contract required detection limit (CRQL) to be acceptable.

All method blank results were acceptable.

Field (Equipment) Blank

No field blanks were submitted for analysis

- **Accuracy**

Matrix Spike and Laboratory Control Sample

Matrix spike (MS) and laboratory control sample (LCS) analyses are used to assess the analytical accuracy of the reported data. The matrix spike is used to assess the effect of the matrix on the ability to accurately quantify sample concentrations. Recoveries must fall within the range of 80% to 120%. Samples with a recovery of less than 30% and a sample result below the IDL are rejected and flagged "UR". Samples with a recovery of 30% to 79% and a sample result less than the IDL are qualified "UJ". Samples with a recovery of greater than 120% or less than 80% and a sample result greater than the IDL are qualified as estimates and flagged "J". Finally, for samples with a recovery greater than 120% and a sample result less than the IDL, no qualification is required.

All accuracy results were acceptable.

- **Precision**

Laboratory Duplicate Samples

Analytical precision is expressed by the relative percent differences (RPD) between the recoveries of matrix spike duplicate (MSD) analyses performed on a sample in the analytical batch. Precision may alternatively be assessed using unspiked duplicate analyses performed on a sample in the analytical batch. If both sample and replicate activities (concentrations) are greater than five times the CRDL and the RPD is less than 20%, no qualification is required. If either activity (concentration) is less than five times the CRDL, the RPD control limit is less than or equal to two times the CRDL. If

the RPD is outside the applicable control limit, associated results are qualified as estimated detects or estimated non-detects.

All laboratory duplicate results were acceptable.

Field Duplicate

One set of field duplicates (J19381/J19419) were submitted for analysis. Field blanks are compared using the same criteria as for laboratory duplicates. Under the WCH statement of work, no qualification is required.

- **Analytical Detection Levels**

Reported analytical detection levels are compared against the required quantitation limits (RQLs) to ensure that laboratory detection levels meet the required criteria. All analytes met the RQL.

- **Completeness**

Data package J00603 was submitted for validation and verified for completeness. Completeness is based on the percentage of data determined to be valid (i.e., not rejected). The completion percentage was 100%.

MAJOR DEFICIENCIES

None found.

MINOR DEFICIENCIES

None found

REFERENCES

Washington Closure Hanford Contract #S00W307A00 (March 2008), *Data Validation Services*.

DOE/RL-2008-11, Rev.0, *Remedial Investigation Work Plan for Hanford Site Releases to the Columbia River*, September 2008.

Appendix 1

Glossary of Data Reporting Qualifiers

Qualifiers which may be applied by data validators in compliance with WCH validation SOW are as follows:

U - Indicates the compound or analyte was analyzed for and not detected in the sample. The value reported is the sample quantitation limit corrected for sample dilution and moisture content by the laboratory.

UJ - Indicates the compound or analyte was analyzed for and not detected in the sample. Due to a minor QC deficiency identified during the data validation, the associated quantitation limit is an estimate.

J - Indicates the compound or analyte was analyzed for and detected. Due to a minor QC deficiency identified during the data validation, the associated concentration is an estimate, but the data are usable for decision-making purposes.

BJ - Applied to inorganic analyses only. Indicates the analyte concentration was greater than the IDL but less than the CRDL and is considered an estimated value.

R - Indicates the compound or analyte was analyzed for, detected, and due to an identified major QC deficiency, the data are unusable.

UR - Indicates the compound or analyte was analyzed for and not detected in the sample. Additionally, the data is unusable due to an identified major QC deficiency.

NJ - Indicates presumptive evidence of a compound at an estimated value. The data may not be valid for some specific applications (i.e., usable for decision-making purposes).

N - Indicates presumptive evidence of a compound. The data may not be valid for some specific applications (i.e., usable for decision-making purposes).

Appendix 2

Summary of Data Qualification

WET CHEMISTRY DATA QUALIFICATION SUMMARY*

SDG: J00603	**REVIEWER: ELR**	**Project: RCBRA**	**PAGE 1 OF 1**

COMMENTS: No qualifiers assigned

* - The Qualified Data Summary Table includes laboratory applied "U" qualifiers not specifically identified here. The laboratory applied "U" qualifiers are included to minimize misinterpretation of results contained in the table.

Appendix 3

Annotated Laboratory Reports

Sample Results Summary

Date: 26-Oct-09

TestAmerica TARL

Ordered by Method, Batch No., Client Sample ID

Report No. : 42698

SDG No: J00603

Batch	Client Id Work Order	Parameter	Result +- Uncertainty (2s)	Qual	Units	Tracer Yield	MDC or MDA	CRDL	RPD
9289499 7196_CR6									
	J19381								
	LMFN91AA	HEXCHROME	3.31E-01 +- 0.0E+00		mg/L	N/A	3.70E-03	3.50E-01	
	J19419								
	LMFPA1AA	HEXCHROME	3.44E-01 +- 0.0E+00		mg/L	N/A	3.70E-03	3.50E-01	
	J19526								
	LMFPF1AA	HEXCHROME	1.60E-02 +- 0.0E+00		mg/L	N/A	3.70E-03	3.50E-01	
	J196D6								
	LMFPK1AA	HEXCHROME	2.60E-02 +- 0.0E+00		mg/L	N/A	3.70E-03	3.50E-01	
	LMFPK1AE	HEXCHROME	2.80E-02 +- 0.0E+00		mg/L	N/A	3.70E-03	3.50E-01	7.4
	J196D7								
	LMFPP1AA	HEXCHROME	1.40E-02 +- 0.0E+00		mg/L	N/A	3.70E-03	3.50E-01	
	J196D8								
	LMFPQ1AA	HEXCHROME	2.60E-02 +- 0.0E+00		mg/L	N/A	3.70E-03	3.50E-01	

No. of Results: 7

11/7/09

TestAmerica   RPD - Relative Percent Difference.

rptSTLRchSaSum
mary2 V5.2.6
A2002

Appendix 4

Laboratory Narrative and Chain-of-Custody Documentation

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Certificate of Analysis

Washington Hanford Closure
2620 Fermi Avenue
Richland, WA 99354

October 26, 2009

Attention: Joan Kessner

SAF Number	:	RC-114
Date SDG Closed	:	October 12, 2009
Number of Samples	:	Six (6)
Sample Type	:	Water
SDG Number	:	J00603
Data Deliverable	:	15-Day / Summary

CASE NARRATIVE

I. Introduction

On October 12, 2009 six water samples were received at TestAmerica for chemistry analysis. Upon receipt, the samples were assigned the following laboratory ID number to correspond with the Washington Closure Hanford (WCH) specific ID:

WCH ID#	TARL ID#	MATRIX	DATE OF RECEIPT
J19381	LMFN9	WATER	10/12/09
J19419	LMFPA	WATER	10/12/09
J19526	LMFPF	WATER	10/12/09
J195D6	LMFPK	WATER	10/12/09
J195D7	LMFPP	WATER	10/12/09
J195D8	LMFPQ	WATER	10/12/09

II. Sample Receipt

The samples were received in good condition and no anomalies were noted during check-in. The client called on September 30, 2009 and instructed TestAmerica to assign a 15 day turn around time to all RC-114 samples received on 10/1/09 or later.

III. Analytical Results/Methodology

The analytical results for this report are presented by laboratory sample ID. Each set of data includes sample identification information, analytical results and the appropriate associated statistical errors.

The requested analyses were:

Chemical Analysis
Hexavalent Chromium by EPA method 7196A

IV. Quality Control

The analytical results for each analysis performed includes a minimum of one laboratory control sample (LCS), one method (reagent) blank, and one duplicate sample analysis. Any exceptions have been noted in the "Comments" section.

QC and sample results are reported in the same units.

V. Comments

Chemical Analysis
Hexavalent Chromium by EPA method 7196A:
The samples were analyzed with a 50ml aliquot due to insufficient sample volume.

The LCS, batch blank, sample, sample duplicate (J195D6), sample matrix spike (J195D6) and sample matrix spike duplicate (J195D6) results are within contractual requirements.

I certify that this Certificate of Analysis is in compliance with the SOW, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hard copy data package has been authorized by the Laboratory Manager, or a designee as verified by the following signature.

Reviewed and approved:

Sandra Seger
Sandra Seger
Project Manager

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-114-29

Page 1 of 1

Collector Sam Gilbo WGH	**Company Contact** JOAN KESSNER	**Telephone No.** 375-4638	**Project Coordinator** KESSNER, JH
Project Designation Columbia River Component of the RCBRA - Pore Water - Pa	**Sampling Location** 100D- T(QED3A		**SAF No.** RC-114
Ice Chest No. NA	**Field Logbook No.** EL-1639	**COA** BESCRC6530	**Method of Shipment** GROUND TRANSPORT 9/30/09 SES 9/30/09
Shipped To TestAmerica Incorporated, Richland	**Offsite Property No.** N/A		**Bill of Lading/Air Bill No.** N/A

Price Code 7K 15 DAY TAT PER J. KESSNER OD

Data Turnaround ~~7 Days~~ 15 Days

POSSIBLE SAMPLE HAZARDS/REMARKS

Radioactive near or below background levels

Special Handling and/or Storage

N/A

Preservation	Cool 4°C
Type of Container	GP
No. of Container(s)	1
Volume	500mL 75L
SAMPLE ANALYSIS	[illegible]

Sample No.	Matrix *	Sample Date	Sample Time	
J19381 LMEH9	WATER	10-12-09	11:03	X

CHAIN OF POSSESSION

Sign/Print Names J Hm 10/12/09

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Sam Gilbo Sam Gilbo	10-12-09 1300	[illegible] Angela Garcia	

SPECIAL INSTRUCTIONS

J00003
J9J120181
Due 10/27/09

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received by	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Washington Closure Hanford	**CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST**	**RC-114-136**	Page 1 of 1
Collector Sam Gulic	Company Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator KESSNER, JH
Project Designation Columbia River Component of the RCBRA - Pore Water - Ph	Sampling Location DUPLICATE 1000- T1GOD3A	SAF No. RC-114	Price Code 7K 15 DAY TAT per JKessner on 9/30/09 Data Turnaround ~~7 Days~~ 15 days
Ice Chest No. N/A	Field Logbook No. EL-1637	COA RESCRC6520	Method of Shipment GROUND TRANSPORT SKS 10/13/09
Shipped To TestAmerica Incorporated, Richland	Offsite Property No. N/A		Bill of Lading/Air Bill No. N/A

POSSIBLE SAMPLE HAZARDS/REMARKS
Radioactive near or below background levels

Special Handling and/or Storage
N/A

Preservation	Cool 4C
Type of Container	G/P
No. of Container(s)	1
Volume	500mL 70mL
SAMPLE ANALYSIS	Chromium Hex - [illegible]

Sample No.	Matrix *	Sample Date	Sample Time	
J19419 LMFPA	WATER	10-12-09	11:03	X

CHAIN OF POSSESSION

Sign/Print Names

Relinquished By/Removed From Sam Gulic	Date/Time 10/12/09 2PM	Received By/Stored In	Date/Time 2pm
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time

SPECIAL INSTRUCTIONS
J00603
J9J120181
Due 10/27/09

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Washington Closure Hanford	**CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST**	RC-114-168	Page 1 of 1
Collector Sam Gilko	**Company Contact** JOAN KESSNER **Telephone No.** 375-4644	**Project Coordinator** KESSNER, JH	**Price Code** 7K **Data Turnaround**
Project Designation Columbia River Component of the RCBRA - Pore Water - Pb	**Sampling Location** 100D- J100D9	**SAF No.** RC-114	15 day TAT per J. Kessner on 9/30/09 ~~7~~ Days 45 days
Ice Chest No. NA	**Field Logbook No.** EL-1639 **COA** RESCRC6520	**Method of Shipment** GROUND TRANSPORT	SES 10/13/09
Shipped To TestAmerica Incorporated, Richland	**Offsite Property No.** N/A	**Bill of Lading/Air Bill No.** N/A	

POSSIBLE SAMPLE HAZARDS/REMARKS
radioactive near or below background levels

Special Handling and/or Storage
N/A

Preservation	Cool 4C
Type of Container	G/P
No. of Container(s)	1
Volume	500mL 70mL
SAMPLE ANALYSIS	Chromium Hex - 7196

Sample No	Matrix *	Sample Date	Sample Time	Chromium Hex - 7196
J18520 LM FPP	WATER	10-12-09	11:55	X

CHAIN OF POSSESSION Sign/Print Names 10/12/09

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Sam Gilko	10-12-09/2PM		2pm

SPECIAL INSTRUCTIONS

J00203
J9J120181
Due 10/27/09

Matrix *
[illegible]

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-114-261

Page 1 of 1

Collector: R. Sweet

Company Contact: JOAN KESSNER

Telephone No.: 375-4688

Project Coordinator: KESSNER, JH

Price Code: 7K

15 day TAT per J. Kessner on 9/30/09 SKS 10/13/09

Data Turnaround: 7 Days

Project Designation: Columbia River Component of the RCBRA - Pore Water - Pt.

Sampling Location: 100D- T100D 3A

SAF No.: RC-114

Ice Chest No.:

Field Logbook No.: EL-1641

COA: BBSCRC6530

Method of Shipment: GROUND TRANSPORT

Shipped To: TestAmerica Incorporated, Richland

Offsite Property No.: N/A

Bill of Lading/Air Bill No.: N/A

POSSIBLE SAMPLE HAZARDS/REMARKS

radioactive near or below background levels

Special Handling and/or Storage

N/A

Preservation	Cool 4C
Type of Container	G/P
No. of Container(s)	1
Volume	500mL

SAMPLE ANALYSIS

Sample No.	Matrix *	Sample Date	Sample Time	Chromium Hex 7196									
J18SD6 [illegible] LMEPK	WATER	10-12-09	1014	X									

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
R. Sweet	10-12-09 2pm	Angel Garcia	10/12/09 9pm

SPECIAL INSTRUCTIONS

J00603

JAJ120181

Due 10/27/09

Matrix *

S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W = Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

TESTAMERICA

24 000017

Washington Closure Hanford	**CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST**	RC-114-263	Page 1 of 1
Collector R. Cusick	Company Contact JOAN KESSNER	Telephone No. 375-4681	Project Coordinator KESSNER, JH
Project Designation Columbia River Component of the RCBRA - Pore Water - Pb	Sampling Location 100D- J100D12		SAF No. RC-114
Ice Chest No.	Field Logbook No. EL-1641	COA BESCRC6320	Method of Shipment GROUND TRANSPORT
Shipped To TestAmerica Incorporated, Richland	Offsite Property No. N/A		Bill of Lading/Air Bill No. N/A

Price Code 7K
15 day TAT per J Kessner 10
9/30/09 SES 10/13/09

Data Turnaround
7 Days

POSSIBLE SAMPLE HAZARDS/REMARKS
radioactive near or below background levels

Special Handling and/or Storage
N/A

Preservation	Cool 4C
Type of Container	G/P
No. of Container(s)	1
Volume	500mL
SAMPLE ANALYSIS	Chromium Hex - 7196

Sample No	Matrix *	Sample Date	Sample Time	
J19507 UMFPP	WATER	10-12-09	1115	X

CHAIN OF POSSESSION

Sign/Print Names 10/12/09

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
R. Cusick R. Cusick	10-12-09 3pm		3pm
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time

SPECIAL INSTRUCTIONS

J00603
J9J120181
Due 10/27/09

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-114-263

Page 1 of 1

Collector R. Sweet	Company Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator KESSNER, JH
Project Designation Columbia River Component of the RCBRA - Pore Water - Ph	Sampling Location 100D- J100D39		SAF No. RC-114
Ice Chest No.	Field Logbook No. EL-1641	COA BESCRC4520	Method of Shipment GROUND TRANSPORT
Shipped To TestAmerica Incorporated, Richland	Offsite Property No. N/A		Bill of Lading/Air Bill No. N/A

Price Code 7K

15 day TAT per J Kessner on 9/30/09 SKS 10/13/09

Data Turnaround 7 Days

POSSIBLE SAMPLE HAZARDS/REMARKS

radioactive near or below background levels

Special Handling and/or Storage

N/a

Preservation	Cool 4C
Type of Container	G/P
No. of Container(s)	1
Volume	500mL
SAMPLE ANALYSIS	Chromium Hex - 7196

Sample No.	Matrix *	Sample Date	Sample Time	
J19SD8 LMPPQ	WATER	10-12-09	1224	X

CHAIN OF POSSESSION Sign/Print Names 10/12/09

Relinquished By/Removed From R. Sweet R. Sweet	Date/Time 10-12-09 2pm	Received By/Stored In	Date/Time 2pm
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time

SPECIAL INSTRUCTIONS

J00603
J9J120181
Due 10/27/09

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W = Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Appendix 5

Data Validation Supporting Documentation

GENERAL CHEMISTRY ANALYSIS DATA VALIDATION CHECKLIST

VALIDATION LEVEL	A	B	[✓ C]	D	E
PROJECT: RCBRA			DATA PACKAGE: J00603		
VALIDATOR: ELR		LAB: TAL		DATE: 11/7/07	
			SDG: J00603		
ANALYSES PERFORMED					
Anions/IC	TOC	TOX	TPH-418.1	Oil and Grease	Alkalinity
Ammonia	BOD/COD	Chloride	[✓ Chromium-VI]	pH	NO_3/NO_2
Sulfate	TDS	TKN	Phosphate		
SAMPLES/MATRIX					
J19381 J19419 J1952[illegible] J195D6 J195D7					
J195D8					
water					

1. DATA PACKAGE COMPLETENESS AND CASE NARRATIVE

Technical verification documentation present? .... Yes [✓ No] N/A

Comments:

2. INSTRUMENT PERFORMANCE AND CALIBRATIONS (Levels D and E)

Initial calibrations performed on all instruments? .... Yes No [✓ N/A]

Initial calibrations acceptable? .... Yes No [✓ N/A]

ICV and CCV checks performed on all instruments? .... Yes No [✓ N/A]

ICV and CCV checks acceptable? .... Yes No [✓ N/A]

Standards traceable? .... Yes No [✓ N/A]

Standards expired? .... Yes No [✓ N/A]

Calculation check acceptable? .... Yes No [✓ N/A]

Comments:

GENERAL CHEMISTRY ANALYSIS DATA VALIDATION CHECKLIST

3. BLANKS (Levels B, C, D, and E)

ICB and CCB checks performed for all applicable analyses? (Levels D, E) .... Yes No [✓ N/A]
ICB and CCB results acceptable? (Levels D, E) .... Yes No [✓ N/A]
Laboratory blanks analyzed? .... [✓ Yes] No N/A
Laboratory blank results acceptable? .... [✓ Yes] No N/A
Field blanks analyzed? (Levels C, D, E) .... Yes [✓ No] N/A
Field blank results acceptable? (Levels C, D, E) .... Yes No [✓ N/A]
Transcription/calculation errors? (Levels D, E) .... Yes No [✓ N/A]
Comments: NO FB

4. ACCURACY (Levels C, D, and E)

Spike samples analyzed? .... [✓ Yes] No N/A
Spike recoveries acceptable? .... [✓ Yes] No N/A
Sike standards NIST traceable? (Levels D, E) .... Yes No [✓ N/A]
Spike standards expired? (Levels D, E) .... Yes No [✓ N/A]
LCS/BSS samples analyzed? .... [✓ Yes] No N/A
LCS/BSS results acceptable? .... [✓ Yes] No N/A
Standards traceable? (Levels D, E) .... Yes No [✓ N/A]
Standards expired? (Levels D, E) .... Yes No [✓ N/A]
Transcription/calculation errors? (Levels D, E) .... Yes No [✓ N/A]
Performance audit sample(s) analyzed? .... Yes [✓ No] N/A
Performance audit sample results acceptable? .... Yes No [✓ N/A]
Comments: NO PAS

GENERAL CHEMISTRY ANALYSIS DATA VALIDATION CHECKLIST

5. PRECISION (Levels C, D, and E)

Duplicate RPD values acceptable?........ [✓ Yes] No N/A

Duplicate results acceptable?........ [✓ Yes] No N/A

MS/MSD standards NIST traceable? (Levels D, E)........ Yes No [✓ N/A]

MS/MSD standards expired? (Levels D, E)........ Yes No [✓ N/A]

Field duplicate RPD values acceptable?........ [✓ Yes] No N/A

Field split RPD values acceptable?........ Yes No [✓ N/A]

Transcription/calculation errors? (Levels D, E)........ Yes No [✓ N/A]

Comments:

39//415 - FD

6. HOLDING TIMES (all levels)

Samples properly preserved?........ [✓ Yes] No N/A

Sample holding times acceptable?........ [✓ Yes] No N/A

Comments:

GENERAL CHEMISTRY ANALYSIS DATA VALIDATION CHECKLIST

7. RESULT QUANTITATION AND DETECTION LIMITS (all levels)

Results reported for all requested analytes? .... [✓ Yes] No N/A

Results supported in the raw data? (Levels D, E) .... Yes No [✓ N/A]

Samples properly prepared? (Levels D, E) .... Yes No [✓ N/A]

Detection limits meet RDL? .... [✓ Yes] No N/A

Transcription/calculation errors? (Levels D, E) .... Yes No [✓ N/A]

Comments: ___

Appendix 6

Additional Documentation Requested by Client

QC Results Summary

TestAmerica TARL

Ordered by Method, Batch No, QC Type,.

Date: 28-Oct-09

Report No. : 42590

SDG No.: J00603

Batch Work Order	Parameter	Result +- Uncertainty (2s)	Qual	Units	Tracer Yield	LCS Recovery	Bias	MDC|MDA
7196_CR6								
9280488 BLANK QC,								
LMFTM1AA	HEXCHROME	3.70E-03 +- 0.0E+00	U	mg/L	N/A			3.70E-03
9280488 LCS,								
LMFTM1AC	HEXCHROME	5.14E-01 +- 0.0E+00		mg/L	N/A	103%	0.0	3.70E-03
9280488 MATRIX SPIKE, J19506								
LMFPK1AC	HEXCHROME	5.33E-01 +- 0.0E+00		mg/L	N/A	101%	0.0	3.70E-03
LMFPK1AD	HEXCHROME	5.39E-01 +- 0.0E+00		mg/L	N/A	102%	0.0	3.70E-03

No. of Results: 4

Bias - (Result/Expected)-1 as defined by ANSI N13.30.

U Qual - Analyzed for but not detected above limiting criteria. Limit criteria is less than the Mdc/Mda or Total Uncert or not identified by gamma scan software.

F.2.1.5 SDG J00607

SAF-RC-114
Columbia River Component of the RCBRA – Pore Water – Phase II
FINAL VALIDATION PACKAGE

COMPLETE COPY OF VALIDATION PACKAGE TO:

Kathy Wendt H4-21

COMMENTS:

SDG J00607 **SAF-RC-114**

Date: 30 November 2009
To: Washington Closure Hanford Inc. (technical representative)
From: ELR Consulting
Project: Columbia River Component of the RCBRA – Pore Water – Phase II
Subject: Wet Chemistry - Data Package No. J00607-TAL

INTRODUCTION

This memo presents the results of data validation on Data Package No. J00607 prepared by TestAmerica Laboratory Inc. (TAL). A list of samples validated along with the analyses reported and the method of analysis is provided in the following table.

Sample ID	Sample Date	Media	Validation	Analyte
J19369	10/14/09	Water	C	See note 1
J19370	10/14/09	Water	C	See note 1

1 – IC anions by 300.0

Data validation was conducted in accordance with the Washington Closure Hanford (WCH) validation statement of work and the Remedial Investigation Work Plan for Hanford Site Releases to the Columbia River (DOE/RL-2008-11, Rev. 0, September 2008). Appendices 1 through 6 provide the following information as indicated below:

Appendix 1. Glossary of Data Reporting Qualifiers
Appendix 2. Summary of Data Qualification
Appendix 3. Annotated Laboratory Reports
Appendix 4. Laboratory Narrative and Chain-of-Custody Documentation
Appendix 5. Data Validation Supporting Documentation
Appendix 6. Additional Documentation Requested by Client

DATA QUALITY PARAMETERS

Holding Times

Analytical holding times for metals are assessed to ascertain whether the holding time requirements were met by the laboratory. The holding time requirements are as follows: Soil samples must be analyzed within 28 days for chloride, fluoride, bromide and sulfate and within 48 hours for nitrate, nitrite and orthophosphate.

If holding times are exceeded, but not by greater than two times the limit, all associated sample results are qualified as estimates and flagged "J" for detects and "UJ" for non-detects. If holding times are exceeded by greater than two times the limit, all associated detectable sample results are qualified as estimates and flagged "J" and all non-detects are rejected and flagged "UR"

Due to the holding time being exceeded by less than twice the limit, all nitrate, nitrite and orthophosphate results were qualified as estimates and flagged "J".

All other holding times were acceptable.

- **Method Blanks**

Method Blanks

Method blank analyses are performed to determine the extent of laboratory contamination introduced through sampling, sample preparation and analysis. At least one acceptable method blank analysis must be conducted for every 20 samples. No contaminants should be present in the method blank. All blank results must fall below the contract required detection limit (CRQL) to be acceptable.

All method blank results were acceptable.

Field (Equipment) Blank

No field blanks were submitted for analysis.

- **Accuracy**

Matrix Spike and Laboratory Control Sample

Matrix spike (MS) and laboratory control sample (LCS) analyses are used to assess the analytical accuracy of the reported data. The matrix spike is used to assess the effect of the matrix on the ability to accurately quantify sample concentrations. Recoveries must fall within the range of 80% to 120%. Samples with a recovery of less than 30% and a sample result below the IDL are rejected and flagged "UR". Samples with a recovery of 30% to 79% and a sample result less than the IDL are qualified "UJ". Samples with a recovery of greater than 120% or less than 80% and a sample result greater than the IDL are qualified as estimates and flagged "J". Finally, for samples with a recovery greater than 120% and a sample result less than the IDL, no qualification is required.

All accuracy results were acceptable.

- **Precision**

Laboratory Duplicate Samples

Analytical precision is expressed by the relative percent differences (RPD) between the recoveries of matrix spike duplicate (MSD) analyses performed on a sample in the analytical batch. Precision may alternatively be assessed using unspiked duplicate analyses performed on a sample in the analytical batch. If both sample and replicate activities (concentrations) are greater than five times the CRDL and the RPD is less than 20%, no qualification is required. If either activity (concentration) is less than five times the CRDL, the RPD control limit is less than or equal to two times the CRDL. If

the RPD is outside the applicable control limit, associated results are qualified as estimated detects or estimated non-detects.

All precision results were acceptable.

Field Duplicate

No field duplicates were submitted for analysis.

- **Analytical Detection Levels**

Reported analytical detection levels are compared against the required quantitation limits (RQLs) to ensure that laboratory detection levels meet the required criteria. All analytes met the RQL.

- **Completeness**

Data package J00607 was submitted for validation and verified for completeness. Completeness is based on the percentage of data determined to be valid (i.e , not rejected). The completion percentage was 100%.

MAJOR DEFICIENCIES

None found.

MINOR DEFICIENCIES

The following minor deficiency was noted:

- Due to the holding time being exceeded by less than twice the limit, all nitrate, nitrite and orthophosphate results were qualified as estimates and flagged "J".

Data flagged "J" indicates that the associated concentration is an estimate, but under the WCH statement of work, the data may be usable for decision-making purposes. All other validated results are considered accurate within the standard error associated with the methods.

REFERENCES

Washington Closure Hanford Contract #S00W307A00 (March 2008), *Data Validation Services*.

DOE/RL-2008-11, Rev.0, *Remedial Investigation Work Plan for Hanford Site Releases to the Columbia River*, September 2008.

Appendix 1

Glossary of Data Reporting Qualifiers

Qualifiers which may be applied by data validators in compliance with WCH validation SOW are as follows:

U - Indicates the compound or analyte was analyzed for and not detected in the sample. The value reported is the sample quantitation limit corrected for sample dilution and moisture content by the laboratory.

UJ - Indicates the compound or analyte was analyzed for and not detected in the sample. Due to a minor QC deficiency identified during the data validation, the associated quantitation limit is an estimate.

J - Indicates the compound or analyte was analyzed for and detected. Due to a minor QC deficiency identified during the data validation, the associated concentration is an estimate, but the data are usable for decision-making purposes.

BJ - Applied to inorganic analyses only. Indicates the analyte concentration was greater than the IDL but less than the CRDL and is considered an estimated value.

R - Indicates the compound or analyte was analyzed for, detected, and due to an identified major QC deficiency, the data are unusable.

UR - Indicates the compound or analyte was analyzed for and not detected in the sample. Additionally, the data is unusable due to an identified major QC deficiency.

NJ - Indicates presumptive evidence of a compound at an estimated value. The data may not be valid for some specific applications (i.e., usable for decision-making purposes).

N - Indicates presumptive evidence of a compound. The data may not be valid for some specific applications (i.e., usable for decision-making purposes).

Appendix 2

Summary of Data Qualification

WET CHEMISTRY DATA QUALIFICATION SUMMARY*

SDG: J00607	**REVIEWER: ELR**	**Project: RCBRA**	**PAGE 1 OF 1**
COMPOUND	QUALIFIER	SAMPLES AFFECTED	REASON
Nitrate Nitrite Orthophosphate	J	All	Hold time exceeded

* - The Qualified Data Summary Table includes laboratory applied "U" qualifiers not specifically identified here. The laboratory applied "U" qualifiers are included to minimize misinterpretation of results contained in the table.

Appendix 3

Annotated Laboratory Reports

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

Washington Closure Hanford LLC

Wet Chemistry Sample Analysis Data Sheet

Lab Name:	TESTAMERICA DENVER	**Client Sample ID:**	J19369
Lot/SDG Number:	D9J160189	**Lab Sample ID:**	D9J160189-001
Matrix:	WATER	**Lab WorkOrder:**	LMPPA
Date/Time Received:	10/16/09 09:00	**Date/Time Collected:**	10/14/09 14:22

Analysis Method: 300.0A **% Moisture:** N/A **Basis:** Wet **Leach Date:** **Unit:** mg/L

QC Batch	Analyte	Conc.	MDL	RL	Q	Prep Date	Analysis Date	Dilution
9296367	Bromide	0.11	0.11	0.20	U	10/16/09	10/16/09 14:49	1
9296368	Chloride	9.5	0.23	3.0		10/16/09	10/16/09 14:49	1
9296369	Fluoride	0.88	0.060	0.50	B	10/16/09	10/16/09 14:49	1
9290078	Nitrate as N	0.79	0.042	0.50	J	10/16/09	10/16/09 14:49	1
9296372	Nitrite as N	0.049	0.049	0.50	U J	10/16/09	10/16/09 14:49	1
9296371	Phosphate as P, Ortho	0.19	0.19	0.50	U J	10/16/09	10/16/09 14:49	1
9296370	Sulfate	34	0.23	5.0		10/16/09	10/16/09 14:49	1

11/24/09

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

Washington Closure Hanford LLC

Wet Chemistry Sample Analysis Data Sheet

Lab Name:	TESTAMERICA DENVER	Client Sample ID:	J19370
Lot/SDG Number:	D9J160184	Lab Sample ID:	D9J160184-002
Matrix:	WATER	Lab WorkOrder:	LMPPH
Date/Time Received:	10/16/09 09:00	Date/Time Collected:	10/14/09 12:33

Analysis Method: 300.0A % Moisture: N/A Basis: Wet Leach Date: Unit: mg/L

QC Batch	Analyte	Conc.	MDL	RL	Q	Prep Date	Analysis Date	Dilution
9296367	Bromide	0.11	0.11	0.20	U	10/16/09	10/16/09 15:40	1
9296368	Chloride	2.1	0.25	3.0	B	10/16/09	10/16/09 15:40	1
9296369	Fluoride	0.17	0.060	0.50	B	10/16/09	10/16/09 15:40	1
9290078	Nitrate as N	0.042	0.042	0.50	U J	10/16/09	10/16/09 15:40	1
9296372	Nitrite as N	0.049	0.049	0.50	U J	10/16/09	10/16/09 15:40	1
9296371	Phosphate as P, Ortho	0.19	0.19	0.50	U J	10/16/09	10/16/09 15:40	1
9296370	Sulfate	0.51	0.25	5.0	B	10/16/09	10/16/09 15:40	1

11/28/09

Appendix 4

Laboratory Narrative and Chain-of-Custody Documentation

CASE NARRATIVE
J00607 / RC-114 / D9J160184
Rev01

The following report contains the analytical results for two water samples submitted to TestAmerica by Washington Closure Hanford. The samples were received October 16, 2009, according to documented sample acceptance procedures.

Client ID	Lab ID	Analyses Requested	Analyses Performed
J19369	D9J160184-001	300.0/6010	300.0A/6010B/6020
J19370	D9J160184-002	300.0/6010	300.0A/6010B/6020

Dilution factors and qualifiers are provided to assist in the interpretation of the results. In some cases, due to interferences or analytes present above the linear calibration curve, samples must be analyzed at a dilution. For samples analyzed at a dilution, the reporting limits are adjusted relative to the dilution required. Dilutions made for reasons other than the presence of target compounds are addressed in the Supplemental QC Information section.

This report includes reporting limits (RLs) less than TestAmerica Denver's practical quantitation limits. These reporting limits are being used specifically at the client's request to meet the needs of this project. Please note that data are not normally reported to these levels without qualification, since they are inherently less reliable and potentially less defensible than required by the current NELAC standards. Please note that Non-Detect (U) results have been evaluated down to the Method Detection Limit (MDL) and should be considered Non-Detect (U) at the MDL.

TestAmerica utilizes USEPA approved methods in all analytical work. The results apply only to the samples included in this report and meet all requirements of NELAC. All data have been reviewed for compliance with the laboratory QA/QC plan and have been found to be compliant with laboratory protocols, with the exception of any items noted below.

SUPPLEMENTAL QC INFORMATION

Sample Receipt

Samples were received in good condition at a temperature of 3.6°C. No anomalies were encountered during sample receipt.

As instructed by the client on October 21, 2009, samples J19369 and J19370 were logged for Bromide, Chloride, Fluoride, Nitrite as N, ortho-Phosphate as P, and Sulfate analyses, in addition to the Nitrate as N analysis requested on the chains-of-custody.

Total Metals – SW846 6010B/6020

Serial dilution of a digestate in analytical batch 9292449 indicates that physical and chemical interferences are present for Aluminum and Sodium. Results in the analytical report have been flagged with an "L".

Low levels of Sodium and Boron are present in the method blank associated with QC batch 9292449. Because the concentrations in the method blank are not present at levels greater than the reporting limits, corrective action is deemed unnecessary.

Aluminum was recovered outside the QC control limits in the Matrix Spike performed on sample J19369. There is no indication that the analytical system was operating out of control, and method accuracy has been verified by the acceptable LCS analysis data; therefore, corrective action is deemed unnecessary.

Total Metals – SW846 6010B/6020 (cont.)

The percent recovery was not calculated for Iron in the Matrix Spike performed on sample J19369, due to the sample concentration reading greater than four times the spike amount. The acceptable LCS analysis data indicated that the analytical system was operating within control.

The duplicate analysis of sample J19369 exhibited RPD data outside the QC control limits for Barium. It can be noted that the RPD was calculated based on a value below the method detection limit, and as such, could not be reliably calculated.

No other anomalies were encountered.

Wet Chemistry – MCAWW 300.0A

The Nitrate as N, Nitrite as N, and ortho-Phosphate as P analyses for samples J19369 and J19370 were performed 30 minutes to 3 hours outside the 48 hour recommended sample holding times. The samples were received at the laboratory with insufficient time remaining for the laboratory to perform the analyses within the recommended holding times. It is TestAmerica's policy to analyze all samples within holding times; however, the laboratory cannot guarantee that hold times will be met when samples are received with less than half the hold time remaining. The client was notified on October 19, 2009.

It can be noted that the recovery for the Sulfate Matrix Spike performed on sample J19369 is within QC control limits; however, the value is estimated as the concentration exceeded the calibration range.

No other anomalies were encountered.

Revisions – 11/3/09

The revisions included in this report are as follows:

1. Total Metals – SW846 6010B: As requested by the client on November 2, 2009, Arsenic, Selenium, Lead and Boron results have been reported, in addition to the Client List of ICP Metals requested on the chains-of-custody.

I certify that this data package is in compliance with the SOW, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hard copy data package has been authorized by the Laboratory Manager or a designee, as verified by the following signature.

Reviewed and Approved:

Kae E. Yoder
Project Manager

3 U RC 10/14/09
T22

Washington Closure Hanford	**CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST**	RC-114-18	Page 1 of 1

Collector: San Gilbo

Company Contact: JOAN KESSNER — Telephone No. 375-4688

Project Coordinator: KESSNER, JH

Price Code: 7K

Data Turnaround: ~~7 Days~~ 45 days

Project Designation: Columbia River Component of the RCBRA - Pore Water - Ph

Sampling Location: 100D- TK-0D535

SAF No. RC-114

Ice Chest No. N/A

Field Logbook No. EL-1639

COA: BESCRO6320

Method of Shipment: FED EX

Shipped To: EBERLINE SERVICES LIONVILLE

Offsite Property No. N/A

Bill of Lading/Air Bill No.

POSSIBLE SAMPLE HAZARDS/REMARKS
radioactive near or below background levels

Special Handling and/or Storage
N/A

Preservation	Cool 4C	HNO3 to pH <2
Type of Container	P	G/P
No. of Container(s)	1	1
Volume	100mL	500mL
SAMPLE ANALYSIS	IC Anions - 9056 (Custom)	See item (1) in Special Instructions

Sample No.	Matrix *	Sample Date	Sample Time		
J19388	WATER	10-14-09	14:22	X	X

S10100

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
San Gilbo	10-14-09 / 16:02	EAS Ref. F	10-14-09 / 16:02
FAS LOCKED STORAGE	10/15/09 9:00	SHANNAN JOHNSON	10/15/09 9:00
SHANNAN JOHNSON	10/15/09 9:10		10/15/09 9:10
	10/15/09 11:00		10-16-09 0900

SPECIAL INSTRUCTIONS

(1) ICP Metals - 6010TR (Chem List) (Aluminum, Antimony, Barium, Beryllium, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Magnesium, Manganese, Nickel, Potassium, Silver, Sodium, Uranium, Vanadium, Zinc)

JU0607

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION — Received By — Title — Date/Time

FINAL SAMPLE DISPOSITION — Disposal Method — Disposed By — Date/Time

WCH-EE-011

TestAmerica

3.6°C 10/14/09
SRL

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-114-19 Page 1 of 1

Collector Sam Gilbert

Company Contact JOAN KESSNER

Telephone No. 375-4688

Project Coordinator KESSNER, JH

Price Code 7K

Data Turnaround ~~7~~ Days 45 10/29/09

Project Designation Columbia River Component of the RCBRA - Pore Water - Ph

Sampling Location 100D– D-A

SAF No. RC-114

Ice Chest No. N/A

Field Logbook No. EL-1639

COA 8BSCRC6320

Method of Shipment FED EX

Shipped To EBERLINE SERVICES (LIONVILLE)

Offsite Property No. N/A

Bill of Lading/Air Bill No.

POSSIBLE SAMPLE HAZARDS/REMARKS

Radioactive near or below background levels

Special Handling and/or Storage

N/A

Preservation	Cool 4C	HNO3 to pH <2
Type of Container	P	G/P
No. of Container(s)	1	1
Volume	100mL	100mL
SAMPLE ANALYSIS	IC Anions - 9056 (Various)	See item (1) in Special Instructions.

Sample No.	Matrix *	Sample Date	Sample Time		
J18370	WATER	10-14-09	1233	X	X

CHAIN OF POSSESSION

Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Sam Gilbert	10-14-09 / 16:02	FAS Ref E	10-14-09 / 16:02
FAS LOCKED STORAGE E	10/15/09 900	SHANNAN JOHNSON	10/15/09 900
SHANNAN JOHNSON	10/15/09 911		10/15/09 910
	10/15/09 1100		10-16-09 0900

SPECIAL INSTRUCTIONS

(1) ICP Metals - 6010TR (Chem Line) (Aluminum, Antimony, Barium, Beryllium, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Magnesium, Manganese, Nickel, Potassium, Silver, Sodium, Uranium, Vanadium, Zinc)

J00607

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location using custody of samples for shipment to lab.

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION Received By Title Date/Time

FINAL SAMPLE DISPOSITION Disposal Method Disposed By Date/Time

WCH-EE-011

TestAmerica

Appendix 5

Data Validation Supporting Documentation

GENERAL CHEMISTRY ANALYSIS DATA VALIDATION CHECKLIST

VALIDATION LEVEL	A	B	[✓ C]	D	E
PROJECT	RCBRA		DATA PACKAGE:	J00607	
VALIDATOR:	ELR	LAB: TAL		DATE:	11/28/09
			SDG:	J00607	
ANALYSES PERFORMED					
[✓ Anions/IC]	TOC	TOX	TPH-418.1	Oil and Grease	Alkalinity
Ammonia	BOD/COD	Chloride	Chromium-VI	pH	NO_2/NO_3
Sulfate	TDS	TKN	Phosphate		

SAMPLES/MATRIX

J19369 J19370

water

1. DATA PACKAGE COMPLETENESS AND CASE NARRATIVE

Technical verification documentation present? .... Yes [✓ No] N/A

Comments:

2. INSTRUMENT PERFORMANCE AND CALIBRATIONS (Levels D and E)

Initial calibrations performed on all instruments? .... Yes No [✓ N/A]

Initial calibrations acceptable? .... Yes No [✓ N/A]

ICV and CCV checks performed on all instruments? .... Yes No [✓ N/A]

ICV and CCV checks acceptable? .... Yes No [✓ N/A]

Standards traceable? .... Yes No [✓ N/A]

Standards expired? .... Yes No [✓ N/A]

Calculation check acceptable? .... Yes No [✓ N/A]

Comments:

GENERAL CHEMISTRY ANALYSIS DATA VALIDATION CHECKLIST

3. BLANKS (Levels B, C, D, and E)

ICB and CCB checks performed for all applicable analyses? (Levels D, E) .... Yes No [✓ N/A]
ICB and CCB results acceptable? (Levels D, E) .... Yes No [✓ N/A]
Laboratory blanks analyzed? .... [✓ Yes] No N/A
Laboratory blank results acceptable? .... [✓ Yes] No N/A
Field blanks analyzed? (Levels C, D, E) .... Yes [✓ No] N/A
Field blank results acceptable? (Levels C, D, E) .... Yes No [✓ N/A]
Transcription/calculation errors? (Levels D, E) .... Yes No [✓ N/A]
Comments: NO FB

4. ACCURACY (Levels C, D, and E)

Spike samples analyzed? .... [✓ Yes] No N/A
Spike recoveries acceptable? .... [✓ Yes] No N/A
Sike standards NIST traceable? (Levels D, E) .... Yes No [✓ N/A]
Spike standards expired? (Levels D, E) .... Yes No [✓ N/A]
LCS/BSS samples analyzed? .... [✓ Yes] No N/A
LCS/BSS results acceptable? .... [✓ Yes] No N/A
Standards traceable? (Levels D, E) .... Yes No [✓ N/A]
Standards expired? (Levels D, E) .... Yes No [✓ N/A]
Transcription/calculation errors? (Levels D, E) .... Yes No [✓ N/A]
Performance audit sample(s) analyzed? .... Yes [✓ No] N/A
Performance audit sample results acceptable? .... Yes No [✓ N/A]
Comments: NO PAS

GENERAL CHEMISTRY ANALYSIS DATA VALIDATION CHECKLIST

5. PRECISION (Levels C, D, and E)

Duplicate RPD values acceptable? .... [✓ Yes] No N/A

Duplicate results acceptable? .... [✓ Yes] No N/A

MS/MSD standards NIST traceable? (Levels D, E) .... Yes No [✓ N/A]

MS/MSD standards expired? (Levels D, E) .... Yes No [✓ N/A]

Field duplicate RPD values acceptable? .... Yes No [✓ N/A]

Field split RPD values acceptable? .... Yes No [✓ N/A]

Transcription/calculation errors? (Levels D, E) .... Yes No [✓ N/A]

Comments:

6. HOLDING TIMES (all levels)

Samples properly preserved? .... [✓ Yes] No N/A

Sample holding times acceptable? .... Yes [✓ No] N/A

Comments: Nitrate, nitrite + phosphate < 24 HT -[illegible]

GENERAL CHEMISTRY ANALYSIS DATA VALIDATION CHECKLIST

7. RESULT QUANTITATION AND DETECTION LIMITS (all levels)

Results reported for all requested analyses? .... [✓ Yes] No N/A

Results supported in the raw data? (Levels D, E) .... Yes No [✓ N/A]

Samples properly prepared? (Levels D, E) .... Yes No [✓ N/A]

Detection limits meet RDL? .... [✓ Yes] No N/A

Transcription/calculation errors? (Levels D, E) .... Yes No [✓ N/A]

Comments ________________

Appendix 6

Additional Documentation Requested by Client

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

Washington Closure Hanford LLC
Wet Chemistry Method Blank Analysis Data Sheet

Lab Name: TESTAMERICA DENVER **Lot/SDG Number:** D9J160184

Lab Sample ID: D9J170000-078B **Work Order:** LMVQ2 **Analysis Method:** 300.0A **Matrix:** WATER **Unit:** mg/L

QC Batch	Analyte	Conc.	MDL	RL	Q	Prep Date	Analysis Date	Dilution
9290078	Nitrate as N	0.042	0.042	0.50	U	10/16/09	10/16/09 11:13	1

Lab Sample ID: D9J230000-367B **Work Order:** LM6PF **Analysis Method:** 300.0A **Matrix:** WATER **Unit:** mg/L

QC Batch	Analyte	Conc.	MDL	RL	Q	Prep Date	Analysis Date	Dilution
9296367	Bromide	0.11	0.11	0.20	U	10/16/09	10/16/09 11:13	1

Lab Sample ID: D9J230000-368B **Work Order:** LM6PC **Analysis Method:** 300.0A **Matrix:** WATER **Unit:** mg/L

QC Batch	Analyte	Conc.	MDL	RL	Q	Prep Date	Analysis Date	Dilution
9296368	Chloride	0.25	0.25	3.0	U	10/16/09	10/16/09 11:13	1

Lab Sample ID: D9J230000-369B **Work Order:** LM6N6 **Analysis Method:** 300.0A **Matrix:** WATER **Unit:** mg/L

QC Batch	Analyte	Conc.	MDL	RL	Q	Prep Date	Analysis Date	Dilution
9296369	Fluoride	0.060	0.060	0.50	U	10/16/09	10/16/09 11:13	1

Lab Sample ID: D9J230000-370B **Work Order:** LM6PR **Analysis Method:** 300.0A **Matrix:** WATER **Unit:** mg/L

QC Batch	Analyte	Conc.	MDL	RL	Q	Prep Date	Analysis Date	Dilution
9296370	Sulfate	0.23	0.23	5.0	U	10/16/09	10/16/09 11:13	1

Lab Sample ID: D9J230000-371B **Work Order:** LM6PK **Analysis Method:** 300.0A **Matrix:** WATER **Unit:** mg/L

QC Batch	Analyte	Conc.	MDL	RL	Q	Prep Date	Analysis Date	Dilution
9296371	Phosphate as P, Ortho	0.19	0.19	0.50	U	10/16/09	10/16/09 11:13	1

Lab Sample ID: D9J230000-372B **Work Order:** LM6PD **Analysis Method:** 300.0A **Matrix:** WATER **Unit:** mg/L

QC Batch	Analyte	Conc.	MDL	RL	Q	Prep Date	Analysis Date	Dilution
9296372	Nitrite as N	0.049	0.049	0.50	U	10/16/09	10/16/09 11:13	1

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

Washington Closure Hanford LLC

Wet Chemistry Laboratory Control Sample Analysis Data Sheet

Lab Name: TESTAMERICA DENVER **Lot/SDG Number:** D9J160184

Lab Sample ID: D9J170000-078C **WorkOrder:** LMVQJ **Analysis Method:** 300.0A **Matrix:** WATE **Unit:** mg/L

QC Batch	Analyte	True	Found	%Rec	Q	Limits	Prep Date	Analysis Date	Dilution
9290074	Nitrate as N	5.00	5.08	102		90 - 110	10/16/09	10/16/09 10:39	1

Lab Sample ID: D9J230000-367C **WorkOrder:** LM6PE **Analysis Method:** 300.0A **Matrix:** WATE **Unit:** mg/L

QC Batch	Analyte	True	Found	%Rec	Q	Limits	Prep Date	Analysis Date	Dilution
9296367	Bromide	5.00	4.92	98		90 - 110	10/16/09	10/16/09 10:39	1

Lab Sample ID: D9J230000-368C **WorkOrder:** LM6PC **Analysis Method:** 300.0A **Matrix:** WATE **Unit:** mg/L

QC Batch	Analyte	True	Found	%Rec	Q	Limits	Prep Date	Analysis Date	Dilution
9296368	Chloride	25.0	25.3	101		90 - 110	10/16/09	10/16/09 10:39	1

Lab Sample ID: D9J230000-369C **WorkOrder:** LM6N6 **Analysis Method:** 300.0A **Matrix:** WATE **Unit:** mg/L

QC Batch	Analyte	True	Found	%Rec	Q	Limits	Prep Date	Analysis Date	Dilution
9296369	Fluoride	5.00	5.12	102		90 - 110	10/16/09	10/16/09 10:39	1

Lab Sample ID: D9J230000-370C **WorkOrder:** LM6PR **Analysis Method:** 300.0A **Matrix:** WATE **Unit:** mg/L

QC Batch	Analyte	True	Found	%Rec	Q	Limits	Prep Date	Analysis Date	Dilution
9296370	Sulfate	25.0	24.7	99		90 - 110	10/16/09	10/16/09 10:39	1

Lab Sample ID: D9J230000-371C **WorkOrder:** LM6PK **Analysis Method:** 300.0A **Matrix:** WATE **Unit:** mg/L

QC Batch	Analyte	True	Found	%Rec	Q	Limits	Prep Date	Analysis Date	Dilution
9296371	Phosphate as P, Ortho	5.00	4.90	98		90 - 110	10/16/09	10/16/09 10:39	1

Lab Sample ID: D9J230000-372C **WorkOrder:** LM6PD **Analysis Method:** 300.0A **Matrix:** WATE **Unit:** mg/L

QC Batch	Analyte	True	Found	%Rec	Q	Limits	Prep Date	Analysis Date	Dilution
9296372	Nitrate as N	5.00	5.08	102		90 - 110	10/16/09	10/16/09 10:39	1

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

Washington Closure Hanford LLC

Wet Chemistry Laboratory Control Sample Duplicate Analysis Data Sheet

Lab Name: TESTAMERICA DENVER Lot/SDG Number: D9J160184

Lab Sample ID: D9J170000-078L WorkOrder: LMVQJ Analysis Method: 300.0A Matrix: WATER Unit: mg/L

QC Batch	Analyte	True	Found	% Rec	RPD	Q	QC Limits % Rec	QC Limits RPD	Prep Date	Analysis Date	Dilution
9290078	Nitrate as N	5.00	5.04	101	0.71		90 - 110	10	10/16/09	10/16/09 10:56	1

Lab Sample ID: D9J230000-367L WorkOrder: LM6PF Analysis Method: 300.0A Matrix: WATER Unit: mg/L

QC Batch	Analyte	True	Found	% Rec	RPD	Q	QC Limits % Rec	QC Limits RPD	Prep Date	Analysis Date	Dilution
9296367	Bromide	5.00	4.58	92	7.2		90 - 110	10	10/16/09	10/16/09 10:56	1

Lab Sample ID: D9J230000-368L WorkOrder: LM6PC Analysis Method: 300.0A Matrix: WATER Unit: mg/L

QC Batch	Analyte	True	Found	% Rec	RPD	Q	QC Limits % Rec	QC Limits RPD	Prep Date	Analysis Date	Dilution
9296368	Chloride	25.0	25.3	101	0.15		90 - 110	10	10/16/09	10/16/09 10:56	1

Lab Sample ID: D9J230000-369L WorkOrder: LM6N6 Analysis Method: 300.0A Matrix: WATER Unit: mg/L

QC Batch	Analyte	True	Found	% Rec	RPD	Q	QC Limits % Rec	QC Limits RPD	Prep Date	Analysis Date	Dilution
9296369	Fluoride	5.00	5.12	102	0.030		90 - 110	10	10/16/09	10/16/09 10:56	1

Lab Sample ID: D9J230000-370L WorkOrder: LM6PR Analysis Method: 300.0A Matrix: WATER Unit: mg/L

QC Batch	Analyte	True	Found	% Rec	RPD	Q	QC Limits % Rec	QC Limits RPD	Prep Date	Analysis Date	Dilution
9296370	Sulfate	25.0	24.8	99	0.12		90 - 110	10	10/16/09	10/16/09 10:56	1

Lab Sample ID: D9J230000-371L WorkOrder: LM6PK Analysis Method: 300.0A Matrix: WATER Unit: mg/L

QC Batch	Analyte	True	Found	% Rec	RPD	Q	QC Limits % Rec	QC Limits RPD	Prep Date	Analysis Date	Dilution
9296371	Phosphorus as P, Ortho	5.00	4.95	99	0.97		90 - 110	10	10/16/09	10/16/09 10:56	1

Lab Sample ID: D9J230000-372L WorkOrder: LM6PD Analysis Method: 300.0A Matrix: WATER Unit: mg/L

QC Batch	Analyte	True	Found	% Rec	RPD	Q	QC Limits % Rec	QC Limits RPD	Prep Date	Analysis Date	Dilution
9296372	Nitrite as N	5.00	5.08	102	0.020		90 - 110	10	10/16/09	10/16/09 10:56	1

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

Washington Closure Hanford LLC

Wet Chemistry Matrix Spike Analysis Data Sheet

Lab Name: TESTAMERICA DENVER   Lot/SDG Number: D9J160184

Client Sample ID:	J19369	Lab WorkOrder:	LMPPA	% Moisture:	N/A	Basis:	Wet
Lab Sample ID:	D9J160184-001S	Analysis Method	300.0A	Matrix:	WATER	Unit:	mg/L
QC Batch ID:	9290078						

Analyte	Spike Amount	Sample Result	Q	MS Result	% Rec	Q	QC Limit	Prep Date	Analysis Date	Dilution
Nitrate as N	5.00	0.78		5.82	101		90 - 110	10/16/09	10/16/09 15:23	1

Client Sample ID:	J19369	Lab WorkOrder:	LMPPA	% Moisture:	N/A	Basis:	Wet
Lab Sample ID:	D9J160184-001S	Analysis Method	300.0A	Matrix:	WATER	Unit:	mg/L
QC Batch ID:	9296367						

Analyte	Spike Amount	Sample Result	Q	MS Result	% Rec	Q	QC Limit	Prep Date	Analysis Date	Dilution
Bromide	5.00	0.11	U	4.96	99		90 - 110	10/16/09	10/16/09 15:23	1

Client Sample ID:	J19369	Lab WorkOrder:	LMPPA	% Moisture:	N/A	Basis:	Wet
Lab Sample ID:	D9J160184-001S	Analysis Method	300.0A	Matrix:	WATER	Unit:	mg/L
QC Batch ID:	9296368						

Analyte	Spike Amount	Sample Result	Q	MS Result	% Rec	Q	QC Limit	Prep Date	Analysis Date	Dilution
Chloride	25.0	9.5		34.3	99		90 - 110	10/16/09	10/16/09 15:23	1

Client Sample ID:	J19369	Lab WorkOrder:	LMPPA	% Moisture:	N/A	Basis:	Wet
Lab Sample ID:	D9J160184-001S	Analysis Method	300.0A	Matrix:	WATER	Unit:	mg/L
QC Batch ID:	9296369						

Analyte	Spike Amount	Sample Result	Q	MS Result	% Rec	Q	QC Limit	Prep Date	Analysis Date	Dilution
Fluoride	5.00	0.38	B	5.10	94		90 - 110	10/16/09	10/16/09 15:23	1

Client Sample ID:	J19369	Lab WorkOrder:	LMPPA	% Moisture:	N/A	Basis:	Wet
Lab Sample ID:	D9J160184-001S	Analysis Method	300.0A	Matrix:	WATER	Unit:	mg/L
QC Batch ID:	9296370						

Analyte	Spike Amount	Sample Result	Q	MS Result	% Rec	Q	QC Limit	Prep Date	Analysis Date	Dilution
Sulfate	25.0	34		59.0	98		90 - 110	10/16/09	10/16/09 15:23	1

Client Sample ID:	J19369	Lab WorkOrder:	LMPPA	% Moisture:	N/A	Basis:	Wet
Lab Sample ID:	D9J160184-001S	Analysis Method	300.0A	Matrix:	WATER	Unit:	mg/L
QC Batch ID:	9296371						

Analyte	Spike Amount	Sample Result	Q	MS Result	% Rec	Q	QC Limit	Prep Date	Analysis Date	Dilution
Phosphorus as P, Ortho	5.00	0.19	U	4.74	95		90 - 110	10/16/09	10/16/09 15:23	1

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

Washington Closure Hanford LLC

Wet Chemistry Matrix Spike Analysis Data Sheet

Lab Name:	TESTAMERICA DENVER			**Lot/SDG Number:**	D9J160184		
Client Sample ID:	J19J02	**Lab WorkOrder:**	LMPPA	**% Moisture:**	N/A	**Basis:**	Wet
Lab Sample ID:	D9J160184-001S	**Analysis Method**	300.0A	**Matrix:**	WATER	**Unit:**	mg/L
QC Batch ID:	9296172						

Analyte	Spike Amount	Sample Result	Q	MS Result	% Rec	Q	QC Limit	Prep Date	Analysis Date	Dilution
Nitrite as N	5.00	0.049	U	5.10	102		90 - 110	10/16/09	10/16/09 15:23	1

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

Washington Closure Hanford LLC

Wet Chemistry Duplicate Sample Analysis Data Sheet

Lab Name:	TESTAMERICA DENVER			**Lot/SDG Number:**	D9J160184		
Client Sample ID:	J19369 DUP	**Lab WorkOrder:**	LMEEA	**% Moisture:**	N/A	**Basis:**	Wet
Lab Sample ID:	D9J160184-001X	**Analysis Method:**	300.0A	**Matrix:**	WATER	**Unit:**	mg/L

Batch	Analyte	RPD Limit	Sample Result	Q	Duplicate Result	RPD	Q	Prep Date	Analysis Date	Dilution
9296368	Chloride	10	9.5		9.1	3.9		10/16/09	10/16/09 15:06	1
9296370	Sulfate	10	34		34	0.041		10/16/09	10/16/09 15:06	1
9296369	Fluoride	10	0.38	B	0.36	4.7	B	10/16/09	10/16/09 15:06	1
9290076	Nitrate as N	10	0.78		0.82	4.4		10/16/09	10/16/09 15:06	1
9296371	Phosphorus as P, Ortho	10	0.19	U	0.19	0	U	10/16/09	10/16/09 15:06	1
9296367	Bromide	10	0.11	U	0.11	0	U	10/16/09	10/16/09 15:06	1
9296372	Nitrite as N	10	0.049	U	0.049	0	U	10/16/09	10/16/09 15:06	1

Date: 30 November 2009
To: Washington Closure Hanford Inc. (technical representative)
From: ELR Consulting
Project: Columbia River Component of the RCBRA – Pore Water – Phase II
Subject: Metals - Data Package No. J00607-TAL

INTRODUCTION

This memo presents the results of data validation on Data Package No. J00607 prepared by TestAmerica Laboratory Inc. (TAL). A list of samples validated along with the analyses reported and the method of analysis is provided in the following table.

Sample ID	Sample Date	Media	Validation	Analyte
J19369	10/14/09	Water	C	See note 1
J19370	10/14/09	Water	C	See note 1

1 - ICP metals (6010B) and mercury (7471A).

Data validation was conducted in accordance with the Washington Closure Hanford (WCH) validation statement of work and the Remedial Investigation Work Plan for Hanford Site Releases to the Columbia River (DOE/RL-2008-11, Rev. 0, September 2008). Appendices 1 through 6 provide the following information as indicated below:

Appendix 1. Glossary of Data Reporting Qualifiers
Appendix 2. Summary of Data Qualification
Appendix 3. Annotated Laboratory Reports
Appendix 4. Laboratory Narrative and Chain-of-Custody Documentation
Appendix 5. Data Validation Supporting Documentation
Appendix 6. Additional Documentation Requested by Client

DATA QUALITY PARAMETERS

- **Holding Times**

Analytical holding times for metals are assessed to ascertain whether the holding time requirements were met by the laboratory. The holding time requirements are as follows: Soil samples must be analyzed within 28 days for mercury and 6 months for ICP metals.

All holding times were acceptable.

- **Preparation (Method) Blanks**

Preparation Blanks

At least one preparation blank, consisting of deionized distilled water processed through each sample preparation and analysis procedure, must be prepared and analyzed with every sample delivery group. In the case of positive blank results, samples with digestate concentrations less than five times the preparation blank value have had their associated values qualified as non-detected and flagged "UJ". Samples with concentrations of greater than five times the highest blank concentration do not require qualification.

In the case of negative blank results, if the absolute value exceeds the contract required detection limit (CRDL), all nondetects are rejected and flagged "UR" and all detects that are less than ten times the absolute value of the associated preparation blank result are qualified as estimates and flagged "J". If the absolute value of the negative preparation blank is greater than the instrument detection limit (IDL) and less than or equal to the CRDL, all nondetects are qualified as estimates and flagged "UJ" and all detects less than ten times the absolute value of the blank are qualified as estimates and flagged "J". If the sample results are greater than ten times the absolute value of the preparation blank, no qualification is necessary.

All preparation blank results were acceptable.

Field (Equipment) Blank

No field blanks were submitted for analysis.

- **Accuracy**

Matrix Spike and Laboratory Control Sample

Matrix spike (MS) and laboratory control sample (LCS) analyses are used to assess the analytical accuracy of the reported data. The matrix spike is used to assess the effect of the matrix on the ability to accurately quantify sample concentrations. Recoveries must fall within the range of 80% to 120%. Samples with a recovery of less than 30% and a sample result below the IDL are rejected and flagged "UR". Samples with a recovery of 30% to 79% and a sample result less than the IDL are qualified "UJ". Samples with a recovery of greater than 120% or less than 80% and a sample result greater than the IDL are qualified as estimates and flagged "J". Finally, for samples with a recovery greater than 120% and a sample result less than the IDL, no qualification is required.

Due to a matrix spike recovery outside QC limits, all aluminum (169%) results were qualified as estimates and flagged "J".

All other accuracy results were acceptable.

Precision

Laboratory Duplicate Samples

Analytical precision is expressed by the relative percent differences (RPD) between the recoveries of matrix spike duplicate (MSD) analyses performed on a sample in the analytical batch. Precision may alternatively be assessed using unspiked duplicate analyses performed on a sample in the analytical batch. If both sample and replicate activities (concentrations) are greater than five times the CRDL and the RPD is less than 20%, no qualification is required. If either activity (concentration) is less than five times the CRDL, the RPD control limit is less than or equal to two times the CRDL. If the RPD is outside the applicable control limit, associated results are qualified as estimated detects or estimated non-detects.

All laboratory duplicate results were acceptable.

Field Duplicate

None found.

- **Analytical Detection Levels**

Reported analytical detection levels are compared against the project RQLs to ensure that laboratory detection levels meet the required criteria. All results met the RQL.

- **Completeness**

Data package No. J00607 was submitted for validation and verified for completeness. Completeness is based on the percentage of data determined to be valid (i.e., not rejected). The completion percentage was 100%.

MAJOR DEFICIENCIES

None found.

MINOR DEFICIENCIES

The following minor deficiency was noted:

- Due to a matrix spike recovery outside QC limits, all aluminum (169%) results were qualified as estimates and flagged "J".

Data flagged "J" indicates that the associated concentration is an estimate, but under the WCH statement of work, the data may be usable for decision-making purposes. All other validated results are considered accurate within the standard error associated with the methods.

REFERENCES

Washington Closure Hanford Contract #S00W307A00 (March 2008), *Data Validation Services*, March 2008.

DOE/RL-2008-11, Rev.0, *Remedial Investigation Work Plan for Hanford Site Releases to the Columbia River*, September 2008.

Appendix 1

Glossary of Data Reporting Qualifiers

Qualifiers which may be applied by data validators in compliance with WCH validation SOW are as follows:

U Indicates the compound or analyte was analyzed for and not detected in the sample. The value reported is the sample quantitation limit corrected for sample dilution and moisture content by the laboratory.

UJ - Indicates the compound or analyte was analyzed for and not detected in the sample. Due to a minor QC deficiency identified during the data validation, the associated quantitation limit is an estimate.

J - Indicates the compound or analyte was analyzed for and detected. Due to a minor QC deficiency identified during the data validation, the associated concentration is an estimate, but the data are usable for decision-making purposes.

BJ - Applied to inorganic analyses only Indicates the analyte concentration was greater than the IDL but less than the CRDL and is considered an estimated value.

R - Indicates the compound or analyte was analyzed for, detected, and due to an identified major QC deficiency, the data are unusable.

UR - Indicates the compound or analyte was analyzed for and not detected in the sample. Additionally, the data is unusable due to an identified major QC deficiency.

NJ - Indicates presumptive evidence of a compound at an estimated value. The data may not be valid for some specific applications (i.e., usable for decision-making purposes).

N Indicates presumptive evidence of a compound. The data may not be valid for some specific applications (i.e., usable for decision-making purposes).

Appendix 2

Summary of Data Qualification

METALS DATA QUALIFICATION SUMMARY*

SDG: J00607	**REVIEWER: ELR**	**Project: RCBRA**	**PAGE 1 OF 1**
COMPOUND	QUALIFIER	SAMPLES AFFECTED	REASON
Aluminum	J	All	MS recovery

* - The Qualified Data Summary Table includes laboratory applied "U" qualifiers not specifically identified here. The laboratory applied "U" qualifiers are included to minimize misinterpretation of results contained in the table.

Appendix 3

Annotated Laboratory Reports

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

Washington Closure Hanford LLC

Metals Sample Analysis Data Sheet

Lab Name:	TESTAMERICA DENVER	**Client Sample ID:**	J19369
Lot/SDG Number:	D9J160184	**Lab Sample ID:**	D9J160184-001
Matrix:	WATER	**Lab WorkOrder:**	LMPPA
Date/Time Received:	10/16/09, 09:00	**Date/Time Collected:**	10/14/09, 14:33

Analysis Method: 6010B TOTAL **% Moisture:** N/A **Basis:** Wet **Leach Date:** **Unit:** mg/L

QC Batch	Analyte	Conc.	MDL	RL	Q	Prep Date	Analysis Date	Dilution
9292449	Aluminum	4.4	0.018	0.050	N L J	10/21/09	10/21/09 23:53	1
9292449	Antimony	0.0031	0.0031	0.0060	U	10/21/09	10/21/09 23:53	1
9292449	Arsenic	0.0062	0.0044	0.010	B	10/21/09	10/21/09 23:53	1
9292449	Barium	0.00058	0.00058	0.0050	U M	10/21/09	10/21/09 23:53	1
9292449	Beryllium	0.00047	0.00047	0.0010	U	10/21/09	10/21/09 23:53	1
9292449	Boron	0.024	0.0016	0.020		10/21/09	10/21/09 23:53	1
9292449	Cadmium	0.00045	0.00045	0.0020	U	10/21/09	10/21/09 23:53	1
9292449	Calcium	45	0.034	0.20		10/21/09	10/21/09 23:53	1
9292449	Chromium	0.0072	0.00066	0.0020		10/21/09	10/21/09 23:53	1
9292449	Cobalt	0.0024	0.0012	0.010	B	10/21/09	10/21/09 23:53	1
9292449	Copper	0.013	0.0014	0.010		10/21/09	10/21/09 23:53	1
9292449	Iron	4.3	0.022	0.050		10/21/09	10/21/09 23:53	1
9292449	Lead	0.0098	0.0076	0.0050		10/21/09	10/21/09 23:53	1
9292449	Magnesium	13	0.011	0.20		10/21/09	10/21/09 23:53	1
9292449	Manganese	0.30	0.00025	0.0050		10/21/09	10/21/09 23:53	1
9292449	Nickel	0.0066	0.0013	0.040	B	10/21/09	10/21/09 23:53	1
9292449	Potassium	6.2	0.24	1.0		10/21/09	10/21/09 23:53	1
9292449	Selenium	0.0049	0.0049	0.010	U	10/21/09	10/21/09 23:53	1
9292449	Silver	0.00093	0.00093	0.0020	U	10/21/09	10/21/09 23:53	1
9292449	Sodium	32	0.092	0.50		10/21/09	10/21/09 23:53	1
9292449	Vanadium	0.024	0.0011	0.010		10/21/09	10/21/09 23:53	1
9292449	Zinc	0.048	0.0045	0.010		10/21/09	10/21/09 23:53	1

Analysis Method: 6020 TOTAL **% Moisture:** N/A **Basis:** Wet **Leach Date:** **Unit:** mg/L

QC Batch	Analyte	Conc.	MDL	RL	Q	Prep Date	Analysis Date	Dilution
9292448	Uranium	0.0077	0.000020	0.0010		10/21/09	10/27/09 02:33	1

11/24/09

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

Washington Closure Hanford LLC

Metals Sample Analysis Data Sheet

Lab Name:	TESTAMERICA DENVER	**Client Sample ID:**	J19370
Lot/SDG Number:	D9J160184	**Lab Sample ID:**	D9J160184 002
Matrix:	WATER	**Lab WorkOrder:**	LMFFH
Date/Time Received:	10/16/09 09:00	**Date/Time Collected:**	10/14/09 12:13

Analysis Method: 6010B TOTAL **% Moisture:** N/A **Basis:** Wet **Leach Date:** **Unit:** mg/L

QC Batch	Analyte	Conc.	MDL	RL	Q	Prep Date	Analysis Date	Dilution
9292449	Aluminum	0.65	0.018	0.050	L J	10/21/09	10/22/09 00:03	1
9292449	Antimony	0.0031	0.0031	0.0060	U	10/21/09	10/22/09 00:03	1
9292449	Arsenic	0.0066	0.0044	0.010	B	10/21/09	10/22/09 00:03	1
9292449	Barium	0.57	0.00058	0.0030		10/21/09	10/22/09 00:03	1
9292449	Beryllium	0.00047	0.00047	0.0010	U	10/21/09	10/22/09 00:03	1
9292449	Boron	0.060	0.0016	0.020		10/21/09	10/22/09 00:03	1
9292449	Cadmium	0.00073	0.00045	0.0020	B	10/21/09	10/22/09 00:03	1
9292449	Calcium	118	0.034	0.20		10/21/09	10/22/09 00:03	1
9292449	Chromium	0.0014	0.00066	0.0020	B	10/21/09	10/22/09 00:03	1
9292449	Cobalt	0.0015	0.0012	0.010	B	10/21/09	10/22/09 00:03	1
9292449	Copper	0.0030	0.0014	0.010	B	10/21/09	10/22/09 00:03	1
9292449	Iron	18	0.022	0.050		10/21/09	10/22/09 00:03	1
9292449	Lead	0.0026	0.0026	0.0050	U	10/21/09	10/22/09 00:03	1
9292449	Magnesium	26	0.011	0.20		10/21/09	10/22/09 00:03	1
9292449	Manganese	1.4	0.00025	0.0010		10/21/09	10/22/09 00:03	1
9292449	Nickel	0.0024	0.0013	0.040	B	10/21/09	10/22/09 00:03	1
9292449	Potassium	7.3	0.24	3.0		10/21/09	10/22/09 00:03	1
9292449	Selenium	0.0049	0.0049	0.010	U	10/21/09	10/22/09 00:03	1
9292449	Silver	0.00093	0.00093	0.0020	U	10/21/09	10/22/09 00:03	1
9292449	Sodium	7.6	0.092	0.50	L	10/21/09	10/22/09 12:09	1
9292449	Vanadium	0.0027	0.0011	0.010	B	10/21/09	10/22/09 00:03	1
9292449	Zinc	0.039	0.0045	0.010		10/21/09	10/22/09 00:03	1

Analysis Method: 6020 TOTAL **% Moisture:** N/A **Basis:** Wet **Leach Date:** **Unit:** mg/L

QC Batch	Analyte	Conc.	MDL	RL	Q	Prep Date	Analysis Date	Dilution
9292448	Uranium	0.00038	0.000020	0.0010	B	10/21/09	10/27/09 07:26	1

11/28/09

Appendix 4

Laboratory Narrative and Chain-of-Custody Documentation

CASE NARRATIVE

J00607 / RC-114 / D9J160184

Rev01

The following report contains the analytical results for two water samples submitted to TestAmerica by Washington Closure Hanford. The samples were received October 16, 2009, according to documented sample acceptance procedures.

Client ID	Lab ID	Analyses Requested	Analyses Performed
J19369	D9J160184-001	300.0/6010	300.0A/6010B/6020
J19370	D9J160184-002	300.0/6010	300.0A/6010B/6020

Dilution factors and qualifiers are provided to assist in the interpretation of the results. In some cases, due to interferences or analytes present above the linear calibration curve, samples must be analyzed at a dilution. For samples analyzed at a dilution, the reporting limits are adjusted relative to the dilution required. Dilutions made for reasons other than the presence of target compounds are addressed in the Supplemental QC Information section.

This report includes reporting limits (RLs) less than TestAmerica Denver's practical quantitation limits. These reporting limits are being used specifically at the client's request to meet the needs of this project. Please note that data are not normally reported to these levels without qualification, since they are inherently less reliable and potentially less defensible than required by the current NELAC standards. Please note that Non-Detect (U) results have been evaluated down to the Method Detection Limit (MDL) and should be considered Non-Detect (U) at the MDL.

TestAmerica utilizes USEPA approved methods in all analytical work. The results apply only to the samples included in this report and meet all requirements of NELAC. All data have been reviewed for compliance with the laboratory QA/QC plan and have been found to be compliant with laboratory protocols, with the exception of any items noted below.

SUPPLEMENTAL QC INFORMATION

Sample Receipt

Samples were received in good condition at a temperature of 3.6°C. No anomalies were encountered during sample receipt.

As instructed by the client on October 21, 2009, samples J19369 and J19370 were logged for Bromide, Chloride, Fluoride, Nitrite as N, ortho-Phosphate as P, and Sulfate analyses, in addition to the Nitrate as N analysis requested on the chains-of-custody.

Total Metals – SW846 6010B/6020

Serial dilution of a digestate in analytical batch 9292449 indicates that physical and chemical interferences are present for Aluminum and Sodium. Results in the analytical report have been flagged with an "L".

Low levels of Sodium and Boron are present in the method blank associated with QC batch 9292449. Because the concentrations in the method blank are not present at levels greater than the reporting limits, corrective action is deemed unnecessary.

Aluminum was recovered outside the QC control limits in the Matrix Spike performed on sample J19369. There is no indication that the analytical system was operating out of control, and method accuracy has been verified by the acceptable LCS analysis data; therefore, corrective action is deemed unnecessary.

Total Metals – SW846 6010B/6020 (cont.)

The percent recovery was not calculated for Iron in the Matrix Spike performed on sample J19369, due to the sample concentration reading greater than four times the spike amount. The acceptable LCS analysis data indicated that the analytical system was operating within control.

The duplicate analysis of sample J19369 exhibited RPD data outside the QC control limits for Barium. It can be noted that the RPD was calculated based on a value below the method detection limit, and as such, could not be reliably calculated.

No other anomalies were encountered.

Wet Chemistry – MCAWW 300.0A

The Nitrate as N, Nitrite as N, and ortho-Phosphate as P analyses for samples J19369 and J19370 were performed 30 minutes to 3 hours outside the 48 hour recommended sample holding times. The samples were received at the laboratory with insufficient time remaining for the laboratory to perform the analyses within the recommended holding times. It is TestAmerica's policy to analyze all samples within holding times; however, the laboratory cannot guarantee that hold times will be met when samples are received with less than half the hold time remaining. The client was notified on October 19, 2009.

It can be noted that the recovery for the Sulfate Matrix Spike performed on sample J19369 is within QC control limits; however, the value is estimated as the concentration exceeded the calibration range.

No other anomalies were encountered.

Revisions – 11/3/09

The revisions included in this report are as follows:

1. **Total Metals – SW846 6010B:** As requested by the client on November 2, 2009, Arsenic, Selenium, Lead and Boron results have been reported, in addition to the Client List of ICP Metals requested on the chains-of-custody.

I certify that this data package is in compliance with the SOW, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hard copy data package has been authorized by the Laboratory Manager or a designee, as verified by the following signature.

Reviewed and Approved:

Kae E. Yoder

Project Manager

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T22

S100015

Washington Closure Hanford	**CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST**	RC-114-18	Page 1 of 1

Collector Sam Gatbo	Company Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator KESSNER, JH
Project Designation Columbia River Component of the RCBRA - Pore Water - F6	Sampling Location 100D-- T000335		SAF No. RC-114
Ice Chest No. N/A	Field Logbook No. EL-1639	COA BESCRC6530	Method of Shipment FED EX
Shipped To EBERLINE SERVICES LIONVILLE	Offsite Property No. N/A		Bill of Lading/Air Bill No.

Price Code 7K

Data Turnaround
~~45~~ 7 Days

POSSIBLE SAMPLE HAZARDS/REMARKS
radioactive near or below background levels

Special Handling and/or Storage
N/A

Preservation	Cool 4C	HNO3 to pH <2
Type of Container	P	G/P
No. of Container(s)	1	1
Volume	100mL	500mL
SAMPLE ANALYSIS	X. Anions - 300.0 (Water)	See item (1) in Special Instructions

Sample No.	Matrix *	Sample Date	Sample Time		
J18369	WATER	10-14-09	14:22	X	X

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From Sam Gatbo	Date/Time 10-14-09/ 16:02	Received By/Stored In FAS Ref. 6	Date/Time 10-14-09/ 16:02
Relinquished By/Removed From FAS LOCKED STORAGE	Date/Time 10/15/09 900	Received By/Stored In SHANNAN JOHNSON	Date/Time 10/15/09 900
Relinquished By/Removed From SHANNAN JOHNSON	Date/Time 10/15/09 910	Received By/Stored In	Date/Time 10/15/09 910
Relinquished By/Removed From	Date/Time 10/15/09 1100	Received By/Stored In	Date/Time 10-16-09 0900
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time

SPECIAL INSTRUCTIONS

(1) ICP Metals - 6010TR (Clients List) {Aluminum, Antimony, Barium, Beryllium, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Magnesium, Manganese, Nickel, Potassium, Silver, Sodium, Uranium, Vanadium, Zinc}

J00607

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody & samples for shipment to lab

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

TestAmerica

3.6 ~ OC 10/14/09
IRL

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-114-19 | Page 1 of 1

Collector: Sam Gallegos	Company Contact: JOAN KESSNER	Telephone No.: 375-4688	Project Coordinator: KESSNER, JH
Project Designation: Columbia River Component of the RCBRA - Pore Water - Ph	Sampling Location: 100D- D-A		SAF No.: RC-114
Ice Chest No.: N/A	Field Logbook No.: EL-1639	COA: BESCRC6530	Method of Shipment: FED EX
Shipped To: EBERLINE SERVICES (LIONVILLE)	Offsite Property No.: N/A		Bill of Lading/Air Bill No.

Price Code: 7K

Data Turnaround: 7 Days
KS 10/15/09

POSSIBLE SAMPLE HAZARDS/REMARKS
/ Radioactive near or below background levels

Special Handling and/or Storage
N/A

910001

Preservation	Cool 4C	HNO3 to pH <2
Type of Container	P	G/P
No. of Container(s)	1	1
Volume	100mL	500mL
SAMPLE ANALYSIS	IC Anions - 300.0 (Sulfate)	See item (1) in Special Instructions

Sample No.	Matrix *	Sample Date	Sample Time		
J19370	WATER	10-14-09	12:33	X	X

CHAIN OF POSSESSION

Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Sam Gallegos	10-14-09 / 16:02	EAS Rd E	10-14-09 / 16:02
EAS LOCKED STORAGE E	10/15/09 900	SHANNAN JOHNSON	10/15/09 900
SHANNAN JOHNSON	10/15/09 911		10/15/09 912
	10/15/09 1100		10/16/09 0900

SPECIAL INSTRUCTIONS

(1) ICP Metals - 6010TR (Clean List) {Aluminum, Antimony, Barium, Beryllium, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Magnesium, Manganese, Nickel, Potassium, Silver, Sodium, Uranium, Vanadium, Zinc}

J00607

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab.

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

TestAmerica

Appendix 5

Data Validation Supporting Documentation

INORGANIC ANALYSIS DATA VALIDATION CHECKLIST

VALIDATION LEVEL:	A	B	[✓ C]	D	E

PROJECT: RCBRA	DATA PACKAGE: J00607
VALIDATOR: ELR LAB: TAL	DATE: 11/28/09
	SDG: J00607

ANALYSES PERFORMED

[✓ SW-846/ICP]	SW-846/GFAA	[✓ SW-846/Hg]	SW-846 Cyanide		

SAMPLES/MATRIX

J19369 J19370

Water

1. DATA PACKAGE COMPLETENESS AND CASE NARRATIVE

Technical verification documentation present? Yes [✓ No] N/A

Comments:

2. INSTRUMENT PERFORMANCE AND CALIBRATIONS (Levels D and E)

Initial calibrations performed on all instruments? Yes No [✓ N/A]

Initial calibrations acceptable? Yes No [✓ N/A]

ICP interference checks acceptable? Yes No [✓ N/A]

ICV and CCV checks performed on all instruments? Yes No [✓ N/A]

ICV and CCV checks acceptable? Yes No [✓ N/A]

Standards traceable? Yes No [✓ N/A]

Standards expired? Yes No [✓ N/A]

Calculation check acceptable? Yes No [✓ N/A]

Comments:

INORGANIC ANALYSIS DATA VALIDATION CHECKLIST

3. BLANKS (Levels B, C, D, and E)

ICB and CCB checks performed for all applicable analyses? (Levels D, E)........ Yes No [✓ N/A]
ICB and CCB results acceptable? (Levels D, E)........ Yes No [✓ N/A]
Laboratory blanks analyzed?........ [✓ Yes] No N/A
Laboratory blank results acceptable?........ [✓ Yes] No N/A
Field blanks analyzed? (Levels C, D, E)........ Yes [✓ No] N/A
Field blank results acceptable? (Levels C, D, E)........ Yes No [✓ N/A]
Transcription/calculation errors? (Levels D, E)........ Yes No [✓ N/A]
Comments: NO FB

4. ACCURACY (Levels C, D, and E)

MS/MSD samples analyzed?........ [✓ Yes] No N/A
MS/MSD results acceptable?........ Yes [✓ No] N/A
MS/MSD standards NIST traceable? (Levels D, E)........ Yes No [✓ N/A]
MS/MSD standards expired? (Levels D, E)........ Yes No [✓ N/A]
LCS/BSS samples analyzed?........ [✓ Yes] No N/A
LCS/BSS results acceptable?........ [✓ Yes] No N/A
Standards traceable? (Levels D, E)........ Yes No [✓ N/A]
Standards expired? (Levels D, E)........ Yes No [✓ N/A]
Transcription/calculation errors? (Levels D, E)........ Yes No [✓ N/A]
Performance audit sample(s) analyzed?........ Yes [✓ No] N/A
Performance audit sample results acceptable?........ Yes No [✓ N/A]
Comments: NO PAS

MS = al - J all

INORGANIC ANALYSIS DATA VALIDATION CHECKLIST

5. PRECISION (Levels C, D, and E)

Duplicate RPD values acceptable? .... [✓ Yes] No N/A
Duplicate results acceptable? .... [✓ Yes] No N/A
MS/MSD standards NIST traceable? (Levels D, E) .... Yes No [✓ N/A]
MS/MSD standards expired? (Levels D, E) .... Yes No [✓ N/A]
Field duplicate RPD values acceptable? .... Yes No [✓ N/A]
Field split RPD values acceptable? .... Yes No [✓ N/A]
Transcription/calculation errors? (Levels D, E) .... Yes No [✓ N/A]

Comments:

6. ICP QUALITY CONTROL (Levels D and E)

ICP serial dilution samples analyzed? .... Yes No [✓ N/A]
ICP serial dilution %D values acceptable? .... Yes No [✓ N/A]
ICP post digestion spike required? .... Yes No [✓ N/A]
ICP post digestion spike values acceptable? .... Yes No [✓ N/A]
Standards traceable? .... Yes No [✓ N/A]
Standards expired? .... Yes No [✓ N/A]
Transcription/calculation errors? .... Yes No [✓ N/A]

Comments:

INORGANIC ANALYSIS DATA VALIDATION CHECKLIST

7. FURNACE AA QUALITY CONTROL (Levels D and E)

Duplicate injections performed as required? .... Yes No [✓ N/A]
Duplicate injection %RSD values acceptable? .... Yes No [✓ N/A]
Analytical spikes performed as required? .... Yes No [✓ N/A]
Analytical spike recoveries acceptable? .... Yes No [✓ N/A]
Standards traceable? .... Yes No [✓ N/A]
Standards expired? .... Yes No [✓ N/A]
MSA performed as required? .... Yes No [✓ N/A]
MSA results acceptable? .... Yes No [✓ N/A]
Transcription/calculation errors? .... Yes No [✓ N/A]
Comments:

8. HOLDING TIMES (all levels)

Samples properly preserved? .... [✓ Yes] No N/A
Sample holding times acceptable? .... [✓ Yes] No N/A
Comments:

INORGANIC ANALYSIS DATA VALIDATION CHECKLIST

9. RESULT QUANTITATION AND DETECTION LIMITS (all levels)

Results reported for all requested analyses? .... [✓ Yes] No N/A

Results supported in the raw data? (Levels D, E) .... Yes No [✓ N/A]

Samples properly prepared? (Levels D, E) .... Yes No [✓ N/A]

Detection limits meet RDL? .... [✓ Yes] No N/A

Transcription/calculation errors? (Levels D, E) .... Yes No [✓ N/A]

Comments:

Appendix 6

Additional Documentation Requested by Client

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

Washington Closure Hanford LLC
Metals Method Blank Analysis Data Sheet

Lab Name: TESTAMERICA DENVER **Lot/SDG Number:** D9J160184

Lab Sample ID: D9J190000-449B **Work Order:** LMVK3 **Analysis Method:** 6010B TOTAL **Matrix:** WATER **Unit:** mg/L

QC Batch	Analyte	Conc.	MDL	RL	Q	Prep Date	Analysis Date	Dilution
9292449	Antimony	0.0031	0.0031	0.0060	U	10/21/09	10/21/09 23:49	1
9292449	Arsenic	0.0044	0.0044	0.010	U	10/21/09	10/21/09 23:49	1
9292449	Iron	0.072	0.072	0.050	U	10/21/09	10/21/09 23:49	1
9292449	Lead	0.0026	0.0026	0.0050	U	10/21/09	10/21/09 23:49	1
9292449	Magnesium	0.011	0.011	0.20	U	10/21/09	10/21/09 23:49	1
9292449	Manganese	0.00025	0.00025	0.0030	U	10/21/09	10/21/09 23:49	1
9292449	Barium	0.00058	0.00058	0.0050	U	10/21/09	10/21/09 23:49	1
9292449	Nickel	0.0013	0.0013	0.040	U	10/21/09	10/21/09 23:49	1
9292449	Potassium	0.24	0.24	3.0	U	10/21/09	10/21/09 23:49	1
9292449	Beryllium	0.00047	0.00047	0.0010	U	10/21/09	10/21/09 23:49	1
9292449	Selenium	0.0049	0.0049	0.010	U	10/21/09	10/21/09 23:49	1
9292449	Silver	0.00093	0.00093	0.0020	U	10/21/09	10/21/09 23:49	1
9292449	Sodium	0.14	0.092	0.50	B	10/21/09	10/21/09 23:49	1
9292449	Vanadium	0.0011	0.0011	0.010	U	10/21/09	10/21/09 23:49	1
9292449	Zinc	0.0045	0.0045	0.010	U	10/21/09	10/21/09 23:49	1
9292449	Chromium	0.00066	0.00066	0.0020	U	10/21/09	10/21/09 23:49	1
9292449	Boron	0.0019	0.0036	0.020	B	10/21/09	10/21/09 23:49	1
9292449	Cadmium	0.00045	0.00045	0.0020	U	10/21/09	10/21/09 23:49	1
9292449	Calcium	0.034	0.034	0.20	U	10/21/09	10/21/09 23:49	1
9292449	Cobalt	0.0012	0.0012	0.010	U	10/21/09	10/21/09 23:49	1
9292449	Copper	0.0014	0.0014	0.010	U	10/21/09	10/21/09 23:49	1
9292449	Aluminum	0.018	0.018	0.050	U	10/21/09	10/21/09 23:49	1

Lab Sample ID: D9J190000-448B **Work Order:** LMVKQ **Analysis Method:** 6020 TOTAL **Matrix:** WATER **Unit:** mg/L

QC Batch	Analyte	Conc.	MDL	RL	Q	Prep Date	Analysis Date	Dilution
9292448	Uranium	0.000020	0.000020	0.0010	U	10/21/09	10/22/09 02:17	1

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THE LEADER IN ENVIRONMENTAL TESTING

Washington Closure Hanford LLC

Metals Laboratory Control Sample Analysis Data Sheet

Lab Name: TESTAMERICA DENVER Lot/SDG Number: D9J160184

Lab Sample ID: D9J190000-449C WorkOrder: LMVKJ Analysis Method: 6010B TOTAL Matrix: WATE Unit: mg/L

QC Batch	Analyte	True	Found	%Rec	Q	Limits	Prep Date	Analysis Date	Dilution
9292449	Antimony	0.500	0.513	103		88 - 110	10/21/09	10/21/09 23:51	1
9292449	Arsenic	1.00	1.00	100		88 - 110	10/21/09	10/21/09 23:51	1
9292449	Iron	1.00	0.934	93		89 - 115	10/21/09	10/21/09 23:51	1
9292449	Lead	0.500	0.488	98		89 - 110	10/21/09	10/21/09 23:51	1
9292449	Magnesium	50.0	48.2	96		90 - 113	10/21/09	10/21/09 23:51	1
9292449	Manganese	0.500	0.488	98		90 - 110	10/21/09	10/21/09 23:51	1
9292449	Barium	2.00	2.03	102		90 - 112	10/21/09	10/21/09 23:51	1
9292449	Nickel	0.500	0.479	96		89 - 111	10/21/09	10/21/09 23:51	1
9292449	Potassium	50.0	54.6	109		89 - 114	10/21/09	10/21/09 23:51	1
9292449	Beryllium	0.0500	0.0487	97		89 - 110	10/21/09	10/21/09 23:51	1
9292449	Selenium	2.00	1.97	99		85 - 112	10/21/09	10/21/09 23:51	1
9292449	Silver	0.0500	0.0524	105		86 - 115	10/21/09	10/21/09 23:51	1
9292449	Sodium	50.0	54.8	110		90 - 115	10/21/09	10/21/09 23:51	1
9292449	Vanadium	0.500	0.492	98		90 - 111	10/21/09	10/21/09 23:51	1
9292449	Zinc	0.500	0.486	97		85 - 111	10/21/09	10/21/09 23:51	1
9292449	Chromium	0.200	0.199	100		90 - 111	10/21/09	10/21/09 23:51	1
9292449	Boron	1.00	0.984	98		88 - 110	10/21/09	10/21/09 23:51	1
9292449	Cadmium	0.100	0.0962	96		88 - 111	10/21/09	10/21/09 23:51	1
9292449	Calcium	50.0	47.1	94		90 - 110	10/21/09	10/21/09 23:51	1
9292449	Cobalt	0.500	0.483	97		89 - 111	10/21/09	10/21/09 23:51	1
9292449	Copper	0.250	0.256	102		86 - 112	10/21/09	10/21/09 23:51	1
9292449	Aluminum	2.00	1.94	97		87 - 111	10/21/09	10/21/09 23:51	1

Lab Sample ID: D9J190000-448C WorkOrder: LMVKQ Analysis Method: 6020 TOTAL Matrix: WATE Unit: mg/L

QC Batch	Analyte	True	Found	%Rec	Q	Limits	Prep Date	Analysis Date	Dilution
9292448	Uranium	0.0400	0.0394	99		85 - 119	10/21/09	10/27/09 02:20	1

Washington Closure Hanford LLC

Metals Matrix Spike Analysis Data Sheet

Lab Name:	TESTAMERICA DENVER			**Lot/SDG Number:**	D9J160184		
Client Sample ID:	J19369	**Lab WorkOrder:**	LMPPA	**% Moisture:**	N/A	**Basis:**	Wet
Lab Sample ID:	D9J160184-001S	**Analysis Method**	6010B TOTAL	**Matrix:**	WATER	**Unit:**	mg/L
QC Batch ID:	9292442						

Analyte	Spike Amount	Sample Result	Q	MS Result	% Rec	Q	QC Limit	Prep Date	Analysis Date	Dilution
Aluminum	2.00	4.4	N L	7.41	162	N	83 - 119	10/21/09	10/21/09 23:58	1
Antimony	0.500	0.0031	U	0.513	103		81 - 124	10/21/09	10/21/09 23:58	1
Arsenic	1.00	0.0062	B	1.01	100		84 - 124	10/21/09	10/21/09 23:58	1
Barium	2.00	0.00058	U M	2.05	102		85 - 120	10/21/09	10/21/09 23:58	1
Beryllium	0.0500	0.00047	U	0.0486	97		79 - 121	10/21/09	10/21/09 23:58	1
Boron	1.00	0.024		1.01	98		87 - 113	10/21/09	10/21/09 23:58	1
Cadmium	0.100	0.00045	U	0.0963	96		82 - 119	10/21/09	10/21/09 23:58	1
Calcium	50.0	45		91.1	91		48 - 153	10/21/09	10/21/09 23:58	1
Chromium	0.200	0.0072		0.206	99		73 - 135	10/21/09	10/21/09 23:58	1
Cobalt	0.500	0.0026	B	0.482	96		82 - 119	10/21/09	10/21/09 23:58	1
Copper	0.250	0.013		0.271	103		82 - 139	10/21/09	10/21/09 23:58	1
Iron	1.00	4.3		5.31		NC MSB	32 - 133	10/21/09	10/21/09 23:58	1
Lead	0.500	0.0098		0.491	96		89 - 121	10/21/09	10/21/09 23:58	1
Magnesium	50.0	13		61.7	97		63 - 146	10/21/09	10/21/09 23:58	1
Manganese	0.500	0.30		0.786	98		79 - 121	10/21/09	10/21/09 23:58	1
Nickel	0.500	0.0066	B	0.481	95		84 - 120	10/21/09	10/21/09 23:58	1
Potassium	50.0	6.2		61.3	110		76 - 137	10/21/09	10/21/09 23:58	1
Selenium	2.00	0.0049	U	1.98	99		71 - 140	10/21/09	10/21/09 23:58	1
Silver	0.0500	0.00093	U	0.0532	106		75 - 141	10/21/09	10/21/09 23:58	1
Sodium	50.0	32	L	85.3	107		70 - 203	10/21/09	10/21/09 23:58	1
Vanadium	0.500	0.024		0.522	100		85 - 120	10/21/09	10/21/09 23:58	1
Zinc	0.500	0.040		0.524	97		60 - 137	10/21/09	10/21/09 23:58	1

Client Sample ID:	J19370	**Lab WorkOrder:**	LMPPH	**% Moisture:**	N/A	**Basis:**	Wet
Lab Sample ID:	D9J160184-002S	**Analysis Method**	6020 TOTAL	**Matrix:**	WATER	**Unit:**	mg/L
QC Batch ID:	9292448						

Analyte	Spike Amount	Sample Result	Q	MS Result	% Rec	Q	QC Limit	Prep Date	Analysis Date	Dilution
Uranium	0.0400	0.00028	U	0.0420	104		85 - 119	10/23/09	10/27/09 02:34	1

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TestAmerica

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Washington Closure Hanford LLC

Metals Duplicate Sample Analysis Data Sheet

Lab Name: TESTAMERICA DENVER **Lot/SDG Number:** D9J160184

Client Sample ID: J19369 DUP **Lab WorkOrder:** LMPPA **% Moisture:** N/A **Basis:** Wet

Lab Sample ID: D9J160184-001X **Analysis Method:** 6010B TOTAL **Matrix:** WATER **Unit:** mg/L

Batch	Analyte	RPD Limit	Sample Result	Q	Duplicate Result	RPD	Q	Prep Date	Analysis Date	Dilution
9292449	Antimony	25	0.0031	U	0.0031	0	U	10/21/09	10/22/09 00:00	1
9292449	Arsenic	25	0.0062	B	0.0072	14	B	10/21/09	10/22/09 00:00	1
9292449	Iron	25	4.3		4.2	2.8		10/21/09	10/22/09 00:00	1
9292449	Lead	25	0.0098		0.0091	7.7		10/21/09	10/22/09 00:00	1
9292449	Magnesium	25	13		13	2.3		10/21/09	10/22/09 00:00	1
9292449	Manganese	25	0.30		0.29	2.3		10/21/09	10/22/09 00:00	1
9292449	Barium	25	0.00058	U M	0.11	200	M	10/21/09	10/22/09 00:00	1
9292449	Nickel	25	0.0066	B	0.0061	7.5	B	10/21/09	10/22/09 00:00	1
9292449	Potassium	25	6.2		6.1	2.5		10/21/09	10/22/09 00:00	1
9292449	Beryllium	25	0.00047	U	0.00047	0	U	10/21/09	10/22/09 00:00	1
9292449	Selenium	25	0.0049	U	0.0049	0	U	10/21/09	10/22/09 00:00	1
9292449	Silver	25	0.00093	U	0.00093	0	U	10/21/09	10/22/09 00:00	1
9292449	Sodium	40	32	L	31	2.4	L	10/21/09	10/22/09 00:00	1
9292449	Vanadium	25	0.024		0.024	0.50		10/21/09	10/22/09 00:00	1
9292449	Zinc	25	0.040		0.036	12		10/21/09	10/22/09 00:00	1
9292449	Chromium	25	0.0072		0.0066	8.7		10/21/09	10/22/09 00:00	1
9292449	Boron	25	0.024		0.023	0.98		10/21/09	10/22/09 00:00	1
9292449	Cadmium	25	0.00045	U	0.00045	0	U	10/21/09	10/22/09 00:00	1
9292449	Calcium	25	45		44	2.7		10/21/09	10/22/09 00:00	1
9292449	Cobalt	25	0.0026	B	0.0025	1.9	B	10/21/09	10/22/09 00:00	1
9292449	Copper	25	0.011		0.011	1.1		10/21/09	10/22/09 00:00	1
9292449	Aluminum	25	4.4	N L	4.1	3.9	L	10/21/09	10/22/09 00:00	1

Client Sample ID: J19370 DUP **Lab WorkOrder:** LMPPH **% Moisture:** N/A **Basis:** Wet

Lab Sample ID: D9J160184-002X **Analysis Method:** 6020 TOTAL **Matrix:** WATER **Unit:** mg/L

Batch	Analyte	RPD Limit	Sample Result	Q	Duplicate Result	RPD	Q	Prep Date	Analysis Date	Dilution
9292448	Uranium	20	0.00028	B	0.00030	4.1	B	10/21/09	10/27/09 02:17	1

000027

F.2.1.6 SDG J00625

SAF-RC-114
Columbia River Component of the RCBRA – Pore Water – Phase II
FINAL VALIDATION PACKAGE

COMPLETE COPY OF VALIDATION PACKAGE TO:

Kathy Wendt H4-21

COMMENTS:

SDG J00625 **SAF-RC-114**

Date: 9 November 2009
To: Washington Closure Hanford Inc. (technical representative)
From: ELR Consulting
Project: Columbia River Component of the RCBRA – Pore Water – Phase II
Subject: Wet Chemistry - Data Package No. J00625-TAL

INTRODUCTION

This memo presents the results of data validation on Data Package No. J00625 prepared by TestAmerica Laboratory Inc. (TAL). A list of samples validated along with the analyses reported and the method of analysis is provided in the following table.

Sample ID	Sample Date	Media	Validation	Analyte
J193C1	10/27/09	Water	C	See note 1
J193C2	10/27/09	Water	C	See note 1

1 – Chromium VI by 7196A.

Data validation was conducted in accordance with the Washington Closure Hanford (WCH) validation statement of work and the Remedial Investigation Work Plan for Hanford Site Releases to the Columbia River (DOE/RL-2008-11, Rev. 0, September 2008). Appendices 1 through 6 provide the following information as indicated below:

Appendix 1. Glossary of Data Reporting Qualifiers
Appendix 2. Summary of Data Qualification
Appendix 3. Annotated Laboratory Reports
Appendix 4. Laboratory Narrative and Chain-of-Custody Documentation
Appendix 5. Data Validation Supporting Documentation
Appendix 6. Additional Documentation Requested by Client

DATA QUALITY PARAMETERS

Holding Times

Analytical holding times for metals are assessed to ascertain whether the holding time requirements were met by the laboratory. The holding time requirements are as follows: Soil samples must be analyzed within 24 hours for chromium VI.

If holding times are exceeded, but not by greater than two times the limit, all associated sample results are qualified as estimates and flagged "J" for detects and "UJ" for non-detects. If holding times are exceeded by greater than two times the limit, all associated detectable sample results are qualified as estimates and flagged "J" and all non-detects are rejected and flagged "UR".

All holding times were acceptable.

- **Method Blanks**

Method Blanks

Method blank analyses are performed to determine the extent of laboratory contamination introduced through sampling, sample preparation and analysis. At least one acceptable method blank analysis must be conducted for every 20 samples. No contaminants should be present in the method blank. All blank results must fall below the contract required detection limit (CRQL) to be acceptable.

All method blank results were acceptable.

Field (Equipment) Blank

No field blanks were submitted for analysis.

- **Accuracy**

Matrix Spike and Laboratory Control Sample

Matrix spike (MS) and laboratory control sample (LCS) analyses are used to assess the analytical accuracy of the reported data. The matrix spike is used to assess the effect of the matrix on the ability to accurately quantify sample concentrations. Recoveries must fall within the range of 80% to 120%. Samples with a recovery of less than 30% and a sample result below the IDL are rejected and flagged "UR". Samples with a recovery of 30% to 79% and a sample result less than the IDL are qualified "UJ". Samples with a recovery of greater than 120% or less than 80% and a sample result greater than the IDL are qualified as estimates and flagged "J". Finally, for samples with a recovery greater than 120% and a sample result less than the IDL, no qualification is required.

Due to the lack of a matrix spike and matrix spike duplicate analysis, all chromium VI results were qualified as estimates and flagged "J".

- **Precision**

Laboratory Duplicate Samples

Analytical precision is expressed by the relative percent differences (RPD) between the recoveries of matrix spike duplicate (MSD) analyses performed on a sample in the analytical batch. Precision may alternatively be assessed using unspiked duplicate analyses performed on a sample in the analytical batch. If both sample and replicate activities (concentrations) are greater than five times the CRDL and the RPD is less than 20%, no qualification is required. If either activity (concentration) is less than five times the CRDL, the RPD control limit is less than or equal to two times the CRDL. If the RPD is outside the applicable control limit, associated results are qualified as estimated detects or estimated non-detects.

Due to the lack of matrix spike and matrix spike duplicate analysis, all chromium VI results were qualified as estimates and flagged "J".

Field Duplicate

No field duplicates were submitted for analysis.

- **Analytical Detection Levels**

Reported analytical detection levels are compared against the required quantitation limits (RQLs) to ensure that laboratory detection levels meet the required criteria. All analytes met the RQL.

- **Completeness**

Data package J00625 was submitted for validation and verified for completeness. Completeness is based on the percentage of data determined to be valid (i.e., not rejected). The completion percentage was 100%.

MAJOR DEFICIENCIES

None found.

MINOR DEFICIENCIES

The following minor deficiency was noted:

- Due to the lack of a matrix spike and matrix spike duplicate analysis, all chromium VI results were qualified as estimates and flagged "J".

Data flagged "J" indicates that the associated concentration is an estimate, but under the WCH statement of work, the data may be usable for decision-making purposes. All other validated results are considered accurate within the standard error associated with the methods.

REFERENCES

Washington Closure Hanford Contract #S00W307A00 (March 2008), *Data Validation Services*.

DOE/RL-2008-11, Rev.0, *Remedial Investigation Work Plan for Hanford Site Releases to the Columbia River*, September 2008.

Appendix 1

Glossary of Data Reporting Qualifiers

Qualifiers which may be applied by data validators in compliance with WCH validation SOW are as follows:

U - Indicates the compound or analyte was analyzed for and not detected in the sample. The value reported is the sample quantitation limit corrected for sample dilution and moisture content by the laboratory.

UJ - Indicates the compound or analyte was analyzed for and not detected in the sample. Due to a minor QC deficiency identified during the data validation, the associated quantitation limit is an estimate.

J - Indicates the compound or analyte was analyzed for and detected. Due to a minor QC deficiency identified during the data validation, the associated concentration is an estimate, but the data are usable for decision-making purposes.

BJ - Applied to inorganic analyses only. Indicates the analyte concentration was greater than the IDL but less than the CRDL and is considered an estimated value.

R - Indicates the compound or analyte was analyzed for, detected, and due to an identified major QC deficiency, the data are unusable.

UR - Indicates the compound or analyte was analyzed for and not detected in the sample. Additionally, the data is unusable due to an identified major QC deficiency.

NJ - Indicates presumptive evidence of a compound at an estimated value. The data may not be valid for some specific applications (i.e., usable for decision-making purposes).

N - Indicates presumptive evidence of a compound. The data may not be valid for some specific applications (i.e., usable for decision-making purposes).

Appendix 2

Summary of Data Qualification

WET CHEMISTRY DATA QUALIFICATION SUMMARY*

SDG: J00625	**REVIEWER: ELR**	**Project: RCBRA**	**PAGE 1 OF 1**
COMPOUND	QUALIFIER	SAMPLES AFFECTED	REASON
Chromium VI	J	All	No MS or MSD analysis

* - The Qualified Data Summary Table includes laboratory applied "U" qualifiers not specifically identified here. The laboratory applied "U" qualifiers are included to minimize misinterpretation of results contained in the table.

Appendix 3

Annotated Laboratory Reports

Sample Results Summary

TestAmerica TARL

Ordered by Method, Batch No., Client Sample ID.

Date: 10-Nov-09

Report No. : 42838

SDG No: J00625

Batch	Client Id Work Order	Parameter	Result +- Uncertainty (2s)	Qual	Units	Tracer Yield	MDC or MDA	CRDL	RPD
9301271	7196_CR6								
	J193C1								
	LND301AA	HEXCHROME	4.40E-02 +- 0.0E+00	J	mg/L	N/A	3.70E-03	3.00E-01	
	J193C2								
	LND351AA	HEXCHROME	1.40E-02 +- 0.0E+00	J	mg/L	N/A	3.70E-03	3.00E-01	

No. of Results: 2

12/2/05

TestAmerica RPD - Relative Percent Difference

rptSTI RchSaSum
mary2 V5.2.6
A2002

Appendix 4

Laboratory Narrative and Chain-of-Custody Documentation

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Certificate of Analysis

TestAmerica Laboratories, Inc.

Washington Hanford Closure
2620 Fermi Avenue
Richland, WA 99354

October 28, 2009

Attention: Joan Kessner

SAF Number	:	RC-114
Date SDG Closed	:	October 28, 2009
Number of Samples	:	Two (2)
Sample Type	:	Water
SDG Number	:	J00625
Data Deliverable	:	15-Day / Summary

CASE NARRATIVE

I. Introduction

On October 28, 2009 two water samples were received at TestAmerica for chemistry analysis. Upon receipt, the samples were assigned the following laboratory ID numbers to correspond with the Washington Closure Hanford (WCH) specific IDs:

WCH ID#	TARL ID#	MATRIX	DATE OF RECEIPT
J193C1	LND30	WATER	10/28/09
J193C2	LND35	WATER	10/28/09

II. Sample Receipt

The samples were received in good condition and no abnormalies were noted during check-in. The client called on September 30, 2009 and instructed TestAmerica to assign a 15 day turn around time to all RC-114 samples received on 10/1/09 or later.

III. Analytical Results/Methodology

The analytical results for this report are presented by laboratory sample ID. Each set of data includes sample identification information, analytical results and the appropriate associated statistical errors.

The requested analyses were:

Chemical Analysis
Hexavalent Chromium by EPA method 7196A

IV. Quality Control

The analytical results for each analysis performed includes a minimum of one laboratory control sample (LCS), one method (reagent) blank, and one duplicate sample analysis. Any exceptions have been noted in the "Comments" section.

QC and sample results are reported in the same units.

V. Comments

Chemical Analysis

Hexavalent Chromium by EPA method 7196A:

The sample was analyzed with a 50ml aliquot due to insufficient sample volume. There was insufficient volume to analyze sample QC.

Except as noted, the LCS, batch blank and sample results are within contractual requirements.

I certify that this Certificate of Analysis is in compliance with the SOW, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hard copy data package has been authorized by the Laboratory Manager, or a designee as verified by the following signature.

Reviewed and approved:

Sandra Seger
Project Manager

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-114-59

Page 1 of 1

Collector	Sam Gilbo
Company Contact	JOAN KESSNER
Telephone No.	373-4688
Project Coordinator	KESSNER, JH
Price Code	7K
Data Turnaround	~~7 Days~~ 45 days
Project Designation	Columbia River Component of the RCBRA - Pore Water - Ph
Sampling Location	100K- ~~T100K17~~ T100K1C
SAF No.	RC-114
Ice Chest No.	N/A
Field Logbook No.	EL-1639
COA	BESCUC6520
Method of Shipment	GROUND TRANSPORT
Shipped To	TestAmerica Incorporated, Richland
Offsite Property No.	N/A
Bill of Lading/Air Bill No.	N/A

POSSIBLE SAMPLE HAZARDS/REMARKS

Radioactive near or below background levels

Special Handling and/or Storage

N/A

Preservation	Cool 4C
Type of Container	G/P
No. of Container(s)	1
Volume	500mL
SAMPLE ANALYSIS	Gamma Spec - TJM

SDG J00625 / J9J280137 / Due 11/12/09

Sample No.	Matrix *	Sample Date	Sample Time	Gamma Spec - TJM
J183C1	WATER	10-27-09	14:40	X

J9J280137

CHAIN OF POSSESSION

Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Sam Gilbo	10-27-09 / 1614	EAS Ref. E	10-27-09 / 1614
EAS LOCKED STORAGE	0820 10/28/09		0820 10/28/09
	0840 10/28/09		10/28/09 830

SPECIAL INSTRUCTIONS

LND30

Sampler unavailable to relinquish samples from EAS Refrigerator. EAS Custodian released samples for shipping on 10 / 28 / 09

Matrix *

S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Washington Closure Hanford	**CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST**	RC-114-60	Page 1 of 1
Collector: Sam Gilloo	Company Contact: JOAN KESSNER Telephone No. 375-4688	Project Coordinator: KESSNER, JH	Price Code 7K
Project Designation: Columbia River Component of the RCBRA - Pore Water - Pb	Sampling Location: 100K - 100K40	SAF No. RC-114	Data Turnaround: 7 Days 45 All Surf
Ice Chest No. N/A	Field Logbook No. EL-1639 COA: HESCRC0520	Method of Shipment: GROUND TRANSPORT	
Shipped To: TestAmerica Incorporated, Richland	Offsite Property No. N/A	Bill of Lading/Air Bill No. N/A	

POSSIBLE SAMPLE HAZARDS/REMARKS
Radioactive near or below background levels

Special Handling and/or Storage
N/A

Preservation	Cool 4C
Type of Container	G/P
No. of Container(s)	1
Volume	500mL

SAMPLE ANALYSIS: Gamma [illegible] - 7116

SDG J00625/J9J280137/Due 11/12/09

Sample No.	Matrix *	Sample Date	Sample Time	Gamma [illegible] - 7116
J18SC2	WATER	10-27-09	12:27	X

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Sam Gilloo	10-27-09 / 16:14	EAS Ref. E	10-27-09 / 16:14
EAS LOCKED STORAGE 2 Wendy Wait	10/28/09 0810	Wendy Wait	10/28/09 0810
Wendy Wait	10/28/09 0830	Angela Vance	10/28/09 850

SPECIAL INSTRUCTIONS

LND35

All field information to Analysis samples from EAS Refrigerator. EAS Custodian removed samples for shipping on 10/28/09

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Appendix 5

Data Validation Supporting Documentation

GENERAL CHEMISTRY ANALYSIS DATA VALIDATION CHECKLIST

VALIDATION LEVEL:	A	B	[✓ C]	D	E

PROJECT: RCBRA

DATA PACKAGE: J00625

VALIDATOR: ELR

LAB: TAL

DATE: 11/7/09

SDG: J00625

ANALYSES PERFORMED

Anions/IC	TOC	TOX	TPH-418.1	Oil and Grease	Alkalinity
Ammonia	BOD/COD	Chloride	Chromium-VI	pH	NO_3/NO_2
Sulfate	TDS	TKN	Phosphate		

SAMPLES/MATRIX

J19391 J19392

Water

1. DATA PACKAGE COMPLETENESS AND CASE NARRATIVE

Technical verification documentation present? .... Yes [✓ No] N/A

Comments:

2. INSTRUMENT PERFORMANCE AND CALIBRATIONS (Levels D and E)

Initial calibrations performed on all instruments? .... Yes No [✓ N/A]

Initial calibrations acceptable? .... Yes No [✓ N/A]

ICV and CCV checks performed on all instruments? .... Yes No [✓ N/A]

ICV and CCV checks acceptable? .... Yes No [✓ N/A]

Standards traceable? .... Yes No [✓ N/A]

Standards expired? .... Yes No [✓ N/A]

Calculation check acceptable? .... Yes No [✓ N/A]

Comments:

GENERAL CHEMISTRY ANALYSIS DATA VALIDATION CHECKLIST

3. BLANKS (Levels B, C, D, and E)

ICB and CCB checks performed for all applicable analyses? (Levels D, E) .... Yes No [✓ N/A]

ICB and CCB results acceptable? (Levels D, E) .... Yes No [✓ N/A]

Laboratory blanks analyzed? .... [✓ Yes] No N/A

Laboratory blank results acceptable? .... [✓ Yes] No N/A

Field blanks analyzed? (Levels C, D, E) .... Yes [✓ No] N/A

Field blank results acceptable? (Levels C, D, E) .... Yes No [✓ N/A]

Transcription/calculation errors? (Levels D, E) .... Yes No [✓ N/A]

Comments: No FB

4. ACCURACY (Levels C, D, and E)

Spike samples analyzed? .... Yes [✓ No] N/A

Spike recoveries acceptable? .... Yes No [✓ N/A]

Sike standards NIST traceable? (Levels D, E) .... Yes No [✓ N/A]

Spike standards expired? (Levels D, E) .... Yes No [✓ N/A]

LCS/BSS samples analyzed? .... [✓ Yes] No N/A

LCS/BSS results acceptable? .... [✓ Yes] No N/A

Standards traceable? (Levels D, E) .... Yes No [✓ N/A]

Standards expired? (Levels D, E) .... Yes No [✓ N/A]

Transcription/calculation errors? (Levels D, E) .... Yes No [✓ N/A]

Performance audit sample(s) analyzed? .... Yes [✓ No] N/A

Performance audit sample results acceptable? .... Yes No [✓ N/A]

Comments: No MS

No MS or LCS - J all

GENERAL CHEMISTRY ANALYSIS DATA VALIDATION CHECKLIST

5. PRECISION (Levels C, D, and E)

Duplicate RPD values acceptable? .... Yes No [✓ N/A]

Duplicate results acceptable? .... Yes No [✓ N/A]

MS/MSD standards NIST traceable? (Levels D, E) .... Yes No [✓ N/A]

MS/MSD standards expired? (Levels D, E) .... Yes No [✓ N/A]

Field duplicate RPD values acceptable? .... Yes No [✓ N/A]

Field split RPD values acceptable? .... Yes No [✓ N/A]

Transcription/calculation errors? (Levels D, E) .... Yes No [✓ N/A]

Comments: no dup - J all

6. HOLDING TIMES (all levels)

Samples properly preserved? .... [✓ Yes] No N/A

Sample holding times acceptable? .... [✓ Yes] No N/A

Comments:

GENERAL CHEMISTRY ANALYSIS DATA VALIDATION CHECKLIST

7. RESULT QUANTITATION AND DETECTION LIMITS (all levels)

Results reported for all requested analyses? .... [✓ Yes] No N/A

Results supported in the raw data? (Levels D, E) .... Yes No [✓ N/A]

Samples properly prepared? (Levels D, E) .... Yes No [✓ N/A]

Detection limits meet RDL? .... [✓ Yes] No N/A

Transcription/calculation errors? (Levels D, E) .... Yes No [✓ N/A]

Comments:

Appendix 6

Additional Documentation Requested by Client

QC Results Summary

Date: 10-Nov-09

TestAmerica TARL

Ordered by Method, Batch No, QC Type,.

Report No. : 42636

SDG No.: J00825

Batch Work Order	Parameter	Result +- Uncertainty (2s)	Qual	Units	Tracer Yield	LCS Recovery	Bias	MDC|MDA
7196_CR6								
9301271 BLANK QC,								
LND7G1AA	HEXCHROME	3.70E-03 +- 0.0E+00	U	mg/L	N/A			3.70E-03
0301271 LCS,								
LND7G1AC	HEXCHROME	5.13E-01 +- 0.0E+00		mg/L	N/A	103%	0.0	3.70E-03
No. of Results: 2								

F.2.1.7 SDG J00637

SAF-RC-114
Columbia River Component of the RCBRA – Pore Water – Phase II
FINAL VALIDATION PACKAGE

COMPLETE COPY OF VALIDATION PACKAGE TO:

Kathy Wendt   H4-21

COMMENTS:

SDG   J00637   **SAF-RC-114**

Date: 14 December 2009
To: Washington Closure Hanford Inc. (technical representative)
From: ELR Consulting
Project: Columbia River Component of the RCBRA – Pore Water – Phase II
Subject: Radiochemistry - Data Package No. J00637-TAL

INTRODUCTION

This memo presents the results of data validation on Data Package No. J00637 prepared by TestAmerica Laboratory Inc. (TAL). A list of samples validated along with the analyses reported and the method of analysis is provided in the following table.

Sample ID	Sample Date	Media	Validation	Analyte
J193F0	11/7/09	Water	C	Strontium-90
J193F1	11/7/09	Water	C	Strontium-90
J193F3	11/8/09	Water	C	Strontium-90
J193F4	11/8/09	Water	C	Strontium-90
J193F5	11/9/09	Water	C	Strontium-90
J193F6	11/8/09	Water	C	Strontium-90
J193F7	11/8/09	Water	C	Strontium-90
J19421	11/8/09	Water	C	Strontium-90
J19436	11/9/09	Water	C	Strontium-90
J195D0	11/9/09	Water	C	Strontium-90
J19CX0	11/9/09	Water	C	Strontium-90

Data validation was conducted in accordance with the Washington Closure Hanford (WCH) validation statement of work and the Remedial Investigation Work Plan for Hanford Site Releases to the Columbia River (DOE/RL-2008-11, Rev. 0, September 2008). Appendices 1 through 6 provide the following information as indicated below:

Appendix 1. Glossary of Data Reporting Qualifiers
Appendix 2. Summary of Data Qualification
Appendix 3. Annotated Laboratory Reports
Appendix 4. Laboratory Narrative and Chain-of-Custody Documentation
Appendix 5. Data Validation Supporting Documentation
Appendix 6. Additional Data Requested by Client

DATA QUALITY PARAMETERS

- **Holding Times**

Holding times are calculated from Chain-of-Custody forms to determine the validity of the results. The maximum holding time for radiochemical analysis is 6 months.

All holding times were acceptable.

- **Preparation (Method) Blanks**

Laboratory Blanks

Blank samples are analyzed to determine if positive results are due to laboratory reagent, sample container, or detector contamination. If blank analysis results indicate the presence of an analyte above the minimum detectable activity (MDA), the following qualifiers are applied: All positive sample results less than five times the highest blank concentration are qualified as estimates and flagged "J"; sample results below the MDA are qualified as undetected and flagged "U"; sample results above the MDA and greater than five times the highest blank concentration are not qualified.

All laboratory blank results were acceptable.

Field (Equipment) Blank

No equipment blanks were submitted for analysis.

- **Accuracy**

Accuracy is evaluated from laboratory control sample (LCS) or blank spike sample (BSS) batch samples and spiked samples from the analytical batch. Measured activities are compared to the known added amounts. The acceptable LCS or BSS and matrix spike (MS) recovery range is 65-135%. In addition, samples may be spiked with a radiochemical tracer to assist in isolating the radioisotope of interest with the yield of the tracer being used in calculating sample activity. The acceptable range for tracer recovery is 20% to 105%. Spike sample results outside the above ranges result in associated sample results being qualified as estimates, or not qualified, depending on the activity of the individual sample. Results are rejected for LCS/BSS recoveries of less than 30% and tracer recoveries of less than 20%, and tracer recoveries of greater than 115% for detected results.

All accuracy results were acceptable.

- **Laboratory Duplicates**

Analytical precision is expressed by the relative percent differences (RPD) between the recoveries of duplicate matrix spike analyses performed on a sample in the analytical batch. Precision may alternatively be assessed using unspiked duplicate analyses performed on a sample in the analytical batch. If both sample and replicate activities (concentrations) are greater than five times the contract required detection limit (CRDL) and the RPD is less than 35%, no qualification is required. If either activity (concentration) is less than five times the CRDL, the RPD control limit is less than or equal to two times the CRDL. If the RPD is outside the applicable control limit, associated results are qualified as estimated detects or estimated non-detects.

All duplicate results were acceptable.

Field Duplicates

No field duplicates were submitted for analyis.

- **Detection Levels**

Reported analytical detection levels for undetected analytes are compared against the project RQLs to ensure that laboratory detection levels meet the required criteria. Eight analytes exceeded the RQL. Under the WCH statement of work, no qualification is required. All other analytes met the RQL.

- **Completeness**

Data package No. J00601 was submitted for validation and verified for completeness. Completeness is based on the percentage of data determined to be valid (i.e., not rejected). The completion percentage was 100%.

MAJOR DEFICIENCIES

None found.

MINOR DEFICIENCIES

Eight analytes exceeded the RQL. Under the WCH statement of work, no qualification is required.

REFERENCES

Washington Closure Hanford Contract #S00W307A00 (March 2008), *Data Validation Services*.

DOE/RL-2008-11, Rev.0, *Remedial Investigation Work Plan for Hanford Site Releases to the Columbia River*, September 2008.

Appendix 1

Glossary of Data Reporting Qualifiers

Qualifiers which may be applied by data validators in compliance with the WCH statement of work are as follows:

U - Indicates the compound or analyte was analyzed for and not detected above the minimum detectable activity (MDA) in the sample. The value reported is the sample result corrected for sample dilution and moisture content by the laboratory The data is usable for decision making purposes.

UJ - Indicates the compound or analyte was analyzed for and not detected at concentrations above the minimum detectable activity (MDA) in the sample. Due to a minor QC deficiency identified during the data validation, the associated quantitation limit is an estimate, but is usable for decision making purposes.

J - Indicates the compound or analyte was analyzed for and detected. Due to a minor QC deficiency identified during the data validation, the associated concentration is an estimate, but the data are usable for decision-making purposes.

R - Indicates the compound or analyte was analyzed for, detected, and due to an identified major QC deficiency, the data are unusable.

UR - Indicates the compound or analyte was analyzed for and not detected in the sample. Additionally, the data is unusable due to an identified major QC deficiency.

Appendix 2

Summary of Data Qualification

RADIOCHEMISTRY DATA QUALIFICATION SUMMARY*

SDG: J00637	**REVIEWER:** **ELR**	**Project:** **RCBRA**	**PAGE 1 OF 1**
COMMENTS: No qualifiers assigned			

* - The Qualified Data Summary Table includes laboratory applied "U" qualifiers not specifically identified here. The laboratory applied "U" qualifiers are included to minimize misinterpretation of results contained in the table.

Appendix 3

Annotated Laboratory Reports

Sample Results Summary

Date: 19-Nov-09

TestAmerica TARL

Ordered by Method, Batch No., Client Sample ID.

Report No. : 42746

SDG No: J00637

Batch	Client Id Work Order	Parameter	Result +- Uncertainty (2s)	Qual	Units	Tracer Yield	MDC or MDA	CRDL	RPD
9316306	SRTOT_SEP_PRECIP_GPC								
	J193F0								
	LPCL11AA	STRONTIUM	1.07E+01 +- 3.0E+00		pCi/L	100%	3.41E+00		
	J193F1								
	LPCLN1AA	STRONTIUM	3.84E+01 +- 1.0E+01		pCi/L	100%	3.33E+00		
	J193F3								
	LPCLL1AA	STRONTIUM	2.37E+00 +- 1.8E+00	U	pCi/L	100%	3.47E+00		
	J193F4								
	LPCLA1AA	STRONTIUM	1.88E+00 +- 2.0E+00	U	pCi/L	99%	3.82E+00		
	J193F5								
	LPCKX1AA	STRONTIUM	3.24E-01 +- 3.7E-01	U	pCi/L	100%	6.98E-01		
	J193F5 DUP								
	LPCKX1AC	STRONTIUM	5.83E-01 +- 3.8E-01	U	pCi/L	100%	6.49E-01		57.1
	J193F6								
	LPCKJ1AA	STRONTIUM	2.00E+00 +- 1.7E+00	U	pCi/L	100%	2.83E+00		
	J193F7								
	LPCJE1AA	STRONTIUM	5.60E-01 +- 1.4E+00	U	pCi/L	100%	2.87E+00		
	J19421								
	LPCL81AA	STRONTIUM	1.56E+00 +- 1.6E+00	U	pCi/L	99%	2.73E+00		
	J19436								
	LPCL61AA	STRONTIUM	1.40E+00 +- 1.7E+00	U	pCi/L	95%	3.33E+00		
	J195D0								
	LPCMA1AA	STRONTIUM	1.22E-01 +- 1.4E+00	U	pCi/L	100%	2.84E+00		
	J19CX0								
	LPCHH1AA	STRONTIUM	-8.44E-03 +- 1.7E+00	U	pCi/L	100%	3.43E+00		

No. of Results: 12

12/12/09

TestAmerica

rptSTLRchSaSummary2 V5.2.6 A2002

RPD - Relative Percent Difference.

U Qual - Analyzed for but not detected above limiting criteria. Limit criteria is less than the Mdc/Mda or Total Uncert or not identified by gamma scan software.

Appendix 4

Laboratory Narrative and Chain-of-Custody Documentation

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Certificate of Analysis

Washington Hanford Closure
2620 Fermi Avenue
Richland, WA 99354

TestAmerica Laboratories, Inc.

November 19, 2009

Attention: Joan Kessner

SAF Number	:	RC-114
Date SDG Closed	:	November 12, 2009
Number of Samples	:	Eleven (11)
Sample Type	:	Water
SDG Number	:	J00637
Data Deliverable	:	7 – Day / Summary

CASE NARRATIVE

I. Introduction

On November 12, 2009 eleven water samples were received at TestAmerica for radiochemical analysis. Upon receipt, the samples were assigned the following laboratory ID numbers to correspond with the Washington Closure Hanford (WCH) specific IDs:

WCH ID#	TARL ID#	MATRIX	DATE OF RECEIPT
J19CX0	LPCHH	WATER	11/12/09
J193F7	LPCJE	WATER	11/12/09
J193F6	LPCKJ	WATER	11/12/09
J193F5	LPCKX	WATER	11/12/09
J193F4	LPCLA	WATER	11/12/09
J193F3	LPCLL	WATER	11/12/09
J193F1	LPCLN	WATER	11/12/09
J193F0	LPCL1	WATER	11/12/09
J19436	LPCL5	WATER	11/12/09
J19421	LPCL6	WATER	11/12/09
J195D0	LPCMA	WATER	11/12/09

I. Sample Receipt

The samples were received in good condition and no anomalies were noted during check-in.

Washington Closure Hanford
November 19, 2009

III. Analytical Results/Methodology

The analytical results for this report are presented by laboratory sample ID. Each set of data includes sample identification information, analytical results and the appropriate associated statistical errors.

The requested analyses were:

Gas Proportional Counting
Total Strontium by method RL-GPC-003 (RICH-RC-5006)*

*SOP ID's changed effective 7-01-2008. Attached is a cross reference until SOP ID's are changed in all systems.

IV. Quality Control

The analytical results for each analysis performed includes a minimum of one laboratory control sample (LCS), one method (reagent) blank, and one duplicate sample analysis. Any exceptions have been noted in the "Comments" section.

QC and sample results are reported in the same units.

V. Comments

Gas Proportional Counting
Total Strontium by method RL-GPC-003 (RICH-RC-5006):
The MDA for the samples, except for the sample and sample duplicate, did not meet CRDL due to insufficient volume. Except as noted, the LCS, batch blank, samples and sample duplicate (J193P5) results are within contractual requirements.

I certify that this Certificate of Analysis is in compliance with the SOW, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hard copy data package has been authorized by the Laboratory Manager, or a designee as verified by the following signature.

Reviewed and approved:

Sandra Seger
Project Manager

Washington Closure Hanford	**CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST**	RC-114-323	Page 1 of 1
Collector R. Saccet	Company Contact JOAN KESSNER Telephone No. 375-4688	Project Coordinator KESSNER, JH	Price Code 7K Data Turnaround 7 Days
Project Designation Columbia River Component of the RCBRA - Pore Water - Pb	Sampling Location 100N-- T100NGC	SAF No. RC-114	
Ice Chest No.	Field Logbook No. EL-1641 COA RESCRC6520	Method of Shipment GROUND TRANSPORT	
Shipped To TestAmerica Incorporated, Richland	Offsite Property No. N/A	Bill of Lading/Air Bill No. N/A	

POSSIBLE SAMPLE HAZARDS/REMARKS
radioactive near or below background levels

Special Handling and/or Storage
N/A

000013

Preservation	HNO3 to pH <2
Type of Container	G/P
No. of Container(s)	1
Volume	1500mL
SAMPLE ANALYSIS	Strontium-89,90 - Total Sr

SDG J00637 J9K.120488 Due 11/19/09 ~~11/27/09~~

945 11/12/9

Sample No.	Matrix *	Sample Date	Sample Time	Strontium-89,90 - Total Sr
J19CX0	WATER	11-09-09	1417	X

CHAIN OF POSSESSION Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
R. Saccet R. Saccet	11-9-09 1442	EAS REF 6	11-9-09 1442
EAS LOCKED STORAGE	11/11/09 825	SHANNAN JOHNSON	11/11/09 825
SHANNAN JOHNSON	11/12/09 845		11/12/09 845

SPECIAL INSTRUCTIONS

LPCHH

Sample custodian to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab.

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

TestAmerica Laboratories, Inc.

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-114-85	Page 1 of 1

Collector R. Conrad	Company Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator KESSNER, JH
Project Designation Columbia River Component of the RCBRA - Pore Water - Ph	Sampling Location 100N- ST100N/65		SAF No. RC-114
Ice Chest No.	Field Logbook No. EL-1641	COA BESCRC6520	Method of Shipment GROUND TRANSPORT
Shipped To TestAmerica Incorporated, Richland	Offsite Property No. N/A		Bill of Lading/Air Bill No. N/A

Price Code 7K

Data Turnaround ~~7 Days~~ 45 9/09

POSSIBLE SAMPLE HAZARDS/REMARKS
Radioactive near or below background levels

Special Handling and/or Storage
N/A

J000147

Preservation	HNO3 to pH <2
Type of Container	G/P
No. of Container(s)	1
Volume	1000mL

SAMPLE ANALYSIS: Strontium-89/90 - Total Sr

SDG J00637 JK120488 Due 11/~~27~~ 19/09

$5 11/13/09

Sample No.	Matrix *	Sample Date	Sample Time	Strontium-89/90 - Total Sr
J193F7	WATER	11-08-09	1416	X

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
R. Conrad R. Conrad	11-08-09 1615	EAS REFD R. Conrad	11-08-09 1615
EAS LOCKED STORAGE	11/11/09 1145	EAS LOCKED STORAGE	11/11/09 1145
EAS LOCKED STORAGE	11/12/09 825	SHANNAN JOHNSON	11/12/09 825
JOHNSON	11/12/09 845		11/12/09 845

SPECIAL INSTRUCTIONS

LPCJE

Sample unavailable to receive sampling from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-114-84

Page 1 of 1

Collector R. Smith	Company Contact JOAN KESSNER	Telephone No. 375-4638	Project Coordinator KESSNER, JH
Project Designation Columbia River Component of the RCBRA - Pore Water - Pt	Sampling Location 100N- ST100N2D		SAF No. RC-114
Ice Chest No.	Field Logbook No. EL-1641	COA RESCRC6570	Method of Shipment GROUND TRANSPORT
Shipped To TestAmerica Incorporated, Richland	Offsite Property No. N/A		Bill of Lading/Air Bill No. N/A

Price Code 7K

Data Turnaround
7 Days
45 [illegible] 9/09

POSSIBLE SAMPLE HAZARDS/REMARKS
Radioactive near or below
background levels

Special Handling and/or Storage
N/A

000015

Preservation	HNO3 to pH <2
Type of Container	G/P
No. of Container(s)	1
Volume	1000mL
SAMPLE ANALYSIS	Strontium-90 - Total Sr

SDG J00637 J9K100488 Due 11/19/09 ~~11/27/09~~ SES 11/12/09

Sample No.	Matrix *	Sample Date	Sample Time	Strontium-90 - Total Sr
J193F8	WATER	11-08-09	1246	X

CHAIN OF POSSESSION

Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
R. Smith R. Smith	11-9-09	R. Smith EAS REF D	11-9-09
EAS LOCKED STORAGE D	11/10/09 1145	EAS LOCKED STORAGE E	11/10/09 1145
EAS LOCKED STORAGE E	11/11/09 825	SHANNAN JOHNSON	11/11/09 825
SHANNAN JOHNSON	11/12/09 845		11/12/09 845

SPECIAL INSTRUCTIONS

LPCKJ

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples to be shipped to lab.

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Washington Closure Hanford	**CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST**	RC-114-74	Page 1 of 1
Collector R. Crust	Company Contact JOAN KESSNER Telephone No. 375-4688	Project Coordinator KESSNER, JH	Price Code 7K Data Turnaround 7 Days 45 9109 JH
Project Designation Columbia River Component of the RCBRA - Pore Water - Ph	Sampling Location 100N- J100N1	SAF No. RC-114	
Ice Chest No.	Field Logbook No. EL-1641 COA BESCRC4120	Method of Shipment GROUND TRANSPORT	
Shipped To TestAmerica Incorporated, Richland	Offsite Property No. N/A	Bill of Lading/Air Bill No. N/A	

POSSIBLE SAMPLE HAZARDS/REMARKS

Radioactive near or below background levels

Special Handling and/or Storage

N/A

Preservation	HNO3 to pH <2
Type of Container	G/P
No. of Container(s)	1
Volume	1000mL

SAMPLE ANALYSIS

Strontium-89,90 - Total Sr

SDG J00637 J9K120488 DUE 11/29/09

19

Sample No.	Matrix *	Sample Date	Sample Time	Strontium-89,90 - Total Sr	
J193F5	WATER	11-09-09	1705	X	SRS 11/12/09

CHAIN OF POSSESSION

Sign/Print Names

Relinquished By/Removed From R. Crust R. Crust	Date/Time 11-09-09 1920	Received By/Stored In R. Crust EAS REF E	Date/Time 11-09-09 1920
Relinquished By/Removed From EAS LOCKED STORAGE E	Date/Time 11/12/09 825	Received By/Stored In SHANNAN JOHNSON	Date/Time 11/12/09 825
Relinquished By/Removed From SHANNAN JOHNSON	Date/Time 11/14/09 845	Received By/Stored In	Date/Time 11/12/09 845
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time

SPECIAL INSTRUCTIONS

LPCKX

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab.

Matrix *

S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W = Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-017

9100016

Washington Closure Hanford | **CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST** | RC-114-73 | Page 1 of 1

Collector Kevin Cranna	Company Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator KESSNER, JH
Project Designation Columbia River Component of the RCBRA - Pore Water - Fa	Sampling Location 100N- T100NIE		SAF No. RC-114
Ice Chest No. N/A	Field Logbook No. EL-1639-1	COA RESCRC6520	Method of Shipment GROUND TRANSPORT
Shipped To TestAmerica Incorporated, Richland	Offsite Property No. N/A		Bill of Lading/Air Bill No. N/A

Price Code 7K

Data Turnaround ~~4~~ 7 Days
45 BS 11/16/09

POSSIBLE SAMPLE HAZARDS/REMARKS
Radioactive near or below background levels

Special Handling and/or Storage
N/A

0000172

Preservation	HNO3 to pH <2
Type of Container	G/P
No. of Container(s)	1
Volume	1000mL
SAMPLE ANALYSIS	Strontium-89,90 – Total Sr

SDG J00637 J9K120488 Due 11/23/09
BS 11/16/09

Sample No.	Matrix *	Sample Date	Sample Time	Strontium-89,90 – Total Sr
J193F4	WATER	11-8-09	1240	X

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Kevin Cranna	11-8-09 1700	EAS RFE	11-8-09 1700
EAS LOCKED STORAGE	11/12/09 825	SHANNAN JOHNSON	11/12/09 825
SHANNAN JOHNSON	11/12/09 825		11/12/09 825

SPECIAL INSTRUCTIONS
LPCUA

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab.

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION — Received By | Title | Date/Time

FINAL SAMPLE DISPOSITION — Disposal Method | Disposed By | Date/Time

WCH-EE-011

Washington Closure Hanford	**CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST**	RC-114-73	Page 1 of 1
Collector Kevin Cragan	Company Contact JOAN KESSNER Telephone No. 375-4688	Project Coordinator KESSNER, JH	Price Code 7K Data Turnaround Days 45 [illegible]
Project Designation Columbia River Component of the RCBRA - Pore Water - Pb	Sampling Location 100N- T100NJA	SAF No. RC-114	
Ice Chest No. N/A	Field Logbook No. EL-1639-1 COA BESCRO4520	Method of Shipment GROUND TRANSPORT	
Shipped To TestAmerica Incorporated, Richland	Offsite Property No. N/A	Bill of Lading/Air Bill No. N/A	

POSSIBLE SAMPLE HAZARDS/REMARKS

Radioactive near or below background levels

Special Handling and/or Storage

N/A

Preservation	HNO3 to pH <2
Type of Container	G/P
No. of Container(s)	1
Volume	1000mL
SAMPLE ANALYSIS	Strontium-89/90 - Total Sr

SDG J00637 JRK 120488 Due 11/29/09

DES 11/24/09

Sample No.	Matrix *	Sample Date	Sample Time	
J183F3	WATER	11-8-09	1454	X

CHAIN OF POSSESSION

Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Kevin Cragan	11-8-09 1700	EAS LOCKED STORAGE	11-8-09 1700
EAS LOCKED STORAGE E	11/12/09 825	SHANNAN JOHNSON	11/12/09 825
SHANNAN JOHNSON	11/12/09 845		11/12/09 825

SPECIAL INSTRUCTIONS

LPCLL

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab

Matrix *

S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Washington Closure Hanford | **CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST** | RC-114-70 | Page 1 of 1

Collector R. Current	Company Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator KESSNER, JK
Project Designation Columbia River Component of the RCBRA - Pore Water - Fe	Sampling Location 100N - T/00N2A		SAF No. RC-114
Ice Chest No.	Field Logbook No. EL-1641	COA BESCRE6530	Method of Shipment GROUND TRANSPORT
Shipped To TestAmerica Incorporated, Richland	Offsite Property No. N/A		Bill of Lading/Air Bill No. N/A

Price Code 7K

Data Turnaround 7 Days 45 [illegible]

POSSIBLE SAMPLE HAZARDS/REMARKS

Radioactive near or below background levels

Special Handling and/or Storage

N/A

Preservation	HNO3 to pH <2
Type of Container	G/P
No. of Container(s)	1
Volume	1000mL

SAMPLE ANALYSIS: [illegible] Total Sr

SDG J00637 J9K120488 Due 11/19/09

[illegible] 11/12/09

Sample No.	Matrix *	Sample Date	Sample Time	
J19DF1	WATER	11-09-09	1357	X

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
R. Current R. Current	11-09-09 1703	EAS REF D R. Current	11-09-09 1703
EAS LOCKED STORAGE D	11/12/09 1145	EAS LOCKED STORAGE E	11/12/09 1145
EAS LOCKED STORAGE E	11/13/09 825	SHANNAN JOHNSON	11/13/09 825
SHANNAN JOHNSON	11/14/09 845	[illegible]	11/13/09 845

SPECIAL INSTRUCTIONS

LPCLN

Sample custodian to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab.

Matrix *

S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-114-49

Page 1 of 1

Collector: R. Carrett

Company Contact: JOAN KESSNER

Telephone No.: 375-4688

Project Coordinator: KESSNER, JH

Price Code: 7K

Data Turnaround: ~~7~~ Days 45 day first

Project Designation: Columbia River Component of the RCBRA - Pore Water - Ph

Sampling Location: 100N- 511OON3A

SAF No.: RC-114

Ice Chest No.:

Field Logbook No.: EL-1641

COA: BESCRC6520

Method of Shipment: GROUND TRANSPORT

Shipped To: TestAmerica Incorporated, Richland

Offsite Property No.: N/A

Bill of Lading/Air Bill No.: N/A

POSSIBLE SAMPLE HAZARDS/REMARKS

Radioactive near or below background levels

Special Handling and/or Storage

NA

Preservation	[illegible]
Type of Container	G/P
No. of Container(s)	1
Volume	1000mL

SAMPLE ANALYSIS

	Strontium-89,90 - Total Sr

SDG J006357 J9K120488 Due 11/~~27~~ 19 /09

Sample No.	Matrix *	Sample Date	Sample Time	Strontium-89,90 - Total Sr									
J190F0	WATER	11-07-09	1533	X								SKS 11/12/09	

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
R. Carrett R. Carrett	11-07-09 1700	R. Carrett EAS REF D	11-07-09 1700
~~EAS LOCKED STORAGE~~ D	11/10/09 1420	EAS LOCKED STORAGE E	11/10/09 1420
EAS LOCKED STORAGE E	11/12/09 825	SHANNAN JOHNSON	11/12/09 825
SHANNAN JOHNSON	11/12/09 845		11/12/09 845

SPECIAL INSTRUCTIONS

LRCL 1

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab.

Matrix *

LABORATORY SECTION — Received By: Title: Date/Time:

FINAL SAMPLE DISPOSITION — Disposal Method: Disposed By: Date/Time:

WCH-EE-011

TestAmerica Laboratories, Inc.

Washington Closure Hanford	**CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST**	RC-114-150	Page 1 of 1

Collector: R. Currett
Company Contact: JOAN KESSNER
Telephone No.: 375-4688
Project Coordinator: KESSNER, JH
Price Code: 7K
Data Turnaround: ~~45~~ 15 Days JA 9/09
Project Designation: Columbia River Component of the RCBRA - Pore Water - Pb
Sampling Location: DUPLICATE 100N- 3100N11
SAF No.: RC-114
Ice Chest No.:
Field Logbook No.: EL-1641
COA: BZSCRC6520
Method of Shipment: FED EX
Shipped To: TestAmerica Incorporated, Richland
Offsite Property No.: N/A
Bill of Lading/Air Bill No.:

POSSIBLE SAMPLE HAZARDS/REMARKS
Radioactive near or below background levels

Special Handling and/or Storage
N/A

Preservation	HNO3 to pH <2
Type of Container	G/P
No. of Container(s)	1
Volume	1000mL

SAMPLE ANALYSIS: Strontium-89,90 - Total Sr

SDG-J00637 J9K120488 DUE 11/~~27~~ 19 /09 SBS 11/10/09

Sample No.	Matrix *	Sample Date	Sample Time	Strontium-89,90 - Total Sr
J19436	WATER	11-09-09	1706	X

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
R. Currett R. Currett	11-09-09 1747	R. Currett EAS REF E	11-09-09 1747
EAS LOCKED STORAGE E	11/12/09 825	SHANNAN JOHNSON	11/12/09 825
SHANNAN JOHNSON	11/12/09 845		11/12/09 845

SPECIAL INSTRUCTIONS
LPCLS

Samples unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab.

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION — Received By: Title: Date/Time:
FINAL SAMPLE DISPOSITION — Disposal Method: Disposed By: Date/Time:

WCH-EE-011

000102

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Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST		RC-114-140	Page 1 of 1
Collector Kevin Cranmer	Company Contact JOAN KESSNER	Telephone No. 375-4658	Project Coordinator KESSNER, JH	Price Code 7K
Project Designation Columbia River Component of the RCBRA - Pore Water - Ph	Sampling Location DUPLICATE 100N- T100N 7B		SAF No. RC-114	Data Turnaround ~~7 Days~~ 45 Days
Ice Chest No. N/A	Field Logbook No. EL-1639-1	COA BESCRC6520	Method of Shipment GROUND TRANSPORT	
Shipped To TestAmerica Incorporated, Richland	Offsite Property No. N/A		Bill of Lading/Air Bill No. N/A	

POSSIBLE SAMPLE HAZARDS/REMARKS
Radioactive near or below background levels

Special Handling and/or Storage
N/A

Preservation	HNO3 to pH <2
Type of Container	G/P
No. of Container(s)	1
Volume	1000mL
SAMPLE ANALYSIS	Strontium-89,90 – Total Sr

SDG J00637 J9K120488 DUE 11/~~27~~19/09

Sample No.	Matrix *	Sample Date	Sample Time		
J19421	WATER	11/9/09	1720	X	SKS 11/24/09

CHAIN OF POSSESSION Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Kevin Cranmer	11/9/09 1845	EAS REF	11/9/09 1845
SJ EAS LOCKED STORAGE	11/11/09 825	SHANNAN JOHNSON	11/11/09 825
SHANNAN JOHNSON	11/11/09 845		11/11/09 845

SPECIAL INSTRUCTIONS

LPCL6

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab.

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-114-256	Page 1 of 1

Collector: Kevin Crumme

Company Contact: JOAN KESSNER

Telephone No.: 375-4688

Project Coordinator: KESSNER, JH

Price Code: 7K ~~+500+90~~ SKS 11/12/09

Data Turnaround: 7 Days

Project Designation: Columbia River Component of the RCBRA - Pore Water - Pb

Sampling Location: 100N- T100N 5E

SAF No.: RC-114

Ice Chest No.: N/A

Field Logbook No.: EL-1639-1

COA: RESCRC6550

Method of Shipment: GROUND TRANSPORT

Shipped To: TestAmerica Incorporated, Richland

Offsite Property No.: N/A

Bill of Lading/Air Bill No.: N/A

POSSIBLE SAMPLE HAZARDS/REMARKS

Radioactive near or below background levels

Special Handling and/or Storage

NE

000023

Preservation	HNO3 to pH <2
Type of Container	G/P
No. of Container(s)	1
Volume	1000mL

SAMPLE ANALYSIS: [illegible] Total Pb

SDG J00637 J9K120488 Due 11/~~24~~ 29/09 SKS 11/12/09

Sample No.	Matrix *	Sample Date	Sample Time	
J19500	WATER	11/9/09	1720	✓

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CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Kevin Crumme	11/9/09 1845	EAS Ref E	11/9/09 1845
EAS LOCKED STORAGE E	11/12/09 825	SHANNAN JOHNSON	11/12/09 825
SHANNAN JOHNSON	11/12/09 845		11/12/09 845

SPECIAL INSTRUCTIONS

LPCMA

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab.

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W = Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION Received By | Title | Date/Time

FINAL SAMPLE DISPOSITION Disposal Method | Disposed By | Date/Time

WCH-EE-011

Appendix 5

Data Validation Supporting Documentation

APPENDIX A

RADIOCHEMICAL DATA VALIDATION CHECKLIST

VALIDATION LEVEL:	A	B	[✓ C]	D	E
PROJECT: RCBRA			DATA PACKAGE: J00637		
VALIDATOR: ELR	LAB: TAL			DATE: 12/12/07	
			SDG: J00637		
ANALYSES PERFORMED					
☐ Gross Alpha/Beta ☐ Total Uranium	☒ Strontium-90 Radium-22[illegible]	☐ Technetium-99 Tritium	Alpha Spectroscopy	☐ Gamma Spectroscopy	
SAMPLES/MATRIX					
J153F0	J153F1	J153F3	J153F4	J153F5	J153F6 J153F7
~~[illegible]~~	J15421	J15436	J15J00	J15CX0	
					Water

1. Completeness ☐ N/A

Technical verification forms present? Yes [✓ No] N/A

Comments:

2. Initial Calibration (Levels D, E) ☒ N/A

Instruments/detectors calibrated? Yes No N/A

Initial calibration acceptable? Yes No N/A

Standards NIST traceable? Yes No N/A

Standards Expired? Yes No N/A

Calculation check acceptable? Yes No N/A

Comments:

3. Continuing Calibration (Levels D, E) ☒ N/A

Calibration checked within required frequency? .... Yes No N/A

Calibration check acceptable? .... Yes No N/A

Calibration check standards traceable? .... Yes No N/A

Calibration check standards expired? .... Yes No N/A

Calculation check acceptable? .... Yes No N/A

Comments:

4. Background Counts (Levels D, E) .... ☒ N/A

Background Counts checked within required frequency? .... Yes No N/A

Background Counts acceptable? .... Yes No N/A

Calculation check acceptable? .... Yes No N/A

Comments:

5. Blanks (Levels B, C, D, E) ☐ N/A

Method blank analyzed within required frequency? [✓ Yes] No N/A

Method blank results acceptable? [✓ Yes] No N/A

Analytes detected in method blank? Yes [✓ No] N/A

Field blank(s) analyzed? Yes [✓ No] N/A

Field blank results acceptable? Yes No [✓ N/A]

Analytes detected in field blank(s)? Yes No [✓ N/A]

Transcription/Calculation Errors? (Levels D, E) Yes No [✓ N/A]

Comments: no FB

6. Laboratory Control Samples or Blank Spike Samples (Levels C, D, E) ☐ N/A

LCS/BSS analyzed within required frequency? [✓ Yes] No N/A

LCS/BSS recoveries acceptable? [✓ Yes] No N/A

LCS/BSS traceable? (Levels D,E) Yes No [✓ N/A]

LCS/BSS expired? (Levels D,E) Yes No [✓ N/A]

LCS/BSS levels correct? (Levels D,E) Yes No [✓ N/A]

Transcription/Calculation Errors? (Levels D, E) Yes No [✓ N/A]

Comments:

7. Chemical Carrier Recovery (Levels C, D, E) ☒ N/A

Chemical carrier added? Yes No N/A

Chemical recovery accepable? Yes No N/A

Chemical carrier traceable? (Levels D, E) Yes No N/A

Chemical carrier expired? (Levels D, E) .... Yes No N/A

Transcription/Calculation errors? (Levels D, E) .... Yes No N/A

Comments:

8. Tracer Recovery (Levels C, D, E) .... ☐ N/A

Tracer added? .... [✓ Yes] No N/A

Tracer recovery acceptable? .... [✓ Yes] No N/A

Tracer traceable? (Levels D, E) .... Yes No [✓ N/A]

Tracer expired? (Levels D, E) .... Yes No [✓ N/A]

Transcription/Calculation errors? (Levels D, E) .... Yes No [✓ N/A]

Comments:

9. Matrix Spikes (Levels C, D, E) .... ☒ N/A

Matrix spike analyzed? .... Yes No N/A

Spike recoveries acceptable? .... Yes No N/A

Spike source traceable? (Levels D, E) .... Yes No N/A

Spike source expired? Levels D, E) .... Yes No N/A

Transcription/Calculation Errors? (Levels D, E) .... Yes No N/A

Comments:

10. Duplicates (Levels C, D, E) .... ☐ N/A

Duplicates Analyzed at required frequency? .... [✓ Yes] No N/A

RPD Values Acceptable? .... [✓ Yes] No N/A

Transcription/Calculation Errors? (Levels D, E) .... Yes No [✓ N/A]

Comments:

11. Field QC Samples (Levels C, D E) .... ☐ N/A

Field duplicate sample(s) analyzed? .... Yes [✓ No] N/A

Field duplicate RPD values acceptable? .... Yes No [✓ N/A]

Field split sample(s) analyzed? .... Yes [✓ No] N/A

Field split RPD values acceptable? .... Yes No [✓ N/A]

Performance audit sample(s) analyzed? .... Yes [✓ No] N/A

Performance audit sample results acceptable? .... Yes No [✓ N/A]

Comments: no Field QC

12. Holding Times (All levels)

Are sample holding times acceptable? .... [✓ Yes] No N/A

Comments:

13. Results and Detection Limits (All Levels) ☐ N/A

Results reported for all required sample analyses? [✓ Yes] No N/A

Results supported in raw data?(Levels D, E) Yes No [✓ N/A]

Results Acceptable? (Levels D, E) Yes No [✓ N/A]

Transcription/Calculation errors? (Levels D, E) Yes No [✓ N/A]

MDA's meet required detection limits? Yes [✓ No] N/A

Transcription/calculation errors? (Levels D, E) Yes No [✓ N/A]

Comments: ~ [illegible] ~

8 cnt – RQL

Appendix 6

Additional Documentation Requested by Client

QC Results Summary

Date: 19-Nov-09

TestAmerica EARL

Ordered by Method, Batch No, QC Type.

Report No. : 42746

SDG No.: J00637

Batch Work Order	Parameter	Result +- Uncertainty (2σ)	Qual	Units	Tracer Yield	LCS Recovery	Bias	MDC/MDA
SRTOT_SEP_PRECIP_GPC								
9316306 BLANK QC,								
LPCVC1AA	STRONTIUM	1.48E-01 +- 3.7E-01	U	pCi/L	95%			7.27E-01
9316306 LCS,								
LPCVC1AC	STRONTIUM	2.40E+01 +- 6.3E+00		pCi/L	97%	88%	-0.1	6.90E-01

No. of Results: 2

TestAmerica rptSTLRchQcSummary V5.2.5 A2002

Bias - (Result/Expected)-1 as defined by ANSI N13.30.

U Qual - Analyzed for but not detected above limiting criteria. Limit criteria is less than the Mdc/Mda or Total Uncert or not identified by gamma scan software.

F.2.1.8 SDG J00646

SAF-RC-114
Columbia River Component of the RCBRA – Pore Water – Phase III
FINAL VALIDATION PACKAGE

COMPLETE COPY OF VALIDATION PACKAGE TO:

Kathy Wendt H4-21

COMMENTS:

SDG J00646 SAF-RC-114

Date: 2 February 2010
To: Washington Closure Hanford Inc. (technical representative)
From: ELR Consulting
Project: Columbia River Component of the RCBRA – Pore Water – Phase III
Subject: Radiochemistry - Data Package No. J00646-TAL

INTRODUCTION

This memo presents the results of data validation on Data Package No. J00646 prepared by TestAmerica Laboratory Inc. (TAL). A list of samples validated along with the analyses reported and the method of analysis is provided in the following table.

Sample ID	Sample Date	Media	Validation	Analyte
J19424	12/2/09	Water	C	Tritium
J195B4	12/2/09	Water	C	Tritium
J195B5	12/3/09	Water	C	Tritium
J195B6	12/4/09	Water	C	Tritium
J195B7	12/4/09	Water	C	Tritium
J195B8	12/4/09	Water	C	Tritium
J195B9	12/5/09	Water	C	Tritium
J195C0	12/2/09	Water	C	Tritium
J195C1	12/7/09	Water	C	Tritium
J195C2	12/8/09	Water	C	Tritium
J195C3	12/8/09	Water	C	Tritium

Data validation was conducted in accordance with the Washington Closure Hanford (WCH) validation statement of work and the Remedial Investigation Work Plan for Hanford Site Releases to the Columbia River (DOE/RL-2008-11, Rev. 0, September 2008). Appendices 1 through 6 provide the following information as indicated below:

Appendix 1. Glossary of Data Reporting Qualifiers
Appendix 2. Summary of Data Qualification
Appendix 3. Annotated Laboratory Reports
Appendix 4. Laboratory Narrative and Chain-of-Custody Documentation
Appendix 5. Data Validation Supporting Documentation
Appendix 6. Additional Data Requested by Client

DATA QUALITY PARAMETERS

- **Holding Times**

Holding times are calculated from Chain-of-Custody forms to determine the validity of the results. The maximum holding time for radiochemical analysis is 6 months.

All holding times were acceptable.

- **Preparation (Method) Blanks**

Laboratory Blanks

Blank samples are analyzed to determine if positive results are due to laboratory reagent, sample container, or detector contamination. If blank analysis results indicate the presence of an analyte above the minimum detectable activity (MDA), the following qualifiers are applied: All positive sample results less than five times the highest blank concentration are qualified as estimates and flagged "J"; sample results below the MDA are qualified as undetected and flagged "U"; sample results above the MDA and greater than five times the highest blank concentration are not qualified.

All laboratory blank results were acceptable.

Field (Equipment) Blank

No equipment blanks were submitted for analysis.

- **Accuracy**

Accuracy is evaluated from laboratory control sample (LCS) or blank spike sample (BSS) batch samples and spiked samples from the analytical batch. Measured activities are compared to the known added amounts. The acceptable LCS or BSS and matrix spike (MS) recovery range is 65-135%. In addition, samples may be spiked with a radiochemical tracer to assist in isolating the radioisotope of interest with the yield of the tracer being used in calculating sample activity. The acceptable range for tracer recovery is 20% to 105%. Spike sample results outside the above ranges result in associated sample results being qualified as estimates, or not qualified, depending on the activity of the individual sample. Results are rejected for LCS/BSS recoveries of less than 30% and tracer recoveries of less than 20%, and tracer recoveries of greater than 115% for detected results.

Due to the lack of a matrix spike analysis, all tritium results were qualified as estimates and flagged "J".

All other accuracy results were acceptable.

- **Laboratory Duplicates**

Analytical precision is expressed by the relative percent differences (RPD) between the recoveries of duplicate matrix spike analyses performed on a sample in the analytical batch. Precision may alternatively be assessed using unspiked duplicate analyses performed on a sample in the analytical batch. If both sample and replicate activities (concentrations) are greater than five times the contract required detection limit (CRDL) and the RPD is less than 35%, no qualification is required. If either activity (concentration) is less than five times the CRDL, the RPD control limit is less than or equal to two times the CRDL. If the RPD is outside the applicable control limit, associated results are qualified as estimated detects or estimated non-detects. All duplicate results were acceptable.

Field Duplicates

No field duplicates were submitted for analysis.

- **Detection Levels**

Reported analytical detection levels for undetected analytes are compared against the project RQLs to ensure that laboratory detection levels meet the required criteria. All analytes met the RQL.

- **Completeness**

Data package No. J00646 was submitted for validation and verified for completeness. Completeness is based on the percentage of data determined to be valid (i.e., not rejected). The completion percentage was 100%.

MAJOR DEFICIENCIES

None found.

MINOR DEFICIENCIES

The following minor deficiency was noted:

Due to the lack of a matrix spike analysis, all tritium results were qualified as estimates and flagged "J".

Data flagged "J" indicates that the associated concentration is an estimate, but under the WCH statement of work, the data may be usable for decision-making purposes. All other validated results are considered accurate within the standard error associated with the methods.

REFERENCES

Washington Closure Hanford Contract #S00W307A00 (March 2006), *Data Validation Services.*

DOE/RL-2008-11, Rev.0, *Remedial Investigation Work Plan for Hanford Site Releases to the Columbia River*, September 2008.

Appendix 1

Glossary of Data Reporting Qualifiers

Qualifiers which may be applied by data validators in compliance with the WCH statement of work are as follows:

U - Indicates the compound or analyte was analyzed for and not detected above the minimum detectable activity (MDA) in the sample. The value reported is the sample result corrected for sample dilution and moisture content by the laboratory The data is usable for decision making purposes.

UJ - Indicates the compound or analyte was analyzed for and not detected at concentrations above the minimum detectable activity (MDA) in the sample. Due to a minor QC deficiency identified during the data validation, the associated quantitation limit is an estimate, but is usable for decision making purposes.

J - Indicates the compound or analyte was analyzed for and detected Due to a minor QC deficiency identified during the data validation, the associated concentration is an estimate, but the data are usable for decision-making purposes.

R - Indicates the compound or analyte was analyzed for, detected, and due to an identified major QC deficiency, the data are unusable.

UR - Indicates the compound or analyte was analyzed for and not detected in the sample. Additionally, the data is unusable due to an identified major QC deficiency.

Appendix 2

Summary of Data Qualification

RADIOCHEMISTRY DATA QUALIFICATION SUMMARY*

SDG: J00646	**REVIEWER: ELR**	**Project: RCBRA**	**PAGE 1 OF 1**
COMPOUND	QUALIFIER	SAMPLES AFFECTED	REASON
Tritium	J	All	No MS analysis

* - The Qualified Data Summary Table includes laboratory applied "U" qualifiers not specifically identified here. The laboratory applied "U" qualifiers are included to minimize misinterpretation of results contained in the table.

Appendix 3

Annotated Laboratory Reports

Sample Results Summary

Date: 30-Dec-09

TestAmerica TARL

Ordered by Method, Batch No., Client Sample ID.

Report No. : 42915

SDG No: J00646

Batch	Client Id / Work Order	Parameter	Result +- Uncertainty (2s)	Qual	Units	Tracer Yield	MDC or MDA	CRDL	RPD
9351183 906.0_H3_LSC									
	J19624								
	LQ46G1AA	H-3	3.06E+04 +- 9.8E+02	J	pCi/L	100%	3.01E+02	4.00E+02	
	J19684								
	LQ4741AA	H-3	3.15E+04 +- 9.7E+02		pCi/L	100%	3.01E+02	4.00E+02	
	J19685								
	LQ4731AA	H-3	2.20E+02 +- 1.4E+02	U	pCi/L	100%	3.02E+02	4.00E+02	
	J19686								
	LQ4701AA	H-3	5.92E+03 +- 3.2E+02		pCi/L	100%	3.01E+02	4.00E+02	
	J19687								
	LQ4771AA	H-3	1.27E+02 +- 1.4E+02	U	pCi/L	100%	3.03E+02	4.00E+02	
	J19688								
	LQ47L1AA	H-3	2.42E+02 +- 1.4E+02	U	pCi/L	100%	3.03E+02	4.00E+02	
	J19689								
	LQ47H1AA	H-3	8.87E+01 +- 1.3E+02	U	pCi/L	100%	3.02E+02	4.00E+02	
	J196C0								
	LQ4811AA	H-3	1.57E+01 +- 1.3E+02	U	pCi/L	100%	3.04E+02	4.00E+02	
	J196C1								
	LQ48P1AA	H-3	2.03E+02 +- 1.4E+02	U	pCi/L	100%	3.03E+02	4.00E+02	
	J196C2								
	LQ48D1AA	H-3	1.15E+04 +- 6.8E+02		pCi/L	100%	3.02E+02	4.00E+02	
	J196C3								
	LQ48W1AA	H-3	6.46E+04 +- 1.6E+03		pCi/L	100%	3.03E+02	4.00E+02	
	J196C3 DUP								
	LQ48W1AC	H-3	6.48E+04 +- 1.8E+03		pCi/L	100%	3.02E+02	4.00E+02	0.3
	No. of Results:	12							

2/1/10

TestAmerica

rptSTLRchSaSummary2 V5 2.5 A2002

RPD - Relative Percent Difference.

U Qual - Analyzed for but not detected above limiting criteria. Limit criteria is less than the Mdc/Mda or Total Uncert or not identified by gamma scan software.

Appendix 4

Laboratory Narrative and Chain-of-Custody Documentation

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Certificate of Analysis

TestAmerica Laboratories, Inc.

Washington Hanford Closure
2620 Fermi Avenue
Richland, WA 99354

December 30, 2009

Attention: Joan Kessner

SAF Number :	RC-114
Date SDG Closed	December 15, 2009
Number of Samples :	Eleven (11)
Sample Type :	Water
SDG Number :	J00646
Data Deliverable	15-Day / Summary

CASE NARRATIVE

I. Introduction

On December 15, 2009 eleven water samples were received at TestAmerica for radiochemical analysis. Upon receipt, the samples were assigned the following laboratory ID number to correspond with the Washington Closure Hanford (WCH) specific ID:

WCH ID#	TAL ID#	MATRIX	DATE OF RECEIPT
J195B4	LQ474	WATER	12/15/09
J195B5	LQ473	WATER	12/15/09
J195B6	LQ470	WATER	12/15/09
J195B7	LQ47T	WATER	12/15/09
J195B8	LQ47L	WATER	12/15/09
J195B9	LQ47H	WATER	12/15/09
J19424	LQ465	WATER	12/15/09
J195C0	LQ461	WATER	12/15/09
J195C1	LQ46P	WATER	12/15/09
J195C2	LQ46D	WATER	12/15/09
J195C3	LQ45W	WATER	12/15/09

II. Sample Receipt

The samples were received in good condition and no anomalies were noted during check-in.

Washington Closure Hanford
December 30, 2009

III. Analytical Results/Methodology

The analytical results for this report are presented by laboratory sample ID. Each set of data includes sample identification information, analytical results and the appropriate associated statistical errors.

The requested analyses were:

Liquid Scintillation Counting
Tritium by method RL-LSC-005 (RICH-RC-5007)*

IV. Quality Control

The analytical results for each analysis performed includes a minimum of one laboratory control sample (LCS), one method (reagent) blank, and one duplicate sample analysis. Any exceptions have been noted in the "Comments" section.

QC and sample results are reported in the same units.

V. Comments

Liquid Scintillation Counting

Tritium by method RL-LSC-005 (RICH-RC-5007):
The LCS, batch blank, samples and sample duplicate (J195C3) results are within contractual requirements.

I certify that this Certificate of Analysis is in compliance with the SOW, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hard copy data package has been authorized by the Laboratory Manager, or a designee as verified by the following signature.

Reviewed and approved:

Sandra Seger

Sandra Seger
Project Manager

Washington Closure Hanford	**CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST**	RC-114-239	Page 1 of 1
Collector: Sam Gilbo	Company Contact: JOAN KESSNER; Telephone No.: 376-4680	Project Coordinator: KESSNER, JH	Price Code: 7K; Data Turnaround: 15 day TAT ~~7 Days~~
Project Designation: Columbia River Component of the RCBRA - Pore Water - Ph	Sampling Location: HTS- JHTS19	SAF No.: RC-114	
Ice Chest No.: NA WCH	Field Logbook No.: EL-1639-1; COA: DESCRC0520	Method of Shipment: GROUND TRANSPORT	
Shipped To: TestAmerica Incorporated, Richland	Offsite Property No.: N/A	Bill of Lading/Air Bill No.: N/A	

POSSIBLE SAMPLE HAZARDS/REMARKS

radioactive near or below background levels

Special Handling and/or Storage

N/A

Preservation	None
Type of Container	P
No. of Container(s)	1
Volume	185mL
SAMPLE ANALYSIS	Tritium - 3H

12-29-09

J9L150475

LQ474

Sample No.	Matrix *	Sample Date	Sample Time	
J1B5B4	WATER	12-2-09	14:07	X

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Sam Gilbo	12-2-09/16:45	EAS Ref. E	12-2-09/16:45
EAS REFE	12-15-09 1045	SHANNAN JOHNSON	12-15-09 1045
SHANNAN JOHNSON	12/15/09 1050		1050 12-15-09

SPECIAL INSTRUCTIONS

J9L150475

8DG J00646

DUE: ~~1-29-10~~

12/31/09

Samples unavailable to remove sample from controlled storage. Shipped removed samples from storage location using custody

Matrix *

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Washington Closure Hanford	**CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST**	RC-114-240	Page 1 of 1
Collector Sam Gilbo	Company Contact JOAN KESSNER — Telephone No. 375-4688	Project Coordinator KESSNER, JR	Price Code 7K — Data Turnaround ~~7 Days~~ 15 day TAT per J. Kessner ca. 45
Project Designation Columbia River Component of the RCBRA - Pore Water - Ph	Sampling Location HTS— THTS2C	SAF No. RC-114	
Ice Chest No. N/A	Field Logbook No. EL-1639-1 — COA RESCRC6570	Method of Shipment GROUND TRANSPORT	12/14/09
Shipped To TestAmerica Incorporated, Richland	Offsite Property No. N/A	Bill of Lading/Air Bill No. N/A	

POSSIBLE SAMPLE HAZARDS/REMARKS
radioactive near or below background levels

Special Handling and/or Storage
N/A

Preservation	None
Type of Container	P
No. of Container(s)	1
Volume	125ml

SAMPLE ANALYSIS — [illegible] - 85

LQ493

Sample No.	Matrix *	Sample Date	Sample Time	
J19585	WATER	12-3-09	16'06	X

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Sam Gilbo	12-3-09/16:30	EAS REF	12-3-09/16:30
EAS REF	12/14/09 1645	SHANNAN JOHNSON	12/14/09 1645
SHANNAN JOHNSON	12/15/09 1050		1055 12-15-09

SPECIAL INSTRUCTIONS

J9L150475
SDG J00646
Due: ~~1-29-10~~ 12/31/09 12-31-09

* Hold time is shipping to lab.
Sampler acceptable to remove samples from controlled storage. Shipper removed samples from storage location taking custody.

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Page 28 of 43

000015

Washington Closure Hanford	**CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST**	RC-114-241	Page 1 of 1
Collector Sam Gilb	Company Contact JOAN KESSNER / Telephone No. 375-4644	Project Coordinator KESSNER, JH	Price Code 7K / Data Turnaround 15 day TAT per J. Kessner ~~7 Days~~ ~~[illegible]~~ 12/17/09 RW 12/17/09
Project Designation Columbia River Component of the RCBRA Pore Water - Pb	Sampling Location NTS- JHTS 16	SAF No. RC-114	
Ice Chest No. N/A WOW	Field Logbook No. EL-1639-1 / COA 0ESCRC6520	Method of Shipment GROUND TRANSPORT	
Shipped To TestAmerica Incorporated, Richland	Offsite Property No. N/A	Bill of Lading/Air Bill No. N/A	

POSSIBLE SAMPLE HAZARDS/REMARKS
radioactive near or below background levels

Special Handling and/or Storage
N/A

Preservation	None
Type of Container	P
No. of Container(s)	1
Volume	125mL
SAMPLE ANALYSIS	[illegible] - U

LQ470

Sample No.	Matrix *	Sample Date	Sample Time	
J19580	WATER	12-4-09	1411	X

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Sam Gilb	12-4-09/ 19:45	EMS REF	12-4-09/ 19:45
EMS REF # 3	12/15/09 1125	SHANNAN JOHNSON	12/15/09 1125
SHANNAN JOHNSON	12/15/09 1250		12-15-09 1250

SPECIAL INSTRUCTIONS

J9L150475

8DG J00646

DUE: ~~1-29-10~~ 12/31/09 RW 12/17/09

** = applicable for [illegible]

Samples unavailable to retrieve samples from controlled storage. Shipper retrieved samples from storage location during custody

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-114-242

Page 1 of 1

Collector: Sam Gilbo

Company Contact: JOAN KESSNER

Telephone No.: 373-[illegible]

Project Coordinator: KESSNER, JH

Price Code: 7K

Data Turnaround: 15 day TAT per J. Kessner ~~45 days~~ 7 Days 12/17/09 RJ 12/4/09

Project Designation: Columbia River Component of the RCBRA - Pore Water - PS

Sampling Location: HTS- JH1528

SAF No.: RC-114

Ice Chest No.: N/A

Field Logbook No.: EL-1639-1

COA: 065CRC6520

Method of Shipment: GROUND TRANSPORT

Shipped To: TestAmerica Incorporated, Richland

Offsite Property No.: N/A

Bill of Lading/Air Bill No.: N/A

POSSIBLE SAMPLE HAZARDS/REMARKS

radionuclides may be near or below background levels

Special Handling and/or Storage

N/A

Preservation	None
Type of Container	P
No. of Container(s)	1
Volume	125mL

SAMPLE ANALYSIS

LQ4TT

Sample No.	Matrix *	Sample Date	Sample Time	[illegible]
J18SB7	WATER	12-4-09	1521	X

CHAIN OF POSSESSION Sign/Print Names

Relinquished By/Removed From: Sam Gilbo	Date/Time: 12-4-09/1945	Received By/Stored In: EK Ref E	Date/Time: 12-4-09/1945
Relinquished By/Removed From: EK Ref E	Date/Time: 12/15/09 1125	Received By/Stored In: SHANNAN JOHNSON	Date/Time: 12/15/09 1125
Relinquished By/Removed From: SHANNAN JOHNSON	Date/Time: 12/15/09 1030	Received By/Stored In:	Date/Time: 12/15/09 1030
Relinquished By/Removed From:	Date/Time:	Received By/Stored In:	Date/Time:
Relinquished By/Removed From:	Date/Time:	Received By/Stored In:	Date/Time:
Relinquished By/Removed From:	Date/Time:	Received By/Stored In:	Date/Time:

SPECIAL INSTRUCTIONS

J9L150495
SDG J00646
DUE: ~~1-29-10~~ 12/31/09 12/17/09

[illegible]
Sampler responsible to ensure samples are controlled storage. Shipper removed samples from storage location [illegible]

Matrix *

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-114-343	Page 1 of 1

Collector Sam Gallo	Company Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator KESSNER, JH
Project Designation Columbia River Component of the RCBRA - Pore Water - Pb	Sampling Location HTS— JHTS 38		SAF No. RC-114
Ice Chest No. N/A	Field Logbook No. EL-1639-1	COA RESCRCA420	Method of Shipment GROUND TRANSPORT 12/7/09 Ed Dhinsa
Shipped To TestAmerica Incorporated, Richland	Offsite Property No. N/A		Bill of Lading/Air Bill No. N/A

Price Code 7K

Data Turnaround

15 day TAT per J. Kessner 7 Days

POSSIBLE SAMPLE HAZARDS/REMARKS

Radioactive ... at or below background levels

Special Handling and/or Storage

N/A

Preservation	None
Type of Container	P
No. of Container(s)	1
Volume	125mL

SAMPLE ANALYSIS

Sample No.	Matrix *	Sample Date	Sample Time	[illegible] - all
J1 95B5	WATER	12-4-09	17:23	X

CHAIN OF POSSESSION

Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Sam Gallo	12-4-09 / 19:45	EAB RC	12-4-09 / 19:45
Eric Belk	12/7/09 1045	SHANNAN JOHNSON	12/7/09 1045
SHANNAN JOHNSON	1050		12-13-09 1050
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time

SPECIAL INSTRUCTIONS

JAL150495

JDG-J00640

DUE: ~~1-29-10~~ 12-31-09 2 Wks

LQ47L

Sampler available to remove samples from controlled storage. Shipper ... samples from storage location using custody ...

Matrix *

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WC-4-EE-011

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST		RC-114-244	Page 1 of 1
Collector Sam Gilbo	Company Contact JOAN KESSNER / Telephone No. 373-[illegible]	Project Coordinator KESSNER, JH	Price Code 7K	Data Turnaround 15 day TAT per J. Kessner ~~7 Days~~
Project Designation Columbia River Component of the RCBRA - Pore Water - 7b	Sampling Location HTS- JHTS29	SAF No. RC-114		
Ice Chest No. NA	Field Logbook No. EL-1639-1 / COA BESCRC6630	Method of Shipment GROUND TRANSPORT 12/17/09		
Shipped To TestAmerica Incorporated, Richland	Offsite Property No. N/A	Bill of Lading/Air Bill No. N/A		

POSSIBLE SAMPLE HAZARDS/REMARKS

radioactive near or below background levels

Special Handling and/or Storage

N/A

Preservation	[illegible]
Type of Container	P
No. of Container(s)	1
Volume	1L

SAMPLE ANALYSIS

Tritium - 10

J9L150475 SDG J00646 Due ~~1-29-10~~ 12/31/09 12/17/09

Sample No.	Matrix *	Sample Date	Sample Time	
J19689	WATER	12-5-09	14:16	X

CHAIN OF POSSESSION — Sign/Print Name

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Sam Gilbo	12-5-09/18:00	[illegible]	12-5-09/18:00
[illegible]	12/16/09 1045	SHANNAN JOHNSON	12/16/09 1045
SHANNAN JOHNSON	12/18/09 1050	[illegible]	12-18-09 1050

SPECIAL INSTRUCTIONS

LQ47H

Sample unavailable to [illegible] from controlled storage. Shipper removed samples from storage location [illegible]

Matrix *

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-01

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-114-143

Page 1 of 1

Collector: Sean Gilliam

Company Contact: JOAN KESSNER

Telephone No.: 375-4684

Project Coordinator: KESSNER, JH

Price Code: 7K

Data Turnaround: ~~7 Days~~ [illegible]

15 day TAT per J Kessner [illegible]

Project Designation: Columbia River Component of the RCBRA - Pore Water - Pb

Sampling Location: DUPLICATE HTS- JHTS19

SAF No.: RC-114

Ice Chest No.: NA

Field Logbook No.: EL-1639-1

COA: BESCRC4530

Method of Shipment: GROUND TRANSPORT [illegible] 12/21/09

Shipped To: TestAmerica Incorporated, Richland

Offsite Property No.: N/A

Bill of Lading/Air Bill No.: N/A

POSSIBLE SAMPLE HAZARDS/REMARKS
radioactive near or below background levels

Special Handling and/or Storage
N/A

Preservation	None
Type of Container	P
No. of Container(s)	1
Volume	[illegible]

SAMPLE ANALYSIS: [illegible]

J9L150475 8DGJ00646 Due 1-29-10 12/31/09 12/31/09

Sample No.	Matrix *	Sample Date	Sample Time	
J19424	WATER	12-2-09	1608	X

CHAIN OF POSSESSION		Sign/Print Names	
Relinquished By/Removed From Sean Gilliam	Date/Time 12-2-09 / 16:45	Received By/Stored In EAS Ref [illegible]	Date/Time 12-2-09 / 16:45
Relinquished By/Removed From EAS REF [illegible]	Date/Time 12/15/09 1043	Received By/Stored In SHANNAN JOHNSON	Date/Time 12/15/09 1043
Relinquished By/Removed From SHANNAN JOHNSON	Date/Time 12/16/09 1050	Received By/Stored In [illegible]	Date/Time 12/16/09 1050
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time

SPECIAL INSTRUCTIONS

L9465

Sample custodian to remove samples from controlled storage. Shipper removed samples from storage location during custody. [illegible]

Matrix *

[illegible]

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST		RC-114-245	Page 1 of 1
Collector Sam Gilbo	Company Contact JOAN KESSNER	Telephone No. 373-4688	Project Coordinator KESSNER, JH	Price Code 7K 15 Day TAT per J. Kessner 12/17/09
Project Designation Columbia River Component of the RCBRA - Pore Water - 7k	Sampling Location HTS- JH1570		SAP No. RC-114	Data Turnaround ~~7 Days~~ 12/17/09
Ice Chest No. N/A	Field Logbook No. EL-1679-1	COA RLSCRC4530	Method of Shipment GROUND TRANSPORT	
Shipped To TestAmerica Incorporated, Richland	Offsite Property No. N/A		Bill of Lading/Air Bill No. N/A	

POSSIBLE SAMPLE HAZARDS/REMARKS

radioactive near or below background levels

Special Handling and/or Storage

N/A

Preservation	None
Type of Container	P
No. of Container(s)	1
Volume	125mL

SAMPLE ANALYSIS

Tritium - 30

J9L150475 SDG J00646 Due: ~~12/29/09~~ 12/31/09 12/17/09

Sample No.	Matrix *	Sample Date	Sample Time	Tritium
J19SC0	WATER	12-5-09	15:37	X

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Sam Gilbo	12-5-09 / 18:00	EKS LSC	12-5-09 / 18:00
EKS REF II	12/15/09 1045	SHANNAN JOHNSON	12/15/09 1045
SHANNAN JOHNSON	12/15/09 1050		12-15-09 1050

SPECIAL INSTRUCTIONS

LQ461

[illegible]

Matrix *

[illegible]

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-114-246 Page 1 of 1

Collector: Sam Gilles

Company Contact: JOAN KESSNER Telephone No. 373-4638

Project Coordinator: KESSNER, JM

Price Code: TK

Data Turnaround: 7 Days ~~45 days~~

15 Day TAT per J. Kessner on 12/13/09

Project Designation: Columbia River Component of the RCBRA - Pore Water - Ph

Sampling Location: HTS- THTS4D

SAF No.: RC-114

Ice Chest No.: N/A

Field Logbook No.: EL-1639-1

COA: RESCRCE030

Method of Shipment: GROUND TRANSPORT

Shipped To: TestAmerica Incorporated, Richland

Offsite Property No.: N/A

Bill of Lading/Air Bill No.: N/A

POSSIBLE SAMPLE HAZARDS/REMARKS

radioactive near or below background levels

Special Handling and/or Storage

N/A

Preservation	None		
Type of Container	P		
No. of Container(s)	1		
Volume	~~[illegible]~~ 60mL	SG 12-8-09	
	Tritium - H3		

SAMPLE ANALYSIS

Due ~~12/9/10~~ 12/31/09 RG 12/13/09 / J9L150475 / SDG J00646

Sample No.	Matrix *	Sample Date	Sample Time	
J19RC1	WATER	12-7-09	6:21	X

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From: Sam Gilles — Date/Time: 12-7-09 / 12:50

Received By/Stored In: EAS Ref E — Date/Time: 12-7-09 / 12:50

Relinquished By/Removed From: EAS Ref E — Date/Time: 12/8/09 1115

Received By/Stored In: SHANNAN JOHNSON — Date/Time: 12/8/09 1115

Relinquished By/Removed From: SHANNAN JOHNSON — Date/Time: 12/8/09 1230

Received By/Stored In: Angel — Date/Time: 12/9/09 1230

Relinquished By/Removed From — Date/Time

Received By/Stored In — Date/Time

Relinquished By/Removed From — Date/Time

Received By/Stored In — Date/Time

Relinquished By/Removed From — Date/Time

Received By/Stored In — Date/Time

SPECIAL INSTRUCTIONS

LQ46P

Sampler uses [illegible] to remove samples from controlled storage. Shipper removed samples from storage [illegible] taking custody

Matrix *

LABORATORY SECTION — Received By — Title — Date/Time

FINAL SAMPLE DISPOSITION — Disposal Method — Disposed By — Date/Time

WCH-EE-011

Washington Closure Hanford WCH

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-114-747

Page 1 of 1

Collector: San Gilbert	Company Contact: JOAN KESSNER	Telephone No.: 375-4683	Project Coordinator: KESSNER, JH
Project Designation: Columbia River Component of the RCBRA - Pore Water - Pb	Sampling Location: HTS- JHCS17		SAF No.: RC-114
Ice Chest No.: N/A	Field Logbook No.: EL-1639-1	COA: RESCRC6530	Method of Shipment: GROUND TRANSPORT
Shipped To: TestAmerica Incorporated, Richland	Offsite Property No.: N/A		Bill of Lading/Air Bill No.: N/A

Price Code: 7K

Data Turnaround: ~~7 Days~~ 15 day TAT Per Joan Kessner SH 12/17/09 RJ 12/17/09

POSSIBLE SAMPLE HAZARDS/REMARKS

radioactive near or below background levels

Special Handling and/or Storage

N/A

Preservation	None
Type of Container	P
No. of Container(s)	1
Volume	250mL

SAMPLE ANALYSIS: Tritium - H3

12/31/09 [illegible]

DUE: 1-29-2010 / J9L150475 / 80SJ00646

Sample No.	Matrix *	Sample Date	Sample Time	Tritium - H3
J19CC2	WATER	12-8-09	14:40	X

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
San Gilbert	12-8-09/15:00	EAS Ref 6	12-8-09/15:00
EAS Ref 6	12/17/09 1125	SHANNAN JOHNSON	12/17/09 1125
SHANNAN JOHNSON	12/17/09 1630	[illegible]	12-15-09 1030

SPECIAL INSTRUCTIONS

LQ46D

Sample custodians to remove samples from controlled storage. Shipper removed samples from storage location taking custody if samples not shipped same day.

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-114-248 Page 1 of 1

Collector: Sam Gallo WCH
Company Contact: JOAN KESSNER
Telephone No.: 375-4461
Project Coordinator: KESSNER, JH
Price Code: 7K
Data Turnaround: 7 Days
15day TAT per Joan Kessner/[illegible] on 12/17/09 [illegible] 12/17/09
Project Designation: Columbia River Component of the RCBRA - Pore Water - Pb
Sampling Location: HTS- 7HIS73
SAF No.: RC-114
Ice Chest No.: N/A
Field Logbook No.: EL1674-1
COA: [illegible]
Method of Shipment: GROUND TRANSPORT
Shipped To: TestAmerica Incorporated, Richland
Offsite Property No.: N/A
Bill of Lading/Air Bill No.: N/A Q#29023

POSSIBLE SAMPLE HAZARDS/REMARKS
Radioactive near or below background levels

Special Handling and/or Storage
N/A

Preservation	None		JFL180475
Type of Container	P		SDG# J00646
No. of Container(s)	1		DUE-12/29/2009
Volume	125mL		12/31/09 1/13/10

SAMPLE ANALYSIS: Trace - Pb

LQ45W

Sample No.	Matrix *	Sample Date	Sample Time	Trace - Pb
J19CG3	WATER	12-8-09	15:42	X

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Sam Gallo	12-8-09/1630	EK Ref E [illegible]	12-8-09/16:30
EAS REF E	12/15/09 [illegible]	SHANNAN JOHNSON	12/15/09 [illegible]
SHANNAN JOHNSON	12/15/09 [illegible]	[illegible] - TA RL	12-15-09 1050

SPECIAL INSTRUCTIONS

Sampler [illegible] to [illegible] sampling from [illegible] storage. Shipper [illegible] samples from storage location using custody [illegible] in lab

Matrix *

LABORATORY SECTION — Received By: Title: Date/Time:

FINAL SAMPLE DISPOSITION — Disposal Method: Disposed By: Date/Time:

WCH-EE-011

Appendix 5

Data Validation Supporting Documentation

APPENDIX A

RADIOCHEMICAL DATA VALIDATION CHECKLIST

VALIDATION LEVEL:	A	B	[✓ C]	D	E

PROJECT:	RCBRA	DATA PACKAGE:	J00646
VALIDATOR: ECR	LAB: TAL	DATE:	2/11/10
		SDG:	J00646

ANALYSES PERFORMED

☐ Gross Alpha/Beta Total Uranium	☐ Strontium-90 ☐ Radium-228	Technetium-99 ✓ Uranium	Alpha Spectroscopy	☐ Gamma Spectroscopy	

SAMPLES/MATRIX

J19424	J19554	J19555	J19556	J19557
J19558	J19559	J19560	J19561	J19562
J19563				

water

1. Completeness ☐ N/A

Technical verification forms present? Yes [✓ No] N/A

Comments:

2. Initial Calibration (Levels D, E) ☒ N/A

Instruments/detectors calibrated? Yes No N/A

Initial calibration acceptable? Yes No N/A

Standards NIST traceable? Yes No N/A

Standards Expired? Yes No N/A

Calculation check acceptable? Yes No N/A

Comments:

3. Continuing Calibration (Levels D, E) ☒ N/A

Calibration checked within required frequency? .... Yes No N/A

Calibration check acceptable? .... Yes No N/A

Calibration check standards traceable? .... Yes No N/A

Calibration check standards expired? .... Yes No N/A

Calculation check acceptable? .... Yes No N/A

Comments:

4. Background Counts (Levels D, E) .... ☒ N/A

Background Counts checked within required frequency? .... Yes No N/A

Background Counts acceptable? .... Yes No N/A

Calculation check acceptable? .... Yes No N/A

Comments:

5. Blanks (Levels B, C, D, E) ☐ N/A

Method blank analyzed within required frequency? [✓ Yes] No N/A

Method blank results acceptable? [✓ Yes] No N/A

Analytes detected in method blank? Yes [✓ No] N/A

Field blank(s) analyzed? Yes [✓ No] N/A

Field blank results acceptable? Yes No [✓ N/A]

Analytes detected in field blank(s)? Yes No [✓ N/A]

Transcription/Calculation Errors? (Levels D, E) Yes No [✓ N/A]

Comments: NO FB

6. Laboratory Control Samples or Blank Spike Samples (Levels C, D, E) ☐ N/A

LCS /BSS analyzed within required frequency? [✓ Yes] No N/A

LCS/BSS recoveries acceptable? [✓ Yes] No N/A

LCS/BSS traceable? (Levels D,E) Yes No [✓ N/A]

LCS/BSS expired? (Levels D,E) Yes No [✓ N/A]

LCS/BSS levels correct? (Levels D,E) Yes No [✓ N/A]

Transcription/Calculation Errors? (Levels D, E) Yes No [✓ N/A]

Comments:

7. Chemical Carrier Recovery (Levels C, D, E) ☒ N/A

Chemical carrier added? Yes No N/A

Chemical recovery acceptable? Yes No N/A

Chemical carrier traceable? (Levels D, E) Yes No N/A

Chemical carrier expired? (Levels D, E) .... Yes No N/A

Transcription/Calculation errors? (Levels D, E) .... Yes No N/A

Comments:

8. Tracer Recovery (Levels C, D, E) .... ☐ N/A

Tracer added? .... [✓ Yes] No N/A

Tracer recovery acceptable? .... [✓ Yes] No N/A

Tracer traceable? (Levels D, E) .... Yes No [✓ N/A]

Tracer expired? (Levels D, E) .... Yes No [✓ N/A]

Transcription/Calculation errors? (Levels D, E) .... Yes No [✓ N/A]

Comments:

9. Matrix Spikes (Levels C, D, E) .... ☐ N/A

Matrix spike analyzed? .... Yes [✓ No] N/A

Spike recoveries acceptable? .... Yes No [✓ N/A]

Spike source traceable? (Levels D, E) .... Yes No [✓ N/A]

Spike source expired? Levels D, E) .... Yes No [✓ N/A]

Transcription/Calculation Errors? (Levels D, E) .... Yes No [✓ N/A]

Comments: No MS - J qlf

10. Duplicates (Levels C, D, E) .... ☐ N/A

Duplicates Analyzed at required frequency? .... [✓ Yes] No N/A

RPD Values Acceptable? .... [✓ Yes] No N/A

Transcription/Calculation Errors? (Levels D, E) .... Yes No [✓ N/A]

Comments:

11. Field QC Samples (Levels C, D E) .... ☐ N/A

Field duplicate sample(s) analyzed? .... Yes [✓ No] N/A

Field duplicate RPD values acceptable? .... Yes No [✓ N/A]

Field split sample(s) analyzed? .... Yes [✓ No] N/A

Field split RPD values acceptable? .... Yes No [✓ N/A]

Performance audit sample(s) analyzed? .... Yes [✓ No] N/A

Performance audit sample results acceptable? .... Yes No [✓ N/A]

Comments: no field QC

12. Holding Times (All levels)

Are sample holding times acceptable? .... [✓ Yes] No N/A

Comments:

13. Results and Detection Limits (All Levels) .... ☐ N/A

Results reported for all required sample analyses? .... [✓ Yes] No N/A

Results supported in raw data?(Levels D, E) .... Yes No [✓ N/A]

Results Acceptable? (Levels D, E) .... Yes No [✓ N/A]

Transcription/Calculation errors? (Levels D, E) .... Yes No [✓ N/A]

MDA's meet required detection limits? .... [✓ Yes] No N/A

Transcription/calculation errors? (Levels D, E) .... Yes No [✓ N/A]

Comments:

Appendix 6

Additional Documentation Requested by Client

QC Results Summary

Date: 30-Dec-09

TestAmerica TARL

Ordered by Method, Batch No, QC Type,.

Report No. : 42895

SDG No.: J00648

Batch Work Order	Parameter	Result +- Uncertainty (2s)	Qual	Units	Tracer Yield	LCS Recovery	Bias	MDC/MDA
906.0_H3_LSC								
9361192 BLANK QC,								
LQ8DP1AA	H-3	2.04E+01 +- 1.3E+02	U	pCi/L	100%			3.00E+02
LQ8DP1AD	H-3	7.18E+01 +- 1.3E+02	U	pCi/L	100%			3.10E+02
9361192 LCS,								
LQ8DP1AE	H-3	2.73E+03 +- 2.3E+02		pCi/L	100%	101%	0.0	3.15E+02
LQ8DP1AC	H-3	2.68E+03 +- 2.2E+02		pCi/L	100%	98%	0.0	2.99E+02

No. of Results: 4

TestAmerica rptSTLRchQcSummary V5.2.6 A2002

Bias - (Result/Expected)-1 as defined by ANSI N13.30.

U Qual - Analyzed for but not detected above limiting criteria. Limit criteria is less than the Mdc/Mda or Total Uncert or not identified by gamma scan software.

F.2.1.9 SDG J00665

SAF-RC-114
Columbia River Component of the RCBRA – Pore Water – Phase III
FINAL VALIDATION PACKAGE

COMPLETE COPY OF VALIDATION PACKAGE TO:

Kathy Wendt H4-21

COMMENTS:

SDG J00665 SAF-RC-114

Date: 27 March 2010
To: Washington Closure Hanford Inc. (technical representative)
From: ELR Consulting
Project: Columbia River Component of the RCBRA – Pore Water – Phase III
Subject: Radiochemistry - Data Package No. J00665-TAL

INTRODUCTION

This memo presents the results of data validation on Data Package No. J00665 prepared by TestAmerica Laboratory Inc. (TAL). A list of samples validated along with the analyses reported and the method of analysis is provided in the following table.

Sample ID	Sample Date	Media	Validation	Analyte
J19F41	1/17/10	Water	C	See note 1
J19F42	1/17/10	Water	C	See note 1

1 – Strontium-90 & tritium.

Data validation was conducted in accordance with the Washington Closure Hanford (WCH) validation statement of work and the Remedial Investigation Work Plan for Hanford Site Releases to the Columbia River (DOE/RL-2008-11, Rev. 0, September 2008). Appendices 1 through 6 provide the following information as indicated below:

Appendix 1. Glossary of Data Reporting Qualifiers
Appendix 2. Summary of Data Qualification
Appendix 3. Annotated Laboratory Reports
Appendix 4. Laboratory Narrative and Chain-of-Custody Documentation
Appendix 5. Data Validation Supporting Documentation
Appendix 6. Additional Data Requested by Client

DATA QUALITY PARAMETERS

· Holding Times

Holding times are calculated from Chain-of-Custody forms to determine the validity of the results. The maximum holding time for radiochemical analysis is 6 months.

All holding times were acceptable.

Preparation (Method) Blanks

Laboratory Blanks

Blank samples are analyzed to determine if positive results are due to laboratory reagent, sample container, or detector contamination. If blank analysis results indicate the presence of an analyte above the minimum detectable activity (MDA), the following qualifiers are applied All positive sample results less than five times the highest blank concentration are qualified as estimates and flagged "J"; sample results below the MDA are qualified as undetected and flagged "U"; sample results above the MDA and greater than five times the highest blank concentration are not qualified.

All laboratory blank results were acceptable.

Field (Equipment) Blank

No equipment blanks were submitted for analysis.

- **Accuracy**

Accuracy is evaluated from laboratory control sample (LCS) or blank spike sample (BSS) batch samples and spiked samples from the analytical batch. Measured activities are compared to the known added amounts. The acceptable LCS or BSS and matrix spike (MS) recovery range is 65-135%. In addition, samples may be spiked with a radiochemical tracer to assist in isolating the radioisotope of interest with the yield of the tracer being used in calculating sample activity. The acceptable range for tracer recovery is 20% to 105%. Spike sample results outside the above ranges result in associated sample results being qualified as estimates, or not qualified, depending on the activity of the individual sample. Results are rejected for LCS/BSS recoveries of less than 30% and tracer recoveries of less than 20%. and tracer recoveries of greater than 115% for detected results.

Due to the lack of a matrix spike analysis, all tritium results were qualified as estimates and flagged "J".

All other accuracy results were acceptable.

- **Laboratory Duplicates**

Analytical precision is expressed by the relative percent differences (RPD) between the recoveries of duplicate matrix spike analyses performed on a sample in the analytical batch. Precision may alternatively be assessed using unspiked duplicate analyses performed on a sample in the analytical batch. If both sample and replicate activities (concentrations) are greater than five times the contract required detection limit (CRDL) and the RPD is less than 35%, no qualification is required. If either activity (concentration) is less than five times the CRDL, the RPD control limit is less than or equal to two times the CRDL. If the RPD is outside the applicable control limit, associated results are qualified as estimated detects or estimated non-detects.
All duplicate results were acceptable.

Field Duplicates

No field duplicates were submitted for analyis.

Detection Levels

Reported analytical detection levels for undetected analytes are compared against the project RQLs to ensure that laboratory detection levels meet the required criteria. Two analytes exceeded the RQL. Under the WCH statement of work, no qualification is required. All other analytes met the RQL.

Completeness

Data package No. J00665 was submitted for validation and verified for completeness. Completeness is based on the percentage of data determined to be valid (i.e., not rejected). The completion percentage was 100%.

MAJOR DEFICIENCIES

None found

MINOR DEFICIENCIES

The following minor deficiency was noted:

- Due to the lack of a matrix spike analysis, all tritium results were qualified as estimates and flagged "J".

Data flagged "J" indicates that the associated concentration is an estimate, but under the WCH statement of work, the data may be usable for decision-making purposes. All other validated results are considered accurate within the standard error associated with the methods.

Two analytes exceeded the RQL. Under the WCH statement of work, no qualification is required.

REFERENCES

Washington Closure Hanford Contract #S00W307A00 (March 2008). *Data Validation Services.*

DOE/RL-2008-11, Rev.0, *Remedial Investigation Work Plan for Hanford Site Releases to the Columbia River*, September 2008.

Appendix 1

Glossary of Data Reporting Qualifiers

Qualifiers which may be applied by data validators in compliance with the WCH statement of work are as follows:

U - Indicates the compound or analyte was analyzed for and not detected above the minimum detectable activity (MDA) in the sample. The value reported is the sample result corrected for sample dilution and moisture content by the laboratory. The data is usable for decision making purposes.

UJ - Indicates the compound or analyte was analyzed for and not detected at concentrations above the minimum detectable activity (MDA) in the sample. Due to a minor QC deficiency identified during the data validation, the associated quantitation limit is an estimate, but is usable for decision making purposes.

J - Indicates the compound or analyte was analyzed for and detected. Due to a minor QC deficiency identified during the data validation, the associated concentration is an estimate, but the data are usable for decision-making purposes.

R - Indicates the compound or analyte was analyzed for, detected, and due to an identified major QC deficiency, the data are unusable.

UR - Indicates the compound or analyte was analyzed for and not detected in the sample. Additionally, the data is unusable due to an identified major QC deficiency.

Appendix 2

Summary of Data Qualification

RADIOCHEMISTRY DATA QUALIFICATION SUMMARY*

SDG: J00665	**REVIEWER:** **ELR**	**Project:** **RCBRA**	**PAGE 1 OF 1**
COMPOUND	QUALIFIER	SAMPLES AFFECTED	REASON
Tritium	J	All	No MS analysis

* - The Qualified Data Summary Table includes laboratory applied "U" qualifiers not specifically identified here. The laboratory applied "U" qualifiers are included to minimize misinterpretation of results contained in the table.

Appendix 3

Annotated Laboratory Reports

Sample Results Summary

Date: 02-Feb-10

TestAmerica TARL

Ordered by Method, Batch No., Client Sample ID.

Report No. : 43166

SDG No: J00085

Batch	Client Id Work Order	Parameter	Result +- Uncertainty (2s)	Qual	Units	Tracer Yield	MDC or MDA	CRDL	RPD
0019288 SRTOT_SEP_PRECIP_GPC									
	J19F41								
	LTA3L1AD	STRONTIUM	5.10E-01 +- 1.0E+00	U	pCi/L	100%	2.20E+00		
	J19F41 DUP								
	LTA3L1AF	STRONTIUM	4.33E-01 +- 9.3E-01	U	pCi/L	100%	2.30E+00		-2006.0
	J19F42								
	LTA8K1AD	STRONTIUM	6.19E-01 +- 1.2E+00	U	pCi/L	100%	2.50E+00		
0019288 906.0_H3_LSC									
	J19F41								
	LTA3L1AA	H-3	5.27E+03 +- 3.0E+02	J	pCi/L	100%	2.07E+02	4.00E+02	
	J19F41 DUP								
	LTA3L1AE	H-3	5.11E+03 +- 2.9E+02		pCi/L	100%	2.06E+02	4.00E+02	3.1
	J19F42								
	LTA8K1AA	H-3	3.81E+03 +- 2.8E+02	J	pCi/L	100%	2.07E+02	4.00E+02	
~~0020533 7196 CR6~~									
	~~J19F41~~								
	~~LTA3L1AC~~	~~HEXCHROME~~	~~1.30E-02 +- 0.0E+00~~		~~mg/L~~	~~N/A~~	~~3.70E-03~~	~~3.50E-01~~	
	~~J19F42~~								
	~~LTA8K1AC~~	~~HEXCHROME~~	~~2.20E-02 +- 0.0E+00~~		~~mg/L~~	~~N/A~~	~~3.70E-03~~	~~3.50E-01~~	
	~~LTA8K1AG~~	~~HEXCHROME~~	~~2.40E-02 +- 0.0E+00~~		~~mg/L~~	~~N/A~~	~~3.70E-03~~	~~3.50E-01~~	~~[illegible]~~

3/21/10

No. of Results: 9

3/21/10

TestAmerica
rptSTLRchSaSum
maryX V5.2.6
A2002

RPD Relative Percent Difference.
U Qual - Analyzed for but not detected above limiting criteria. Limit criteria is less than the Mdc/Mda or Total Uncert or not identified by gamma scan software.

Appendix 4

Laboratory Narrative and Chain-of-Custody Documentation

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Certificate of Analysis

TestAmerica Laboratories, Inc.

Washington Hanford Closure
2620 Fermi Avenue
Richland, WA 99354

February 2, 2010

Attention: Joan Kessner

SAF Number	:	RC-114
Date SDG Closed	:	January 18, 2010
Number of Samples	:	Two (2)
Sample Type	:	Water
SDG Number	:	J00665
Data Deliverable	:	15-Day / Summary

CASE NARRATIVE

I. Introduction

On January 18, 2010 two water samples were received at TestAmerica for radiochemical analysis. Upon receipt, the samples were assigned the following laboratory ID number to correspond with the Washington Closure Hanford (WCH) specific ID:

WCH ID#	TARL ID#	MATRIX	DATE OF RECEIPT
J19F41	LTA3L	WATER	01/18/10
J19F42	LTA6K	WATER	01/18/10

II. Sample Receipt

The samples were received in good condition and no anomalies were noted during check-in.

III. Analytical Results/Methodology

The analytical results for this report are presented by laboratory sample ID. Each set of data includes sample identification information, analytical results and the appropriate associated statistical errors.

The requested analyses were:

Gas Proportional Counting
Strontium-90 by method RL-GPC-003 (RICH-RC-5006)*
Liquid Scintillation Counting
Tritium by method RL-LSC-005 (RICH-RC-5007)*
Chemical Analysis
Hexavalent Chromium by EPA method 7196A

*SOP ID's changed effective 7-01-2008. Attached is a cross reference until SOP ID's are changed in all systems.

IV. Quality Control

The analytical results for each analysis performed includes a minimum of one laboratory control sample (LCS), one method (reagent) blank, and one duplicate sample analysis. Any exceptions have been noted in the "Comments" section.

QC and sample results are reported in the same units.

V. Comments

Gas Proportional Counting
Strontium-90 by method RL-GPC-003 (RICH-RC-5006):
The LCS, batch blank, samples and sample duplicate (J19F41) results are within contractual requirements.

Liquid Scintillation Counting
Tritium by method RL-LSC-005 (RICH-RC-5007):
The LCS, batch blank, samples and sample duplicate (J19F41) results are within contractual requirements.

Chemical Analysis
Hexavalent Chromium by EPA method 7196A
Samples J19F41 and J19F42 were filtered prior to taking the aliquot. All the samples in the batch except the blank and LCS were analyzed with a 50 aliquot due to insufficient sample size. Except as noted, the LCS, batch blank, samples, sample duplicate (J19F42), sample matrix spike (J19F42), and matrix spike duplicate (J19F42) results are within contractual requirements.

I certify that this Certificate of Analysis is in compliance with the SOW, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hard copy data package has been authorized by the Laboratory Manager, or a designee as verified by the following signature.

Reviewed and approved:

Sandra Seger
Project Manager

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-114-332

Page 1 of 4

Collector R. Cornett	Company Contact JOAN KESSNER	Telephone No. 375-4678	Project Coordinator KESSNER, JH
Project Designation Columbia River Component of the RCBRA - Pore Water - Ph	Sampling Location 100-BC T/100BC 3C		SAF No. RC-114
Ice Chest No.	Field Logbook No. EL-1645-01	COA BESCRC6530	Method of Shipment FED EX
Shipped To TestAmerica Incorporated Richland	Offsite Property No. N/A		Bill of Lading/Air Bill No.

Price Code 7C

Data Turnaround 15 Days

POSSIBLE SAMPLE HAZARDS/REMARKS

N/A

Special Handling and/or Storage

N/A

Preservation	Cool 4C	HNO3 to pH <2	None
Type of Container	G/P	G/P	P
No. of Container(s)	1	1	1
Volume	500mL	1000mL	125mL
SAMPLE ANALYSIS	Chromium Hex - 7196	[illegible] ICP - Total Sr	Tritium - 3H

JOA180467

LTA6K

Sample No.	Matrix *	Sample Date	Sample Time			
J19FA2	WATER	01-17-10	1454	X	X	X

CHAIN OF POSSESSION

Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
R. Cornett R. Cornett	01-17-10 1512	CAS REEF R. Cornett	01-17-10 1512
CAS Reef SF	01-18-10 0715	S. Beckenbach	01-18-10 0715
S. Beckenbach	01-18-10 0805		1-18-10

SPECIAL INSTRUCTIONS

JOA180467 5 scs 1/18/10

SDG #D0668

DUE - FEB.02.10

Matrix *

S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EF-011

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-114-331	Page 1 of 1

Collector Kevin Cranna	Company Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator KESSNER, JH	Price Code 7C
Project Designation Complete Remedial Components of the RC BRA - Pore Water - Ph	Sampling Location 100-BL J100Z47		SAF No. RC-314	Data Turnaround 15 Days
Ice Chest No.	Field Logbook No. EL-1645	COA BESCRC6120	Method of Shipment FED EX	
Shipped To [illegible] Incorporated, Richland	Offsite Property No. N/A		Bill of Lading/Air Bill No.	

POSSIBLE SAMPLE HAZARDS/REMARKS
N/A

Special Handling and/or Storage
N/A

Preservation	[illegible]	HNO3 to pH <2	None
Type of Container	G/P	G/P	P
No. of Container(s)	1	1	1
Volume	[illegible]mL	1000mL	125mL
SAMPLE ANALYSIS	[illegible]	[illegible]	[illegible]

4TA3L

Sample No.	Matrix *	Sample Date	Sample Time			
J13F41	WATER	01-17-10	1500	X	X	X

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Kevin Cranna	01-17-10 1940	EAS locked Storage	01-17-10 1940
EAS Locked Storage	01-18-10 0710	SL Gerken Shipping	01-18-10 0710
SL Gerken Shipping	01-18-10 0825		1-18-10 0825

SPECIAL INSTRUCTIONS
JOA180454
SDG # J00665
DUE - 2/02/10

J0A180454

Matrix *

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

Appendix 6

Data Validation Supporting Documentation

APPENDIX A

RADIOCHEMICAL DATA VALIDATION CHECKLIST

VALIDATION LEVEL	A	B	[✓ C]	D	E
PROJECT: BCBRA			DATA PACKAGE: J00665		
VALIDATOR: ELR	LAB: TAL			DATE: 3/21/[illegible]	
			SDG: J00664		
ANALYSES PERFORMED					
☐ Gross Alpha/Beta	☒ Strontium-90	☐ Technetium-99	☐ Alpha Spectroscopy	☐ Gamma Spectroscopy	
☐ Total Uranium	☐ Radium-22	☒ Tritium			
SAMPLES/MATRIX					
J19P41 J19P42					
					Water

1. Completeness .... ☐ N/A

Technical verification forms present? .... Yes [✓ No] N/A

Comments: ______

2. Initial Calibration (Levels D, E) .... ☒ N/A

Instruments/detectors calibrated? .... Yes No N/A

Initial calibration acceptable? .... Yes No N/A

Standards NIST traceable? .... Yes No N/A

Standards Expired? .... Yes No N/A

Calculation check acceptable? .... Yes No N/A

Comments: ______

3. Continuing Calibration (Levels D, E) ☒ N/A

Calibration checked within required frequency?............Yes No N/A

Calibration check acceptable?............Yes No N/A

Calibration check standards traceable?............Yes No N/A

Calibration check standards expired?............Yes No N/A

Calculation check acceptable?............Yes No N/A

Comments:

4. Background Counts (Levels D, E)............☒ N/A

Background Counts checked within required frequency?............Yes No N/A

Background Counts acceptable?............Yes No N/A

Calculation check acceptable?............Yes No N/A

Comments:

5. Blanks (Levels B, C, D, E) ☐ N/A

Method blank analyzed within required frequency? [✓ Yes] No N/A

Method blank results acceptable? [✓ Yes] No N/A

Analytes detected in method blank? Yes [✓ No] N/A

Field blank(s) analyzed? Yes [✓ No] N/A

Field blank results acceptable? Yes No [✓ N/A]

Analytes detected in field blank(s)? Yes No [✓ N/A]

Transcription/Calculation Errors? (Levels D, E) Yes No [✓ N/A]

Comments: no FB

6. Laboratory Control Samples or Blank Spike Samples (Levels C, D, E) ☐ N/A

LCS /BSS analyzed within required frequency? [✓ Yes] No N/A

LCS/BSS recoveries acceptable? [✓ Yes] No N/A

LCS/BSS traceable? (Levels D,E) Yes No [✓ N/A]

LCS/BSS expired? (Levels D,E) Yes No [✓ N/A]

LCS/BSS levels correct? (Levels D,E) Yes No [✓ N/A]

Transcription/Calculation Errors? (Levels D, E) Yes No [✓ N/A]

Comments:

7. Chemical Carrier Recovery (Levels C, D, E) ☒ N/A

Chemical carrier added? Yes No N/A

Chemical recovery acceptable? Yes No N/A

Chemical carrier traceable? (Levels D, E) Yes No N/A

Chemical carrier expired? (Levels D, E) .... Yes No N/A

Transcription/Calculation errors? (Levels D, E) .... Yes No N/A

Comments:

8. Tracer Recovery (Levels C, D, E) .... ☐ N/A

Tracer added? .... [✓ Yes] No N/A

Tracer recovery acceptable? .... [✓ Yes] No N/A

Tracer traceable? (Levels D, E) .... Yes No [✓ N/A]

Tracer expired? (Levels D, E) .... Yes No [✓ N/A]

Transcription/Calculation errors? (Levels D, E) .... Yes No [✓ N/A]

Comments:

9. Matrix Spikes (Levels C, D, E) .... ☐ N/A

Matrix spike analyzed? .... Yes [✓ No] N/A

Spike recoveries acceptable? .... Yes No [✓ N/A]

Spike source traceable? (Levels D, E) .... Yes No [✓ N/A]

Spike source expired? Levels D, E) .... Yes No [✓ N/A]

Transcription/Calculation Errors? (Levels D, E) .... Yes No [✓ N/A]

Comments: 3H - No MS - J all

10. Duplicates (Levels C, D, E) .... ☐ N/A

Duplicates Analyzed at required frequency? .... [✓ Yes] No N/A

RPD Values Acceptable? .... [✓ Yes] No N/A

Transcription/Calculation Errors? (Levels D, E) .... Yes No [✓ N/A]

Comments: ____________________

11. Field QC Samples (Levels C, D E) .... ☐ N/A

Field duplicate sample(s) analyzed? .... Yes [✓ No] N/A

Field duplicate RPD values acceptable? .... Yes No [✓ N/A]

Field split sample(s) analyzed? .... Yes [✓ No] N/A

Field split RPD values acceptable? .... Yes No [✓ N/A]

Performance audit sample(s) analyzed? .... Yes [✓ No] N/A

Performance audit sample results acceptable? .... Yes No [✓ N/A]

Comments: No field QC

12. Holding Times (All levels)

Are sample holding times acceptable? .... [✓ Yes] No N/A

Comments: ____________________

13. Results and Detection Limits (All Levels) .... ☐ N/A

Results reported for all required sample analyses? .... [✓ Yes] No N/A

Results supported in raw data? (Levels D, E) .... Yes No [✓ N/A]

Results Acceptable? (Levels D, E) .... Yes No [✓ N/A]

Transcription/Calculation errors? (Levels D, E) .... Yes No [✓ N/A]

MDA's meet required detection limits? .... NO .... Yes [✓ No] N/A

Transcription/calculation errors? (Levels D, E) .... Yes No [✓ N/A]

Comments: ~~SR - all over~~ 3/21/10

SR-90 - all over

Appendix 6

Additional Documentation Requested by Client

QC Results Summary

Date: 02-Feb-10

TestAmerica TARL

Ordered by Method, Batch No, QC Type,.

Report No. : 43158

SDG No.: J00885

Batch Work Order	Parameter	Result +- Uncertainty (2s)	Qual	Units	Tracer Yield	LCS Recovery	Bias	MDC|MDA
SRTOT_SEP_PRECIP_GPC								
0019288 BLANK QC,								
LTDHF1AA	STRONTIUM	7.24E-01 +- 1.1E+00	U	pCi/L	96%			2.43E+00
0019288 LCS,								
LTDHF1AC	STRONTIUM	4.74E+01 +- 1.3E+01		pCi/L	94%	105%	0.1	2.56E+00
906.0_H3_LSC								
0019285 BLANK QC,								
LTDC01AA	H-3	5.16E+00 +- 1.3E+02	U	pCi/L	100%			2.04E+02
LTDC01AD	H-3	-6.35E+01 +- 1.3E+02	U	pCi/L	100%			3.17E+02
0019285 LCS,								
LTDC01AE	H-3	2.63E+03 +- 3.3E+02		pCi/L	100%	97%	0.0	3.10E+02
LTDC01AC	H-3	2.43E+03 +- 2.7E+02		pCi/L	100%	90%	0.1	2.10E+02
7196_CR6								
0025533 BLANK QC,								
LTQCT1AA	HEXCHROME	3.70E-03 +- 0.0E+00	U	mg/L	N/A			3.70E-03
0025533 LCS,								
LTQCT1AC	HEXCHROME	5.10E-01 +- 0.0E+00		mg/L	N/A	100%	0.0	3.70E-03
0025533 MATRIX SPIKE, J19F49								
LTABK1AL	HEXCHROME	5.47E-01 +- 0.0E+00		mg/L	N/A	104%	0.0	3.70E-03
LTABK1AF	HEXCHROME	5.47E-01 +- 0.0E+00		mg/L	N/A	104%	0.0	3.70E-03

No. of Results: 10

TestAmerica rptSTLRchQcSummary V5.2.6 A2002

Bias - (Result/Expected)-1 as defined by ANSI N13.30.

U Qual - Analyzed for but not detected above limiting criteria. Limit criteria is less than the Mdc/Mda or Total Uncert or not identified by gamma scan software.

Date: 24 March 2010
To: Washington Closure Hanford Inc. (technical representative)
From: ELR Consulting
Project: Columbia River Component of the RCBRA – Pore Water – Phase III
Subject: Wet Chemistry - Data Package No. J00665-TAL

INTRODUCTION

This memo presents the results of data validation on Data Package No. J00665 prepared by TestAmerica Laboratory Inc. (TAL). A list of samples validated along with the analyses reported and the method of analysis is provided in the following table.

Sample ID	Sample Date	Media	Validation	Analyte
J19F41	1/17/10	Water	C	See note 1
J19F42	1/17/10	Water	C	See note 1

1 - Chromium VI by 7196A

Data validation was conducted in accordance with the Washington Closure Hanford (WCH) validation statement of work and the Remedial Investigation Work Plan for Hanford Site Releases to the Columbia River (DOE/RL-2008-11, Rev. 0. September 2008). Appendices 1 through 6 provide the following information as indicated below:

Appendix 1. Glossary of Data Reporting Qualifiers
Appendix 2. Summary of Data Qualification
Appendix 3. Annotated Laboratory Reports
Appendix 4. Laboratory Narrative and Chain-of-Custody Documentation
Appendix 5. Data Validation Supporting Documentation
Appendix 6. Additional Documentation Requested by Client

DATA QUALITY PARAMETERS

Holding Times

Analytical holding times for metals are assessed to ascertain whether the holding time requirements were met by the laboratory. The holding time requirements are as follows: Soil samples must be analyzed within 24 hours for chromium VI.

If holding times are exceeded, but not by greater than two times the limit, all associated sample results are qualified as estimates and flagged "J" for detects and "UJ" for non-detects. If holding times are exceeded by greater than two times the limit, all associated detectable sample results are qualified as estimates and flagged "J" and all non-detects are rejected and flagged "UR".

All holding times were acceptable.

Method Blanks

Method Blanks

Method blank analyses are performed to determine the extent of laboratory contamination introduced through sampling, sample preparation and analysis. At least one acceptable method blank analysis must be conducted for every 20 samples. No contaminants should be present in the method blank. All blank results must fall below the contract required detection limit (CRQL) to be acceptable.

All method blank results were acceptable.

Field (Equipment) Blank

No field blanks were submitted for analysis.

Accuracy

Matrix Spike and Laboratory Control Sample

Matrix spike (MS) and laboratory control sample (LCS) analyses are used to assess the analytical accuracy of the reported data. The matrix spike is used to assess the effect of the matrix on the ability to accurately quantify sample concentrations. Recoveries must fall within the range of 80% to 120%. Samples with a recovery of less than 30% and a sample result below the IDL are rejected and flagged "UR". Samples with a recovery of 30% to 79% and a sample result less than the IDL are qualified "UJ". Samples with a recovery of greater than 120% or less than 80% and a sample result greater than the IDL are qualified as estimates and flagged "J". Finally, for samples with a recovery greater than 120% and a sample result less than the IDL, no qualification is required.

All accuracy results were acceptable.

Precision

Laboratory Duplicate Samples

Analytical precision is expressed by the relative percent differences (RPD) between the recoveries of matrix spike duplicate (MSD) analyses performed on a sample in the analytical batch. Precision may alternatively be assessed using unspiked duplicate analyses performed on a sample in the analytical batch. If both sample and replicate activities (concentrations) are greater than five times the CRDL and the RPD is less than 20%, no qualification is required. If either activity (concentration) is less than five times the CRDL, the RPD control limit is less than or equal to two times the CRDL. If the RPD is outside the applicable control limit, associated results are qualified as estimated detects or estimated non-detects.

All duplicate results were acceptable.

Field Duplicate

No field duplicates were submitted for analysis.

- **Analytical Detection Levels**

Reported analytical detection levels are compared against the required quantitation limits (RQLs) to ensure that laboratory detection levels meet the required criteria. All analytes met the RQL.

- **Completeness**

Data package J00665 was submitted for validation and verified for completeness. Completeness is based on the percentage of data determined to be valid (i.e., not rejected). The completion percentage was 100%

MAJOR DEFICIENCIES

None found.

MINOR DEFICIENCIES

None found.

REFERENCES

Washington Closure Hanford Contract #S00W307A00 (March 2008), *Data Validation Services*.

DOE/RL 2008-11, Rev.0, *Remedial Investigation Work Plan for Hanford Site Releases to the Columbia River*, September 2008.

Appendix 1

Glossary of Data Reporting Qualifiers

Qualifiers which may be applied by data validators in compliance with WCH validation SOW are as follows:

U - Indicates the compound or analyte was analyzed for and not detected in the sample. The value reported is the sample quantitation limit corrected for sample dilution and moisture content by the laboratory.

UJ - Indicates the compound or analyte was analyzed for and not detected in the sample. Due to a minor QC deficiency identified during the data validation, the associated quantitation limit is an estimate.

J - Indicates the compound or analyte was analyzed for and detected. Due to a minor QC deficiency identified during the data validation, the associated concentration is an estimate, but the data are usable for decision-making purposes.

BJ - Applied to inorganic analyses only. Indicates the analyte concentration was greater than the IDL but less than the CRDL and is considered an estimated value.

R - Indicates the compound or analyte was analyzed for, detected, and due to an identified major QC deficiency, the data are unusable.

UR - Indicates the compound or analyte was analyzed for and not detected in the sample. Additionally, the data is unusable due to an identified major QC deficiency.

NJ - Indicates presumptive evidence of a compound at an estimated value. The data may not be valid for some specific applications (i.e., usable for decision-making purposes).

N - Indicates presumptive evidence of a compound. The data may not be valid for some specific applications (i.e., usable for decision-making purposes).

Appendix 2

Summary of Data Qualification

WET CHEMISTRY DATA QUALIFICATION SUMMARY*

SDG: J00666	**REVIEWER: ELR**	**Project: RCBRA**	**PAGE 1 OF 1**
COMMENTS: No qualifiers assigned			

* - The Qualified Data Summary Table includes laboratory applied "U" qualifiers not specifically identified here. The laboratory applied "U" qualifiers are included to minimize misinterpretation of results contained in the table.

Appendix 3

Annotated Laboratory Reports

Sample Results Summary

Date: 02-Feb-10

TestAmerica TARL

Ordered by Method, Batch No., Client Sample ID.

Report No. : 43156

SDG No: J00865

Batch	Client Id Work Order	Parameter	Result +- Uncertainty (1s)	Qual	Units	Tracer Yield	MDC or MDA	CRDL	RPD
[illegible] SRTOT_SEP_PRECIP_GPC									
	J19F41								
	LTA3L1AD	STRONTIUM	5.18E-01 +- 1.0E+00	U	pCi/L	100%	2.26E+00		
	J19F41 DUP								
	LTA3L1AF	STRONTIUM	6.33E-01 +- 9.3E-01	U	pCi/L	100%	2.30E+00		-3008.0
	J19F42								
	LTA6K1AD	STRONTIUM	9.49E-01 +- 1.2E+00	U	pCi/L	100%	2.68E+00		
[illegible] 906.0_H3_LSC									
	J19F41								
	LTA3L1AA	H-3	5.27E+03 +- 3.0E+02		pCi/L	100%	2.97E+02	4.00E+02	
	J19F41 DUP								
	LTA3L1AE	H-3	5.11E+03 +- 2.9E+02		pCi/L	100%	2.96E+02	4.00E+02	3.1
	J19F42								
	LTA6K1AA	H-3	3.81E+03 +- 2.6E+02		pCi/L	100%	2.97E+02	4.00E+02	
[illegible] 7196_CR6									
	J19F41								
	LTA3L1AC	HEXCHROME	1.30E-02 +- 0.0E+00		mg/L	N/A	3.70E-03	3.50E-01	
	J19F42								
	LTA6K1AC	HEXCHROME	2.20E-02 +- 0.0E+00		mg/L	N/A	3.70E-03	3.50E-01	
	LTA6K1AG	HEXCHROME	2.40E-02 +- 0.0E+00		mg/L	N/A	3.70E-03	3.50E-01	8.7

No. of Results: 9

3/21/10

3/21/10

TestAmerica
rptSTLRchSum
mary2 V5.2.5
A2002

RPD Relative Percent Difference,

U Qual - Analyzed for but not detected above limiting criteria. Limit criteria is less than the MDC/MDA or Total Uncert or not identified by gamma scan software.

Appendix 4

Laboratory Narrative and Chain-of-Custody Documentation

Certificate of Analysis

TestAmerica Laboratories, Inc.

Washington Hanford Closure
2620 Fermi Avenue
Richland, WA 99354

February 2, 2010

Attention: Joan Kessner

SAF Number : RC-114
Date SDG Closed : January 18, 2010
Number of Samples : Two (2)
Sample Type : Water
SDG Number : J00665
Data Deliverable 15-Day / Summary

CASE NARRATIVE

I. Introduction

On January 18, 2010 two water samples were received at TestAmerica for radiochemical analysis. Upon receipt, the samples were assigned the following laboratory ID number to correspond with the Washington Closure Hanford (WCH) specific ID:

WCH ID#	TARL ID#	MATRIX	DATE OF RECEIPT
J19F41	LTA3L	WATER	01/18/10
J19F42	LTA6K	WATER	01/18/10

II. Sample Receipt

The samples were received in good condition and no anomalies were noted during check-in.

III. Analytical Results/Methodology

The analytical results for this report are presented by laboratory sample ID. Each set of data includes sample identification information, analytical results and the appropriate associated statistical errors.

The requested analyses were;

Gas Proportional Counting
Strontium-90 by method RL-GPC-003 (RICH-RC-5006)*
Liquid Scintillation Counting
Tritium by method RL-LSC-005 (RICH-RC-5007)*
Chemical Analysis
Hexavalent Chromium by EPA method 7196A

*SOP ID's changed effective 7-01-2008. Attached is a cross reference until SOP ID's are changed in all systems.

IV. Quality Control

The analytical results for each analysis performed includes a minimum of one laboratory control sample (LCS), one method (reagent) blank, and one duplicate sample analysis. Any exceptions have been noted in the "Comments" section.

QC and sample results are reported in the same units.

V. Comments

Gas Proportional Counting
Strontium-90 by method RL-GPC-003 (RICH-RC-5006):
The LCS, batch blank, samples and sample duplicate (J19P41) results are within contractual requirements.

Liquid Scintillation Counting
Tritium by method RL-LSC-005 (RICH-RC-5007):
The LCS, batch blank, samples and sample duplicate (J19P41) results are within contractual requirements.

Chemical Analysis
Hexavalent Chromium by EPA method 7196A
Samples J19P41 and J19P42 were filtered prior to taking the aliquot. All the samples in the batch except the blank and LCS were analyzed with a 50 aliquot due to insufficient sample size. Except as noted, the LCS, batch blank, samples, sample duplicate (J19P42), sample matrix spike (J19P42), and matrix spike duplicate (J19P42) results are within contractual requirements.

I certify that this Certificate of Analysis is in compliance with the SOW, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hard copy data package has been authorized by the Laboratory Manager, or a designee as verified by the following signature.

Reviewed and approved:
Sandra Seger
Sandra Seger
Project Manager

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-114-332

Page 1 of 1

Collector: R. Cusset

Company Contact: JOAN KESSNER

Telephone No.: 375-4688

Project Coordinator: KESSNER, JH

Price Code: 7C

Data Turnaround: 15 Days

Project Designation: Columbia River Component of the RCBRA Pore Water - 7b

Sampling Location: 100-BC 7/100BC-3C

SAF No.: RC-114

Ice Chest No.:

Field Logbook No.: GL-1645-01

COA: BESCHC0320

Method of Shipment: FED EX

Shipped To: TestAmerica Incorporated Richland

Offsite Property No.: N/A

Bill of Lading/Air Bill No.:

POSSIBLE SAMPLE HAZARDS/REMARKS
N/A

Special Handling and/or Storage
N/A

J0A180467

Preservation	Cool 4C	HNO3 to pH <2	None
Type of Container	G/P	G/P	P
No. of Container(s)	1	1	1
Volume	500mL	100mL	125mL

SAMPLE ANALYSIS

Sample No.	Matrix *	Sample Date	Sample Time	Chromium Hex - 7196	Cations 6010 - Trace Sr	Tritium - 3H
J10F42	WATER	01-17-10	1454	X	X	X

LTA6K

CHAIN OF POSSESSION

Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
R. Cusset R. Cusset	01-17-10 1512	EAS REEA R. Cusset	01-17-10 1512
EAS REEA	01-18-10 0715	S. Geckenshoed	01-18-10 0715
S. Geckenshoed	01-18-10 0827		1-18-10 0835

SPECIAL INSTRUCTIONS

JOA180467 5 325 1/18/10
SDG# J00668
DUE - FEB.02.10

Matrix *

LABORATORY SECTION — Received By — Title — Date/Time

FINAL SAMPLE DISPOSITION — Disposal Method — Disposed By — Date/Time

WCH-EE-012

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-114-331

Page [illegible] of [illegible]

Collector: Kevin Crane

Company Contact: JOAN KESSNER

Telephone No.: 375-4681

Project Coordinator: KESSNER, JH

Price Code: 7C

Data Turnaround: 15 Days

Project Designation: Columbia River Component of the RCBRA - Pore Water - Ph

Sampling Location: 100-BC J100BC47

SAF No.: RC-114

Ice Chest No.:

Field Logbook No.: EL-1645

COA: BESCRA0420

Method of Shipment: FED EX

Shipped To: TestAmerica Incorporated, Richland

Offsite Property No.: N/A

Bill of Lading/Air Bill No.:

POSSIBLE SAMPLE HAZARDS/REMARKS
N/A

Special Handling and/or Storage
N/A

Preservation	Cool 4C	HNO3 to pH <2	None
Type of Container	G/P	G/P	P
No. of Container(s)	1	1	1
Volume	300mL	1000mL	125mL
SAMPLE ANALYSIS	Chromium Hex - 7196	[illegible]	[illegible]

4TA3L

Sample No.	Matrix *	Sample Date	Sample Time			
J19F41	WATER	01-17-10	1500	X	X	X

CHAIN OF POSSESSION

Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Kevin Crane	01-17-10 1940	GAS locked Storage	01-17-10 1940
GAS Locked Storage	01-18-10 0710	SL Locked Storage	01-18-10 0710
SL [illegible]	01-18-10 0825	[illegible]	1-18-10 0825
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time

SPECIAL INSTRUCTIONS

JOA180454
SDG # J00665
DUE - 2/02/10

J0A180454

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION — Received By: Title: Date/Time:

FINAL SAMPLE DISPOSITION — Disposal Method: Disposed By: Date/Time:

[illegible]

Appendix 5

Data Validation Supporting Documentation

GENERAL CHEMISTRY ANALYSIS DATA VALIDATION CHECKLIST

VALIDATION LEVEL:	A	B	[✓ C]	D	E
PROJECT: RCBRA			DATA PACKAGE: J00665		
VALIDATOR: FLR		LAB: TAL		DATE: 3/22/10	
			SDG: J00665		

ANALYSES PERFORMED

Anions/IC	TOC	TOX	TPH-418.1	Oil and Grease	Alkalinity
Ammonia	BOD/COD	Chloride	[✓ Chromium-VI]	pH	NO_3/NO_2
Sulfate	TDS	TKN	Phosphate		

SAMPLES/MATRIX

J19F41 J19F42

water

1. DATA PACKAGE COMPLETENESS AND CASE NARRATIVE

Technical verification documentation present? .... Yes [✓ No] N/A

Comments:

2. INSTRUMENT PERFORMANCE AND CALIBRATIONS (Levels D and E)

Initial calibrations performed on all instruments? .... Yes No [✓ N/A]

Initial calibrations acceptable? .... Yes No [✓ N/A]

ICV and CCV checks performed on all instruments? .... Yes No [✓ N/A]

ICV and CCV checks acceptable? .... Yes No [✓ N/A]

Standards traceable? .... Yes No [✓ N/A]

Standards expired? .... Yes No [✓ N/A]

Calculation check acceptable? .... Yes No [✓ N/A]

Comments:

GENERAL CHEMISTRY ANALYSIS DATA VALIDATION CHECKLIST

3. BLANKS (Levels B, C, D, and E)

ICB and CCB checks performed for all applicable analyses? (Levels D, E) .... Yes No [✓ N/A]
ICB and CCB results acceptable? (Levels D, E) .... Yes No [✓ N/A]
Laboratory blanks analyzed? .... [✓ Yes] No N/A
Laboratory blank results acceptable? .... [✓ Yes] No N/A
Field blanks analyzed? (Levels C, D, E) .... Yes [✓ No] N/A
Field blank results acceptable? (Levels C, D, E) .... Yes No [✓ N/A]
Transcription/calculation errors? (Levels D, E) .... Yes No [✓ N/A]
Comments: No FB

4. ACCURACY (Levels C, D, and E)

Spike samples analyzed? .... [✓ Yes] No N/A
Spike recoveries acceptable? .... [✓ Yes] No N/A
Sike standards NIST traceable? (Levels D, E) .... Yes No [✓ N/A]
Spike standards expired? (Levels D, E) .... Yes No [✓ N/A]
LCS/BSS samples analyzed? .... [✓ Yes] No N/A
LCS/BSS results acceptable? .... [✓ Yes] No N/A
Standards traceable? (Levels D, E) .... Yes No [✓ N/A]
Standards expired? (Levels D, E) .... Yes No [✓ N/A]
Transcription/calculation errors? (Levels D, E) .... Yes No [✓ N/A]
Performance audit sample(s) analyzed? .... Yes [✓ No] N/A
Performance audit sample results acceptable? .... Yes No [✓ N/A]
Comments: NO PAS

GENERAL CHEMISTRY ANALYSIS DATA VALIDATION CHECKLIST

5. PRECISION (Levels C, D, and E)

Duplicate RPD values acceptable? .... [✓ Yes] No N/A

Duplicate results acceptable? .... [✓ Yes] No N/A

MS/MSD standards NIST traceable? (Levels D, E) .... Yes No [✓ N/A]

MS/MSD standards expired? (Levels D, E) .... Yes No [✓ N/A]

Field duplicate RPD values acceptable? .... Yes No [✓ N/A]

Field split RPD values acceptable? .... Yes No [✓ N/A]

Transcription/calculation errors? (Levels D, E) .... Yes No [✓ N/A]

Comments:

6. HOLDING TIMES (all levels)

Samples properly preserved? .... [✓ Yes] No N/A

Sample holding times acceptable? .... [✓ Yes] No N/A

Comments:

GENERAL CHEMISTRY ANALYSIS DATA VALIDATION CHECKLIST

7. RESULT QUANTITATION AND DETECTION LIMITS (all levels)

Results reported for all requested analyses? .... [✓ Yes] No N/A

Results supported in the raw data? (Levels D, E). .... Yes No [✓ N/A]

Samples properly prepared? (Levels D, E). .... Yes No [✓ N/A]

Detection limits meet RDL? .... [✓ Yes] No N/A

Transcription/calculation errors? (Levels D, E). .... Yes No [✓ N/A]

Comments:

Appendix 6

Additional Documentation Requested by Client

QC Results Summary

TestAmerica TARL

Ordered by Method, Batch No, QC Type..

Date: 02-Feb-10

Report No. : 43155

SDG No.: J00868

Batch Work Order	Parameter	Result +- Uncertainty (2s)	Qual	Units	Tracer Yield	LCS Recovery	Bias	MDC|MDA
SR90_SEP_PRECIP_GPC								
9019258 BLANK QC,								
LTDHF1AA	STRONTIUM	7.24E-01 +- 1.1E+00	U	pCi/L	85%			7.43E+00
9019259 LCS,								
LTDHF1AC	STRONTIUM	4.74E+01 +- 1.3E+01		pCi/L	94%	105%	0.1	2.55E+00
906.0_H3_LSC								
9019265 BLANK QC,								
LTDG91AA	H-3	5.16E+00 +- 1.3E+02	U	pCi/L	100%			2.94E+02
LTDG91AD	H-3	-6.35E+01 +- 1.3E+02	U	pCi/L	100%			3.12E+02
9019266 LCS,								
LTDG91AE	H-3	2.03E+03 +- 2.3E+02		pCi/L	100%	97%	0.0	3.10E+02
LTDG91AC	H-3	2.43E+03 +- 2.1E+02		pCi/L	100%	90%	-0.1	3.03E+02
7196_CR6								
9025533 BLANK QC,								
LTDCT1AA	HEXCHROME	3.70E-03 +- 0.0E+00	U	mg/L	N/A			3.70E-03
9025533 LCS,								
LTDCT1AC	HEXCHROME	5.15E-01 +- 0.0E+00		mg/L	N/A	103%	0.0	3.70E-03
9025533 MATRIX SPIKE J1B042								
LTA8K1AE	HEXCHROME	5.47E-01 +- 0.0E+00		mg/L	N/A	104%	0.0	3.70E-03
LTA8K1AF	HEXCHROME	5.47E-01 +- 0.0E+00		mg/L	N/A	104%	0.0	3.70E-03

No. of Results: 10

TestAmerica rptSTLRchQcSummary V5.2.8 A2002

Bias - (Result/Expected)-1 as defined by ANSI N13.30.

U Qual - Analyzed for but not detected above limiting criteria. Limit criteria is less than the Mdc/Mda or Total Uncert or not identified by gamma scan software.

F.2.1.10 SDG J00714

SAF-RC-114
Columbia River Component of the RCBRA – Pore Water – Phase III
FINAL VALIDATION PACKAGE

COMPLETE COPY OF VALIDATION PACKAGE TO:

Kathy Wendt H4-21

COMMENTS:

SDG J00714 SAF-RC-114

Date: 26 March 2010
To: Washington Closure Hanford Inc. (technical representative)
From: ELR Consulting
Project: Columbia River Component of the RCBRA – Pore Water – Phase III – 100-D
Subject: Wet Chemistry - Data Package No. J00714-TAL

INTRODUCTION

This memo presents the results of data validation on Data Package No J00714 prepared by TestAmerica Laboratory Inc. (TAL). A list of samples validated along with the analyses reported and the method of analysis is provided in the following table.

Sample ID	Sample Date	Media	Validation	Analyte
J19J73	2/5/10	Water	C	See note 1
J19J74	2/5/10	Water	C	See note 1

1 – Chromium VI by 7196A.

Data validation was conducted in accordance with the Washington Closure Hanford (WCH) validation statement of work and the Remedial Investigation Work Plan for Hanford Site Releases to the Columbia River (DOE/RL-2008-11, Rev. 0, September 2008). Appendices 1 through 6 provide the following information as indicated below:

Appendix 1 Glossary of Data Reporting Qualifiers
Appendix 2. Summary of Data Qualification
Appendix 3. Annotated Laboratory Reports
Appendix 4. Laboratory Narrative and Chain-of-Custody Documentation
Appendix 5. Data Validation Supporting Documentation
Appendix 6. Additional Documentation Requested by Client

DATA QUALITY PARAMETERS

- **Holding Times**

Analytical holding times for metals are assessed to ascertain whether the holding time requirements were met by the laboratory. The holding time requirements are as follows: Soil samples must be analyzed within 24 hours for chromium VI.

If holding times are exceeded, but not by greater than two times the limit, all associated sample results are qualified as estimates and flagged "J" for detects and "UJ" for non-detects. If holding times are exceeded by greater than two times the limit, all associated detectable sample results are qualified as estimates and flagged "J" and all non-detects are rejected and flagged "UR".

All holding times were acceptable.

- **Method Blanks**

Method Blanks

Method blank analyses are performed to determine the extent of laboratory contamination introduced through sampling, sample preparation and analysis. At least one acceptable method blank analysis must be conducted for every 20 samples. No contaminants should be present in the method blank. All blank results must fall below the contract required detection limit (CRQL) to be acceptable.

All method blank results were acceptable.

Field (Equipment) Blank

No field blanks were submitted for analysis.

- **Accuracy**

Matrix Spike and Laboratory Control Sample

Matrix spike (MS) and laboratory control sample (LCS) analyses are used to assess the analytical accuracy of the reported data. The matrix spike is used to assess the effect of the matrix on the ability to accurately quantify sample concentrations. Recoveries must fall within the range of 80% to 120%. Samples with a recovery of less than 30% and a sample result below the IDL are rejected and flagged "UR". Samples with a recovery of 30% to 79% and a sample result less than the IDL are qualified "UJ". Samples with a recovery of greater than 120% or less than 80% and a sample result greater than the IDL are qualified as estimates and flagged "J". Finally, for samples with a recovery greater than 120% and a sample result less than the IDL, no qualification is required.

All accuracy results were acceptable.

- **Precision**

Laboratory Duplicate Samples

Analytical precision is expressed by the relative percent differences (RPD) between the recoveries of matrix spike duplicate (MSD) analyses performed on a sample in the analytical batch. Precision may alternatively be assessed using unspiked duplicate analyses performed on a sample in the analytical batch. If both sample and replicate activities (concentrations) are greater than five times the CRDL and the RPD is less than 20%, no qualification is required. If either activity (concentration) is less than five times the CRDL, the RPD control limit is less than or equal to two times the CRDL. If the RPD is outside the applicable control limit, associated results are qualified as estimated detects or estimated non-detects.

All duplicate results were acceptable.

Field Duplicate

No field duplicates were submitted for analysis.

- **Analytical Detection Levels**

Reported analytical detection levels are compared against the required quantitation limits (RQLs) to ensure that laboratory detection levels meet the required criteria. All analytes met the RQL.

- **Completeness**

Data package J00714 was submitted for validation and verified for completeness. Completeness is based on the percentage of data determined to be valid (i.e., not rejected). The completion percentage was 100%.

MAJOR DEFICIENCIES

None found.

MINOR DEFICIENCIES

None found.

REFERENCES

Washington Closure Hanford Contract #S00W307A00 (March 2008), *Data Validation Services*.

DOE/RL-2008-11, Rev.0, *Remedial Investigation Work Plan for Hanford Site Releases to the Columbia River*, September 2008.

Appendix 1

Glossary of Data Reporting Qualifiers

Qualifiers which may be applied by data validators in compliance with WCH validation SOW are as follows:

U - Indicates the compound or analyte was analyzed for and not detected in the sample. The value reported is the sample quantitation limit corrected for sample dilution and moisture content by the laboratory

UJ - Indicates the compound or analyte was analyzed for and not detected in the sample. Due to a minor QC deficiency identified during the data validation, the associated quantitation limit is an estimate

J - Indicates the compound or analyte was analyzed for and detected. Due to a minor QC deficiency identified during the data validation, the associated concentration is an estimate, but the data are usable for decision-making purposes.

BJ - Applied to inorganic analyses only. Indicates the analyte concentration was greater than the IDL but less than the CRDL and is considered an estimated value.

R - Indicates the compound or analyte was analyzed for, detected, and due to an identified major QC deficiency, the data are unusable.

UR - Indicates the compound or analyte was analyzed for and not detected in the sample. Additionally, the data is unusable due to an identified major QC deficiency.

NJ - Indicates presumptive evidence of a compound at an estimated value. The data may not be valid for some specific applications (i.e., usable for decision-making purposes).

N - Indicates presumptive evidence of a compound. The data may not be valid for some specific applications (i.e., usable for decision-making purposes).

Appendix 2

Summary of Data Qualification

WET CHEMISTRY DATA QUALIFICATION SUMMARY*

SDG: J00714	**REVIEWER:** **ELR**	**Project:** **RCBRA**	**PAGE 1 OF 1**

COMMENTS: No qualifiers assigned

* - The Qualified Data Summary Table includes laboratory applied "U" qualifiers not specifically identified here. The laboratory applied "U" qualifiers are included to minimize misinterpretation of results contained in the table.

Appendix 3

Annotated Laboratory Reports

Sample Results Summary

TestAmerica TARL

Ordered by Method, Batch No., Client Sample ID.

Date: 23-Feb-10

Report No. : 43317

SDG No: J00714

Batch	Client Id Work Order	Parameter	Result +- Uncertainty (2s)	Qual	Units	Tracer Yield	MDC or MDA	CRDL	RPD
0040489 SRTOT_SEP_PRECIP_GPC									
J19J73									
	LVEMN1AD	STRONTIUM	1.09E+00 +- 7.8E-01	U	pCi/L	100%	1.44E+00		
J19J74									
	LVEM11AD	STRONTIUM	3.92E-01 +- 7.3E-01	U	pCi/L	100%	1.80E+00		
J19J74 DUP									
	LVEM11AE	STRONTIUM	4.51E-01 +- 7.1E-01	U	pCi/L	100%	1.54E+00		14.0
0039412 7196_CR6									
J19J73									
	LVEMN1AC	HEXCHROME	4.10E-02 +- 0.0E+00		mg/L	N/A	7.40E-03	3.50E-01	
	LVEMN1AK	HEXCHROME	4.20E-02 +- 0.0E+00		mg/L	N/A	7.40E-03	3.50E-01	2.4
J19J74									
	LVEM11AC	HEXCHROME	0.40E-01 +- 0.0E+00		mg/L	N/A	7.40E-03	3.50E-01	
0040488 906.0_H3_LSC									
J19J73									
	LVEMN1AA	H-3	1.84E+02 +- 1.5E+02	U	pCi/L	100%	3.16E+02	4.00E+02	
J19J73 DUP									
	LVEMN1AL	H-3	2.43E+02 +- 1.5E+02	U	pCi/L	100%	3.17E+02	4.00E+02	27.4
J19J74									
	LVEM11AA	H-3	9.36E+00 +- 1.4E+02	U	pCi/L	100%	3.17E+02	4.00E+02	

No. of Results: 9

3/25/10

TestAmerica RPD - Relative Percent Difference.

rptSTLRchSaSummary2 V5.2.5 A2002 U Qual - Analyzed for but not detected above limiting criteria. Limit criteria is less than the Mda/Mdc or Total Uncert or not identified by gamma scan software.

Appendix 4

Laboratory Narrative and Chain-of-Custody Documentation

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

Certificate of Analysis

TestAmerica Laboratories, Inc.

Washington Hanford Closure
2620 Fermi Avenue
Richland, WA 99354

February 23, 2010

Attention: Joan Kessner

SAP Number	:	RC-114
Date SDG Closed	:	February 6, 2010
Number of Samples	:	Two (2)
Sample Type	:	Water
SDG Number	:	J00714
Data Deliverable	:	15-Day / Summary

CASE NARRATIVE

I. Introduction

On February 6, 2010 two water samples were received at TestAmerica for radiochemical analysis. Upon receipt, the samples were assigned the following laboratory ID number to correspond with the Washington Closure Hanford (WCH) specific ID:

WCH ID#	TARL ID#	MATRIX	DATE OF RECEIPT
J19J73	LVEMN	WATER	02/06/10
J19J74	LVEMT	WATER	02/06/10

II. Sample Receipt

The samples were received in good condition and no anomalies were noted during check-in.

III. Analytical Results/Methodology

The analytical results for this report are presented by laboratory sample ID. Each set of data includes sample identification information, analytical results and the appropriate associated statistical errors.

The requested analyses were:

Gas Proportional Counting
Strontium-90 by method RL-GPC-003 (RICH-RC-5006)*
Liquid Scintillation Counting
Tritium by method RL-LSC-005 (RICH-RC-5007)*
Chemical Analysis
Hexavalent Chromium by EPA method 7196A

*SOP ID's changed effective 7-01-2008. Attached is a cross reference until SOP ID's are changed in all systems.

IV. Quality Control

The analytical results for each analysis performed includes a minimum of one laboratory control sample (LCS), one method (reagent) blank, and one duplicate sample analysis. Any exceptions have been noted in the "Comments" section.

QC and sample results are reported in the same units

V. Comments

Gas Proportional Counting
Strontium-90 by method RL-GPC-003 (RICH-RC-5006):
The LCS, batch blank, samples and sample duplicate (J19J74) results are within contractual requirements.

Liquid Scintillation Counting
Tritium by method RL-LSC-005 (RICH-RC-5007):
The LCS, batch blank, samples and sample duplicate (J19J73) results are within contractual requirements.

Chemical Analysis
Hexavalent Chromium by EPA method 7196A
Samples J19J73 and J19J74 were filtered prior to aliquoting. Samples J19J73, J19J74, J19J73 DUP, J19J73 MS and J19J73 MSD were analyzed with a 50ml aliquot due to insufficient sample volume. Except as noted, the LCS, batch blank, samples, sample duplicate (J19J73), sample matrix spike (J19J73), and matrix spike duplicate (J19J73) results are within contractual requirements.

I certify that this Certificate of Analysis is in compliance with the SOW, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hard copy data package has been authorized by the Laboratory Manager, or a designee as verified by the following signature.

Reviewed and approved:
Sandra Seger
Sandra Seger
Project Manager

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-114-411

Page 1 of 1

Collector Sam Gilbo	Company Contact JOAN KESSNER	Telephone No 375-4688	Project Coordinator KESSNER, JH	Price Code 7C
Project Designation Columbia River Component of the RCBRA - Pore Water - Ph	Sampling Location 100-D T100D2A		SAF No. RC-114	Data Turnaround 15 Days
Ice Chest No. N/A	Field Logbook No. EL-1647-01	COA BESCRC8520	Method of Shipment GROUND TRANSPORT	
Shipped To TestAmerica Incorporated, Richland	Offsite Property No. N/A		Bill of Lading/Air Bill No. N/A	

POSSIBLE SAMPLE HAZARDS/REMARKS

N/A

Special Handling and/or Storage

N/A

Preservation	Cool 4C	HNO3 to pH <2	None
Type of Container	G/P	G/P	P
No. of Container(s)	1	1	1
Volume	500mL	1500mL	15mL

J0B080464

Dup- 2/22/10
SDG J00-714
J0B080464

SAMPLE ANALYSIS

Sample No.	Matrix *	Sample Date	Sample Time	[illegible]	[illegible]	[illegible]
J19JT3	WATER	2-5-10	15:45	X	X	X

CHAIN OF POSSESSION Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Sam Gilbo	2-5-10/17:25	EASRef D	2-5-10/17 25
EASRef D Wendy [illegible]	[illegible]	Wendy [illegible]	0750 2/6/10
Wendy [illegible]	2/8/10	Dan McGinnis [illegible]	0800 2/8/10

SPECIAL INSTRUCTIONS

LVEUN

Shipper [illegible] to remove samples from controlled storage. Shipper removed samples from storage location [illegible]

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Washington Closure Hanford	**CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST**	RC-114-412	Page 1 of 1
Collector Sam Gilbo WCH	Company Contact JOAN KESSNER Telephone No. 375-4684	Project Coordinator KESSNER, JH	Price Code 7C Data Turnaround 15 Days
Project Designation Columbia River Component of the RCBRA - Pore Water - Ph	Sampling Location 100-D Z100D3A	SAF No. RC114	
Ice Chest No. N/A	Field Logbook No. EL-1645 COA RESCRC0120	Method of Shipment GROUND TRANSPORT	
Shipped To TestAmerica Incorporated, Richland	Offsite Property No. N/A	Bill of Lading/Air Bill No. N/A	

POSSIBLE SAMPLE HAZARDS/REMARKS

N/A

Special Handling and/or Storage

N/A

Preservation	Cool 4C	HNO3 to pH <2	None							
Type of Container	G/P	G/P	P							
No. of Container(s)	1	1	1							
Volume	300mL	1000mL	125mL			DUP				
SAMPLE ANALYSIS	Chromium Hex - 7196	Inorganics 6010 - Total 3s	Anions - 300			SDG J00714 JOB080464				

Sample No.	Matrix *	Sample Date	Sample Time										
J19J74	WATER	2-5-10	14:50	X	X	X							

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Sam Gilbo	2-5-10/1725	EAS Ref D	2-5-10/1725
EAS Ref D Woodyatt	2/6/10 0750	Woodyatt	2/6/10 0750
Woodyatt	2/6/10 0800	Tom M	2/6/10 0800

SPECIAL INSTRUCTIONS

LVEM1

[illegible]

Sampler unavailable to remove samples from controlled storage. Shipper retrieved samples from storage location using custody;

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Appendix 6

Data Validation Supporting Documentation

GENERAL CHEMISTRY ANALYSIS DATA VALIDATION CHECKLIST

VALIDATION LEVEL:	A	B	[✓ C]	D	E
PROJECT: RCBRA			DATA PACKAGE: J00714		
VALIDATOR: ELR	LAB: TAL		DATE: 3/25/03		
			SDG: J00714		
ANALYSES PERFORMED					
Anions/IC	TOC	TOX	TPH-418.1	Oil and Grease	Alkalinity
Ammonia	BOD/COD	Chloride	[✓ Chromium-VI]	pH	NO_3/NO_2
Sulfate	TDS	TKN	Phosphate		
SAMPLES/MATRIX					
J19J73 J19J74					
water					

1. DATA PACKAGE COMPLETENESS AND CASE NARRATIVE

Technical verification documentation present? .... Yes [✓ No] N/A

Comments:

2. INSTRUMENT PERFORMANCE AND CALIBRATIONS (Levels D and E)

Initial calibrations performed on all instruments? .... Yes No [✓ N/A]

Initial calibrations acceptable? .... Yes No [✓ N/A]

ICV and CCV checks performed on all instruments? .... Yes No [✓ N/A]

ICV and CCV checks acceptable? .... Yes No [✓ N/A]

Standards traceable? .... Yes No [✓ N/A]

Standards expired? .... Yes No [✓ N/A]

Calculation check acceptable? .... Yes No [✓ N/A]

Comments:

GENERAL CHEMISTRY ANALYSIS DATA VALIDATION CHECKLIST

3. BLANKS (Levels B, C, D, and E)

ICB and CCB checks performed for all applicable analyses? (Levels D, E) .... Yes No [✓ N/A]

ICB and CCB results acceptable? (Levels D, E) .... Yes No [✓ N/A]

Laboratory blanks analyzed? .... [✓ Yes] No N/A

Laboratory blank results acceptable? .... [✓ Yes] No N/A

Field blanks analyzed? (Levels C, D, E) .... Yes [✓ No] N/A

Field blank results acceptable? (Levels C, D, E) .... Yes No [✓ N/A]

Transcription/calculation errors? (Levels D, E) .... Yes No [✓ N/A]

Comments: no FB

4. ACCURACY (Levels C, D, and E)

Spike samples analyzed? .... [✓ Yes] No N/A

Spike recoveries acceptable? .... [✓ Yes] No N/A

Sike standards NIST traceable? (Levels D, E) .... Yes No [✓ N/A]

Spike standards expired? (Levels D, E) .... Yes No [✓ N/A]

LCS/BSS samples analyzed? .... [✓ Yes] No N/A

LCS/BSS results acceptable? .... [✓ Yes] No N/A

Standards traceable? (Levels D, E) .... Yes No [✓ N/A]

Standards expired? (Levels D, E) .... Yes No [✓ N/A]

Transcription/calculation errors? (Levels D, E) .... Yes No [✓ N/A]

Performance audit sample(s) analyzed? .... Yes [✓ No] N/A

Performance audit sample results acceptable? .... Yes No [✓ N/A]

Comments: no PAS

GENERAL CHEMISTRY ANALYSIS DATA VALIDATION CHECKLIST

5. PRECISION (Levels C, D, and E)

Duplicate RPD values acceptable? .... [✓ Yes] No N/A
Duplicate results acceptable? .... [✓ Yes] No N/A
MS/MSD standards NIST traceable? (Levels D, E) .... Yes No [✓ N/A]
MS/MSD standards expired? (Levels D, E) .... Yes No [✓ N/A]
Field duplicate RPD values acceptable? .... Yes No [✓ N/A]
Field split RPD values acceptable? .... Yes No [✓ N/A]
Transcription/calculation errors? (Levels D, E) .... Yes No [✓ N/A]
Comments:

6. HOLDING TIMES (all levels)

Samples properly preserved? .... [✓ Yes] No N/A
Sample holding times acceptable? .... [✓ Yes] No N/A
Comments:

GENERAL CHEMISTRY ANALYSIS DATA VALIDATION CHECKLIST

7. RESULT QUANTITATION AND DETECTION LIMITS (all levels)

Results reported for all requested analyses? .... [✓ Yes] No N/A

Results supported in the raw data? (Levels D, E) .... Yes No [✓ N/A]

Samples properly prepared? (Levels D, E) .... Yes No [✓ N/A]

Detection limits meet RDL? .... [✓ Yes] No N/A

Transcription/calculation errors? (Levels D, E) .... Yes No [✓ N/A]

Comments:

Appendix 6

Additional Documentation Requested by Client

QC Results Summary

TestAmerica TARL

Ordered by Method, Batch No, QC Type..

Date: 23-Feb-10

Report No. : 43317

SDG No.: J00714

Batch Work Order	Parameter	Result +- Uncertainty (2s)	Qual	Units	Tracer Yield	LCS Recovery	Bias	MDC|MDA
SRTOT_SEP_PRECIP_GPC								
0040459 BLANK QC,								
LVGPF1AA	STRONTIUM	1.21E-01 +- 8.4E-01	U	pCi/L	99%			1.50E+00
0040459 LCS,								
LVGPF1AC	STRONTIUM	2.45E+01 +- 8.7E+00		pCi/L	100%	90%	-0.1	1.45E+00
7196_CR6								
0039412 BLANK QC,								
LVENK1AA	HEXCHROME	3.70E-03 +- 0.0E+00	U	mg/L	N/A			3.70E-03
0039412 LCS,								
LVENK1AC	HEXCHROME	5.15E-01 +- 0.0E+00		mg/l	N/A	103%	0.0	3.70E-03
0039412 MATRIX SPIKE, J1E07								
LVEMN1AH	HEXCHROME	5.39E-01 +- 0.0E+00		mg/L	N/A	102%	0.0	7.40E-03
LVEMN1AJ	HEXCHROME	5.39E-01 +- 0.0E+00		mg/L	N/A	102%	0.0	7.40E-03
906.0_H3_LSC								
0040458 BLANK QC,								
LVGPC1AA	H-3	-1.28E+02 +- 1.4E+02	U	pCi/L	100%			3.16E+02
LVGPC1AD	H-3	-1.44E+02 +- 1.3E+02	U	pCi/L	100%			3.16E+02
0040458 LCS,								
LVGPC1AE	H-3	2.40E+03 +- 2.2E+02		pCi/L	100%	89%	0.1	3.16E+02
LVGPC1AC	H-3	2.50E+03 +- 2.3E+02		pCi/L	100%	92%	-0.1	3.70E+02

No. of Results: 10

Bias - (Result/Expected)-1 as defined by ANSI N13.30.

U Qual - Analyzed for but not detected above limiting criteria. Limit criteria is less than the Mdc/Mda or Total Uncert or not identified by gamma scan software.

Date: 26 March 2010
To: Washington Closure Hanford Inc. (technical representative)
From: ELR Consulting
Project: Columbia River Component of the RCBRA – Pore Water – Phase III – 100-D
Subject: Radiochemistry - Data Package No. J00714-TAL

INTRODUCTION

This memo presents the results of data validation on Data Package No. J00714 prepared by TestAmerica Laboratory Inc. (TAL). A list of samples validated along with the analyses reported and the method of analysis is provided in the following table.

Sample ID	Sample Date	Media	Validation	Analyte
J19J73	2/5/10	Water	C	See note 1
J19J74	2/5/10	Water	C	See note 1

1 – Strontium-90 & tritium.

Data validation was conducted in accordance with the Washington Closure Hanford (WCH) validation statement of work and the Remedial Investigation Work Plan for Hanford Site Releases to the Columbia River (DOE/RL-2008-11, Rev. 0, September 2008). Appendices 1 through 6 provide the following information as indicated below:

Appendix 1. Glossary of Data Reporting Qualifiers
Appendix 2. Summary of Data Qualification
Appendix 3. Annotated Laboratory Reports
Appendix 4. Laboratory Narrative and Chain-of-Custody Documentation
Appendix 5. Data Validation Supporting Documentation
Appendix 6. Additional Data Requested by Client

DATA QUALITY PARAMETERS

- **Holding Times**

Holding times are calculated from Chain-of-Custody forms to determine the validity of the results. The maximum holding time for radiochemical analysis is 6 months.

All holding times were acceptable.

- **Preparation (Method) Blanks**

Laboratory Blanks

Blank samples are analyzed to determine if positive results are due to laboratory reagent, sample container, or detector contamination. If blank analysis results indicate the presence of an analyte above the minimum detectable activity (MDA), the following qualifiers are applied: All positive sample results less than five times the highest blank concentration are qualified as estimates and flagged "J"; sample results below the MDA are qualified as undetected and flagged "U"; sample results above the MDA and greater than five times the highest blank concentration are not qualified.

All laboratory blank results were acceptable.

Field (Equipment) Blank

No equipment blanks were submitted for analysis.

- **Accuracy**

Accuracy is evaluated from laboratory control sample (LCS) or blank spike sample (BSS) batch samples and spiked samples from the analytical batch. Measured activities are compared to the known added amounts. The acceptable LCS or BSS and matrix spike (MS) recovery range is 65-135%. In addition, samples may be spiked with a radiochemical tracer to assist in isolating the radioisotope of interest with the yield of the tracer being used in calculating sample activity. The acceptable range for tracer recovery is 20% to 105%. Spike sample results outside the above ranges result in associated sample results being qualified as estimates, or not qualified, depending on the activity of the individual sample. Results are rejected for LCS/BSS recoveries of less than 30% and tracer recoveries of less than 20%, and tracer recoveries of greater than 115% for detected results

Due to the lack of a matrix spike analysis, all tritium results were qualified as estimates and flagged "J".

All other accuracy results were acceptable.

- **Laboratory Duplicates**

Analytical precision is expressed by the relative percent differences (RPD) between the recoveries of duplicate matrix spike analyses performed on a sample in the analytical batch. Precision may alternatively be assessed using unspiked duplicate analyses performed on a sample in the analytical batch. If both sample and replicate activities (concentrations) are greater than five times the contract required detection limit (CRDL) and the RPD is less than 35%, no qualification is required. If either activity (concentration) is less than five times the CRDL, the RPD control limit is less than or equal to two times the CRDL. If the RPD is outside the applicable control limit, associated results are qualified as estimated detects or estimated non detects.
All duplicate results were acceptable.

Field Duplicates

No field duplicates were submitted for analysis.

- **Detection Levels**

Reported analytical detection levels for undetected analytes are compared against the project RQLs to ensure that laboratory detection levels meet the required criteria. Three analytes exceeded the RQL. Under the WCH statement of work, no qualification is required. All other analytes met the RQL.

- **Completeness**

Data package No. J00714 was submitted for validation and verified for completeness. Completeness is based on the percentage of data determined to be valid (i.e., not rejected). The completion percentage was 100%.

MAJOR DEFICIENCIES

None found.

MINOR DEFICIENCIES

The following minor deficiency was noted:

- Due to the lack of a matrix spike analysis, all tritium results were qualified as estimates and flagged "J".

Data flagged "J" indicates that the associated concentration is an estimate, but under the WCH statement of work, the data may be usable for decision-making purposes. All other validated results are considered accurate within the standard error associated with the methods.

Three analytes exceeded the RQL. Under the WCH statement of work, no qualification is required.

REFERENCES

Washington Closure Hanford Contract #S00W307A00 (March 2008), *Data Validation Services*.

DOE/RL-2008-11, Rev.0, *Remedial Investigation Work Plan for Hanford Site Releases to the Columbia River*, September 2008.

Appendix 1

Glossary of Data Reporting Qualifiers

Qualifiers which may be applied by data validators in compliance with the WCH statement of work are as follows:

U - Indicates the compound or analyte was analyzed for and not detected above the minimum detectable activity (MDA) in the sample. The value reported is the sample result corrected for sample dilution and moisture content by the laboratory. The data is usable for decision making purposes.

UJ - Indicates the compound or analyte was analyzed for and not detected at concentrations above the minimum detectable activity (MDA) in the sample. Due to a minor QC deficiency identified during the data validation, the associated quantitation limit is an estimate, but is usable for decision making purposes.

J - Indicates the compound or analyte was analyzed for and detected. Due to a minor QC deficiency identified during the data validation, the associated concentration is an estimate, but the data are usable for decision-making purposes.

R - Indicates the compound or analyte was analyzed for, detected, and due to an identified major QC deficiency, the data are unusable.

UR - Indicates the compound or analyte was analyzed for and not detected in the sample. Additionally, the data is unusable due to an identified major QC deficiency.

Appendix 2

Summary of Data Qualification

RADIOCHEMISTRY DATA QUALIFICATION SUMMARY*

SDG: J00714	**REVIEWER: ELR**	**Project: RCBRA**	**PAGE 1 OF 1**
COMPOUND	QUALIFIER	SAMPLES AFFECTED	REASON
Tritium	J	All	No MS analysis

* - The Qualified Data Summary Table includes laboratory applied "U" qualifiers not specifically identified here. The laboratory applied "U" qualifiers are included to minimize misinterpretation of results contained in the table.

Appendix 3

Annotated Laboratory Reports

Sample Results Summary

Date: 23-Feb-10

TestAmerica TARL

Ordered by Method, Batch No., Client Sample ID.

Report No. : 43317

SDG No: J00714

Batch	Client Id Work Order	Parameter	Result +- Uncertainty (2s)	Qual	Units	Tracer Yield	MDC or MDA	CRDL	RPD
[illegible] SRTOT_SEP_PRECIP_GPC									
	J19J73								
	LVEMN1AD	STRONTIUM	1.09E+00 +- 7.8E-01	U	pCi/L	100%	1.44E+00		
	J19J74								
	LVEM11AD	STRONTIUM	3.82E-01 +- 7.3E-01	U	pCi/L	100%	1.60E+00		
	J19J74 DUP								
	LVEM11AE	STRONTIUM	4.51E-01 +- 7.1E-01	U	pCi/L	100%	1.54E+00		14.0
[illegible] 7196 CR6									
	~~J19J73~~								
	~~LVEMN1AC~~	~~HEXCHROME~~	~~4.10E-02 +- 0.0E+00~~		~~mg/L~~	~~N/A~~	~~7.40E-03~~	~~3.50E-01~~	
	~~LVEMN1AK~~	~~HEXCHROME~~	~~4.20E-02 +- 0.0E+00~~		~~mg/L~~	~~N/A~~	~~7.40E-03~~	~~3.50E-01~~	~~2.4~~
	~~J19J74~~								
	~~LVEM11AC~~	~~HEXCHROME~~	~~6.40E-01 +- 0.0E+00~~	3/25/10	~~mg/L~~	~~N/A~~	~~7.40E-03~~	~~3.50E-01~~	
[illegible] 906.0_H3_LSC									
	J19J73								
	LVEMN1AA	H-3	1.84E+02 +- 1.5E+02	U J	pCi/L	100%	3.16E+02	4.00E+02	
	J19J73 DUP								
	LVEMN1AL	H-3	2.42E+02 +- 1.5E+02	U	pCi/L	100%	3.17E+02	4.00E+02	27.4
	J19J74								
	LVEM11AA	H-3	9.36E+00 +- 1.4E+02	U J	pCi/L	100%	3.17E+02	4.00E+02	

No. of Results: 9

TestAmerica rptSTLRchSaSummary2 V5.2.5 A2002

RPD - Relative Percent Difference.

U Qual - Analyzed for but not detected above limiting criteria. Limit criteria is less than the MDC/MDA or Total Uncert or not identified by gamma scan software.

Appendix 4

Laboratory Narrative and Chain-of-Custody Documentation

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

Certificate of Analysis

TestAmerica Laboratories, Inc.

Washington Hanford Closure
2620 Fermi Avenue
Richland, WA 99354

February 23, 2010

Attention: Joan Kessner

SAF Number	:	RC-114
Date SDG Closed	:	February 6, 2010
Number of Samples	:	Two (2)
Sample Type	:	Water
SDG Number	:	J00714
Data Deliverable	:	15 Day / Summary

CASE NARRATIVE

I. Introduction

On February 6, 2010 two water samples were received at TestAmerica for radiochemical analysis. Upon receipt, the samples were assigned the following laboratory ID number to correspond with the Washington Closure Hanford (WCH) specific ID:

WCH ID#	TARL ID#	MATRIX	DATE OF RECEIPT
J19J73	LVEMN	WATER	02/06/10
J19J74	LVEM1	WATER	02/06/10

II. Sample Receipt

The samples were received in good condition and no anomalies were noted during check-in.

III. Analytical Results/Methodology

The analytical results for this report are presented by laboratory sample ID. Each set of data includes sample identification information, analytical results and the appropriate associated statistical errors.

The requested analyses were:

Gas Proportional Counting
Strontium-90 by method RL-GPC-003 (RICH-RC-5006)*
Liquid Scintillation Counting
Tritium by method RL-LSC-005 (RICH-RC-5007)*
Chemical Analysis
Hexavalent Chromium by EPA method 7196A

*SOP ID's changed effective 7-01-2008. Attached is a cross reference until SOP ID's are changed in all systems.

IV. Quality Control

The analytical results for each analysis performed includes a minimum of one laboratory control sample (LCS), one method (reagent) blank, and one duplicate sample analysis. Any exceptions have been noted in the "Comments" section.

QC and sample results are reported in the same units

V. Comments

Gas Proportional Counting
Strontium-90 by method RL-GPC-003 (RICH-RC-5006):
The LCS, batch blank, samples and sample duplicate (J19J74) results are within contractual requirements.

Liquid Scintillation Counting
Tritium by method RL-LSC-005 (RICH-RC-5007):
The LCS, batch blank, samples and sample duplicate (J19J73) results are within contractual requirements.

Chemical Analysis
Hexavalent Chromium by EPA method 7196A
Samples J19J73 and J19J74 were filtered prior to aliquoting. Samples J19J73, J19J74, J19J73 DUP, J19J73 MS and J19J73 MSD were analyzed with a 50ml aliquot due to insufficient sample volume. Except as noted, the LCS, batch blank, samples, sample duplicate (J19J73), sample matrix spike (J19J73), and matrix spike duplicate (J19J73) results are within contractual requirements.

I certify that this Certificate of Analysis is in compliance with the SOW, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hard copy data package has been authorized by the Laboratory Manager, or a designee as verified by the following signature.

Reviewed and approved:
Sandra Seger
Sandra Seger
Project Manager

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-114-411	Page 2 of 3
Collector Sam Gilbo	Company Contact JOAN KESSNER	Telephone No. 375-4613	Project Coordinator KESSNER, JH
Project Designation Columbia River Component of the RCBRA - Pore Water - Fo	Sampling Location 100-D T-100D 2A	SAF No. RC-134	Price Code 7C Data Turnaround 15 Days
Ice Chest No. N/A	Field Logbook No. EL 1643-46T	COA BESCRC6520	Method of Shipment GROUND TRANSPORT
Shipped To TestAmerica Incorporated, Richland	Offsite Property No. N/A		Bill of Lading/Air Bill No. N/A

POSSIBLE SAMPLE HAZARDS/REMARKS
N/A

Special Handling and/or Storage
N/A

J0B080464

Preservation				Cool 4C	HNO3 to pH<2	None	
Type of Container				G/P	G/P	P	
No. of Container(s)				1	1	1	
Volume				500mL	1000mL	125mL	
SAMPLE ANALYSIS				Chromium Hex - 7196	Strontium-89,90 - Total Sr	Tritium - H3	Due - 2/22/10 SDG 300714 J0B080464
Sample No.	Matrix *	Sample Date	Sample Time				
J15J74	WATER	2-5-10	1545	X	X	X	

CHAIN OF POSSESSION

Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Sam Gilbo	2-5-10 / 17:25	EAS Ref D	2-5-10 / 17:25
EAS Ref D Wendy Welt		Wendy Welt	2/8/10 0750
Wendy Welt	2/8/10		2/8/10 0800

SPECIAL INSTRUCTIONS

LVEMN

[illegible]

Matrix *

[illegible]

LABORATORY SECTION	Received By	Title Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By Date/Time

WCH-EE-011

000014

Page 29 of 33

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST		RC-114-412	Page 1 of 1
Collector Sam Gilbo WCH	Company Contact JOAN KESSNER	Telephone No. 375-4656	Project Coordinator KESSNER, JH	Price Code 7C
Project Designation Columbia River Component of the RCBRA - 2010 Water - [illegible]	Sampling Location 300-FF 7110D 3/A		SAF No. RC 114	Data Turnaround 15 Days
Ice Chest No. N/A	Field Logbook No. EL 1045	COA [illegible]	Method of Shipment GROUND TRANSPORT	
Shipped To TestAmerica Incorporated, Richland	Offsite Property No. N/A		Bill of Lading/Air Bill No. N/A	

POSSIBLE SAMPLE HAZARDS/REMARKS
N/A

Special Handling and/or Storage
N/A

Preservation	Cool 4C	HNO3 to pH <2	None
Type of Container	G/P	G/P	P
No. of Container(s)	1	1	1
Volume	500mL	1000mL	125mL
SAMPLE ANALYSIS	Chromium Hex - 7196	Strontium-89,90 - Total Sr	Tritium - H3

DUP
SDG J00714
JOB 580464

Sample No.	Matrix *	Sample Date	Sample Time			
J19374	WATER	2-5-10	14:50	X	X	X

CHAIN OF POSSESSION Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Sam Gilbo	2-5-10 / 17:25	EAS Ref D	2-5-10 / 17:25
EAS Ref D Wendy Walt	[illegible]	Wendy Walt	2/6/10 0730
Wendy Walt	2/6/10 0800	Tom McGinnis	2/8/10 0930

SPECIAL INSTRUCTIONS

LVEM1

Sampler [illegible] to refrigerate [illegible] upon [illegible] storage. Sampler [illegible] samples from storage [illegible]

Matrix * [illegible]

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Appendix 5

Data Validation Supporting Documentation

APPENDIX A

RADIOCHEMICAL DATA VALIDATION CHECKLIST

VALIDATION LEVEL:	A	B	[✓ C]	D	E
PROJECT:	RCBRA	100-D	DATA PACKAGE:	J00714	
VALIDATOR:	GLR	LAB:	TAL	DATE:	3/23/10
			SDG:	J00714	
ANALYSES PERFORMED					
☐ Gross Alpha/Beta	☒ Strontium-90	☐ Technetium-99	☐ Alpha Spectrometry	☐ Gamma Spectrometry	
☐ Total Uranium	☐ Radium-226	☒ Tritium			
SAMPLES/MATRIX					
J19373 J19374					
				Water	

1\. Completeness ☐ N/A

Technical verification forms present? Yes [✓ No] N/A

Comments:

2\. Initial Calibration (Levels D, E) ☑ N/A

Instruments/detectors calibrated? Yes No N/A

Initial calibration acceptable? Yes No N/A

Standards NIST traceable? Yes No N/A

Standards Expired? Yes No N/A

Calculation check acceptable? Yes No N/A

Comments:

3. Continuing Calibration (Levels D, E) ☑ N/A

Calibration checked within required frequency? .... Yes No N/A

Calibration check acceptable? .... Yes No N/A

Calibration check standards traceable? .... Yes No N/A

Calibration check standards expired? .... Yes No N/A

Calculation check acceptable? .... Yes No N/A

Comments:

4. Background Counts (Levels D, E) .... ☒ N/A

Background Counts checked within required frequency? .... Yes No N/A

Background Counts acceptable? .... Yes No N/A

Calculation check acceptable? .... Yes No N/A

Comments:

5. Blanks (Levels B, C, D, E) .... ☐ N/A

Method blank analyzed within required frequency? .... [✓ Yes] No N/A

Method blank results acceptable? .... [✓ Yes] No N/A

Analytes detected in method blank? .... Yes [✓ No] N/A

Field blank(s) analyzed? .... Yes [✓ No] N/A

Field blank results acceptable? .... Yes No [✓ N/A]

Analytes detected in field blank(s)? .... Yes No [✓ N/A]

Transcription/Calculation Errors? (Levels D, E) .... Yes No [✓ N/A]

Comments: no FB

6. Laboratory Control Samples or Blank Spike Samples (Levels C, D, E) .... ☐ N/A

LCS /BSS analyzed within required frequency? .... [✓ Yes] No N/A

LCS/BSS recoveries acceptable? .... [✓ Yes] No N/A

LCS/BSS traceable? (Levels D,E) .... Yes No [✓ N/A]

LCS/BSS expired? (Levels D,E) .... Yes No [✓ N/A]

LCS/BSS levels correct? (Levels D,E) .... Yes No [✓ N/A]

Transcription/Calculation Errors? (Levels D, E) .... Yes No [✓ N/A]

Comments:

7. Chemical Carrier Recovery (Levels C, D, E) .... ☒ N/A

Chemical carrier added? .... Yes No N/A

Chemical recovery acceptable? .... Yes No N/A

Chemical carrier traceable? (Levels D, E) .... Yes No N/A

Chemical carrier expired? (Levels D, E) .... Yes No N/A

Transcription/Calculation errors? (Levels D, E) .... Yes No N/A

Comments:

8. Tracer Recovery (Levels C, D, E) .... ☐ N/A

Tracer added? .... [✓ Yes] No N/A

Tracer recovery acceptable? .... [✓ Yes] No N/A

Tracer traceable? (Levels D, E) .... Yes No [✓ N/A]

Tracer expired? (Levels D, E) .... Yes No [✓ N/A]

Transcription/Calculation errors? (Levels D, E) .... Yes No [✓ N/A]

Comments:

9. Matrix Spikes (Levels C, D, E) .... ☐ N/A

Matrix spike analyzed? .... Yes [✓ No] N/A

Spike recoveries acceptable? .... Yes No [✓ N/A]

Spike source traceable? (Levels D, E) .... Yes No [✓ N/A]

Spike source expired? Levels D, E) .... Yes No [✓ N/A]

Transcription/Calculation Errors? (Levels D, E) .... Yes No [✓ N/A]

Comments: no 3H MS - J all

10. Duplicates (Levels C, D, E) ☐ N/A

Duplicates Analyzed at required frequency? [✓ Yes] No N/A

RPD Values Acceptable? [✓ Yes] No N/A

Transcription/Calculation Errors? (Levels D, E) Yes No [✓ N/A]

Comments:

11. Field QC Samples (Levels C, D E) ☐ N/A

Field duplicate sample(s) analyzed? Yes [✓ No] N/A

Field duplicate RPD values acceptable? Yes No [✓ N/A]

Field split sample(s) analyzed? Yes [✓ No] N/A

Field split RPD values acceptable? Yes No [✓ N/A]

Performance audit sample(s) analyzed? Yes [✓ No] N/A

Performance audit sample results acceptable? Yes No [✓ N/A]

Comments: no field QC

12. Holding Times (All levels)

Are sample holding times acceptable? [✓ Yes] No N/A

Comments:

13. Results and Detection Limits (All Levels) ☐ N/A

Results reported for all required sample analyses? [✓ Yes] No ~~N/A~~

Results supported in raw data? (Levels D, E) Yes No [✓ N/A]

Results Acceptable? (Levels D, E) Yes No [✓ N/A]

Transcription/Calculation errors? (Levels D, E) ~~Yes~~ No [✓ N/A]

MDA's meet required detection limits? [✓ Yes] No ~~N/A~~

Transcription/calculation errors? (Levels D, E) Yes No [✓ N/A]

Comments: 3 SR-20-044

Appendix 6

Additional Documentation Requested by Client

QC Results Summary
TestAmerica TARL
Ordered by Method, Batch No, QC Type,.

Date: 23-Feb-10

Report No. : 43317

SDG No.: J00714

Batch Work Order	Parameter	Result +- Uncertainty (2s)	Qual	Units	Tracer Yield	LCS Recovery	Bias	MDC/MDA
SRTOT_SEP_PRECIP_GPC								
0040489 BLANK QC,								
LVGPF1AA	STRONTIUM	1.21E-01 +- 6.4E-01	U	pCi/L	90%			1.50E+00
0040489 LCS,								
LVGPF1AC	STRONTIUM	2.45E+01 +- 6.7E+00		pCi/L	100%	90%	0.1	1.45E+00
7196_CR6								
0039412 BLANK QC,								
LVENK1AA	HEXCHROME	3.70E-03 +- 0.0E+00	U	mg/L	N/A			3.70E-03
0039412 LCS,								
LVENK1AC	HEXCHROME	5.15E-01 +- 0.0E+00		mg/l	N/A	103%	0.0	3.70E-03
0039412 MATRIX SPIKE, J0U73								
LVEMN1AH	HEXCHROME	5.30E-01 +- 0.0E+00		mg/L	N/A	107%	0.0	7.40E-03
LVEMN1AJ	HEXCHROME	5.30E-01 +- 0.0E+00		mg/L	N/A	107%	0.0	7.40E-03
906.0_H3_LSC								
0040488 BLANK QC,								
LVGPC1AA	H-3	1.28E+02 +- 1.4E+02	U	pCi/L	100%			3.18E+02
LVGPC1AD	H-3	-1.44E+02 +- 1.3E+02	U	pCi/L	100%			3.18E+02
0040488 LCS,								
LVGPC1AE	H-3	2.40E+03 +- 2.7E+02		pCi/L	100%	89%	0.1	3.18E+02
LVGPC1AG	H-3	2.50E+03 +- 2.3E+02		pCi/L	100%	92%	0.1	3.70E+02

No. of Results: 10

TestAmerica	Bias - (Result/Expected)-1 as defined by ANSI N13.30.
rptSTLRchQcSummary V5.3.5 A2002	U Qual - Analyzed for but not detected above limiting criteria. Limit criteria is less than the Mdc/Mda or Total Uncert or not identified by gamma scan software.

F.2.1.11 SDG K1833

SAF-RC-114
Columbia River Component of the RCBRA – Pore Water – Phase II
FINAL VALIDATION PACKAGE

COMPLETE COPY OF VALIDATION PACKAGE TO;

Kathy Wendt H4-21

COMMENTS:

SDG K1833 **SAF-RC-114**

Date: 7 December 2009
To: Washington Closure Hanford (technical representative)
From: ELR Consultants
Project: Columbia River Component of the RCBRA – Pore Water – Phase II
Subject: DRO - Data Package No. K1833-LLI

INTRODUCTION

This memo presents the results of data validation on Data Package No. K1833 prepared by Lionville Laboratory Inc. (LLI). A list of samples validated along with the analyses reported and the method of analysis is provided in the following table

Sample ID	Sample Date	Media	Validation	Anaysis
J193D1	11/7/09	Solid	C	See note 1
J193D2	11/7/09	Solid	C	See note 1
J193D3	11/7/09	Solid	C	See note 1
J193D4	11/7/09	Solid	C	See note 1
J193D5	11/7/09	Solid	C	See note 1
J193D6	11/7/09	Solid	C	See note 1
J195D1	11/7/09	Solid	C	See note 1
J19420	11/7/09	Solid	C	See note 1

1 – Diesel range organics by 8015B.

Data validation was conducted in accordance with the Washington Closure Hanford (WCH) validation statement of work and the Remedial Investigation Work Plan for Hanford Site Releases to the Columbia River (DOE/RL-2008-11, Rev. 0, September 2008). Appendices 1 through 6 provide the following information as indicated below:

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DATA QUALITY OBJECTIVES

Holding Times & Sample Preservation

Analytical holding times were assessed to ascertain whether the holding time requirements were met by the laboratory. The holding time requirements are as follows: Samples must be extracted within 14 days of the date of sample collection and analyzed within 40 days from the date of extraction.

If holding times are exceeded, but not by greater than two times the limit, all associated sample results are qualified as estimates and flagged "J" for detects and "UJ" for non-detects. If holding times are exceeded by greater than two times the limit, all associated detectable sample results are qualified as estimates and flagged "J" and all non-detects are rejected and flagged "UR".

All holding times were acceptable.

- **Method Blanks**

Method blank analyses are conducted to determine the extent of laboratory contamination introduced through sampling, sample preparation and analysis. At least one acceptable method blank analysis must be conducted for every 20 samples. No contaminants should be present in the method blank. Analytical results for analytes present in any sample at less than five times the concentration of that analyte found in the associated blank are qualified as non detects and flagged "U". Common laboratory contaminants present in samples at less than ten times the concentration of that analyte found in the associated blank are qualified as non-detects. If a sample result is less than the CRQL and is less than five times (or less than ten times for lab contaminants) the highest associated blank result, the sample result value is raised to the CRQL level and qualified as undetected "U".

All method blank results were acceptable.

Field Blanks

No field blanks were submitted for analysis.

- **Accuracy**

Matrix Spike/Matrix Spike Duplicate & Blank Spike Recoveries

Matrix spike/matrix spike duplicate analyses are used to assess the analytical accuracy of the reported data and the effect of the matrix on the ability to accurately quantify sample concentrations. Matrix spike/matrix spike duplicate analyses are performed in duplicate using five compounds for which percent recoveries must be within a range of 80-120% or within laboratory control limits. If spike recoveries are outside control limits, detected sample results less than five times the spike concentration are qualified as estimates and flagged "J". Undetected sample results with spike recoveries below control limits are qualified as estimates and flagged "UJ". Undetected sample results are not qualified if the spike recovery is above control limits. Sample results greater than five times the spike concentration require no qualification.

Due to a matrix spike () and LCS recovery outside QC limits, all diesel range organic results were qualified as estimates and flagged "J".

Surrogate Recovery

The analyses of surrogate compounds provide a measure of performance for individual samples. Matrix-specific surrogate compound recovery control windows have been established by the EPA CLP program. If two surrogates of the same class of compounds (base/neutral or acid) are out of control limits, all associated sample results greater than the contract required quantitation limit (CRQL) are qualified as estimates and flagged "J". Sample results less than the CRQL and below the lower control limit are qualified as estimates and flagged "UJ". Sample results less than the CRQL with recoveries above the upper control limit require no qualification. If a surrogate recovery is less than 10%, detects are qualified as estimates and flagged "J" and nondetects are rejected and flagged "UR".

All surrogate results were acceptable.

- **Precision**

Matrix Spike/Matrix Spike Duplicate Samples

Matrix spike (MS)/matrix spike duplicate (MSD) results provide matrix-specific information on the precision of the method for specific target compound classes. Precision is expressed by the relative percent difference (RPD) between the recoveries of duplicate matrix spike analyses performed on a sample. Samples results must be within RPD limits of +/-20%. If RPD values are out of specification and the sample concentration is less than five times the spike concentration, all associated detected sample results are qualified as estimates and flagged "J". If RPD values are out of specification and the sample concentration is greater than five times the spike concentration, no qualification is required .

Due to the lack of a matrix spike and matrix spike duplicate analysis, all motor oil results were qualified as estimates and flagged "J".

All other precision results were acceptable.

Field Duplicate Samples

One set of field duplicates (J18610/J18795) were submitted for analysis. Field duplicates are compared using the same criteria as for laboratory duplicates. All field duplicates results were acceptable.

Analytical Detection Levels

Reported analytical detection levels are compared against the required quantitation limits (RQL's) to ensure that laboratory detection levels meet the required criteria. Eight analytes exceeded the RQL. Under the WCH statement of work, no qualification is required.

Completeness

Data package No. K1833 was submitted for validation and verified for completeness. Completeness is based on the percentage of data determined to be valid (i.e., not rejected). The completion percentage was 100%.

MAJOR DEFICIENCIES

None found.

MINOR DEFICIENCIES

The following minor deficiency was noted:

- Due to the lack of a matrix spike, matrix spike duplicate and LCS analysis, all motor oil results were qualified as estimates and flagged "J".
- Due to a matrix spike () and LCS recovery outside QC limits, all diesel range organic results were qualified as estimates and flagged "J".

Data flagged "J" indicates that the associated concentration is an estimate, but under the WCH statement of work, the data *may* be usable for decision-making purposes. All other validated results are considered accurate within the standard error associated with the methods.

Eight analytes exceeded the RQL. Under the WCH statement of work, no qualification is required.

REFERENCES

Washington Closure Hanford Contract #S00W307A00 (March 2008), *Data Validation Services.*

DOE/RL-2008-11, Rev.0, *Remedial Investigation Work Plan for Hanford Site Releases to the Columbia River*, September 2008.

Appendix 1

Glossary of Data Reporting Qualifiers

Qualifiers which may be applied by data validators in compliance with the WCH validation SOW are as follows:

U - Indicates the compound or analyte was analyzed for and not detected in the sample. The value reported is the same quantitation limit corrected for sample dilution and moisture content by the laboratory.

UJ - Indicates the compound or analyte was analyzed for and not detected in the sample. Due to a minor QC deficiency identified during the data validation, the associated quantitation limit is an estimate.

J - Indicates the compound or analyte was analyzed for and detected Due to a minor QC deficiency identified during the data validation, the associated quantitation limit is an estimate.

R Indicates the compound or analyte was analyzed for, detected, and due to an identified major QC deficiency, the data are unusable.

UR - Indicates the compound or analyte was analyzed for and not detected in the sample Additionally, the data is unusable due to an identified major QC deficiency.

NJ - Indicates presumptive evidence of a compound at an estimated value The data may not be valid for some specific applications (i.e., usable for decision-making purposes).

N - Indicates presumptive evidence of a compound The data may not be valid for some specific applications usable for decision-making purposes).

Appendix 2

Summary of Data Qualification

DIESEL RANGE ORGANIC DATA QUALIFICATION SUMMARY*

SDG: K1833	**REVIEWER: ELR**	**Project: RCBRA**	**QC Issue**
COMPOUND	QUALIFIER	SAMPLES AFFECTED	REASON
Diesel range organics	J	All	MS and LCS recovery
Motor oil	J	All	No MS, MSD or LCS analysis

* - The Qualified Data Summary Table includes laboratory applied "U" qualifiers not specifically identified here. The laboratory applied "U" qualifiers are included to minimize misinterpretation of results contained in the table.

Appendix 3

Qualified Data Summary and Annotated Laboratory Reports

208 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

WC Hanford Inc 2620 Fermi Avenue Richland WA 99354	Project: RC 114 Project Number: K1833 Project Manager: Joan Kessner	Reported: 11-30-2009 12:20

J193D1
0911045-01 (Water)

Analyte	Result and Qualifier	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
		Lionville Laboratory						
Extractable Petroleum Hydrocarbons by SW846 8015								
Diesel Range Organics	385 U J	385	ug/l	1	L911127	11/13/2009	11/19/2009	8015M
Motor Oil	1150 U J	1150	ug/l	1	L911127	11/13/2009	11/19/2009	8015M
Surrogate: o-Terphenyl	*91 %*	*15-130*			*L911127*	*11/13/2009*	*11/19/2009*	*8015M*

12/4/09

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

WC Hanford, Inc	Project: RC-114	
2620 Fermi Avenue	Project Number: K1833	Reported:
Richland WA 99354	Project Manager: Joan Kessner	11/24/2009 17:30

J193D2

0911045-02 (Water)

Analyte	Result and Qualifier	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Lionville Laboratory								
Extractable Petroleum Hydrocarbons by SW846 8015								
Diesel Range Organics	100 U J	400	ug/L	1	L911127	11/13/2009	11/19/2009	8015M
Motor Oil	1700 U J	1200	ug/L	1	L911127	11/13/2009	11/19/2009	8015M
Surrogate: p-Terphenyl	*91 %*	*35-130*			*L911127*	*11/13/2009*	*11/19/2009*	*8015M*

12/4/09

264 Welsh Pool Road
Exton, PA 19341
Phone: 610 280 3000
Fax: 610 280 3041

WCH - Hanford, Inc	Project: RC-113	
2620 Fermi Avenue	Project Number: K1801	Reported:
Richland WA, 99354	Project Manager: Joan Kessner	11/24/2009 17:26

J193D3
0911045-03 (Water)

Analyte	Result and Qualifier	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Lionville Laboratory								
Extractable Petroleum Hydrocarbons by SW846 8015								
Diesel Range Organics	1110 U J	1110	ug/L	1	L911127	11/13/2009	11/19/2009	8015M
Motor Oil	3330 U J	3330	ug/L	1	L911127	11/13/2009	11/19/2009	8015M
Surrogate: o-Terphenyl	*80 %*	*55-130*			*L911127*	*11/13/2009*	*11/19/2009*	*8015M*

12/4/09

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

WC Hanford, Inc. 2620 Fermi Avenue Richland WA 99354	Project: RC-114 Project Number: K1833 Project Manager: Jodi Kessner	Reported: 11/24/2009 17:31

J193D4

0911045-04 (Water)

Analyte	Result and Qualifier	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Lionville Laboratory								
Extractable Petroleum Hydrocarbons by SW846 8015								
Diesel Range Organics	417 U J	417	ug/L	1	L911127	11/13/2009	11/19/2009	8015M
Motor Oil	1250 U J	1250	ug/L	1	L911127	11/13/2009	11/19/2009	8015M
Surrogate: o-Terphenyl	*90 %*	*35-130*			*L911127*	*11/13/2009*	*11/19/2009*	*8015M*

12/6/09

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

WCH-Hanford, Inc.	Project: RC-IH	
2620 Fermi Avenue	Project Number: K1833	Reported:
Richland WA, 99354	Project Manager: Joan Kessner	11/24/2009 17:20

J193D5

0911045-05 (Water)

Analyte	Result and Qualifier	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
		Lionville Laboratory						
Extractable Petroleum Hydrocarbons by SW846 8015								
Diesel Range Organics	170 U J	170	ug/L	1	0911127	11/13/2009	11/20/2009	8015M
Motor Oil	1110 U J	1110	ug/L	1	0911127	11/13/2009	11/20/2009	8015M
Surrogate: o-Terphenyl	*102 %*	*35-130*			*0911127*	*11/13/2009*	*11/20/2009*	*8015M*

12/4/09

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

WC-Hanford, Inc	Project: RI-114	
2620 Fermi Avenue	Project Number: K1833	Reported:
Richland WA, 99354	Project Manager: Joan Kessner	11-24/2009 17:20

J193D6

0911045-06 (Water)

Analyte	Result and Qualifier	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Lionville Laboratory								
Extractable Petroleum Hydrocarbons by SW846 8015								
Diesel Range Organics	333 U J	333	ug/L	1	0911127	11/13/2009	11/20/2009	8015M
Motor Oil	1000 U J	1000	ug/L	1	0911127	11/13/2009	11/20/2009	8015M
Surrogate: o-Terphenyl	*95 %*	*45-140*			*0911127*	*11/13/2009*	*11/20/2009*	*8015M*

12/6/09

208 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

WCH-Hanford, Inc.	Project: RC-114	
2620 Fermi Avenue	Project Number: K1833	Reported:
Richland WA 99354	Project Manager: Joan Kessner	11/24/2009 17:26

J195D1

0911045-07 (Water)

Analyte	Result and Qualifier	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Lionville Laboratory								
Extractable Petroleum Hydrocarbons by SW846 8015								
Diesel Range Organics	100 U J	100	ug/L	1	L911127	11/13/2009	11/20/2009	8015M
Motor Oil	500 U J	500	ug/L	1	L911127	11/13/2009	11/20/2009	8015M
Surrogate: p-Terphenyl	*94 %*	*35-130*			*L911127*	*11/13/2009*	*11/20/2009*	*8015M*

12/6/09

208 Welsh Pool Road
Exton, PA 19341
Phone 610-280-3000
Fax 610-280-3041

WC-Hanford, Inc.	Project: RC-114	
2620 Fermi Avenue	Project Number: K1833	Reported:
Richland WA 99354	Project Manager: Joan Kessner	11/24/2009 17:20

J19420

0911045-08 (Water)

Analyte	Result and Qualifier	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Lionville Laboratory								
Extractable Petroleum Hydrocarbons by SW846 8015								
Diesel Range Organics	400 U J	400	ug/L	1	1911127	11/13/2009	11/20/2009	8015M
Motor Oil	1200 U J	1200	ug/L	1	1911127	11/13/2009	11/20/2009	8015M
Surrogate: o-Terphenyl	*92 %*	*35-130*			*1911127*	*11/13/2009*	*11/20/2009*	*8015M*

12/6/09

Appendix 4

Laboratory Narrative and Chain-of-Custody Documentation

LvLI

264 Welsh Pool Road
Exton, Pennsylvania 19341
Phone (610) 280-3000
Fax (610) 280-3041

Case Narrative

Client: WC-HANFORD
LVL #: 0911045
SDG/SAF#: K1833 / RC-114

W.O. #: 60049-001-001-0001-00
Date Received: 11-13-2009

DIESEL RANGE ORGANICS

Eight (8) water samples were collected on 11-07,08,09-2009.

The samples and associated QC samples were extracted on 11-13-2009 and analyzed according to Lionville Laboratory SOPs based on SW846, 3rd Edition procedure on 11-19,20-2009. The extraction procedure was based on method 3520C and the extracts were analyzed based on method 8015B for Diesel Range Organics.

The following is a summary of the QC results accompanying the sample results. Lionville Laboratory (LvLI) certifies that all test results meet the requirements of NELAC except as noted below:

1. All required holding times for extraction and analysis have been met.
2. The method blank was below the reporting limits for all target compounds.
3. All obtainable surrogate recoveries were within acceptance criteria.
4. All blank spike recoveries were within acceptance criteria.
5. All initial calibrations associated with this data set were within acceptance criteria.
6. All continuing calibration standards analyzed prior to sample extracts were within acceptance criteria.
7. LvLI is NELAP accredited by the State of Pennsylvania. For a complete listing of accrediting authorities and the corresponding analytes/methods, please contact your Project Manager.

[illegible]

8. I certify that this sample data package is in compliance with SOW requirements, both technically and for completeness, other than the conditions detailed above. Release of the data contained in this hard-copy data package has been authorized by the laboratory manager or a designee as verified by the following signature.

Jim Daniels
Laboratory Manager
Lionville Laboratory

11|25|07
Date

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-114-78

Page 1 of 1

Collector: R Carey

Company Contact: JOAN KESSNER

Telephone No: 373-4695

Project Coordinator: KESSNER, JH

Price Code: 7K

Data Turnaround: ~~7~~ 15 Days

Project Designation: Columbia River Component of the RCBRA - Pore Water - Ph

Sampling Location: DRN- 3 T100N3A

SAF No.: RC-114

Ice Chest No.: LRC - 01 - 027

Field Logbook No.: EL - 1641

COA: RESCRC0520

Method of Shipment: FED EX

Shipped To: EBERLINE SERVICES (LIONVILLE)

Offsite Property No.: N/A

Bill of Lading/Air Bill No.: 7930 1229 7380

POSSIBLE SAMPLE HAZARDS/REMARKS

Radioactive near or below background levels

Special Handling and/or Storage

N/A

120000

Preservation	
Type of Container	aG
No. of Container(s)	1
Volume	1000mL
SAMPLE ANALYSIS	1-H-Lower Range W-TSR-01

Sample No.	Matrix *	Sample Date	Sample Time	
J19SD1	WATER	11-07-09	1534	X

CHAIN OF POSSESSION Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
R Carey R. Carey	11-07-09 1700	R. Carey EAS REF 8	11-07-09 1700
FAS LOCKED STORAGE	11/10/09 1100	FAS LOCKED STORAGE	11/10/09 1100
FAS LOCKED STORAGE	11/12/09 1000	SHANNAN JOHNSON	11/12/09 1000
SHANNAN JOHNSON	11/12/09 1100	FED X	
	11/20/09 1000	Received By Sample	11-20-09 1000

SPECIAL INSTRUCTIONS

Sampler unavailable to remove samples from controlled storage. Sampler removed samples from storage before shipping / storage of samples for shipment 6/26

Matrix *

LABORATORY SECTION Received By | Title | Date/Time

FINAL SAMPLE DISPOSITION Disposal Method | Disposed By | Date/Time

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-114-79

Page 1 of 1

Collector R. Cu[illegible]	Company Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator KESSNER, JR
Project Designation Columbia River Component of the RCBRA - Pore Water - Ph	Sampling Location IBIN- ZX00N2A		SAF No. RC-114
Ice Chest No. ERC-01-027	Field Logbook No. EL-1641	COA BESCRU0520	Method of Shipment FEDEX
Shipped To EBERLINE SERVICES [✓ DANVILLE]	Offsite Property No. N/A		Bill of Lading/Air Bill No. 7930 1289 7580

Price Code 7K

Data Turnaround 7 Days
YS 4/13/09

POSSIBLE SAMPLE HAZARDS/REMARKS

- Radioactive near or below background levels

Special Handling and/or Storage

N/A

Preservation		[illegible]
Type of Container		aG
No. of Container(s)		1
Volume		1000ml
SAMPLE ANALYSIS		Tritium; Beta; WATER

Sample No.	Matrix *	Sample Date	Sample Time	
J19302	WATER	11-07-09	1358	X

CHAIN OF POSSESSION	Date/Time	Sign/Print Names	Date/Time
Relinquished By/Removed From R. C[illegible] R. C[illegible]	11-07-09 1702	Received By/Stored In R. C[illegible] EAS REF E	11-07-09 1702
Relinquished By/Removed From EAS LOCKED STORAGE	11/10/09 1130	Received By/Stored In EAS LOCKED STORAGE	11/10/09 1135
Relinquished By/Removed From EAS LOCKED STORAGE	11/12/09 1022	Received By/Stored In SHANNAN JOHNSON	11/12/09 1022
Relinquished By/Removed From SHANNAN JOHNSON	11/12/09 1022	Received By/Stored In FDX	
Relinquished By/Removed From	11-13-09 1000	Received By/Stored In	11-13-09 1000
Relinquished By/Removed From		Received By/Stored In	

SPECIAL INSTRUCTIONS

Sampler unavailable to remove samples from controlled storage. [illegible] removed samples from storage location [illegible] of samples for shipment [illegible]

Matrix *

[illegible]

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-014

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-114-80 | Page 1 of 1

Collector Sam Gallo	Company Contact JOAN KESSNER	Telephone No 375-4688	Project Coordinator KESSNER, JH
Project Designation Columbia River Component of the RCBRA - Pore Water - Ph	Sampling Location 100N T100N46		SAF No. RC-114
Ice Chest No. NA 4/12/09 CRL-2-01-027	Field Logbook No. EL-1619-1	COA BDSFRC0520	Method of Shipment FEDEX
Shipped To ESPERT BIL SERVICES (ONVILLE)	Offsite Property No. N/A		Bill of Lading/Air Bill No. 7950 1289 7380

Price Code 7K

Data Turnaround 7 Days
415 JB 9/04

POSSIBLE SAMPLE HAZARDS/REMARKS

Radioactive near or below background levels

Special Handling and/or Storage

N/A

Preservation	HCl to pH<2 Cool 4C
Type of Container	aG
No. of Container(s)	1
Volume	100mL
SAMPLE ANALYSIS	NH3 (Ammonia Range) WTPH-D

Sample No.	Matrix *	Sample Date	Sample Time	
J10003	WATER	11-7-07	17:25	X

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From Sam Gallo	Date/Time 11-7-07/18:50	Received By/Stored In EBRALE	Date/Time 11-7-07/18:50
Relinquished By/Removed From FAS LOCKED STORAGE	Date/Time 11/8/07	Received By/Stored In SHANNAN JOHNSON	Date/Time 11/8/07 1100
Relinquished By/Removed From SHANNAN JOHNSON	Date/Time 11/8/07 1100	Received By/Stored In FDX	Date/Time
Relinquished By/Removed From FDX	Date/Time 11-8-07 1100	Received By/Stored In	Date/Time 11-8-07 1000
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time

SPECIAL INSTRUCTIONS

Sample available to [illegible] from controlled storage. [illegible] samples from storage location [illegible]

Matrix *

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-114-81 | Page 1 of 1

Collector: Kevin Greene	Company Contact: JOAN KESSNER	Telephone No.: 375-4688	Project Coordinator: KESSNER, JH
Project Designation: Columbia River Component of the RCBRA - Pore Water - Ph	Sampling Location: LOON - TIGON 3A		SAF No.: RC-114
Ice Chest No.: ~~N/A~~ 11/12/09 CRC-01-027	Field Logbook No.: EL-1639-1	COA: RESCRC0520	Method of Shipment: FEDEX
Shipped To: PHYSICS ENGINE SERVICES [✓ LIONVILLE]	Offsite Property No.: N/A		Bill of Lading/Air Bill No.: 7930 1269 7360

Price Code: 7K

Data Turnaround: 7 Days
15 Days 11/13/09

POSSIBLE SAMPLE HAZARDS/REMARKS
Radioactive near or below background levels

Special Handling and/or Storage
N/A

4200024

Preservation	Cool 4C
Type of Container	aG
No. of Container(s)	1
Volume	1000mL
SAMPLE ANALYSIS	TPH Diesel Range - WTPH-D

Sample No.	Matrix *	Sample Date	Sample Time	TPH Diesel Range - WTPH-D
J193D4	WATER	11-8-09	1454	X

CHAIN OF POSSESSION	Date/Time	Sign/Print Names — Received By/Stored In	Date/Time
Relinquished By/Removed From: Kevin Greene	11-8-09 1700	Received By/Stored In: FAS BOX E	11-8-09 1700
Relinquished By/Removed From: FAS LOCKED STORAGE	11/12/09 1130	Received By/Stored In: FAS LOCKED STORAGE	11/12/09 1130
Relinquished By/Removed From: FAS LOCKED STORAGE	11/12/09 1022	Received By/Stored In: SHANNAN JOHNSON	11/12/09 1022
Relinquished By/Removed From: SHANNAN JOHNSON	11/12/09 1200	Received By/Stored In: FDX	Date/Time
Relinquished By/Removed From	Date/Time 11/13/09 1000	Received By/Stored In	Date/Time 11/13/09 1000
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time

SPECIAL INSTRUCTIONS

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location for sign off of samples for shipment to lab.

Matrix *

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-031

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-114-82

Page 1 of 1

Collector: Kevin Cramen

Company Contact: JOAN KESSNER

Telephone No.: 375-4688

Project Coordinator: KESSNER, JH

Price Code: 7K

Data Turnaround: ~~7~~ Days

Project Designation: Columbia River Component of the RCBRA - Pore Water - PK

Sampling Location: 100N - T100N1E

SAF No.: RC-114

Ice Chest No.: EDA-01-027

Field Logbook No.: EL-1659-1

COA: RES0RC0170

Method of Shipment: FED EX

Shipped To: EBERLINE SERVICES ~~RICHMOND~~ ROSWELL

Offsite Property No.: N/A

Bill of Lading/Air Bill No.: 7936 1284 7380

POSSIBLE SAMPLE HAZARDS/REMARKS

Radioactive near or below background levels

Special Handling and/or Storage

N/A

1000125

Preservation	HCl to pH<2 Cool 4C
Type of Container	aG
No. of Container(s)	1
Volume	2000mL
SAMPLE ANALYSIS	Tritium (Low-level)

Sample No.	Matrix *	Sample Date	Sample Time	
J193D5	WATER	11-8-09	1240	X

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Kevin Cramen	11-8-09 1700	EAS REFE	11-8-09 1700
EAS LOCKED STORAGE	11/11/09 1242	EAS LOCKED STORAGE	11/11/09 1242
EAS LOCKED STORAGE	11/12/09 1123	SHANNAN JOHNSON	11/12/09 1123
SHANNAN JOHNSON	11/12/09 1000	FDX	
	11-13-09 1000		11-13-09 1000

SPECIAL INSTRUCTIONS

Sampler unavailable to remove samples from controlled storage. Sampler removed samples from storage location taking custody of samples for shipment above.

Matrix *

LABORATORY SECTION — Received By — Title — Date/Time

FINAL SAMPLE DISPOSITION — Disposal Method — Disposed By — Date/Time

WCH-EE-011

[illegible]

Washington Closure Hanford | **CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST** | RC-114-83 | Page 1 of 1

Collector R Cu[illegible]	Company Contact JOAN KESSNER	Telephone No. 375-4683	Project Coordinator KESSNER, JG	Price Code 7K
Project Designation Evaluating Reuse Components of the RCBRA - Pore Water - Pb	Sampling Location 100N - 3100NL		SAF No. RC-114	Data Turnaround ~~7 Days~~ 45 [illegible]
Ice Chest No. [illegible]-01-027	Field Logbook No. EL-1641	COA RESCRC6520	Method of Shipment FEDEX	
Shipped To EBERLINE SERVICES [✓ OAKVILLE]	Offsite Property No. N/A		Bill of Lading/Air Bill No. 7930 1289 7780	

POSSIBLE SAMPLE HAZARDS/REMARKS

Radioactive near or below background levels

Special Handling and/or Storage
N/A

Preservation	Cool 4C
Type of Container	P
No. of Container(s)	1
Volume	500mL
SAMPLE ANALYSIS	[illegible] Total Lead 6010-[illegible]

Sample No.	Matrix *	Sample Date	Sample Time	
J193D6	WATER	11-09-09	1707	X

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
R. Cu[illegible] R. C[illegible]	11-09-09 1734	EAS REF D	11-09-09 1739
EAS LOCKED STORAGE D	11/12/09 1122	SHANNAN JOHNSON	11/12/09 1122
SHANNAN JOHNSON	11/12/09 1122	EDY	
[illegible]	11/13 09 1000	DSmith [illegible]	11/13/09 1020

SPECIAL INSTRUCTIONS

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab.

Matrix *

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-114-255
Page 1 of 1

Collector: Kevin Cranna	Company Contact: JOAN KESSNER	Telephone No.: 375-4698	Project Coordinator: KESSNER, JH
Project Designation: Columbia River Component of the RCBRA - Pore Water - Ph	Sampling Location: 100N- T100N 3B		SAF No.: RC-114
Ice Chest No.: ~~N/A~~ 11/12/09 ERC-01-027	Field Logbook No.: EL-1639-1	COA: DESCRG0520	Method of Shipment: FED EX
Shipped To: EBERLINE SERVICES (RICHMOND)	Offsite Property No.: N/A		Bill of Lading/Air Bill No.: 7930 1289 7360

Price Code: 7K
Data Turnaround: 7 Days

POSSIBLE SAMPLE HAZARDS/REMARKS
[illegible]

Special Handling and/or Storage
N/A

Preservation	HCl to pH<2 Cool 4C								
Type of Container	aG								
No. of Container(s)	1								
Volume	1000mL								
SAMPLE ANALYSIS	TPH Diesel Range WTPH-Dx								

Sample No.	Matrix *	Sample Date	Sample Time										
J19501	WATER	11/9/09	1720	X									

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Kevin Cranna	11/9/09 1845	EAS REF	11/9/09 1845
EAS LOCKED STORAGE	11/10/09 1135	EAS LOCKED STORAGE	11/10/09 1135
EAS LOCKED STORAGE	11/12/09 1000	SHANNAN JOHNSON	11/12/09 1000
SHANNAN JOHNSON	11/12/09 1100	FDX	
	11/13 09 1000	D. SMITH	11-13-09 1650

SPECIAL INSTRUCTIONS

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab.

Matrix *
S = Soil
SE = Sediment
SO = Solid
SL = Sludge
W = Water
O = Oil
A = Air
DS = Drum Solids
DL = Drum Liquids
T = Tissue
WI = Wipe
L = Liquid
V = Vegetation
X = Other

LABORATORY SECTION	Received By	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By / Date/Time

WCH-EE-011

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-114-139

Page 1 of 1

Collector: Kevin Crumms

Company Contact: JOAN KESSNER

Telephone No.: 375-4685

Project Coordinator: KESSNER, JH

Price Code: 7K

Data Turnaround: 7 Days ~~45 days~~

Project Designation: Columbia River Component of the RCBRA - Pore Water - Ph

Sampling Location: DUPLICATE 100N - T100N 3B

SAF No.: RC-114

Ice Chest No.: N/A

Field Logbook No.: EL-1639-1

COA: BFSCRC6520

Method of Shipment: FEDEX

Offsite Property No.: N/A

Bill of Lading/Air Bill No.: 7932 1289 7588

Shipped To: LIFELINE SERVICES (LOUISVILLE)

POSSIBLE SAMPLE HAZARDS/REMARKS

Radioactive near or below background levels

Special Handling and/or Storage

N/A

Preservation	HCl to pH <2 Cool 4C
Type of Container	[illegible]
No. of Container(s)	1
Volume	1000mL
SAMPLE ANALYSIS	EPH Diesel Range WTPH-D

Sample No.	Matrix *	Sample Date	Sample Time	EPH Diesel Range WTPH-D
J19420	WATER	11/9/09	1720	X

CHAIN OF POSSESSION

Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Kevin Crumms	11/9/09 1845	EAS Ref	11/9/09 1845
EAS LOCKED STORAGE	11/10/09 [illegible]	EAS LOCKED STORAGE	11/10/09 [illegible]
EAS LOCKED STORAGE	11/12/09 1000	SHANNAN JOHNSON	11/12/09 1000
SHANNAN JOHNSON	11/12/09 1015	FEDX	
	11/13/09 1000		11/13/09 1000

SPECIAL INSTRUCTIONS

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment [illegible].

Matrix *

[illegible]

LABORATORY SECTION: Received By

Title

Date/Time

FINAL SAMPLE DISPOSITION: Disposal Method

Disposed By

Date/Time

WCH-EE-051

Appendix 5

Data Validation Supporting Documentation

GC/MS ORGANIC DATA VALIDATION CHECKLIST

VALIDATION LEVEL	A	B	[✓ C]	D	E

PROJECT: RCBRA

DATA PACKAGE: K1833

VALIDATOR: ELR

LAB: LLI

DATE:

SDG: K1833

ANALYSES PERFORMED

SW-846 8260	[✓ 8015B]	SW-846 8260 (TCLP)	SW-846 8270		SW-846 8270 (TCLP)

SAMPLES/MATRIX

J193D1 J193D2 J193D3 J193D4 J193D5
J193D6 J195D1 J19420

1. DATA PACKAGE COMPLETENESS AND CASE NARRATIVE

Technical verification documentation present? .... Yes [✓ No] N/A

Comments:

2. INSTRUMENT TUNING AND CALIBRATION (Levels D and E)

GC/MS tuning/performance check acceptable? .... Yes No [✓ N/A]

Initial calibrations acceptable? .... Yes No [✓ N/A]

Continuing calibrations acceptable? .... Yes No [✓ N/A]

Standards traceable? .... Yes No [✓ N/A]

Standards expired? .... Yes No [✓ N/A]

Calculation check acceptable? .... Yes No [✓ N/A]

Comments:

GC/MS ORGANIC DATA VALIDATION CHECKLIST

3. BLANKS (Levels B, C, D, and E)

Calibration blanks analyzed? (Levels D, E) .... Yes No [✓ N/A]
Calibration blank results acceptable? (Levels D, E) .... Yes No [✓ N/A]
Laboratory blanks analyzed? .... [✓ Yes] No N/A
Laboratory blank results acceptable? .... [✓ Yes] No N/A
Field/trip blanks analyzed? (Levels C, D, E) .... Yes [✓ No] N/A
Field/trip blank results acceptable? (Levels C, D, E) .... Yes No [✓ N/A]
Transcription/calculation errors? (Levels D, E) .... Yes No [✓ N/A]
Comments: No FB

4. ACCURACY (Levels C, D, and E)

Surrogates/system monitoring compounds analyzed? .... [✓ Yes] No N/A
Surrogate/system monitoring compound recoveries acceptable? .... [✓ Yes] No N/A
Surrogates traceable? (Levels D, E) .... Yes No [✓ N/A]
Surrogates expired? (Levels D, E) .... Yes No [✓ N/A]
MS/MSD samples analyzed? .... [✓ Yes] No N/A
MS/MSD results acceptable? .... Yes [✓ No] N/A
MS/MSD standards NIST traceable? (Levels D, E) .... Yes No [✓ N/A]
MS/MSD standards? (Levels D, E) .... Yes No [✓ N/A]
LCS/BSS samples analyzed? .... [✓ Yes] No N/A
LCS/BSS results acceptable? .... Yes [✓ No] N/A
Standards traceable? (Levels D, E) .... Yes No [✓ N/A]
Standards expired? (Levels D, E) .... Yes No [✓ N/A]
Transcription/calculation errors? (Levels D, E) .... Yes No [✓ N/A]
Performance audit sample(s) analyzed? .... Yes [✓ No] N/A
Performance audit sample results acceptable? .... Yes No [✓ N/A]
Comments: No PAS
[illegible] No MS, MSD or LCS – [illegible]

GC/MS ORGANIC DATA VALIDATION CHECKLIST

5. PRECISION (Levels C, D, and E)

MS/MSD samples analyzed? .... [✓ Yes] No N/A
MS/MSD RPD values acceptable? .... [✓ Yes] No N/A
MS/MSD standards NIST traceable? (Levels D, E) .... Yes No [✓ N/A]
MS/MSD standards expired? (Levels D, E) .... Yes No [✓ N/A]
Field duplicate RPD values acceptable? .... Yes No [✓ N/A]
Field split RPD values acceptable? .... Yes No [✓ N/A]
Transcription/calculation errors? (Levels D, E) .... Yes No [✓ N/A]
Comments:

6. SYSTEM PERFORMANCE (Levels D and E)

Internal standards analyzed? .... Yes No [✓ N/A]
Internal standard areas acceptable? .... Yes No [✓ N/A]
Internal standard retention times acceptable? .... Yes No [✓ N/A]
Standards traceable? .... Yes No [✓ N/A]
Standards expired? .... Yes No [✓ N/A]
Transcription/calculation errors? .... Yes No [✓ N/A]
Comments:

7. HOLDING TIMES (all levels)

Samples properly preserved? .... [✓ Yes] No N/A
Sample holding times acceptable? .... [✓ Yes] No N/A
Comments:

GC/MS ORGANIC DATA VALIDATION CHECKLIST

8. COMPOUND IDENTIFICATION, QUANTITATION, AND DETECTION LIMITS (all levels)

Compound identification acceptable? (Levels D, E) .... Yes No [✓ N/A]

Compound quantitation acceptable? (Levels D, E) .... Yes No [✓ N/A]

Results reported for all requested analyses? .... [✓ Yes] No N/A

Results supported in the raw data? (Levels D, E) .... Yes No [✓ N/A]

Samples properly prepared? (Levels D, E) .... Yes No [✓ N/A]

Laboratory properly identified and coded all TIC? (Levels D, E) .... Yes [✓ No] N/A

Detection limits meet RDL? .... Yes No [✓ N/A]

Transcription/calculation errors? (Levels D, E) .... Yes No [✓ N/A]

Comments: TPH III - out

9. SAMPLE CLEANUP (Levels D and E)

GPC cleanup performed? .... Yes No [✓ N/A]

GPC check performed? .... Yes No [✓ N/A]

GPC check recoveries acceptable? .... Yes No [✓ N/A]

GPC calibration performed? .... Yes No [✓ N/A]

GPC calibration check performed? .... Yes No [✓ N/A]

GPC calibration check retention times acceptable? .... Yes No [✓ N/A]

Check/calibration materials traceable? .... Yes No [✓ N/A]

Check/calibration materials Expired? .... Yes No [✓ N/A]

Analytical batch QC given similar cleanup? .... Yes No [✓ N/A]

Transcription/Calculation Errors? .... Yes No [✓ N/A]

Comments:

Appendix 6

Additional Documentation Requested by Client

Extractable Petroleum Hydrocarbons by SW846 8015 - Quality Control

Lionville Laboratory

Analyte	Result and Qualifiers	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch L911127 - SW 3520C									
Blank (L911127-BLK1)			Prepared: 11/13/2009 Analyzed: 11/19/2009						
Diesel Range Organics	100 U	100	ug/L						
Motor Oil	300 U	300	ug/L						
Surrogate: o-Terphenyl	*177*		*ug/L*	*200.00*		*88*	*55-130*		
LCS (L911127-BS1)			Prepared: 11/13/2009 Analyzed: 11/19/2009						
Diesel Range Organics	1390	100	ug/L	2000.0		69	60-130		
Surrogate: o-Terphenyl	*189*		*ug/L*	*200.00*		*94*	*55-130*		
LCS Dup (L911127-BSD1)			Prepared: 11/13/2009 Analyzed: 11/19/2009						
Diesel Range Organics	1550	100	ug/L	2000.0		78	60-130	11	40
Surrogate: o-Terphenyl	*216*		*ug/L*	*200.00*		*108*	*55-130*		

F.2.1.12 SDG K1926

SAF-RC-114
Columbia River Component of the RCBRA – Pore Water – Phase III
FINAL VALIDATION PACKAGE

COMPLETE COPY OF VALIDATION PACKAGE TO:

Kathy Wendt H4-21

COMMENTS:

SDG K1926 SAF-RC-114

Date: 12 April 2010
To: Washington Closure Hanford (technical representative)
From: ELR Consulting
Project: Columbia River Component of the RCBRA – Pore Water – Phase III
Subject: Wet Chemistry - Data Package No. K1926-LLI

INTRODUCTION

This memo presents the results of data validation on Data Package No. K1926 prepared by Lionville Laboratory Inc. (LLI). A list of samples validated along with the analyses reported and the method of analysis is provided in the following table.

Sample ID	Sample Date	Media	Validation	Date
J19JD7	1/29/10	Water	C	See note 1
J19JD8	1/29/10	Water	C	See note 1
J19JD9	1/30/10	Water	C	See note 1
J19JC7	1/31/10	Water	C	See note 1
J19HN9	1/31/10	Water	C	See note 1
J19HK0	1/31/10	Water	C	See note 1
J19F74	2/1/10	Water	C	See note 1
J19HW2	2/1/10	Water	C	See note 1

1 = IC anions by 300.0, nitrate/nitrite by 353.2, total organic carbon by 415.1 and total inorganic carbon by 415.1

Data validation was conducted in accordance with the Washington Closure Hanford (WCH) validation statement of work and the Remedial Investigation Work Plan for Hanford Site Releases to the Columbia River (DOE/RL-2008-11, Rev. 0, September 2008). Appendices 1 through 6 provide the following information as indicated below:

Appendix 1. Glossary of Data Reporting Qualifiers
Appendix 2. Summary of Data Qualification
Appendix 3. Qualified Data Summary and Annotated Laboratory Reports
Appendix 4. Laboratory Narrative and Chain-of-Custody Documentation
Appendix 5. Data Validation Supporting Documentation
Appendix 6. Additional Documentation Requested by Client

DATA QUALITY PARAMETERS

- **Holding Times & Sample Preservation**

Analytical holding times for metals are assessed to ascertain whether the holding time requirements were met by the laboratory. The holding time requirements are as follows: Samples must be analyzed within 28 days for total organic carbon, total inorganic carbon, nitrate/nitrite, chloride, fluoride, bromide and sulfate; and 48 hours for nitrate, nitrite and orthophosphate.

If holding times are exceeded, but not by greater than two times the limit, all associated sample results are qualified as estimates and flagged "J" for detects and "UJ" for non-detects. If holding times are exceeded by greater than two times the limit, all associated detectable sample results are qualified as estimates and flagged "J" and all non-detects are rejected and flagged "UR".

Due to the samples not being properly preserved (headspace in sample containers), all total organic and total inorganic carbon results were qualified as estimates and flagged "J".

Due to the holding time being exceeded by greater than twice the limit, all detected nitrate, nitrite and orthophosphate results in samples J19JD8, J19JD7 and J19JD9 were qualified as estimates and flagged "J".

Due to the holding time being exceeded by greater than twice the limit, all undetected nitrate, nitrite and orthophosphate results in samples J19JD8, J19JD7 and J19JD9 were qualified as rejected and flagged "R"

Due to the holding time being exceeded by less than twice the limit, all nitrate, nitrite and orthophosphate results in samples J19JC7, J19HN9, J19HK0, J19F74 and J19HW2 were qualified as estimates and flagged "J".

All other holding time and sample preservation results were acceptable.

- **Method Blanks**

Method Blanks

Method blank analyses are performed to determine the extent of laboratory contamination introduced through sampling, sample preparation and analysis. At least one acceptable method blank analysis must be conducted for every 20 samples. No contaminants should be present in the method blank. All blank results must fall below the contract required detection limit (CRQL) to be acceptable.

Due to method blank contamination, the total organic carbon results in samples J19HN9, J19HK0, J19F74 and J19HW2 were qualified as estimates and flagged "J".

All other method blank results were acceptable.

Field (Equipment) Blank

No field blanks were submitted for analysis.

Accuracy

Matrix Spike and Laboratory Control Sample

Matrix spike (MS) and laboratory control sample (LCS) analyses are used to assess the analytical accuracy of the reported data. The matrix spike is used to assess the effect of the matrix on the ability to accurately quantify sample concentrations. Recoveries must fall within the range of 80% to 120%. Samples with a recovery of less than 30% and a sample result below the IDL are rejected and flagged "UR". Samples with a recovery of 30% to 79% and a sample result less than the IDL are qualified "UJ". Samples with a recovery of greater than 120% or less than 80% and a sample result greater than the IDL are qualified as estimates and flagged "J". Finally, for samples with a recovery greater than 130% and a sample result less than the IDL, no qualification is required.

Due to a matrix spike recovery outside QC limits (73%), all nitrate/nitrite results were qualified as estimates and flagged "J".

Due to the lack of a matrix spike, all total inorganic carbon results were qualified as estimates and flagged "J".

Due to the lack of an LCS analysis, all total inorganic carbon results were qualified as estimates and flagged "J".

Due to the lack of a matrix spike analysis, the total organic carbon results in samples J19HN9, J19HK0, J19F74 and J19HW2 were qualified as estimates and flagged "J"

All other accuracy results were acceptable.

Precision

Laboratory Duplicate Samples

Analytical precision is expressed by the relative percent differences (RPD) between the recoveries of matrix spike duplicate (MSD) analyses performed on a sample in the analytical batch. Precision may alternatively be assessed using unspiked duplicate analyses performed on a sample in the analytical batch. If both sample and replicate activities (concentrations) are greater than five times the CRDL and the RPD is less than 20%, no qualification is required. If either activity (concentration) is less than five times the CRDL, the RPD control limit is less than or equal to two times the CRDL. If the RPD is outside the applicable control limit, associated results are qualified as estimated detects or estimated non-detects.

Due to an RPD outside QC limits (22%), all nitrate/nitrite results were qualified as estimates and flagged "J".

Due to the lack of a duplicate analysis, all total inorganic carbon were qualified as estimates and flagged "J".

Due to the lack of a duplicate analysis, the total organic carbon results in samples J19HN9, J19HK0, J19F74 and J19HW2 were qualified as estimates and flagged "J".

All other laboratory duplicate results were acceptable.

Field Duplicate

No field duplicates were submitted for analysis.

- **Analytical Detection Levels**

Reported analytical detection levels are compared against the required quantitation limits (RQLs) to ensure that laboratory detection levels meet the required criteria. All analytes met the RQL.

Completeness

Data package No. K1926 was submitted for validation and verified for completeness. Completeness is based on the percentage of data determined to be valid (i.e., not rejected). The completion percentage was 91%.

MAJOR DEFICIENCIES

The following major deficiency was noted:

- Due to the holding time being exceeded by greater than twice the limit, all undetected nitrate, nitrite and orthophosphate results in samples J19JD8, J19JD7 and J19JD9 were qualified as rejected and flagged "R".

Rejected data is unusable and should not be reported.

MINOR DEFICIENCIES

The following minor deficiency was noted:

- Due to the samples not being properly preserved (headspace in sample containers), all total organic and total inorganic carbon results were qualified as estimates and flagged "J".
- Due to the holding time being exceeded by greater than twice the limit, all detected nitrate, nitrite and orthophosphate results in samples J19JD8, J19JD7 and J19JD9 were qualified as estimates and flagged "J".

- Due to the holding time being exceeded by less than twice the limit, all nitrate, nitrite and orthophosphate results in samples J19JC7, J19HN9, J19HK0, J19F74 and J19HW2 were qualified as estimates and flagged "J".

- Due to a matrix spike recovery outside QC limits (73%), all nitrate/nitrite results were qualified as estimates and flagged "J".

- Due to the lack of a matrix spike, all total inorganic carbon results were qualified as estimates and flagged "J".

- Due to the lack of an LCS analysis, all total inorganic carbon results were qualified as estimates and flagged "J".

- Due to the lack of a matrix spike analysis, the total organic carbon results in samples J19HN9, J19HK0, J19F74 and J19HW2 were qualified as estimates and flagged "J".

- Due to an RPD outside QC limits (22%), all nitrate/nitrite results were qualified as estimates and flagged "J".

- Due to the lack of a duplicate analysis, all total inorganic carbon were qualified as estimates and flagged "J".

- Due to the lack of a duplicate analysis, the total organic carbon results in samples J19HN9, J19HK0, J19F74 and J19HW2 were qualified as estimates and flagged "J".

Data flagged "J" indicates that the associated concentration is an estimate, but under the WCH statement of work, the data may be usable for decision-making purposes. All other validated results are considered accurate within the standard error associated with the methods.

REFERENCES

Washington Closure Hanford Contract #S00W307A00 (March 2008), *Data Validation Services*, March 2008.

DOE/RL-2008-11, Rev.0, *Remedial Investigation Work Plan for Hanford Site Releases to the Columbia River*, September 2008.

Appendix 1

Glossary of Data Reporting Qualifiers

Qualifiers which may be applied by data validators in compliance with WCH validation SOW are as follows:

U - Indicates the compound or analyte was analyzed for and not detected in the sample. The value reported is the sample quantitation limit corrected for sample dilution and moisture content by the laboratory.

UJ - Indicates the compound or analyte was analyzed for and not detected in the sample. Due to a minor QC deficiency identified during the data validation, the associated quantitation limit is an estimate.

J - Indicates the compound or analyte was analyzed for and detected. Due to a minor QC deficiency identified during the data validation, the associated concentration is an estimate, but the data are usable for decision-making purposes.

BJ - Applied to inorganic analyses only. Indicates the analyte concentration was greater than the IDL but less than the CRDL and is considered an estimated value.

R - Indicates the compound or analyte was analyzed for, detected, and due to an identified major QC deficiency, the data are unusable.

UR - Indicates the compound or analyte was analyzed for and not detected in the sample. Additionally, the data is unusable due to an identified major QC deficiency.

NJ - Indicates presumptive evidence of a compound at an estimated value. The data may not be valid for some specific applications (i.e., usable for decision-making purposes).

N - Indicates presumptive evidence of a compound. The data may not be valid for some specific applications (i.e., usable for decision-making purposes).

Appendix 2

Summary of Data Qualification

WET CHEMISTRY DATA QUALIFICATION SUMMARY*

SDG: K1926	**REVIEWER: ELR**	**Project: RCBRA**	**PAGE 1 OF 1**
COMPOUND	QUALIFIER	SAMPLES AFFECTED	REASON
Total organic carbon Total inorganic carbon	J	All	Sample preservation (headspace in the sample container)
Nitrate	J	J19JD8, J19JD7	Hold time
Nitrate	UR	J19JD9	Hold time
Nitrite Orthophosphate	UR	J19JD8, J19JD7 J19JD9	Hold time
Nitrate Nitrite Orthophosphate	J	J19JC7, J19HN9 J19HK0, J19F74 J19HW2	Hold time
Nitrate/nitrite	J	All	MS recovery
Total inorganic carbon	J	All	No MS, LCS or duplicate analysis
Total organic carbon	J	J19HN9, J19HK0 J19F74, J19HW2	No MS or duplicate analysis
Nitrate/nitrite	J	All	RPD

* - The Qualified Data Summary Table includes laboratory applied "U" qualifiers not specifically identified here. The laboratory applied "U" qualifiers are included to minimize misinterpretation of results contained in the table.

Appendix 3

Qualified Data Summary and Annotated Laboratory Reports

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

WC-Hanford, Inc. 2620 Fermi Avenue Richland WA, 99354	Project: RC-114 Project Number: K1936 Project Manager: Joan Kessner	Reported: 03/08/2010 13:11

Wet Chemistry
Lionville Laboratory

4/11/10

Analyte	Result and Qualifier	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
J19JD8 (1002009-01) Water								
Bromide	0.25 U	0.25	mg/L	1	L002265	02/04/2010	02/04/2010	EPA 300.0 (1993)
Chloride	5.03	0.25	mg/L	1	L002265	02/04/2010	02/04/2010	EPA 300.0 (1993)
Fluoride	0.25 U	0.25	mg/L	1	L002265	02/04/2010	02/04/2010	EPA 300.0 (1993)
Nitrate	6.22 J	0.25	mg/L	1	L002265	02/04/2010	02/04/2010	EPA 300.0 (1993)
Nitrite	0.25 U R	0.25	mg/L	1	L002265	02/04/2010	02/04/2010	EPA 300.0 (1993)
Orthophosphate	0.25 U R	0.25	mg/L	1	L002265	02/04/2010	02/04/2010	EPA 300.0 (1993)
Sulfate	17.1 D	1.25	mg/L	5	L002265	02/04/2010	02/04/2010	EPA 300.0 (1993)
Nitrate/Nitrite as N	1.09 D J	0.20	mg/L	10	L002223	02/17/2010	02/17/2010	EPA 353.2
Total Inorganic Carbon	18.9 J	0.50	mg/L	1	L002250	02/18/2010	02/18/2010	EPA 415.1
Total Organic Carbon	1.53 J	0.50	mg/L	1	L002250	02/18/2010	02/18/2010	EPA 415.1
J19JD7 (1002009-03) Water								
Bromide	0.25 U	0.25	mg/L	1	L002265	02/04/2010	02/04/2010	EPA 300.0 (1993)
Chloride	13.3 D	1.25	mg/L	5	L002265	02/04/2010	02/04/2010	EPA 300.0 (1993)
Fluoride	0.07 J	0.25	mg/L	1	L002265	02/04/2010	02/04/2010	EPA 300.0 (1993)
Nitrate	12.7 D J	1.25	mg/L	5	L002265	02/04/2010	02/04/2010	EPA 300.0 (1993)
Nitrite	0.25 U R	0.25	mg/L	1	L002265	02/04/2010	02/04/2010	EPA 300.0 (1993)
Orthophosphate	0.25 U R	0.25	mg/L	1	L002265	02/04/2010	02/04/2010	EPA 300.0 (1993)
Sulfate	34.8 D	1.25	mg/L	5	L002265	02/04/2010	02/04/2010	EPA 300.0 (1993)
Nitrate/Nitrite as N	3.01 D J	0.20	mg/L	10	L002223	02/17/2010	02/17/2010	EPA 353.2
Total Inorganic Carbon	22.1 J	0.50	mg/L	1	L002250	02/18/2010	02/18/2010	EPA 415.1
Total Organic Carbon	0.78 J	0.50	mg/L	1	L002250	02/18/2010	02/18/2010	EPA 415.1
J19JD9 (1002009-05) Water								
Bromide	0.25 U	0.25	mg/L	1	L002265	02/04/2010	02/04/2010	EPA 300.0 (1993)
Chloride	1.35	0.25	mg/L	1	L002265	02/04/2010	02/04/2010	EPA 300.0 (1993)

208 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

WC-Hanford, Inc. 2620 Fermi Avenue Richland WA, 99354	Project: RC-114 Project Number: K1976 Project Manager: Joan Kessner	**Reported:** 03/08/2010 13:11

Wet Chemistry
Lionville Laboratory

4/1/10

Analyte	Result and Qualifier	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
J19JD9 (1002009-05) Water								
Fluoride	0.04 B	0.25	mg/L	1	L002265	02/04/2010	02/04/2010	EPA 300.0 (1993)
Nitrite	0.25 U R	0.25	mg/L	1	L002265	02/04/2010	02/04/2010	EPA 300.0 (1993)
Nitrite	0.25 U R	0.25	mg/L	1	L002265	02/04/2010	02/04/2010	EPA 300.0 (1993)
Orthophosphate	0.25 U R	0.25	mg/L	1	L002265	02/04/2010	02/04/2010	EPA 300.0 (1993)
Sulfate	10.0 D	0.50	mg/L	2	L002265	02/04/2010	02/04/2010	EPA 300.0 (1993)
Nitrate/Nitrite as N	0.16 J	0.02	mg/L	1	L002223	02/17/2010	02/17/2010	EPA 353.2
Total Inorganic Carbon	24.7 J	0.50	mg/L	1	L002250	02/18/2010	02/18/2010	EPA 415.1
Total Organic Carbon	1.34 J	0.50	mg/L	1	L002250	02/18/2010	02/18/2010	EPA 415.1
J19JC7 (1002009-07) Water								
Bromide	0.25 U	0.25	mg/L	1	L002265	02/04/2010	02/04/2010	EPA 300.0 (1993)
Chloride	4.31	0.25	mg/L	1	L002265	02/04/2010	02/04/2010	EPA 300.0 (1993)
Fluoride	0.04 B	0.25	mg/L	1	L002265	02/04/2010	02/04/2010	EPA 300.0 (1993)
Nitrate	7.44 J	0.25	mg/L	1	L002265	02/04/2010	02/04/2010	EPA 300.0 (1993)
Nitrite	0.25 U J	0.25	mg/L	1	L002265	02/04/2010	02/04/2010	EPA 300.0 (1993)
Orthophosphate	0.25 U J	0.25	mg/L	1	L002265	02/04/2010	02/04/2010	EPA 300.0 (1993)
Sulfate	18.7 D	1.25	mg/L	5	L002265	02/04/2010	02/04/2010	EPA 300.0 (1993)
Nitrate/Nitrite as N	1.53 D J	0.20	mg/L	10	L002223	02/17/2010	02/17/2010	EPA 353.2
Total Inorganic Carbon	23.2 J	0.50	mg/L	1	L002250	02/18/2010	02/18/2010	EPA 415.1
Total Organic Carbon	1.18 J	0.50	mg/L	1	L002250	02/18/2010	02/18/2010	EPA 415.1
J19HN9 (1002009-09) Water								
Bromide	0.25 U	0.25	mg/L	1	L002265	02/04/2010	02/04/2010	EPA 300.0 (1993)
Chloride	10.5 D	0.50	mg/L	2	L002265	02/04/2010	02/04/2010	EPA 300.0 (1993)
Fluoride	0.16 B	0.25	mg/L	1	L002265	02/04/2010	02/04/2010	EPA 300.0 (1993)
Nitrate	11.4 D J	0.50	mg/L	2	L002265	02/04/2010	02/04/2010	EPA 300.0 (1993)
Nitrite	0.25 U J	0.25	mg/L	1	L002265	02/04/2010	02/04/2010	EPA 300.0 (1993)
Orthophosphate	0.25 U J	0.25	mg/L	1	L002265	02/04/2010	02/04/2010	EPA 300.0 (1993)

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

WC-Hanford, Inc. 2620 Fermi Avenue Richland WA, 99354	Project: RCV114 Project Number: K1926 Project Manager: Joan Kessner	**Reported:** 03/08/2010 13:11

Wet Chemistry
Lionville Laboratory

4/11/10

Analyte	Result and Qualifier	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
J19HN9 (1002009-09) Water								
Sulfate	67.1 D	2.50	mg/L	10	L002265	02/04/2010	02/04/2010	EPA 300.0 (1993)
Nitrate/Nitrite as N	2.32 D J	0.20	mg/L	10	L002223	02/17/2010	02/17/2010	EPA 353.2
Total Inorganic Carbon	21.3 J	0.50	mg/L	1	L002291	02/22/2010	02/22/2010	EPA 415.1
Total Organic Carbon	1.03 J	0.50	mg/L	1	L002291	02/22/2010	02/22/2010	EPA 415.1
J19HK0 (1002009-11) Water								
Bromide	0.25 U	0.25	mg/L	1	L002265	02/04/2010	02/04/2010	EPA 300.0 (1993)
Chloride	10.6 D	0.50	mg/L	2	L002265	02/04/2010	02/04/2010	EPA 300.0 (1993)
Fluoride	0.14 B	0.25	mg/L	1	L002265	02/04/2010	02/04/2010	EPA 300.0 (1993)
Nitrate	10.9 D J	0.50	mg/L	2	L002265	02/04/2010	02/04/2010	EPA 300.0 (1993)
Nitrite	0.25 U J	0.25	mg/L	1	L002265	02/04/2010	02/04/2010	EPA 300.0 (1993)
Orthophosphate	0.25 U J	0.25	mg/L	1	L002265	02/04/2010	02/04/2010	EPA 300.0 (1993)
Sulfate	67.1 D	2.50	mg/L	10	L002265	02/04/2010	02/04/2010	EPA 300.0 (1993)
Nitrate/Nitrite as N	2.30 D J	0.20	mg/L	10	L002223	02/17/2010	02/17/2010	EPA 353.2
Total Inorganic Carbon	20.3 J	0.50	mg/L	1	L002291	02/22/2010	02/22/2010	EPA 415.1
Total Organic Carbon	0.96 J	0.50	mg/L	1	L002291	02/22/2010	02/22/2010	EPA 415.1
J19H74 (1002009-13) Water								
Bromide	0.25 U	0.25	mg/L	1	L002265	02/04/2010	02/04/2010	EPA 300.0 (1993)
Chloride	17.4	0.25	mg/L	1	L002265	02/04/2010	02/04/2010	EPA 300.0 (1993)
Fluoride	0.17	0.25	mg/L	1	L002265	02/04/2010	02/04/2010	EPA 300.0 (1993)
Nitrate	0.61 J	0.25	mg/L	1	L002265	02/04/2010	02/04/2010	EPA 300.0 (1993)
Nitrite	0.25 U J	0.25	mg/L	1	L002265	02/04/2010	02/04/2010	EPA 300.0 (1993)
Orthophosphate	0.25 U J	0.25	mg/L	1	L002265	02/04/2010	02/04/2010	EPA 300.0 (1993)
Sulfate	60.6 D	2.50	mg/L	10	L002265	02/04/2010	02/04/2010	EPA 300.0 (1993)
Nitrate/Nitrite as N	0.19 J	0.02	mg/L	1	L002223	02/17/2010	02/17/2010	EPA 353.2
Total Inorganic Carbon	34.5 J	0.50	mg/L	1	L002291	02/22/2010	02/22/2010	EPA 415.1
Total Organic Carbon	1.54 J	0.50	mg/L	1	L002291	02/22/2010	02/22/2010	EPA 415.1

WC Hanford, Inc	Project: RC 114	
2620 Fermi Avenue	Project Number: K1926	**Reported:**
Richland WA, 99354	Project Manager: Joan Kessner	03/08/2010 13:11

Wet Chemistry
Lionville Laboratory

4/16/10

Analyte	Result and Qualifier	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
J19HW2 (1002009-15) Water								
Bromide	0.25 U	0.25	mg/L	1	L002265	02/04/2010	02/04/2010	EPA 300.0 (1993)
Chloride	16.1 D	1.25	mg/L	5	L002265	02/04/2010	02/04/2010	EPA 300.0 (1993)
Fluoride	0.17 B	0.25	mg/L	1	L002265	02/04/2010	02/04/2010	EPA 300.0 (1993)
Nitrate	19.1 D J	1.25	mg/L	5	L002265	02/04/2010	02/04/2010	EPA 300.0 (1993)
Nitrite	0.25 U J	0.25	mg/L	1	L002265	02/04/2010	02/04/2010	EPA 300.0 (1993)
Orthophosphate	0.25 U J	0.25	mg/L	1	L002265	02/04/2010	02/04/2010	EPA 300.0 (1993)
Sulfate	40.5 D	1.25	mg/L	5	L002265	02/04/2010	02/04/2010	EPA 300.0 (1993)
Nitrate/Nitrite as N	4.92 D J	0.20	mg/L	10	L002221	02/17/2010	02/17/2010	EPA 353.2
Total Inorganic Carbon	28.1 J	0.50	mg/L	1	L002291	02/22/2010	02/22/2010	EPA 415.1
Total Organic Carbon	1.24 J	0.50	mg/L	1	L002291	02/22/2010	02/22/2010	EPA 415.1

Appendix 4

Laboratory Narrative and Chain-of-Custody Documentation

204 Welsh Pool Road
Exton, Pennsylvania 19341
Phone (610) 280-3000
Fax (610) 280-3041

Case Narrative

Client: WC-HANFORD RC/114 K1926
LVL#: 1002009

W.O.#: 60049-001-001
Date Received: 02-03-10

INORGANIC NARRATIVE

1. This narrative covers the analyses of 8 water samples.

2. The samples were prepared and analyzed in accordance with the methods indicated on the data summary report.

   Lionville Lab (LvL) is NELAP accredited by the State of Pennsylvania. For a complete list of accrediting authorities and the corresponding analytes/methods, please contact your Project Manager. LvL certifies that all test results meet the requirements of NELAC with any exception noted in the following statements.

3. Sample holding times as required by the method and/or contract were met with the exception of Nitrate, Nitrite and Orthophosphate.

4. The results presented in this report are derived from samples that met LvL's sample acceptance policy with the exception of Nitrate, Nitrite, Orhophosphate, Total Organic Carbon (TOC) and Total Inorganic Carbon (TIC) as noted on the Sample Receipt Checklist.

5. The method blanks were within the method criteria.

6. The Laboratory Control Samples (LCS) were within the laboratory control limits.

7. The matrix spike recoveries for Nitrate Nitrite was out at 73%; recoveries for TOC, Fluoride, Chloride, Nitrite, Nitrate, Orthophosphate and Sulfate were within the 75-125% control limits.

8. The replicate analyses were for Nitrate Nitrite was out at 22%. TOC, Fluoride, Chloride, Nitrite, Nitrate, Orthophosphate and Sulfate within the 20% Relative Percent Difference (RPD) control limit.

9. I certify that this sample data package is in compliance with SOW requirements, both technically and for completeness, other than the conditions detailed above. Release of the data contained in this hard copy package has been authorized by the Laboratory Manager or a designee, as verified by the following signature.

by

Iain Daniels
Laboratory Manager
Lionville Laboratory

3/11/10
Date

njpv02497

Lionville Laboratory Incorporated

SAMPLE RECEIPT CHECKLIST (SRC)

Client/PM: WC Hanford
Project/SAF/SOW/Release #: [illegible]
Date: [illegible]

LvLI Batch #: [illegible]
Sample Custodian: [illegible]

NOTE: EXPLAIN ALL DISCREPANCIES

1. Samples Hand Delivered or [✓ Shipped]? Carrier: FedEx Airbill #: [illegible]

2. Custody Seals on coolers or shipping containers intact, signed & dated? ☑ Yes ☐ No ☐ No Seals

3. Outside of coolers or shipping containers are free from damage? ☐ Yes ☑ No Comments: * hole - bottom of cooler

4. All expected paperwork received (coc & other client specific information) sealed in plastic bag and easily accessible? ☑ Yes ☐ No

5. Samples received [✓ cooled] or ambient? Temp [illegible] °C Cooler # [illegible]

How was the temperature taken? ☑ IR ☐ Temp. Blank ☐ Other (Specify): [illegible]

Is the Temp Criteria met for these samples? (Hg in soils @ 4°C) ☑ Yes ☐ No

6. Custody seals on sample containers intact, signed and dated? ☑ Yes ☐ No ☐ No Seals

7. COC (Client & LvLI) signed & dated? ☑ Yes ☐ No

8. Sample containers are intact? ☑ Yes ☐ No

9. All samples on COC received? ☑ Yes ☐ No
All samples received on COC? ☑ Yes ☐ No

10. All sample label information matches COC? ☑ Yes ☐ No

11. Samples properly preserved? (If #5 is no, then this is no.) ☑ Yes ☐ No

12. Samples received within hold times? ☐ Yes ☑ No *
Short holds taken to wet lab? ☑ Yes ☐ No ☐ N/A

* J1M0D8, J1M0D7, J1M0[illegible] J1M0C7, J1M0H4 [illegible] NO2, NO3, PO4 past HT

13. VOA, TOC, TOX free of headspace? ☑ Yes ☐ No [illegible] ☐ N/A

14. QC stickers placed on bottles designated by client? ☐ Yes ☐ No ☑ N/A

15. Shipment meets LvLI Sample Acceptance Policy? (Identify all bottles that do not meet the policy, which is on the reverse of this page.) ☐ Yes ☐ No

16. Project Manager contacted concerning any discrepancies? ☐ Yes ☐ No ☐ N/A
Person Contacted ______ Date ______

LvLI

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-114-422

Page 1 of 1

Collector: R Corbett

Company Contact: JOAN KESSNER

Telephone No.: 375-4688

Project Coordinator: KESSNER, JH

Price Code: 7C

Data Turnaround: 15 Days

Project Designation: Columbia River Component of the RCBRA - Pore Water - Ph

Sampling Location: 100-H J100444

SAF No.: RC-114

Ice Chest No.: ETC-96-058

Field Logbook No.: EL-1645-01

COA: RESCRC4531

Method of Shipment: FED EX

Shipped To: [illegible] SERVICES - (LIONVILLE)

Offsite Property No.: N/A

Bill of Lading/Air Bill No.: 7983 5655 8248

POSSIBLE SAMPLE HAZARDS/REMARKS
N/A

Special Handling and/or Storage
N/A

000018

Preservation	HNO3 to pH <2	Cool 4C	[illegible]	Cool 4C	HNO3 to pH <2
Type of Container	G/P	P	aG/P	G	G/P
No. of Container(s)	1	1	1	1	1
Volume	1000mL	1000mL	1000mL	500mL	500mL
SAMPLE ANALYSIS	See item (1) in Special Instructions	See item (2) in Special Instructions	[illegible]	[illegible]	See item (3) in Special Instructions

Sample No.	Matrix *	Sample Date	Sample Time					
J19LD8	WATER	01-29-10	14:49	X	X	X	X	
J19LF2	WATER	01-29-10	14:49					X

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From: R Corbett R Corbett	Date/Time: 01-29-10 1741	Received By/Stored In: [illegible] EASREF E	Date/Time: 01-29-10 1741
Relinquished By/Removed From: CASREF E	Date/Time: 2/4/10 1045	Received By/Stored In: SHANNAN JOHNSON	Date/Time: 2/4/10 1045
Relinquished By/Removed From: SHANNAN JOHNSON	Date/Time: 2/4/10 1145	Received By/Stored In: FDX	Date/Time:
Relinquished By/Removed From:	Date/Time: 2-5-10/0955	Received By/Stored In: D Smith / D Smith	Date/Time: 2-5-10/0955
Relinquished By/Removed From:	Date/Time:	Received By/Stored In:	Date/Time:
Relinquished By/Removed From:	Date/Time:	Received By/Stored In:	Date/Time:

SPECIAL INSTRUCTIONS

(1) ICP Metals - 6010TR (Clean List) (Aluminum, Antimony, Arsenic, Barium, Beryllium, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Magnesium, Manganese, Nickel, Potassium, Selenium, Silver, Sodium, Vanadium, Zinc); Mercury - 7470 - CVAA; (2) IC Anions - 9056 (Bromide, Chloride, Fluoride, Nitrate, Nitrite, Phosphate, Sulfate); (3) FILTERED ICP Metals - 6010TR (Clean List) (Aluminum, Antimony, Arsenic, Barium, Beryllium, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Magnesium, Manganese, Nickel, Potassium, Selenium, Silver, Sodium, Thallium, Vanadium, Zinc); FILTERED Mercury - 7470 - CVAA

Sampler unavailable to remove samples
to a controlled storage. Shipper removed
samples from storage location taking custody
of samples for shipment to lab.

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-114-421

Page 1 of 1

Collector: Sam Gilles

Company Contact: JOAN KESSNER

Telephone No.: 373-4688

Project Coordinator: KESSNER, JH

Price Code: 7C

Data Turnaround: 15 Days

Project Designation: [illegible]

Sampling Location: 100-H 100 HZA

SAF No.: RC-114

Ice Chest No.: [illegible]

Field Logbook No.: EL-1645 EL1645

COA: [illegible]

Method of Shipment: FEDEX

Shipped To: EBERLINE SERVICES (LIONVILLE)

Offsite Property No.: N/A

Bill of Lading/Air Bill No.: 798356558248

POSSIBLE SAMPLE HAZARDS/REMARKS

N/A

Special Handling and/or Storage

N/A

000019

Preservation	[illegible]	Cool 4C	[illegible]	[illegible]	[illegible]
Type of Container	G/P	P	G/P	[illegible]	G/P
No. of Container(s)	1	1	1	1	1
Volume	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
SAMPLE ANALYSIS	See item (1) in Special Instructions	See item (2) in Special Instructions	[illegible]	[illegible]	See item (3) in Special Instructions

Sample No.	Matrix *	Sample Date	Sample Time					
[illegible]	WATER	1-29-10	15 30	X	X	X	X	
[illegible]	WATER	1-29-10	15 30					X

CHAIN OF POSSESSION	Date/Time	Sign/Print Names	Date/Time
Relinquished By/Removed From: Sam Gilles S. Gilles	1-29-10/18:16	Received By/Stored In: CAS REF E S. Gilles	1-29-10/18:16
Relinquished By/Removed From: CAS REF ES	2/2/10	Received By/Stored In: SHANNAN JOHNSON	2/2/10 1145
Relinquished By/Removed From: SHANNAN JOHNSON	2/2/10 1[illegible]	Received By/Stored In: FDX	
Relinquished By/Removed From: FedEx	2-3-10 0955	Received By/Stored In: Donna Smith	2-3-10 0955
Relinquished By/Removed From:	Date/Time	Received By/Stored In:	Date/Time
Relinquished By/Removed From:	Date/Time	Received By/Stored In:	Date/Time

SPECIAL INSTRUCTIONS

(1) ICP Metals - 6010 TAL (Short List) (Aluminum, Antimony, Arsenic, Barium, Beryllium, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Magnesium, Manganese, Nickel, Potassium, Selenium, Silver, Sodium, Thallium, Vanadium, Zinc); Mercury - 7470 - CVAA
(2) IC Anions - 300.0 (Bromide, Chloride, Fluoride, Nitrate, Nitrite, Phosphate, Sulfate)
(3) FILTERED ICP Metals - 6010 TAL (Short List) (Aluminum, Antimony, Arsenic, Barium, Beryllium, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Magnesium, Manganese, Nickel, Potassium, Selenium, Silver, Sodium, Thallium, Vanadium, Zinc); FILTERED Mercury - 7470 - CVAA

Shipper [illegible] to [illegible] samples from controlled storage. Shipper removed samples from storage location taking custody. [illegible] for shipment to lab.

Matrix *

S = Soil
SE = Sediment
SO = Solid
SL = Sludge
W = Water
O = Oil
A = Air
DS = Drum Solids
DL = Drum Liquids
T = Tissue
WI = Wipe
L = Liquid
V = Vegetation
X = Other

LABORATORY SECTION

Received By | Title | Date/Time

FINAL SAMPLE DISPOSITION

Disposal Method | Disposed By | Date/Time

WCH-EE-011

Washington Closure Hanford	**CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST**	RC-114-423	Page 1 of 1
Collector: Sam Gilles	Company Contact: JOAN KESSNER Telephone No.: 375-4688	Project Coordinator: KESSNER, JH	Price Code: 7C Data Turnaround: 15 Days
Project Designation: [illegible] River Component of the RCBRA - Pore Water - Ph	Sampling Location: [illegible] 100 H4-3	SAF No.: RC-114	
Ice Chest No.: ELR-96 WS	Field Logbook No.: EL-1095-01 COA: RESRC6520	Method of Shipment: FEDEX	
Shipped To: [illegible] SERVICES [illegible] (KNOXVILLE)	Offsite Property No.: N/A	Bill of Lading/Air Bill No.: 7483 5655 8248	

POSSIBLE SAMPLE HAZARDS/REMARKS
N/A

Special Handling and/or Storage
N/A

Preservation	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Type of Container	G/P	P	G/P	G	G/P
No. of Container(s)	1	1	1	1	1
Volume	1gal.	1gal.	Stand.	Stand.	Stand.
SAMPLE ANALYSIS	See item (1) in Special Instructions	See item (2) in Special Instructions	[illegible]	[illegible]	See item (3) in Special Instructions

Sample No.	Matrix *	Sample Date	Sample Time					
J19H09	WATER	1-30-10	15:45	X	X	X	X	
J19H03	WATER	1-30-10	15:45					X

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Sam Gilles	1-30-10/18:50	CAS REF E	1-30-10/18:50
CAS REF ES	2/2/10 105	SHANNAN JOHNSON	2/2/10 105
SHANNAN JOHNSON	2/2/10 105	FDX	
	2-3-10 10:55	Dana Smith	2-3-10/10:55

SPECIAL INSTRUCTIONS

(1) ICP Metals - 6010TR (Aluminum, Antimony, Arsenic, Barium, Beryllium, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Magnesium, Manganese, Nickel, Potassium, Selenium, Silver, Sodium, Uranium, Vanadium, Zinc); Mercury - 7470 - (CV)
(2) IC Anions - 300.0 (Bromide, Chloride, Fluoride, Nitrogen in Nitrate, Phosphate, Sulfate)
(3) FILTERED ICP Metals - 6010TR (Low Level) (Aluminum, Antimony, Arsenic, Barium, Beryllium, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Magnesium, Manganese, Nickel, Potassium, Selenium, Silver, Sodium, Uranium, Vanadium, Zinc) [illegible]; Mercury - 7470 - (CV)

Sample [illegible] unavailable to remove samples
from controlled storage. Shipper removed
samples from storage location using [illegible]
of [illegible]

Matrix *
S = Soil
SE = Sediment
SO = Solid
SL = Sludge
W = Water
O = Oil
A = Air
DS = Drum Solids
DL = Drum Liquids
T = Tissue
WI = Wipe
L = Liquid
V = Vegetation
X = Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-114-419

Collector: Sam Gilbo	Company Contact: JEAN KESSNER, Telephone No. 375-[illegible]
Project Designation: [illegible]	Sampling Location: TOOK 1C
Ice Chest No.: EKT 96 058	Field Logbook No.: [illegible]
Shipped To: [illegible]	COA: [illegible]
Offsite Property No.: N/A	Project Coordinator: KESSNER, JH
SAF No.: RC-114	Price Code: 7C
Data Turnaround: 15 Days	Method of Shipment: FEDEX
Bill of Lading/Air Bill No.: 7983 [illegible] 8248	

POSSIBLE SAMPLE HAZARDS/REMARKS

N/A

Special Handling and/or Storage

N/A

000021

Preservation	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Type of Container	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
No. of Container(s)	1	[illegible]	1	1	1
Volume	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
SAMPLE ANALYSIS	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

Sample No.	Matrix *	Sample Date	Sample Time					
J19C07	WATER	1-31-10	1600	X	X	X	X	
J19C08	WATER	1-31-10	1600					X

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From: Sam Gilbo, 1-31-10 / 2004	Received By/Stored In: [illegible] 1-31-10 / 2004
Relinquished By/Removed From: [illegible] 2/1/10 1615	Received By/Stored In: SHANNAN JOHNSON 2/1/10 1615
Relinquished By/Removed From: SHANNAN JOHNSON 2/1/10 1615	Received By/Stored In: FDX
Relinquished By/Removed From: 2-3-10/0955	Received By/Stored In: Dona Smith, 2-3-10/0955
Relinquished By/Removed From: Date/Time	Received By/Stored In: Date/Time
Relinquished By/Removed From: Date/Time	Received By/Stored In: Date/Time

SPECIAL INSTRUCTIONS

(1) ICP Metals - 6010 TAL (Short List) {Aluminum, Antimony, Arsenic, Barium, Beryllium, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Magnesium, Manganese, Nickel, Potassium, Selenium, Silver, Sodium, Uranium, Vanadium, Zinc}; Mercury - 7470 - (CV)
(2) IC Anions - 9056 {Bromide, Chloride, Fluoride, Nitrate, Nitrite, Phosphate, Sulfate}
(3) FILTERED ICP Metals - 6010 TAL (Short List) {Aluminum, Antimony, Arsenic, Barium, Beryllium, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Magnesium, Manganese, Nickel, Potassium, Selenium, Silver, Sodium, Uranium, Vanadium, Zinc}; FILTERED Mercury - 7470 - (CV)

Sample: unavailable to remove samples from controlled storage. Shipper removed samples from storage location [illegible]

Matrix *: [illegible]

LABORATORY SECTION — Received By: Title: Date/Time:

FINAL SAMPLE DISPOSITION — Disposal Method: Disposed By: Date/Time:

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-114-396

Page 1 of 1

Collector Sari Gilbo	Company Contact [illegible] KESSNER	Telephone No. [illegible]-4658	Project Coordinator KESSNER, [illegible]
Project Designation [illegible]	Sampling Location 100-K 100K 24		SAF No. [illegible]
Ice Chest No. [illegible]-916 UB	Field Logbook No. [illegible]-1645-05	COA [illegible]	Method of Shipment FEDEX
Shipped To [illegible] (Eberline)	Offsite Property No. N/A		Bill of Lading/Air Bill No. 4983 5655 8248

Price Code 7C

Data Turnaround 15 Days

POSSIBLE SAMPLE HAZARDS/REMARKS

[illegible]

Special Handling and/or Storage

[illegible]

2200010

SAMPLE ANALYSIS

		Preservation	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
		Type of Container	[illegible]	P	[illegible]	[illegible]	[illegible]
		No. of Container(s)	[illegible]	1	1	[illegible]	1
		Volume	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
			See item (1) in Special Instructions	See item (2) in Special Instructions	[illegible]	[illegible]	See item (3) in Special Instructions

Sample No.	Matrix *	Sample Date	Sample Time					
[illegible]	WATER	1-31-10	17:30	X	X	X	X	
[illegible]	WATER	1-31-10	17:30					X

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Sari Gilbo	1-31-10/2004	EASLEE	1-31-10/2004
EASLEE SJ	2/2/10 1105	SHANNAN JOHNSON	2/2/10 1105
SHANNAN JOHNSON	2/2/10 1105	FOX	
[illegible]	2-3-10/0955	[illegible] / Dona Smith	2-3-10/0955

SPECIAL INSTRUCTIONS

(1) ICP Metals - 6010 (TAL) [illegible] (Aluminum, Antimony, Arsenic, Barium, Beryllium, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Magnesium, Manganese, Nickel, Potassium, Selenium, Silver, Sodium, Thallium, Vanadium, Zinc); Mercury - 7470 - [illegible]

(2) IC Anions - 300.0 (Bromide, Chloride, Fluoride, Nitrate, Nitrite, Phosphate, Sulfate)

(3) FILTERED ICP Metals - 6010 (TAL) [illegible] (Aluminum, Antimony, Arsenic, Barium, Beryllium, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Magnesium, Manganese, Nickel, Potassium, Selenium, Silver, Sodium, Thallium, Vanadium, Zinc); FILTERED Mercury - 7470 - [illegible]

[illegible]

Sampler unavailable to receive samples
from controlled storage. Shipper removed
sample from storage location [illegible]

Matrix *

[illegible]

LABORATORY SECTION	Received By
FINAL SAMPLE DISPOSITION	Disposal Method

Title

Date/Time

Disposed By

Date/Time

[illegible]

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-114-394 | [illegible]

Collector [illegible]	Company Contact KIMM KESSNER [illegible]	Telephone No. 375 4688	Project Coordinator KESSNER, [illegible]
Project Designation [illegible]	Sampling Location [illegible] J100K24 DUP		SAF No. [illegible]
Ice Chest No. ERC-96 [illegible]	Field Logbook No. [illegible]	[illegible]	Method of Shipment FEDEX
Shipped To [illegible]	Offsite Property No. N/A		Bill of Lading/Air Bill No. 7983 5655 8248

Price Code 7C

Data Turnaround 15 Days

POSSIBLE SAMPLE HAZARDS/REMARKS
N/A

Special Handling and/or Storage
N/A

	Preservation	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]							
	Type of Container	G/P	P	G/P	G	G/P							
	No. of Container(s)		1	1	1	1							
	Volume	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]							
SAMPLE ANALYSIS		[illegible]	[illegible]	[illegible]	[illegible]	[illegible]							

Sample No.	Matrix *	Sample Date	Sample Time										
[illegible]	WATER	1-31-10	17:30	X	X	X	X						
[illegible]	WATER	1-31-10	17:30					X					

CHAIN OF POSSESSION	Date/Time	Sign/Print Names	Date/Time
Relinquished By/Removed From [illegible]	1/31/10/ 2004	Received By/Stored In EAS [illegible]	1/31/10/ 2004
Relinquished By/Removed From EAS REF [illegible]	2/2/10 [illegible]	Received By/Stored In [illegible] SHANNAN JOHNSON	2/2/10 [illegible]
Relinquished By/Removed From SHANNAN JOHNSON	2/2/10 [illegible]	Received By/Stored In FDX	Date/Time
Relinquished By/Removed From [illegible]	2-3-10 / 0955	Received By/Stored In [illegible]	2-3-10 / 0955
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time

SPECIAL INSTRUCTIONS

[illegible] Metals [illegible] Arsenic, [illegible] Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Magnesium, Manganese, [illegible] Potassium, Selenium, [illegible] Vanadium, Zinc, Mercury [illegible]
[illegible] Anions [illegible] Chloride, Fluoride, Nitrate, Nitrite, [illegible] Sulfate
[illegible] Metals [illegible] Arsenic [illegible] Beryllium, [illegible] Chromium, [illegible] Copper, [illegible] Manganese, Nickel, Potassium, Selenium, Silver, Sodium, [illegible] Vanadium, Zinc [illegible]
Mercury [illegible]

[illegible]
Sampler unavailable to release samples from controlled storage. Shipper removed samples from storage location [illegible] custody.

Matrix * [illegible]

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

ACCL-EL 011

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC[illegible]-340

Collector: Dave Gilbo	Company Contact: [illegible]	Telephone No.: [illegible]	Project Coordinator: [illegible]
Project Designation: [illegible]	Sampling Location: T300133		SAF No.: [illegible]
Ice Chest No.: MES-121-007	Field Logbook No.: [illegible]	COA: [illegible]	Method of Shipment: FEDEX
Shipped To: [illegible]	Offsite Property No.: [illegible]		Bill of Lading/Air Bill No.: 7983 5655 8330

Price Code: 7C

Data Turnaround: 15 Days

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

0000024

		Preservation	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
		Type of Container	[illegible]	P	[illegible]	[illegible]	[illegible]	[illegible]
		No. of Container(s)	1	1	1	[illegible]	1	[illegible]
		Volume	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
SAMPLE ANALYSIS			[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Sample No.	Matrix *	Sample Date	Sample Time						
[illegible]	WATER	2-1-10	12 05	X	X	X	X	X	
[illegible]	WATER	2-1-10	12 05						X

[illegible] stored [illegible] shipped [illegible] samples from storage [illegible] shipment to lab

CHAIN OF POSSESSION	Date/Time	Sign/Print Names Received By/Stored In	Date/Time
Relinquished By/Removed From: Dave Gilbo	2-1-10/1620	EAT REF [illegible]	2-1-10/16:20
Relinquished By/Removed From: [illegible] REF [illegible]	2/2/10 1015	Received By/Stored In: SHANNAN JOHNSON	2/2/10 1015
Relinquished By/Removed From: SHANNAN JOHNSON	2/2/10 1015	Received By/Stored In: FDX	
Relinquished By/Removed From: [illegible]	2-3-10 0855	Received By/Stored In: Dave Smith	2-3-10 0855
Relinquished By/Removed From:		Received By/Stored In:	
Relinquished By/Removed From:		Received By/Stored In:	

SPECIAL INSTRUCTIONS

[illegible]

Matrix *

LABORATORY SECTION | Received By

FINAL SAMPLE DISPOSITION | Disposal Method | Disposed By

Date/Time

[illegible]

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-114-399 Page 1 of 2

Collector Sean Gallon	Company Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator KESSNER, JO
Price Code 7C	Data Turnaround 15 Days		
Project Designation [illegible]	Sampling Location 300 A J300019	SAF No. [illegible]-114	
Ice Chest No. MS-411-025	Field Logbook No. EL-1645-01	COA [illegible]	Method of Shipment FedEx
Shipped To [illegible] ONSITE	Offsite Property No. N/A	Bill of Lading/Air Bill No. 7983 5655 8432	

POSSIBLE SAMPLE HAZARDS/REMARKS
N/A

Special Handling and/or Storage
N/A

0000025

Preservation	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Type of Container	[illegible]	P	[illegible]	[illegible]	[illegible]	[illegible]
No. of Container(s)	1	1	1	~~3~~ 2 [illegible]	[illegible]	1
Volume	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
SAMPLE ANALYSIS	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

Sample No.	Matrix *	Sample Date	Sample Time						
J19K67	WATER	2-1-10	13 45	X	X	X	X	X	
J19K64	WATER	2-1-10	13 45						X

[illegible]

CHAIN OF POSSESSION	Date/Time	Sign/Print Names Received By/Stored In	Date/Time
Relinquished By/Removed From Sean Gallon	2-1-10 / 1610	Received By/Stored In CAS ROLL	2-1-10 / 16:20
Relinquished By/Removed From [illegible]	2-2-10 1145	Received By/Stored In SHANNAN JOHNSON	2-2-10 1145
Relinquished By/Removed From SHANNAN JOHNSON	2-2-10 1700	Received By/Stored In FEDX	
Relinquished By/Removed From FedEx	2-3-10 1035	Received By/Stored In [illegible]	2-3-10
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time

SPECIAL INSTRUCTIONS

[illegible]

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

[illegible]

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-114-415

Collector Scot Gibbs	Company Contact [illegible] KESSNER Telephone No. 375-[illegible]	Project Coordinator KESSNER, JH	Price Code 7C Data Turnaround 15 Days
Project Designation [illegible]	Sampling Location [illegible] 330019 DUPLICATE	SAF No. RC-134	
Ice Chest No. [illegible] 09 025	Field Logbook No. [illegible] COA [illegible]	Method of Shipment FEDEX	
Shipped To [illegible]	Offsite Property No. N/A	Bill of Lading/Air Bill No. 7983 5655 8032	

POSSIBLE SAMPLE HAZARDS/REMARKS

N/A

Special Handling and/or Storage

N/A

0000026

	Preservation	[illegible]	[illegible]
	Type of Container	[illegible]	[illegible]
	No. of Container(s)	3	1
	Volume	[illegible]	[illegible]
SAMPLE ANALYSIS		[illegible]	[illegible]

Sample No.	Matrix *	Sample Date	Sample Time		
[illegible]	WATER	2-1-10	13:45	X	
[illegible]	WATER	2-1-10	13:45		X

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Scot Gibbs	2-1-10/16:20	EAS Ref E	2-1-10/16:20
EAS Ref E	2/2/10 1145	SHANNAN JOHNSON	2/2/10 1145
SHANNAN JOHNSON	2/2/10 1145	FDY	
[illegible]	2-2-[illegible]	[illegible] Smith	2-3-10

SPECIAL INSTRUCTIONS

[illegible] Metals [illegible] (Aluminum, Antimony, Arsenic, Barium, Beryllium, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Magnesium, Manganese, Nickel, Potassium, Selenium, Silver, Sodium, Uranium, Vanadium, Zinc) [illegible] Mercury [illegible]

Samples are [illegible] [illegible] [illegible] [illegible]

Matrix *

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

[illegible]

Appendix 5

Data Validation Supporting Documentation

GENERAL CHEMISTRY ANALYSIS DATA VALIDATION CHECKLIST

VALIDATION LEVEL:	A	B	[✓ C]	D	E

PROJECT:	RCBRA	DATA PACKAGE:	K1922
VALIDATOR: ELR	LAB: LLI	DATE:	4/9/10
		SDG:	K1922

ANALYSES PERFORMED

[✓ Anions/IC]	[✓ TOC]	TOX	TPH-418.1	Oil and Grease	Alkalinity
Ammonia	BOD/COD	Chloride	Chromium-VI	pH	[✓ NO_2/NO_3]
Sulfate	TDS	TKN	Phosphate	[✓ TIC]	

SAMPLES/MATRIX

J19JD8 J19JD7 J19JD9 J19JC7 J19HW9
J19HW0 J19F74 J19HW2

Water

1. DATA PACKAGE COMPLETENESS AND CASE NARRATIVE

Technical verification documentation present? .... Yes [✓ No] N/A

Comments:

2. INSTRUMENT PERFORMANCE AND CALIBRATIONS (Levels D and E)

Initial calibrations performed on all instruments? .... Yes No [✓ N/A]

Initial calibrations acceptable? .... Yes No [✓ N/A]

ICV and CCV checks performed on all instruments? .... Yes No [✓ N/A]

ICV and CCV checks acceptable? .... Yes No [✓ N/A]

Standards traceable? .... Yes No [✓ N/A]

Standards expired? .... Yes No [✓ N/A]

Calculation check acceptable? .... Yes No [✓ N/A]

Comments:

GENERAL CHEMISTRY ANALYSIS DATA VALIDATION CHECKLIST

3. BLANKS (Levels B, C, D, and E)

ICB and CCB checks performed for all applicable analyses? (Levels D, E) .... Yes No [✓ N/A]

ICB and CCB results acceptable? (Levels D, E) .... Yes No [✓ N/A]

Laboratory blanks analyzed? .... [✓ Yes] No N/A

Laboratory blank results acceptable? .... Yes [✓ No] N/A

Field blanks analyzed? (Levels C, D, E) .... Yes [✓ No] N/A

Field blank results acceptable? (Levels C, D, E) .... Yes No [✓ N/A]

Transcription/calculation errors? (Levels D, E) .... Yes No [✓ N/A]

Comments: MB - TOC - UJ - D7, C7, M9, K0, W2

No FB

4. ACCURACY (Levels C, D, and E)

Spike samples analyzed? .... [✓ Yes] No N/A

Spike recoveries acceptable? .... Yes [✓ No] N/A

Sike standards NIST traceable? (Levels D, E) .... Yes No [✓ N/A]

Spike standards expired? (Levels D, E) .... Yes No [✓ N/A]

LCS/BSS samples analyzed? .... [✓ Yes] No N/A

LCS/BSS results acceptable? .... [✓ Yes] No N/A

Standards traceable? (Levels D, E) .... Yes No [✓ N/A]

Standards expired? (Levels D, E) .... Yes No [✓ N/A]

Transcription/calculation errors? (Levels D, E) .... Yes No [✓ N/A]

Performance audit sample(s) analyzed? .... Yes [✓ No] N/A

Performance audit sample results acceptable? .... Yes No [✓ N/A]

Comments: No2/No3 - 73% - J all MS

TOC - M5, K0, 74, W2 : No MS - J all

TIC - NO MS, ~~MS~~ Dup or LCS

No PE

GENERAL CHEMISTRY ANALYSIS DATA VALIDATION CHECKLIST

5. PRECISION (Levels C, D, and E)

Duplicate RPD values acceptable? .... [✓ Yes] [✓ No] N/A

Duplicate results acceptable? .... [✓ Yes] [✓ No] N/A

MS/MSD standards NIST traceable? (Levels D, E) .... Yes No [✓ N/A]

MS/MSD standards expired? (Levels D, E) .... Yes No [✓ N/A]

Field duplicate RPD values acceptable? .... Yes No [✓ N/A]

Field split RPD values acceptable? .... Yes No [✓ N/A]

Transcription/calculation errors? (Levels D, E) .... Yes No [✓ N/A]

Comments: no dup - TIC - all

no dup - TOC N9, K0 74 W2

NO2/NO3 - 22% - J - all

6. HOLDING TIMES (all levels)

Samples properly preserved? .... Yes [✓ No] N/A

Sample holding times acceptable? .... Yes [✓ No] N/A

Comments:

TIC - TOC - bubbles - J all

HT - D, D8, D7 - nitrate, nitrite, ortho - J/UJ

HT - E7, N9, K0, 74, W2 - J

GENERAL CHEMISTRY ANALYSIS DATA VALIDATION CHECKLIST

7. RESULT QUANTITATION AND DETECTION LIMITS (all levels)

Results reported for all requested analyses? .... [✓ Yes] No N/A

Results supported in the raw data? (Levels D, E) .... Yes No [✓ N/A]

Samples properly prepared? (Levels D, E) .... Yes No [✓ N/A]

Detection limits meet RDL? .... [✓ Yes] No N/A

Transcription/calculation errors? (Levels D, E) .... Yes No [✓ N/A]

Comments: ____________________

Appendix 6

Additional Documentation Requested by Client

Wet Chemistry - Quality Control

Lionville Laboratory

Analyte	Result and Qualifiers		Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch L002223 - Default Prep GenChem										
Blank (L002223-BLK1)				Prepared & Analyzed: 02/17/2010						
Nitrate/Nitrite as N	0.02	U	0.02	mg/L						
LCS (L002223-BS1)				Prepared & Analyzed: 02/17/2010						
Nitrate/Nitrite as N	0.45		0.02	mg/L	0.5000		90	90-110		
Duplicate (L002223-DUP2)		Source: 1002009-01		Prepared & Analyzed: 02/17/2010						
Nitrate/Nitrite as N	1.36	D	0.20	mg/L		1.09			22*	20
Matrix Spike (L002223-MS2)		Source: 1002009-01		Prepared & Analyzed: 02/17/2010						
Nitrate/Nitrite as N	4.72	D	0.20	mg/L	5.0000	1.09	73*	75-125		
Batch L002250 - Default Prep GenChem										
Blank (L002250-BLK1)				Prepared & Analyzed: 02/18/2010						
Total Inorganic Carbon	0.50	U	0.50	mg/L						
Total Organic Carbon	0.50	U	0.50	mg/L						
LCS (L002250-BS1)				Prepared & Analyzed: 02/18/2010						
Total Organic Carbon	5.31		0.50	mg/L	5.0000		106	90-110		
Duplicate (L002250-DUP1)		Source: 1002009-01		Prepared & Analyzed: 02/18/2010						
Total Organic Carbon	1.60		0.50	mg/L		1.53			4.19	20
Matrix Spike (L002250-MS1)		Source: 1002009-01		Prepared & Analyzed: 02/18/2010						
Total Organic Carbon	7.06		0.50	mg/L	5.0000	1.53	111	75-125		

WC-Hanford, Inc.	Project: RC-119	
2620 Fermi Avenue	Project Number: K1926	**Reported:**
Richland WA, 99354	Project Manager: Joan Kessner	03/08/2010 13:11

Wet Chemistry - Quality Control

Lionville Laboratory

Analyte	Result and Qualifiers	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch L002265 - Default Prep GenChem									
Blank (L002265-BLK1)			Prepared & Analyzed: 02/03/2010						
Fluoride	0.25 U	0.25	mg/L						
Chloride	0.25 U	0.25	mg/L						
Nitrite	0.25 U	0.25	mg/L						
Bromide	0.25 U	0.25	mg/L						
Nitrate	0.25 U	0.25	mg/L						
Orthophosphate	0.25 U	0.25	mg/L						
Sulfate	0.25 U	0.25	mg/L						
LCS (L002265-BS1)			Prepared & Analyzed: 02/03/2010						
Fluoride	4.92	0.25	mg/L	5.0000		98.4	90-110		
Chloride	4.76	0.25	mg/L	5.0000		95.2	90-110		
Nitrite	4.64	0.25	mg/L	5.0000		92.8	90-110		
Bromide	4.81	0.25	mg/L	5.0000		96.2	90-110		
Nitrate	4.99	0.25	mg/L	5.0000		99.8	90-110		
Orthophosphate	5.52	0.25	mg/L	5.0000		110	90-110		
Sulfate	4.94	0.25	mg/L	5.0000		98.7	90-110		
Duplicate (L002265-DUP1)		Source: 1002009-15	Prepared & Analyzed: 02/04/2010						
Fluoride	0.18 D	0.25	mg/L		0.17			0.573	20
Chloride	16.2 D	1.25	mg/L		16.1			0.618	20
Nitrite	0.25 U	0.25	mg/L		0.25 U				20
Bromide	0.25 U	0.25	mg/L		0.25 U				20
Nitrate	19.0 D	1.25	mg/L		19.1			0.577	20
Orthophosphate	0.25 U	0.25	mg/L		0.25 U				20
Sulfate	40.5 D	1.25	mg/L		40.5			0.0543	20
Matrix Spike (L002265-MS1)		Source: 1002009-15	Prepared & Analyzed: 02/04/2010						
Fluoride	9.95 D	0.50	mg/L	10.000	0.17	97.8	80-120		
Nitrite	9.83 D	0.50	mg/L	10.000	0.25 U	98.3	80-120		
Bromide	9.35 D	0.50	mg/L	10.000	0.25 U	93.5	80-120		
Orthophosphate	9.99 D	0.50	mg/L	10.000	0.25 U	99.9	80-120		

208 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

WC-Hanford, Inc 2620 Fermi Avenue Richland WA, 99354	Project: RC-III Project Number: K1926 Project Manager: Joan Kessner	**Reported:** 03/08/2010 13:11

Wet Chemistry - Quality Control
Lionville Laboratory

Analyte	Result	Qualifiers	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch L002265 - Default Prep GenChem										
Matrix Spike (L002265-MS2)		**Source: 1002009-15**		**Prepared & Analyzed: 02/04/2010**						
Chloride	71.8	D	2.50	mg/L	50.000	16.1	111	80-120		
Nitrate	25.6	D	2.50	mg/L	20.000	3.4	111	80-120		
Sulfate	99.9	D	2.50	mg/L	50.000	40.5	119	80-120		
Batch L002291 - Default Prep GenChem										
Blank (L002291-BLK1)				**Prepared & Analyzed: 02/22/2010**						
Total Organic Carbon	0.30	U	0.50	mg/L						
Total Inorganic Carbon	0.30	U	0.50	mg/L						
LCS (L002291-BS1)				**Prepared & Analyzed: 02/22/2010**						
Total Organic Carbon	4.92		0.50	mg/L	5.0000		98.4	90-110		

Date: 12 April 2010
To: Washington Closure Hanford (technical representative)
From: ELR Consulting
Project: Columbia River Component of the RCBRA -- Pore Water – Phase III
Subject: Volatiles - Data Package No. K1926-LLI

INTRODUCTION

This memo presents the results of data validation on Summary Data Package No. K1926 prepared by Lionville Laboratory Inc. (LLI). A list of the samples validated along with the analyses reported and the method of analysis is provided in the following table

Sample ID	Sample Date	Media	Validation	Data
J19F74	2/1/10	Water	C	See note 1
J19HW2	2/1/10	Water	C	See note 1
J19JC1	2/1/10	Water	C	See note 1

1 - Volatiles by 8260B

Data validation was conducted in accordance with the Washington Closure Hanford (WCH) validation statement of work and the Remedial Investigation Work Plan for Hanford Site Releases to the Columbia River (DOE/RL-2008-11, Rev. 0, September 2008). Appendices 1 through 6 provide the following information as indicated below.

Appendix 1. Glossary of Data Reporting Qualifiers
Appendix 2. Summary of Data Qualification
Appendix 3. Annotated Laboratory Reports
Appendix 4. Laboratory Narrative and Chain-of-Custody Documentation
Appendix 5 Data Validation Supporting Documentation
Appendix 6. Additional Documentation Requested by Client

DATA QUALITY OBJECTIVES

- **Holding Times & Sample Preservation**

Analytical holding times are assessed to ascertain whether the holding time requirements were met by the laboratory. Preserved water samples must be analyzed within: 14 days of the date of sample collection for preserved samples and 7 days for unpreserved samples.

If holding times are exceeded, but not by greater than twice the limit, all associated sample results are qualified as estimates and flagged "J" for detects and "UJ" for non-detects. If holding times are exceeded by greater than twice the limit, all associated detected sample results are qualified as estimates and flagged "J" and all non-detects are rejected and flagged "UR"

All holding times were acceptable

- **Blanks**

Method blank analyses are conducted to determine the extent of laboratory contamination introduced through sampling, sample preparation and analysis. At least one acceptable method blank analysis must be conducted for every 20 samples. No contaminants should be present in the method blank. Analytical results for analytes present in any sample at less than five times the concentration of that analyte found in the associated blank are qualified as non-detects and flagged "U". Common laboratory contaminants present in samples at less than ten times the concentration of that analyte found in the associated blank are qualified as non-detects. If a sample result is less than the CRQL and is less than five times (or less than ten times for lab contaminants) the highest associated blank result, the sample result value is raised to the CRQL level and qualified as undetected "U".

All method blank results were acceptable.

Field Blanks

No field blanks were submitted for analysis.

- **Accuracy**

Matrix Spike/Matrix Spike Duplicate & Laboratory Control Sample

Matrix spike/matrix spike duplicate analyses are used to assess the analytical accuracy of the reported data and the effect of the matrix on the ability to accurately quantify sample concentrations. Matrix spike/matrix spike duplicate analyses are performed in duplicate using five compounds for which percent recoveries must be within a range of 50-150% or within laboratory control limits. If spike recoveries are outside control limits, detected sample results less than five times the spike concentration are qualified as estimates and flagged "J". Undetected sample results with spike recoveries below control limits are qualified as estimates and flagged "UJ". Undetected sample results are not qualified if the spike recovery is above control limits. Sample results greater than five times the spike concentration require no qualification.

All accuracy results were acceptable.

Surrogate Recovery

The analyses of surrogate compounds provide a measure of performance for individual samples. Matrix-specific surrogate compound recovery control windows have been established by the EPA CLP program. If two surrogates of the same class of compounds (base/neutral or acid) are out of control limits, all associated sample results greater than the contract required quantitation limit (CRQL) are qualified as estimates and flagged "J". Sample results less than the CRQL and below the lower control limit are qualified as estimates and flagged "UJ". Sample results less than the CRQL with recoveries above the upper control limit require no qualification. If a surrogate recovery is less than 10%, detects are qualified as estimates and flagged "J" and nondetects are rejected and flagged "UR".

All surrogate recovery results were acceptable.

- **Precision**

Matrix Spike/Matrix Spike Duplicate Samples

Matrix spike (MS)/matrix spike duplicate (MSD) results provide matrix-specific information on the precision of the method for specific target compound classes. Precision is expressed by the relative percent difference (RPD) between the recoveries of duplicate matrix spike analyses performed on a sample. Samples results must be within RPD limits of +/-20%. If RPD values are out of specification and the sample concentration is less than five times the spike concentration, all associated detected sample results are qualified as estimates and flagged "J". If RPD values are out of specification and the sample concentration is greater than five times the spike concentration, no qualification is required.

All precision results were acceptable.

Field Duplicate Samples

No field duplicates were submitted for analysis.

- **Analytical Detection Levels**

Reported analytical detection levels are compared against the minimum detection limits (MDLs) to ensure that laboratory detection levels meet the required criteria. Three analytes exceeded the RQL. Under the WCH statement of work, no qualification is required. All other results met the RQL.

- **Completeness**

Data package No. K1926 was submitted for validation and verified for completeness. Completeness is based on the percentage of data determined to be valid (i.e., not rejected). The completion percentage was 100%.

MAJOR DEFICIENCIES

None found.

MINOR DEFICIENCIES

Three analytes exceeded the RQL. Under the WCH statement of work, no qualification is required.

REFERENCES

Washington Closure Hanford Contract #S00W307A00 (March 2008), *Data Validation Services*, March 2008.

DOE/RL-2008-11, Rev.0, *Remedial Investigation Work Plan for Hanford Site Releases to the Columbia River*, September 2008.

Appendix 1

Glossary of Data Reporting Qualifiers

Qualifiers which may be applied by data validator in compliance with the WCH validation SOW are as follows:

U - Indicates the compound or analyte was analyzed for and not detected in the sample. The value reported is the sample quantitation limit corrected for dilution and moisture content by the laboratory.

UJ - Indicates the compound or analyte was analyzed for and not detected in the sample. Due to a minor QC deficiency identified during the data validation, the associated quantitation limit is an estimate

J - Indicates the compound or analyte was analyzed for and detected. Due to a minor QC deficiency identified during the data validation, the associated quantitation limit is an estimate.

R - Indicates the compound or analyte was analyzed for, detected, and due to an identified major QC deficiency, the data are unusable.

UR - Indicates the compound or analyte was analyzed for and not detected in the sample. Additionally, the data is unusable due to an identified major QC deficiency.

NJ - Indicates presumptive evidence of a compound at an estimated value. The data may not be valid for some specific applications (i.e , usable for decision-making purposes).

N - Indicates presumptive evidence of a compound. The data may not be valid for some specific applications (i.e., usable for decision-making purposes).

Appendix 2

Summary of Data Qualification

VOLATILE ORGANIC DATA QUALIFICATION SUMMARY*

SDG: K1926	**REVIEWER: ELR**	**Project: RCBRA**	**PAGE 1 OF 1**
COMMENTS: No qualifiers assigned			

* - The Qualified Data Summary Table includes laboratory applied "U" qualifiers not specifically identified here. The laboratory applied "U" qualifiers are included to minimize misinterpretation of results contained in the table.

Appendix 3

Annotated Laboratory Reports

208 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

WC Hanford, Inc.
2620 Fermi Avenue
Richland WA, 99354

Project: RC-111
Project Number: K1926
Project Manager: Joan Kessner

Reported:
02/19/2010 14:01

J19F74
1002009-13 (Water)

Lionville Laboratory

Volatile Organic Compounds by SW846 8260B

Analyte	Result and Qualifier		Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
1,1,1-Trichloroethane	5.00	U	5.00	ug/L	1	L002254	02/12/2010	02/12/2010	8260B
1,1,2,2-Tetrachloroethane	5.00	U	5.00	ug/L	1	L002254	02/12/2010	02/12/2010	8260B
1,1,2-Trichloroethane	5.00	U	5.00	ug/L	1	L002254	02/12/2010	02/12/2010	8260B
1,1-Dichloroethane	5.00	U	5.00	ug/L	1	L002254	02/12/2010	02/12/2010	8260B
1,1-Dichloroethene	5.00	U	5.00	ug/L	1	L002254	02/12/2010	02/12/2010	8260B
1,2-Dichloroethane	5.00	U	5.00	ug/L	1	L002254	02/12/2010	02/12/2010	8260B
1,2-Dichloroethene (total)	5.00	U	5.00	ug/L	1	L002254	02/12/2010	02/12/2010	8260B
1,2-Dichloropropane	5.00	U	5.00	ug/L	1	L002254	02/12/2010	02/12/2010	8260B
2-Butanone	10.0	U	10.0	ug/L	1	L002254	02/12/2010	02/12/2010	8260B
2-Hexanone	10.0	U	10.0	ug/L	1	L002254	02/12/2010	02/12/2010	8260B
4-Methyl-2-pentanone	10.0	U	10.0	ug/L	1	L002254	02/12/2010	02/12/2010	8260B
Acetone	10.0	U	10.0	ug/L	1	L002254	02/12/2010	02/12/2010	8260B
Benzene	5.00	U	5.00	ug/L	1	L002254	02/12/2010	02/12/2010	8260B
Bromodichloromethane	5.00	U	5.00	ug/L	1	L002254	02/12/2010	02/12/2010	8260B
Bromoform	5.00	U	5.00	ug/L	1	L002254	02/12/2010	02/12/2010	8260B
Bromomethane	10.0	U	10.0	ug/L	1	L002254	02/12/2010	02/12/2010	8260B
Carbon Disulfide	5.00	U	5.00	ug/L	1	L002254	02/12/2010	02/12/2010	8260B
Carbon Tetrachloride	5.00	U	5.00	ug/L	1	L002254	02/12/2010	02/12/2010	8260B
Chlorobenzene	5.00	U	5.00	ug/L	1	L002254	02/12/2010	02/12/2010	8260B
Chloroethane	10.0	U	10.0	ug/L	1	L002254	02/12/2010	02/12/2010	8260B
Chloroform	5.00	U	5.00	ug/L	1	L002254	02/12/2010	02/12/2010	8260B
Chloromethane	10.0	U	10.0	ug/L	1	L002254	02/12/2010	02/12/2010	8260B
cis-1,2-Dichloroethene	5.00	U	5.00	ug/L	1	L002254	02/12/2010	02/12/2010	8260B
cis-1,3-Dichloropropene	5.00	U	5.00	ug/L	1	L002254	02/12/2010	02/12/2010	8260B
Dibromochloromethane	5.00	U	5.00	ug/L	1	L002254	02/12/2010	02/12/2010	8260B
Ethylbenzene	5.00	U	5.00	ug/L	1	L002254	02/12/2010	02/12/2010	8260B
Methylene Chloride	6.00	U	6.00	ug/L	1	L002254	02/12/2010	02/12/2010	8260B
Styrene	5.00	U	5.00	ug/L	1	L002254	02/12/2010	02/12/2010	8260B
Tetrachloroethene	5.00	U	5.00	ug/L	1	L002254	02/12/2010	02/12/2010	8260B
trans-1,2-Dichloroethene	5.00	U	5.00	ug/L	1	L002254	02/12/2010	02/12/2010	8260B
Toluene	5.00	U	5.00	ug/L	1	L002254	02/12/2010	02/12/2010	8260B
trans-1,3-Dichloropropene	5.00	U	5.00	ug/L	1	L002254	02/12/2010	02/12/2010	8260B
Trichloroethene	5.00	U	5.00	ug/L	1	L002254	02/12/2010	02/12/2010	8260B
Vinyl chloride	10.0	U	10.0	ug/L	1	L002254	02/12/2010	02/12/2010	8260B
Xylenes, total	5.00	U	5.00	ug/L	1	L002254	02/12/2010	02/12/2010	8260B
TIC: Unknown 1	8.23	J		ug/L	1	L002254	02/12/2010	02/12/2010	8260B
Surrogate: 1,2-Dichloroethane-d4	*[illegible] %*		*64-130*			*L002254*	*02/12/2010*	*02/12/2010*	*8260B*
Surrogate: Toluene-d8	*92 %*		*70-130*			*L002254*	*02/12/2010*	*02/12/2010*	*8260B*
Surrogate: 4-Bromofluorobenzene	*91 %*		*81-115*			*L002254*	*02/12/2010*	*02/12/2010*	*8260B*

WCH-Hanford, Inc
2620 Fermi Avenue
Richland WA, 99354

Project: RCI-114
Project Number: K1926
Project Manager: Joan Kessner

Reported:
02/19/2010 11:01

J19HW2

1002009-15 (Water)

Analyte	Result and Qualifier	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
		Lionville Laboratory						
Volatile Organic Compounds by SW846 8260B								
1,1,1-Trichloroethane	5.00 U	5.00	ug/L	1	1002260	02/13/2010	02/13/2010	8260B
1,1,2,2-Tetrachloroethane	5.00 U	5.00	ug/L	1	1002260	02/13/2010	02/13/2010	8260B
1,1,2-Trichloroethane	5.00 U	5.00	ug/L	1	1002260	02/13/2010	02/13/2010	8260B
1,1-Dichloroethane	5.00 U	5.00	ug/L	1	1002260	02/13/2010	02/13/2010	8260B
1,1-Dichloroethene	5.00 U	5.00	ug/L	1	1002260	02/13/2010	02/13/2010	8260B
1,2-Dichloroethane	5.00 U	5.00	ug/L	1	1002260	02/13/2010	02/13/2010	8260B
1,2-Dichloroethene (total)	5.00 U	5.00	ug/L	1	1002260	02/13/2010	02/13/2010	8260B
1,2-Dichloropropane	5.00 U	5.00	ug/L	1	1002260	02/13/2010	02/13/2010	8260B
2-Butanone	10.0 U	10.0	ug/L	1	1002260	02/13/2010	02/13/2010	8260B
2-Hexanone	10.0 U	10.0	ug/L	1	1002260	02/13/2010	02/13/2010	8260B
4-Methyl-2-pentanone	10.0 U	10.0	ug/L	1	1002260	02/13/2010	02/13/2010	8260B
Acetone	**15.6**	10.0	ug/L	1	1002260	02/13/2010	02/13/2010	8260B
Benzene	5.00 U	5.00	ug/L	1	1002260	02/13/2010	02/13/2010	8260B
Bromodichloromethane	5.00 U	5.00	ug/L	1	1002260	02/13/2010	02/13/2010	8260B
Bromoform	5.00 U	5.00	ug/L	1	1002260	02/13/2010	02/13/2010	8260B
Bromomethane	10.0 U	10.0	ug/L	1	1002260	02/13/2010	02/13/2010	8260B
Carbon Disulfide	5.00 U	5.00	ug/L	1	1002260	02/13/2010	02/13/2010	8260B
Carbon Tetrachloride	5.00 U	5.00	ug/L	1	1002260	02/13/2010	02/13/2010	8260B
Chlorobenzene	5.00 U	5.00	ug/L	1	1002260	02/13/2010	02/13/2010	8260B
Chloroethane	10.0 U	10.0	ug/L	1	1002260	02/13/2010	02/13/2010	8260B
Chloroform	5.00 U	5.00	ug/L	1	1002260	02/13/2010	02/13/2010	8260B
Chloromethane	10.0 U	10.0	ug/L	1	1002260	02/13/2010	02/13/2010	8260B
cis-1,2-Dichloroethene	5.00 U	5.00	ug/L	1	1002260	02/13/2010	02/13/2010	8260B
cis-1,3-Dichloropropene	5.00 U	5.00	ug/L	1	1002260	02/13/2010	02/13/2010	8260B
Dibromochloromethane	5.00 U	5.00	ug/L	1	1002260	02/13/2010	02/13/2010	8260B
Ethylbenzene	5.00 U	5.00	ug/L	1	1002260	02/13/2010	02/13/2010	8260B
Methylene Chloride	6.00 U	6.00	ug/L	1	1002260	02/13/2010	02/13/2010	8260B
Styrene	5.00 U	5.00	ug/L	1	1002260	02/13/2010	02/13/2010	8260B
Tetrachloroethene	5.00 U	5.00	ug/L	1	1002260	02/13/2010	02/13/2010	8260B
trans-1,2-Dichloroethene	5.00 U	5.00	ug/L	1	1002260	02/13/2010	02/13/2010	8260B
Toluene	5.00 U	5.00	ug/L	1	1002260	02/13/2010	02/13/2010	8260B
trans-1,3-Dichloropropene	5.00 U	5.00	ug/L	1	1002260	02/13/2010	02/13/2010	8260B
Trichloroethene	5.00 U	5.00	ug/L	1	1002260	02/13/2010	02/13/2010	8260B
Vinyl chloride	10.0 U	10.0	ug/L	1	1002260	02/13/2010	02/13/2010	8260B
Xylenes, total	5.00 U	5.00	ug/L	1	1002260	02/13/2010	02/13/2010	8260B
Surrogate: 1,2-Dichloroethane-d4	*81 %*	*64-140*			*1002260*	*02/13/2010*	*02/13/2010*	*8260B*
Surrogate: Toluene-d8	*97 %*	*70-130*			*1002260*	*02/13/2010*	*02/13/2010*	*8260B*
Surrogate: 4-Bromofluorobenzene	*98 %*	*81-115*			*1002260*	*02/13/2010*	*02/13/2010*	*8260B*

208 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

WC-Hanford, Inc 2620 Fermi Avenue Richland WA, 99354	Project: RC-114 Project Number: K1926 Project Manager: Joan Kessner	Reported: 02/19/2010 14:01

J19JC1
1002009-17 (Water)

4/14/10

Analyte	Result and Qualifier	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
		Lionville Laboratory						
Volatile Organic Compounds by SW846 8260B								
1,1,1-Trichloroethane	5.00 U	5.00	ug/L	1	L002254	02/12/2010	02/12/2010	8260B
1,1,2,2-Tetrachloroethane	5.00 U	5.00	ug/L	1	L002254	02/12/2010	02/12/2010	8260B
1,1,2-Trichloroethane	5.00 U	5.00	ug/L	1	L002254	02/12/2010	02/12/2010	8260B
1,1-Dichloroethane	5.00 U	5.00	ug/L	1	L002254	02/12/2010	02/12/2010	8260B
1,1-Dichloroethene	5.00 U	5.00	ug/L	1	L002254	02/12/2010	02/12/2010	8260B
1,2-Dichloroethane	5.00 U	5.00	ug/L	1	L002254	02/12/2010	02/12/2010	8260B
1,2-Dichloroethene (total)	5.00 U	5.00	ug/L	1	L002254	02/12/2010	02/12/2010	8260B
1,2-Dichloropropane	5.00 U	5.00	ug/L	1	L002254	02/12/2010	02/12/2010	8260B
2-Butanone	10.0 U	10.0	ug/L	1	L002254	02/12/2010	02/12/2010	8260B
2-Hexanone	10.0 U	10.0	ug/L	1	L002254	02/12/2010	02/12/2010	8260B
4-Methyl-2-pentanone	10.0 U	10.0	ug/L	1	L002254	02/12/2010	02/12/2010	8260B
Acetone	**11.0**	10.0	ug/L	1	L002254	02/12/2010	02/12/2010	8260B
Benzene	5.00 U	5.00	ug/L	1	L002254	02/12/2010	02/12/2010	8260B
Bromodichloromethane	5.00 U	5.00	ug/L	1	L002254	02/12/2010	02/12/2010	8260B
Bromoform	5.00 U	5.00	ug/L	1	L002254	02/12/2010	02/12/2010	8260B
Bromomethane	10.0 U	10.0	ug/L	1	L002254	02/12/2010	02/12/2010	8260B
Carbon Disulfide	5.00 U	5.00	ug/L	1	L002254	02/12/2010	02/12/2010	8260B
Carbon Tetrachloride	5.00 U	5.00	ug/L	1	L002254	02/12/2010	02/12/2010	8260B
Chlorobenzene	5.00 U	5.00	ug/L	1	L002254	02/12/2010	02/12/2010	8260B
Chloroethane	10.0 U	10.0	ug/L	1	L002254	02/12/2010	02/12/2010	8260B
Chloroform	5.00 U	5.00	ug/L	1	L002254	02/12/2010	02/12/2010	8260B
Chloromethane	10.0 U	10.0	ug/L	1	L002254	02/12/2010	02/12/2010	8260B
cis-1,2-Dichloroethene	5.00 U	5.00	ug/L	1	L002254	02/12/2010	02/12/2010	8260B
cis-1,3-Dichloropropene	5.00 U	5.00	ug/L	1	L002254	02/12/2010	02/12/2010	8260B
Dibromochloromethane	5.00 U	5.00	ug/L	1	L002254	02/12/2010	02/12/2010	8260B
Ethylbenzene	5.00 U	5.00	ug/L	1	L002254	02/12/2010	02/12/2010	8260B
Methylene Chloride	6.00 U	6.00	ug/L	1	L002254	02/12/2010	02/12/2010	8260B
Styrene	5.00 U	5.00	ug/L	1	L002254	02/12/2010	02/12/2010	8260B
Tetrachloroethene	5.00 U	5.00	ug/L	1	L002254	02/12/2010	02/12/2010	8260B
trans-1,2-Dichloroethene	5.00 U	5.00	ug/L	1	L002254	02/12/2010	02/12/2010	8260B
Toluene	5.00 U	5.00	ug/L	1	L002254	02/12/2010	02/12/2010	8260B
trans-1,3-Dichloropropene	5.00 U	5.00	ug/L	1	L002254	02/12/2010	02/12/2010	8260B
Trichloroethene	5.00 U	5.00	ug/L	1	L002254	02/12/2010	02/12/2010	8260B
Vinyl chloride	10.0 U	10.0	ug/L	1	L002254	02/12/2010	02/12/2010	8260B
Xylenes, total	5.00 U	5.00	ug/L	1	L002254	02/12/2010	02/12/2010	8260B
Surrogate: 1,2-Dichloroethane-d4	*90 %*	*64-140*			*L002254*	*02/12/2010*	*02/12/2010*	*8260B*
Surrogate: Toluene-d8	*89 %*	*70-130*			*L002254*	*02/12/2010*	*02/12/2010*	*8260B*
Surrogate: 4-Bromofluorobenzene	*93 %*	*81-115*			*L002254*	*02/12/2010*	*02/12/2010*	*8260B*

Appendix 4

Laboratory Narrative and Chain-of-Custody Documentation

LvL

[illegible]
[illegible]
[illegible]
[illegible] 229-7011

Case Narrative

Client: WC-HANFORD RC-114
LVL #: 1002009
SDG/SAF #: K1936 / RC-114

W.O. #: 60049-001-001-0001-00
Date Received: 02-03-2010

GC/MS VOLATILE

Three (3) water samples were collected on 02-01-2010.

The samples and associated QC samples were analyzed according to criteria set forth in Lionville Laboratory SOPs based on SW Method 8260B for TCL Volatile target compounds on 02-12,13-2010.

The following is a summary of QC results accompanying the sample results. Lionville Laboratory (LvL) certifies that all test results meet the requirements of NELAC except as noted below:

1. Samples were analyzed within hold time.
2. Non-target compounds were detected in these samples.
3. All surrogate recoveries were within acceptance criteria.
4. All matrix spike recoveries were within acceptance criteria.
5. All blank spike recoveries were within acceptance criteria.
6. The method blanks were below the reporting limit for all target compounds.
7. Internal standard area and retention time criteria were met.
8. Manual integrations are performed according to SOP QA-125 to produce quality data with utmost integrity. All manual integrations are required to be technically valid and properly documented. Appropriate technical flags are defined in the Glossary ("Technical Flags For Manual Integration").
9. LvL is NELAP accredited by the State of Pennsylvania. For a complete listing of accrediting authorities and the corresponding analytes/methods, please contact your Project Manager.

10. "I certify that this sample data package is in compliance with SOW requirements, both technically and for completeness, other than the conditions detailed above. Release of the data contained in this hard-copy data package has been authorized by the Laboratory Manager or a designee, as verified by the following signature."

Judy Stone

Iain Daniels
Laboratory Manager
Lionville Laboratory

2/24/02
Date

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-113-340

Collector Sean Gilkes	Company Contact [illegible] KESSNER	Telephone No. [illegible]
Project Designation [illegible]	Sampling Location [illegible] T300133	
Ice Chest No. RES-04-007	Field Logbook No. [illegible]	COA [illegible]
Shipped To [illegible] [✓ ONSITE]	Offsite Property No. [illegible]	

Project Coordinator KESSNER [illegible]	Price Code 7C
SAF No. RC-113	Data Turnaround 15 Days
Method of Shipment FEDEX	
Bill of Lading/Air Bill No.	7983 6655 8330

POSSIBLE SAMPLE HAZARDS/REMARKS

[illegible]

Special Handling and/or Storage

[illegible]

SAMPLE ANALYSIS

Preservation	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Type of Container	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
No. of Container(s)	[illegible]	[illegible]	[illegible]	3	[illegible]	[illegible]
Volume	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

Sample No.	Matrix *	Sample Date	Sample Time						
[illegible]	WATER	2-1-10	12:05	X	X	X	X	X	
[illegible]	WATER	2-1-10	12:05						X

CHAIN OF POSSESSION

Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Sean Gilkes	2-1-10/16:20	CAS RSE	2-1-10/16:20
CAS RSE	2/2/10 1125	SHANNAN JOHNSON	2/2/10 1125
SHANNAN JOHNSON	2/2/10 1125	FDX	
[illegible]	[illegible]	Dana Smith	2-3-10 [illegible]

SPECIAL INSTRUCTIONS

[illegible]

LABORATORY SECTION	Received By
FINAL SAMPLE DISPOSITION	Disposal Method

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

F10-114-399 | Page [illegible]

Collector: Sean Galle	Company Contact: [illegible]	Telephone No.: [illegible]	Project Coordinator: [illegible]
Project Designation: [illegible]	Sampling Location: 699-S [illegible] 530019		SAF No.: F10-114
Ice Chest No.: ECS-14-025	Field Logbook No.: EL-1645-01	COA: [illegible]	Method of Shipment: FEDEX
Shipped To: EBERLINE SERVICES [✓ ONSITE]	Offsite Property No.: N/A		Bill of Lading/Air Bill No.: 7983 5655 8432

Price Code: 7C

Data Turnaround: 15 Days

POSSIBLE SAMPLE HAZARDS/REMARKS

N/A

Special Handling and/or Storage

N/A

0100017

Preservation	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Type of Container	G/P	[illegible]	G/P	aG	G	G/P
No. of Container(s)	1	1	1	~~2~~ 3 [illegible]	[illegible]	1
Volume	[illegible]	[illegible]	[illegible]	40mL	[illegible]	[illegible]
SAMPLE ANALYSIS	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

Sample No.	Matrix *	Sample Date	Sample Time						
J19HW2	WATER	2-1-10	13:45	X	X	X	X	X	
J19HW4	WATER	2-1-10	13:45						X

[illegible]

CHAIN OF POSSESSION Sign/Print Names

Relinquished By/Removed From: Sean Galle	Date/Time: 2-1-10/1610	Received By/Stored In: EMS Relc [illegible]	Date/Time: 2-1-10/16:20
Relinquished By/Removed From: [illegible]	Date/Time: 2-2-10 1145	Received By/Stored In: SHANNAH JOHNSON	Date/Time: 2-2-10 1145
Relinquished By/Removed From: SHANNAH JOHNSON	Date/Time: [illegible]	Received By/Stored In: FDX	Date/Time:
Relinquished By/Removed From: FedEx	Date/Time: 2-3-10/0955	Received By/Stored In: [illegible]	Date/Time: 2-3-10
Relinquished By/Removed From:	Date/Time:	Received By/Stored In:	Date/Time:
Relinquished By/Removed From:	Date/Time:	Received By/Stored In:	Date/Time:

SPECIAL INSTRUCTIONS

[illegible]

Matrix *

[illegible]

LABORATORY SECTION: Received By: Title: Date/Time:

FINAL SAMPLE DISPOSITION: Disposal Method: Disposed By: Date/Time:

WCH-EE-[illegible]

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

KC-114-415

Price Code 7C

15 Days

Sampling Location: 330019 DUPLICATE

Method of Shipment: FEDEX

Bill of Lading/Air Bill No. 7983 2558 [illegible]

000018

SAMPLE ANALYSIS

Type of Container				[illegible]	[illegible]
No. of Container(s)				1	1
Volume				[illegible]	[illegible]
Sample No.	Matrix *	Sample Date	Sample Time		
[illegible]	WATER	2-1-10	13 45	X	
[illegible]	WATER	2-1-10	13-45		X

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
[illegible]	2-1-10/16 20	EAS Ref. [illegible]	2-1-10/16 20
EAS REF.	2/2/10 145	SHANNAN JOHNSON	2/2/10 145
SHANNAN JOHNSON	2/2/10 145	FDY	
[illegible]	2-3-10 [illegible]	[illegible]	2-3-10

SPECIAL INSTRUCTIONS

LABORATORY SECTION

FINAL SAMPLE DISPOSITION

Appendix 5

Data Validation Supporting Documentation

GC/MS ORGANIC DATA VALIDATION CHECKLIST

VALIDATION LEVEL:	A	B	[✓ C]	D	E
PROJECT:	RCBRA		DATA PACKAGE:	K1926	
VALIDATOR:	BLR	LAB: LLI		DATE:	4/9/10
			SDG:	K1926	
ANALYSES PERFORMED					
[✓ SW-846 8260]		SW-846 8260 (TCLP)	SW-846 8270		SW 846 8270 (TCLP)
SAMPLES/MATRIX					
J19F74	J19HW2	J19JC1			
					Water

1. DATA PACKAGE COMPLETENESS AND CASE NARRATIVE

Technical verification documentation present? .... Yes [✓ No] N/A

Comments:

2. INSTRUMENT TUNING AND CALIBRATION (Levels D and E)

GC/MS tuning/performance check acceptable? .... Yes No [✓ N/A]

Initial calibrations acceptable? .... Yes No [✓ N/A]

Continuing calibrations acceptable? .... Yes No [✓ N/A]

Standards traceable? .... Yes No [✓ N/A]

Standards expired? .... Yes No [✓ N/A]

Calculation check acceptable? .... Yes No [✓ N/A]

Comments:

GC/MS ORGANIC DATA VALIDATION CHECKLIST

3. BLANKS (Levels B, C, D, and E)

Calibration blanks analyzed? (Levels D, E) .... Yes No [✓ N/A]
Calibration blank results acceptable? (Levels D, E) .... Yes No [✓ N/A]
Laboratory blanks analyzed? .... [✓ Yes] No N/A
Laboratory blank results acceptable? .... [✓ Yes] No N/A
Field/trip blanks analyzed? (Levels C, D, E) .... Yes [✓ No] N/A
Field/trip blank results acceptable? (Levels C, D, E) .... Yes No [✓ N/A]
Transcription/calculation errors? (Levels D, E) .... Yes No [✓ N/A]
Comments: NO FB

4. ACCURACY (Levels C, D, and E)

Surrogates/system monitoring compounds analyzed? .... [✓ Yes] No N/A
Surrogate/system monitoring compound recoveries acceptable? .... [✓ Yes] No N/A
Surrogates traceable? (Levels D, E) .... Yes No [✓ N/A]
Surrogates expired? (Levels D, E) .... Yes No [✓ N/A]
MS/MSD samples analyzed? .... [✓ Yes] No N/A
MS/MSD results acceptable? .... [✓ Yes] No N/A
MS/MSD standards NIST traceable? (Levels D, E) .... Yes No [✓ N/A]
MS/MSD standards? (Levels D, E) .... Yes No [✓ N/A]
LCS/BSS samples analyzed? .... [✓ Yes] No N/A
LCS/BSS results acceptable? .... [✓ Yes] No N/A
Standards traceable? (Levels D, E) .... Yes No [✓ N/A]
Standards expired? (Levels D, E) .... Yes No [✓ N/A]
Transcription/calculation errors? (Levels D, E) .... Yes No [✓ N/A]
Performance audit sample(s) analyzed? .... Yes [✓ No] N/A
Performance audit sample results acceptable? .... Yes No [✓ N/A]
Comments: ~~F7d — VC+ — NO MS/MSD [illegible] all~~ [illegible]

NO PAS

GC/MS ORGANIC DATA VALIDATION CHECKLIST

5. PRECISION (Levels C, D, and E)

MS/MSD samples analyzed? .... [✓ Yes] No N/A

MS/MSD RPD values acceptable? .... [✓ Yes] No N/A

MS/MSD standards NIST traceable? (Levels D, E) .... Yes No [✓ N/A]

MS/MSD standards expired? (Levels D, E) .... Yes No [✓ N/A]

Field duplicate RPD values acceptable? .... Yes No [✓ N/A]

Field split RPD values acceptable? .... Yes No [✓ N/A]

Transcription/calculation errors? (Levels D, E) .... Yes No [✓ N/A]

Comments:

6. SYSTEM PERFORMANCE (Levels D and E)

Internal standards analyzed? .... Yes No [✓ N/A]

Internal standard areas acceptable? .... Yes No [✓ N/A]

Internal standard retention times acceptable? .... Yes No [✓ N/A]

Standards traceable? .... Yes No [✓ N/A]

Standards expired? .... Yes No [✓ N/A]

Transcription/calculation errors? .... Yes No [✓ N/A]

Comments:

7. HOLDING TIMES (all levels)

Samples properly preserved? .... [✓ Yes] No N/A

Sample holding times acceptable? .... [✓ Yes] No N/A

Comments:

GC/MS ORGANIC DATA VALIDATION CHECKLIST

8. COMPOUND IDENTIFICATION, QUANTITATION, AND DETECTION LIMITS (all levels)

Compound identification acceptable? (Levels D, E) .... Yes No [✓ N/A]

Compound quantitation acceptable? (Levels D, E) .... Yes No [✓ N/A]

Results reported for all requested analyses? .... [✓ Yes] No N/A

Results supported in the raw data? (Levels D, E) .... Yes No [✓ N/A]

Samples properly prepared? (Levels D, E) .... Yes No [✓ N/A]

Laboratory properly identified and coded all TIC? (Levels D, E) .... Yes No [✓ N/A]

Detection limits meet RDL? .... Yes [✓ No] N/A

Transcription/calculation errors? (Levels D, E) .... Yes No [✓ N/A]

Comments: 3 out

9. SAMPLE CLEANUP (Levels D and E)

GPC cleanup performed? .... Yes No [✓ N/A]

GPC check performed? .... Yes No [✓ N/A]

GPC check recoveries acceptable? .... Yes No [✓ N/A]

GPC calibration performed? .... Yes No [✓ N/A]

GPC calibration check performed? .... Yes No [✓ N/A]

GPC calibration check retention times acceptable? .... Yes No [✓ N/A]

Check/calibration materials traceable? .... Yes No [✓ N/A]

Check/calibration materials Expired? .... Yes No [✓ N/A]

Analytical batch QC given similar cleanup? .... Yes No [✓ N/A]

Transcription/Calculation Errors? .... Yes No [✓ N/A]

Comments:

Appendix 6

Additional Documentation Requested by Client

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

Volatile Organic Compounds by SW846 8260B - Quality Control

Lionville Laboratory

Analyte	Result and Qualifiers	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch L002254 - SW 5030B									
Blank (L002254-BLK1)			Prepared & Analyzed: 02/12/2010						
1,1,1-Trichloroethane	5.00 U	5.00	ug/L						
1,1,2,2-Tetrachloroethane	5.00 U	5.00	ug/L						
1,1,2-Trichloroethane	5.00 U	5.00	ug/L						
1,1-Dichloroethane	5.00 U	5.00	ug/L						
1,1-Dichloroethene	5.00 U	5.00	ug/L						
1,2-Dichloroethane	5.00 U	5.00	ug/L						
1,2-Dichloroethene (total)	5.00 U	5.00	ug/L						
1,2-Dichloropropane	5.00 U	5.00	ug/L						
2-Butanone	10.0 U	10.0	ug/L						
2-Hexanone	10.0 U	10.0	ug/L						
4-Methyl-2-pentanone	10.0 U	10.0	ug/L						
Acetone	10.0 U	10.0	ug/L						
Benzene	5.00 U	5.00	ug/L						
Bromodichloromethane	5.00 U	5.00	ug/L						
Bromoform	5.00 U	5.00	ug/L						
Bromomethane	10.0 U	10.0	ug/L						
Carbon Disulfide	5.00 U	5.00	ug/L						
Carbon Tetrachloride	5.00 U	5.00	ug/L						
Chlorobenzene	5.00 U	5.00	ug/L						
Chloroethane	10.0 U	10.0	ug/L						
Chloroform	5.00 U	5.00	ug/L						
Chloromethane	10.0 U	10.0	ug/L						
cis-1,2-Dichloroethene	5.00 U	5.00	ug/L						
cis-1,3-Dichloropropene	5.00 U	5.00	ug/L						
Dibromochloromethane	5.00 U	5.00	ug/L						
Ethylbenzene	5.00 U	5.00	ug/L						
Methylene Chloride	6.00 U	6.00	ug/L						
Styrene	5.00 U	5.00	ug/L						
Tetrachloroethene	5.00 U	5.00	ug/L						
trans-1,2-Dichloroethene	5.00 U	5.00	ug/L						
Toluene	5.00 U	5.00	ug/L						
trans-1,3-Dichloropropene	5.00 U	5.00	ug/L						
Trichloroethene	5.00 U	5.00	ug/L						
Vinyl chloride	10.0 U	10.0	ug/L						
Xylenes, total	5.00 U	5.00	ug/L						
Surrogate: 1,2-Dichloroethane-d4	*[illegible]*		*ug/L*	*50.000*		*[illegible]*	*64-140*		

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

WC Hanford, Inc.	Project: RCT114	Reported:
2620 Fermi Avenue	Project Number: K1936	02/19/2010 14:01
Richland WA, 99354	Project Manager: Joan Kessner	

Volatile Organic Compounds by SW846 8260B - Quality Control

Lionville Laboratory

Analyte	Result and Qualifiers	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch L002254 - SW 5030B									
Blank (L002254-BLK1)			Prepared & Analyzed: 02/12/2010						
Surrogate: Toluene-d8	*47.5*		*ug/L*	*50.000*		*95*	*70-130*		
Surrogate: 4-Bromofluorobenzene	*44.5*		*ug/L*	*50.000*		*89*	*81-115*		
LCS (L002254-BS1)			Prepared & Analyzed: 02/12/2010						
1,1,1-Trichloroethane	41.9	5.00	ug/L	50.000		83	60-140		
1,1,2,2-Tetrachloroethane	41.9	5.00	ug/L	50.000		84	70-130		
1,1,2-Trichloroethane	45.0	5.00	ug/L	50.000		90	70-130		
1,1-Dichloroethane	41.8	5.00	ug/L	50.000		84	60-140		
1,1-Dichloroethene	42.7	5.00	ug/L	50.000		85	60-140		
1,2-Dichloroethane	39.9	5.00	ug/L	50.000		80	60-140		
1,2-Dichloroethene (total)	85.2	5.00	ug/L	100.00		85	60-140		
1,2-Dichloropropane	42.9	5.00	ug/L	50.000		86	70-130		
2-Butanone	41.8	10.0	ug/L	50.000		84	20-200		
2-Hexanone	46.0	10.0	ug/L	50.000		92	20-200		
4-Methyl-2-pentanone	41.0	10.0	ug/L	50.000		82	50-150		
Acetone	57.9	10.0	ug/L	50.000		116	20-200		
Benzene	43.4	5.00	ug/L	50.000		87	70-130		
Bromodichloromethane	38.0	5.00	ug/L	50.000		76	60-140		
Bromoform	41.2	5.00	ug/L	50.000		82	60-140		
Bromomethane	47.9	10.0	ug/L	50.000		96	50-180		
Carbon Disulfide	44.8	5.00	ug/L	50.000		90	60-140		
Carbon Tetrachloride	41.1	5.00	ug/L	50.000		82	60-140		
Chlorobenzene	51.0	5.00	ug/L	50.000		102	70-130		
Chloroethane	46.1	10.0	ug/L	50.000		92	50-180		
Chloroform	41.1	5.00	ug/L	50.000		82	60-140		
Chloromethane	43.6	10.0	ug/L	50.000		87	50-180		
cis-1,2-Dichloroethene	41.7	5.00	ug/L	50.000		83	60-140		
cis-1,3-Dichloropropene	46.6	5.00	ug/L	50.000		93	70-130		
Dibromochloromethane	43.2	5.00	ug/L	50.000		86	70-130		
Ethylbenzene	51.0	5.00	ug/L	50.000		102	70-130		
Methylene Chloride	42.3	5.00	ug/L	50.000		85	50-180		
Styrene	50.1	5.00	ug/L	50.000		100	70-130		
Tetrachloroethene	58.7	5.00	ug/L	50.000		117	60-140		
trans-1,2-Dichloroethene	43.5	5.00	ug/L	50.000		87	60-140		
Toluene	51.3	5.00	ug/L	50.000		103	70-130		
trans-1,3-Dichloropropene	46.0	5.00	ug/L	50.000		92	70-130		
Trichloroethene	45.5		ug/L	50.000		91	70-130		

WCH Hanford, Inc	Project: RC-114	
2620 Fermi Avenue	Project Number: K1906	Reported:
Richland WA, 99354	Project Manager: Joan Kessner	02/19/2010 14:01

Volatile Organic Compounds by SW846 8260B - Quality Control

Lionville Laboratory

Analyte	Result and Qualifiers	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch L002254 - SW 5030B									
LCS (L002254-BS1)			Prepared & Analyzed: 02/12/2010						
Vinyl chloride	43.2	10.0	ug/L	50.000		86	50-180		
Xylenes, total	156	5.00	ug/L	150.00		104	70-130		
Surrogate: 1,2-Dichloroethane-d4	*40.4*		*ug/L*	*50.000*		*81*	*64-140*		
Surrogate: Toluene-d8	*51.6*		*ug/L*	*50.000*		*103*	*70-130*		
Surrogate: 4-Bromofluorobenzene	*49.5*		*ug/L*	*50.000*		*99*	*81-115*		
Batch L002260 - SW 5030B									
Blank (L002260-BLK1)			Prepared & Analyzed: 02/13/2010						
1,1,1-Trichloroethane	5.00 U	5.00	ug/L						
1,1,2,2-Tetrachloroethane	5.00 U	5.00	ug/L						
1,1,2-Trichloroethane	5.00 U	5.00	ug/L						
1,1-Dichloroethane	5.00 U	5.00	ug/L						
1,1-Dichloroethene	5.00 U	5.00	ug/L						
1,2-Dichloroethane	5.00 U	5.00	ug/L						
1,2-Dichloroethene (total)	5.00 U	5.00	ug/L						
1,2-Dichloropropane	5.00 U	5.00	ug/L						
2-Butanone	10.0 U	10.0	ug/L						
2-Hexanone	10.0 U	10.0	ug/L						
4-Methyl-2-pentanone	10.0 U	10.0	ug/L						
Acetone	10.0 U	10.0	ug/L						
Benzene	5.00 U	5.00	ug/L						
Bromodichloromethane	5.00 U	5.00	ug/L						
Bromoform	5.00 U	5.00	ug/L						
Bromomethane	10.0 U	10.0	ug/L						
Carbon Disulfide	5.00 U	5.00	ug/L						
Carbon Tetrachloride	5.00 U	5.00	ug/L						
Chlorobenzene	5.00 U	5.00	ug/L						
Chloroethane	10.0 U	10.0	ug/L						
Chloroform	5.00 U	5.00	ug/L						
Chloromethane	10.0 U	10.0	ug/L						
cis-1,2-Dichloroethene	5.00 U	5.00	ug/L						
cis-1,3-Dichloropropene	5.00 U	5.00	ug/L						
Dibromochloromethane	5.00 U	5.00	ug/L						
Ethylbenzene	5.00 U	5.00	ug/L						
Methylene Chloride	6.00 U	6.00	ug/L						
Styrene	5.00 U	5.00	ug/L						
Tetrachloroethene	5.00 U	5.00							

WC Hanford, Inc 2620 Fermi Avenue Richland WA, 99354	Project: RC-114 Project Number: K1926 Project Manager: Joan Kessner	Reported: 02/19/2010 11:01

Volatile Organic Compounds by SW846 8260B - Quality Control

Lionville Laboratory

Analyte	Result and Qualifiers	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch L002260 - SW 5030B									
Blank (L002260-BLK1)			Prepared & Analyzed: 02/13/2010						
trans-1,2-Dichloroethene	5.00 U	5.00	ug/L						
Toluene	5.00 U	5.00	ug/L						
trans-1,3-Dichloropropene	5.00 U	5.00	ug/L						
Trichloroethene	5.00 U	5.00	ug/L						
Vinyl chloride	10.0 U	10.0	ug/L						
Xylenes, total	5.00 U	5.00	ug/L						
Surrogate: 1,2-Dichloroethane-d4	*44.4*		*ug/L*	*50.000*		*89*	*64-140*		
Surrogate: Toluene-d8	*49.9*		*ug/L*	*50.000*		*100*	*70-130*		
Surrogate: 4-Bromofluorobenzene	*46.2*		*ug/L*	*50.000*		*92*	*86-115*		
LCS (L002260-BS1)			Prepared & Analyzed: 02/13/2010						
1,1,1-Trichloroethane	41.1	5.00	ug/L	50.000		82	60-140		
1,1,2,2-Tetrachloroethane	43.7	5.00	ug/L	50.000		87	70-130		
1,1,2-Trichloroethane	45.8	5.00	ug/L	50.000		92	70-130		
1,1-Dichloroethane	41.9	5.00	ug/L	50.000		84	60-140		
1,1-Dichloroethene	43.5	5.00	ug/L	50.000		87	60-130		
1,2-Dichloroethane	40.3	5.00	ug/L	50.000		81	60-140		
1,2-Dichloroethene (total)	80.9	5.00	ug/L	100.00		81	60-140		
1,2-Dichloropropane	44.9	5.00	ug/L	50.000		90	70-130		
2-Butanone	37.0	10.0	ug/L	50.000		74	20-200		
2-Hexanone	40.5	10.0	ug/L	50.000		81	20-200		
4-Methyl-2-pentanone	38.7	10.0	ug/L	50.000		77	30-150		
Acetone	40.6	10.0	ug/L	50.000		81	20-200		
Benzene	43.6	5.00	ug/L	50.000		87	70-130		
Bromodichloromethane	39.5	5.00	ug/L	50.000		79	60-140		
Bromoform	45.0	5.00	ug/L	50.000		90	60-140		
Bromomethane	41.7	10.0	ug/L	50.000		83	30-180		
Carbon Disulfide	41.1	5.00	ug/L	50.000		82	60-140		
Carbon Tetrachloride	39.9	5.00	ug/L	50.000		80	60-140		
Chlorobenzene	52.7	5.00	ug/L	50.000		105	70-130		
Chloroethane	40.4	10.0	ug/L	50.000		81	50-140		
Chloroform	41.4	5.00	ug/L	50.000		83	60-140		
Chloromethane	38.4	10.0	ug/L	50.000		77	50-180		
cis-1,2-Dichloroethene	40.4	5.00	ug/L	50.000		81	60-140		
cis-1,3-Dichloropropene	46.3	5.00	ug/L	50.000		93	70-130		
Dibromochloromethane	43.7	5.00	ug/L	50.000		87	70-130		
Ethylbenzene	50.8	5.00	ug/L	50.000		102	70-130		

WC-Hanford, Inc	Project: RC-114	
2620 Fermi Avenue	Project Number: K1926	Reported:
Richland WA, 99354	Project Manager: Joan Kessner	02/19/2010 14:41

Volatile Organic Compounds by SW846 8260B - Quality Control

Lionville Laboratory

Analyte	Result and Qualifiers	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch L002260 - SW 5030B									
LCS (L002260-BS1)			Prepared & Analyzed: 02/11/2010						
Methylene Chloride	44.1	5.00	ug/L	50.000		88	50-150		
Styrene	51.4	5.00	ug/L	50.000		103	70-130		
Tetrachloroethene	57.5	5.00	ug/L	50.000		115	60-140		
trans-1,2-Dichloroethene	40.5	5.00	ug/L	50.000		81	60-140		
Toluene	51.5	5.00	ug/L	50.000		103	70-130		
trans-1,3-Dichloropropene	46.1	5.00	ug/L	50.000		92	70-130		
Trichloroethene	47.0	5.00	ug/L	50.000		94	70-130		
Vinyl chloride	38.1	10.0	ug/L	50.000		76	50-150		
Xylenes, total	158	5.00	ug/L	150.00		105	70-130		
Surrogate: 1,2-Dichloroethane-d4	*41.3*		*ug/L*	*50.000*		*83*	*64-140*		
Surrogate: Toluene-d8	*53.0*		*ug/L*	*50.000*		*106*	*70-130*		
Surrogate: 4-Bromofluorobenzene	*50.4*		*ug/L*	*50.000*		*101*	*81-115*		
Matrix Spike (L002260-MS1)	Source: L003009-15		Prepared & Analyzed: 02/11/2010						
1,1,1-Trichloroethane	43.6	5.00	ug/L	50.000	5.00 U	87	60-140		
1,1,2,2-Tetrachloroethane	45.2	5.00	ug/L	50.000	5.00 U	90	70-130		
1,1,2-Trichloroethane	45.0	5.00	ug/L	50.000	5.00 U	90	70-130		
1,1-Dichloroethane	45.3	5.00	ug/L	50.000	5.00 U	91	60-140		
1,1-Dichloroethene	40.9	5.00	ug/L	50.000	5.00 U	82	60-130		
1,2-Dichloroethane	43.6	5.00	ug/L	50.000	5.00 U	87	60-140		
1,2-Dichloroethene (total)	84.3	5.00	ug/L	100.00	5.00 U	84	60-140		
1,2-Dichloropropane	45.6	5.00	ug/L	50.000	5.00 U	91	70-130		
2-Butanone	36.6	10.0	ug/L	50.000	10.0 U	73	20-200		
2-Hexanone	36.5	10.0	ug/L	50.000	10.0 U	73	20-200		
4-Methyl-2-pentanone	37.8	10.0	ug/L	50.000	10.0 U	76	50-150		
Acetone	48.1	10.0	ug/L	50.000	15.6	65	20-200		
Benzene	44.3	5.00	ug/L	50.000	5.00 U	89	70-130		
Bromodichloromethane	40.4	5.00	ug/L	50.000	5.00 U	81	60-140		
Bromoform	43.1	5.00	ug/L	50.000	5.00 U	86	60-140		
Bromomethane	45.9	10.0	ug/L	50.000	10.0 U	92	50-150		
Carbon Disulfide	41.9	5.00	ug/L	50.000	5.00 U	84	60-140		
Carbon Tetrachloride	41.8	5.00	ug/L	50.000	5.00 U	84	60-140		
Chlorobenzene	52.4	5.00	ug/L	50.000	5.00 U	105	70-130		
Chloroethane	42.5	10.0	ug/L	50.000	10.0 U	85	50-150		
Chloroform	44.1	5.00	ug/L	50.000	5.00 U	88	60-140		
Chloromethane	37.4	10.0	ug/L	50.000	10.0 U	75	50-150		
cis-1,2-Dichloroethene	40.4	5.00	ug/L	50.000	5.00 U	81	60-140		

Volatile Organic Compounds by SW846 8260B - Quality Control

Lionville Laboratory

Analyte	Result and Qualifiers	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch L002260 - SW 5030B									
Matrix Spike (L002260-MS1)	Source: 1002009-15		Prepared & Analyzed: 02/13/2010						
cis-1,3-Dichloropropene	42.8	5.00	ug/L	50.000	5.00 U	86	70-130		
Dibromochloromethane	45.2	5.00	ug/L	50.000	5.00 U	90	70-130		
Ethylbenzene	51.6	5.00	ug/L	50.000	5.00 U	103	70-130		
Methylene Chloride	43.8	6.00	ug/L	50.000	6.00 U	88	50-180		
Styrene	49.2	5.00	ug/L	50.000	5.00 U	98	70-130		
Tetrachloroethene	53.1	5.00	ug/L	50.000	5.00 U	106	60-140		
trans-1,2-Dichloroethene	43.9	5.00	ug/L	50.000	5.00 U	88	60-140		
Toluene	49.4	5.00	ug/L	50.000	5.00 U	99	70-130		
trans-1,3-Dichloropropene	44.2	5.00	ug/L	50.000	5.00 U	88	70-130		
Trichloroethene	46.4	5.00	ug/L	50.000	5.00 U	93	70-130		
Vinyl chloride	36.5	10.0	ug/L	50.000	10.0 U	73	50-180		
Xylenes, total	158	5.00	ug/L	150.00	5.00 U	105	70-130		
Surrogate: 1,2-Dichloroethane-d4	*44.0*		*ug/L*	*50.000*		*88*	*64-140*		
Surrogate: Toluene-d8	*49.6*		*ug/L*	*50.000*		*99*	*70-130*		
Surrogate: 4-Bromofluorobenzene	*51.4*		*ug/L*	*50.000*		*103*	*81-115*		
Matrix Spike Dup (L002260-MSD1)	Source: 1002009-15		Prepared & Analyzed: 02/13/2010						
1,1,1-Trichloroethane	40.7	5.00	ug/L	50.000	5.00 U	81	60-140	7	20
1,1,2,2-Tetrachloroethane	42.9	5.00	ug/L	50.000	5.00 U	86	70-130	5	20
1,1,2-Trichloroethane	44.3	5.00	ug/L	50.000	5.00 U	89	70-130	2	20
1,1-Dichloroethane	43.8	5.00	ug/L	50.000	5.00 U	88	60-140	3	20
1,1-Dichloroethene	39.1	5.00	ug/L	50.000	5.00 U	78	60-140	4	20
1,2-Dichloroethane	43.1	5.00	ug/L	50.000	5.00 U	86	60-140	1	20
1,2-Dichloroethene (total)	79.9	5.00	ug/L	100.00	5.00 U	80	60-140	5	20
1,2-Dichloropropane	44.8	5.00	ug/L	50.000	5.00 U	90	70-130	2	20
2-Butanone	35.6	10.0	ug/L	50.000	10.0 U	71	20-200	3	20
2-Hexanone	34.9	10.0	ug/L	50.000	10.0 U	70	20-200	5	20
4-Methyl-2-pentanone	37.9	10.0	ug/L	50.000	10.0 U	76	50-130	0.2	20
Acetone	47.8	10.0	ug/L	50.000	15.6	64	20-200	1	20
Benzene	43.6	5.00	ug/L	50.000	5.00 U	87	70-130	2	20
Bromodichloromethane	38.6	5.00	ug/L	50.000	5.00 U	77	60-130	1	20
Bromoform	40.5	5.00	ug/L	50.000	5.00 U	81	60-140	6	20
Bromomethane	41.2	10.0	ug/L	50.000	10.0 U	82	50-180	11	20
Carbon Disulfide	40.7	5.00	ug/L	50.000	5.00 U	81	60-140	3	20
Carbon Tetrachloride	39.2	5.00	ug/L	50.000	5.00 U	78	60-140	6	20
Chlorobenzene	49.2	5.00	ug/L	50.000	5.00 U	98	70-130	6	20
Chloroethane	40.6	10.0	ug/L	50.000	10.0 U	81	50-180	1	20

Volatile Organic Compounds by SW846 8260B - Quality Control

Lionville Laboratory

Analyte	Result and Qualifiers	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch L002260 - SW 5030B									
Matrix Spike Dup (L002260-MSD1)		**Source: 1002009-15**	Prepared & Analyzed: 02/13/2010						
Chloroform	41.4	5.00	ug/L	50.000	5.00 U	83	60-140	6	20
Chloromethane	39.0	10.0	ug/L	50.000	10.0 U	78	50-150	4	20
cis-1,2-Dichloroethene	39.6	5.00	ug/L	50.000	5.00 U	79	60-140	2	20
cis-1,3-Dichloropropene	43.1	5.00	ug/L	50.000	5.00 U	86	70-130	0.6	20
Dibromochloromethane	42.6	5.00	ug/L	50.000	5.00 U	85	70-130	6	20
Ethylbenzene	48.8	5.00	ug/L	50.000	5.00 U	98	70-130	5	20
Methylene Chloride	40.6	6.00	ug/L	50.000	6.00 U	81	50-150	8	20
Styrene	45.5	5.00	ug/L	50.000	5.00 U	91	70-130	8	20
Tetrachloroethene	51.0	5.00	ug/L	50.000	5.00 U	102	60-140	4	20
trans-1,2-Dichloroethene	40.3	5.00	ug/L	50.000	5.00 U	81	60-140	8	20
Toluene	48.6	5.00	ug/L	50.000	5.00 U	97	70-130	2	20
trans-1,3-Dichloropropene	44.3	5.00	ug/L	50.000	5.00 U	89	70-130	0.2	20
Trichloroethene	44.7	5.00	ug/L	50.000	5.00 U	89	70-130	4	20
Vinyl chloride	36.7	10.0	ug/L	50.000	10.0 U	73	50-150	0.3	20
Xylenes, total	149	5.00	ug/L	150.00	5.00 U	100	70-130	6	20
Surrogate: 1,2-Dichloroethane-d4	*46.8*		*ug/L*	*50.000*		*94*	*64-140*		
Surrogate: Toluene-d8	*52.3*		*ug/L*	*50.000*		*105*	*70-130*		
Surrogate: 4-Bromofluorobenzene	*52.5*		*ug/L*	*50.000*		*105*	*81-115*		

WC-Hanford, Inc 2620 Fermi Avenue Richland WA, 99354	Project: RC-115 Project Number: K1923 Project Manager: Joan Kessner	Reported: 02/19/2010 14:03

Volatile Organic Compounds by SW846 8260B - Quality Control
Lionville Laboratory

Analyte	Result and Qualifiers	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch L002254 - SW 5030B									
LCS (L002254-BS1)			Prepared & Analyzed: 02/17/2010						
Vinyl chloride	43.2	10.0	ug/L	50.000		86	50-180		
Xylenes, total	156	5.00	ug/L	150.00		104	70-130		
Surrogate: 1,2-Dichloroethane-d4	*41.4*		*ug/L*	*50.000*		*83*	*64-140*		
Surrogate: Toluene-d8	*51.6*		*ug/L*	*50.000*		*103*	*70-130*		
Surrogate: 4-Bromofluorobenzene	*49.5*		*ug/L*	*50.000*		*99*	*81-115*		
Matrix Spike (L002254-MS1)		Source: 1002010-13	Prepared & Analyzed: 02/12/2010						
1,1,1-Trichloroethane	43.4	5.00	ug/L	50.000	5.00 U	87	60-140		
1,1,2,2-Tetrachloroethane	44.4	5.00	ug/L	50.000	5.00 U	89	70-130		
1,1,2-Trichloroethane	43.6	5.00	ug/L	50.000	5.00 U	87	70-130		
1,1-Dichloroethane	46.3	5.00	ug/L	50.000	5.00 U	93	60-140		
1,1-Dichloroethene	41.9	5.00	ug/L	50.000	5.00 U	84	60-140		
1,2-Dichloroethane	44.9	5.00	ug/L	50.000	5.00 U	90	60-140		
1,2-Dichloroethene (total)	85.6	5.00	ug/L	100.00	5.00 U	86	60-140		
1,2-Dichloropropane	45.3	5.00	ug/L	50.000	5.00 U	91	70-130		
2-Butanone	39.3	10.0	ug/L	50.000	10.0 U	79	20-200		
2-Hexanone	39.3	10.0	ug/L	50.000	10.0 U	79	20-200		
4-Methyl-2-pentanone	41.3	10.0	ug/L	50.000	10.0 U	83	50-150		
Acetone	38.5	10.0	ug/L	50.000	10.0 U	77	20-200		
Benzene	44.4	5.00	ug/L	50.000	5.00 U	89	70-130		
Bromodichloromethane	40.3	5.00	ug/L	50.000	5.00 U	81	60-140		
Bromoform	45.8	5.00	ug/L	50.000	5.00 U	92	60-140		
Bromomethane	46.8	10.0	ug/L	50.000	10.0 U	94	50-180		
Carbon Disulfide	43.7	5.00	ug/L	50.000	5.00 U	87	60-140		
Carbon Tetrachloride	42.0	5.00	ug/L	50.000	5.00 U	84	60-140		
Chlorobenzene	50.1	5.00	ug/L	50.000	5.00 U	100	70-130		
Chloroethane	43.1	10.0	ug/L	50.000	10.0 U	86	40-180		
Chloroform	43.0	5.00	ug/L	50.000	5.00 U	86	60-140		
Chloromethane	40.8	10.0	ug/L	50.000	10.0 U	82	50-180		
cis-1,2-Dichloroethene	40.5	5.00	ug/L	50.000	5.00 U	81	60-140		
cis-1,3-Dichloropropene	40.6	5.00	ug/L	50.000	5.00 U	81	70-130		
Dibromochloromethane	45.0	5.00	ug/L	50.000	5.00 U	90	70-130		
Ethylbenzene	48.3	5.00	ug/L	50.000	5.00 U	97	70-130		
Methylene Chloride	43.7	6.00	ug/L	50.000	6.00 U	87	50-180		
Styrene	49.4	5.00	ug/L	50.000	5.00 U	99	70-130		
Tetrachloroethene	51.4	5.00	ug/L	50.000	5.00 U	103	60-140		
trans-1,2-Dichloroethene	45.1	5.00	ug/L	50.000	5.00 U	90	60-140		

364 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
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WC-Hanford, Inc. 2620 Fermi Avenue Richland WA, 99354	Project: RC-113 Project Number: K1923 Project Manager: Joan Kessner	Reported: 02/19/2010 14:03

Volatile Organic Compounds by SW846 8260B - Quality Control

Lionville Laboratory

Analyte	Result and Qualifiers	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch L002254 - SW 5030B									
Matrix Spike (L002254-MS1)		**Source: 1002010-13**	**Prepared & Analyzed: 02/12/2010**						
Toluene	46.6	5.00	ug/L	50.000	5.00 U	93	70-130		
trans-1,3-Dichloropropene	45.0	5.00	ug/L	50.000	5.00 U	90	70-130		
Trichloroethene	45.4	5.00	ug/L	50.000	5.00 U	91	70-130		
Vinyl chloride	39.8	10.0	ug/L	50.000	10.0 U	80	50-180		
Xylenes, total	153	5.00	ug/L	150.00	5.00 U	102	70-130		
Surrogate: 1,2-Dichloroethane-d4	*43.9*		*ug/L*	*50.000*		*88*	*64-140*		
Surrogate: Toluene-d8	*46.7*		*ug/L*	*50.000*		*93*	*70-130*		
Surrogate: 4-Bromofluorobenzene	*45.7*		*ug/L*	*50.000*		*91*	*81-115*		
Matrix Spike Dup (L002254-MSD1)		**Source: 1002010-13**	**Prepared & Analyzed: 02/12/2010**						
1,1,1-Trichloroethane	42.6	5.00	ug/L	50.000	5.00 U	85	60-140	2	20
1,1,2,2-Tetrachloroethane	48.2	5.00	ug/L	50.000	5.00 U	96	70-130	8	20
1,1,2-Trichloroethane	45.9	5.00	ug/L	50.000	5.00 U	92	70-130	5	20
1,1-Dichloroethane	46.7	5.00	ug/L	50.000	5.00 U	93	60-140	0.9	20
1,1-Dichloroethene	41.9	5.00	ug/L	50.000	5.00 U	84	60-130	0.2	20
1,2-Dichloroethane	45.4	5.00	ug/L	50.000	5.00 U	91	60-140	1	20
1,2-Dichloroethene (total)	82.9	5.00	ug/L	100.00	5.00 U	83	60-140	3	20
1,2-Dichloropropane	46.9	5.00	ug/L	50.000	5.00 U	94	70-130	4	20
2-Butanone	41.8	10.0	ug/L	50.000	10.0 U	84	20-200	6	20
2-Hexanone	43.7	10.0	ug/L	50.000	10.0 U	87	20-200	11	20
4-Methyl-2-pentanone	45.4	10.0	ug/L	50.000	10.0 U	91	50-150	10	20
Acetone	40.0	10.0	ug/L	50.000	10.0 U	80	20-200	4	20
Benzene	44.1	5.00	ug/L	50.000	5.00 U	88	70-130	0.6	20
Bromodichloromethane	41.4	5.00	ug/L	50.000	5.00 U	83	60-140	3	20
Bromoform	46.1	5.00	ug/L	50.000	5.00 U	92	60-140	0.7	20
Bromomethane	44.5	10.0	ug/L	50.000	10.0 U	89	50-180	5	20
Carbon Disulfide	43.4	5.00	ug/L	50.000	5.00 U	87	60-140	0.8	20
Carbon Tetrachloride	41.2	5.00	ug/L	50.000	5.00 U	82	60-140	2	20
Chlorobenzene	51.4	5.00	ug/L	50.000	5.00 U	103	70-130	1	20
Chloroethane	44.1	10.0	ug/L	50.000	10.0 U	88	50-180	2	20
Chloroform	43.2	5.00	ug/L	50.000	5.00 U	86	65-140	0.3	20
Chloromethane	42.2	10.0	ug/L	50.000	10.0 U	84	50-150	5	20
cis-1,2-Dichloroethene	40.3	5.00	ug/L	50.000	5.00 U	81	60-140	0.1	20
cis-1,3-Dichloropropene	44.2	5.00	ug/L	50.000	5.00 U	88	70-130	6	20
Dibromochloromethane	45.4	5.00	ug/L	50.000	5.00 U	91	70-130	0.8	20
Ethylbenzene	49.1	5.00	ug/L	50.000	5.00 U	98	70-130	2	20
Methylene Chloride	43.0	6.00	ug/L	50.000	6.00 U	86	50-180	2	20

Volatile Organic Compounds by SW846 8260B - Quality Control

Lionville Laboratory

Analyte	Result and Qualifiers	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch L002254 - SW 5030B									
Matrix Spike Dup (L002254-MSD1)		Source: 1002010-13	Prepared & Analyzed: 02/12/2010						
Styrene	50.9	5.00	ug/L	50.000	5.00 U	102	70-130	1	20
Tetrachloroethene	52.5	5.00	ug/L	50.000	5.00 U	105	60-140	2	20
trans-1,2-Dichloroethene	42.5	5.00	ug/L	50.000	5.00 U	85	60-140	6	20
Toluene	49.7	5.00	ug/L	50.000	5.00 U	99	70-130	6	20
trans-1,3-Dichloropropene	46.8	5.00	ug/L	50.000	5.00 U	94	70-130	1	20
Trichloroethene	44.2	5.00	ug/L	50.000	5.00 U	88	70-130	1	20
Vinyl chloride	40.8	10.0	ug/L	50.000	10.0 U	82	50-180	2	20
Xylenes, total	154	5.00	ug/L	150.00	5.00 U	102	70-130	0.7	20
Surrogate: 1,2-Dichloroethane-d4	*43.2*		*ug/L*	*50.000*		*86*	*64-140*		
Surrogate: Toluene-d8	*45.9*		*ug/L*	*50.000*		*92*	*70-130*		
Surrogate: 4-Bromofluorobenzene	*46.3*		*ug/L*	*50.000*		*93*	*81-115*		

Date: 12 April 2010
To: Washington Closure Hanford (technical representative)
From: ELR Consulting
Project: Columbia River Component of the RCBRA – Pore Water – Phase III
Subject: Inorganic - Data Package No. K1926-LLI

INTRODUCTION

This memo presents the results of data validation on Data Package No. K1926 prepared by Lionville Laboratory Inc. (LLI). A list of samples validated along with the analyses reported and the method of analysis is provided in the following table.

Sample ID	Sample Date	Media	Validation	Data
J19JD8	1/29/10	Water	C	See note 1
J19JF2	1/29/10	Water	C	See note 1
J19JD7	1/29/10	Water	C	See note 1
J19JF1	1/29/10	Water	C	See note 1
J19JD9	1/30/10	Water	C	See note 1
J19JF3	1/30/10	Water	C	See note 1
J19JC7	1/31/10	Water	C	See note 1
J19JC8	1/31/10	Water	C	See note 1
J19HN9	1/31/10	Water	C	See note 1
J19HP0	1/31/10	Water	C	See note 1
J19HK0	1/31/10	Water	C	See note 1
J19HK1	1/31/10	Water	C	See note 1
J19F74	2/1/10	Water	C	See note 1
J19F78	2/1/10	Water	C	See note 1
J19HW2	2/1/10	Water	C	See note 1
J19HW4	2/1/10	Water	C	See note 1
J19JC3	2/1/10	Water	C	See note 1

1 - ICP metals (6010B) and mercury (7471A)

Data validation was conducted in accordance with the Washington Closure Hanford (WCH) validation statement of work and the Remedial Investigation Work Plan for Hanford Site Releases to the Columbia River (DOE/RL-2008-11, Rev 0, September 2008). Appendices 1 through 6 provide the following information as indicated below:

Appendix 1. Glossary of Data Reporting Qualifiers
Appendix 2. Summary of Data Qualification
Appendix 3. Qualified Data Summary and Annotated Laboratory Reports
Appendix 4. Laboratory Narrative and Chain-of-Custody Documentation
Appendix 5. Data Validation Supporting Documentation
Appendix 6. Additional Documentation Requested by Client

DATA QUALITY PARAMETERS

· Holding Times

Analytical holding times for metals are assessed to ascertain whether the holding time requirements were met by the laboratory. The holding time requirements are as follows; Samples must be analyzed within 6 months for ICP metals and 28 days for mercury.

All holding times were acceptable.

· Preparation (Method) Blanks

Preparation Blanks

At least one preparation blank, consisting of deionized distilled water processed through each sample preparation and analysis procedure, must be prepared and analyzed with every sample delivery group. In the case of positive blank results, samples with digestate concentrations less than five times the preparation blank value have had their associated values qualified as non-detected and flagged "U". Samples with concentrations of greater than five times the highest blank concentration do not require qualification

In the case of negative blank results, if the absolute value exceeds the contract required detection limit (CRDL), all nondetects are rejected and flagged "UR" and all detects that are less than ten times the absolute value of the associated preparation blank result are qualified as estimates and flagged "J" If the absolute value of the negative preparation blank is greater than the instrument detection limit (IDL) and less than or equal to the CRDL, all nondetects are qualified as estimates and flagged "UJ" and all detects less than ten times the absolute value of the blank are qualified as estimates and flagged "J" If the sample results are greater than ten times the absolute value of the preparation blank, no qualification is necessary.

Due to method blank contamination, the aluminum result in samples J19JF2, J19JD7, J19JF1, J19JF3, J19JC8, J19HP0, J19HK1, J19F78, J19HW4 and J19JC3 were qualified as undetected and flagged "UJ".

All other preparation blank results were acceptable.

Field (Equipment) Blank

No field blanks were submitted for analysis.

- **Accuracy**

Matrix Spike and Laboratory Control Sample

Matrix spike (MS) and laboratory control sample (LCS) analyses are used to assess the analytical accuracy of the reported data. The matrix spike is used to assess the effect of the matrix on the ability to accurately quantify sample concentrations. Recoveries must fall within the range of 70% to 130%. Samples with a recovery of less than 30% and a sample result below the IDL are rejected and flagged "UR". Samples with a recovery of 30% to 69% and a sample result less than the IDL are qualified "UJ". Samples with a recovery of greater than 130% or less than 70% and a sample result greater than the IDL are qualified as estimates and flagged "J". Finally, for samples with a recovery greater than 130% and a sample result less than the IDL, no qualification is required.

All accuracy results were acceptable.

- **Precision**

Laboratory Duplicate Samples

Analytical precision is expressed by the relative percent differences (RPD) between the recoveries of matrix spike duplicate (MSD) analyses performed on a sample in the analytical batch. Precision may alternatively be assessed using unspiked duplicate analyses performed on a sample in the analytical batch. If both sample and replicate activities (concentrations) are greater than five times the CRDL and the RPD is less than 30%, no qualification is required. If either activity (concentration) is less than five times the CRDL, the RPD control limit is less than or equal to two times the CRDL. If the RPD is outside the applicable control limit, associated results are qualified as estimated detects or estimated non-detects.

All laboratory duplicate results were acceptable.

Field Duplicate

No field duplicates were submitted for analysis.

- **Analytical Detection Levels**

Reported analytical detection levels are compared against the 100 and 300 Area RQLs to ensure that laboratory detection levels meet the required criteria. All results met the RQL.

Completeness

Data package No. K1926 was submitted for validation and verified for completeness. Completeness is based on the percentage of data determined to be valid (i.e., not rejected). The completion percentage was 100%.

MAJOR DEFICIENCIES

None found.

MINOR DEFICIENCIES

The following minor deficiencies were noted:

- Due to method blank contamination, the aluminum result in samples J19JF2, J19JD7, J19JF1, J19JF3, J19JC8, J19HP0, J19HK1, J19F78, J19HW4 and J19JC3 were qualified as undetected and flagged "UJ".

Data flagged "J" indicates that the associated concentration is an estimate, but under the WCH statement of work, the data may be usable for decision-making purposes. All other validated results are considered accurate within the standard error associated with the methods.

REFERENCES

Washington Closure Hanford Contract #S00W307A00 (March 2008), *Data Validation Services*, March 2008.

DOE/RL-2008-11, Rev.0, *Remedial Investigation Work Plan for Hanford Site Releases to the Columbia River*, September 2008.

Appendix 1

Glossary of Data Reporting Qualifiers

Qualifiers which may be applied by data validators in compliance with WCH validation SOW are as follows:

U - Indicates the compound or analyte was analyzed for and not detected in the sample. The value reported is the sample quantitation limit corrected for sample dilution and moisture content by the laboratory.

UJ - Indicates the compound or analyte was analyzed for and not detected in the sample. Due to a minor QC deficiency identified during the data validation, the associated quantitation limit is an estimate.

J - Indicates the compound or analyte was analyzed for and detected. Due to a minor QC deficiency identified during the data validation, the associated concentration is an estimate, but the data are usable for decision-making purposes.

BJ - Applied to inorganic analyses only. Indicates the analyte concentration was greater than the IDL but less than the CRDL and is considered an estimated value.

R - Indicates the compound or analyte was analyzed for, detected, and due to an identified major QC deficiency, the data are unusable.

UR - Indicates the compound or analyte was analyzed for and not detected in the sample. Additionally, the data is unusable due to an identified major QC deficiency.

NJ - Indicates presumptive evidence of a compound at an estimated value. The data may not be valid for some specific applications (i.e., usable for decision-making purposes).

N - Indicates presumptive evidence of a compound. The data may not be valid for some specific applications (i.e., usable for decision-making purposes).

Appendix 2

Summary of Data Qualification

METALS DATA QUALIFICATION SUMMARY*

SDG: K1926	**REVIEWER: ELR**	**Project: RCBRA**	**PAGE_1_OF_1**
COMPOUND	QUALIFIER	SAMPLES AFFECTED	REASON
Aluminum	UJ	J19JF2, J19JD7 J19JF1, J19JF3 J19JC8, J19HP0 J19HK1, J19F78 J19HW4, J19JC3	Method blank contamination

* - The Qualified Data Summary Table includes laboratory applied "U" qualifiers not specifically identified here. The laboratory applied "U" qualifiers are included to minimize misinterpretation of results contained in the table

Appendix 3

Qualified Data Summary and Annotated Laboratory Reports

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

WCH Hanford, Inc
2620 Fermi Avenue
Richland WA, 99354

Project: RC-TEI
Project Number: K1926
Project Manager: Joan Kessner

Reported:
02/19/2010 14:30

J19JD8
1002009-01 (Water)

V 4/11/10

Analyte	Result and Qualifier		Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
			Lionville Laboratory						
Metals by SW846 6000/7000 series									
Aluminum	**2440**		50.0	ug/L	1	1002220	02/17/2010	02/18/2010	6010B
Antimony	6.00	U	6.00	ug/L	1	1002220	02/17/2010	02/18/2010	6010B
Arsenic	10.0	U	10.0	ug/L	1	1002220	02/17/2010	02/18/2010	6010B
Barium	**43.6**		5.00	ug/L	1	1002220	02/17/2010	02/18/2010	6010B
Beryllium	2.00	U	2.00	ug/L	1	1002220	02/17/2010	02/18/2010	6010B
Boron	**18.6**		10.0	ug/L	1	1002220	02/17/2010	02/18/2010	6010B
Cadmium	1.00	U	1.00	ug/L	1	1002220	02/17/2010	02/18/2010	6010B
Calcium	**27200**		100	ug/L	1	1002220	02/17/2010	02/18/2010	6010B
Chromium	**9.08**		2.00	ug/L	1	1002220	02/17/2010	02/18/2010	6010B
Cobalt	**0.648**	B	2.00	ug/L	1	1002220	02/17/2010	02/18/2010	6010B
Copper	**4.73**	B	10.0	ug/L	1	1002220	02/17/2010	02/18/2010	6010B
Iron	**2190**		50.0	ug/L	1	1002220	02/17/2010	02/18/2010	6010B
Lead	**2.70**	B	5.00	ug/L	1	1002220	02/17/2010	02/18/2010	6010B
Magnesium	**5980**		100	ug/L	1	1002220	02/17/2010	02/18/2010	6010B
Manganese	**27.4**		2.00	ug/L	1	1002220	02/17/2010	02/18/2010	6010B
Nickel	**3.93**	B	5.00	ug/L	1	1002220	02/17/2010	02/18/2010	6010B
Potassium	**1980**		500	ug/L	1	1002220	02/17/2010	02/18/2010	6010B
Selenium	10.0	U	10.0	ug/L	1	1002220	02/17/2010	02/18/2010	6010B
Silver	2.00	U	2.00	ug/L	1	1002220	02/17/2010	02/18/2010	6010B
Sodium	**3090**		500	ug/L	1	1002220	02/17/2010	02/18/2010	6010B
Uranium	100	U	100	ug/L	1	1002220	02/17/2010	02/18/2010	6010B
Vanadium	**7.28**		5.00	ug/L	1	1002220	02/17/2010	02/18/2010	6010B
Zinc	**16.4**		10.0	ug/L	1	1002220	02/17/2010	02/18/2010	6010B
Mercury	**0.0770**	B	0.200	ug/L	1	1002153	02/12/2010	02/15/2010	7470A

WC-Hanford, Inc	Project: RCP-114	
2620 Fermi Avenue	Project Number: K3926	Reported:
Richland WA 99354	Project Manager: Joan Kessner	02/19/2010 14:30

J19JF2

1002009-02 (Water)

Analyte	Result and Qualifier		Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
			Lionville Laboratory			4/6/10			
Metals by SW846 6000/7000 series									
Aluminum	**21.1**	B UJ	50.0	ug/L	1	1002220	02/17/2010	02/18/2010	6010B
Antimony	6.00	U	6.00	ug/L	1	1002220	02/17/2010	02/18/2010	6010B
Arsenic	10.0	U	10.0	ug/L	1	1002220	02/17/2010	02/18/2010	6010B
Barium	**18.4**		5.00	ug/L	1	1002220	02/17/2010	02/18/2010	6010B
Beryllium	2.00	U	2.00	ug/L	1	1002220	02/17/2010	02/18/2010	6010B
Boron	**16.0**		10.0	ug/L	1	1002220	02/17/2010	02/18/2010	6010B
Cadmium	1.00	U	1.00	ug/L	1	1002220	02/17/2010	02/18/2010	6010B
Calcium	**26700**		100	ug/L	1	1002220	02/17/2010	02/18/2010	6010B
Chromium	**4.61**		2.00	ug/L	1	1002220	02/17/2010	02/18/2010	6010B
Cobalt	2.00	U	2.00	ug/L	1	1002220	02/17/2010	02/18/2010	6010B
Copper	**2.40**	B	10.0	ug/L	1	1002220	02/17/2010	02/18/2010	6010B
Iron	**11.0**	B	50.0	ug/L	1	1002220	02/17/2010	02/18/2010	6010B
Lead	5.00	U	5.00	ug/L	1	1002220	02/17/2010	02/18/2010	6010B
Magnesium	**5210**		100	ug/L	1	1002220	02/17/2010	02/18/2010	6010B
Manganese	**0.961**	B	2.00	ug/L	1	1002220	02/17/2010	02/18/2010	6010B
Nickel	**0.610**	B	5.00	ug/L	1	1002220	02/17/2010	02/18/2010	6010B
Potassium	**1360**		500	ug/L	1	1002220	02/17/2010	02/18/2010	6010B
Selenium	10.0	U	10.0	ug/L	1	1002220	02/17/2010	02/18/2010	6010B
Silver	2.00	U	2.00	ug/L	1	1002220	02/17/2010	02/18/2010	6010B
Sodium	**2840**		100	ug/L	1	1002220	02/17/2010	02/18/2010	6010B
Uranium	100	U	100	ug/L	1	1002220	02/17/2010	02/18/2010	6010B
Vanadium	**2.33**	B	5.00	ug/L	1	1002220	02/17/2010	02/18/2010	6010B
Zinc	**6.20**	B	10.0	ug/L	1	1002220	02/17/2010	02/18/2010	6010B
Soluble Mercury	0.200	U	0.200	ug/L	1	1002153	02/12/2010	02/15/2010	7470A

WC-Hanford, Inc. 2620 Fermi Avenue Richland WA, 99354	Project: RC-114 Project Number: K1926 Project Manager: Joan Kessner	Reported: 02/19/2010 11:30

J19JD7

1002009-03 (Water)

Lionville Laboratory ✓ 4/6/10

Metals by SW846 6000/7000 series

Analyte	Result and Qualifier		Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Aluminum	64.0	U5	50.0	ug/L	1	1002220	02/17/2010	02/18/2010	6010B
Antimony	6.00	U	6.00	ug/L	1	1002220	02/17/2010	02/18/2010	6010B
Arsenic	10.0	U	10.0	ug/L	1	1002220	02/17/2010	02/18/2010	6010B
Barium	**47.9**		5.00	ug/L	1	1002220	02/17/2010	02/18/2010	6010B
Beryllium	2.00	U	2.00	ug/L	1	1002220	02/17/2010	02/18/2010	6010B
Boron	**22.0**		10.0	ug/L	1	1002220	02/17/2010	02/18/2010	6010B
Cadmium	1.00	U	1.00	ug/L	1	1002220	02/17/2010	02/18/2010	6010B
Calcium	**36300**		100	ug/L	1	1002220	02/17/2010	02/18/2010	6010B
Chromium	**3.33**		2.00	ug/L	1	1002220	02/17/2010	02/18/2010	6010B
Cobalt	2.00	U	2.00	ug/L	1	1002220	02/17/2010	02/18/2010	6010B
Copper	10.0	U	10.0	ug/L	1	1002220	02/17/2010	02/18/2010	6010B
Iron	**69.8**		50.0	ug/L	1	1002220	02/17/2010	02/18/2010	6010B
Lead	**2.94**	B	5.00	ug/L	1	1002220	02/17/2010	02/18/2010	6010B
Magnesium	**8690**		100	ug/L	1	1002220	02/17/2010	02/18/2010	6010B
Manganese	**5.96**		2.00	ug/L	1	1002220	02/17/2010	02/18/2010	6010B
Nickel	**1.11**	B	5.00	ug/L	1	1002220	02/17/2010	02/18/2010	6010B
Potassium	**2520**		500	ug/L	1	1002220	02/17/2010	02/18/2010	6010B
Selenium	10.0	U	10.0	ug/L	1	1002220	02/17/2010	02/18/2010	6010B
Silver	2.00	U	2.00	ug/L	1	1002220	02/17/2010	02/18/2010	6010B
Sodium	**5750**		100	ug/L	1	1002220	02/17/2010	02/18/2010	6010B
Uranium	100	U	100	ug/L	1	1002220	02/17/2010	02/18/2010	6010B
Vanadium	**6.54**		5.00	ug/L	1	1002220	02/17/2010	02/18/2010	6010B
Zinc	**12.4**		10.0	ug/L	1	1002220	02/17/2010	02/18/2010	6010B
Mercury	0.200	U	0.200	ug/L	1	1002133	02/12/2010	02/15/2010	7470A

204 Welsh Pool Road
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WC Hanford, Inc	Project: RC-114	
2620 Fermi Avenue	Project Number: K1926	Reported:
Richland WA, 99354	Project Manager: Joan Kessner	02/19/2010 14:30

J19JF1

1002009-04 (Water)

Analyte	Result and Qualifier		Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method

Lionville Laboratory ✓ ul 3/1/10

Metals by SW846 6000/7000 series

Analyte	Result	Qualifier	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Aluminum	20.0	B U5	50.0	ug/L	1	L002220	02/17/2010	02/18/2010	6010B
Antimony	6.00	U	6.00	ug/L	1	L002220	02/17/2010	02/18/2010	6010B
Arsenic	2.02	B	10.0	ug/L	1	L002220	02/17/2010	02/18/2010	6010B
Barium	46.3		5.00	ug/L	1	L002220	02/17/2010	02/18/2010	6010B
Beryllium	2.00	U	2.00	ug/L	1	L002220	02/17/2010	02/18/2010	6010B
Boron	20.5		10.0	ug/L	1	L002220	02/17/2010	02/18/2010	6010B
Cadmium	1.00	U	1.00	ug/L	1	L002220	02/17/2010	02/18/2010	6010B
Calcium	36400		100	ug/L	1	L002220	02/17/2010	02/18/2010	6010B
Chromium	2.96		2.00	ug/L	1	L002220	02/17/2010	02/18/2010	6010B
Cobalt	2.00	U	2.00	ug/L	1	L002220	02/17/2010	02/18/2010	6010B
Copper	10.0	U	10.0	ug/L	1	L002220	02/17/2010	02/18/2010	6010B
Iron	50.0	U	50.0	ug/L	1	L002220	02/17/2010	02/18/2010	6010B
Lead	2.11	B	5.00	ug/L	1	L002220	02/17/2010	02/18/2010	6010B
Magnesium	8700		100	ug/L	1	L002220	02/17/2010	02/18/2010	6010B
Manganese	2.04		2.00	ug/L	1	L002220	02/17/2010	02/18/2010	6010B
Nickel	0.920	B	5.00	ug/L	1	L002220	02/17/2010	02/18/2010	6010B
Potassium	2460		300	ug/L	1	L002220	02/17/2010	02/18/2010	6010B
Selenium	10.0	U	10.0	ug/L	1	L002220	02/17/2010	02/18/2010	6010B
Silver	2.00	U	2.00	ug/L	1	L002220	02/17/2010	02/18/2010	6010B
Sodium	5760		100	ug/L	1	L002220	02/17/2010	02/18/2010	6010B
Uranium	100	U	100	ug/L	1	L002220	02/17/2010	02/18/2010	6010B
Vanadium	5.99		5.00	ug/L	1	L002220	02/17/2010	02/18/2010	6010B
Zinc	7.82	B	10.0	ug/L	1	L002220	02/17/2010	02/18/2010	6010B
Soluble Mercury	0.200	U	0.200	ug/L	1	L002153	02/12/2010	02/15/2010	7470A

WC-Hanford, Inc 7620 Fermi Avenue Richland WA, 99354	Project: RC-114 Project Number: K1926 Project Manager: Joan Kessner	Reported: 02/19/2010 14:30

J19JD9

1002009-05 (Water)

4/16/10

Analyte	Result and Qualifier		Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
			Lionville Laboratory						
Metals by SW846 6000/7000 series									
Aluminum	**2660**		50.0	ug/L	1	1002220	02/17/2010	02/18/2010	6010B
Antimony	6.00	U	6.00	ug/L	1	1002220	02/17/2010	02/18/2010	6010B
Arsenic	**2.67**	B	10.0	ug/L	1	1002220	02/17/2010	02/18/2010	6010B
Barium	**89.7**		5.00	ug/L	1	1002220	02/17/2010	02/18/2010	6010B
Beryllium	2.00	U	2.00	ug/L	1	1002220	02/17/2010	02/18/2010	6010B
Boron	**18.7**		10.0	ug/L	1	1002220	02/17/2010	02/18/2010	6010B
Cadmium	**0.398**	B	1.00	ug/L	1	1002220	02/17/2010	02/18/2010	6010B
Calcium	**24000**		100	ug/L	1	1002220	02/17/2010	02/18/2010	6010B
Chromium	**4.85**		2.00	ug/L	1	1002220	02/17/2010	02/18/2010	6010B
Cobalt	**1.27**	B	2.00	ug/L	1	1002220	02/17/2010	02/18/2010	6010B
Copper	**11.6**		10.0	ug/L	1	1002220	02/17/2010	02/18/2010	6010B
Iron	**2030**		50.0	ug/L	1	1002220	02/17/2010	02/18/2010	6010B
Lead	**5.64**		5.00	ug/L	1	1002220	02/17/2010	02/18/2010	6010B
Magnesium	**6180**		100	ug/L	1	1002220	02/17/2010	02/18/2010	6010B
Manganese	**2320**		2.00	ug/L	1	1002220	02/17/2010	02/18/2010	6010B
Nickel	**5.13**		5.00	ug/L	1	1002220	02/17/2010	02/18/2010	6010B
Potassium	**2690**		500	ug/L	1	1002220	02/17/2010	02/18/2010	6010B
Selenium	10.0	U	10.0	ug/L	1	1002220	02/17/2010	02/18/2010	6010B
Silver	2.00	U	2.00	ug/L	1	1002220	02/17/2010	02/18/2010	6010B
Sodium	**4180**		100	ug/L	1	1002220	02/17/2010	02/18/2010	6010B
Uranium	100	U	100	ug/L	1	1002220	02/17/2010	02/18/2010	6010B
Vanadium	**6.90**		5.00	ug/L	1	1002220	02/17/2010	02/18/2010	6010B
Zinc	**25.1**		10.0	ug/L	1	1002220	02/17/2010	02/18/2010	6010B
Mercury	0.200	U	0.200	ug/L	1	1002133	02/12/2010	02/15/2010	7470A

204 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

WC Hanford, Inc	Project: RC-114	
2620 Fermi Avenue	Project Number: K1926	**Reported:**
Richland WA, 99354	Project Manager: Joan Kessner	02/19/2010 14:30

J19JF3

1002009-06 (Water)

Lionville Laboratory

4/16/10

Metals by SW846 6000/7000 series

Analyte	Result and Qualifier		Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Aluminum	**50.2**	UJ	50.0	ug/L	1	L002220	02/17/2010	02/18/2010	6010B
Antimony	6.00	U	6.00	ug/L	1	L002220	02/17/2010	02/18/2010	6010B
Arsenic	10.0	U	10.0	ug/L	1	L002220	02/17/2010	02/18/2010	6010B
Barium	**46.7**		5.00	ug/L	1	L002220	02/17/2010	02/18/2010	6010B
Beryllium	2.00	U	2.00	ug/L	1	L002220	02/17/2010	02/18/2010	6010B
Boron	**17.5**		10.0	ug/L	1	L002220	02/17/2010	02/18/2010	6010B
Cadmium	1.00	U	1.00	ug/L	1	L002220	02/17/2010	02/18/2010	6010B
Calcium	**23000**		100	ug/L	1	L002220	02/17/2010	02/18/2010	6010B
Chromium	2.00	U	2.00	ug/L	1	L002220	02/17/2010	02/18/2010	6010B
Cobalt	**0.681**	B	2.00	ug/L	1	L002220	02/17/2010	02/18/2010	6010B
Copper	10.0	U	10.0	ug/L	1	L002220	02/17/2010	02/18/2010	6010B
Iron	**27.9**	B	50.0	ug/L	1	L002220	02/17/2010	02/18/2010	6010B
Lead	5.00	U	5.00	ug/L	1	L002220	02/17/2010	02/18/2010	6010B
Magnesium	**5770**		100	ug/L	1	L002220	02/17/2010	02/18/2010	6010B
Manganese	**2260**		2.00	ug/L	1	L002220	02/17/2010	02/18/2010	6010B
Nickel	**1.65**	B	5.00	ug/L	1	L002220	02/17/2010	02/18/2010	6010B
Potassium	**2080**		500	ug/L	1	L002220	02/17/2010	02/18/2010	6010B
Selenium	10.0	U	10.0	ug/L	1	L002220	02/17/2010	02/18/2010	6010B
Silver	2.00	U	2.00	ug/L	1	L002220	02/17/2010	02/18/2010	6010B
Sodium	**3450**		100	ug/L	1	L002220	02/17/2010	02/18/2010	6010B
Uranium	100	U	100	ug/L	1	L002220	02/17/2010	02/18/2010	6010B
Vanadium	**2.32**	B	5.00	ug/L	1	L002220	02/17/2010	02/18/2010	6010B
Zinc	**7.49**	B	10.0	ug/L	1	L002220	02/17/2010	02/18/2010	6010B
Soluble Mercury	**0.0990**	B	0.200	ug/L	1	L002151	02/12/2010	02/15/2010	7470A

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WCH Hanford, Inc 2620 Fermi Avenue Richland WA, 99354	Project: RC-114 Project Number: K1976 Project Manager: Joan Kessner	Reported: 02/19/2010 14:10

J19JC7
1002009-07 (Water)

Lionville Laboratory

Metals by SW846 6000/7000 series

Analyte	Result and Qualifier		Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Aluminum	**515**		50.0	ug/L	1	1002220	02/17/2010	02/18/2010	6010B
Antimony	6.00	U	6.00	ug/L	1	1002220	02/17/2010	02/18/2010	6010B
Arsenic	10.0	U	10.0	ug/L	1	1002220	02/17/2010	02/18/2010	6010B
Barium	**31.2**		5.00	ug/L	1	1002220	02/17/2010	02/18/2010	6010B
Beryllium	2.00	U	2.00	ug/L	1	1002220	02/17/2010	02/18/2010	6010B
Boron	**18.3**		10.0	ug/L	1	1002220	02/17/2010	02/18/2010	6010B
Cadmium	1.00	U	1.00	ug/L	1	1002220	02/17/2010	02/18/2010	6010B
Calcium	**27100**		100	ug/L	1	1002220	02/17/2010	02/18/2010	6010B
Chromium	**29.7**		2.00	ug/L	1	1002220	02/17/2010	02/18/2010	6010B
Cobalt	2.00	U	2.00	ug/L	1	1002220	02/17/2010	02/18/2010	6010B
Copper	10.0	U	10.0	ug/L	1	1002220	02/17/2010	02/18/2010	6010B
Iron	**498**		50.0	ug/L	1	1002220	02/17/2010	02/18/2010	6010B
Lead	5.00	U	5.00	ug/L	1	1002220	02/17/2010	02/18/2010	6010B
Magnesium	**7350**		100	ug/L	1	1002220	02/17/2010	02/18/2010	6010B
Manganese	**49.3**		2.00	ug/L	1	1002220	02/17/2010	02/18/2010	6010B
Nickel	**1.76**	B	5.00	ug/L	1	1002220	02/17/2010	02/18/2010	6010B
Potassium	**2860**		500	ug/L	1	1002220	02/17/2010	02/18/2010	6010B
Selenium	10.0	U	10.0	ug/L	1	1002220	02/17/2010	02/18/2010	6010B
Silver	2.00	U	2.00	ug/L	1	1002220	02/17/2010	02/18/2010	6010B
Sodium	**5350**		100	ug/L	1	1002220	02/17/2010	02/18/2010	6010B
Uranium	100	U	100	ug/L	1	1002220	02/17/2010	02/18/2010	6010B
Vanadium	**6.85**		5.00	ug/L	1	1002220	02/17/2010	02/18/2010	6010B
Zinc	**12.5**		10.0	ug/L	1	1002220	02/17/2010	02/18/2010	6010B
Mercury	0.200	U	0.200	ug/L	1	1002153	02/17/2010	02/18/2010	7470A

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WC-Hanford, Inc. 2620 Fermi Avenue Richland WA, 99354	Project: RC 114 Project Number: K1926 Project Manager: Joan Kessner	**Reported:** 02/19/2010 14:30

J19JC8

1002009-08 (Water)

Lionville Laboratory

4/1/10

Metals by SW846 6000/7000 series

Analyte	Result and Qualifier		Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Aluminum	17.5	B UJ	50.0	ug/L	1	L002220	02/17/2010	02/18/2010	6010B
Antimony	6.00	U	6.00	ug/L	1	L002220	02/17/2010	02/18/2010	6010B
Arsenic	10.0	U	10.0	ug/L	1	L002220	02/17/2010	02/18/2010	6010B
Barium	22.8		5.00	ug/L	1	L002220	02/17/2010	02/18/2010	6010B
Beryllium	2.00	U	2.00	ug/L	1	L002220	02/17/2010	02/18/2010	6010B
Boron	17.2		10.0	ug/L	1	L002220	02/17/2010	02/18/2010	6010B
Cadmium	1.00	U	1.00	ug/L	1	L002220	02/17/2010	02/18/2010	6010B
Calcium	26700		100	ug/L	1	L002220	02/17/2010	02/18/2010	6010B
Chromium	28.8		2.00	ug/L	1	L002220	02/17/2010	02/18/2010	6010B
Cobalt	2.00	U	2.00	ug/L	1	L002220	02/17/2010	02/18/2010	6010B
Copper	10.0	U	10.0	ug/L	1	L002220	02/17/2010	02/18/2010	6010B
Iron	50.0	U	50.0	ug/L	1	L002220	02/17/2010	02/18/2010	6010B
Lead	5.00	U	5.00	ug/L	1	L002220	02/17/2010	02/18/2010	6010B
Magnesium	7180		100	ug/L	1	L002220	02/17/2010	02/18/2010	6010B
Manganese	1.18	B	2.00	ug/L	1	L002220	02/17/2010	02/18/2010	6010B
Nickel	0.519	B	5.00	ug/L	1	L002220	02/17/2010	02/18/2010	6010B
Potassium	2730		500	ug/L	1	L002220	02/17/2010	02/18/2010	6010B
Selenium	10.0	U	10.0	ug/L	1	L002220	02/17/2010	02/18/2010	6010B
Silver	2.00	U	2.00	ug/L	1	L002220	02/17/2010	02/18/2010	6010B
Sodium	5240		100	ug/L	1	L002220	02/17/2010	02/18/2010	6010B
Uranium	100	U	100	ug/L	1	L002220	02/17/2010	02/18/2010	6010B
Vanadium	4.99	B	5.00	ug/L	1	L002220	02/17/2010	02/18/2010	6010B
Zinc	4.04	B	10.0	ug/L	1	L002220	02/17/2010	02/18/2010	6010B
Soluble Mercury	0.200	U	0.200	ug/L	1	L002151	02/12/2010	02/15/2010	7470A

WC-Hanford, Inc 2620 Fermi Avenue Richland WA, 99354	Project: RC 114 Project Number: K1926 Project Manager: Joan Kessner	Reported: 02/19/2010 14:10

J19HN9
1002009-09 (Water)

Lionville Laboratory

4/16/10

Analyte	Result and Qualifier		Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Metals by SW846 6000/7000 series									
Aluminum	239		50.0	ug/L	1	1002220	02/17/2010	02/18/2010	6010B
Antimony	6.00	U	6.00	ug/L	1	1002220	02/17/2010	02/18/2010	6010B
Arsenic	10.0	U	10.0	ug/L	1	1002220	02/17/2010	02/18/2010	6010B
Barium	37.3		5.00	ug/L	1	1002220	02/17/2010	02/18/2010	6010B
Beryllium	2.00	U	2.00	ug/L	1	1002220	02/17/2010	02/18/2010	6010B
Boron	16.2		10.0	ug/L	1	1002220	02/17/2010	02/18/2010	6010B
Cadmium	1.00	U	1.00	ug/L	1	1002220	02/17/2010	02/18/2010	6010B
Calcium	39300		100	ug/L	1	1002220	02/17/2010	02/18/2010	6010B
Chromium	60.5		2.00	ug/L	1	1002220	02/17/2010	02/18/2010	6010B
Cobalt	2.00	U	2.00	ug/L	1	1002220	02/17/2010	02/18/2010	6010B
Copper	10.0	U	10.0	ug/L	1	1002220	02/17/2010	02/18/2010	6010B
Iron	214		50.0	ug/L	1	1002220	02/17/2010	02/18/2010	6010B
Lead	2.32	B	5.00	ug/L	1	1002220	02/17/2010	02/18/2010	6010B
Magnesium	10400		100	ug/L	1	1002220	02/17/2010	02/18/2010	6010B
Manganese	5.36		2.00	ug/L	1	1002220	02/17/2010	02/18/2010	6010B
Nickel	0.943	B	5.00	ug/L	1	1002220	02/17/2010	02/18/2010	6010B
Potassium	2720		500	ug/L	1	1002220	02/17/2010	02/18/2010	6010B
Selenium	10.0	U	10.0	ug/L	1	1002220	02/17/2010	02/18/2010	6010B
Silver	2.00	U	2.00	ug/L	1	1002220	02/17/2010	02/18/2010	6010B
Sodium	12500		100	ug/L	1	1002220	02/17/2010	02/18/2010	6010B
Uranium	100	U	100	ug/L	1	1002220	02/17/2010	02/18/2010	6010B
Vanadium	8.22		5.00	ug/L	1	1002220	02/17/2010	02/18/2010	6010B
Zinc	4.56	B	10.0	ug/L	1	1002220	02/17/2010	02/18/2010	6010B
Mercury	0.200	U	0.200	ug/L	1	1002151	02/12/2010	02/15/2010	7470A

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WC-Hanford, Inc. 2620 Fermi Avenue Richland WA, 99354	Project: RC-114 Project Number: K1926 Project Manager: Joan Kessner	**Reported:** 02/19/2010 14:30

J19HP0

1002609-10 (Water)

Lionville Laboratory

Metals by SW846 6000/7000 series

Analyte	Result and Qualifier		Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Aluminum	23.3	B UJ	50.0	ug/L	1	1002220	02/17/2010	02/18/2010	6010B
Antimony	6.00	U	6.00	ug/L	1	1002220	02/17/2010	02/18/2010	6010B
Arsenic	2.50	B	10.0	ug/L	1	1002220	02/17/2010	02/18/2010	6010B
Barium	32.3		5.00	ug/L	1	1002220	02/17/2010	02/18/2010	6010B
Beryllium	2.00	U	2.00	ug/L	1	1002220	02/17/2010	02/18/2010	6010B
Boron	18.3		10.0	ug/L	1	1002220	02/17/2010	02/18/2010	6010B
Cadmium	1.00	U	1.00	ug/L	1	1002220	02/17/2010	02/18/2010	6010B
Calcium	37900		100	ug/L	1	1002220	02/17/2010	02/18/2010	6010B
Chromium	94.5		2.00	ug/L	1	1002220	02/17/2010	02/18/2010	6010B
Cobalt	2.00	U	2.00	ug/L	1	1002220	02/17/2010	02/18/2010	6010B
Copper	10.0	U	10.0	ug/L	1	1002220	02/17/2010	02/18/2010	6010B
Iron	50.0	U	50.0	ug/L	1	1002220	02/17/2010	02/18/2010	6010B
Lead	5.00	U	5.00	ug/L	1	1002220	02/17/2010	02/18/2010	6010B
Magnesium	9900		100	ug/L	1	1002220	02/17/2010	02/18/2010	6010B
Manganese	1.92	B	2.00	ug/L	1	1002220	02/17/2010	02/18/2010	6010B
Nickel	0.601	B	5.00	ug/L	1	1002220	02/17/2010	02/18/2010	6010B
Potassium	2550		500	ug/L	1	1002220	02/17/2010	02/18/2010	6010B
Selenium	10.0	U	10.0	ug/L	1	1002220	02/17/2010	02/18/2010	6010B
Silver	2.00	U	2.00	ug/L	1	1002220	02/17/2010	02/18/2010	6010B
Sodium	11900		100	ug/L	1	1002220	02/17/2010	02/18/2010	6010B
Uranium	100	U	100	ug/L	1	1002220	02/17/2010	02/18/2010	6010B
Vanadium	8.23		5.00	ug/L	1	1002220	02/17/2010	02/18/2010	6010B
Zinc	4.57	B	10.0	ug/L	1	1002220	02/17/2010	02/18/2010	6010B
Soluble Mercury	0.200	U	0.200	ug/L	1	1002153	02/12/2010	02/15/2010	7470A

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WCHanford, Inc.	Project: RC 111	
2620 Fermi Avenue	Project Number: K3026	Reported:
Richland WA, 99354	Project Manager: Joan Kessner	02/19/2010 11:30

J19HK0
1002009-11 (Water)

Lionville Laboratory

4/4/10

Metals by SW846 6000/7000 series

Analyte	Result and Qualifier		Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Aluminum	266		50.0	ug/L	1	L002220	02/17/2010	02/18/2010	6010B
Antimony	6.00	U	6.00	ug/L	1	L002220	02/17/2010	02/18/2010	6010B
Arsenic	2.27	B	10.0	ug/L	1	L002220	02/17/2010	02/18/2010	6010B
Barium	36.6		5.00	ug/L	1	L002220	02/17/2010	02/18/2010	6010B
Beryllium	2.00	U	2.00	ug/L	1	L002220	02/17/2010	02/18/2010	6010B
Boron	17.4		10.0	ug/L	1	L002220	02/17/2010	02/18/2010	6010B
Cadmium	1.00	U	1.00	ug/L	1	L002220	02/17/2010	02/18/2010	6010B
Calcium	38500		100	ug/L	1	L002220	02/17/2010	02/18/2010	6010B
Chromium	49.3		2.00	ug/L	1	L002220	02/17/2010	02/18/2010	6010B
Cobalt	2.00	U	2.00	ug/L	1	L002220	02/17/2010	02/18/2010	6010B
Copper	10.0	U	10.0	ug/L	1	L002220	02/17/2010	02/18/2010	6010B
Iron	241		50.0	ug/L	1	L002220	02/17/2010	02/18/2010	6010B
Lead	2.85	B	5.00	ug/L	1	L002220	02/17/2010	02/18/2010	6010B
Magnesium	10200		100	ug/L	1	L002220	02/17/2010	02/18/2010	6010B
Manganese	6.20		2.00	ug/L	1	L002220	02/17/2010	02/18/2010	6010B
Nickel	1.12	B	5.00	ug/L	1	L002220	02/17/2010	02/18/2010	6010B
Potassium	2650		500	ug/L	1	L002220	02/17/2010	02/18/2010	6010B
Selenium	10.0	U	10.0	ug/L	1	L002220	02/17/2010	02/18/2010	6010B
Silver	2.00	U	2.00	ug/L	1	L002220	02/17/2010	02/18/2010	6010B
Sodium	13200		100	ug/L	1	L002220	02/17/2010	02/18/2010	6010B
Thallium	100	U	100	ug/L	1	L002220	02/17/2010	02/18/2010	6010B
Vanadium	8.58		5.00	ug/L	1	L002220	02/17/2010	02/18/2010	6010B
Zinc	10.0	U	10.0	ug/L	1	L002220	02/17/2010	02/18/2010	6010B
Mercury	0.200	U	0.200	ug/L	1	L002153	02/12/2010	02/15/2010	7470A

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WC-Hanford, Inc.	Project: RCT-114	
2620 Fermi Avenue	Project Number: K1926	Reported:
Richland WA, 99354	Project Manager: Joan Kessner	02/19/2010 14:30

J19HK1

1002009-12 (Water)

Lionville Laboratory

Metals by SW846 6000/7000 series

Analyte	Result and Qualifier		Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Aluminum	21.5	B UJ	50.0	ug/L	1	L002220	02/17/2010	02/18/2010	6010B
Antimony	6.00	U	6.00	ug/L	1	L002220	02/17/2010	02/18/2010	6010B
Arsenic	2.93	B	10.0	ug/L	1	L002220	02/17/2010	02/18/2010	6010B
Barium	33.4		5.00	ug/L	1	L002220	02/17/2010	02/18/2010	6010B
Beryllium	2.00	U	2.00	ug/L	1	L002220	02/17/2010	02/18/2010	6010B
Boron	17.7		10.0	ug/L	1	L002220	02/17/2010	02/18/2010	6010B
Cadmium	1.00	U	1.00	ug/L	1	L002220	02/17/2010	02/18/2010	6010B
Calcium	39300		100	ug/L	1	L002220	02/17/2010	02/18/2010	6010B
Chromium	62.1		2.00	ug/L	1	L002220	02/17/2010	02/18/2010	6010B
Cobalt	2.00	U	2.00	ug/L	1	L002220	02/17/2010	02/18/2010	6010B
Copper	10.0	U	10.0	ug/L	1	L002220	02/17/2010	02/18/2010	6010B
Iron	50.0	U	50.0	ug/L	1	L002220	02/17/2010	02/18/2010	6010B
Lead	3.65	B	5.00	ug/L	1	L002220	02/17/2010	02/18/2010	6010B
Magnesium	10400		100	ug/L	1	L002220	02/17/2010	02/18/2010	6010B
Manganese	0.833	B	2.00	ug/L	1	L002220	02/17/2010	02/18/2010	6010B
Nickel	3.03	B	5.00	ug/L	1	L002220	02/17/2010	02/18/2010	6010B
Potassium	2650		500	ug/L	1	L002220	02/17/2010	02/18/2010	6010B
Selenium	10.0	U	10.0	ug/L	1	L002220	02/17/2010	02/18/2010	6010B
Silver	2.00	U	2.00	ug/L	1	L002220	02/17/2010	02/18/2010	6010B
Sodium	12400		100	ug/L	1	L002220	02/17/2010	02/18/2010	6010B
Uranium	100	U	100	ug/L	1	L002220	02/17/2010	02/18/2010	6010B
Vanadium	8.06		5.00	ug/L	1	L002220	02/17/2010	02/18/2010	6010B
Zinc	4.26	B	10.0	ug/L	1	L002220	02/17/2010	02/18/2010	6010B
Soluble Mercury	0.200	U	0.200	ug/L	1	L002151	02/12/2010	02/15/2010	7470A

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WC Hanford, Inc 2620 Fermi Avenue Richland WA, 99354	Project: RC-114 Project Number: K1926 Project Manager: Joan Kessner	Reported: 02/19/2010 14:30

J19F74

1002809-13 (Water)

Lionville Laboratory

Metals by SW846 6000/7000 series

Analyte	Result and Qualifier		Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Aluminum	520		50.0	ug/L	1	1002220	02/17/2010	02/18/2010	6010B
Antimony	6.00	U	6.00	ug/L	1	1002220	02/17/2010	02/18/2010	6010B
Arsenic	10.0	U	10.0	ug/L	1	1002220	02/17/2010	02/18/2010	6010B
Barium	106		5.00	ug/L	1	1002220	02/17/2010	02/18/2010	6010B
Beryllium	2.00	U	2.00	ug/L	1	1002220	02/17/2010	02/18/2010	6010B
Boron	29.9		10.0	ug/L	1	1002220	02/17/2010	02/18/2010	6010B
Cadmium	1.00	U	1.00	ug/L	1	1002220	02/17/2010	02/18/2010	6010B
Calcium	45800		100	ug/L	1	1002220	02/17/2010	02/18/2010	6010B
Chromium	1.56	B	2.00	ug/L	1	1002220	02/17/2010	02/18/2010	6010B
Cobalt	2.00	U	2.00	ug/L	1	1002220	02/17/2010	02/18/2010	6010B
Copper	2.18	B	10.0	ug/L	1	1002220	02/17/2010	02/18/2010	6010B
Iron	1830		50.0	ug/L	1	1002220	02/17/2010	02/18/2010	6010B
Lead	4.23	B	5.00	ug/L	1	1002220	02/17/2010	02/18/2010	6010B
Magnesium	11200		100	ug/L	1	1002220	02/17/2010	02/18/2010	6010B
Manganese	144		2.00	ug/L	1	1002220	02/17/2010	02/18/2010	6010B
Nickel	2.37	B	5.00	ug/L	1	1002220	02/17/2010	02/18/2010	6010B
Potassium	3580		500	ug/L	1	1002220	02/17/2010	02/18/2010	6010B
Selenium	10.0	U	10.0	ug/L	1	1002220	02/17/2010	02/18/2010	6010B
Silver	2.00	U	2.00	ug/L	1	1002220	02/17/2010	02/18/2010	6010B
Sodium	20500		100	ug/L	1	1002220	02/17/2010	02/18/2010	6010B
Uranium	40.4	B	100	ug/L	1	1002220	02/17/2010	02/18/2010	6010B
Vanadium	4.28	B	5.00	ug/L	1	1002220	02/17/2010	02/18/2010	6010B
Zinc	27.1		10.0	ug/L	1	1002220	02/17/2010	02/18/2010	6010B
Mercury	0.200	U	0.200	ug/L	1	1002153	02/12/2010	02/15/2010	7470A

496 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

WCH Hanford, Inc 2620 Fermi Avenue Richland WA, 99354	Project: RC-114 Project Number: K1926 Project Manager: Joan Kessner	Reported: 03/19/2010 11:30

J19F78

1002089-14 (Water)

Lionville Laboratory

4/6/10

Metals by SW846 6000/7000 series

Analyte	Result and Qualifier		Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Aluminum	14.8	B UJ	50.0	ug/L	1	1002220	02/17/2010	02/18/2010	6010B
Antimony	6.00	U	6.00	ug/L	1	1002220	02/17/2010	02/18/2010	6010B
Arsenic	10.0	U	10.0	ug/L	1	1002220	02/17/2010	02/18/2010	6010B
Barium	93.7		5.00	ug/L	1	1002220	02/17/2010	02/18/2010	6010B
Beryllium	2.00	U	2.00	ug/L	1	1002220	02/17/2010	02/18/2010	6010B
Boron	28.8		10.0	ug/L	1	1002220	02/17/2010	02/18/2010	6010B
Cadmium	1.00	U	1.00	ug/L	1	1002220	02/17/2010	02/18/2010	6010B
Calcium	44800		100	ug/L	1	1002220	02/17/2010	02/18/2010	6010B
Chromium	2.00	U	2.00	ug/L	1	1002220	02/17/2010	02/18/2010	6010B
Cobalt	2.00	U	2.00	ug/L	1	1002220	02/17/2010	02/18/2010	6010B
Copper	10.0	U	10.0	ug/L	1	1002220	02/17/2010	02/18/2010	6010B
Iron	80.3		50.0	ug/L	1	1002220	02/17/2010	02/18/2010	6010B
Lead	2.53	B	5.00	ug/L	1	1002220	02/17/2010	02/18/2010	6010B
Magnesium	10900		100	ug/L	1	1002220	02/17/2010	02/18/2010	6010B
Manganese	117		2.00	ug/L	1	1002220	02/17/2010	02/18/2010	6010B
Nickel	1.80	B	5.00	ug/L	1	1002220	02/17/2010	02/18/2010	6010B
Potassium	3350		500	ug/L	1	1002220	02/17/2010	02/18/2010	6010B
Selenium	10.0	U	10.0	ug/L	1	1002220	02/17/2010	02/18/2010	6010B
Silver	2.00	U	2.00	ug/L	1	1002220	02/17/2010	02/18/2010	6010B
Sodium	19900		100	ug/L	1	1002220	02/17/2010	02/18/2010	6010B
Uranium	40.9	B	100	ug/L	1	1002220	02/17/2010	02/18/2010	6010B
Vanadium	2.40	B	5.00	ug/L	1	1002220	02/17/2010	02/18/2010	6010B
Zinc	11.5		10.0	ug/L	1	1002220	02/17/2010	02/18/2010	6010B
Soluble Mercury	0.200	U	0.200	ug/L	1	1002153	02/12/2010	02/15/2010	7470A

WC-Hanford, Inc	Project: RC-114	
2620 Fermi Avenue	Project Number: K1926	Reported:
Richland WA, 99354	Project Manager: Joan Kessner	02/19/2010 14:30

J19HW2
1002009-15 (Water)

Lionville Laboratory

Metals by SW846 6000/7000 series

Analyte	Result and Qualifier		Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Aluminum	**1330**		50.0	ug/L	1	1002220	02/17/2010	02/18/2010	6010B
Antimony	6.00	U	6.00	ug/L	1	1002220	02/17/2010	02/18/2010	6010B
Arsenic	**2.76**	B	10.0	ug/L	1	1002220	02/17/2010	02/18/2010	6010B
Barium	**60.9**		5.00	ug/L	1	1002220	02/17/2010	02/18/2010	6010B
Beryllium	2.00	U	2.00	ug/L	1	1002220	02/17/2010	02/18/2010	6010B
Boron	**42.8**		10.0	ug/L	1	1002220	02/17/2010	02/18/2010	6010B
Cadmium	1.00	U	1.00	ug/L	1	1002220	02/17/2010	02/18/2010	6010B
Calcium	**42600**		100	ug/L	1	1002220	02/17/2010	02/18/2010	6010B
Chromium	**8.07**		2.00	ug/L	1	1002220	02/17/2010	02/18/2010	6010B
Cobalt	2.00	U	2.00	ug/L	1	1002220	02/17/2010	02/18/2010	6010B
Copper	**2.57**	B	10.0	ug/L	1	1002220	02/17/2010	02/18/2010	6010B
Iron	**1210**		50.0	ug/L	1	1002220	02/17/2010	02/18/2010	6010B
Lead	**4.17**	B	5.00	ug/L	1	1002220	02/17/2010	02/18/2010	6010B
Magnesium	**8820**		100	ug/L	1	1002220	02/17/2010	02/18/2010	6010B
Manganese	**31.8**		2.00	ug/L	1	1002220	02/17/2010	02/18/2010	6010B
Nickel	**2.08**	B	5.00	ug/L	1	1002220	02/17/2010	02/18/2010	6010B
Potassium	**4090**		500	ug/L	1	1002220	02/17/2010	02/18/2010	6010B
Selenium	10.0	U	10.0	ug/L	1	1002220	02/17/2010	02/18/2010	6010B
Silver	2.00	U	2.00	ug/L	1	1002220	02/17/2010	02/18/2010	6010B
Sodium	**17400**		100	ug/L	1	1002220	02/17/2010	02/18/2010	6010B
Uranium	**52.6**	B	100	ug/L	1	1002220	02/17/2010	02/18/2010	6010B
Vanadium	**9.45**		5.00	ug/L	1	1002220	02/17/2010	02/18/2010	6010B
Zinc	**60.6**		10.0	ug/L	1	1002220	02/17/2010	02/18/2010	6010B
Mercury	0.200	U	0.200	ug/L	1	1002153	02/12/2010	02/15/2010	7470A

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

WCH-Hanford, Inc.	Project: RC-114	
2620 Fermi Avenue	Project Number: K1926	**Reported:**
Richland WA, 99354	Project Manager: Joan Kessner	02/19/2010 14:30

J19HW4
1002009-16 (Water)

Analyte	Result and Qualifier		Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
			Lionville Laboratory						
Metals by SW846 6000/7000 series									
Aluminum	47.5	B UJ	50.0	ug/L	1	1002220	02/17/2010	02/19/2010	6010B
Antimony	6.00	U	6.00	ug/L	1	1002220	02/17/2010	02/19/2010	6010B
Arsenic	10.0	U	10.0	ug/L	1	1002220	02/17/2010	02/19/2010	6010B
Barium	48.0		5.00	ug/L	1	1002220	02/17/2010	02/19/2010	6010B
Beryllium	2.00	U	2.00	ug/L	1	1002220	02/17/2010	02/19/2010	6010B
Boron	42.4		10.0	ug/L	1	1002220	02/17/2010	02/19/2010	6010B
Cadmium	1.00	U	1.00	ug/L	1	1002220	02/17/2010	02/19/2010	6010B
Calcium	42200		100	ug/L	1	1002220	02/17/2010	02/19/2010	6010B
Chromium	2.76		2.00	ug/L	1	1002220	02/17/2010	02/19/2010	6010B
Cobalt	2.00	U	2.00	ug/L	1	1002220	02/17/2010	02/19/2010	6010B
Copper	10.0	U	10.0	ug/L	1	1002220	02/17/2010	02/19/2010	6010B
Iron	23.6	B	50.0	ug/L	1	1002220	02/17/2010	02/19/2010	6010B
Lead	2.34	B	5.00	ug/L	1	1002220	02/17/2010	02/19/2010	6010B
Magnesium	8470		100	ug/L	1	1002220	02/17/2010	02/19/2010	6010B
Manganese	4.26		2.00	ug/L	1	1002220	02/17/2010	02/19/2010	6010B
Nickel	5.00	U	5.00	ug/L	1	1002220	02/17/2010	02/19/2010	6010B
Potassium	6030		500	ug/L	1	1002220	02/17/2010	02/19/2010	6010B
Selenium	10.0	U	10.0	ug/L	1	1002220	02/17/2010	02/19/2010	6010B
Silver	2.00	U	2.00	ug/L	1	1002220	02/17/2010	02/19/2010	6010B
Sodium	17500		100	ug/L	1	1002220	02/17/2010	02/19/2010	6010B
Uranium	48.0	B	100	ug/L	1	1002220	02/17/2010	02/19/2010	6010B
Vanadium	6.68		5.00	ug/L	1	1002220	02/17/2010	02/19/2010	6010B
Zinc	5.09	B	10.0	ug/L	1	1002220	02/17/2010	02/19/2010	6010B
Soluble Mercury	0.200	U	0.200	ug/L	1	1002153	02/12/2010	02/15/2010	7470A

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

WC-Hanford, Inc	Project: RCS-114	
2620 Fermi Avenue	Project Number: K1936	**Reported:**
Richland WA, 99354	Project Manager: Joan Kessner	02/19/2010 14:30

J19JC3

1002009-18 (Water)

Lionville Laboratory

4/6/10

Metals by SW846 6000/7000 series

Analyte	Result and Qualifier		Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Aluminum	27.8	B UJ	50.0	ug/L	1	1002220	02/17/2010	02/19/2010	6010B
Antimony	6.00	U	6.00	ug/L	1	1002220	02/17/2010	02/19/2010	6010B
Arsenic	2.02	B	10.0	ug/L	1	1002220	02/17/2010	02/19/2010	6010B
Barium	45.8		5.00	ug/L	1	1002220	02/17/2010	02/19/2010	6010B
Beryllium	2.00	U	2.00	ug/L	1	1002220	02/17/2010	02/19/2010	6010B
Boron	43.3		10.0	ug/L	1	1002220	02/17/2010	02/19/2010	6010B
Cadmium	1.00	U	1.00	ug/L	1	1002220	02/17/2010	02/19/2010	6010B
Calcium	41300		100	ug/L	1	1002220	02/17/2010	02/19/2010	6010B
Chromium	2.63		5.00	ug/L	1	1002220	02/17/2010	02/19/2010	6010B
Cobalt	2.00	U	2.00	ug/L	1	1002220	02/17/2010	02/19/2010	6010B
Copper	10.0	U	10.0	ug/L	1	1002220	02/17/2010	02/19/2010	6010B
Iron	10.5	B	50.0	ug/L	1	1002220	02/17/2010	02/19/2010	6010B
Lead	2.15	B	5.00	ug/L	1	1002220	02/17/2010	02/19/2010	6010B
Magnesium	8330		100	ug/L	1	1002220	02/17/2010	02/19/2010	6010B
Manganese	3.03		2.00	ug/L	1	1002220	02/17/2010	02/19/2010	6010B
Nickel	5.00	U	5.00	ug/L	1	1002220	02/17/2010	02/19/2010	6010B
Potassium	3810		500	ug/L	1	1002220	02/17/2010	02/19/2010	6010B
Selenium	10.0	U	10.0	ug/L	1	1002220	02/17/2010	02/19/2010	6010B
Silver	2.00	U	2.00	ug/L	1	1002220	02/17/2010	02/19/2010	6010B
Sodium	16800		100	ug/L	1	1002220	02/17/2010	02/19/2010	6010B
Uranium	44.5	B	100	ug/L	1	1002220	02/17/2010	02/19/2010	6010B
Vanadium	6.52		5.00	ug/L	1	1002220	02/17/2010	02/19/2010	6010B
Zinc	5.54	B	10.0	ug/L	1	1002220	02/17/2010	02/19/2010	6010B
Soluble Mercury	0.200	U	0.200	ug/L	1	1002133	02/12/2010	02/15/2010	7470A

Appendix 4

Laboratory Narrative and Chain-of-Custody Documentation

264 Welsh Pool Road
Exton, Pennsylvania 19341
Phone (610) 280-3000
Fax (610) 280-3041

Case Narrative

Client: WC-HANFORD RC-114
LVL#: 1002009
SDG/SAF#: K1926/RC-114

W.O.#: 60049-001-001-0001-00
Date Received: 02-03-10

METALS

The following is a summary of the QC results accompanying the sample results. Lionville Laboratory (LvL) certifies that all test results meet the requirements of NELAC except as noted below.

1. This narrative covers the analyses of 17 water samples.
2. The samples were prepared and analyzed in accordance with methods listed on the data report forms.
3. All analyses were performed within the required holding times.
4. Please refer to the Sample Receipt Check List for any sample discrepancies in LvLI's sample acceptance policy.
5. All Initial and Continuing Calibration Verifications (ICV/CCVs) were within the 90-110% control limits (80-120% for Mercury).
6. All Initial and Continuing Calibration Blanks (ICB/CCBs) were within control limits (less than the LOQ).
7. All preparation/method blanks (MB) were within method criteria (less than the Limit of Quantitation (3-10X the LOD), or samples greater than 20X MB value).
8. All ICP Interference Check Standards were within control limits.
9. All laboratory control samples (LCS) were within the 80-120% control limits.
10. All matrix spike (MS) recoveries were within the 75-125% control limits.
11. All duplicate analyses were within the 20% Relative Percent Difference (RPD) control limit critieria. The ± 20% RPD control limit applies to sample results greater than ten times the MDL.

12. For the purposes of this report, the data have been reported to the Limit of Detection (LOD). Values between the LOD and the Limit of Quantitation (LOQ) are acquired in a region of less-certain quantification.

13. Soluble and total digestates were prepared within the same preparation batch.

14. LvL is NELAP accredited by the State of Pennsylvania. For a complete listing of accrediting authorities and the corresponding analytes/methods, please contact your Project Manager.

15. I certify that this sample data package is in compliance with SOW requirements, both technically and for completeness, other than the conditions detailed above. Release of the data contained in this hard-copy data package has been authorized by the Laboratory Manager or a designee, as verified by the following signature.

Iain Daniels
Laboratory Manager
Lionville Laboratory

2/23/12
Date

[illegible]

Washington Closure Hanford | **CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST** | RC-114-422

Collector R. [illegible]	Company Contact [illegible]	Telephone No. [illegible]	Project Coordinator [illegible]
Project Designation [illegible]	Sampling Location 100-F J100H44		SAF No. F10-114
Ice Chest No. ELC-96-058	Field Logbook No. EL-1615-01	COA [illegible]	Method of Shipment FEDEX
Shipped To [illegible]	Offsite Property No. N/A		Bill of Lading/Air Bill No. 7983 5645 8298

Price Code 7C

Data Turnaround 15 Days

POSSIBLE SAMPLE HAZARDS/REMARKS
N/A

Special Handling and/or Storage
N/A

0000030

Preservation	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Type of Container	G/P	[illegible]	G/P	G	G/P
No. of Container(s)	1	1	1	1	1
Volume	[illegible]	1000mL	[illegible]	[illegible]	[illegible]
SAMPLE ANALYSIS	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

Sample No.	Matrix *	Sample Date	Sample Time					
J19[illegible]	WATER	01-29-10	14:49	X	X	X	X	
J19[illegible]	WATER	01-29-10	1449					X

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From R. [illegible]	Date/Time 01-29-10 1741	Received By/Stored In EASREF E	Date/Time 01-29-10 1741
Relinquished By/Removed From CASREF E	Date/Time 2/2/10 1105	Received By/Stored In SHANNAN JOHNSON	Date/Time 2/2/10 1015
Relinquished By/Removed From SHANNAN JOHNSON	Date/Time 2/2/10 1105	Received By/Stored In FDX	Date/Time
Relinquished By/Removed From	Date/Time 2-3-10/0955	Received By/Stored In [illegible] / D Smith	Date/Time 2-3-10/0955
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time

SPECIAL INSTRUCTIONS

(1) ICP Metals - 6010 [illegible]: Aluminum, Antimony, Arsenic, Barium, Beryllium, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Magnesium, Manganese, Nickel, Potassium, Selenium, Silver, Sodium, Thallium, Vanadium, Zinc; Mercury - 7470 [illegible]

(2) IC Anions - [illegible] Chloride, Fluoride, Nitrate, Nitrite, Phosphate, Sulfate;

(3) [illegible] Metals [illegible]: Aluminum, Antimony, Arsenic, Barium, Beryllium, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Magnesium, Manganese, Nickel, Potassium, Selenium, Silver, Sodium, [illegible], Vanadium, Zinc; [illegible] Mercury - 7470 [illegible]

Sample [illegible]
[illegible]
[illegible]
[illegible]

Matrix * [illegible]

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-[illegible]14-421

Page [illegible] of [illegible]

Collector: [illegible] Gilles

Company Contact: [illegible]KESSNER

Telephone No: [illegible]

Project Coordinator: KESSNER, [illegible]

Price Code: 7C

Data Turnaround: 15 Days

Project Designation: [illegible]

Sampling Location: [illegible] 100 HZA

SAF No.: [illegible]

Ice Chest No.: [illegible]-[illegible]

Field Logbook No.: [illegible] EL 1465

COA: [illegible]

Method of Shipment: [illegible]

Shipped To: [illegible] ([illegible])

Offsite Property No.: N/A

Bill of Lading/Air Bill No.: 7983 5655 82[illegible]

POSSIBLE SAMPLE HAZARDS/REMARKS

[illegible]

Special Handling and/or Storage

[illegible]

000031

Preservation	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]						
Type of Container	[illegible]	P	[illegible]	[illegible]	[illegible]						
No. of Container(s)	1	1	1	[illegible]	1						
Volume	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]						
SAMPLE ANALYSIS	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]						

Sample No.	Matrix *	Sample Date	Sample Time					
J[illegible]	WATER	1-29-10	15 30	X	X	X	X	
J[illegible]	WATER	1-29-10	15 30					X

CHAIN OF POSSESSION	Date/Time	Sign/Print Names	Date/Time
Relinquished By/Removed From [illegible] Gilles	1-29-10/18:16	Received By/Stored In [illegible] Gilles	1-29-10/18:16
Relinquished By/Removed From [illegible]	2/2/10 1145	Received By/Stored In SHANNAN JOHNSON	2/2/10 1145
Relinquished By/Removed From SHANNAN JOHNSON	2/4/10 1015	Received By/Stored In FDX	
Relinquished By/Removed From [illegible]	2-3-10/0955	Received By/Stored In [illegible] Smith	2-3-10/0955
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time

SPECIAL INSTRUCTIONS

(1) ICP Metals - 6010 [illegible] (Aluminum, Antimony, Arsenic, Barium, Beryllium, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Magnesium, Manganese, Nickel, Potassium, Selenium, Silver, Sodium, [illegible], Vanadium, Zinc); Mercury - 7470 [illegible] (2) [illegible] Anions - [illegible] (Bromide, Chloride, Fluoride, Nitrate, Nitrite, Sulfate, Phosphate, [illegible]) (3) [illegible] ICP Metals - 6010 [illegible] (Aluminum, Antimony, Arsenic, Barium, Beryllium, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Magnesium, Manganese, Nickel, Potassium, Selenium, Silver, Sodium, [illegible], Vanadium, Zinc); [illegible] Mercury - 7470 [illegible]

Sample [illegible] removed [illegible] storage. Shipped [illegible] [illegible] storage [illegible] [illegible]

Matrix *

[illegible]

LABORATORY SECTION | Received By | Title | Date/Time

FINAL SAMPLE DISPOSITION | Disposal Method | Disposed By | Date/Time

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-114-423

Page [illegible]

Collector Sm Gallo	Company Contact [illegible] KESSNER Telephone No. [illegible]	Project Coordinator KESSNER, JH	Price Code 7[illegible]
Project Designation [illegible] RCBRA [illegible] Pore Water [illegible]	Sampling Location 100-H [illegible]	SAF No. RC-114	Data Turnaround 15 Days
Ice Chest No. [illegible]	Field Logbook No. EL-1615-64 COA [illegible]	Method of Shipment FEDEX	
Shipped To [illegible]	Offsite Property No. N/A	Bill of Lading/Air Bill No. 7985 6657 8248	

POSSIBLE SAMPLE HAZARDS/REMARKS

N/A

Special Handling and/or Storage

N/A

000032

			Preservation	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
			Type of Container	[illegible]	P	G/P	[illegible]	G/P
			No. of Container(s)	1	1	1	1	1
			Volume	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
SAMPLE ANALYSIS				[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Sample No.	Matrix *	Sample Date	Sample Time					
J19JD9	WATER	1-30-10	15:45	X	X	X	X	
J19JF9	WATER	1-30-10	15:45					X

CHAIN OF POSSESSION		Sign/Print Names	
Relinquished By/Removed From Sm Gallo	Date/Time 1-30-10 / 18:50	Received By/Stored In EAS Ref E	Date/Time 1-30-10 / 18:50
Relinquished By/Removed From EAS Ref E S	Date/Time 2/2/10 10[illegible]	Received By/Stored In SHANNAN JOHNSON	Date/Time 2/2/10 10[illegible]
Relinquished By/Removed From SHANNAN JOHNSON	Date/Time 2/2/10 10[illegible]	Received By/Stored In FDX	Date/Time
Relinquished By/Removed From	Date/Time 2-3-10 0955	Received By/Stored In Dona Smith	Date/Time 2-3-10 0955
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time

SPECIAL INSTRUCTIONS

(1) ICP Metals - 6010 [illegible] Aluminum, Antimony, Arsenic, [illegible] Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Magnesium, Manganese, Nickel, Potassium, Selenium, Silver, Sodium, [illegible], Vanadium, Zinc; Mercury [illegible]

(2) IC Anions - 300.0 {Bromide, Chloride, Fluoride, Nitrate, Nitrite, Phosphate, Sulfate}

(3) [illegible] Aluminum, Antimony, Arsenic, Barium, Beryllium, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Magnesium, Manganese, Nickel, Potassium, Selenium, Silver, Sodium, [illegible], Vanadium, Zinc; [illegible] Mercury - 7470 [illegible]

Samples [illegible]
from compacted storage [illegible]
samples from storage [illegible]
[illegible]

Matrix *

[illegible]

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-114-419

15 Days

Collector: Sam Gilles

Company Contact: [illegible] Telephone No. [illegible]

Project Coordinator: [illegible]

Price Code: 7C

Project Designation: [illegible]

Sampling Location: [illegible] 100K14

SAF No. RC-114

Ice Chest No. ECE-96-058

Field Logbook No. [illegible]

COA [illegible]

Method of Shipment: FEDEX

Shipped To: [illegible]

Offsite Property No. N/A

Bill of Lading/Air Bill No. 7983 [illegible] 8298

POSSIBLE SAMPLE HAZARDS/REMARKS

N/A

Special Handling and/or Storage

N/A

0000033

Preservation	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]				
Type of Container	[illegible]	P	[illegible]	G	[illegible]				
No. of Container(s)	1	1	1	1	1				
Volume	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]				
SAMPLE ANALYSIS	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]				

Sample No.	Matrix *	Sample Date	Sample Time									
[illegible]	WATER	1-31-10	16 00	X	X	X	X					
[illegible]	WATER	1-31-10	16 00					X				

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Sam Gilles [illegible]	[illegible] 2004	[illegible]	[illegible] 2004
[illegible]	[illegible]	SHANNON JOHNSON	[illegible]
[illegible]	[illegible]	FDX	
[illegible]	[illegible]	[illegible]	[illegible]

SPECIAL INSTRUCTIONS

[illegible]

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location [illegible]

Matrix *

LABORATORY SECTION — Received By [illegible] Date/Time

FINAL SAMPLE DISPOSITION — Disposal Method [illegible] Disposed By [illegible] Date/Time

[illegible]

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

[illegible]-114-396 Page 1 of 1

Collector Scot Gibbs	Company Contact JOAN KESSNER	Telephone No. 375-[illegible]	Project Coordinator KESSNER, JH
Project Designation [illegible]	Sampling Location [illegible] 100K74		SAF No. [illegible]
Ice Chest No. [illegible]	Field Logbook No. [illegible]	COA [illegible]	Method of Shipment FEDEX
Shipped To [illegible] SERVICES INC [EBERLINE]	Offsite Property No. N/A		Bill of Lading/Air Bill No. 7983 5655 8248

Price Code 7C

Data Turnaround
15 Days

POSSIBLE SAMPLE HAZARDS/REMARKS
NA

Special Handling and/or Storage
NA

0600034

			Preservation	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
			Type of Container	G/P	P	G/P	G	G/P
			No. of Container(s)	1	1	1	1	1
			Volume	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
SAMPLE ANALYSIS				[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Sample No.	Matrix *	Sample Date	Sample Time					
[illegible]	WATER	1-31-10	1730	X	X	X	X	
[illegible]	WATER	1-31-10	1738					X

CHAIN OF POSSESSION		Sign/Print Names	
Relinquished By/Removed From Scot Gibbs	Date/Time 1-31-10/2004	Received By/Stored In EAS PeCE	Date/Time 1-31-10/2004
Relinquished By/Removed From EASLEE	Date/Time 2/2/10 1015	Received By/Stored In SHANNAN JOHNSON	Date/Time 2/2/10 1015
Relinquished By/Removed From SHANNAN JOHNSON	Date/Time 2/2/10 1015	Received By/Stored In FOX	Date/Time
Relinquished By/Removed From	Date/Time 2-3-10/0955	Received By/Stored In [illegible] / Dina Smith	Date/Time 2-3-10/0955
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time

SPECIAL INSTRUCTIONS

[illegible] Mercury - 7470 [illegible]

[illegible]

Sample [illegible] samples

[illegible] storage [illegible]

Samples [illegible] storage [illegible]

Matrix *
[illegible]

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

[illegible]

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-114-394 | Page [illegible]

Collector: Sam Gilbo	Company Contact: RENSSELAER	Telephone No.: 375-4688	Project Coordinator: RENSSELAER, JL
Project Designation: [illegible]	Sampling Location: [illegible] J100K24 DUP		SAF No.: RC-[illegible]
Ice Chest No.: EE2-96-058	Field Logbook No.: [illegible]	COA: [illegible]	Method of Shipment: FEDEX
Shipped To: [illegible]	Offsite Property No.: N/A		Bill of Lading/Air Bill No.: 7983 5655 8248

Price Code: 7C

Data Turnaround: 15 Days

POSSIBLE SAMPLE HAZARDS/REMARKS

N/A

Special Handling and/or Storage

N/A

0000335

Preservation	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Type of Container	[illegible]	P	[illegible]	[illegible]	[illegible]
No. of Container(s)	1	1	1	1	1
Volume	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
SAMPLE ANALYSIS	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

Sample No.	Matrix *	Sample Date	Sample Time					
[illegible]	WATER	1-31-10	17:30	X	X	X	X	
[illegible]	WATER	1-31-10	17:30					X

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From: Sam Gilbo	Date/Time: 1-31-10/ 2004	Received By/Stored In: EAS REF 6	Date/Time: 1-31-10/ 2004
Relinquished By/Removed From: EAS REF 6	Date/Time: 2/2/10	Received By/Stored In: SHANNAN JOHNSON	Date/Time: 2/2/10
Relinquished By/Removed From: SHANNAN JOHNSON	Date/Time: 2/2/10	Received By/Stored In: FDX	Date/Time:
Relinquished By/Removed From:	Date/Time: 2-3-10 / 0955	Received By/Stored In: [illegible] Smith	Date/Time: 2-3-10 0955
Relinquished By/Removed From:	Date/Time:	Received By/Stored In:	Date/Time:
Relinquished By/Removed From:	Date/Time:	Received By/Stored In:	Date/Time:

SPECIAL INSTRUCTIONS

[illegible]

* Samples [illegible]

Sampler [illegible] to remove samples from controlled storage. Shipper removed samples from storage location [illegible].

Matrix *: [illegible]

LABORATORY SECTION	Received By:	Title:	Date/Time:
FINAL SAMPLE DISPOSITION	Disposal Method:	Disposed By:	Date/Time:

[illegible]

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-114-340

Turnaround: 15 Days

Sampler: Dave Gibbs

Sampling Location: 300133

Ice Chest No.: RFS-04-107

Bill of Lading/Air Bill No.: 7983 5655 8350

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

0000036

SAMPLE ANALYSIS

Sample No.	Matrix *	Sample Date	Sample Time						
[illegible]	WATER	2-1-10	12:05	X	X	X	X	X	
[illegible]	WATER	2-1-10	12:05						X

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Dave Gibbs	2-1-10/16:20	EAS RSE 6-016	2-1-10/16:20
EAS RSE 6-016	2/2/10 1125	SHANNAN JOHNSON	2/2/10 1125
SHANNAN JOHNSON	2/2/10 1125	FDX	
	2-3-10 0955		2-3-10

SPECIAL INSTRUCTIONS

LABORATORY SECTION

FINAL SAMPLE DISPOSITION

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-114-199

Collector Sam Gilkes	Company Contact [illegible]	Telephone No. [illegible]	Project Coordinator [illegible]
Project Designation [illegible]	Sampling Location [illegible] J30019		SAF No. RC-114
Ice Chest No. NFS-111-025	Field Logbook No. [illegible]	COA [illegible]	Method of Shipment [illegible]
Shipped To [illegible]	Offsite Property No. N/A		Bill of Lading/Air Bill No. 7983 5655 8132

Priority: 7C

Data Turnaround: 15 Days

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

Preservation	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Type of Container	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
No. of Container(s)	1	[illegible]	1	[illegible]	[illegible]	[illegible]
Volume	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
SAMPLE ANALYSIS	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

Handwritten in the No. of Container(s) row: 7g 2/2/10

Sample No.	Matrix	Sample Date	Sample Time						
[illegible]	WATER	2-1-10	13 45	X	X	X	X	X	
[illegible]	WATER	2 1-10	13 45						X

CHAIN OF POSSESSION	Date/Time	Sign/Print Names	Date/Time
Relinquished By: Sam Gilkes	2/1/10 1610	Received By: EAS Kell	2/1/10 16:20
Relinquished By: [illegible]	2/2/10 11:45	Received By: SHANNAN JOHNSON	2/2/10 11:45
Relinquished By: SHANNAN JOHNSON	2/2/10 1700	Received By: FDX	
Relinquished By: Fed Ex	2-3-10 0955	Received By: [illegible]	2-3-10 0955
Relinquished By:		Received By:	
Relinquished By:		Received By:	

SPECIAL INSTRUCTIONS

[illegible]

LABORATORY SECTION: Received By

FINAL SAMPLE DISPOSITION: Disposal Method; Disposed By

Washington Closure Hanford	**CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST**	RC-114-415
Collector: Sean [illegible]	Company Contact: JOAN KESSNER · Telephone No.: 373-[illegible] · Project Coordinator: KESSNER, JH	Price Code: 7C · Data Turnaround: 15 Days
Project Designation: [illegible]	Sampling Location: 100-A 330019 DUPLICATE · SAF No.: RC-114	
Ice Chest No.: [illegible]	Field Logbook No.: [illegible] · COA: [illegible] · Method of Shipment: FEDEX	
Shipped To: [illegible]	Offsite Property No.: N/A · Bill of Lading/Air Bill No.: 7983 5255 8032	

POSSIBLE SAMPLE HAZARDS/REMARKS

N/A

Special Handling and/or Storage

N/A

8000038

	Preservation	[illegible]	[illegible]	
	Type of Container	[illegible]	[illegible]	
	No. of Container(s)	1	1	
	Volume	[illegible]	[illegible]	
SAMPLE ANALYSIS		[illegible]	[illegible]	

Sample No.	Matrix *	Sample Date	Sample Time		
[illegible]	WATER	2-1-10	13:45	X	
[illegible]	WATER	2-1-10	13:45		X

CHAIN OF POSSESSION · Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Sean [illegible]	2-1-10/1620	EAS REF [illegible]	2-1-10/1620
EAS REF [illegible]	2/2/10 1145	SHANNAN JOHNSON	2/2/10 1145
SHANNAN JOHNSON	2/2/10 1145	FDX	
[illegible]	2-3-10 [illegible]	[illegible]	2-3-10

SPECIAL INSTRUCTIONS

[illegible]

[illegible]

LABORATORY SECTION · Received By · Title · Date/Time

FINAL SAMPLE DISPOSITION · Disposal Method · Disposed By · Date/Time

Appendix 5

Data Validation Supporting Documentation

INORGANIC ANALYSIS DATA VALIDATION CHECKLIST

VALIDATION LEVEL	A	B	[✓ C]	D	E

PROJECT:	RCBRA	DATA PACKAGE:	K1926
VALIDATOR:	ELR	LAB: LLI	DATE: 4/9/10
		SDG:	K1926

ANALYSES PERFORMED

[✓ SW-846/ICP]	SW-846/GFAA	[✓ SW-846/Hg]	SW-846 Cyanide		

SAMPLES/MATRIX

J19JD8 J19JF2 J19J07 J19JF1 J19J07, J19JF7
J19JC7, J19JK8 J19K09 J19H00 J19HK0 J19HE1
J19F74 J19P78 J19HW2 J19HW4 J19JC3

Water

1. DATA PACKAGE COMPLETENESS AND CASE NARRATIVE

Technical verification documentation present? .... Yes [✓ No] N/A

Comments:

2. INSTRUMENT PERFORMANCE AND CALIBRATIONS (Levels D and E)

Initial calibrations performed on all instruments? .... Yes No [✓ N/A]
Initial calibrations acceptable? .... Yes No [✓ N/A]
ICP interference checks acceptable? .... Yes No [✓ N/A]
ICV and CCV checks performed on all instruments? .... Yes No [✓ N/A]
ICV and CCV checks acceptable? .... Yes No [✓ N/A]
Standards traceable? .... Yes No [✓ N/A]
Standards expired? .... Yes No [✓ N/A]
Calculation check acceptable? .... Yes No [✓ N/A]

Comments:

INORGANIC ANALYSIS DATA VALIDATION CHECKLIST

3. BLANKS (Levels B, C, D, and E)

ICB and CCB checks performed for all applicable analyses? (Levels D, E) .... Yes No [✓ N/A]
ICB and CCB results acceptable? (Levels D, E) .... Yes No [✓ N/A]
Laboratory blanks analyzed? .... [✓ Yes] No N/A
Laboratory blank results acceptable? .... Yes [✓ No] N/A
Field blanks analyzed? (Levels C, D, E) .... Yes [✓ No] N/A
Field blank results acceptable? (Levels C, D, E) .... Yes No [✓ N/A]
Transcription/calculation errors? (Levels D, E) .... Yes No [✓ N/A]

Comments: Cd – UJ (except W2, T4, E0, A19, C7, D7, D8)

No FB

4. ACCURACY (Levels C, D, and E)

MS/MSD samples analyzed? .... [✓ Yes] No N/A
MS/MSD results acceptable? .... [✓ Yes] No N/A
MS/MSD standards NIST traceable? (Levels D, E) .... Yes No [✓ N/A]
MS/MSD standards expired? (Levels D, E) .... Yes No [✓ N/A]
LCS/BSS samples analyzed? .... [✓ Yes] No N/A
LCS/BSS results acceptable? .... [✓ Yes] No N/A
Standards traceable? (Levels D, E) .... Yes No [✓ N/A]
Standards expired? (Levels D, E) .... Yes No [✓ N/A]
Transcription/calculation errors? (Levels D, E) .... Yes No [✓ N/A]
Performance audit sample(s) analyzed? .... Yes [✓ No] N/A
Performance audit sample results acceptable? .... Yes No [✓ N/A]

Comments: No PAS

INORGANIC ANALYSIS DATA VALIDATION CHECKLIST

5. PRECISION (Levels C, D, and E)

Duplicate RPD values acceptable? .... [✓ Yes] No N/A

Duplicate results acceptable? .... [✓ Yes] No N/A

MS/MSD standards NIST traceable? (Levels D, E) .... Yes No [✓ N/A]

MS/MSD standards expired? (Levels D, E) .... Yes No [✓ N/A]

Field duplicate RPD values acceptable? .... Yes No [✓ N/A]

Field split RPD values acceptable? .... Yes No [✓ N/A]

Transcription/calculation errors? (Levels D, E) .... Yes No [✓ N/A]

Comments:

6. ICP QUALITY CONTROL (Levels D and E)

ICP serial dilution samples analyzed? .... Yes No [✓ N/A]

ICP serial dilution %D values acceptable? .... Yes No [✓ N/A]

ICP post digestion spike required? .... Yes No [✓ N/A]

ICP post digestion spike values acceptable? .... Yes No [✓ N/A]

Standards traceable? .... Yes No [✓ N/A]

Standards expired? .... Yes No [✓ N/A]

Transcription/calculation errors? .... Yes No [✓ N/A]

Comments:

INORGANIC ANALYSIS DATA VALIDATION CHECKLIST

7. FURNACE AA QUALITY CONTROL (Levels D and E)

Duplicate injections performed as required? .... Yes No [✓ N/A]

Duplicate injection %RSD values acceptable? .... Yes No [✓ N/A]

Analytical spikes performed as required? .... Yes No [✓ N/A]

Analytical spike recoveries acceptable? .... Yes No [✓ N/A]

Standards traceable? .... Yes No [✓ N/A]

Standards expired? .... Yes No [✓ N/A]

MSA performed as required? .... Yes No [✓ N/A]

MSA results acceptable? .... Yes No [✓ N/A]

Transcription/calculation errors? .... Yes No [✓ N/A]

Comments:

8. HOLDING TIMES (all levels)

Samples properly preserved? .... [✓ Yes] No N/A

Sample holding times acceptable? .... [✓ Yes] No N/A

Comments:

INORGANIC ANALYSIS DATA VALIDATION CHECKLIST

9. RESULT QUANTITATION AND DETECTION LIMITS (all levels)

Results reported for all requested analyses? .... [✓ Yes] No N/A

Results supported in the raw data? (Levels D, E) .... Yes No [✓ N/A]

Samples properly prepared? (Levels D, E) .... Yes No [✓ N/A]

Detection limits meet RDL? .... [✓ Yes] No N/A

Transcription/calculation errors? (Levels D, E) .... Yes No [✓ N/A]

Comments:

Appendix 6

Additional Documentation Requested by Client

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

WC Hanford, Inc 2620 Fermi Avenue Richland WA, 99354	Project: RC-114 Project Number: K1926 Project Manager: Joan Kessner	Reported: 02/19/2010 14:30

Metals by SW846 6000/7000 series - Quality Control

Lionville Laboratory

Analyte	Result	and Qualifiers	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch L002153 - SW 7470A Prep										
Blank (L002153-BLK1)				Prepared: 02/12/2010 Analyzed: 02/15/2010						
Mercury	0.200	U	0.200	ug/L						
LCS (L002153-BS1)				Prepared: 02/12/2010 Analyzed: 02/15/2010						
Mercury	5.12		0.200	ug/L	5.0606		101	80-120		
Duplicate (L002153-DUP1)		Source: 1002009-02		Prepared: 02/12/2010 Analyzed: 02/15/2010						
Soluble Mercury	0.200	U	0.200	ug/L		0.200 U				20
Matrix Spike (L002153-MS1)		Source: 1002009-02		Prepared: 02/12/2010 Analyzed: 02/15/2010						
Soluble Mercury	0.952		0.200	ug/L	1.0121	0.200 U	94.1	75-125		
Batch L002220 - SW 3005A										
Blank (L002220-BLK1)				Prepared: 02/17/2010 Analyzed: 02/18/2010						
Aluminum	25.4	B	50.0	ug/L						
Antimony	6.00	U	6.00	ug/L						
Arsenic	10.0	U	10.0	ug/L						
Barium	5.00	U	5.00	ug/L						
Beryllium	2.00	U	2.00	ug/L						
Boron	10.0	U	10.0	ug/L						
Cadmium	1.00	U	1.00	ug/L						
Calcium	100	U	100	ug/L						
Chromium	2.00	U	2.00	ug/L						
Cobalt	2.00	U	2.00	ug/L						
Copper	10.0	U	10.0	ug/L						
Iron	50.0	U	50.0	ug/L						
Lead	5.00	U	5.00	ug/L						
Magnesium	100	U	100	ug/L						
Manganese	2.00	U	2.00	ug/L						
Nickel	5.00	U	5.00	ug/L						
Potassium	500	U	500	ug/L						
Selenium	10.0	U	10.0	ug/L						
Silver	2.00	U	2.00	ug/L						
Sodium	100	U	100	ug/L						
Thallium	100	U	100	ug/L						
Vanadium	5.00	U	5.00	ug/L						
Zinc	10.0	U	10.0	ug/L						

364 Welsh Pool Road
Exton, PA 19341
Phone: 610 280-3000
Fax: 610 280-3041

WC-Hanford, Inc 2620 Fermi Avenue Richland WA, 99354	Project: RC-114 Project Number: K1976 Project Manager: Joan Kessner	Reported: 02/19/2010 11:30

Metals by SW846 6000/7000 series - Quality Control

Lionville Laboratory

Analyte	Result and Qualifiers		Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch L002220 - SW 3005A										
LCS (L002220-BS1)				Prepared: 02/17/2010 Analyzed: 02/18/2010						
Aluminum	4860		50.0	ug/L	5000.0		97	80-120		
Antimony	5040		6.00	ug/L	5000.0		101	80-120		
Arsenic	9970		10.0	ug/L	10000		100	80-120		
Barium	4990		5.00	ug/L	5000.0		100	80-120		
Beryllium	240		2.00	ug/L	250.00		96	80-120		
Boron	4880		10.0	ug/L	5000.0		98	80-120		
Cadmium	235		1.00	ug/L	250.00		94	80-120		
Calcium	24500		100	ug/L	25000		98	80-120		
Chromium	491		2.00	ug/L	500.00		98	80-120		
Cobalt	2420		2.00	ug/L	2500.0		97	80-120		
Copper	1250		10.0	ug/L	1250.0		100	80-120		
Iron	4950		50.0	ug/L	5000.0		99	80-120		
Lead	2450		5.00	ug/L	2500.0		98	80-120		
Magnesium	24500		100	ug/L	25000		98	80-120		
Manganese	248		2.00	ug/L	250.00		99	80-120		
Nickel	1940		5.00	ug/L	2000.0		97	80-120		
Potassium	24600		500	ug/L	25000		99	80-120		
Selenium	9980		10.0	ug/L	10000		100	80-120		
Silver	486		2.00	ug/L	500.00		97	80-120		
Sodium	25100		100	ug/L	25000		100	80-120		
Uranium	4770		100	ug/L	5000.0		95	80-120		
Vanadium	2430		5.00	ug/L	2500.0		97	80-120		
Zinc	983		10.0	ug/L	1000.0		98	80-120		
Duplicate (L002220-DUP1)		Source: 1002009-01		Prepared: 02/17/2010 Analyzed: 02/18/2010						
Aluminum	2400		50.0	ug/L		2440			2	20
Antimony	6.00	U	6.00	ug/L		6.00 U				20
Arsenic	10.0	U	10.0	ug/L		10.0 U				20
Barium	41.6		5.00	ug/L		41.6			0	20
Beryllium	2.00	U	2.00	ug/L		2.00 U				20
Boron	18.5		10.0	ug/L		18.6			0.4	20
Cadmium	1.00	U	1.00	ug/L		1.00 U				20
Calcium	27100		100	ug/L		27200			0.4	20
Chromium	9.55		2.00	ug/L		9.03			5	20
Cobalt	0.625	B	2.00	ug/L		0.648			4	20
Copper	3.71	B	10.0	ug/L		[illegible]			19	20
Iron	2110		50.0	ug/L		2190			4	20

Metals by SW846 6000/7000 series - Quality Control

Lionville Laboratory

Analyte	Result	Qualifiers	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch L002220 - SW 3005A										
Duplicate (L002220-DUP1)		Source: 1002009-01		Prepared: 02/17/2010 Analyzed: 02/18/2010						
Lead	1.89	B	5.00	ug/L		2.70			0.3	20
Magnesium	5860		100	ug/L		5930			1	20
Manganese	27.0		2.00	ug/L		27.4			1	20
Nickel	4.62	B	5.00	ug/L		5.44			16	20
Potassium	1880		500	ug/L		1880			0.1	20
Selenium	10.0	U	10.0	ug/L		10.0 U				20
Silver	2.00	U	2.00	ug/L		2.00 U				20
Sodium	3120		100	ug/L		3090			0.8	20
Uranium	1.00	U	1.00	ug/L		1.00 U				20
Vanadium	7.12		5.00	ug/L		7.28			2	20
Zinc	16.2		10.0	ug/L		16.4			1	20
Matrix Spike (L002220-MS1)		Source: 1002009-01		Prepared: 02/17/2010 Analyzed: 02/18/2010						
Aluminum	4640		50.0	ug/L	2000.0	2440	110	75-125		
Antimony	506		6.00	ug/L	500.00	6.00 U	101	75-125		
Arsenic	2050		10.0	ug/L	2000.0	10.0 U	103	75-125		
Barium	2040		5.00	ug/L	2000.0	43.6	100	75-125		
Beryllium	48.3		2.00	ug/L	50.000	2.00 U	97	75-125		
Boron	1010		10.0	ug/L	1000.0	18.6	99	75-125		
Cadmium	47.8		1.00	ug/L	50.000	1.00 U	96	75-125		
Calcium	51900		100	ug/L	25000	27200	98	75-125		
Chromium	208		2.00	ug/L	200.00	9.08	100	75-125		
Cobalt	490		2.00	ug/L	500.00	0.648	98	75-125		
Copper	257		10.0	ug/L	250.00	4.73	101	75-125		
Iron	3120		50.0	ug/L	1000.0	2190	93	75-125		
Lead	500		5.00	ug/L	500.00	2.70	99	75-125		
Magnesium	30500		100	ug/L	25000	5930	98	75-125		
Manganese	525		2.00	ug/L	500.00	27.4	100	75-125		
Nickel	498		5.00	ug/L	500.00	5.43	99	75-125		
Potassium	26400		500	ug/L	25000	1880	98	75-125		
Selenium	2030		10.0	ug/L	2000.0	10.0 U	101	75-125		
Silver	51.6		2.00	ug/L	50.000	2.00 U	103	75-125		
Sodium	28100		100	ug/L	25000	3090	100	75-125		
Uranium	4790		1.00	ug/L	5000.0	1.00 U	96	75-125		
Vanadium	492		5.00	ug/L	500.00	7.28	97	75-125		
Zinc	512		10.0	ug/L	500.00	16.4	99	75-125		

F.2.2 Surface Water

F.2.2.1 SDG J00712

SAF-RC-115
Columbia River Component of the RCBRA – Surface Water
FINAL VALIDATION PACKAGE

COMPLETE COPY OF VALIDATION PACKAGE TO:

Kathy Wendt H4-21

COMMENTS:

SDG J00712 **SAF-RC-115**

Date: 25 March 2010
To: Washington Closure Hanford Inc (technical representative)
From: ELR Consulting
Project: Columbia River Component of the RCBRA – Surface Water
Subject: Wet Chemistry - Data Package No. J00712-TAL

INTRODUCTION

This memo presents the results of data validation on Data Package No. J00712 prepared by TestAmerica Laboratory Inc. (TAL). A list of samples validated along with the analyses reported and the method of analysis is provided in the following table.

Sample ID	Sample Date	Media	Validation	Analyte
J19J85	2/5/10	Water	C	See note 1
J19J86	2/5/10	Water	C	See note 1

1 – Chromium VI by 7196A

Data validation was conducted in accordance with the Washington Closure Hanford (WCH) validation statement of work and the Remedial Investigation Work Plan for Hanford Site Releases to the Columbia River (DOE/RL-2008-11, Rev. 0, September 2008). Appendices 1 through 6 provide the following information as indicated below:

Appendix 1. Glossary of Data Reporting Qualifiers
Appendix 2. Summary of Data Qualification
Appendix 3. Annotated Laboratory Reports
Appendix 4. Laboratory Narrative and Chain-of-Custody Documentation
Appendix 5. Data Validation Supporting Documentation
Appendix 6. Additional Documentation Requested by Client

DATA QUALITY PARAMETERS

Holding Times

Analytical holding times for metals are assessed to ascertain whether the holding time requirements were met by the laboratory. The holding time requirements are as follows: Soil samples must be analyzed within 24 hours for chromium VI.

If holding times are exceeded, but not by greater than two times the limit, all associated sample results are qualified as estimates and flagged "J" for detects and "UJ" for non-detects. If holding times are exceeded by greater than two times the limit, all associated detectable sample results are qualified as estimates and flagged "J" and all non-detects are rejected and flagged "UR"

All holding times were acceptable.

Method Blanks

Method Blanks

Method blank analyses are performed to determine the extent of laboratory contamination introduced through sampling, sample preparation and analysis. At least one acceptable method blank analysis must be conducted for every 20 samples. No contaminants should be present in the method blank. All blank results must fall below the contract required detection limit (CRQL) to be acceptable.

All method blank results were acceptable.

Field (Equipment) Blank

No field blanks were submitted for analysis.

Accuracy

Matrix Spike and Laboratory Control Sample

Matrix spike (MS) and laboratory control sample (LCS) analyses are used to assess the analytical accuracy of the reported data. The matrix spike is used to assess the effect of the matrix on the ability to accurately quantify sample concentrations. Recoveries must fall within the range of 80% to 120%. Samples with a recovery of less than 30% and a sample result below the IDL are rejected and flagged "UR". Samples with a recovery of 30% to 79% and a sample result less than the IDL are qualified "UJ". Samples with a recovery of greater than 120% or less than 80% and a sample result greater than the IDL are qualified as estimates and flagged "J". Finally, for samples with a recovery greater than 120% and a sample result less than the IDL, no qualification is required.

All accuracy results were acceptable.

Precision

Laboratory Duplicate Samples

Analytical precision is expressed by the relative percent differences (RPD) between the recoveries of matrix spike duplicate (MSD) analyses performed on a sample in the analytical batch. Precision may alternatively be assessed using unspiked duplicate analyses performed on a sample in the analytical batch. If both sample and replicate activities (concentrations) are greater than five times the CRDL and the RPD is less than 20%, no qualification is required. If either activity (concentration) is less than five times the CRDL, the RPD control limit is less than or equal to two times the CRDL. If the RPD is outside the applicable control limit, associated results are qualified as estimated detects or estimated non-detects.

All duplicate results were acceptable.

Field Duplicate

No field duplicates were submitted for analysis.

- **Analytical Detection Levels**

Reported analytical detection levels are compared against the required quantitation limits (RQLs) to ensure that laboratory detection levels meet the required criteria. All analytes met the RQL.

- **Completeness**

Data package J00712 was submitted for validation and verified for completeness. Completeness is based on the percentage of data determined to be valid (i.e., not rejected). The completion percentage was 100%.

MAJOR DEFICIENCIES

None found.

MINOR DEFICIENCIES

None found.

REFERENCES

Washington Closure Hanford Contract #S00W307A00 (March 2008). *Data Validation Services.*

DOE/RL-2008-11, Rev.0, *Remedial Investigation Work Plan for Hanford Site Releases to the Columbia River*, September 2008

Appendix 1

Glossary of Data Reporting Qualifiers

Qualifiers which may be applied by data validators in compliance with WCH validation SOW are as follows:

U - Indicates the compound or analyte was analyzed for and not detected in the sample. The value reported is the sample quantitation limit corrected for sample dilution and moisture content by the laboratory.

UJ - Indicates the compound or analyte was analyzed for and not detected in the sample. Due to a minor QC deficiency identified during the data validation, the associated quantitation limit is an estimate.

J - Indicates the compound or analyte was analyzed for and detected. Due to a minor QC deficiency identified during the data validation, the associated concentration is an estimate, but the data are usable for decision-making purposes.

BJ - Applied to inorganic analyses only. Indicates the analyte concentration was greater than the IDL but less than the CRDL and is considered an estimated value.

R - Indicates the compound or analyte was analyzed for, detected, and due to an identified major QC deficiency, the data are unusable.

UR - Indicates the compound or analyte was analyzed for and not detected in the sample. Additionally, the data is unusable due to an identified major QC deficiency.

NJ - Indicates presumptive evidence of a compound at an estimated value. The data may not be valid for some specific applications (i.e., usable for decision-making purposes).

N - Indicates presumptive evidence of a compound. The data may not be valid for some specific applications (i.e., usable for decision-making purposes).

Appendix 2

Summary of Data Qualification

WET CHEMISTRY DATA QUALIFICATION SUMMARY*

SDG: J00712	**REVIEWER:** ELR	**Project:** RCBRA	**PAGE 1 OF 1**

COMMENTS: No qualifiers assigned

* - The Qualified Data Summary Table includes laboratory applied "U" qualifiers not specifically identified here. The laboratory applied "U" qualifiers are included to minimize misinterpretation of results contained in the table.

Appendix 3

Annotated Laboratory Reports

Sample Results Summary

Date: 22-Feb-10

TestAmerica TARL

Ordered by Method, Batch No., Client Sample ID.

Report No. : 43200

SDG No: J00712

Batch	Client Id Work Order	Parameter	Result +- Uncertainty (2s)	Qual	Units	Tracer Yield	MDC or MDA	CRDL	RPD
0039384 7196_CR6									
J19J88									
	LVFHM1AA	HEXCHROME	3.70E-03 +- 0.0E+00	U	mg/L	N/A	3.70E-03	3.50E-01	
	LVFHM1AR	HEXCHROME	3.70E-03 +- 0.0E+00	U	mg/L	N/A	3.70E-03	3.50E-01	0.0
J19J89									
	LVFHN1AA	HEXCHROME	3.70E-03 +- 0.0E+00	U	mg/L	N/A	3.70E-03	3.50E-01	

No. of Results: 3

3/24/10

TestAmerica

rptSTLRchSaSummary2 V5.2.5 A2002

RPD - Relative Percent Difference.

U Qual - Analyzed for but not detected above limiting criteria. Limit criteria is less than the Mdc/Mda or Total Uncert or not identified by gamma scan software.

Appendix 4

Laboratory Narrative and Chain-of-Custody Documentation

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

Certificate of Analysis

TestAmerica Laboratories, Inc.

Washington Hanford Closure
2020 Fermi Avenue
Richland, WA 99354

February 22, 2010

Attention: Joan Kessner

SAF Number : RC-115
Date SDG Closed : February 6, 2010
Number of Samples : Two (2)
Sample Type : Water
SDG Number : H0712
Data Deliverable : 15 Day / Summary

CASE NARRATIVE

I. Introduction

On February 6, 2010 two water samples were received at TestAmerica for chemistry analysis. Upon receipt, the samples were assigned the following laboratory ID numbers to correspond with the Washington Closure Hanford (WCH) specific ID:

WCH ID#	TARL ID#	MATRIX	DATE OF RECEIPT
J19J85	LVBJM	WATER	02/06/10
J19J86	LVBJJ	WATER	02/06/10

II. Sample Receipt

The samples were received in good condition and no anomalies were noted during check-in.

III. Analytical Results/Methodology

The analytical results for this report are presented by laboratory sample ID. Each set of data includes sample identification information, analytical results and the appropriate associated statistical errors.

Washington Closure Hanford
February 22, 2010

The requested analyses were:

Chemical Analysis
Hexavalent Chromium by EPA method 7196A

IV. Quality Control

The analytical results for each analysis performed includes a minimum of one laboratory control sample (LCS), one method (reagent) blank, and one duplicate sample analysis. Any exceptions have been noted in the "Comments" section.

QC and sample results are reported in the same units.

V. Comments

Chemical Analysis
Hexavalent Chromium by EPA method 7196A:
Samples J19J85 and J19J86 were filtered prior to aliquoting. Except as noted, the LCS, batch blank, samples, sample duplicate (J19J85), sample matrix spike (J19J85), and matrix spike duplicate (J19J85) results are within contractual requirements.

I certify that this Certificate of Analysis is in compliance with the SOW, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hard copy data package has been authorized by the Laboratory Manager, or a designee as verified by the following signature.

Reviewed and approved:

Sandra Seger

Sandra Seger
Project Manager

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-115-274 Page 1 of 1

Collector
R. Carter

Company Contact
John Kessner

Telephone No.
372-[illegible]

Project Coordinator
KESSNER, JH

Price Code 7C

Data Turnaround
15 Days

Project Designation
Columbia River Component of the RCBRA - Surface Water

Sampling Location
T90/D2A

SAF No.
RC-115

Ice Chest No. N/A

Field Logbook No.
EL-1645-6 [illegible]

COA
[illegible]

Method of Shipment
GROUND TRANSPORT

Shipped To
TestAmerica Incorporated, Richland

Offsite Property No.
N/A

Bill of Lading/Air Bill No.
N/A

POSSIBLE SAMPLE HAZARDS/REMARKS
N/A

Special Handling and/or Storage
N/A

Preservation	Cool 4C
Type of Container	G/P
No. of Container(s)	1
Volume	500mL

SAMPLE ANALYSIS

J0B080452

J0G-12-22-10
J0G1500712
J0B080452

Sample No.	Matrix *	Sample Date	Sample Time	[illegible]
J15JB5	WATER	02-05-10	1245	X

CHAIN OF POSSESSION

Sign/Print Names

Relinquished By/Removed From R. Carter R. [illegible] Date/Time 02-05-10 1315
Received By/Stored In R. Carter EAS REF 6 Date/Time 02-05-10 1315

Relinquished By/Removed From EAS REF 6 [illegible] Date/Time [illegible]
Received By/Stored In [illegible] 2/6/10 Date/Time 0756

Relinquished By/Removed From [illegible] 2/6/10 Date/Time
Received By/Stored In [illegible] 2/6/10 [illegible] Date/Time

Relinquished By/Removed From Date/Time
Received By/Stored In Date/Time

Relinquished By/Removed From Date/Time
Received By/Stored In Date/Time

Relinquished By/Removed From Date/Time
Received By/Stored In Date/Time

SPECIAL INSTRUCTIONS

LVEHM

Sample [illegible] [illegible]

Matrix *

LABORATORY SECTION Received By Title Date/Time

FINAL SAMPLE DISPOSITION Disposal Method Disposed By Date/Time

WCH-EE-011

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-115-275

Page 1 of 1

Collector Rylie Barron	Company Contact Joan Kessner	Telephone No. 375-4688	Project Coordinator KESSNER, JH
Project Designation Columbia River Component of the RI/FS - Surface Water	Sampling Location T;5050A		SAF No. RC-115
Ice Chest No. N/A	Field Logbook No. EL-3045	COA RESCAN[illegible]	Method of Shipment GROUND TRANSPORT
Shipped To TestAmerica Incorporated, Richland	Offsite Property No. N/A		Bill of Lading/Air Bill No. N/A

Price Code 7C

Data Turnaround 15 Days

POSSIBLE SAMPLE HAZARDS/REMARKS
N/A

Special Handling and/or Storage
N/A

Preservation	Cool 4C
Type of Container	G/P
No. of Container(s)	1
Volume	250mL
SAMPLE ANALYSIS	Chromium Hex - 7196

DUR-222-10
J0B080952
SDG J00712

Sample No.	Matrix *	Sample Date	Sample Time	
J19J88	WATER	2-5-10	1230	X

CHAIN OF POSSESSION

Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
R. Barron R.B	2-5-10 1700	R. Barron EAS ref D R.B	2-5-10 1700
EAS ref D Wendy West	2/6/10 0710	Wendy West	2/6/10 0710
Wendy West	2/6/10	[illegible]	2/6/10 0850

SPECIAL INSTRUCTIONS

LVEH1

Matrix *

LABORATORY SECTION — Received By — Title — Date/Time

FINAL SAMPLE DISPOSITION — Disposal Method — Disposed By — Date/Time

WCH-EE-017

Appendix 5

Data Validation Supporting Documentation

GENERAL CHEMISTRY ANALYSIS DATA VALIDATION CHECKLIST

VALIDATION LEVEL	A	B	[✓ C]	D	E
PROJECT:	RCBRA		DATA PACKAGE:	J00712	
VALIDATOR:	ELR	LAB: TAL		DATE:	3/24/10
			SDG:	J00712	
ANALYSES PERFORMED					
Anions/IC	TOC	TOX	TPH-418.1	Oil and Grease	Alkalinity
Ammonia	BOD/COD	Chloride	[✓ Chromium-VI]	pH	NO_3/NO_2
Sulfate	TDS	TKN	Phosphate		
SAMPLES/MATRIX					
J19J85 J19J86					
					Water

1. DATA PACKAGE COMPLETENESS AND CASE NARRATIVE

Technical verification documentation present? .... Yes [✓ No] N/A

Comments:

2. INSTRUMENT PERFORMANCE AND CALIBRATIONS (Levels D and E)

Initial calibrations performed on all instruments? .... Yes No [✓ N/A]

Initial calibrations acceptable? .... Yes No [✓ N/A]

ICV and CCV checks performed on all instruments? .... Yes No [✓ N/A]

ICV and CCV checks acceptable? .... Yes No [✓ N/A]

Standards traceable? .... Yes No [✓ N/A]

Standards expired? .... Yes No [✓ N/A]

Calculation check acceptable? .... Yes No [✓ N/A]

Comments:

GENERAL CHEMISTRY ANALYSIS DATA VALIDATION CHECKLIST

3. BLANKS (Levels B, C, D, and E)

ICB and CCB checks performed for all applicable analyses? (Levels D, E) .... Yes No [✓ N/A]

ICB and CCB results acceptable? (Levels D, E) .... Yes No [✓ N/A]

Laboratory blanks analyzed? .... [✓ Yes] No N/A

Laboratory blank results acceptable? .... [✓ Yes] No N/A

Field blanks analyzed? (Levels C, D, E) .... Yes [✓ No] N/A

Field blank results acceptable? (Levels C, D, E) .... Yes No [✓ N/A]

Transcription/calculation errors? (Levels D, E) .... Yes No [✓ N/A]

Comments: No FB

4. ACCURACY (Levels C, D, and E)

Spike samples analyzed? .... [✓ Yes] No N/A

Spike recoveries acceptable? .... [✓ Yes] No N/A

Sike standards NIST traceable? (Levels D, E) .... Yes No [✓ N/A]

Spike standards expired? (Levels D, E) .... Yes No [✓ N/A]

LCS/BSS samples analyzed? .... [✓ Yes] No N/A

LCS/BSS results acceptable? .... [✓ Yes] No N/A

Standards traceable? (Levels D, E) .... Yes No [✓ N/A]

Standards expired? (Levels D, E) .... Yes No [✓ N/A]

Transcription/calculation errors? (Levels D, E) .... Yes No [✓ N/A]

Performance audit sample(s) analyzed? .... Yes [✓ No] N/A

Performance audit sample results acceptable? .... Yes No [✓ N/A]

Comments: No PAS

GENERAL CHEMISTRY ANALYSIS DATA VALIDATION CHECKLIST

5. PRECISION (Levels C, D, and E)

Duplicate RPD values acceptable? .... [✓ Yes] No N/A

Duplicate results acceptable? .... [✓ Yes] No N/A

MS/MSD standards NIST traceable? (Levels D, E) .... Yes No [✓ N/A]

MS/MSD standards expired? (Levels D, E) .... Yes No [✓ N/A]

Field duplicate RPD values acceptable? .... Yes No [✓ N/A]

Field split RPD values acceptable? .... Yes No [✓ N/A]

Transcription/calculation errors? (Levels D, E) .... Yes No [✓ N/A]

Comments:

6. HOLDING TIMES (all levels)

Samples properly preserved? .... [✓ Yes] No N/A

Sample holding times acceptable? .... [✓ Yes] No N/A

Comments:

GENERAL CHEMISTRY ANALYSIS DATA VALIDATION CHECKLIST

7. RESULT QUANTITATION AND DETECTION LIMITS (all levels)

Results reported for all requested analyses? .... [✓ Yes] No N/A

Results supported in the raw data? (Levels D, E) .... Yes No [✓ N/A]

Samples properly prepared? (Levels D, E) .... Yes No [✓ N/A]

Detection limits meet RDL? .... [✓ Yes] No N/A

Transcription/calculation errors? (Levels D, E) .... Yes No [✓ N/A]

Comments:

Appendix 6

Additional Documentation Requested by Client

QC Results Summary

TestAmerica TARL

Ordered by Method, Batch No, QC Type,.

Date: 22-Feb-10

Report No.: 43299

SDG No.: J00712

Batch Work Order	Parameter	Result +- Uncertainty (2s)	Qual	Units	Tracer Yield	LCS Recovery	Bias	MDC|MDA
7196_Cr6								
0039084 BLANK QC,								
LVELD1AA	HEXCHROME	3.70E-03 +- 0.0E+00	U	mg/kg	N/A			3.70E-03
0039084 LCS,								
LVELD1AC	HEXCHROME	4.00E-01 +- 0.0E+00		mg/L	N/A	99%	0.0	3.70E-03
0039084 MATRIX SPIKE, J10J65								
LVEHM1AC	HEXCHROME	2.73E-01 +- 0.0E+00		mg/L	N/A	104%	0.0	3.70E-03
LVEHM1AD	HEXCHROME	2.75E-01 +- 0.0E+00		mg/L	N/A	104%	0.0	3.70E-03

No. of Results: 4

TestAmerica Bias - (Result/Expected)-1 as defined by ANSI N13.30.

rptSTLRchQcSummary V5.2.5 A2002 U Qual - Analyzed for but not detected above limiting criteria. Limit criteria is less than the Mdc/Mda or Total Uncert or not identified by gamma scan software.

F.2.2.2 SDG K1917

SAF-RC-115
Columbia River Component of the RCBRA – Surface Water
FINAL VALIDATION PACKAGE

COMPLETE COPY OF VALIDATION PACKAGE TO:

Kathy Wendt   H4-21

COMMENTS:

SDG K1917   **SAF-RC-115**

Date: 29 March 2010
To: Washington Closure Hanford (technical representative)
From: ELR Consulting
Project: Columbia River Component of the RCBRA – Surface Water
Subject: Wet Chemistry - Data Package No. K1917-LLI

INTRODUCTION

This memo presents the results of data validation on Data Package No. K1917 prepared by Lionville Laboratory Inc. (LLI). A list of samples validated along with the analyses reported and the method of analysis is provided in the following table.

Sample ID	Sample Date	Media	Validation	Data
J19F85	1/25/10	Water	C	See note 1
J19FC8	1/25/10	Water	C	See note 1
J19FH2	1/24/10	Water	C	See note 1
J19FH3	1/24/10	Water	C	See note 1
J19H19	1/25/10	Water	C	See note 1
J19HR4	1/22/10	Water	C	See note 1
J19HR6	1/23/10	Water	C	See note 1

1 – Alkalinity by 310.1, hardness by 130.2 and dissolved organic carbon by 415.1.

Data validation was conducted in accordance with the Washington Closure Hanford (WCH) validation statement of work and the Remedial Investigation Work Plan for Hanford Site Releases to the Columbia River (DOE/RL-2008-11, Rev. 0, September 2008). Appendices 1 through 6 provide the following information as indicated below:

Appendix 1. Glossary of Data Reporting Qualifiers
Appendix 2. Summary of Data Qualification
Appendix 3. Qualified Data Summary and Annotated Laboratory Reports
Appendix 4. Laboratory Narrative and Chain-of-Custody Documentation
Appendix 5. Data Validation Supporting Documentation
Appendix 6. Additional Documentation Requested by Client

DATA QUALITY PARAMETERS

- **Holding Times & Sample Preservation**

Analytical holding times for metals are assessed to ascertain whether the holding time requirements were met by the laboratory. The holding time requirements are as follows: Samples must be analyzed within 6 months for hardness, 28 days for dissolved organic carbon and 14 days for alkalinity.

If holding times are exceeded, but not by greater than two times the limit, all associated sample results are qualified as estimates and flagged "J" for detects and "UJ" for non-detects. If holding times are exceeded by greater than two times the limit, all associated detectable sample results are qualified as estimates and flagged "J" and all non detects are rejected and flagged "UR".

Due to the samples not being properly preserved (no acid added), all dissolved organic carbon results were qualified as estimates and flagged "J".

All other holding time and sample preservation results were acceptable.

- **Method Blanks**

Method Blanks

Method blank analyses are performed to determine the extent of laboratory contamination introduced through sampling, sample preparation and analysis. At least one acceptable method blank analysis must be conducted for every 20 samples. No contaminants should be present in the method blank. All blank results must fall below the contract required detection limit (CRQL) to be acceptable.

All method blank results were acceptable.

Field (Equipment) Blank

No field blanks were submitted for analysis.

- **Accuracy**

Matrix Spike and Laboratory Control Sample

Matrix spike (MS) and laboratory control sample (LCS) analyses are used to assess the analytical accuracy of the reported data. The matrix spike is used to assess the effect of the matrix on the ability to accurately quantify sample concentrations. Recoveries must fall within the range of 70% to 130%. Samples with a recovery of less than 30% and a sample result below the IDL are rejected and flagged "UR". Samples with a recovery of 30% to 69% and a sample result less than the IDL are qualified "UJ". Samples with a recovery of greater than 130% or less than 70% and a sample result greater than the IDL are qualified as estimates and flagged "J". Finally, for samples with a recovery greater than 130% and a sample result less than the IDL, no qualification is required.

Due to the lack of a matrix spike analysis, all alkalinity results were qualified as estimates and flagged "J".

All other accuracy results were acceptable.

- **Precision**

Laboratory Duplicate Samples

Analytical precision is expressed by the relative percent differences (RPD) between the recoveries of matrix spike duplicate (MSD) analyses performed on a sample in the analytical batch. Precision may alternatively be assessed using unspiked duplicate analyses performed on a sample in the analytical batch. If both sample and replicate activities (concentrations) are greater than five times the CRDL and the RPD is less than 20%, no qualification is required. If either activity (concentration) is less than five times the CRDL, the RPD control limit is less than or equal to two times the CRDL. If the RPD is outside the applicable control limit, associated results are qualified as estimated detects or estimated non-detects.

All laboratory duplicate results were acceptable.

Field Duplicate

No field duplicates were submitted for analysis.

- **Analytical Detection Levels**

Reported analytical detection levels are compared against the required quantitation limits (RQLs) to ensure that laboratory detection levels meet the required criteria. All analytes met the RQL.

- **Completeness**

Data package No. K1917 was submitted for validation and verified for completeness. Completeness is based on the percentage of data determined to be valid (i.e., not rejected). The completion percentage was 100%.

MAJOR DEFICIENCIES

None found.

MINOR DEFICIENCIES

The following minor deficiency was noted:

- Due to the samples not being properly preserved (no acid added), all dissolved organic carbon results were qualified as estimates and flagged "J".
- Due to the lack of a matrix spike analysis, all alkalinity results were qualified as estimates and flagged "J".

Data flagged "J" indicates that the associated concentration is an estimate, but under the WCH statement of work, the data may be usable for decision-making purposes. All other validated results are considered accurate within the standard error associated with the methods.

REFERENCES

Washington Closure Hanford Contract #S00W307A00 (March 2008), *Data Validation Services*, March 2008.

DOE/RL-2008-11, Rev.0, *Remedial Investigation Work Plan for Hanford Site Releases to the Columbia River*, September 2008.

Appendix 1

Glossary of Data Reporting Qualifiers

Qualifiers which may be applied by data validators in compliance with WCH validation SOW are as follows:

U - Indicates the compound or analyte was analyzed for and not detected in the sample. The value reported is the sample quantitation limit corrected for sample dilution and moisture content by the laboratory.

UJ - Indicates the compound or analyte was analyzed for and not detected in the sample. Due to a minor QC deficiency identified during the data validation, the associated quantitation limit is an estimate.

J - Indicates the compound or analyte was analyzed for and detected. Due to a minor QC deficiency identified during the data validation, the associated concentration is an estimate, but the data are usable for decision-making purposes.

BJ - Applied to inorganic analyses only. Indicates the analyte concentration was greater than the IDL but less than the CRDL and is considered an estimated value.

R - Indicates the compound or analyte was analyzed for, detected, and due to an identified major QC deficiency, the data are unusable.

UR - Indicates the compound or analyte was analyzed for and not detected in the sample. Additionally, the data is unusable due to an identified major QC deficiency.

NJ - Indicates presumptive evidence of a compound at an estimated value. The data may not be valid for some specific applications (i.e., usable for decision-making purposes).

N - Indicates presumptive evidence of a compound. The data may not be valid for some specific applications (i.e., usable for decision-making purposes).

Appendix 2

Summary of Data Qualification

WET CHEMISTRY DATA QUALIFICATION SUMMARY*

SDG: K1917	**REVIEWER: ELR**	**Project: RCBRA**	**PAGE 1 OF 1**
COMPOUND	QUALIFIER	SAMPLES AFFECTED	REASON
Dissolved organic carbon	J	All	Sample preservation (no acid added)
Alkalinity	J	All	No MS analysis

* - The Qualified Data Summary Table includes laboratory applied "U" qualifiers not specifically identified here. The laboratory applied "U" qualifiers are included to minimize misinterpretation of results contained in the table.

Appendix 3

Qualified Data Summary and Annotated Laboratory Reports

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

WC-Hanford, Inc
2620 Fermi Avenue
Richland WA, 99354

Project: RC-115
Project Number: K1917
Project Manager: Joan Kessner

Reported:
02/19/2010 15:42

3/22/10

Wet Chemistry
Lionville Laboratory

Analyte	Result and Qualifier	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
J19HR4 (1001099-01) Water								
Total Hardness	85.1	5.00	mg/L	1	1002040	02/02/2010	02/02/2010	EPA 130.2
Total Alkalinity	62.5 J	2.00	mg/L	1	1001238	01/28/2010	01/28/2010	EPA 310.1
Dissolved Organic Carbon	1.66 B J	0.500	mg/L	1	1002247	02/18/2010	02/18/2010	EPA 415.1
J19HR6 (1001099-03) Water								
Total Hardness	80.2	5.00	mg/L	1	1002040	02/02/2010	02/02/2010	EPA 130.2
Total Alkalinity	62.5 J	2.00	mg/L	1	1001238	01/28/2010	01/28/2010	EPA 310.1
Dissolved Organic Carbon	1.54 B J	0.500	mg/L	1	1002247	02/18/2010	02/18/2010	EPA 415.1
J19FH2 (1001099-05) Water								
Total Hardness	72.3	5.00	mg/L	1	1002040	02/02/2010	02/02/2010	EPA 130.2
Total Alkalinity	64.7 J	2.00	mg/L	1	1001238	01/28/2010	01/28/2010	EPA 310.1
Dissolved Organic Carbon	1.45 B J	0.500	mg/L	1	1002247	02/18/2010	02/18/2010	EPA 415.1
J19FH3 (1001099-07) Water								
Total Hardness	77.2	5.00	mg/L	1	1002040	02/02/2010	02/02/2010	EPA 130.2
Total Alkalinity	64.7 J	2.00	mg/L	1	1001238	01/28/2010	01/28/2010	EPA 310.1
Dissolved Organic Carbon	1.48 B J	0.500	mg/L	1	1002247	02/18/2010	02/18/2010	EPA 415.1
J19H19 (1001099-09) Water								
Total Hardness	81.2	5.00	mg/L	1	1002040	02/02/2010	02/02/2010	EPA 130.2
Total Alkalinity	73.7 J	2.00	mg/L	1	1001238	01/28/2010	01/28/2010	EPA 310.1
Dissolved Organic Carbon	1.72 B J	0.500	mg/L	1	1002247	02/18/2010	02/18/2010	EPA 415.1
J19FC8 (1001099-12) Water								
Total Hardness	88.1	5.00	mg/L	1	1002040	02/02/2010	02/02/2010	EPA 130.2
Total Alkalinity	64.7 J	2.00	mg/L	1	1001238	01/28/2010	01/28/2010	EPA 310.1
Dissolved Organic Carbon	1.73 B J	0.500	mg/L	1	1002247	02/18/2010	02/18/2010	EPA 415.1

204 Welsh Pool Road
Exton, PA 19341
Phone: 610 280-3000
Fax: 610-280-3041

WC-Hanford, Inc. 2620 Fermi Avenue Richland WA, 99354	Project: RC-115 Project Number: K1917 Project Manager: Joan Kessner	Reported: 02/19/2010 15:42

Wet Chemistry
Lionville Laboratory

Analyte	Result and Qualifier		Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
J19F85 (1001099-16) Water									
Total Hardness	80.2		5.00	mg/L	1	1002040	02/02/2010	02/02/2010	EPA 130.2
Total Alkalinity	62.5	J	2.00	mg/L	1	1001238	01/28/2010	01/28/2010	EPA 310.1
Dissolved Organic Carbon	1.42 B	J	0.500	mg/L	1	1002247	02/18/2010	02/18/2010	EPA 415.1

3/22/10

Appendix 4

Laboratory Narrative and Chain-of-Custody Documentation

[illegible]

Case Narrative

Client: WC-HANFORD RC-115 K1917
LVL#: 1001099

W.O.#: 60049-001-001
Date Received: 01-27-10

INORGANIC NARRATIVE

1. This narrative covers the analyses of 7 water samples.

2. The samples were prepared and analyzed in accordance with the methods indicated on the data summary report. The Dissolved Organic Carbon (DOC) samples submitted were filtered and acidified in the laboratory.

   Lionville Lab (LvL) is NELAP accredited by the State of Pennsylvania. For a complete list of accrediting authorities and the corresponding analytes/methods, please contact your Project Manager. LvL certifies that all test results meet the requirements of NELAC with any exception noted in the following statements.

3. Sample holding times as required by the method and/or contract were met..

4. The results presented in this report are derived from samples that met LvL's sample acceptance policy with the exception of DOC as noted on the Sample Receipt Checklist.

5. The method blanks were within the method criteria; sample L002247-BLK2 represents the filter blank for DOC samples filtered in the laboratory.

6. The Laboratory Control Samples (LCS) were within the laboratory control limits. The duplicate LCS for Total Alkalinity was within the 20% Relative Percent Difference (RPD) control limit.

7. The matrix spike recoveries were within the 75-125% control limits.

8. The replicate analyses were within the 20% Relative Percent Difference (RPD) control limit.

9. I certify that this sample data package is in compliance with SOW requirements, both technically and for completeness, other than the conditions detailed above. Release of the data contained in this hard copy package has been authorized by the Laboratory Manager or a designee, as verified by the following signature.

Jon Daniels
Laboratory Manager
Lionville Laboratory

2/20/10
Date

lvl001099

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST		RC-115-258	Page 1 of 3
Collector: E. Brown	Company Contact: Joan Kessner	Telephone No.: 375-4688	Project Coordinator: KESSNER, JH	Price Code: 7C · Data Turnaround: 15 Days
Project Designation: [illegible] Component of the RCBRA - Surface Water	Sampling Location: 100 K KW-5, RCSW-1		SAF No.: RC-115	
Ice Chest No.: NFS-09-054	Field Logbook No.: EL-1665	COA: 0I5C8[illegible]6426	Method of Shipment: FEDEX	
Shipped To: EBERLINE SERVICES [✓ DONOVAN]	Offsite Property No.: N/A		Bill of Lading/Air Bill No.: FDX 7932 1448 4540	

POSSIBLE SAMPLE HAZARDS/REMARKS

N/A

Special Handling and/or Storage

N/A

Preservation	[illegible]	Cool 4C	Cool 4C	[illegible]	[illegible]	None	[illegible]	[illegible]	[illegible]	[illegible]
Type of Container	G/P	G/P	G	G/P	G/P	G/P	G/P	G/P	G/P	G/P
No. of Container(s)	1	1	1	1	1	1	2	2	1	1
Volume	500mL	250mL	125mL	[illegible]	1000mL	250mL	1000mL	500mL	1000mL	1000mL
SAMPLE ANALYSIS	[illegible]	Alkalinity	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

Sample No.	Matrix *	Sample Date	Sample Time										
J19PH4	WATER	1-22-10	1130	X	X	X	X						
J19PH9	WATER												

CHAIN OF POSSESSION	Date/Time	Sign/Print Names	Date/Time
Relinquished By/Removed From: E. Brown E. Brown	1-22-10 1730	Received By/Stored In: E. Brown / FAS Ref E KR	1-22-10 1730
Relinquished By/Removed From: EAS REF E [illegible]	1/26/10 1200	Received By/Stored In: SHANNAN JOHNSON	1/26/10 1200
Relinquished By/Removed From: SHANNAN JOHNSON	1/26/10 1300	Received By/Stored In: FDX	
Relinquished By/Removed From: FDX	1-27-10 / 0930	Received By/Stored In: D Smith	1-27-10 / 0930
Relinquished By/Removed From		Received By/Stored In	
Relinquished By/Removed From		Received By/Stored In	

SPECIAL INSTRUCTIONS

(1) ICP Metals - 6010 Total (Super Trace) {Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Titanium, Uranium, Vanadium, Zinc}; Mercury - 7470 (CVAA)

(2) Gamma Spec - (Full List) {Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106}

Sampler unavailable to remove samples from controlled storage. Shipped [illegible] samples from storage location [illegible]

Matrix *
S = Soil
SE = Sediment
SO = Solid
SL = Sludge
W = Water
O = Oil
A = Air
DS = Drum Solids
DL = Drum Liquids
T = Tissue
WI = Wipe
L = Liquid
V = Vegetation
X = Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

A-6[illegible]

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-115-260 Page [illegible] of 2

Collector	Rylan Brooks
Company Contact	Joan Kessner
Telephone No.	375-4688
Project Coordinator	KESSNER, JH
Price Code	7C
Data Turnaround	15 Days
Project Designation	Columbia River Component of the RCBRA - Surface Water
Sampling Location	HRX T10 K3A
SAF No.	RC-115
Ice Chest No.	APS-04-054
Field Logbook No.	EL-1635
COA	[illegible]
Method of Shipment	FEDEX
Shipped To	[illegible] ([✓ [illegible]])
Offsite Property No.	N/A
Bill of Lading/Air Bill No.	FDX 7932 1448 4540
POSSIBLE SAMPLE HAZARDS/REMARKS	N/A
Special Handling and/or Storage	N/A

			Preservation	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
			Type of Container	G/P	G/P	aG	G/P	G/P	G/P	G/P	G/P	G/P	G/P
			No. of Container(s)	1	1	1	1	1	1	2	2	1	1
			Volume	[illegible]	250mL	125mL	250mL	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
SAMPLE ANALYSIS				See item (1) in Special Instructions	[illegible]	[illegible]	[illegible]	See item (2) in Special Instructions	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Sample No.	Matrix *	Sample Date	Sample Time										
J1SHR6	WATER	1-23-10	1230	X	X	X	X		~~X~~ [illegible] 1-23-10				
J1SPH1	WATER												

CHAIN OF POSSESSION Sign/Print Names

Relinquished By/Removed From: R. Brown R.B.	Date/Time 1-23-10 1830	Received By/Stored In: R. Brown EHS Ref E R.B.	Date/Time 1-23-10 1830
Relinquished By/Removed From: EHS REF E S[illegible]	Date/Time 1/26/10 1302	Received By/Stored In: SHANNAN JOHNSON	Date/Time 1/26/10 1302
Relinquished By/Removed From: SHANNAN JOHNSON	Date/Time 1/26/10 1302	Received By/Stored In: FDX	Date/Time
Relinquished By/Removed From: FedEx	Date/Time 1/27/10/0930	Received By/Stored In: [illegible]	Date/Time 1/27/10/0930
Relinquished By/Removed From:	Date/Time	Received By/Stored In:	Date/Time
Relinquished By/Removed From:	Date/Time	Received By/Stored In:	Date/Time

SPECIAL INSTRUCTIONS

(1) ICP Metals - 6010 [illegible] {Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Titanium, Uranium, Vanadium, Zinc}; Mercury - 7470 - (CVAA)

(2) Gamma Spec - (Full List) {Americium-241, Antimony-125, Beryllium-7, Cerium-141, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106}

Sampler unavailable to remove samples from controlled storage. Shipper retrieved samples from storage location taking custody of samples for shipment to lab.

Matrix *
[illegible]

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

0100015

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

Collector R. [illegible]	Company Contact [illegible]	Telephone No. [illegible]	Project Coordinator [illegible]
Project Designation [illegible] RCBRA - Surface Water	Sampling Location [illegible] TIORRIA		SAF No. [illegible]
Ice Chest No. DFS-04-054	Field Logbook No. [illegible]-01	COA [illegible]	Method of Shipment [illegible]
Shipped To [illegible]	Offsite Property No. N/A		Bill of Lading/Air Bill No. FED EX 793214496540

RCS[illegible]-241

Page 1 of 1

Price Code 7C

Data Turnaround 15 Days

POSSIBLE SAMPLE HAZARDS/REMARKS

[illegible]

Special Handling and/or Storage

[illegible]

9100016

Preservation	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Type of Container	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
No. of Container(s)	1	[illegible]	[illegible]	[illegible]	1	[illegible]	2	[illegible]	[illegible]	[illegible]
Volume	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
SAMPLE ANALYSIS	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

Sample No.	Matrix *	Sample Date	Sample Time										
J[illegible]	WATER	01-24-10	1205	X	X	X	X						
J[illegible]	WATER	01-24-10	1205										X

CHAIN OF POSSESSION

Sign/Print Names

Relinquished By/Removed From R. [illegible]	Date/Time 01-24-10 1707	Received By/Stored In EAS REF E	Date/Time 01-24-10 1707
Relinquished By/Removed From EAS REF E	Date/Time 1/25/10 1300	Received By/Stored In SHANNAN JOHNSON	Date/Time 1/25/10 1324
Relinquished By/Removed From SHANNAN JOHNSON	Date/Time 1/26/10 1214	Received By/Stored In FDX	Date/Time
Relinquished By/Removed From FedEx	Date/Time 1/27/10 10:30	Received By/Stored In	Date/Time 1/27/10 10A30
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time

SPECIAL INSTRUCTIONS

(1) [illegible] Metals [illegible]

(2) Gamma Spec [illegible]

(3) [illegible] Metals [illegible]

Sample [illegible] to [illegible] samples

[illegible] storage [illegible]

[illegible] custody

[illegible]

Matrix *

[illegible]

LABORATORY SECTION	Received By [illegible] Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method [illegible] Disposed By [illegible] Date/Time

[illegible]

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-115-242 Page 1 of 1

Collector	Kyle Baccus
Company Contact	Stan Kessler
Telephone No.	375-4588
Project Coordinator	KESSNER, [illegible]
Price Code	7C
Data Turnaround	15 Days
Project Designation	[illegible]
Sampling Location	[illegible] T100HAE
SAF No.	[illegible]
Ice Chest No.	EFS-CAF 054
Field Logbook No.	[illegible]
COA	[illegible]
Method of Shipment	FEDEX
Shipped To	[illegible] [✓ [illegible]]
Offsite Property No.	N/A
Bill of Lading/Air Bill No.	FDX 793214484540

POSSIBLE SAMPLE HAZARDS/REMARKS

[illegible]

Special Handling and/or Storage

[illegible]

Preservation	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Type of Container	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
No. of Container(s)	1	1	1	1	1	2	1	1	1	1
Volume	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
SAMPLE ANALYSIS	[illegible] *	[illegible]	[illegible] *	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

Sample No.	Matrix *	Sample Date	Sample Time										
[illegible]	WATER	1-24-10	1100	X	X	X	X						
[illegible]	WATER	1-24-10	1100										X

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
R. Baccus RB	1-24-10 1730	EFS CAF E RB	1-24-10 1730
EFS CAF C SJ	1/26/10 1200	SHANNAN JOHNSON	1/26/10 1200
SHANNAN JOHNSON	1/26/10 1300	FDX	
FedEx 1/27/10/0930		D Smith 1/27/10/0930	

SPECIAL INSTRUCTIONS

(1) ICP Metals [illegible]

(2) [illegible]

(3) [illegible]

[illegible]

Matrix *

[illegible]

LABORATORY SECTION — Received By — Title — Date/Time

FINAL SAMPLE DISPOSITION — Disposal Method — Disposed By — Date/Time

[illegible]

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-115-250 | Page [illegible]

Collector	Bryan Barrow
Company Contact	Joan Kessner
Telephone No.	375-4668
Project Coordinator	KESSNER, JOI
Price Code	7C
Data Turnaround	15 Days
Project Designation	[illegible] River [illegible] RC [illegible] Surface Water
Sampling Location	[illegible] T300535
SAF No.	RC-115
Ice Chest No.	
Field Logbook No.	EL-1565
COA	[illegible]
Method of Shipment	FEDEX
Shipped To	[illegible] SERVICES [illegible]
Offsite Property No.	N/A
Bill of Lading/Air Bill No.	FD 793214484469

POSSIBLE SAMPLE HAZARDS/REMARKS
N/A

Special Handling and/or Storage
N/A

R400000

Preservation	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Type of Container	[illegible]	G/P	[illegible]	G/P	[illegible]	G/P	[illegible]	[illegible]	[illegible]	[illegible]
No. of Container(s)	1	1	[illegible]	1	[illegible]	1	2	[illegible]	1	1
Volume	500mL	250mL	125mL	250mL	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
SAMPLE ANALYSIS	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

Sample No.	Matrix *	Sample Date	Sample Time										
[illegible]	WATER	1-25-10	1100	X	X	X	X	X					
[illegible]	WATER	1-25-10	1100										X

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Bryan R.B.	1-25-10 [illegible]	[illegible] R. Barrow [illegible] E R.B.	1-25-10 [illegible]
[illegible]	1/26/10 1100	SHANNAN JOHNSON	1/26/10 1100
SHANNAN JOHNSON	1/26/10 1100	FEDEX	
FEDEX	1/27/10/0930	[illegible]	1/27/10/0930

SPECIAL INSTRUCTIONS

[illegible]

Matrix *
[illegible]

LABORATORY SECTION — Received By | Title | Date/Time

FINAL SAMPLE DISPOSITION — Disposal Method | Disposed By | Date/Time

[illegible]

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-115-233 Page 1 of 5

Collector: R Curet

Company Contact: Joan Kessner

Telephone No.: [illegible]

Project Coordinator: KESSNER, JK

Price Code: 7C

Data Turnaround: 15 Days

Project Designation: Columbia River Component of the RCBRA - Surface Water

Sampling Location: J3008 - Duplicate

SAF No.: [illegible]

Ice Chest No.: [illegible]

Field Logbook No.: [illegible]

COA: [illegible]

Method of Shipment: FEDEX

Shipped To: [illegible]

Offsite Property No.: N/A

Bill of Lading/Air Bill No.: FD 793214484469

POSSIBLE SAMPLE HAZARDS/REMARKS: [illegible]

Special Handling and/or Storage: [illegible]

Preservation	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Type of Container	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
No. of Container(s)	1	1	1	1	1	1	2	1	1	1
Volume	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
SAMPLE ANALYSIS	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

Sample No.	Matrix	Sample Date	Sample Time										
[illegible]	WATER	01-25-10	~~1215~~ 1220	X	X	X	X	X					
[illegible]	WATER	01-25-10	1220										
													X

CHAIN OF POSSESSION

Sign/Print Names

Relinquished By/Removed From: [illegible]	Date/Time: 01-25-10 1807	Received By/Stored In: R Curet / EAS BEE E	Date/Time: 01-25-10 1807
Relinquished By/Removed From: [illegible]	Date/Time: 1/26/10 1100	Received By/Stored In: SHANNAN JOHNSON	Date/Time: 1/26/10 1100
Relinquished By/Removed From: SHANNAN JOHNSON	Date/Time: 1/26/10 1100	Received By/Stored In: FDX	Date/Time:
Relinquished By/Removed From:	Date/Time: 1-27-10/0930	Received By/Stored In:	Date/Time: 1-27-10/0930
Relinquished By/Removed From:	Date/Time:	Received By/Stored In:	Date/Time:
Relinquished By/Removed From:	Date/Time:	Received By/Stored In:	Date/Time:

SPECIAL INSTRUCTIONS

[illegible]

Matrix *

LABORATORY SECTION: Received By: Title: Date/Time:

FINAL SAMPLE DISPOSITION: Disposal Method: Disposed By: Date/Time:

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-115-229

Page 1 of 1

Collector: R. Cusack

Company Contact: Joan Kessner

Telephone No.: 372-[illegible]

Project Coordinator: KESSNER, J H

Price Code: 7C

Data Turnaround: 15 Days

Project Designation: Columbia River Component of the RI/FS – Surface Water

Sampling Location: [illegible] 53008

SAF No.: RC-115

Ice Chest No.: [illegible] CCI

Field Logbook No.: [illegible] 01

COA: [illegible]

Method of Shipment: FEDEX

Shipped To: [illegible]

Offsite Property No.: N/A

Bill of Lading/Air Bill No.: FD 793214484469

POSSIBLE SAMPLE HAZARDS/REMARKS

N/A

Special Handling and/or Storage

N/A

0000020

Preservation	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Type of Container	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
No. of Container(s)	[illegible]	1	[illegible]		[illegible]	[illegible]	[illegible]	1	[illegible]	1
Volume	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
SAMPLE ANALYSIS	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

Sample No.	Matrix	Sample Date	Sample Time										
[illegible]	WATER	01-25-10	1215	X	X	X	X	X					
[illegible]	WATER	01-25-10	1215										X

[illegible]

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From: R. Cusack	Date/Time: 01-25-10 1801	Received By/Stored In: R. [illegible] CAS REEF E	Date/Time: 01-25-10 1801
Relinquished By/Removed From: CAS REEF E	Date/Time: 1/26/10 1100	Received By/Stored In: SHANNAH JOHNSON	Date/Time: 1/26/10 1100
Relinquished By/Removed From: SHANNAH JOHNSON	Date/Time: 1/26/10 1107	Received By/Stored In: FDX	Date/Time:
Relinquished By/Removed From: FDX	Date/Time: 1/27/10/0932	Received By/Stored In: D Smith	Date/Time: 1/27/10/0932
Relinquished By/Removed From:	Date/Time:	Received By/Stored In:	Date/Time:
Relinquished By/Removed From:	Date/Time:	Received By/Stored In:	Date/Time:

SPECIAL INSTRUCTIONS

[illegible]

LABORATORY SECTION — Received By: Title: Date/Time:

FINAL SAMPLE DISPOSITION — Disposal Method: Disposed By: Date/Time:

Lionville Laboratory Incorporated
SAMPLE RECEIPT CHECKLIST (SRC)

CLIENT: WC Hanford
Project/SDG/Reference #: PL-115
Date: 1-21-10
LVLI Batch #: 1001C59
Sample Custodian:

NOTE: EXPLAIN ALL DISCREPANCIES

1. Samples Hand Delivered or Shipped?	Courier FedEx		Airbill # 1532 1448 4464 1532 1446 45
2. Custody Seals on coolers or shipping containers intact, signed & dated?	☑ Yes	☐ No	☐ No Seals
3. Outside of coolers or shipping containers are free from damage?	☑ Yes	☐ No	Comments:
4. All expected paperwork received (coc & other client specific information) sealed in plastic bag and easily accessible?	☑ Yes	☐ No	
5. Samples received cooled condition?	Temp 3.4 (3.8)	°C	Cooler # AFS-08-001
How was the temperature taken?	☑ IR	☐ Temp. Blank	☐ Other (Specify) AFS-04-05
Is the Temp. Criteria met for these samples? Hg in soils (@ 4°C)	☑ Yes	☐ No	
6. Custody seals on sample containers intact, signed and dated?	☑ Yes	☐ No	☐ No Seals
7. COC (Client & LVLI) signed & dated?	☑ Yes	☐ No	
8. Sample containers are intact?	☑ Yes	☐ No	
9. All samples on COC received? All samples received on COC?	☑ Yes ☑ Yes	☐ No ☐ No	
10. All sample label information matches COC?	☑ Yes	☐ No	
11. Samples properly preserved? (If pH is no, then this is no.)	☐ Yes	☑ No See COC See explanation	
12. Samples received within hold times? Short holds taken to wet lab?	☑ Yes ☐ Yes	☐ No ☐ No	☑ N/A
13. VOA, TOC, TOX free of headspace?	☑ Yes	☐ No	☐ N/A
14. QC volumes placed on bottles and sealed by client?	☐ Yes	☐ No	☑ N/A
15. Shipment meets LVLI Sample Acceptance Policy? (Identify all bottles that do not meet the policy, which is on the reverse of this page.)	☐ Yes	☑ No	
16. Project Manager contacted concerning any discrepancies?	☑ Yes	☐ No	☐ N/A

Person Contacted: ___________
Date: 1-21-10

LVLI

Appendix 5

Data Validation Supporting Documentation

GENERAL CHEMISTRY ANALYSIS DATA VALIDATION CHECKLIST

VALIDATION LEVEL:	A	B	[✓ C]	D	E

PROJECT: RCBRA		DATA PACKAGE: K1917	
VALIDATOR: ELR	LAB: LLI	DATE: 3/29/10	
		SDG: K1917	

ANALYSES PERFORMED

Anions/IC	TOC	TOX	TPH-418.1	Oil and Grease	[✓ Alkalinity]
Ammonia	BOD/COD	Chloride	Chromium-VI	pH	NO_2/NO_3
Sulfide	TDS	TKN	Phosphate	[✓ Hardness]	[✓ DOC]

SAMPLES/MATRIX

J19HR4 J19HR6 J19FH2 J19FH3 J19H19

J19FC8 J19P85

water

1. DATA PACKAGE COMPLETENESS AND CASE NARRATIVE

Technical verification documentation present? .... Yes [✓ No] N/A

Comments: ____________________

2. INSTRUMENT PERFORMANCE AND CALIBRATIONS (Levels D and E)

Initial calibrations performed on all instruments? .... Yes No [✓ N/A]

Initial calibrations acceptable? .... Yes No [✓ N/A]

ICV and CCV checks performed on all instruments? .... Yes No [✓ N/A]

ICV and CCV checks acceptable? .... Yes No [✓ N/A]

Standards traceable? .... Yes No [✓ N/A]

Standards expired? .... Yes No [✓ N/A]

Calculation check acceptable? .... Yes No [✓ N/A]

Comments: ____________________

GENERAL CHEMISTRY ANALYSIS DATA VALIDATION CHECKLIST

3. BLANKS (Levels B, C, D, and E)

ICB and CCB checks performed for all applicable analyses? (Levels D, E) .... Yes No [✓ N/A]
ICB and CCB results acceptable? (Levels D, E) .... Yes No [✓ N/A]
Laboratory blanks analyzed? .... [✓ Yes] No N/A
Laboratory blank results acceptable? .... [✓ Yes] No N/A
Field blanks analyzed? (Levels C, D, E) .... Yes [✓ No] N/A
Field blank results acceptable? (Levels C, D, E) .... Yes No [✓ N/A]
Transcription/calculation errors? (Levels D, E) .... Yes No [✓ N/A]
Comments: no FS

4. ACCURACY (Levels C, D, and E)

Spike samples analyzed? .... [✓ Yes] No N/A
Spike recoveries acceptable? .... [✓ Yes] No N/A
Sike standards NIST traceable? (Levels D, E) .... Yes No [✓ N/A]
Spike standards expired? (Levels D, E) .... Yes No [✓ N/A]
LCS/BSS samples analyzed? .... [✓ Yes] No N/A
LCS/BSS results acceptable? .... [✓ Yes] No N/A
Standards traceable? (Levels D, E) .... Yes No [✓ N/A]
Standards expired? (Levels D, E) .... Yes No [✓ N/A]
Transcription/calculation errors? (Levels D, E) .... Yes No [✓ N/A]
Performance audit sample(s) analyzed? .... Yes [✓ No] N/A
Performance audit sample results acceptable? .... Yes No [✓ N/A]
Comments: alkalinity - NO MS - J all

h • D15

GENERAL CHEMISTRY ANALYSIS DATA VALIDATION CHECKLIST

5. PRECISION (Levels C, D, and E)

Duplicate RPD values acceptable? .... [✓ Yes] No N/A
Duplicate results acceptable? .... [✓ Yes] No N/A
MS/MSD standards NIST traceable? (Levels D, E) .... Yes No [✓ N/A]
MS/MSD standards expired? (Levels D, E) .... Yes No [✓ N/A]
Field duplicate RPD values acceptable? .... Yes No [✓ N/A]
Field split RPD values acceptable? .... Yes No [✓ N/A]
Transcription/calculation errors? (Levels D, E) .... Yes No [✓ N/A]
Comments:

6. HOLDING TIMES (all levels)

Samples properly preserved? .... Yes [✓ No] N/A
Sample holding times acceptable? .... [✓ Yes] No N/A
Comments: DOC – preserved (no acid added)

GENERAL CHEMISTRY ANALYSIS DATA VALIDATION CHECKLIST

7. RESULT QUANTITATION AND DETECTION LIMITS (all levels)

Results reported for all requested analyses? .... [✓ Yes] No N/A

Results supported in the raw data? (Levels D, E) .... Yes No [✓ N/A]

Samples properly prepared? (Levels D, E) .... Yes No [✓ N/A]

Detection limits meet RDL? .... [✓ Yes] No N/A

Transcription/calculation errors? (Levels D, E) .... Yes No [✓ N/A]

Comments:

Appendix 8

Additional Documentation Requested by Client

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

WC-Hanford, Inc.
2620 Fermi Avenue
Richland WA, 99354

Project: KQ-115
Project Number: K3917
Project Manager: Joan Kessner

Reported:
02/19/2010 15:42

Wet Chemistry - Quality Control
Lionville Laboratory

Analyte	Result and Qualifiers	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch L001238 - Default Prep GenChem									
Blank (L001238-BLK1)			Prepared & Analyzed: 01/28/2010						
Total Alkalinity	0.50 U	0.50	mg/L						
LCS (L001238-BS1)			Prepared & Analyzed: 01/28/2010						
Total Alkalinity	105	1.00	mg/L	100.00		105	90-110		
LCS Dup (L001238-BSD1)			Prepared & Analyzed: 01/28/2010						
Total Alkalinity	93.7	1.00	mg/L	100.00		93.7	90-110	11.2	20
Duplicate (L001238-DUP1)	Source: 1001099-01		Prepared & Analyzed: 01/28/2010						
Total Alkalinity	60.1	2.00	mg/L		62.5			3.65	20
Batch L002040 - Default Prep GenChem									
Blank (L002040-BLK1)			Prepared & Analyzed: 02/02/2010						
Total Hardness	5.00 U	5.00	mg/L						
LCS (L002040-BS1)			Prepared & Analyzed: 02/02/2010						
Total Hardness	40.6	5.00	mg/L	40.000		101	75-125		
LCS (L002040-BS2)			Prepared & Analyzed: 02/02/2010						
Total Hardness	40.6	5.00	mg/L	40.000		101	75-125		
Duplicate (L002040-DUP3)	Source: 1001099-01		Prepared & Analyzed: 02/02/2010						
Total Hardness	87.1	5.00	mg/L		85.1			2	20
Matrix Spike (L002040-MS3)	Source: 1001099-01		Prepared & Analyzed: 02/02/2010						
Total Hardness	166	5.00	mg/L	80.000	85.1	101	90-110		

204 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

WC-Hanford, Inc.	Project: RC-115	
2620 Fermi Avenue	Project Number: K1917	Reported:
Richland WA, 99354	Project Manager: Joan Kessner	02/19/2010 15:32

Wet Chemistry - Quality Control

Lionville Laboratory

Analyte	Result and Qualifiers		Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch L002247 - Default Prep GenChem										
Blank (L002247-BLK1)				Prepared & Analyzed: 02/18/2010						
Dissolved Organic Carbon	0.500	U	0.500	mg/L						
Blank (L002247-BLK2)				Prepared & Analyzed: 02/18/2010						
Dissolved Organic Carbon	0.651		0.500	mg/L						
LCS (L002247-BS1)				Prepared & Analyzed: 02/18/2010						
Dissolved Organic Carbon	5.31	B	0.500	mg/L	5.0000		106	90-110		
Duplicate (L002247-DUP1)		**Source: 1001099-01**		Prepared & Analyzed: 02/18/2010						
Dissolved Organic Carbon	1.70	B	0.500	mg/L		1.66			2.19	20
Matrix Spike (L002247-MS1)		**Source: 1001099-01**		Prepared & Analyzed: 02/18/2010						
Dissolved Organic Carbon	6.81	B	0.500	mg/L	5.0000	1.66	103	80-120		

Date: 29 March 2010
To: Washington Closure Hanford (technical representative)
From: ELR Consulting
Project: Columbia River Component of the RCBRA – Surface Water
Subject: Volatiles - Data Package No. K1917-LLI

INTRODUCTION

This memo presents the results of data validation on Summary Data Package No. K1917 prepared by Lionville Laboratory Inc. (LLI). A list of the samples validated along with the analyses reported and the method of analysis is provided in the following table.

Sample ID	Sample Date	Media	Validation	Date
J19H19	1/25/10	Water	C	See note 1
J19FF3	1/25/10	Water	C	See note 1
J19FC8	1/25/10	Water	C	See note 1
J19HH2	1/25/10	Water	C	See note 1
J19FW5	1/25/10	Water	C	See note 1
J19F85	1/25/10	Water	C	See note 1

1 - Volatiles by 8260B

Data validation was conducted in accordance with the Washington Closure Hanford (WCH) validation statement of work and the Remedial Investigation Work Plan for Hanford Site Releases to the Columbia River (DOE/RL-2008-11, Rev. 0, September 2008). Appendices 1 through 6 provide the following information as indicated below:

Appendix 1. Glossary of Data Reporting Qualifiers
Appendix 2. Summary of Data Qualification
Appendix 3. Annotated Laboratory Reports
Appendix 4. Laboratory Narrative and Chain-of-Custody Documentation
Appendix 5. Data Validation Supporting Documentation
Appendix 6. Additional Documentation Requested by Client

DATA QUALITY OBJECTIVES

- **Holding Times & Sample Preservation**

Analytical holding times are assessed to ascertain whether the holding time requirements were met by the laboratory. Preserved water samples must be analyzed within: 14 days of the date of sample collection for preserved samples and 7 days for unpreserved samples.

If holding times are exceeded, but not by greater than twice the limit, all associated sample results are qualified as estimates and flagged "J" for detects and "UJ" for non-detects. If holding times are exceeded by greater than twice the limit, all associated detected sample results are qualified as estimates and flagged "J" and all non-detects are rejected and flagged "UR".

All holding times were acceptable.

- **Blanks**

Method blank analyses are conducted to determine the extent of laboratory contamination introduced through sampling, sample preparation and analysis. At least one acceptable method blank analysis must be conducted for every 20 samples. No contaminants should be present in the method blank. Analytical results for analytes present in any sample at less than five times the concentration of that analyte found in the associated blank are qualified as non-detects and flagged "U". Common laboratory contaminants present in samples at less than ten times the concentration of that analyte found in the associated blank are qualified as non-detects. If a sample result is less than the CRQL and is less than five times (or less than ten times for lab contaminants) the highest associated blank result, the sample result value is raised to the CRQL level and qualified as undetected "U".

All method blank results were acceptable.

Field Blanks

One equipment blank (J19HH2) and one trip blank (J19FF3) were submitted for analysis. All field blank results were acceptable.

- **Accuracy**

Matrix Spike/Matrix Spike Duplicate & Laboratory Control Sample

Matrix spike/matrix spike duplicate analyses are used to assess the analytical accuracy of the reported data and the effect of the matrix on the ability to accurately quantify sample concentrations. Matrix spike/matrix spike duplicate analyses are performed in duplicate using five compounds for which percent recoveries must be within a range of 50-150% or within laboratory control limits. If spike recoveries are outside control limits, detected sample results less than five times the spike concentration are qualified as estimates and flagged "J". Undetected sample results with spike recoveries below control limits are qualified as estimates and flagged "UJ". Undetected sample results are not qualified if the spike recovery is above control limits. Sample results greater than five times the spike concentration require no qualification.

Due to the lack of a matrix spike and matrix spike duplicate analysis, all VOA results in samples J19FC8, J19HH2, J19FW5 and J19F85 were qualified as estimates and flagged "J".

All other accuracy results were acceptable.

Surrogate Recovery

The analyses of surrogate compounds provide a measure of performance for individual samples. Matrix-specific surrogate compound recovery control windows have been established by the EPA CLP program. If two surrogates of the same class of compounds (base/neutral or acid) are out of control limits, all associated sample results greater than the contract required quantitation limit (CRQL) are qualified as estimates and flagged "J". Sample results less than the CRQL and below the lower control limit are qualified as estimates and flagged "UJ". Sample results less than the CRQL with recoveries above the upper control limit require no qualification. If a surrogate recovery is less than 10%, detects are qualified as estimates and flagged "J" and nondetects are rejected and flagged "UR".

All surrogate recovery results were acceptable.

- **Precision**

Matrix Spike/Matrix Spike Duplicate Samples

Matrix spike (MS)/matrix spike duplicate (MSD) results provide matrix-specific information on the precision of the method for specific target compound classes. Precision is expressed by the relative percent difference (RPD) between the recoveries of duplicate matrix spike analyses performed on a sample. Samples results must be within RPD limits of +/-20%. If RPD values are out of specification and the sample concentration is less than five times the spike concentration, all associated detected sample results are qualified as estimates and flagged "J". If RPD values are out of specification and the sample concentration is greater than five times the spike concentration, no qualification is required.

Due to the lack of a matrix spike and matrix spike duplicate analysis, all VOA results in samples J19FC8, J19HH2, J19FW5 and J19F85 were qualified as estimates and flagged "J".

All other precision results were acceptable.

Field Duplicate Samples

No field duplicates were submitted for analysis.

Analytical Detection Levels

Reported analytical detection levels are compared against the minimum detection limits (MDLs) to ensure that laboratory detection levels meet the required criteria. Six analytes exceeded the RQL. Under the WCH statement of work, no qualification is required. All other results met the RQL.

Completeness

Data package No. K1917 was submitted for validation and verified for completeness. Completeness is based on the percentage of data determined to be valid (i.e., not rejected). The completion percentage was 100%.

MAJOR DEFICIENCIES

None found.

MINOR DEFICIENCIES

The following minor deficiency was noted:

- Due to the lack of a matrix spike and matrix spike duplicate analysis, all VOA results in samples J19FC8, J19HH2, J19FW5 and J19F85 were qualified as estimates and flagged "J".

Data flagged "J" indicates that the associated concentration is an estimate, but under the WCH statement of work, the data may be usable for decision-making purposes. All other validated results are considered accurate within the standard error associated with the methods.

REFERENCES

Washington Closure Hanford Contract #S00W307A00 (March 2008), *Data Validation Services*, March 2008.

DOE/RL-2008-11, Rev.0, *Remedial Investigation Work Plan for Hanford Site Releases to the Columbia River*, September 2008.

Appendix 1

Glossary of Data Reporting Qualifiers

Qualifiers which may be applied by data validator in compliance with the WCH validation SOW are as follows:

U - Indicates the compound or analyte was analyzed for and not detected in the sample. The value reported is the sample quantitation limit corrected for dilution and moisture content by the laboratory.

UJ - Indicates the compound or analyte was analyzed for and not detected in the sample. Due to a minor QC deficiency identified during the data validation, the associated quantitation limit is an estimate.

J - Indicates the compound or analyte was analyzed for and detected. Due to a minor QC deficiency identified during the data validation, the associated quantitation limit is an estimate.

R - Indicates the compound or analyte was analyzed for, detected, and due to an identified major QC deficiency, the data are unusable.

UR - Indicates the compound or analyte was analyzed for and not detected in the sample. Additionally, the data is unusable due to an identified major QC deficiency.

NJ - Indicates presumptive evidence of a compound at an estimated value. The data may not be valid for some specific applications (i.e., usable for decision-making purposes).

N - Indicates presumptive evidence of a compound. The data may not be valid for some specific applications (i.e., usable for decision-making purposes).

Appendix 2

Summary of Data Qualification

VOLATILE ORGANIC DATA QUALIFICATION SUMMARY*

SDG: K1917	**REVIEWER: ELR**	**Project: RCBRA**	**PAGE 1 OF 1**
COMPOUND	QUALIFIER	SAMPLES AFFECTED	REASON
All	J	J19FC8, J19HH2 J19FW5, J19F85	No MS or MSD analysis

* - The Qualified Data Summary Table includes laboratory applied "U" qualifiers not specifically identified here. The laboratory applied "U" qualifiers are included to minimize misinterpretation of results contained in the table.

Appendix 3

Annotated Laboratory Reports

WCH Hanford, Inc. 2620 Fermi Avenue Richland WA, 99354	Project: RC-115 Project Number: K1917 Project Manager: John Kessner	Reported: 02/15/2010 10:40

J19H19
1001899-09 (Water)

3/21/10

Analyte	Result and Qualifier		Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
			Lionville Laboratory						
Volatile Organic Compounds by SW846 8260B									
1,1,1-Trichloroethane	5.00	U	5.00	ug/L	1	L002097	02/07/2010	02/07/2010	8260B
1,1,2,2-Tetrachloroethane	5.00	U	5.00	ug/L	1	L002097	02/07/2010	02/07/2010	8260B
1,1,2-Trichloroethane	5.00	U	5.00	ug/L	1	L002097	02/07/2010	02/07/2010	8260B
1,1-Dichloroethane	5.00	U	5.00	ug/L	1	L002097	02/07/2010	02/07/2010	8260B
1,1-Dichloroethene	5.00	U	5.00	ug/L	1	L002097	02/07/2010	02/07/2010	8260B
1,2-Dichloroethane	5.00	U	5.00	ug/L	1	L002097	02/07/2010	02/07/2010	8260B
1,2-Dichloroethene (total)	5.00	U	5.00	ug/L	1	L002097	02/07/2010	02/07/2010	8260B
1,2-Dichloropropane	5.00	U	5.00	ug/L	1	L002097	02/07/2010	02/07/2010	8260B
2-Butanone	10.0	U	10.0	ug/L	1	L002097	02/07/2010	02/07/2010	8260B
2-Hexanone	10.0	U	10.0	ug/L	1	L002097	02/07/2010	02/07/2010	8260B
4-Methyl-2-pentanone	10.0	U	10.0	ug/L	1	L002097	02/07/2010	02/07/2010	8260B
Acetone	**16.4**		10.0	ug/L	1	L002097	02/07/2010	02/07/2010	8260B
Benzene	5.00	U	5.00	ug/L	1	L002097	02/07/2010	02/07/2010	8260B
Bromodichloromethane	5.00	U	5.00	ug/L	1	L002097	02/07/2010	02/07/2010	8260B
Bromoform	5.00	U	5.00	ug/L	1	L002097	02/07/2010	02/07/2010	8260B
Bromomethane	10.0	U	10.0	ug/L	1	L002097	02/07/2010	02/07/2010	8260B
Carbon Disulfide	5.00	U	5.00	ug/L	1	L002097	02/07/2010	02/07/2010	8260B
Carbon Tetrachloride	5.00	U	5.00	ug/L	1	L002097	02/07/2010	02/07/2010	8260B
Chlorobenzene	5.00	U	5.00	ug/L	1	L002097	02/07/2010	02/07/2010	8260B
Chloroethane	10.0	U	10.0	ug/L	1	L002097	02/07/2010	02/07/2010	8260B
Chloroform	5.00	U	5.00	ug/L	1	L002097	02/07/2010	02/07/2010	8260B
Chloromethane	10.0	U	10.0	ug/L	1	L002097	02/07/2010	02/07/2010	8260B
cis-1,2-Dichloroethene	5.00	U	5.00	ug/L	1	L002097	02/07/2010	02/07/2010	8260B
cis-1,3-Dichloropropene	5.00	U	5.00	ug/L	1	L002097	02/07/2010	02/07/2010	8260B
Dibromochloromethane	5.00	U	5.00	ug/L	1	L002097	02/07/2010	02/07/2010	8260B
Ethylbenzene	5.00	U	5.00	ug/L	1	L002097	02/07/2010	02/07/2010	8260B
Methylene Chloride	6.00	U	6.00	ug/L	1	L002097	02/07/2010	02/07/2010	8260B
Styrene	5.00	U	5.00	ug/L	1	L002097	02/07/2010	02/07/2010	8260B
Tetrachloroethene	5.00	U	5.00	ug/L	1	L002097	02/07/2010	02/07/2010	8260B
trans-1,2-Dichloroethene	5.00	U	5.00	ug/L	1	L002097	02/07/2010	02/07/2010	8260B
Toluene	5.00	U	5.00	ug/L	1	L002097	02/07/2010	02/07/2010	8260B
trans-1,3-Dichloropropene	5.00	U	5.00	ug/L	1	L002097	02/07/2010	02/07/2010	8260B
Trichloroethene	5.00	U	5.00	ug/L	1	L002097	02/07/2010	02/07/2010	8260B
Vinyl chloride	10.0	U	10.0	ug/L	1	L002097	02/07/2010	02/07/2010	8260B
Xylenes, total	5.00	U	5.00	ug/L	1	L002097	02/07/2010	02/07/2010	8260B
Surrogate: 1,2-Dichloroethane-d4	*89 %*		*64-140*			*L002097*	*02/07/2010*	*02/07/2010*	*8260B*
Surrogate: Toluene-d8	*88 %*		*70-130*			*L002097*	*02/07/2010*	*02/07/2010*	*8260B*
Surrogate: 4-Bromofluorobenzene	*92 %*		*81-115*			*L002097*	*02/07/2010*	*02/07/2010*	*8260B*

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WC-Hanford, Inc.	Project: RC-115	
2620 Fermi Avenue	Project Number: K1917	Reported:
Richland WA, 99354	Project Manager: Joan Kessner	02/15/2010 10:40

J19FF3
1001899-11 (Water)

✓ 3/22/10

Analyte	Result and Qualifier		Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method

Lionville Laboratory

Volatile Organic Compounds by SW846 8260B

Analyte	Result	Qualifier	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
1,1,1-Trichloroethane	5.00	U	5.00	ug/L	1	1002097	02/07/2010	02/07/2010	8260B
1,1,2,2-Tetrachloroethane	5.00	U	5.00	ug/L	1	1002097	02/07/2010	02/07/2010	8260B
1,1,2-Trichloroethane	5.00	U	5.00	ug/L	1	1002097	02/07/2010	02/07/2010	8260B
1,1-Dichloroethane	5.00	U	5.00	ug/L	1	1002097	02/07/2010	02/07/2010	8260B
1,1-Dichloroethene	5.00	U	5.00	ug/L	1	1002097	02/07/2010	02/07/2010	8260B
1,2-Dichloroethane	5.00	U	5.00	ug/L	1	1002097	02/07/2010	02/07/2010	8260B
1,2-Dichloroethene (total)	5.00	U	5.00	ug/L	1	1002097	02/07/2010	02/07/2010	8260B
1,2-Dichloropropane	5.00	U	5.00	ug/L	1	1002097	02/07/2010	02/07/2010	8260B
2-Butanone	10.0	U	10.0	ug/L	1	1002097	02/07/2010	02/07/2010	8260B
2-Hexanone	10.0	U	10.0	ug/L	1	1002097	02/07/2010	02/07/2010	8260B
4-Methyl-2-pentanone	10.0	U	10.0	ug/L	1	1002097	02/07/2010	02/07/2010	8260B
Acetone	10.0	U	10.0	ug/L	1	1002097	02/07/2010	02/07/2010	8260B
Benzene	5.00	U	5.00	ug/L	1	1002097	02/07/2010	02/07/2010	8260B
Bromodichloromethane	5.00	U	5.00	ug/L	1	1002097	02/07/2010	02/07/2010	8260B
Bromoform	5.00	U	5.00	ug/L	1	1002097	02/07/2010	02/07/2010	8260B
Bromomethane	10.0	U	10.0	ug/L	1	1002097	02/07/2010	02/07/2010	8260B
Carbon Disulfide	5.00	U	5.00	ug/L	1	1002097	02/07/2010	02/07/2010	8260B
Carbon Tetrachloride	5.00	U	5.00	ug/L	1	1002097	02/07/2010	02/07/2010	8260B
Chlorobenzene	5.00	U	5.00	ug/L	1	1002097	02/07/2010	02/07/2010	8260B
Chloroethane	10.0	U	10.0	ug/L	1	1002097	02/07/2010	02/07/2010	8260B
Chloroform	5.00	U	5.00	ug/L	1	1002097	02/07/2010	02/07/2010	8260B
Chloromethane	10.0	U	10.0	ug/L	1	1002097	02/07/2010	02/07/2010	8260B
cis-1,2-Dichloroethene	5.00	U	5.00	ug/L	1	1002097	02/07/2010	02/07/2010	8260B
cis-1,3-Dichloropropene	5.00	U	5.00	ug/L	1	1002097	02/07/2010	02/07/2010	8260B
Dibromochloromethane	5.00	U	5.00	ug/L	1	1002097	02/07/2010	02/07/2010	8260B
Ethylbenzene	5.00	U	5.00	ug/L	1	1002097	02/07/2010	02/07/2010	8260B
Methylene Chloride	6.00	U	6.00	ug/L	1	1002097	02/07/2010	02/07/2010	8260B
Styrene	5.00	U	5.00	ug/L	1	1002097	02/07/2010	02/07/2010	8260B
Tetrachloroethene	5.00	U	5.00	ug/L	1	1002097	02/07/2010	02/07/2010	8260B
trans-1,2-Dichloroethene	5.00	U	5.00	ug/L	1	1002097	02/07/2010	02/07/2010	8260B
Toluene	5.00	U	5.00	ug/L	1	1002097	02/07/2010	02/07/2010	8260B
trans-1,3-Dichloropropene	5.00	U	5.00	ug/L	1	1002097	02/07/2010	02/07/2010	8260B
Trichloroethene	5.00	U	5.00	ug/L	1	1002097	02/07/2010	02/07/2010	8260B
Vinyl chloride	10.0	U	10.0	ug/L	1	1002097	02/07/2010	02/07/2010	8260B
Xylenes, total	5.00	U	5.00	ug/L	1	1002097	02/07/2010	02/07/2010	8260B
Surrogate: 1,2-Dichloroethane-d4	*88 %*		*64-140*			*1002097*	*02/07/2010*	*02/07/2010*	*8260B*
Surrogate: Toluene-d8	*86 %*		*70-110*			*1002097*	*02/07/2010*	*02/07/2010*	*8260B*
Surrogate: 4-Bromofluorobenzene	*90 %*		*81-115*			*1002097*	*02/07/2010*	*02/07/2010*	*8260B*

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WC Hanford, Inc 2620 Fermi Avenue Richland WA, 99354	Project: RC-115 Project Number: K1917 Project Manager: John Kessner	**Reported:** 02/15/2010 10:30

J19FC8
1001099-12 (Water)

K 3/22/10

Lionville Laboratory

Volatile Organic Compounds by SW846 8260B

Analyte	Result and Qualifier	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
1,1,1-Trichloroethane	5.00 U I	5.00	ug/L	1	L002007	01/31/2010	01/31/2010	8260B
1,1,2,2-Tetrachloroethane	5.00 U	5.00	ug/L	1	L002007	01/31/2010	01/31/2010	8260B
1,1,2-Trichloroethane	5.00 U	5.00	ug/L	1	L002007	01/31/2010	01/31/2010	8260B
1,1-Dichloroethane	5.00 U	5.00	ug/L	1	L002007	01/31/2010	01/31/2010	8260B
1,1-Dichloroethene	5.00 U	5.00	ug/L	1	L002007	01/31/2010	01/31/2010	8260B
1,2-Dichloroethane	5.00 U	5.00	ug/L	1	L002007	01/31/2010	01/31/2010	8260B
1,2-Dichloroethene (total)	5.00 U	5.00	ug/L	1	L002007	01/31/2010	01/31/2010	8260B
1,2-Dichloropropane	5.00 U	5.00	ug/L	1	L002007	01/31/2010	01/31/2010	8260B
2-Butanone	10.0 U	10.0	ug/L	1	L002007	01/31/2010	01/31/2010	8260B
2-Hexanone	10.0 U	10.0	ug/L	1	L002007	01/31/2010	01/31/2010	8260B
4-Methyl-2-pentanone	10.0 U	10.0	ug/L	1	L002007	01/31/2010	01/31/2010	8260B
Acetone	10.0 U	10.0	ug/L	1	L002007	01/31/2010	01/31/2010	8260B
Benzene	5.00 U	5.00	ug/L	1	L002007	01/31/2010	01/31/2010	8260B
Bromodichloromethane	5.00 U	5.00	ug/L	1	L002007	01/31/2010	01/31/2010	8260B
Bromoform	5.00 U	5.00	ug/L	1	L002007	01/31/2010	01/31/2010	8260B
Bromomethane	10.0 U	10.0	ug/L	1	L002007	01/31/2010	01/31/2010	8260B
Carbon Disulfide	5.00 U	5.00	ug/L	1	L002007	01/31/2010	01/31/2010	8260B
Carbon Tetrachloride	5.00 U	5.00	ug/L	1	L002007	01/31/2010	01/31/2010	8260B
Chlorobenzene	5.00 U	5.00	ug/L	1	L002007	01/31/2010	01/31/2010	8260B
Chloroethane	10.0 U	10.0	ug/L	1	L002007	01/31/2010	01/31/2010	8260B
Chloroform	**2.06 J**	5.00	ug/L	1	L002007	01/31/2010	01/31/2010	8260B
Chloromethane	10.0 U	10.0	ug/L	1	L002007	01/31/2010	01/31/2010	8260B
cis-1,2-Dichloroethene	5.00 U	5.00	ug/L	1	L002007	01/31/2010	01/31/2010	8260B
cis-1,3-Dichloropropene	5.00 U	5.00	ug/L	1	L002007	01/31/2010	01/31/2010	8260B
Dibromochloromethane	5.00 U	5.00	ug/L	1	L002007	01/31/2010	01/31/2010	8260B
Ethylbenzene	5.00 U	5.00	ug/L	1	L002007	01/31/2010	01/31/2010	8260B
Methylene Chloride	6.00 U	6.00	ug/L	1	L002007	01/31/2010	01/31/2010	8260B
Styrene	5.00 U	5.00	ug/L	1	L002007	01/31/2010	01/31/2010	8260B
Tetrachloroethene	5.00 U	5.00	ug/L	1	L002007	01/31/2010	01/31/2010	8260B
trans-1,2-Dichloroethene	5.00 U	5.00	ug/L	1	L002007	01/31/2010	01/31/2010	8260B
Toluene	5.00 U	5.00	ug/L	1	L002007	01/31/2010	01/31/2010	8260B
trans-1,3-Dichloropropene	5.00 U	5.00	ug/L	1	L002007	01/31/2010	01/31/2010	8260B
Trichloroethene	5.00 U	5.00	ug/L	1	L002007	01/31/2010	01/31/2010	8260B
Vinyl chloride	10.0 U	10.0	ug/L	1	L002007	01/31/2010	01/31/2010	8260B
Xylenes, total	5.00 U	5.00	ug/L	1	L002007	01/31/2010	01/31/2010	8260B
Surrogate: 1,2-Dichloroethane-d4	*122 %*	*64-140*			*L002007*	*01/31/2010*	*01/31/2010*	*8260B*
Surrogate: Toluene-d8	*89 %*	*70-130*			*L002007*	*01/31/2010*	*01/31/2010*	*8260B*
Surrogate: 4-Bromofluorobenzene	*85 %*	*81-115*			*L002007*	*01/31/2010*	*01/31/2010*	*8260B*

WC-Hanford, Inc
2620 Fermi Avenue
Richland WA, 99354

Project: RC-115
Project Number: K1917
Project Manager: Joan Kessner

Reported:
02/15/2010 10:40

J19HH2
1001099-14 (Water)

3/21/10

Lionville Laboratory

Volatile Organic Compounds by SW846 8260B

Analyte	Result and Qualifier	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
1,1,1-Trichloroethane	5.00 U J	5.00	ug/L	1	L002007	01/31/2010	01/31/2010	8260B
1,1,2,2-Tetrachloroethane	5.00 U	5.00	ug/L	1	L002007	01/31/2010	01/31/2010	8260B
1,1,2-Trichloroethane	5.00 U	5.00	ug/L	1	L002007	01/31/2010	01/31/2010	8260B
1,1-Dichloroethane	5.00 U	5.00	ug/L	1	L002007	01/31/2010	01/31/2010	8260B
1,1-Dichloroethene	5.00 U	5.00	ug/L	1	L002007	01/31/2010	01/31/2010	8260B
1,2-Dichloroethane	5.00 U	5.00	ug/L	1	L002007	01/31/2010	01/31/2010	8260B
1,2-Dichloroethene (total)	5.00 U	5.00	ug/L	1	L002007	01/31/2010	01/31/2010	8260B
1,2-Dichloropropane	5.00 U	5.00	ug/L	1	L002007	01/31/2010	01/31/2010	8260B
2-Butanone	10.0 U	10.0	ug/L	1	L002007	01/31/2010	01/31/2010	8260B
2-Hexanone	10.0 U	10.0	ug/L	1	L002007	01/31/2010	01/31/2010	8260B
4-Methyl-2-pentanone	10.0 U	10.0	ug/L	1	L002007	01/31/2010	01/31/2010	8260B
Acetone	10.0 U	10.0	ug/L	1	L002007	01/31/2010	01/31/2010	8260B
Benzene	5.00 U	5.00	ug/L	1	L002007	01/31/2010	01/31/2010	8260B
Bromodichloromethane	5.00 U	5.00	ug/L	1	L002007	01/31/2010	01/31/2010	8260B
Bromoform	5.00 U	5.00	ug/L	1	L002007	01/31/2010	01/31/2010	8260B
Bromomethane	10.0 U	10.0	ug/L	1	L002007	01/31/2010	01/31/2010	8260B
Carbon Disulfide	5.00 U	5.00	ug/L	1	L002007	01/31/2010	01/31/2010	8260B
Carbon Tetrachloride	5.00 U	5.00	ug/L	1	L002007	01/31/2010	01/31/2010	8260B
Chlorobenzene	5.00 U	5.00	ug/L	1	L002007	01/31/2010	01/31/2010	8260B
Chloroethane	10.0 U	10.0	ug/L	1	L002007	01/31/2010	01/31/2010	8260B
Chloroform	5.00 U	5.00	ug/L	1	L002007	01/31/2010	01/31/2010	8260B
Chloromethane	10.0 U	10.0	ug/L	1	L002007	01/31/2010	01/31/2010	8260B
cis-1,2-Dichloroethene	5.00 U	5.00	ug/L	1	L002007	01/31/2010	01/31/2010	8260B
cis-1,3-Dichloropropene	5.00 U	5.00	ug/L	1	L002007	01/31/2010	01/31/2010	8260B
Dibromochloromethane	5.00 U	5.00	ug/L	1	L002007	01/31/2010	01/31/2010	8260B
Ethylbenzene	5.00 U	5.00	ug/L	1	L002007	01/31/2010	01/31/2010	8260B
Methylene Chloride	6.00 U	6.00	ug/L	1	L002007	01/31/2010	01/31/2010	8260B
Styrene	5.00 U	5.00	ug/L	1	L002007	01/31/2010	01/31/2010	8260B
Tetrachloroethene	5.00 U	5.00	ug/L	1	L002007	01/31/2010	01/31/2010	8260B
trans-1,2-Dichloroethene	5.00 U	5.00	ug/L	1	L002007	01/31/2010	01/31/2010	8260B
Toluene	5.00 U	5.00	ug/L	1	L002007	01/31/2010	01/31/2010	8260B
trans-1,3-Dichloropropene	5.00 U	5.00	ug/L	1	L002007	01/31/2010	01/31/2010	8260B
Trichloroethene	5.00 U	5.00	ug/L	1	L002007	01/31/2010	01/31/2010	8260B
Vinyl chloride	10.0 U	10.0	ug/L	1	L002007	01/31/2010	01/31/2010	8260B
Xylenes, total	5.00 U	5.00	ug/L	1	L002007	01/31/2010	01/31/2010	8260B
TIC: Unknown 1	12.6 J		ug/L	1	L002007	01/31/2010	01/31/2010	8260B
Surrogate: 1,2-Dichloroethane-d4	*113 %*	*64-140*			*L002007*	*01/31/2010*	*01/31/2010*	*8260B*
Surrogate: Toluene-d8	*96 %*	*70-130*			*L002007*	*01/31/2010*	*01/31/2010*	*8260B*
Surrogate: 4-Bromofluorobenzene	*89 %*	*81-115*			*L002007*	*01/31/2010*	*01/31/2010*	*8260B*

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WC Hanford, Inc 2620 Fermi Avenue Richland WA, 99354	Project: RC-115 Project Number: K1917 Project Manager: Joan Kessner	Reported: 03/15/2010 10:10

J19FW5
1001099-15 (Water)

✓ 3/24/10

Analyte	Result and Qualifier	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method

Lionville Laboratory

Analyte	Result and Qualifier	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Volatile Organic Compounds by SW846 8260B								
1,1,1-Trichloroethane	5.00 U	5.00	ug/L	1	L002007	01/31/2010	01/31/2010	8260B
1,1,2,2-Tetrachloroethane	5.00 U	5.00	ug/L	1	L002007	01/31/2010	01/31/2010	8260B
1,1,2-Trichloroethane	5.00 U	5.00	ug/L	1	L002007	01/31/2010	01/31/2010	8260B
1,1-Dichloroethane	5.00 U	5.00	ug/L	1	L002007	01/31/2010	01/31/2010	8260B
1,1-Dichloroethene	5.00 U	5.00	ug/L	1	L002007	01/31/2010	01/31/2010	8260B
1,2-Dichloroethane	5.00 U	5.00	ug/L	1	L002007	01/31/2010	01/31/2010	8260B
1,2-Dichloroethene (total)	5.00 U	5.00	ug/L	1	L002007	01/31/2010	01/31/2010	8260B
1,2-Dichloropropane	5.00 U	5.00	ug/L	1	L002007	01/31/2010	01/31/2010	8260B
2-Butanone	10.0 U	10.0	ug/L	1	L002007	01/31/2010	01/31/2010	8260B
2-Hexanone	10.0 U	10.0	ug/L	1	L002007	01/31/2010	01/31/2010	8260B
4-Methyl-2-pentanone	10.0 U	10.0	ug/L	1	L002007	01/31/2010	01/31/2010	8260B
Acetone	10.0 U	10.0	ug/L	1	L002007	01/31/2010	01/31/2010	8260B
Benzene	5.00 U	5.00	ug/L	1	L002007	01/31/2010	01/31/2010	8260B
Bromodichloromethane	5.00 U	5.00	ug/L	1	L002007	01/31/2010	01/31/2010	8260B
Bromoform	5.00 U	4.00	ug/L	1	L002007	01/31/2010	01/31/2010	8260B
Bromomethane	10.0 U	10.0	ug/L	1	L002007	01/31/2010	01/31/2010	8260B
Carbon Disulfide	5.00 U	5.00	ug/L	1	L002007	01/31/2010	01/31/2010	8260B
Carbon Tetrachloride	5.00 U	5.00	ug/L	1	L002007	01/31/2010	01/31/2010	8260B
Chlorobenzene	5.00 U	5.00	ug/L	1	L002007	01/31/2010	01/31/2010	8260B
Chloroethane	10.0 U	10.0	ug/L	1	L002007	01/31/2010	01/31/2010	8260B
Chloroform	5.00 U	5.00	ug/L	1	L002007	01/31/2010	01/31/2010	8260B
Chloromethane	10.0 U	10.0	ug/L	1	L002007	01/31/2010	01/31/2010	8260B
cis-1,2-Dichloroethene	5.00 U	5.00	ug/L	1	L002007	01/31/2010	01/31/2010	8260B
cis-1,3-Dichloropropene	5.00 U	5.00	ug/L	1	L002007	01/31/2010	01/31/2010	8260B
Dibromochloromethane	5.00 U	5.00	ug/L	1	L002007	01/31/2010	01/31/2010	8260B
Ethylbenzene	5.00 U	5.00	ug/L	1	L002007	01/31/2010	01/31/2010	8260B
Methylene Chloride	6.00 U	6.00	ug/L	1	L002007	01/31/2010	01/31/2010	8260B
Styrene	5.00 U	5.00	ug/L	1	L002007	01/31/2010	01/31/2010	8260B
Tetrachloroethene	5.00 U	5.00	ug/L	1	L002007	01/31/2010	01/31/2010	8260B
trans-1,2-Dichloroethene	5.00 U	5.00	ug/L	1	L002007	01/31/2010	01/31/2010	8260B
Toluene	5.00 U	5.00	ug/L	1	L002007	01/31/2010	01/31/2010	8260B
trans-1,3-Dichloropropene	5.00 U	5.00	ug/L	1	L002007	01/31/2010	01/31/2010	8260B
Trichloroethene	5.00 U	5.00	ug/L	1	L002007	01/31/2010	01/31/2010	8260B
Vinyl chloride	10.0 U	10.0	ug/L	1	L002007	01/31/2010	01/31/2010	8260B
Xylenes, total	5.00 U	5.00	ug/L	1	L002007	01/31/2010	01/31/2010	8260B
Surrogate: 1,2-Dichloroethane-d4	*123 %*	*64-140*			*L002007*	*01/31/2010*	*01/31/2010*	*8260B*
Surrogate: Toluene-d8	*89 %*	*70-130*			*L002007*	*01/31/2010*	*01/31/2010*	*8260B*
Surrogate: 4-Bromofluorobenzene	*85 %*	*81-115*			*L002007*	*01/31/2010*	*01/31/2010*	*8260B*

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Phone: 610-280-3000
Fax: 610-280-3041

WC-Hanford, Inc 2620 Fermi Avenue Richland WA, 99354	Project: RC-113 Project Number: K1917 Project Manager: Joan Kessner	**Reported:** 02/15/2010 10:40

J19F85
1001099-16 (Water)

3/21/10

Lionville Laboratory

Analyte	Result and Qualifier	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Volatile Organic Compounds by SW846 8260B								
1,1,1-Trichloroethane	5.00 U	5.00	ug/L	1	1002007	01/31/2010	01/31/2010	8260B
1,1,2,2-Tetrachloroethane	5.00 U	5.00	ug/L	1	1002007	01/31/2010	01/31/2010	8260B
1,1,2-Trichloroethane	5.00 U	5.00	ug/L	1	1002007	01/31/2010	01/31/2010	8260B
1,1-Dichloroethane	5.00 U	5.00	ug/L	1	1002007	01/31/2010	01/31/2010	8260B
1,1-Dichloroethene	5.00 U	5.00	ug/L	1	1002007	01/31/2010	01/31/2010	8260B
1,2-Dichloroethane	5.00 U	5.00	ug/L	1	1002007	01/31/2010	01/31/2010	8260B
1,2-Dichloroethene (total)	5.00 U	5.00	ug/L	1	1002007	01/31/2010	01/31/2010	8260B
1,2-Dichloropropane	5.00 U	5.00	ug/L	1	1002007	01/31/2010	01/31/2010	8260B
2-Butanone	10.0 U	10.0	ug/L	1	1002007	01/31/2010	01/31/2010	8260B
2-Hexanone	10.0 U	10.0	ug/L	1	1002007	01/31/2010	01/31/2010	8260B
4-Methyl-2-pentanone	10.0 U	10.0	ug/L	1	1002007	01/31/2010	01/31/2010	8260B
Acetone	10.0 U	10.0	ug/L	1	1002007	01/31/2010	01/31/2010	8260B
Benzene	5.00 U	5.00	ug/L	1	1002007	01/31/2010	01/31/2010	8260B
Bromodichloromethane	5.00 U	5.00	ug/L	1	1002007	01/31/2010	01/31/2010	8260B
Bromoform	5.00 U	5.00	ug/L	1	1002007	01/31/2010	01/31/2010	8260B
Bromomethane	10.0 U	10.0	ug/L	1	1002007	01/31/2010	01/31/2010	8260B
Carbon Disulfide	5.00 U	5.00	ug/L	1	1002007	01/31/2010	01/31/2010	8260B
Carbon Tetrachloride	5.00 U	5.00	ug/L	1	1002007	01/31/2010	01/31/2010	8260B
Chlorobenzene	5.00 U	5.00	ug/L	1	1002007	01/31/2010	01/31/2010	8260B
Chloroethane	10.0 U	10.0	ug/L	1	1002007	01/31/2010	01/31/2010	8260B
Chloroform	5.00 U	5.00	ug/L	1	1002007	01/31/2010	01/31/2010	8260B
Chloromethane	10.0 U	10.0	ug/L	1	1002007	01/31/2010	01/31/2010	8260B
cis-1,2-Dichloroethene	5.00 U	5.00	ug/L	1	1002007	01/31/2010	01/31/2010	8260B
cis-1,3-Dichloropropene	5.00 U	5.00	ug/L	1	1002007	01/31/2010	01/31/2010	8260B
Dibromochloromethane	5.00 U	5.00	ug/L	1	1002007	01/31/2010	01/31/2010	8260B
Ethylbenzene	5.00 U	5.00	ug/L	1	1002007	01/31/2010	01/31/2010	8260B
Methylene Chloride	6.00 U	6.00	ug/L	1	1002007	01/31/2010	01/31/2010	8260B
Styrene	5.00 U	5.00	ug/L	1	1002007	01/31/2010	01/31/2010	8260B
Tetrachloroethene	5.00 U	5.00	ug/L	1	1002007	01/31/2010	01/31/2010	8260B
trans-1,2-Dichloroethene	5.00 U	5.00	ug/L	1	1002007	01/31/2010	01/31/2010	8260B
Toluene	5.00 U	5.00	ug/L	1	1002007	01/31/2010	01/31/2010	8260B
trans-1,3-Dichloropropene	5.00 U	5.00	ug/L	1	1002007	01/31/2010	01/31/2010	8260B
Trichloroethene	5.00 U	5.00	ug/L	1	1002007	01/31/2010	01/31/2010	8260B
Vinyl chloride	10.0 U	10.0	ug/L	1	1002007	01/31/2010	01/31/2010	8260B
Xylenes, total	5.00 U	5.00	ug/L	1	1002007	01/31/2010	01/31/2010	8260B
Surrogate: 1,2-Dichloroethane-d4	*131 %*	*64-140*			*1002007*	*01/31/2010*	*01/31/2010*	*8260B*
Surrogate: Toluene-d8	*97 %*	*70-130*			*1002007*	*01/31/2010*	*01/31/2010*	*8260B*
Surrogate: 4-Bromofluorobenzene	*89 %*	*81-115*			*1002007*	*01/31/2010*	*01/31/2010*	*8260B*

Appendix 4

Laboratory Narrative and Chain-of-Custody Documentation

Case Narrative

Client: WC HANFORD RC-115
LVL #: 1001099
SDG/SAF # K1917 / RC-115

W.O. #: 60049-001-001-0001-00
Date Received: 01-27-2010

GC/MS VOLATILE

Six (6) water samples were collected on 01-25-2010.

The samples and associated QC samples were analyzed according to criteria set forth in Lionville Laboratory SOPs based on SW Method 8260B for Client Specified Volatile target compounds on 01-31-2010 and 02-07-2010.

The following is a summary of QC results accompanying the sample results. Lionville Laboratory (LvL) certifies that all test results meet the requirements of NELAC except as noted below:

1. Discrepancies from the sample acceptance policy have been recorded on the Sample Receipt Checklist.
2. Samples were analyzed within hold time.
3. Non-target compounds were detected in these samples.
4. All surrogate recoveries were within acceptance criteria.
5. All matrix spike recoveries were within acceptance criteria.
6. All blank spike recoveries were within acceptance criteria.
7. The method blanks were below the reporting limit for all target compounds.
8. Internal standard areas were outside QC limits for samples: J19FC8, J191H2, J19FW5, and J19F85. The samples were not reanalyzed due to hold time.
9. Manual integrations are performed according to SOP QA-125 to produce quality data with utmost integrity. All manual integrations are required to be technically valid and properly documented. Appropriate technical flags are defined in the Glossary ("Technical Flags For Manual Integration").
10. LvL is NELAP accredited by the State of Pennsylvania. For a complete listing of accrediting authorities and the corresponding analytes/methods, please contact your Project Manager.

11. "I certify that this sample data package is in compliance with SOW requirements, both technically and for completeness, other than the conditions detailed above. Release of the data contained in this hard-copy data package has been authorized by the Laboratory Manager or a designee, as verified by the following signature."

Iain Daniels
Laboratory Manager
Lionville Laboratory

2/16/10
Date

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-115-229 Page 1 of 1

Collector: R. Gomez

Company Contact: Joan Kessner Telephone No. 375-4585

Project Coordinator: KESSNER, JB

Price Code: 7C

Data Turnaround: 15 Days

Project Designation: Columbia River Component of the RCBRA - Surface Water

Sampling Location: 100A 33008

SAF No. RC-115

Ice Chest No. APS-CA-001

Field Logbook No. EL-1645-01

COA: [illegible]

Method of Shipment: FEDEX

Shipped To: [illegible] CONSULT

Offsite Property No. N/A

Bill of Lading/Air Bill No. FDX 7932 1448 4469

POSSIBLE SAMPLE HAZARDS/REMARKS

N/A

Special Handling and/or Storage

N/A

000019

Preservation	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Type of Container	G/P	G/P	G	G/P	aG	G/P	G/P	G/P	G/P	G/P
No. of Container(s)	1 ea	1	1	1	3 ea	1	2	2	1	1
Volume	500mL	500mL	250mL	250mL	40mL	1000mL	1000mL	500mL	500mL	500mL
SAMPLE ANALYSIS	See item (1) in Special Instructions	Alkalinity [illegible]	Dissolved Organic Carbon (DOC)	[illegible]	See item (2) in Special Instructions	See item (1) in Special Instructions	[illegible]	[illegible]	[illegible]	See item (3) in Special Instructions

Sample No.	Matrix *	Sample Date	Sample Time										
J19FB8	WATER	01-25-10	1215	X	X	X	X	X					
J19FB9	WATER	01-25-10	1215										X

Samples [illegible] to controlled storage. Shipper removed samples from storage location [illegible] samples for shipment [illegible]

CHAIN OF POSSESSION	Date/Time	Sign/Print Names	Date/Time
Relinquished By/Removed From: R. Gomez	01-25-10 1801	Received By/Stored In: CAS REEF E	01-25-10 1801
Relinquished By/Removed From: CAS REEF E	1/26/10 1102	Received By/Stored In: SHANNAN JOHNSON	1/26/10 1102
Relinquished By/Removed From: SHANNAN JOHNSON	1/26/10 1102	Received By/Stored In: FDX	
Relinquished By/Removed From: FDX	1/27/10/0930	Received By/Stored In: D Smith	1/27/10/0930
Relinquished By/Removed From:	Date/Time	Received By/Stored In:	Date/Time
Relinquished By/Removed From:	Date/Time	Received By/Stored In:	Date/Time

SPECIAL INSTRUCTIONS

(1) ICP Metals - 6010B (TAL Filtered) {Aluminum, Antimony, Arsenic, Barium, Beryllium, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Titanium, Uranium, Vanadium, Zinc}; Mercury - 7470 - (CV)

(2) VOA - 8260B (TCL) {1,1,1-Trichloroethane, 1,1,2,2-Tetrachloroethane, 1,1,2-Trichloroethane, 1,1-Dichloroethane, 1,1-Dichloroethene, 1,2-Dichloroethane, 1,2-Dichloropropane, 2-Butanone, 2-Hexanone, 4-Methyl-2-Pentanone, Acetone, Benzene, Bromodichloromethane, Bromoform, Bromomethane, Carbon disulfide, Carbon tetrachloride, Chlorobenzene, Chloroethane, Chloroform, Chloromethane, cis-1,2-Dichloroethylene, cis-1,3-Dichloropropene, Dibromochloromethane, Ethylbenzene, Methylene chloride, Styrene, Tetrachloroethylene, Toluene, trans-1,2-Dichloroethylene, trans-1,3-Dichloropropene, Trichloroethene, Vinyl chloride, Xylenes (total)}

(3) Gamma Spec - (Full List) {Americium-241, Antimony-125, Beryllium-7, Cerium-144, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106}

[illegible]

Matrix *

[illegible]

LABORATORY SECTION — Received By: Title: Date/Time:

FINAL SAMPLE DISPOSITION — Disposal Method: Disposed By: Date/Time:

WCH-EE-011

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-115-247 Page 1 of 1

Collector Rylie Boston	Company Contact Joan Kessner	Telephone No. 375-4688	Project Coordinator KESSNER, JH
Project Designation Columbia River Component of the RCBRA - Surface Water	Sampling Location RBRA-1300595 TRIP BLANK		SAF No. RC-115
Ice Chest No. APS-CE-002	Field Logbook No. EL-1645	COA 1E-S0 RC-0590	Method of Shipment FEDEX
Shipped To TESTAMERICA SERVICES (KNOXVILLE)	Offsite Property No. N/A		Bill of Lading/Air Bill No. FDX 793214484469

Price Code 7C

Data Turnaround 15 Days

POSSIBLE SAMPLE HAZARDS/REMARKS

N/A

Special Handling and/or Storage

N/A

0200030

Preservation	HCl to pH<2, Cool 4°C
Type of Container	aG*
No. of Container(s)	3
Volume	40 mL
SAMPLE ANALYSIS	See item (1) in Special Instructions

Sample No.	Matrix *	Sample Date	Sample Time	
J18W95	WATER	1-25-10	0800	X

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From R. Boston R.B.	Date/Time 1-25-10 1700	Received By/Stored In R. Boston EAS REF E R.B.	Date/Time 1700 1-25-10
Relinquished By/Removed From EAS REF E	Date/Time 1/26/10 1110	Received By/Stored In SHANNAN JOHNSON	Date/Time 1/26/10 1110
Relinquished By/Removed From SHANNAN JOHNSON	Date/Time 1/26/10 1110	Received By/Stored In FDX	Date/Time
Relinquished By/Removed From FedEx 1-27-10/0930	Date/Time	Received By/Stored In DSmith 1-27-10/0930	Date/Time
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time

SPECIAL INSTRUCTIONS

(1) VOA - 8260A (TCL) {1,1,1-Trichloroethane, 1,1,2,2-Tetrachloroethane, 1,1,2-Trichloroethane, 1,1-Dichloroethane, 1,1-Dichloroethene, 1,2-Dichloroethane, 1,2-Dichloropropane, 2-Butanone, 2-Hexanone, 4-Methyl-2-Pentanone, Acetone, Benzene, Bromodichloromethane, Bromoform, Bromomethane, Carbon disulfide, Carbon tetrachloride, Chlorobenzene, Chloroethane, Chloroform, Chloromethane, cis-1,2-Dichloroethylene, cis-1,3-Dichloropropene, Dibromochloromethane, Ethylbenzene, Methylene chloride, Styrene, Tetrachloroethene, Toluene, trans-1,2-Dichloroethylene, trans-1,3-Dichloropropene, Trichloroethene, Vinyl chloride, Xylenes (total)}

0

[illegible]

Matrix *

[illegible]

LABORATORY SECTION Received By Title Date/Time

FINAL SAMPLE DISPOSITION Disposal Method Disposed By Date/Time

WCH-EE-018

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-115-256 | Page 1 of 1

Collector R Curet	Company Contact Joan Kessner	Telephone No. 373-4688	Project Coordinator KESSNER, JH
Project Designation Columbia River Component of the RCBRA - Surface Water	Sampling Location 100 AREA EQUIPMENT BLANK J3008		SAF No. RC-105
Ice Chest No. APZ-08-001	Field Logbook No. EL-1445-9	COA BESCRE6720	Method of Shipment FEDEX
Shipped To EBERLINE SERVICES (KNOXVILLE)	Offsite Property No. N/A		Bill of Lading/Air Bill No. FDX# 793214484469

Price Code 7C

Data Turnaround 15 Days

POSSIBLE SAMPLE HAZARDS/REMARKS

N/A

Special Handling and/or Storage

N/A

E200021

Preservation	HCl to pH<2 Cool 4C
Type of Container	aG*
No. of Container(s)	3
Volume	40mL
SAMPLE ANALYSIS	See item (1) in Special Instructions

Sample No.	Matrix *	Sample Date	Sample Time	
J19HH2	WATER	01-25-10	1045	X

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
R Curet R. Curet	01-25-10 1803	R Curet EAS REFE	01-25-10 1803
EAS REFE	1/26/10 1120	SHANNAH JOHNSON	1/26/10 1128
SHANNAH JOHNSON	1/26/10 1124	FDX	
FEDEX	1.27.10 0930	D Smith	1.27.10/0930

SPECIAL INSTRUCTIONS

(1) VOA - 8260 (TCL) 1,1,1-Trichloroethane, 1,1,2,2-Tetrachloroethane, 1,1,2-Trichloroethane, 1,1-Dichloroethane, 1,1-Dichloroethene, 1,2-Dichloroethane, 1,2-Dichloropropane, 2-Butanone, 2-Hexanone, 4-Methyl-2-pentanone, Acetone, Benzene, Bromodichloromethane, Bromoform, Bromomethane, Carbon disulfide, Carbon tetrachloride, Chlorobenzene, Chloroethane, Chloroform, Chloromethane, cis-1,2-Dichloroethylene, cis-1,3-Dichloropropene, Dibromochloromethane, Ethylbenzene, Methylene chloride, Styrene, Tetrachloroethene, Toluene, trans-1,2-Dichloroethene, trans-1,3-Dichloropropene, Trichloroethene, Vinyl chloride, Xylenes (total);

[illegible]

Matrix *

[illegible]

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

ACH EF-011

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-115-233 | Page [illegible]

Collector R Gurst	Company Contact [illegible] Telephone No. 375-[illegible]	Project Coordinator [illegible]
Project Designation [illegible] - Surface Water	Sampling Location [illegible] - J3008 - Duplicate	SAF No. [illegible]
Ice Chest No. [illegible] -CEI-CCI	Field Logbook No. [illegible] - 01 COA [illegible]	Method of Shipment [illegible]
Shipped To [illegible]	Offsite Property No. N/A	Bill of Lading/Air Bill No. FD [illegible] 79321448446 9

Price Code 7C

Data Turnaround 15 Days

POSSIBLE SAMPLE HAZARDS/REMARKS

N/A

Special Handling and/or Storage

N/A

Preservation	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Type of Container	G/P	G/P	G	G/P	[illegible]	G/P	G/P	G/P	G/P	[illegible]
No. of Container(s)	1	1	1	1	1	1	2		1	1
Volume	500mL	250mL	125mL	250mL	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	500mL
SAMPLE ANALYSIS	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

Sample No.	Matrix *	Sample Date	Sample Time										
J19FC8	WATER	01-25-10	~~1215~~ 1230	X	X	X	X	X					
J19FC9	WATER	01-25-10	1220										X

CHAIN OF POSSESSION	Date/Time	Sign/Print Names	Date/Time
Relinquished By/Removed From [illegible]	01-25-10 1307	Received By/Stored In EAS REF E	01-25-10 1807
Relinquished By/Removed From EAS REF E	1/26/10 1110	Received By/Stored In SHANNAN JOHNSON	1/26/10
Relinquished By/Removed From SHANNAN JOHNSON	1/26/10 1[illegible]	Received By/Stored In FDX	Date/Time
Relinquished By/Removed From FedEx	1-27-10/0930	Received By/Stored In	1-27-10/0930
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time

SPECIAL INSTRUCTIONS

[illegible]

Matrix *

[illegible]

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

A-6[illegible]

0060224

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-115-238	Page 1 of 1
Collector R. Cusack	Company Contact Joan Kessner	Telephone No. 375-4668	Project Coordinator KESSNER, JH
Project Designation Columbia River Component of the RI/FS - Surface Water	Sampling Location [illegible] TRIP BLANK #3x08		SAF No. RC-115
Ice Chest No. HFS-04-E54	Field Logbook No. EL-1645-01	COA BESURC0520	Method of Shipment FEDEX
Shipped To [illegible] SERVICES CONVILLE	Offsite Property No. N/A		Bill of Lading/Air Bill No. FDX 7932 1448 4544

Price Code 7C

Data Turnaround 15 Days

POSSIBLE SAMPLE HAZARDS/REMARKS
N/A

Special Handling and/or Storage
N/A

0000823

Preservation	HCl to pH<2 Cool 4°C
Type of Container	aGs RC 01-25-10
No. of Container(s)	6
Volume	40mL
SAMPLE ANALYSIS	See item (1) in Special Instructions.

Sample No.	Matrix *	Sample Date	Sample Time	
J19FF1	WATER	01-25-10	0815	X

CHAIN OF POSSESSION	Date/Time	Sign/Print Names	Date/Time
Relinquished By/Removed From R. Cusack R.C.	01-25-10 1804	Received By/Stored In R. Cusack EAS REF E	01-25-10 1804
Relinquished By/Removed From EAS REF E SJ	1/26/10 1300	Received By/Stored In SHANNAN JOHNSON	1/26/10 1300
Relinquished By/Removed From SHANNAN JOHNSON	1/26/10 1630	Received By/Stored In FDX	Date/Time
Relinquished By/Removed From FDX	1-27-10 0930	Received By/Stored In Smith	1-27-10 0930
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time

SPECIAL INSTRUCTIONS

(1) VOA - 8260A (TCL) {1,1,1-Trichloroethane, 1,1,2,2-Tetrachloroethane, 1,1,2-Trichloroethane, 1,1-Dichloroethane, 1,1-Dichloroethene, 1,2-Dichloroethane, 1,2-Dichloropropane, 2-Butanone, 2-Hexanone, 4-Methyl-2-Pentanone, Acetone, Benzene, Bromodichloromethane, Bromoform, Bromomethane, Carbon disulfide, Carbon tetrachloride, Chlorobenzene, Chloroethane, Chloroform, Chloromethane, cis-1,2-Dichloroethylene, cis-1,3-Dichloropropene, Dibromochloromethane, Ethylbenzene, Methylene chloride, Styrene, Tetrachloroethene, Toluene, trans-1,2-Dichloroethylene, trans-1,3-Dichloropropene, Trichloroethene, Vinyl chloride, Xylenes (total)}

Sampler responsible for [illegible] samples
[illegible] storage. Sample returned
samples from storage [illegible]
of samples [illegible]

Matrix *
[illegible]

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

[illegible]

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-115-250

Collector Rylie Bassow	Company Contact [illegible] Kessner	Telephone No. [illegible]	Project Coordinator KESSNER, J.H.
Project Designation [illegible] Surface Water	Sampling Location [illegible] T300535		SAF No. RC-115
Ice Chest No.	Field Logbook No. [illegible]	COA [illegible]	Method of Shipment FEDEX
Shipped To [illegible] SERVICES [illegible]	Offsite Property No. N/A		Bill of Lading/Air Bill No. FD 793214484469

Price Code 7C

Data Turnaround 15 Days

POSSIBLE SAMPLE HAZARDS/REMARKS
N/A

Special Handling and/or Storage
N/A

Preservation	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Type of Container	G/P	G/P	G	G/P	aG	G/P	G/P	G/P	G/P	G/P
No. of Container(s)	2	1	1	1	3	1	2	1	1	1
Volume	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
SAMPLE ANALYSIS	See item (1) in Special Instructions	Alkalinity [illegible]	Dissolved Organic Carbon [illegible]	Hardness [illegible]	See item (2) in Special Instructions	See item (3) in Special Instructions	[illegible]	[illegible]	[illegible]	See item (4) in Special Instructions

Sample No.	Matrix *	Sample Date	Sample Time										
[illegible]19	WATER	1-25-10	1100	X	X	X	X	X					
[illegible]20	WATER	1-25-10	1100										X

CHAIN OF POSSESSION	Date/Time	Sign/Print Names	Date/Time
Relinquished By/Removed From R Bassow R.B.	1-25-10 1730	Received By/Stored In EAS REF [illegible] R.B.	1-25-10 1730
Relinquished By/Removed From EAS REF [illegible]	1/26/10 1100	Received By/Stored In SHANNAN JOHNSON	1/26/10 1100
Relinquished By/Removed From SHANNAN JOHNSON	1/26/10 1100	Received By/Stored In FEDEX	
Relinquished By/Removed From	1.27.10/0930	Received By/Stored In	1.27.10/0930
Relinquished By/Removed From		Received By/Stored In	
Relinquished By/Removed From		Received By/Stored In	

SPECIAL INSTRUCTIONS

(1) ICP Metals - 6010 [illegible] Aluminum, Antimony, Arsenic, Barium, Beryllium, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, [illegible], Tin, Titanium, Uranium, Vanadium, Zinc}; Mercury - 7470 [illegible]

(2) VOA - 8260B [illegible] 1,1,1-Trichloroethane, 1,1,2,2-Tetrachloroethane, [illegible] 1,1-Dichloroethane, 1,1-Dichloroethene, 1,2-Dichloroethane, 1,2-Dichloropropane, 2-Butanone, 2-Hexanone, 4-Methyl-2-Pentanone, Acetone, Benzene, [illegible], Bromoform, Bromomethane, Carbon disulfide, Carbon tetrachloride, Chlorobenzene, Chloroethane, Chloroform, Chloromethane, [illegible], Ethylbenzene, Methylene chloride, Styrene, Tetrachloroethene, [illegible], Trichloroethene, Vinyl chloride, Xylenes (total)}

(3) Gamma Spec - (Full List) {Americium-241, Antimony-125, Beryllium-7, Cerium-144, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106}

(4) [illegible]

Samples [illegible] custody sealed package [illegible] samples [illegible] samples [illegible]

Matrix *
[illegible]

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

[illegible]

0000024

Appendix 5

Data Validation Supporting Documentation

GC/MS ORGANIC DATA VALIDATION CHECKLIST

VALIDATION LEVEL:	A	B	[✓ C]	D	E

PROJECT: RCBRA		DATA PACKAGE: K1917	
VALIDATOR: ELR	LAB: LLI		DATE 3/27/10
		SDG: K1917	

ANALYSES PERFORMED					
[✓ SW-846 8260]		SW-846 8260 (TCLP)	SW-846 8270		SW-846 8270 (TCLP)

SAMPLES/MATRIX

J19H19 J19FF3 J19FC4 J19GH2 J19FW5

J19FF5

Water

1. DATA PACKAGE COMPLETENESS AND CASE NARRATIVE

Technical verification documentation present? .... Yes [✓ No] N/A

Comments:

2. INSTRUMENT TUNING AND CALIBRATION (Levels D and E)

GC/MS tuning/performance check acceptable? .... Yes No [✓ N/A]

Initial calibrations acceptable? .... Yes No [✓ N/A]

Continuing calibrations acceptable? .... Yes No [✓ N/A]

Standards traceable? .... Yes No [✓ N/A]

Standards expired? .... Yes No [✓ N/A]

Calculation check acceptable? .... Yes No [✓ N/A]

Comments:

GC/MS ORGANIC DATA VALIDATION CHECKLIST

3. BLANKS (Levels B, C, D, and E)

Calibration blanks analyzed? (Levels D, E) .... Yes No [✓ N/A]
Calibration blank results acceptable? (Levels D, E) .... Yes No [✓ N/A]
Laboratory blanks analyzed? .... [✓ Yes] No N/A
Laboratory blank results acceptable? .... [✓ Yes] No N/A
Field/trip blanks analyzed? (Levels C, D, E) .... [✓ Yes] No N/A
Field/trip blank results acceptable? (Levels C, D, E) .... [✓ Yes] No N/A
Transcription/calculation errors? (Levels D, E) .... Yes No [✓ N/A]
Comments:

FP3 HH2

4. ACCURACY (Levels C, D, and E)

Surrogates/system monitoring compounds analyzed? .... [✓ Yes] No N/A
Surrogate/system monitoring compound recoveries acceptable? .... [✓ Yes] No N/A
Surrogates traceable? (Levels D, E) .... Yes No [✓ N/A]
Surrogates expired? (Levels D, E) .... Yes No [✓ N/A]
MS/MSD samples analyzed? .... [✓ Yes] No N/A
MS/MSD results acceptable? .... [✓ Yes] No N/A
MS/MSD standards NIST traceable? (Levels D, E) .... Yes No [✓ N/A]
MS/MSD standards? (Levels D, E) .... Yes No [✓ N/A]
LCS/BSS samples analyzed? .... [✓ Yes] No N/A
LCS/BSS results acceptable? .... [✓ Yes] No N/A
Standards traceable? (Levels D, E) .... Yes No [✓ N/A]
Standards expired? (Levels D, E) .... Yes No [✓ N/A]
Transcription/calculation errors? (Levels D, E) .... Yes No [✓ N/A]
Performance audit sample(s) analyzed? .... Yes [✓ No] N/A
Performance audit sample results acceptable? .... Yes No [✓ N/A]
Comments: NO PAS

NO MS/MSD - C4, H2, W5, 95 - J.

GC/MS ORGANIC DATA VALIDATION CHECKLIST

5. PRECISION (Levels C, D, and E)

MS/MSD samples analyzed? .... [✓ Yes] No N/A
MS/MSD RPD values acceptable? .... [✓ Yes] No N/A
MS/MSD standards NIST traceable? (Levels D, E) .... Yes No [✓ N/A]
MS/MSD standards expired? (Levels D, E) .... Yes No [✓ N/A]
Field duplicate RPD values acceptable? .... Yes No [✓ N/A]
Field split RPD values acceptable? .... Yes No [✓ N/A]
Transcription/calculation errors? (Levels D, E) .... Yes No [✓ N/A]

Comments:
no MS/MSD - C8, H2, W5, 85 - J.

6. SYSTEM PERFORMANCE (Levels D and E)

Internal standards analyzed? .... Yes No [✓ N/A]
Internal standard areas acceptable? .... Yes No [✓ N/A]
Internal standard retention times acceptable? .... Yes No [✓ N/A]
Standards traceable? .... Yes No [✓ N/A]
Standards expired? .... Yes No [✓ N/A]
Transcription/calculation errors? .... Yes No [✓ N/A]

Comments:

7. HOLDING TIMES (all levels)

Samples properly preserved? .... [✓ Yes] No N/A
Sample holding times acceptable? .... [✓ Yes] No N/A

Comments:

GC/MS ORGANIC DATA VALIDATION CHECKLIST

8. COMPOUND IDENTIFICATION, QUANTITATION, AND DETECTION LIMITS (all levels)

Compound identification acceptable? (Levels D, E) .... Yes No [✓ N/A]

Compound quantitation acceptable? (Levels D, E) .... Yes No [✓ N/A]

Results reported for all requested analyses? .... [✓ Yes] No N/A

Results supported in the raw data? (Levels D, E) .... Yes No N/A

Samples properly prepared? (Levels D, E) .... Yes No [✓ N/A]

Laboratory properly identified and coded all TIC? (Levels D, E) .... Yes No [✓ N/A]

Detection limits meet RDL? .... Yes [✓ No] N/A

Transcription/calculation errors? (Levels D, E) .... Yes No [✓ N/A]

Comments: ______________________________

Cont ______________________________

9. SAMPLE CLEANUP (Levels D and E)

GPC cleanup performed? .... Yes No [✓ N/A]

GPC check performed? .... Yes No [✓ N/A]

GPC check recoveries acceptable? .... Yes No [✓ N/A]

GPC calibration performed? .... Yes No [✓ N/A]

GPC calibration check performed? .... Yes No [✓ N/A]

GPC calibration check retention times acceptable? .... Yes No [✓ N/A]

Check/calibration materials traceable? .... Yes No [✓ N/A]

Check/calibration materials Expired? .... Yes No [✓ N/A]

Analytical batch QC given similar cleanup? .... Yes No [✓ N/A]

Transcription/Calculation Errors? .... Yes No [✓ N/A]

Comments: ______________________________

Appendix 6

Additional Documentation Requested by Client

WCH-Hanford, Inc	Project: RCS-115	
2620 Fermi Avenue	Project Number: K1917	Reported:
Richland WA, 99354	Project Manager: Joan Kessner	02/15/2010 10:30

Volatile Organic Compounds by SW846 8260B - Quality Control

Lionville Laboratory

Analyte	Result and Qualifiers	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch L002007 - SW 5030B									
Blank (L002007-BLK1)			Prepared & Analyzed: 01/31/2010						
1,1,1-Trichloroethane	5.00 U	5.00	ug/L						
1,1,2-Trichloroethane	5.00 U	5.00	ug/L						
1,1-Dichloroethane	5.00 U	5.00	ug/L						
1,1-Dichloroethene	5.00 U	5.00	ug/L						
2-Butanone	10.0 U	10.0	ug/L						
2-Hexanone	10.0 U	10.0	ug/L						
4-Methyl-2-pentanone	10.0 U	10.0	ug/L						
Acetone	10.0 U	10.0	ug/L						
Benzene	5.00 U	5.00	ug/L						
Carbon Disulfide	5.00 U	5.00	ug/L						
Carbon Tetrachloride	5.00 U	5.00	ug/L						
Chlorobenzene	5.00 U	5.00	ug/L						
Chloroethane	10.0 U	10.0	ug/L						
Chloroform	5.00 U	5.00	ug/L						
cis-1,2-Dichloroethene	5.00 U	5.00	ug/L						
Ethylbenzene	5.00 U	5.00	ug/L						
Methylene Chloride	5.00 U	5.00	ug/L						
Styrene	5.00 U	5.00	ug/L						
Tetrachloroethene	5.00 U	5.00	ug/L						
Toluene	5.00 U	5.00	ug/L						
Trichloroethene	5.00 U	5.00	ug/L						
Vinyl chloride	5.00 U	5.00	ug/L						
Xylenes, total	5.00 U	5.00	ug/L						
1,2,4-Trimethylbenzene	5.00 U	5.00	ug/L						
1,2-Xylene	5.00 U	5.00	ug/L						
1,3,5-Trimethylbenzene	5.00 U	5.00	ug/L						
Isopropylbenzene	5.00 U	5.00	ug/L						
Surrogate: 1,2-Dichloroethane-d4	*50.6*		*ug/L*	*50.000*		*101*	*64-140*		
Surrogate: Toluene-d8	*48.6*		*ug/L*	*50.000*		*97*	*70-130*		
Surrogate: 4-Bromofluorobenzene	*45.5*		*ug/L*	*50.000*		*91*	*81-115*		

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

WC-Hanford, Inc 2620 Fermi Avenue Richland WA, 99354	Project: RC-115 Project Number: K1917 Project Manager: Joan Kessner	Reported: 02/15/2010 10:40

Volatile Organic Compounds by SW846 8260B - Quality Control

Lionville Laboratory

Analyte	Result and Qualifiers	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch L002007 - SW 5030B									
Blank (L002007-BLK2)			Prepared & Analyzed: 01/31/2010						
1,1,1-Trichloroethane	5.00 U	5.00	ug/L						
1,1,2,2-Tetrachloroethane	5.00 U	5.00	ug/L						
1,1,2-Trichloroethane	5.00 U	5.00	ug/L						
1,1-Dichloroethane	5.00 U	5.00	ug/L						
1,1-Dichloroethene	5.00 U	5.00	ug/L						
1,2-Dichloroethane	5.00 U	5.00	ug/L						
1,2-Dichloroethene (total)	5.00 U	5.00	ug/L						
1,2-Dichloropropane	5.00 U	5.00	ug/L						
2-Butanone	10.0 U	10.0	ug/L						
2-Hexanone	10.0 U	10.0	ug/L						
4-Methyl-2-pentanone	10.0 U	10.0	ug/L						
Acetone	10.0 U	10.0	ug/L						
Benzene	5.00 U	5.00	ug/L						
Bromodichloromethane	5.00 U	5.00	ug/L						
Bromoform	5.00 U	5.00	ug/L						
Bromomethane	10.0 U	10.0	ug/L						
Carbon Disulfide	5.00 U	5.00	ug/L						
Carbon Tetrachloride	5.00 U	5.00	ug/L						
Chlorobenzene	5.00 U	5.00	ug/L						
Chloroethane	10.0 U	10.0	ug/L						
Chloroform	5.00 U	5.00	ug/L						
Chloromethane	10.0 U	10.0	ug/L						
cis-1,2-Dichloroethene	5.00 U	5.00	ug/L						
cis-1,3-Dichloropropene	5.00 U	5.00	ug/L						
Dibromochloromethane	5.00 U	5.00	ug/L						
Ethylbenzene	5.00 U	5.00	ug/L						
Methylene Chloride	5.00 U	5.00	ug/L						
Styrene	5.00 U	5.00	ug/L						
Tetrachloroethene	5.00 U	5.00	ug/L						
trans-1,2-Dichloroethene	5.00 U	5.00	ug/L						
Toluene	5.00 U	5.00	ug/L						
trans-1,3-Dichloropropene	5.00 U	5.00	ug/L						
Trichloroethene	5.00 U	5.00	ug/L						
Vinyl chloride	5.00 U	5.00	ug/L						
Xylenes, total	5.00 U	5.00	ug/L						
1,1,1,2-Tetrachloroethane	5.00 U	5.00	ug/L						

764 Welsh Pool Road
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Phone: 610-280-3000
Fax: 610-280-3041

WC-Hanford, Inc. 2620 Fermi Avenue Richland WA, 99354	Project: RC-115 Project Number: K1917 Project Manager: Joan Kessner	**Reported:** 02/15/2010 10:40

Volatile Organic Compounds by SW846 8260B - Quality Control

Lionville Laboratory

Analyte	Result and Qualifiers	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch L002007 - SW 5030B									
Blank (L002007-BLK2)			Prepared & Analyzed: 01/31/2010						
1,2,3-Trichloropropane	5.00 U	5.00	ug/L						
1,2,4-Trimethylbenzene	5.00 U	5.00	ug/L						
1,2-Dibromo-3-chloropropane	5.00 U	5.00	ug/L						
1,2-Dibromoethane	5.00 U	5.00	ug/L						
1,2-Xylene	5.00 U	5.00	ug/L						
1,3,5-Trimethylbenzene	5.00 U	5.00	ug/L						
4-Isopropyltoluene	5.00 U	5.00	ug/L						
Dibromomethane	5.00 U	5.00	ug/L						
Dichlorodifluoromethane	5.00 U	5.00	ug/L						
Isopropylbenzene	5.00 U	5.00	ug/L						
n-Propylbenzene	5.00 U	5.00	ug/L						
sec-Butylbenzene	5.00 U	5.00	ug/L						
tert-Butylbenzene	5.00 U	5.00	ug/L						
Trichlorofluoromethane	5.00 U	5.00	ug/L						
Surrogate: 1,2-Dichloroethane-d4	*50.6*		*ug/L*	*50.000*		*101*	*64-140*		
Surrogate: Toluene-d8	*48.6*		*ug/L*	*50.000*		*97*	*70-130*		
Surrogate: 4-Bromofluorobenzene	*45.5*		*ug/L*	*50.000*		*91*	*81-115*		
Blank (L002007-BLK4)			Prepared & Analyzed: 01/31/2010						
1,1,1-Trichloroethane	5.00 U	5.00	ug/L						
1,1,2,2-Tetrachloroethane	5.00 U	5.00	ug/L						
1,1,2-Trichloroethane	5.00 U	5.00	ug/L						
1,1-Dichloroethane	5.00 U	5.00	ug/L						
1,1-Dichloroethene	5.00 U	5.00	ug/L						
1,2-Dichloroethane	5.00 U	5.00	ug/L						
1,2-Dichloroethene (total)	5.00 U	5.00	ug/L						
1,2-Dichloropropane	5.00 U	5.00	ug/L						
2-Butanone	10.0 U	10.0	ug/L						
2-Hexanone	10.0 U	10.0	ug/L						
4-Methyl-2-pentanone	10.0 U	10.0	ug/L						
Acetone	10.0 U	10.0	ug/L						
Benzene	5.00 U	5.00	ug/L						
Bromodichloromethane	5.00 U	5.00	ug/L						
Bromoform	5.00 U	5.00	ug/L						
Bromomethane	10.0 U	10.0	ug/L						
Carbon Disulfide	5.00 U	5.00	ug/L						
Carbon Tetrachloride	5.00 U	5.00	ug/L						

WC-Hanford, Inc 2620 Fermi Avenue Richland WA, 99354	Project: RC 115 Project Number: K1917 Project Manager: Joan Kessner	**Reported:** 02/15/2010 10:40

Volatile Organic Compounds by SW846 8260B - Quality Control

Lionville Laboratory

Analyte	Result and Qualifiers	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch 1002007 - SW 5030B									
Blank (1002007-BLK4)			Prepared & Analyzed: 01/31/2010						
Chlorobenzene	5.00 U	5.00	ug/L						
Chloroethane	10.0 U	10.0	ug/L						
Chloroform	5.00 U	5.00	ug/L						
Chloromethane	10.0 U	10.0	ug/L						
cis-1,2-Dichloroethene	5.00 U	5.00	ug/L						
cis-1,3-Dichloropropene	5.00 U	5.00	ug/L						
Dibromochloromethane	5.00 U	5.00	ug/L						
Ethylbenzene	5.00 U	5.00	ug/L						
Methylene Chloride	6.00 U	6.00	ug/L						
Styrene	5.00 U	5.00	ug/L						
Tetrachloroethene	5.00 U	5.00	ug/L						
trans-1,2-Dichloroethene	5.00 U	5.00	ug/L						
Toluene	5.00 U	5.00	ug/L						
trans-1,3-Dichloropropene	5.00 U	5.00	ug/L						
Trichloroethene	5.00 U	5.00	ug/L						
Vinyl chloride	10.0 U	10.0	ug/L						
Xylenes, total	5.00 U	5.00	ug/L						
Surrogate: 1,2-Dichloroethane-d4	*50.6*		*ug/L*	*50.000*		*101*	*64-140*		
Surrogate: Toluene-d8	*48.6*		*ug/L*	*50.000*		*97*	*70-130*		
Surrogate: 4-Bromofluorobenzene	*45.5*		*ug/L*	*50.000*		*91*	*81-115*		
LCS (1002007-BS1)			Prepared & Analyzed: 01/31/2010						
1,1,1-Trichloroethane	52.6	5.00	ug/L	50.000		105	60-140		
1,1,2-Trichloroethane	44.7	5.00	ug/L	50.000		89	70-130		
1,1-Dichloroethane	50.4	5.00	ug/L	50.000		101	60-140		
1,1-Dichloroethene	55.4	5.00	ug/L	50.000		111	60-130		
2-Butanone	34.7	10.0	ug/L	50.000		69	20-200		
2-Hexanone	37.4	10.0	ug/L	50.000		75	20-200		
4-Methyl-2-pentanone	41.1	10.0	ug/L	50.000		82	50-150		
Acetone	40.2	10.0	ug/L	50.000		80	20-200		
Benzene	46.4	5.00	ug/L	50.000		93	70-130		
Carbon Disulfide	55.8	5.00	ug/L	50.000		112	60-140		
Carbon Tetrachloride	51.3	5.00	ug/L	50.000		103	60-140		
Chlorobenzene	54.9	5.00	ug/L	50.000		110	70-130		
Chloroethane	58.1	10.0	ug/L	50.000		116	30-180		
Chloroform	48.8	5.00	ug/L	50.000		98	60-140		
cis-1,2-Dichloroethene	41.5	5.00	ug/L	50.000		83	60-140		

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

Volatile Organic Compounds by SW846 8260B - Quality Control
Lionville Laboratory

Analyte	Result and Qualifiers	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch L002007 - SW 5030B									
LCS (L002007-BS1)				Prepared & Analyzed: 01/31/2010					
Ethylbenzene	55.9	5.00	ug/L	50.000		112	70-130		
Methylene Chloride	49.5	5.00	ug/L	50.000		99	50-180		
Styrene	55.0	5.00	ug/L	50.000		110	70-130		
Tetrachloroethene	58.2	5.00	ug/L	50.000		116	60-140		
Toluene	52.4	5.00	ug/L	50.000		105	70-130		
Trichloroethene	46.8	5.00	ug/L	50.000		94	70-130		
Vinyl Chloride	54.9	5.00	ug/L	50.000		110	50-180		
Xylenes, total	169	5.00	ug/L	150.00		113	70-130		
1,2-Xylene	56.4	5.00	ug/L	50.000		113	70-130		
Isopropylbenzene	50.2	5.00	ug/L	50.000		100	75-125		
Surrogate: 1,2-Dichloroethane-d4	*50.4*		*ug/L*	*50.000*		*101*	*66-140*		
Surrogate: Toluene-d8	*50.7*		*ug/L*	*50.000*		*101*	*70-130*		
Surrogate: 4-Bromofluorobenzene	*52.2*		*ug/L*	*50.000*		*104*	*81-115*		
LCS (L002007-BS2)				Prepared & Analyzed: 01/31/2010					
1,1,1-Trichloroethane	52.6	5.00	ug/L	50.000		105	60-140		
1,1,2,2-Tetrachloroethane	43.6	5.00	ug/L	50.000		87	70-130		
1,1,2-Trichloroethane	44.7	5.00	ug/L	50.000		89	70-130		
1,1-Dichloroethane	50.4	5.00	ug/L	50.000		101	60-140		
1,1-Dichloroethene	55.4	5.00	ug/L	50.000		111	60-130		
1,2-Dichloroethane	50.8	5.00	ug/L	50.000		102	60-140		
1,2-Dichloroethene (total)	91.0	5.00	ug/L	100.00		91	60-140		
1,2-Dichloropropane	47.9	5.00	ug/L	50.000		96	70-130		
2-Butanone	34.7	10.0	ug/L	50.000		69	20-200		
2-Hexanone	37.4	10.0	ug/L	50.000		75	20-200		
4-Methyl-2-pentanone	41.1	10.0	ug/L	50.000		82	50-150		
Acetone	40.2	10.0	ug/L	50.000		80	20-200		
Benzene	46.4	5.00	ug/L	50.000		93	70-130		
Bromodichloromethane	46.8	5.00	ug/L	50.000		94	60-140		
Bromoform	46.6	5.00	ug/L	50.000		93	60-140		
Bromomethane	58.0	10.0	ug/L	50.000		116	50-180		
Carbon Disulfide	55.8	5.00	ug/L	50.000		112	60-140		
Carbon Tetrachloride	51.3	5.00	ug/L	50.000		103	60-140		
Chlorobenzene	54.9	5.00	ug/L	50.000		110	70-130		
Chloroethane	58.1	10.0	ug/L	50.000		116	50-180		
Chloroform	48.8	5.00	ug/L	50.000		98	60-140		
Chloromethane	48.4	10.0	ug/L	50.000		97	50-180		

Volatile Organic Compounds by SW846 8260B - Quality Control

Lionville Laboratory

Analyte	Result and Qualifiers	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch L002007 - SW 5030B									
LCS (L002007-BS2)			Prepared & Analyzed: 01/31/2010						
cis-1,2-Dichloroethene	41.5	5.00	ug/L	50.000		83	60-140		
cis-1,3-Dichloropropene	47.7	5.00	ug/L	50.000		95	70-130		
Dibromochloromethane	48.2	5.00	ug/L	50.000		96	70-130		
Ethylbenzene	55.9	5.00	ug/L	50.000		112	70-130		
Methylene Chloride	49.5	5.00	ug/L	50.000		99	50-180		
Styrene	55.0	5.00	ug/L	50.000		110	70-130		
Tetrachloroethene	58.2	5.00	ug/L	50.000		116	60-140		
trans-1,2-Dichloroethene	49.5	5.00	ug/L	50.000		99	60-140		
Toluene	52.4	5.00	ug/L	50.000		105	70-130		
trans-1,3-Dichloropropene	50.5	5.00	ug/L	50.000		101	70-130		
Trichloroethene	46.8	5.00	ug/L	50.000		94	70-130		
Vinyl chloride	54.9	5.00	ug/L	50.000		110	30-180		
Xylenes, total	169	5.00	ug/L	150.00		112	70-130		
1,2-Dibromo-3-chloropropane	34.2	5.00	ug/L	50.000		68	50-130		
1,2-Dibromoethane	44.9	5.00	ug/L	50.000		90	60-150		
1,2-Xylene	56.4	5.00	ug/L	50.000		113	70-130		
Cyclohexane	49.4	5.00	ug/L	50.000		99	0-200		
Dichlorodifluoromethane	42.5	5.00	ug/L	50.000		85	60-140		
Freon-113	59.1	5.00	ug/L	50.000		118	0-200		
Isopropylbenzene	50.2	5.00	ug/L	50.000		100	75-125		
Methylcyclohexane	50.8	5.00	ug/L	50.000		102	0-200		
Trichlorofluoromethane	52.9	5.00	ug/L	50.000		106	60-145		
Surrogate: 1,2-Dichloroethane-d4	*50.4*		*ug/L*	*50.000*		*101*	*64-140*		
Surrogate: Toluene-d8	*51.7*		*ug/L*	*50.000*		*103*	*70-130*		
Surrogate: 4-Bromofluorobenzene	*52.1*		*ug/L*	*50.000*		*104*	*87-115*		
LCS (L002007-BS4)			Prepared & Analyzed: 01/31/2010						
1,1,1-Trichloroethane	52.6	5.00	ug/L	50.000		105	60-140		
1,1,2,2-Tetrachloroethane	43.6	5.00	ug/L	50.000		87	70-130		
1,1,2-Trichloroethane	44.7	5.00	ug/L	50.000		89	70-130		
1,1-Dichloroethane	50.4	5.00	ug/L	50.000		101	60-140		
1,1-Dichloroethene	55.4	5.00	ug/L	50.000		111	60-130		
1,2-Dichloroethane	50.8	5.00	ug/L	50.000		102	60-140		
1,2-Dichloroethene (total)	91.0	5.00	ug/L	100.00		91	60-140		
1,2-Dichloropropane	47.9	5.00	ug/L	50.000		96	70-130		
2-Butanone	34.7	10.0	ug/L	50.000		69	20-200		
2-Hexanone	37.4	10.0	ug/L	50.000		75	20-200		

Volatile Organic Compounds by SW846 8260B - Quality Control

Lionville Laboratory

Analyte	Result and Qualifiers	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch L002007 - SW 5030B									
LCS (L002007-BS4)			Prepared & Analyzed: 01/31/2010						
4-Methyl-2-pentanone	41.1	10.0	ug/L	50.000		82	50-150		
Acetone	40.2	10.0	ug/L	50.000		80	70-200		
Benzene	46.4	5.00	ug/L	50.000		93	70-130		
Bromodichloromethane	46.8	5.00	ug/L	50.000		94	60-140		
Bromoform	46.6	5.00	ug/L	50.000		93	60-140		
Bromomethane	58.0	10.0	ug/L	50.000		116	50-180		
Carbon Disulfide	55.8	5.00	ug/L	50.000		112	60-140		
Carbon Tetrachloride	51.5	5.00	ug/L	50.000		103	60-140		
Chlorobenzene	54.9	5.00	ug/L	50.000		110	70-130		
Chloroethane	58.1	10.0	ug/L	50.000		116	50-180		
Chloroform	48.8	5.00	ug/L	50.000		98	60-140		
Chloromethane	48.4	10.0	ug/L	50.000		97	50-180		
cis-1,2-Dichloroethene	41.5	5.00	ug/L	50.000		83	60-140		
cis-1,3-Dichloropropene	47.7	5.00	ug/L	50.000		95	70-130		
Dibromochloromethane	48.2	5.00	ug/L	50.000		96	70-130		
Ethylbenzene	55.9	5.00	ug/L	50.000		112	70-130		
Methylene Chloride	49.5	5.00	ug/L	50.000		99	50-180		
Styrene	55.0	5.00	ug/L	50.000		110	70-130		
Tetrachloroethene	58.2	5.00	ug/L	50.000		116	60-140		
trans-1,2-Dichloroethene	49.5	5.00	ug/L	50.000		99	60-140		
Toluene	52.4	5.00	ug/L	50.000		105	70-130		
trans-1,3-Dichloropropene	50.5	5.00	ug/L	50.000		101	70-130		
Trichloroethene	46.8	5.00	ug/L	50.000		94	70-130		
Vinyl chloride	54.9	10.0	ug/L	50.000		110	50-180		
Xylenes (total)	169	5.00	ug/L	150.00		112	70-130		
Surrogate: 1,2-Dichloroethane-d4	*50.4*		*ug/L*	*50.000*		*101*	*64-140*		
Surrogate: Toluene-d8	*51.7*		*ug/L*	*50.000*		*103*	*70-130*		
Surrogate: 4-Bromofluorobenzene	*52.1*		*ug/L*	*50.000*		*104*	*81-115*		

Volatile Organic Compounds by SW846 8260B - Quality Control

Lionville Laboratory

Analyte	Result and Qualifiers		Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch L002097 - SW 5030B										
Blank (L002097-BLK1)				Prepared & Analyzed: 02/07/2010						
1,1,1-Trichloroethane	5.00	U	5.00	ug/L						
1,1,2,2-Tetrachloroethane	5.00	U	5.00	ug/L						
1,1,2-Trichloroethane	5.00	U	5.00	ug/L						
1,1-Dichloroethane	5.00	U	5.00	ug/L						
1,1-Dichloroethene	5.00	U	5.00	ug/L						
1,2-Dichloroethane	6.00	U	6.00	ug/L						
1,2-Dichloroethene (total)	5.00	U	5.00	ug/L						
1,2-Dichloropropane	5.00	U	5.00	ug/L						
2-Butanone	12.0	U	12.0	ug/L						
2-Hexanone	12.0	U	12.0	ug/L						
4-Methyl-2-pentanone	12.0	U	12.0	ug/L						
Acetone	12.0	U	12.0	ug/L						
Benzene	5.00	U	5.00	ug/L						
Bromodichloromethane	6.00	U	6.00	ug/L						
Bromoform	5.00	U	5.00	ug/L						
Bromomethane	10.0	U	10.0	ug/L						
Carbon Disulfide	5.00	U	5.00	ug/L						
Carbon Tetrachloride	5.00	U	5.00	ug/L						
Chlorobenzene	5.00	U	5.00	ug/L						
Chloroethane	10.0	U	10.0	ug/L						
Chloroform	5.00	U	5.00	ug/L						
Chloromethane	10.0	U	10.0	ug/L						
cis-1,2-Dichloroethene	5.00	U	5.00	ug/L						
cis-1,3-Dichloropropene	5.00	U	5.00	ug/L						
Dibromochloromethane	5.00	U	5.00	ug/L						
Ethylbenzene	5.00	U	5.00	ug/L						
Methylene Chloride	6.00	U	6.00	ug/L						
Styrene	5.00	U	5.00	ug/L						
Tetrachloroethene	5.00	U	5.00	ug/L						
trans-1,2-Dichloroethene	5.00	U	5.00	ug/L						
Toluene	5.00	U	5.00	ug/L						
trans-1,3-Dichloropropene	5.00	U	5.00	ug/L						
Trichloroethene	5.00	U	5.00	ug/L						
Vinyl chloride	10.0	U	10.0	ug/L						
Xylenes, total	5.00	U	5.00	ug/L						
Surrogate: 1,2-Dichloroethane-d4	47.5			ug/L	50.000		95	65-137		

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WC-Hanford, Inc. 2620 Fermi Avenue Richland WA, 99354	Project: RC-115 Project Number: K1917 Project Manager: Joan Kessner	Reported: 02/15/2010 10:30

Volatile Organic Compounds by SW846 8260B - Quality Control

Lionville Laboratory

Analyte	Result and Qualifiers	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch L002097 - SW 5030B									
Blank (L002097-BLK1)			Prepared & Analyzed: 02/07/2010						
Surrogate: Toluene-d8	*46.2*		*ug/L*	*50.000*		*92*	*65-110*		
Surrogate: 4-Bromofluorobenzene	*46.7*		*ug/L*	*50.000*		*93*	*66-122*		
Blank (L002097-BLK2)			Prepared & Analyzed: 02/07/2010						
1,1,2,2-Tetrachloroethane	5.00 U	5.00	ug/L						
1,2-Dichloroethane	6.00 U	6.00	ug/L						
1,2-Dichloropropane	5.00 U	5.00	ug/L						
2-Butanone	12.0 U	12.0	ug/L						
2-Hexanone	12.0 U	12.0	ug/L						
4-Methyl-2-pentanone	12.0 U	12.0	ug/L						
Acetone	12.0 U	12.0	ug/L						
Benzene	5.00 U	5.00	ug/L						
Bromodichloromethane	6.00 U	6.00	ug/L						
Bromoform	5.00 U	5.00	ug/L						
Bromomethane	10.0 U	10.0	ug/L						
Carbon Disulfide	5.00 U	5.00	ug/L						
Carbon Tetrachloride	5.00 U	5.00	ug/L						
Chlorobenzene	5.00 U	5.00	ug/L						
Chloroethane	10.0 U	10.0	ug/L						
Chloroform	5.00 U	5.00	ug/L						
Chloromethane	10.0 U	10.0	ug/L						
cis-1,2-Dichloroethene	5.00 U	5.00	ug/L						
Dibromochloromethane	5.00 U	5.00	ug/L						
Ethylbenzene	5.00 U	5.00	ug/L						
Methylene Chloride	6.00 U	6.00	ug/L						
Styrene	5.00 U	5.00	ug/L						
Tetrachloroethene	5.00 U	5.00	ug/L						
trans-1,2-Dichloroethene	5.00 U	5.00	ug/L						
Toluene	5.00 U	5.00	ug/L						
Trichloroethene	5.00 U	5.00	ug/L						
Vinyl chloride	10.0 U	10.0	ug/L						
Xylenes, total	5.00 U	5.00	ug/L						
1,1,1,2-Tetrachloroethane	5.00 U	5.00	ug/L						
1,2,3-Trichloropropane	5.00 U	5.00	ug/L						
1,2,4-Trichlorobenzene	5.00 U	5.00	ug/L						
1,2,4-Trimethylbenzene	5.00 U	5.00	ug/L						
1,2-Xylene	5.00 U	5.00	ug/L						

Volatile Organic Compounds by SW846 8260B - Quality Control

Lionville Laboratory

Analyte	Result and Qualifiers	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch L002097 - SW 5030B									
Blank (L002097-BLK2)				Prepared & Analyzed: 02/07/2010					
1,3- and 1,4-Xylenes	5.00 U	5.00	ug/L						
1,3,5-Trimethylbenzene	5.00 U	5.00	ug/L						
2-Chlorotoluene	10.0 U	10.0	ug/L						
4-Isopropyltoluene	5.00 U	5.00	ug/L						
Acetonitrile	10.0 U	10.0	ug/L						
Acrolein	20.0 U	20.0	ug/L						
Acrylonitrile	20.0 U	20.0	ug/L						
Dichlorodifluoromethane	10.0 U	10.0	ug/L						
Hexane	5.00 U	5.00	ug/L						
Isopropylbenzene	5.00 U	5.00	ug/L						
Methyl Methacrylate	5.00 U	5.00	ug/L						
Methylcyclohexane	10.0 U	10.0	ug/L						
n-Propylbenzene	5.00 U	5.00	ug/L						
n-Butylbenzene	10.0 U	10.0	ug/L						
sec-Butylbenzene	10.0 U	10.0	ug/L						
Trichlorofluoromethane	6.00 U	6.00	ug/L						
Surrogate: 1,2-Dichloroethane-d4	*47.5*		*ug/L*	*50.000*		*95*	*63-137*		
Surrogate: Toluene-d8	*46.2*		*ug/L*	*50.000*		*92*	*69-140*		
Surrogate: 4-Bromofluorobenzene	*46.7*		*ug/L*	*50.000*		*93*	*66-122*		
LCS (L002097-BS1)				Prepared & Analyzed: 02/07/2010					
1,1,1-Trichloroethane	43.3	5.00	ug/L	50.000		87	60-140		
1,1,2,2-Tetrachloroethane	39.3	5.00	ug/L	50.000		79	70-110		
1,1,2-Trichloroethane	38.5	5.00	ug/L	50.000		77	70-110		
1,1-Dichloroethane	44.9	5.00	ug/L	50.000		90	60-140		
1,1-Dichloroethene	43.5	5.00	ug/L	50.000		87	60-130		
1,2-Dichloroethane	41.1	6.00	ug/L	50.000		82	60-140		
1,2-Dichloroethene (total)	86.5	5.00	ug/L	100.00		86	60-140		
1,2-Dichloropropane	44.3	5.00	ug/L	50.000		89	70-130		
2-Butanone	45.7	12.0	ug/L	50.000		91	20-200		
2-Hexanone	45.8	12.0	ug/L	50.000		92	20-200		
4-Methyl-2-pentanone	37.2	12.0	ug/L	50.000		74	50-150		
Acetone	65.7	12.0	ug/L	50.000		131	20-200		
Benzene	43.6	5.00	ug/L	50.000		87	70-130		
Bromodichloromethane	38.1	6.00	ug/L	50.000		76	60-140		
Bromoform	39.1	5.00	ug/L	50.000		78	60-140		
Bromomethane	47.5	10.0	ug/L	50.000		95	50-180		

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Volatile Organic Compounds by SW846 8260B - Quality Control

Lionville Laboratory

Analyte	Result and Qualifiers	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch L002097 - SW 5030B									
LCS (L002097-BS1)			Prepared & Analyzed: 02/07/2010						
Carbon Disulfide	45.2	5.00	ug/L	50.000		90	60-140		
Carbon Tetrachloride	42.4	5.00	ug/L	50.000		85	60-140		
Chlorobenzene	48.5	5.00	ug/L	50.000		97	70-130		
Chloroethane	46.0	10.0	ug/L	50.000		92	50-180		
Chloroform	41.5	5.00	ug/L	50.000		83	60-140		
Chloromethane	46.1	10.0	ug/L	50.000		92	50-180		
cis-1,2-Dichloroethene	42.8	5.00	ug/L	50.000		86	60-140		
cis-1,3-Dichloropropene	40.9	5.00	ug/L	50.000		82	70-130		
Dibromochloromethane	38.4	5.00	ug/L	50.000		77	70-130		
Ethylbenzene	47.6	5.00	ug/L	50.000		95	70-130		
Methylene Chloride	43.1	5.00	ug/L	50.000		86	50-180		
Styrene	48.1	5.00	ug/L	50.000		96	70-130		
Tetrachloroethene	50.1	5.00	ug/L	50.000		100	60-140		
trans-1,2-Dichloroethene	43.6	5.00	ug/L	50.000		87	60-140		
Toluene	44.6	5.00	ug/L	50.000		89	70-130		
trans-1,3-Dichloropropene	40.3	5.00	ug/L	50.000		81	70-130		
Trichloroethene	45.1	5.00	ug/L	50.000		90	70-130		
Vinyl chloride	43.2	10.0	ug/L	50.000		86	50-180		
Xylenes, total	147	5.00	ug/L	150.00		98	70-130		
Surrogate: 1,2-Dichloroethane-d4	*42.7*		*ug/L*	*50.000*		*85*	*63-137*		
Surrogate: Toluene-d8	*46.6*		*ug/L*	*50.000*		*93*	*68-110*		
Surrogate: 4-Bromofluorobenzene	*49.9*		*ug/L*	*50.000*		*100*	*66-122*		
LCS (L002097-BS2)			Prepared & Analyzed: 02/07/2010						
1,1,2,2-Tetrachloroethane	39.5	5.00	ug/L	50.000		79	70-130		
1,2-Dichloroethane	41.1	5.00	ug/L	50.000		82	60-140		
1,2-Dichloropropane	44.3	5.00	ug/L	50.000		89	70-130		
2-Butanone	45.7	12.0	ug/L	50.000		91	20-200		
2-Hexanone	45.8	12.0	ug/L	50.000		92	20-200		
4-Methyl-2-pentanone	37.2	12.0	ug/L	50.000		74	50-150		
Acetone	65.7	12.0	ug/L	50.000		131	20-200		
Benzene	43.6	5.00	ug/L	50.000		87	70-130		
Bromodichloromethane	38.1	5.00	ug/L	50.000		76	60-130		
Bromoform	39.1	5.00	ug/L	50.000		78	60-140		
Bromomethane	47.5	10.0	ug/L	50.000		95	50-180		
Carbon Disulfide	45.2	5.00	ug/L	50.000		90	60-140		
Carbon Tetrachloride	42.4	5.00	ug/L	50.000		85	60-140		

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WC-Hanford, Inc 2620 Fermi Avenue Richland WA, 99354	Project: RC-115 Project Number: K1917 Project Manager: Joan Kessner	Reported: 02/15/2010 10:40

Volatile Organic Compounds by SW846 8260B - Quality Control
Lionville Laboratory

Analyte	Result and Qualifiers	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch 1,002097 - SW 5030B									
LCS (1,002097-BS7)			Prepared & Analyzed: 02/07/2010						
Chlorobenzene	48.5	5.00	ug/L	50.000		97	70-130		
Chloroethane	46.0	10.0	ug/L	50.000		92	50-180		
Chloroform	41.3	5.00	ug/L	50.000		83	60-140		
Chloromethane	46.1	10.0	ug/L	50.000		92	50-180		
cis-1,2-Dichloroethene	42.8	5.00	ug/L	50.000		86	60-140		
Dibromochloromethane	38.4	5.00	ug/L	50.000		77	70-130		
Ethylbenzene	47.6	5.00	ug/L	50.000		95	70-130		
Methylene Chloride	43.1	6.00	ug/L	50.000		86	50-180		
Styrene	48.1	5.00	ug/L	50.000		96	70-130		
Tetrachloroethene	50.1	5.00	ug/L	50.000		100	60-140		
trans-1,2-Dichloroethene	43.6	5.00	ug/L	50.000		87	60-140		
Toluene	44.6	5.00	ug/L	50.000		89	70-130		
Trichloroethene	45.1	5.00	ug/L	50.000		90	70-130		
Vinyl chloride	43.7	10.0	ug/L	50.000		86	50-180		
Xylenes, total	147	5.00	ug/L	150.00		98	70-130		
1,2-Xylene	48.5	5.00	ug/L	50.000		97	70-130		
1,3- and 1,4-Xylenes	98.1	5.00	ug/L	100.00		98	70-130		
Dichlorodifluoromethane	34.6	10.0	ug/L	50.000		69	60-140		
Isopropylbenzene	42.1	5.00	ug/L	50.000		84	75-125		
Methylcyclohexane	43.0	10.0	ug/L	50.000		86	0-200		
Trichlorofluoromethane	38.9	6.00	ug/L	50.000		78	60-145		
Surrogate: 1,2-Dichloroethane-d4	*42.7*		ug/L	*50.000*		*85*	*63-137*		
Surrogate: Toluene-d8	*46.6*		ug/L	*50.000*		*93*	*68-140*		
Surrogate: 4-Bromofluorobenzene	*49.9*		ug/L	*50.000*		*100*	*66-122*		
Matrix Spike (1,002097-MS2)		Source: 1001099-09	Prepared & Analyzed: 02/07/2010						
1,1,1-Trichloroethane	43.1	5.00	ug/L	50.000	5.00 U	86	60-140		
1,1,2,2-Tetrachloroethane	40.1	5.00	ug/L	50.000	5.00 U	80	70-130		
1,1,2-Trichloroethane	38.0	5.00	ug/L	50.000	5.00 U	76	70-130		
1,1-Dichloroethane	44.4	5.00	ug/L	50.000	5.00 U	89	60-140		
1,1-Dichloroethene	41.9	5.00	ug/L	50.000	5.00 U	84	60-130		
1,2-Dichloroethane	42.9	5.00	ug/L	50.000	5.00 U	86	60-140		
1,2-Dichloroethene (total)	82.1	5.00	ug/L	100.00	5.00 U	82	60-140		
1,2-Dichloropropane	42.5	5.00	ug/L	50.000	5.00 U	85	70-130		
2-Butanone	35.7	12.0	ug/L	50.000	10.0 U	71	20-200		
2-Hexanone	34.0	12.0	ug/L	50.000	10.0 U	68	20-200		
4-Methyl-2-pentanone	33.0	12.0	ug/L	50.000	10.0 U	66	50-150		

Volatile Organic Compounds by SW846 8260B - Quality Control

Lionville Laboratory

Analyte	Result and Qualifiers	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch L002097 - SW 5030B									
Matrix Spike (L002097-MS1)		Source: L001099-09		Prepared & Analyzed: 02/07/2010					
Acetone	46.5	12.0	ug/L	50.000	16.5	60	20-200		
Benzene	41.0	5.00	ug/L	50.000	5.00 U	82	70-130		
Bromodichloromethane	39.8	5.00	ug/L	50.000	5.00 U	80	60-140		
Bromoform	41.5	5.00	ug/L	50.000	5.00 U	83	60-140		
Bromomethane	46.7	10.0	ug/L	50.000	10.0 U	93	50-180		
Carbon Disulfide	42.4	5.00	ug/L	50.000	5.00 U	85	60-140		
Carbon Tetrachloride	41.2	5.00	ug/L	50.000	5.00 U	82	60-140		
Chlorobenzene	49.5	5.00	ug/L	50.000	5.00 U	99	70-130		
Chloroethane	42.8	10.0	ug/L	50.000	10.0 U	86	50-180		
Chloroform	41.5	5.00	ug/L	50.000	5.00 U	83	60-140		
Chloromethane	43.8	10.0	ug/L	50.000	10.0 U	88	50-180		
cis-1,2-Dichloroethene	38.7	5.00	ug/L	50.000	5.00 U	77	60-140		
cis-1,3-Dichloropropene	39.8	5.00	ug/L	50.000	5.00 U	80	70-130		
Dibromochloromethane	40.1	5.00	ug/L	50.000	5.00 U	80	70-130		
Ethylbenzene	49.0	5.00	ug/L	50.000	5.00 U	98	70-130		
Methylene Chloride	41.7	6.00	ug/L	50.000	6.00 U	83	50-180		
Styrene	49.8	5.00	ug/L	50.000	5.00 U	100	70-130		
Tetrachloroethene	47.0	5.00	ug/L	50.000	5.00 U	94	60-140		
trans-1,2-Dichloroethene	43.5	5.00	ug/L	50.000	5.00 U	87	60-140		
Toluene	44.9	5.00	ug/L	50.000	5.00 U	90	70-130		
trans-1,3-Dichloropropene	40.2	5.00	ug/L	50.000	5.00 U	80	70-130		
Trichloroethene	41.2	5.00	ug/L	50.000	5.00 U	82	70-130		
Vinyl chloride	42.1	10.0	ug/L	50.000	10.0 U	84	50-180		
Xylenes, total	147	5.00	ug/L	150.00	5.00 U	98	70-130		
Surrogate: 1,2-Dichloroethane-d4	*48.4*		*ug/L*	*50.000*		*97*	*61-131*		
Surrogate: Toluene-d8	*46.5*		*ug/L*	*50.000*		*93*	*68-140*		
Surrogate: 4-Bromofluorobenzene	*48.6*		*ug/L*	*50.000*		*97*	*66-124*		

WC-Hanford, Inc. 2620 Fermi Avenue Richland WA, 99354	Project: RC-115 Project Number: K1917 Project Manager: Joan Kessner	Reported: 02/15/2010 10:40

Volatile Organic Compounds by SW846 8260B - Quality Control
Lionville Laboratory

Analyte	Result and Qualifiers	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch L002097 - SW 5030B									
Matrix Spike Dup (L002097-MSD2)		Source: 1001099-09		Prepared & Analyzed: 02/07/2010					
1,1,1-Trichloroethane	44.4	5.00	ug/L	50.000	5.00 U	89	60-140	1	20
1,1,2,2-Tetrachloroethane	42.7	5.00	ug/L	50.000	5.00 U	85	70-130	6	20
1,1,2-Trichloroethane	39.0	5.00	ug/L	50.000	5.00 U	78	70-130	3	20
1,1-Dichloroethane	46.0	5.00	ug/L	50.000	5.00 U	92	60-140	3	20
1,1-Dichloroethene	42.8	5.00	ug/L	50.000	5.00 U	86	60-130	2	20
1,2-Dichloroethane	44.7	5.00	ug/L	50.000	5.00 U	89	60-140	4	20
1,2-Dichloroethene (total)	86.7	5.00	ug/L	100.00	5.00 U	87	60-140	5	20
1,2-Dichloropropane	44.6	5.00	ug/L	50.000	5.00 U	89	70-130	5	20
2-Butanone	36.0	12.0	ug/L	50.000	10.0 U	72	20-200	0.8	20
2-Hexanone	34.3	12.0	ug/L	50.000	10.0 U	69	20-200	0.9	20
4-Methyl-2-pentanone	35.8	12.0	ug/L	50.000	10.0 U	72	50-150	8	20
Acetone	48.3	12.0	ug/L	50.000	16.5	64	20-200	6	20
Benzene	43.7	5.00	ug/L	50.000	5.00 U	87	70-130	6	20
Bromodichloromethane	40.8	5.00	ug/L	50.000	5.00 U	82	60-140	1	20
Bromoform	44.0	5.00	ug/L	50.000	5.00 U	88	60-140	6	20
Bromomethane	47.5	10.0	ug/L	50.000	10.0 U	95	50-180	7	20
Carbon Disulfide	44.9	5.00	ug/L	50.000	5.00 U	90	60-140	6	20
Carbon Tetrachloride	42.5	5.00	ug/L	50.000	5.00 U	85	60-140	3	20
Chlorobenzene	49.6	5.00	ug/L	50.000	5.00 U	99	70-130	0.3	20
Chloroethane	46.3	10.0	ug/L	50.000	10.0 U	93	50-180	4	20
Chloroform	42.9	5.00	ug/L	50.000	5.00 U	86	60-140	1	20
Chloromethane	44.7	10.0	ug/L	50.000	10.0 U	89	50-180	2	20
cis-1,2-Dichloroethene	41.8	5.00	ug/L	50.000	5.00 U	84	60-140	8	20
cis-1,3-Dichloropropene	40.0	5.00	ug/L	50.000	5.00 U	80	70-130	0.7	20
Dibromochloromethane	42.3	5.00	ug/L	50.000	5.00 U	85	70-130	5	20
Ethylbenzene	49.1	5.00	ug/L	50.000	5.00 U	98	70-130	0.1	20
Methylene Chloride	43.3	6.00	ug/L	50.000	6.00 U	87	50-180	4	20
Styrene	49.0	5.00	ug/L	50.000	5.00 U	98	70-130	2	20
Tetrachloroethene	49.6	5.00	ug/L	50.000	5.00 U	99	60-140	5	20
trans-1,2-Dichloroethene	44.9	5.00	ug/L	50.000	5.00 U	90	60-140	3	20
Toluene	44.7	5.00	ug/L	50.000	5.00 U	89	70-130	0.6	20
trans-1,3-Dichloropropene	42.4	5.00	ug/L	50.000	5.00 U	85	70-130	5	20
Trichloroethene	44.4	5.00	ug/L	50.000	5.00 U	89	70-130	8	20
Vinyl chloride	43.8	10.0	ug/L	50.000	10.0 U	88	50-180	4	20
Xylenes, total	148	5.00	ug/L	150.00	5.00 U	99	70-130	0.9	20
Surrogate: 1,2-Dichloroethane-d4	*47.1*		*ug/L*	*50.000*		*94*	*63-151*		

Volatile Organic Compounds by SW846 8260B - Quality Control

Lionville Laboratory

Analyte	Result and Qualifiers	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch L002097 - SW 5030B									
Matrix Spike Dup (L002097-MSD2)	Source: L001099-09		Prepared & Analyzed: 02/07/2010						
Surrogate: Toluene-d8	*46.3*		*ug/L*	*50.000*		*93*	*68-140*		
Surrogate: 4-Bromofluorobenzene	*48.8*		*ug/L*	*50.000*		*98*	*66-132*		

Date: 29 March 2010
To: Washington Closure Hanford (technical representative)
From: ELR Consulting
Project: Columbia River Component of the RCBRA – Surface Water
Subject: Inorganic - Data Package No. K1917-LLI

INTRODUCTION

This memo presents the results of data validation on Data Package No. K1917 prepared by Lionville Laboratory Inc. (LLI). A list of samples validated along with the analyses reported and the method of analysis is provided in the following table.

Sample ID	Sample Date	Media	Validation	Date
J19HR4	1/22/10	Water	C	See note 1
J19HR8	1/22/10	Water	C	See note 1
J19HR6	1/23/10	Water	C	See note 1
J19HT0	1/23/10	Water	C	See note 1
J19FH2	1/24/10	Water	C	See note 1
J19FH4	1/24/10	Water	C	See note 1
J19FH3	1/24/10	Water	C	See note 1
J19FH5	1/24/10	Water	C	See note 1
J19H19	1/25/10	Water	C	See note 1
J19H20	1/25/10	Water	C	See note 1
J19FC8	1/25/10	Water	C	See note 1
J19FC9	1/25/10	Water	C	See note 1
J19F85	1/25/10	Water	C	See note 1
J19F89	1/25/10	Water	C	See note 1

1 - ICP metals (6010B) and mercury (7471A).

Data validation was conducted in accordance with the Washington Closure Hanford (WCH) validation statement of work and the Remedial Investigation Work Plan for Hanford Site Releases to the Columbia River (DOE/RL-2008-11, Rev. 0, September 2008). Appendices 1 through 6 provide the following information as indicated below:

Appendix 1. Glossary of Data Reporting Qualifiers
Appendix 2. Summary of Data Qualification
Appendix 3. Qualified Data Summary and Annotated Laboratory Reports
Appendix 4. Laboratory Narrative and Chain-of-Custody Documentation
Appendix 5. Data Validation Supporting Documentation
Appendix 6. Additional Documentation Requested by Client

DATA QUALITY PARAMETERS

- **Holding Times**

Analytical holding times for metals are assessed to ascertain whether the holding time requirements were met by the laboratory. The holding time requirements are as follows: Samples must be analyzed within 6 months for ICP metals and

28 days for mercury.

All holding times were acceptable.

Preparation (Method) Blanks

Preparation Blanks

At least one preparation blank, consisting of deionized distilled water processed through each sample preparation and analysis procedure, must be prepared and analyzed with every sample delivery group. In the case of positive blank results, samples with digestate concentrations less than five times the preparation blank value have had their associated values qualified as non-detected and flagged "U" Samples with concentrations of greater than five times the highest blank concentration do not require qualification.

In the case of negative blank results, if the absolute value exceeds the contract required detection limit (CRDL), all nondetects are rejected and flagged "UR" and all detects that are less than ten times the absolute value of the associated preparation blank result are qualified as estimates and flagged "J". If the absolute value of the negative preparation blank is greater than the instrument detection limit (IDL) and less than or equal to the CRDL, all nondetects are qualified as estimates and flagged "UJ" and all detects less than ten times the absolute value of the blank are qualified as estimates and flagged "J". If the sample results are greater than ten times the absolute value of the preparation blank, no qualification is necessary.

Due to method blank contamination, the iron results in samples J19HR4, J19HR8, J19HR6, J19FH3, J19FC8 and J19F85, were qualified as undetected and flagged "UJ".

Due to method blank contamination, all aluminum and manganese results were qualified as undetected and flagged "UJ".

All other preparation blank results were acceptable.

Field (Equipment) Blank

No field blanks were submitted for analysis.

Accuracy

Matrix Spike and Laboratory Control Sample

Matrix spike (MS) and laboratory control sample (LCS) analyses are used to assess the analytical accuracy of the reported data. The matrix spike is used to assess the effect of the matrix on the ability to accurately quantify sample concentrations. Recoveries must fall within the range of 70% to 130%. Samples with a recovery of less than 30% and a sample result below the IDL are rejected and flagged "UR". Samples with a recovery of 30% to 69% and a sample result less than the IDL are qualified "UJ". Samples with a recovery of greater than 130% or less than 70% and a sample result greater than the IDL are qualified as estimates and flagged "J". Finally, for samples with a recovery greater than 130% and a sample result less than the IDL, no qualification is required.

All accuracy results were acceptable.

- **Precision**

Laboratory Duplicate Samples

Analytical precision is expressed by the relative percent differences (RPD) between the recoveries of matrix spike duplicate (MSD) analyses performed on a sample in the analytical batch. Precision may alternatively be assessed using unspiked duplicate analyses performed on a sample in the analytical batch. If both sample and replicate activities (concentrations) are greater than five times the CRDL and the RPD is less than 30%, no qualification is required. If either activity (concentration) is less than five times the CRDL, the RPD control limit is less than or equal to two times the CRDL. If the RPD is outside the applicable control limit, associated results are qualified as estimated detects or estimated non-detects

All laboratory duplicate results were acceptable.

Field Duplicate

No field duplicates were submitted for analysis.

- **Analytical Detection Levels**

Reported analytical detection levels are compared against the 100 and 300 Area RQLs to ensure that laboratory detection levels meet the required criteria. All results met the RQL.

- **Completeness**

Data package No. K1917 was submitted for validation and verified for completeness. Completeness is based on the percentage of data determined to be valid (i.e., not rejected). The completion percentage was 100%.

MAJOR DEFICIENCIES

None found.

MINOR DEFICIENCIES

The following minor deficiencies were noted:

- Due to method blank contamination, the iron results in samples J19HR4, J19HR8, J19HR6, J19FH3, J19FC8 and J19F85 were qualified as undetected and flagged "UJ".
- Due to method blank contamination, all aluminum and manganese results were qualified as undetected and flagged "UJ".

Data flagged "J" indicates that the associated concentration is an estimate, but under the WCH statement of work, the data may be usable for decision-making purposes. All other validated results are considered accurate within the standard error associated with the methods.

REFERENCES

Washington Closure Hanford Contract #S00W307A00 (March 2008), *Data Validation Services*, March 2008.

DOE/RL-2008-11, Rev.0, *Remedial Investigation Work Plan for Hanford Site Releases to the Columbia River*, September 2008.

Appendix 1

Glossary of Data Reporting Qualifiers

Qualifiers which may be applied by data validators in compliance with WCH validation SOW are as follows:

U - Indicates the compound or analyte was analyzed for and not detected in the sample. The value reported is the sample quantitation limit corrected for sample dilution and moisture content by the laboratory.

UJ - Indicates the compound or analyte was analyzed for and not detected in the sample. Due to a minor QC deficiency identified during the data validation, the associated quantitation limit is an estimate.

J - Indicates the compound or analyte was analyzed for and detected. Due to a minor QC deficiency identified during the data validation, the associated concentration is an estimate, but the data are usable for decision-making purposes.

BJ - Applied to inorganic analyses only. Indicates the analyte concentration was greater than the IDL but less than the CRDL and is considered an estimated value.

R - Indicates the compound or analyte was analyzed for, detected, and due to an identified major QC deficiency, the data are unusable.

UR - Indicates the compound or analyte was analyzed for and not detected in the sample. Additionally, the data is unusable due to an identified major QC deficiency.

NJ - Indicates presumptive evidence of a compound at an estimated value. The data may not be valid for some specific applications (i.e., usable for decision-making purposes).

N - Indicates presumptive evidence of a compound The data may not be valid for some specific applications (i.e., usable for decision-making purposes).

Appendix 2

Summary of Data Qualification

METALS DATA QUALIFICATION SUMMARY*

SDG: K1917	**REVIEWER: ELR**	**Project: RCBRA**	**PAGE_1_OF_1**
COMPOUND	QUALIFIER	SAMPLES AFFECTED	REASON
Iron	UJ	J19HR4, J19HR8, J19HR6, J19FH3, J19FC8, J19F85	Method blank contamination
Manganese Aluminum	UJ	All	Method blank contamination

* - The Qualified Data Summary Table includes laboratory applied "U" qualifiers not specifically identified here. The laboratory applied "U" qualifiers are included to minimize misinterpretation of results contained in the table.

Appendix 3

Qualified Data Summary and Annotated Laboratory Reports

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

WCH Hanford, Inc	Project: RC-115	
2620 Fermi Avenue	Project Number: K1917	Reported:
Richland WA, 99354	Project Manager: Joan Kessner	02/09/2010 09:15

J19HR4
1001099-01 (Water)

jk 3/22/10

Analyte	Result and Qualifier	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
	Lionville Laboratory							
Metals by SW846 6000/7000 series								
Aluminum	28.0 B UJ	50.0	ug/L	1	L002012	02/01/2010	02/02/2010	6010B
Antimony	6.00 U	6.00	ug/L	1	L002012	02/01/2010	02/02/2010	6010B
Arsenic	10.0 U	10.0	ug/L	1	L002012	02/01/2010	02/02/2010	6010B
Barium	29.6	5.00	ug/L	1	L002012	02/01/2010	02/02/2010	6010B
Beryllium	2.00 U	2.00	ug/L	1	L002012	02/01/2010	02/02/2010	6010B
Bismuth	100 U	100	ug/L	1	L002012	02/01/2010	02/02/2010	6010B
Boron	12.2 B	20.0	ug/L	1	L002012	02/01/2010	02/02/2010	6010B
Cadmium	2.00 U	2.00	ug/L	1	L002012	02/01/2010	02/02/2010	6010B
Calcium	38600	1000	ug/L	1	L002012	02/01/2010	02/02/2010	6010B
Chromium	2.00 U	2.00	ug/L	1	L002012	02/01/2010	02/02/2010	6010B
Cobalt	20.0 U	20.0	ug/L	1	L002012	02/01/2010	02/02/2010	6010B
Copper	10.0 U	10.0	ug/L	1	L002012	02/01/2010	02/02/2010	6010B
Iron	15.7 B UJ	50.0	ug/L	1	L002012	02/01/2010	02/02/2010	6010B
Lead	5.00 U	5.00	ug/L	1	L002012	02/01/2010	02/02/2010	6010B
Lithium	25.0 U	25.0	ug/L	1	L002012	02/01/2010	02/02/2010	6010B
Magnesium	4690	750	ug/L	1	L002012	02/01/2010	02/02/2010	6010B
Manganese	2.13 B UJ	5.00	ug/L	1	L002012	02/01/2010	02/02/2010	6010B
Molybdenum	2.11 B	20.0	ug/L	1	L002012	02/01/2010	02/02/2010	6010B
Nickel	0.710 B	10.0	ug/L	1	L002012	02/01/2010	02/02/2010	6010B
Phosphorus	50.0 U	50.0	ug/L	1	L002012	02/01/2010	02/02/2010	6010B
Potassium	759 B	1000	ug/L	1	L002012	02/01/2010	02/02/2010	6010B
Selenium	10.0 U	10.0	ug/L	1	L002012	02/01/2010	02/02/2010	6010B
Silicon	2140	25.0	ug/L	1	L002012	02/01/2010	02/02/2010	6010B
Silver	2.00 U	2.00	ug/L	1	L002012	02/01/2010	02/02/2010	6010B
Sodium	2370	500	ug/L	1	L002012	02/01/2010	02/02/2010	6010B
Strontium	103	10.0	ug/L	1	L002012	02/01/2010	02/02/2010	6010B
Thallium	1.11 B	5.00	ug/L	1	L002012	02/01/2010	02/02/2010	6010B
Tin	100 U	100	ug/L	1	L002012	02/01/2010	02/02/2010	6010B
Titanium	1.30 B	5.00	ug/L	1	L002012	02/01/2010	02/02/2010	6010B
Uranium	200 U	200	ug/L	1	L002012	02/01/2010	02/02/2010	6010B
Vanadium	1.12 B	25.0	ug/L	1	L002012	02/01/2010	02/02/2010	6010B
Zinc	10.0 U	10.0	ug/L	1	L002012	02/01/2010	02/02/2010	6010B
Mercury	0.200 U	0.200	ug/L	1	L002059	02/04/2010	02/05/2010	7470A

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

WC Hanford, Inc. 2620 Fermi Avenue Richland WA, 99354	Project: RC 115 Project Number: K1917 Project Manager: Joan Kessner	Reported: 02/09/2010 09:15

J19HR8
1001899-02 (Water)

✓ 3/27/10

Analyte	Result and Qualifier	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method

Lionville Laboratory

Metals by SW846 6000/7000 series

Analyte	Result and Qualifier	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Aluminum	45.3 B UJ	50.0	ug/L	1	L002012	02/01/2010	02/02/2010	6010B
Antimony	6.00 U	6.00	ug/L	1	L002012	02/01/2010	02/02/2010	6010B
Arsenic	10.0 U	10.0	ug/L	1	L002012	02/01/2010	02/02/2010	6010B
Barium	30.1	5.00	ug/L	1	L002012	02/01/2010	02/02/2010	6010B
Beryllium	2.00 U	2.00	ug/L	1	L002012	02/01/2010	02/02/2010	6010B
Bismuth	100 U	100	ug/L	1	L002012	02/01/2010	02/02/2010	6010B
Boron	10.6 B	20.0	ug/L	1	L002012	02/01/2010	02/02/2010	6010B
Cadmium	2.00 U	2.00	ug/L	1	L002012	02/01/2010	02/02/2010	6010B
Calcium	19200	1000	ug/L	1	L002012	02/01/2010	02/02/2010	6010B
Chromium	2.00 U	2.00	ug/L	1	L002012	02/01/2010	02/02/2010	6010B
Cobalt	20.0 U	20.0	ug/L	1	L002012	02/01/2010	02/02/2010	6010B
Copper	10.0 U	10.0	ug/L	1	L002012	02/01/2010	02/02/2010	6010B
Iron	11.0 B UJ	50.0	ug/L	1	L002012	02/01/2010	02/02/2010	6010B
Lead	5.00 U	5.00	ug/L	1	L002012	02/01/2010	02/02/2010	6010B
Lithium	25.0 U	25.0	ug/L	1	L002012	02/01/2010	02/02/2010	6010B
Magnesium	4900	750	ug/L	1	L002012	02/01/2010	02/02/2010	6010B
Manganese	1.39 B UJ	5.00	ug/L	1	L002012	02/01/2010	02/02/2010	6010B
Molybdenum	0.867 B	20.0	ug/L	1	L002012	02/01/2010	02/02/2010	6010B
Nickel	40.0 U	40.0	ug/L	1	L002012	02/01/2010	02/02/2010	6010B
Phosphorus	50.0 U	50.0	ug/L	1	L002012	02/01/2010	02/02/2010	6010B
Potassium	762 B	4000	ug/L	1	L002012	02/01/2010	02/02/2010	6010B
Selenium	10.0 U	10.0	ug/L	1	L002012	02/01/2010	02/02/2010	6010B
Silicon	2140	25.0	ug/L	1	L002012	02/01/2010	02/02/2010	6010B
Silver	2.00 U	2.00	ug/L	1	L002012	02/01/2010	02/02/2010	6010B
Sodium	1370	500	ug/L	1	L002012	02/01/2010	02/02/2010	6010B
Strontium	106	10.0	ug/L	1	L002012	02/01/2010	02/02/2010	6010B
Thallium	5.00 U	5.00	ug/L	1	L002012	02/01/2010	02/02/2010	6010B
Tin	100 U	100	ug/L	1	L002012	02/01/2010	02/02/2010	6010B
Titanium	0.732 B	5.00	ug/L	1	L002012	02/01/2010	02/02/2010	6010B
Uranium	200 U	200	ug/L	1	L002012	02/01/2010	02/02/2010	6010B
Vanadium	2.03 B	25.0	ug/L	1	L002012	02/01/2010	02/02/2010	6010B
Zinc	10.0 U	10.0	ug/L	1	L002012	02/01/2010	02/02/2010	6010B
Soluble Mercury	0.0810 B	0.200	ug/L	1	L002059	02/04/2010	02/05/2010	7470A

WC Hanford, Inc.
2620 Fermi Avenue
Richland WA, 99354

Project: RC 115
Project Number: K1917
Project Manager: Joan Kessner

Reported:
02/09/2010 09:15

J19HR6
1001099-03 (Water)

3/27/10

Analyte	Result and Qualifier		Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
			Lionville Laboratory						
Metals by SW846 6000/7000 series									
Aluminum	13.8 B	UJ	50.0	ug/L	1	L002012	02/01/2010	02/02/2010	6010B
Antimony	6.00 U		6.00	ug/L	1	L002012	02/01/2010	02/02/2010	6010B
Arsenic	10.0 U		10.0	ug/L	1	L002012	02/01/2010	02/02/2010	6010B
Barium	27.5		5.00	ug/L	1	L002012	02/01/2010	02/02/2010	6010B
Beryllium	2.00 U		2.00	ug/L	1	L002012	02/01/2010	02/02/2010	6010B
Bismuth	100 U		100	ug/L	1	L002012	02/01/2010	02/02/2010	6010B
Boron	9.45 B		20.0	ug/L	1	L002012	02/01/2010	02/02/2010	6010B
Cadmium	2.00 U		2.00	ug/L	1	L002012	02/01/2010	02/02/2010	6010B
Calcium	17800		1000	ug/L	1	L002012	02/01/2010	02/02/2010	6010B
Chromium	0.652 B		2.00	ug/L	1	L002012	02/01/2010	02/02/2010	6010B
Cobalt	20.0 U		20.0	ug/L	1	L002012	02/01/2010	02/02/2010	6010B
Copper	10.0 U		10.0	ug/L	1	L002012	02/01/2010	02/02/2010	6010B
Iron	11.2 B	UJ	50.0	ug/L	1	L002012	02/01/2010	02/02/2010	6010B
Lead	5.00 U		5.00	ug/L	1	L002012	02/01/2010	02/02/2010	6010B
Lithium	25.0 U		25.0	ug/L	1	L002012	02/01/2010	02/02/2010	6010B
Magnesium	4460		750	ug/L	1	L002012	02/01/2010	02/02/2010	6010B
Manganese	1.90 B	UJ	5.00	ug/L	1	L002012	02/01/2010	02/02/2010	6010B
Molybdenum	1.19 B		20.0	ug/L	1	L002012	02/01/2010	02/02/2010	6010B
Nickel	40.0 U		40.0	ug/L	1	L002012	02/01/2010	02/02/2010	6010B
Phosphorus	50.0 U		50.0	ug/L	1	L002012	02/01/2010	02/02/2010	6010B
Potassium	716 B		4000	ug/L	1	L002012	02/01/2010	02/02/2010	6010B
Selenium	10.0 U		10.0	ug/L	1	L002012	02/01/2010	02/02/2010	6010B
Silicon	2040		25.0	ug/L	1	L002012	02/01/2010	02/02/2010	6010B
Silver	2.00 U		2.00	ug/L	1	L002012	02/01/2010	02/02/2010	6010B
Sodium	2160		500	ug/L	1	L002012	02/01/2010	02/02/2010	6010B
Strontium	97.0		10.0	ug/L	1	L002012	02/01/2010	02/02/2010	6010B
Thallium	5.00 U		5.00	ug/L	1	L002012	02/01/2010	02/02/2010	6010B
Tin	100 U		100	ug/L	1	L002012	02/01/2010	02/02/2010	6010B
Titanium	1.02 B		5.00	ug/L	1	L002012	02/01/2010	02/02/2010	6010B
Uranium	200 U		200	ug/L	1	L002012	02/01/2010	02/02/2010	6010B
Vanadium	1.30 B		25.0	ug/L	1	L002012	02/01/2010	02/02/2010	6010B
Zinc	10.0 U		10.0	ug/L	1	L002012	02/01/2010	02/02/2010	6010B
Mercury	0.200 U		0.200	ug/L	1	L002059	02/04/2010	02/05/2010	7470A

WC-Hanford, Inc 2620 Fermi Avenue Richland WA, 99354	Project: RC-115 Project Number: K1917 Project Manager: Joan Kessner	Reported: 02/09/2010 09:15

J19HT0
1001899-04 (Water)

3/27/10

Analyte	Result and Qualifier	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
		Lionville Laboratory						
Metals by SW846 6000/7000 series								
Aluminum	11.0 B UJ	40.0	ug/L	1	L002012	02/01/2010	02/02/2010	6010B
Antimony	6.00 U	6.00	ug/L	1	L002012	02/01/2010	02/02/2010	6010B
Arsenic	10.0 U	10.0	ug/L	1	L002012	02/01/2010	02/02/2010	6010B
Barium	29.4	5.00	ug/L	1	L002012	02/01/2010	02/02/2010	6010B
Beryllium	2.00 U	2.00	ug/L	1	L002012	02/01/2010	02/02/2010	6010B
Bismuth	100 U	100	ug/L	1	L002012	02/01/2010	02/02/2010	6010B
Boron	10.9 B	20.0	ug/L	1	L002012	02/01/2010	02/02/2010	6010B
Cadmium	2.00 U	2.00	ug/L	1	L002012	02/01/2010	02/02/2010	6010B
Calcium	19200	1000	ug/L	1	L002012	02/01/2010	02/02/2010	6010B
Chromium	3.54	2.00	ug/L	1	L002012	02/01/2010	02/02/2010	6010B
Cobalt	20.0 U	20.0	ug/L	1	L002012	02/01/2010	02/02/2010	6010B
Copper	10.0 U	10.0	ug/L	1	L002012	02/01/2010	02/02/2010	6010B
Iron	50.0 U	50.0	ug/L	1	L002012	02/01/2010	02/02/2010	6010B
Lead	5.00 U	5.00	ug/L	1	L002012	02/01/2010	02/02/2010	6010B
Lithium	25.0 U	25.0	ug/L	1	L002012	02/01/2010	02/02/2010	6010B
Magnesium	4820	750	ug/L	1	L002012	02/01/2010	02/02/2010	6010B
Manganese	1.50 B UJ	5.00	ug/L	1	L002012	02/01/2010	02/02/2010	6010B
Molybdenum	0.959 B	20.0	ug/L	1	L002012	02/01/2010	02/02/2010	6010B
Nickel	1.23 B	40.0	ug/L	1	L002012	02/01/2010	02/02/2010	6010B
Phosphorus	50.0 U	50.0	ug/L	1	L002012	02/01/2010	02/02/2010	6010B
Potassium	768 B	4000	ug/L	1	L002012	02/01/2010	02/02/2010	6010B
Selenium	10.0 U	10.0	ug/L	1	L002012	02/01/2010	02/02/2010	6010B
Silicon	4150	25.0	ug/L	1	L002012	02/01/2010	02/02/2010	6010B
Silver	2.00 U	2.00	ug/L	1	L002012	02/01/2010	02/02/2010	6010B
Sodium	3320	500	ug/L	1	L002012	02/01/2010	02/02/2010	6010B
Strontium	104	10.0	ug/L	1	L002012	02/01/2010	02/02/2010	6010B
Thallium	5.00 U	5.00	ug/L	1	L002012	02/01/2010	02/02/2010	6010B
Tin	100 U	100	ug/L	1	L002012	02/01/2010	02/02/2010	6010B
Titanium	0.709 B	5.00	ug/L	1	L002012	02/01/2010	02/02/2010	6010B
Uranium	200 U	200	ug/L	1	L002012	02/01/2010	02/02/2010	6010B
Vanadium	1.41 B	15.0	ug/L	1	L002012	02/01/2010	02/02/2010	6010B
Zinc	4.86 B	10.0	ug/L	1	L002012	02/01/2010	02/02/2010	6010B
Soluble Mercury	0.200 U	0.200	ug/L	1	L002099	02/01/2010	02/03/2010	7470A

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WC Hanford, Inc. 2620 Fermi Avenue Richland WA, 99354	Project: RC 115 Project Number: K1917 Project Manager: Joan Kessner	Reported: 02/09/2010 09:15

J19FH2
L001099-05 (Water)

3/27/10

Lionville Laboratory

Analyte	Result and Qualifier	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Metals by SW846 6000/7000 series								
Aluminum	20.9 B UJ	50.0	ug/L	1	L002012	02/01/2010	02/02/2010	6010B
Antimony	6.00 U	6.00	ug/L	1	L002012	02/01/2010	02/02/2010	6010B
Arsenic	10.0 U	10.0	ug/L	1	L002012	02/01/2010	02/02/2010	6010B
Barium	29.8	5.00	ug/L	1	L002012	02/01/2010	02/02/2010	6010B
Beryllium	2.00 U	2.00	ug/L	1	L002012	02/01/2010	02/02/2010	6010B
Bismuth	100 U	100	ug/L	1	L002012	02/01/2010	02/02/2010	6010B
Boron	11.0 B	20.0	ug/L	1	L002012	02/01/2010	02/02/2010	6010B
Cadmium	2.00 U	2.00	ug/L	1	L002012	02/01/2010	02/02/2010	6010B
Calcium	19800	1000	ug/L	1	L002012	02/01/2010	02/02/2010	6010B
Chromium	2.00 U	2.00	ug/L	1	L002012	02/01/2010	02/02/2010	6010B
Cobalt	20.0 U	20.0	ug/L	1	L002012	02/01/2010	02/02/2010	6010B
Copper	10.0 U	10.0	ug/L	1	L002012	02/01/2010	02/02/2010	6010B
Iron	50.0 U	50.0	ug/L	1	L002012	02/01/2010	02/02/2010	6010B
Lead	5.00 U	5.00	ug/L	1	L002012	02/01/2010	02/02/2010	6010B
Lithium	25.0 U	25.0	ug/L	1	L002012	02/01/2010	02/02/2010	6010B
Magnesium	4770	750	ug/L	1	L002012	02/01/2010	02/02/2010	6010B
Manganese	3.97 B UJ	5.00	ug/L	1	L002012	02/01/2010	02/02/2010	6010B
Molybdenum	0.713 B	20.0	ug/L	1	L002012	02/01/2010	02/02/2010	6010B
Nickel	40.0 U	40.0	ug/L	1	L002012	02/01/2010	02/02/2010	6010B
Phosphorus	50.0 U	50.0	ug/L	1	L002012	02/01/2010	02/02/2010	6010B
Potassium	752 B	1000	ug/L	1	L002012	02/01/2010	02/02/2010	6010B
Selenium	10.0 U	10.0	ug/L	1	L002012	02/01/2010	02/02/2010	6010B
Silicon	2140	25.0	ug/L	1	L002012	02/01/2010	02/02/2010	6010B
Silver	2.00 U	2.00	ug/L	1	L002012	02/01/2010	02/02/2010	6010B
Sodium	2310	500	ug/L	1	L002012	02/01/2010	02/02/2010	6010B
Strontium	105	10.0	ug/L	1	L002012	02/01/2010	02/02/2010	6010B
Thallium	5.00 U	5.00	ug/L	1	L002012	02/01/2010	02/02/2010	6010B
Tin	100 U	100	ug/L	1	L002012	02/01/2010	02/02/2010	6010B
Titanium	1.00 B	5.00	ug/L	1	L002012	02/01/2010	02/02/2010	6010B
Uranium	200 U	200	ug/L	1	L002012	02/01/2010	02/02/2010	6010B
Vanadium	1.58 B	25.0	ug/L	1	L002012	02/01/2010	02/02/2010	6010B
Zinc	10.0 U	10.0	ug/L	1	L002012	02/01/2010	02/02/2010	6010B
Mercury	0.200 U	0.200	ug/L	1	L002059	02/04/2010	02/05/2010	7470A

WC-Hanford, Inc. 2620 Fermi Avenue Richland WA, 99354	Project: RC-115 Project Number: K1917 Project Manager: Joan Kessner	Reported: 02/09/2010 09:13

J19FH4
1001099-06 (Water)

✓ 3/27/10

Analyte	Result and Qualifier		Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method

Lionville Laboratory

Metals by SW846 6000/7000 series

Analyte	Result and Qualifier			Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Aluminum	23.8	B	UJ	50.0	ug/L	1	1002012	02/01/2010	02/02/2010	6010B
Antimony	6.00	U		6.00	ug/L	1	1002012	02/01/2010	02/02/2010	6010B
Arsenic	10.0	U		10.0	ug/L	1	1002012	02/01/2010	02/02/2010	6010B
Barium	34.1			5.00	ug/L	1	1002012	02/01/2010	02/02/2010	6010B
Beryllium	2.00	U		2.00	ug/L	1	1002012	02/01/2010	02/02/2010	6010B
Bismuth	100	U		100	ug/L	1	1002012	02/01/2010	02/02/2010	6010B
Boron	12.6	B		20.0	ug/L	1	1002012	02/01/2010	02/02/2010	6010B
Cadmium	2.00	U		2.00	ug/L	1	1002012	02/01/2010	02/02/2010	6010B
Calcium	18600			1000	ug/L	1	1002012	02/01/2010	02/02/2010	6010B
Chromium	0.615	B		2.00	ug/L	1	1002012	02/01/2010	02/02/2010	6010B
Cobalt	20.0	U		20.0	ug/L	1	1002012	02/01/2010	02/02/2010	6010B
Copper	10.0	U		10.0	ug/L	1	1002012	02/01/2010	02/02/2010	6010B
Iron	50.0	U		50.0	ug/L	1	1002012	02/01/2010	02/02/2010	6010B
Lead	5.00	U		5.00	ug/L	1	1002012	02/01/2010	02/02/2010	6010B
Lithium	25.0	U		25.0	ug/L	1	1002012	02/01/2010	02/02/2010	6010B
Magnesium	4660			750	ug/L	1	1002012	02/01/2010	02/02/2010	6010B
Manganese	1.49	B	UJ	5.00	ug/L	1	1002012	02/01/2010	02/02/2010	6010B
Molybdenum	1.68	B		20.0	ug/L	1	1002012	02/01/2010	02/02/2010	6010B
Nickel	0.637	B		10.0	ug/L	1	1002012	02/01/2010	02/02/2010	6010B
Phosphorus	50.0	U		50.0	ug/L	1	1002012	02/01/2010	02/02/2010	6010B
Potassium	762	B		4000	ug/L	1	1002012	02/01/2010	02/02/2010	6010B
Selenium	10.0	U		10.0	ug/L	1	1002012	02/01/2010	02/02/2010	6010B
Silicon	2100			25.0	ug/L	1	1002012	02/01/2010	02/02/2010	6010B
Silver	2.00	U		2.00	ug/L	1	1002012	02/01/2010	02/02/2010	6010B
Sodium	3330			500	ug/L	1	1002012	02/01/2010	02/02/2010	6010B
Strontium	103			10.0	ug/L	1	1002012	02/01/2010	02/02/2010	6010B
Thallium	5.00	U		5.00	ug/L	1	1002012	02/01/2010	02/02/2010	6010B
Tin	100	U		100	ug/L	1	1002012	02/01/2010	02/02/2010	6010B
Titanium	0.942	B		5.00	ug/L	1	1002012	02/01/2010	02/02/2010	6010B
Uranium	200	U		200	ug/L	1	1002012	02/01/2010	02/02/2010	6010B
Vanadium	2.19	B		25.0	ug/L	1	1002012	02/01/2010	02/02/2010	6010B
Zinc	10.0	U		10.0	ug/L	1	1002012	02/01/2010	02/02/2010	6010B
Soluble Mercury	0.200	U		0.200	ug/L	1	1002039	02/04/2010	02/05/2010	7470A

WC-Hanford, Inc 2620 Fermi Avenue Richland WA, 99354	Project: RC-115 Project Number: K1917 Project Manager: Joan Kessner	Reported: 02/09/2010 09:15

J19FH3
1001099-07 (Water)

3/22/10

Analyte	Result and Qualifier	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method

Lionville Laboratory

Metals by SW846 6000/7000 series

Analyte	Result and Qualifier	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Aluminum	31.9 B UJ	50.0	ug/L	1	1002012	02/01/2010	02/02/2010	6010B
Antimony	6.00 U	6.00	ug/L	1	1002012	02/01/2010	02/02/2010	6010B
Arsenic	10.0 U	10.0	ug/L	1	1002012	02/01/2010	02/02/2010	6010B
Barium	29.4	5.00	ug/L	1	1002012	02/01/2010	02/02/2010	6010B
Beryllium	2.00 U	2.00	ug/L	1	1002012	02/01/2010	02/02/2010	6010B
Bismuth	100 U	100	ug/L	1	1002012	02/01/2010	02/02/2010	6010B
Boron	11.5 B	20.0	ug/L	1	1002012	02/01/2010	02/02/2010	6010B
Cadmium	2.00 U	2.00	ug/L	1	1002012	02/01/2010	02/02/2010	6010B
Calcium	18600	1000	ug/L	1	1002012	02/01/2010	02/02/2010	6010B
Chromium	0.887 B	2.00	ug/L	1	1002012	02/01/2010	02/02/2010	6010B
Cobalt	20.0 U	20.0	ug/L	1	1002012	02/01/2010	02/02/2010	6010B
Copper	10.0 U	10.0	ug/L	1	1002012	02/01/2010	02/02/2010	6010B
Iron	16.3 B UJ	50.0	ug/L	1	1002012	02/01/2010	02/02/2010	6010B
Lead	5.00 U	5.00	ug/L	1	1002012	02/01/2010	02/02/2010	6010B
Lithium	25.0 U	25.0	ug/L	1	1002012	02/01/2010	02/02/2010	6010B
Magnesium	4700	750	ug/L	1	1002012	02/01/2010	02/02/2010	6010B
Manganese	1.66 B UJ	5.00	ug/L	1	1002012	02/01/2010	02/02/2010	6010B
Molybdenum	1.32 B	20.0	ug/L	1	1002012	02/01/2010	02/02/2010	6010B
Nickel	40.0 U	40.0	ug/L	1	1002012	02/01/2010	02/02/2010	6010B
Phosphorus	50.0 U	50.0	ug/L	1	1002012	02/01/2010	02/02/2010	6010B
Potassium	745 B	4000	ug/L	1	1002012	02/01/2010	02/02/2010	6010B
Selenium	10.0 U	10.0	ug/L	1	1002012	02/01/2010	02/02/2010	6010B
Silicon	2170	25.0	ug/L	1	1002012	02/01/2010	02/02/2010	6010B
Silver	2.00 U	2.00	ug/L	1	1002012	02/01/2010	02/02/2010	6010B
Sodium	2,560	500	ug/L	1	1002012	02/01/2010	02/02/2010	6010B
Strontium	103	10.0	ug/L	1	1002012	02/01/2010	02/02/2010	6010B
Thallium	1.08 B	5.00	ug/L	1	1002012	02/01/2010	02/02/2010	6010B
Tin	100 U	100	ug/L	1	1002012	02/01/2010	02/02/2010	6010B
Titanium	1.28 B	5.00	ug/L	1	1002012	02/01/2010	02/02/2010	6010B
Uranium	200 U	200	ug/L	1	1002012	02/01/2010	02/02/2010	6010B
Vanadium	1.88 B	25.0	ug/L	1	1002012	02/01/2010	02/02/2010	6010B
Zinc	10.0 U	10.0	ug/L	1	1002012	02/01/2010	02/02/2010	6010B
Mercury	0.200 U	0.200	ug/L	1	1002059	02/04/2010	02/05/2010	7470A

000016

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WCH Hanford, Inc. 2620 Fermi Avenue Richland WA, 99354	Project: RC 115 Project Number: K1917 Project Manager: Joan Kessner	Reported: 02/09/2010 09:15

J19FH5
1001099-08 (Water)

3/22/10

Analyte	Result and Qualifier		Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
			Lionville Laboratory						
Metals by SW846 6000/7000 series									
Aluminum	12.1 B	UJ	50.0	ug/L	1	1002012	02/01/2010	02/02/2010	6010B
Antimony	6.00 U		6.00	ug/L	1	1002012	02/01/2010	02/02/2010	6010B
Arsenic	10.0 U		10.0	ug/L	1	1002012	02/01/2010	02/02/2010	6010B
Barium	29.0		5.00	ug/L	1	1002012	02/01/2010	02/02/2010	6010B
Beryllium	2.00 U		2.00	ug/L	1	1002012	02/01/2010	02/02/2010	6010B
Bismuth	100 U		100	ug/L	1	1002012	02/01/2010	02/02/2010	6010B
Boron	9.78 B		20.0	ug/L	1	1002012	02/01/2010	02/02/2010	6010B
Cadmium	2.00 U		2.00	ug/L	1	1002012	02/01/2010	02/02/2010	6010B
Calcium	16300		1000	ug/L	1	1002012	02/01/2010	02/02/2010	6010B
Chromium	2.00 U		2.00	ug/L	1	1002012	02/01/2010	02/02/2010	6010B
Cobalt	20.0 U		20.0	ug/L	1	1002012	02/01/2010	02/02/2010	6010B
Copper	10.0 U		10.0	ug/L	1	1002012	02/01/2010	02/02/2010	6010B
Iron	50.0 U		50.0	ug/L	1	1002012	02/01/2010	02/02/2010	6010B
Lead	5.00 U		5.00	ug/L	1	1002012	02/01/2010	02/02/2010	6010B
Lithium	25.0 U		25.0	ug/L	1	1002012	02/01/2010	02/02/2010	6010B
Magnesium	4120		750	ug/L	1	1002012	02/01/2010	02/02/2010	6010B
Manganese	1.33 B	UJ	5.00	ug/L	1	1002012	02/01/2010	02/02/2010	6010B
Molybdenum	1.09 B		20.0	ug/L	1	1002012	02/01/2010	02/02/2010	6010B
Nickel	40.0 U		40.0	ug/L	1	1002012	02/01/2010	02/02/2010	6010B
Phosphorus	50.0 U		50.0	ug/L	1	1002012	02/01/2010	02/02/2010	6010B
Potassium	670 B		4000	ug/L	1	1002012	02/01/2010	02/02/2010	6010B
Selenium	10.0 U		10.0	ug/L	1	1002012	02/01/2010	02/02/2010	6010B
Silicon	1880		25.0	ug/L	1	1002012	02/01/2010	02/02/2010	6010B
Silver	2.00 U		2.00	ug/L	1	1002012	02/01/2010	02/02/2010	6010B
Sodium	2050		500	ug/L	1	1002012	02/01/2010	02/02/2010	6010B
Strontium	90.2		10.0	ug/L	1	1002012	02/01/2010	02/02/2010	6010B
Thallium	5.00 U		5.00	ug/L	1	1002012	02/01/2010	02/02/2010	6010B
Tin	100 U		100	ug/L	1	1002012	02/01/2010	02/02/2010	6010B
Titanium	0.687 B		5.00	ug/L	1	1002012	02/01/2010	02/02/2010	6010B
Uranium	200 U		200	ug/L	1	1002012	02/01/2010	02/02/2010	6010B
Vanadium	1.28 B		25.0	ug/L	1	1002012	02/01/2010	02/02/2010	6010B
Zinc	10.0 U		10.0	ug/L	1	1002012	02/01/2010	02/02/2010	6010B
Soluble Mercury	0.200 U		0.200	ug/L	1	1002039	02/04/2010	02/05/2010	7470A

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WC Hanford, Inc 2620 Fermi Avenue Richland WA, 99354	Project: RCS-115 Project Number: K1917 Project Manager: Joan Kessner	Reported: 02/09/2010 09:15

J19H19
1001099-09 (Water)

1/ 3/27/10

Lionville Laboratory

Metals by SW846 6000/7000 series

Analyte	Result and Qualifier		Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Aluminum	54.5	UJ	50.0	ug/L	1	1002012	02/01/2010	02/02/2010	6010B
Antimony	6.00	U	6.00	ug/L	1	1002012	02/01/2010	02/02/2010	6010B
Arsenic	10.0	U	10.0	ug/L	1	1002012	02/01/2010	02/02/2010	6010B
Barium	36.1		5.00	ug/L	1	1002012	02/01/2010	02/02/2010	6010B
Beryllium	2.00	U	2.00	ug/L	1	1002012	02/01/2010	02/02/2010	6010B
Bismuth	100	U	100	ug/L	1	1002012	02/01/2010	02/02/2010	6010B
Boron	14.2	B	20.0	ug/L	1	1002012	02/01/2010	02/02/2010	6010B
Cadmium	2.00	U	2.00	ug/L	1	1002012	02/01/2010	02/02/2010	6010B
Calcium	23100		1000	ug/L	1	1002012	02/01/2010	02/02/2010	6010B
Chromium	0.890	B	2.00	ug/L	1	1002012	02/01/2010	02/02/2010	6010B
Cobalt	20.0	U	20.0	ug/L	1	1002012	02/01/2010	02/02/2010	6010B
Copper	10.0	U	10.0	ug/L	1	1002012	02/01/2010	02/02/2010	6010B
Iron	2.96		50.0	ug/L	1	1002012	02/01/2010	02/02/2010	6010B
Lead	5.00	U	5.00	ug/L	1	1002012	02/01/2010	02/02/2010	6010B
Lithium	25.0	U	25.0	ug/L	1	1002012	02/01/2010	02/02/2010	6010B
Magnesium	6900		750	ug/L	1	1002012	02/01/2010	02/02/2010	6010B
Manganese	3.89	B UJ	5.00	ug/L	1	1002012	02/01/2010	02/02/2010	6010B
Molybdenum	1.70	B	20.0	ug/L	1	1002012	02/01/2010	02/02/2010	6010B
Nickel	0.619	B	40.0	ug/L	1	1002012	02/01/2010	02/02/2010	6010B
Phosphorus	11.5	B	50.0	ug/L	1	1002012	02/01/2010	02/02/2010	6010B
Potassium	1370	B	4000	ug/L	1	1002012	02/01/2010	02/02/2010	6010B
Selenium	10.0	U	10.0	ug/L	1	1002012	02/01/2010	02/02/2010	6010B
Silicon	3700		25.0	ug/L	1	1002012	02/01/2010	02/02/2010	6010B
Silver	2.00	U	2.00	ug/L	1	1002012	02/01/2010	02/02/2010	6010B
Sodium	7120		500	ug/L	1	1002012	02/01/2010	02/02/2010	6010B
Strontium	139		10.0	ug/L	1	1002012	02/01/2010	02/02/2010	6010B
Thallium	5.00	U	5.00	ug/L	1	1002012	02/01/2010	02/02/2010	6010B
Tin	100	U	100	ug/L	1	1002012	02/01/2010	02/02/2010	6010B
Titanium	2.23	B	5.00	ug/L	1	1002012	02/01/2010	02/02/2010	6010B
Uranium	200	U	200	ug/L	1	1002012	02/01/2010	02/02/2010	6010B
Vanadium	3.50	B	25.0	ug/L	1	1002012	02/01/2010	02/02/2010	6010B
Zinc	5.23	B	10.0	ug/L	1	1002012	02/01/2010	02/02/2010	6010B
Mercury	0.200	U	0.200	ug/L	1	1002059	02/04/2010	02/05/2010	7470A

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WC Hanford, Inc. 2620 Fermi Avenue Richland WA, 99354	Project: RCI FFS Project Number: K1012 Project Manager: Joan Kessner	Reported: 02/09/2010 09:15

J19H20
1001099-10 (Water)

3/27/10

Analyte	Result and Qualifier	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Lionville Laboratory								
Metals by SW846 6000/7000 series								
Aluminum	18.6 B UJ	50.0	ug/L	1	L002012	02/01/2010	02/02/2010	6010B
Antimony	6.00 U	6.00	ug/L	1	L002012	02/01/2010	02/02/2010	6010B
Arsenic	10.0 U	10.0	ug/L	1	L002012	02/01/2010	02/02/2010	6010B
Barium	39.9	5.00	ug/L	1	L002012	02/01/2010	02/02/2010	6010B
Beryllium	2.00 U	2.00	ug/L	1	L002012	02/01/2010	02/02/2010	6010B
Bismuth	100 U	100	ug/L	1	L002012	02/01/2010	02/02/2010	6010B
Boron	14.5 B	20.0	ug/L	1	L002012	02/01/2010	02/02/2010	6010B
Cadmium	2.00 U	2.00	ug/L	1	L002012	02/01/2010	02/02/2010	6010B
Calcium	45400	1000	ug/L	1	L002012	02/01/2010	02/02/2010	6010B
Chromium	2.00 U	2.00	ug/L	1	L002012	02/01/2010	02/02/2010	6010B
Cobalt	20.0 U	20.0	ug/L	1	L002012	02/01/2010	02/02/2010	6010B
Copper	10.0 U	10.0	ug/L	1	L002012	02/01/2010	02/02/2010	6010B
Iron	50.0 U	50.0	ug/L	1	L002012	02/01/2010	02/02/2010	6010B
Lead	5.00 U	5.00	ug/L	1	L002012	02/01/2010	02/02/2010	6010B
Lithium	25.0 U	25.0	ug/L	1	L002012	02/01/2010	02/02/2010	6010B
Magnesium	6910	750	ug/L	1	L002012	02/01/2010	02/02/2010	6010B
Manganese	1.64 B UJ	5.00	ug/L	1	L002012	02/01/2010	02/02/2010	6010B
Molybdenum	1.60 B	20.0	ug/L	1	L002012	02/01/2010	02/02/2010	6010B
Nickel	40.0 U	40.0	ug/L	1	L002012	02/01/2010	02/02/2010	6010B
Phosphorus	50.0 U	50.0	ug/L	1	L002012	02/01/2010	02/02/2010	6010B
Potassium	1540 B	4000	ug/L	1	L002012	02/01/2010	02/02/2010	6010B
Selenium	10.0 U	10.0	ug/L	1	L002012	02/01/2010	02/02/2010	6010B
Silicon	3560	75.0	ug/L	1	L002012	02/01/2010	02/02/2010	6010B
Silver	2.00 U	2.00	ug/L	1	L002012	02/01/2010	02/02/2010	6010B
Sodium	6900	500	ug/L	1	L002012	02/01/2010	02/02/2010	6010B
Strontium	141	10.0	ug/L	1	L002012	02/01/2010	02/02/2010	6010B
Thallium	5.00 U	5.00	ug/L	1	L002012	02/01/2010	02/02/2010	6010B
Tin	100 U	100	ug/L	1	L002012	02/01/2010	02/02/2010	6010B
Titanium	0.774 B	5.00	ug/L	1	L002012	02/01/2010	02/02/2010	6010B
Uranium	200 U	200	ug/L	1	L002012	02/01/2010	02/02/2010	6010B
Vanadium	3.74 B	25.0	ug/L	1	L002012	02/01/2010	02/02/2010	6010B
Zinc	6.64 B	10.0	ug/L	1	L002012	02/01/2010	02/02/2010	6010B
Soluble Mercury	0.200 U	0.200	ug/L	1	L002059	02/04/2010	02/05/2010	7470A

WCH-Hanford, Inc 2620 Fermi Avenue Richland WA, 99354	Project: RC-115 Project Number: K1917 Project Manager: Joan Kessner	Reported: 02/09/2010 09:15

J19FC8
1001099-12 (Water)

JL 3/27/10

Lionville Laboratory

Analyte	Result and Qualifier		Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Metals by SW846 6000/7000 series									
Aluminum	24.6	B UJ	50.0	ug/L	1	1002012	02/01/2010	02/02/2010	6010B
Antimony	6.00	U	6.00	ug/L	1	1002012	02/01/2010	02/02/2010	6010B
Arsenic	10.0	U	10.0	ug/L	1	1002012	02/01/2010	02/02/2010	6010B
Barium	30.0		5.00	ug/L	1	1002012	02/01/2010	02/02/2010	6010B
Beryllium	2.00	U	2.00	ug/L	1	1002012	02/01/2010	02/02/2010	6010B
Bismuth	100	U	100	ug/L	1	1002012	02/01/2010	02/02/2010	6010B
Boron	10.7	B	20.0	ug/L	1	1002012	02/01/2010	02/02/2010	6010B
Cadmium	2.00	U	2.00	ug/L	1	1002012	02/01/2010	02/02/2010	6010B
Calcium	19200		1000	ug/L	1	1002012	02/01/2010	02/02/2010	6010B
Chromium	2.00	U	2.00	ug/L	1	1002012	02/01/2010	02/02/2010	6010B
Cobalt	20.0	U	20.0	ug/L	1	1002012	02/01/2010	02/02/2010	6010B
Copper	10.0	U	10.0	ug/L	1	1002012	02/01/2010	02/02/2010	6010B
Iron	11.7	B UJ	50.0	ug/L	1	1002012	02/01/2010	02/02/2010	6010B
Lead	5.00	U	5.00	ug/L	1	1002012	02/01/2010	02/02/2010	6010B
Lithium	25.0	U	25.0	ug/L	1	1002012	02/01/2010	02/02/2010	6010B
Magnesium	4880		750	ug/L	1	1002012	02/01/2010	02/02/2010	6010B
Manganese	1.93	B UJ	5.00	ug/L	1	1002012	02/01/2010	02/02/2010	6010B
Molybdenum	6.941	B	20.0	ug/L	1	1002012	02/01/2010	02/02/2010	6010B
Nickel	40.0	U	40.0	ug/L	1	1002012	02/01/2010	02/02/2010	6010B
Phosphorus	50.0	U	50.0	ug/L	1	1002012	02/01/2010	02/02/2010	6010B
Potassium	843	B	1000	ug/L	1	1002012	02/01/2010	02/02/2010	6010B
Selenium	10.0	U	10.0	ug/L	1	1002012	02/01/2010	02/02/2010	6010B
Silicon	2170		25.0	ug/L	1	1002012	02/01/2010	02/02/2010	6010B
Silver	2.00	U	2.00	ug/L	1	1002012	02/01/2010	02/02/2010	6010B
Sodium	2750		500	ug/L	1	1002012	02/01/2010	02/02/2010	6010B
Strontium	107		10.0	ug/L	1	1002012	02/01/2010	02/02/2010	6010B
Thallium	5.00	U	5.00	ug/L	1	1002012	02/01/2010	02/02/2010	6010B
Tin	100	U	100	ug/L	1	1002012	02/01/2010	02/02/2010	6010B
Titanium	0.917	B	5.00	ug/L	1	1002012	02/01/2010	02/02/2010	6010B
Uranium	200	U	200	ug/L	1	1002012	02/01/2010	02/02/2010	6010B
Vanadium	1.94	B	25.0	ug/L	1	1002012	02/01/2010	02/02/2010	6010B
Zinc	10.0	U	10.0	ug/L	1	1002012	02/01/2010	02/02/2010	6010B
Mercury	0.200	U	0.200	ug/L	1	1002059	02/04/2010	02/05/2010	7470A

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WC-Hanford, Inc. 2620 Fermi Avenue Richland WA, 99354	Project: RC-115 Project Number: K1917 Project Manager: Joan Kessner	**Reported:** 02/09/2010 09:15

J19FC9

1001099-13 (Water)

K 3/27/10

Lionville Laboratory

Metals by SW846 6000/7000 series

Analyte	Result and Qualifier		Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Aluminum	**16.4**	B UJ	50.0	ug/L	1	L002012	02/01/2010	02/02/2010	6010B
Antimony	6.00	U	6.00	ug/L	1	L002012	02/01/2010	02/02/2010	6010B
Arsenic	10.0	U	10.0	ug/L	1	L002012	02/01/2010	02/02/2010	6010B
Barium	**32.5**		5.00	ug/L	1	L002012	02/01/2010	02/02/2010	6010B
Beryllium	2.00	U	2.00	ug/L	1	L002012	02/01/2010	02/02/2010	6010B
Bismuth	100	U	100	ug/L	1	L002012	02/01/2010	02/02/2010	6010B
Boron	**8.41**	B	20.0	ug/L	1	L002012	02/01/2010	02/02/2010	6010B
Cadmium	2.00	U	2.00	ug/L	1	L002012	02/01/2010	02/02/2010	6010B
Calcium	**19400**		1000	ug/L	1	L002012	02/01/2010	02/02/2010	6010B
Chromium	2.00	U	2.00	ug/L	1	L002012	02/01/2010	02/02/2010	6010B
Cobalt	20.0	U	20.0	ug/L	1	L002012	02/01/2010	02/02/2010	6010B
Copper	10.0	U	10.0	ug/L	1	L002012	02/01/2010	02/02/2010	6010B
Iron	50.0	U	50.0	ug/L	1	L002012	02/01/2010	02/02/2010	6010B
Lead	5.00	U	5.00	ug/L	1	L002012	02/01/2010	02/02/2010	6010B
Lithium	25.0	U	25.0	ug/L	1	L002012	02/01/2010	02/02/2010	6010B
Magnesium	**4900**		750	ug/L	1	L002012	02/01/2010	02/02/2010	6010B
Manganese	**0.964**	B UJ	5.00	ug/L	1	L002012	02/01/2010	02/02/2010	6010B
Molybdenum	**1.00**	B	20.0	ug/L	1	L002012	02/01/2010	02/02/2010	6010B
Nickel	40.0	U	40.0	ug/L	1	L002012	02/01/2010	02/02/2010	6010B
Phosphorus	50.0	U	50.0	ug/L	1	L002012	02/01/2010	02/02/2010	6010B
Potassium	**843**	B	4000	ug/L	1	L002012	02/01/2010	02/02/2010	6010B
Selenium	10.0	U	10.0	ug/L	1	L002012	02/01/2010	02/02/2010	6010B
Silicon	**2200**		25.0	ug/L	1	L002012	02/01/2010	02/02/2010	6010B
Silver	2.00	U	2.00	ug/L	1	L002012	02/01/2010	02/02/2010	6010B
Sodium	**2830**		500	ug/L	1	L002012	02/01/2010	02/02/2010	6010B
Strontium	**108**		10.0	ug/L	1	L002012	02/01/2010	02/02/2010	6010B
Thallium	5.00	U	5.00	ug/L	1	L002012	02/01/2010	02/02/2010	6010B
Tin	100	U	100	ug/L	1	L002012	02/01/2010	02/02/2010	6010B
Titanium	**0.669**	B	5.00	ug/L	1	L002012	02/01/2010	02/02/2010	6010B
Uranium	200	U	200	ug/L	1	L002012	02/01/2010	02/02/2010	6010B
Vanadium	**1.47**	B	25.0	ug/L	1	L002012	02/01/2010	02/02/2010	6010B
Zinc	10.0	U	10.0	ug/L	1	L002012	02/01/2010	02/02/2010	6010B
Soluble Mercury	0.200	U	0.200	ug/L	1	L002059	02/04/2010	02/05/2010	7470A

WC-Hanford, Inc 2620 Fermi Avenue Richland WA, 99354	Project: RC 115 Project Number: K1917 Project Manager: Joan Kessner	Reported: 02/09/2010 09:15

J19F85
1001099-16 (Water)

3/27/10

Analyte	Result and Qualifier			Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method

Lionville Laboratory

Metals by SW846 6000/7000 series

Analyte	Result	Qualifier		Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Aluminum	17.8	B	UJ	50.0	ug/L	1	L002012	02/01/2010	02/02/2010	6010B
Antimony	6.00	U		6.00	ug/L	1	L002012	02/01/2010	02/02/2010	6010B
Arsenic	10.0	U		10.0	ug/L	1	L002012	02/01/2010	02/02/2010	6010B
Barium	29.7			5.00	ug/L	1	L002012	02/01/2010	02/02/2010	6010B
Beryllium	2.00	U		2.00	ug/L	1	L002012	02/01/2010	02/02/2010	6010B
Bismuth	100	U		100	ug/L	1	L002012	02/01/2010	02/02/2010	6010B
Boron	11.7	B		20.0	ug/L	1	L002012	02/01/2010	02/02/2010	6010B
Cadmium	2.00	U		2.00	ug/L	1	L002012	02/01/2010	02/02/2010	6010B
Calcium	18900			1000	ug/L	1	L002012	02/01/2010	02/02/2010	6010B
Chromium	2.00	U		2.00	ug/L	1	L002012	02/01/2010	02/02/2010	6010B
Cobalt	20.0	U		20.0	ug/L	1	L002012	02/01/2010	02/02/2010	6010B
Copper	10.0	U		10.0	ug/L	1	L002012	02/01/2010	02/02/2010	6010B
Iron	10.4	B	UJ	50.0	ug/L	1	L002012	02/01/2010	02/02/2010	6010B
Lead	5.00	U		5.00	ug/L	1	L002012	02/01/2010	02/02/2010	6010B
Lithium	25.0	U		25.0	ug/L	1	L002012	02/01/2010	02/02/2010	6010B
Magnesium	4770			750	ug/L	1	L002012	02/01/2010	02/02/2010	6010B
Manganese	2.37	B	UJ	5.00	ug/L	1	L002012	02/01/2010	02/02/2010	6010B
Molybdenum	0.864	B		20.0	ug/L	1	L002012	02/01/2010	02/02/2010	6010B
Nickel	40.0	U		40.0	ug/L	1	L002012	02/01/2010	02/02/2010	6010B
Phosphorus	50.0	U		50.0	ug/L	1	L002012	02/01/2010	02/02/2010	6010B
Potassium	829	B		1000	ug/L	1	L002012	02/01/2010	02/02/2010	6010B
Selenium	10.0	U		10.0	ug/L	1	L002012	02/01/2010	02/02/2010	6010B
Silicon	2200			25.0	ug/L	1	L002012	02/01/2010	02/02/2010	6010B
Silver	2.00	U		2.00	ug/L	1	L002012	02/01/2010	02/02/2010	6010B
Sodium	2760			500	ug/L	1	L002012	02/01/2010	02/02/2010	6010B
Strontium	104			10.0	ug/L	1	L002012	02/01/2010	02/02/2010	6010B
Thallium	5.00	U		5.00	ug/L	1	L002012	02/01/2010	02/02/2010	6010B
Tin	100	U		100	ug/L	1	L002012	02/01/2010	02/02/2010	6010B
Titanium	1.33	B		5.00	ug/L	1	L002012	02/01/2010	02/02/2010	6010B
Uranium	200	U		200	ug/L	1	L002012	02/01/2010	02/02/2010	6010B
Vanadium	1.93	B		25.0	ug/L	1	L002012	02/01/2010	02/02/2010	6010B
Zinc	10.0	U		10.0	ug/L	1	L002012	02/01/2010	02/02/2010	6010B
Mercury	0.200	U		0.200	ug/L	1	L002059	02/04/2010	02/05/2010	7470A

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WCH-Hanford, Inc.
2620 Fermi Avenue
Richland WA, 99354

Project: RC 115
Project Number: K1912
Project Manager: Joan Kessner

Reported:
02/09/2010 09:15

J19P89
1001099-17 (Water)

3/27/10

Analyte	Result and Qualifier	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Lionville Laboratory								
Metals by SW846 6000/7000 series								
Aluminum	12.9 B UJ	50.0	ug/L	1	L002012	02/01/2010	02/02/2010	6010B
Antimony	6.00 U	6.00	ug/L	1	L002012	02/01/2010	02/02/2010	6010B
Arsenic	10.0 U	10.0	ug/L	1	L002012	02/01/2010	02/02/2010	6010B
Barium	33.4	5.00	ug/L	1	L002012	02/01/2010	02/02/2010	6010B
Beryllium	2.00 U	2.00	ug/L	1	L002012	02/01/2010	02/02/2010	6010B
Bismuth	100 U	100	ug/L	1	L002012	02/01/2010	02/02/2010	6010B
Boron	11.3 B	20.0	ug/L	1	L002012	02/01/2010	02/02/2010	6010B
Cadmium	2.00 U	2.00	ug/L	1	L002012	02/01/2010	02/02/2010	6010B
Calcium	19100	1000	ug/L	1	L002012	02/01/2010	02/02/2010	6010B
Chromium	2.00 U	2.00	ug/L	1	L002012	02/01/2010	02/02/2010	6010B
Cobalt	20.0 U	20.0	ug/L	1	L002012	02/01/2010	02/02/2010	6010B
Copper	10.0 U	10.0	ug/L	1	L002012	02/01/2010	02/02/2010	6010B
Iron	50.0 U	50.0	ug/L	1	L002012	02/01/2010	02/02/2010	6010B
Lead	5.00 U	5.00	ug/L	1	L002012	02/01/2010	02/02/2010	6010B
Lithium	25.0 U	25.0	ug/L	1	L002012	02/01/2010	02/02/2010	6010B
Magnesium	4820	250	ug/L	1	L002012	02/01/2010	02/02/2010	6010B
Manganese	0.921 B UJ	5.00	ug/L	1	L002012	02/01/2010	02/02/2010	6010B
Molybdenum	0.884 B	20.0	ug/L	1	L002012	02/01/2010	02/02/2010	6010B
Nickel	40.0 U	40.0	ug/L	1	L002012	02/01/2010	02/02/2010	6010B
Phosphorus	50.0 U	50.0	ug/L	1	L002012	02/01/2010	02/02/2010	6010B
Potassium	846 B	4000	ug/L	1	L002012	02/01/2010	02/02/2010	6010B
Selenium	10.0 U	10.0	ug/L	1	L002012	02/01/2010	02/02/2010	6010B
Silicon	3180	25.0	ug/L	1	L002012	02/01/2010	02/02/2010	6010B
Silver	2.00 U	2.00	ug/L	1	L002012	02/01/2010	02/02/2010	6010B
Sodium	2820	500	ug/L	1	L002012	02/01/2010	02/02/2010	6010B
Strontium	106	10.0	ug/L	1	L002012	02/01/2010	02/02/2010	6010B
Thallium	5.00 U	5.00	ug/L	1	L002012	02/01/2010	02/02/2010	6010B
Tin	100 U	100	ug/L	1	L002012	02/01/2010	02/02/2010	6010B
Titanium	0.615 B	5.00	ug/L	1	L002012	02/01/2010	02/02/2010	6010B
Uranium	200 U	200	ug/L	1	L002012	02/01/2010	02/02/2010	6010B
Vanadium	2.16 B	25.0	ug/L	1	L002012	02/01/2010	02/02/2010	6010B
Zinc	10.0 U	10.0	ug/L	1	L002012	02/01/2010	02/02/2010	6010B
Soluble Mercury	0.200 U	0.200	ug/L	1	L002059	02/04/2010	02/05/2010	7470A

Appendix 4

Laboratory Narrative and Chain-of-Custody Documentation

LIONVILLE LABORATORY
[illegible]

264 Welsh Pool Road
Exton, Pennsylvania 19341
Phone (610) 280-3000
Fax (610) 280-3041

Case Narrative

Client: WC-HANFORD RC-115
LVL#: 1001099
SDG/SAF#: K1917/RC-115

W.O.#: 60049-001-001-0001-00
Date Received: 01-27-10

METALS

The following is a summary of the QC results accompanying the sample results. Lionville Laboratory (LvL) certifies that all test results meet the requirements of NELAC except as noted below.

1. This narrative covers the analyses of 14 water samples.
2. The samples were prepared and analyzed in accordance with methods listed on the data report forms.
3. All analyses were performed within the required holding times.
4. Please refer to the Sample Receipt Check List for any sample discrepancies in LvLI's sample acceptance policy.
5. All Initial and Continuing Calibration Verifications (ICV/CCVs) were within the 90-110% control limits (80-120% for Mercury).
6. All Initial and Continuing Calibration Blanks (ICB/CCBs) were within control limits (less than the LOQ).
7. All preparation/method blanks (MB) were within method criteria (less than the Limit of Quantitation (3-10X the LOD), or samples greater than 20X MB value).
8. All ICP Interference Check Standards were within control limits.
9. All laboratory control samples (LCS) were within the 80-120% control limits.
10. All matrix spike (MS) recoveries were within the 75-125% control limits.
11. All duplicate analyses were within the 20% Relative Percent Difference (RPD) control limit critieria. The ± 20% RPD control limit applies to sample results greater than ten times the MDL. The sample results for Aluminum and Manganese were less than ten times the MDL.

[illegible]

12. For the purposes of this report, the data have been reported to the Limit of Detection (LOD). Values between the LOD and the Limit of Quantitation (LOQ) are acquired in a region of less-certain quantification.

13. Soluble and total digestates were prepared within the same preparation batch.

14. LvL is NELAP accredited by the State of Pennsylvania. For a complete listing of accrediting authorities and the corresponding analytes/methods, please contact your Project Manager.

15. I certify that this sample data package is in compliance with SOW requirements, both technically and for completeness, other than the conditions detailed above. Release of the data contained in this hard-copy data package has been authorized by the Laboratory Manager or a designee, as verified by the following signature.

Iain Daniels
Laboratory Manager
Lionville Laboratory

2/11/2
Date

a/m/m01 009

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-115-256

Collector: [illegible]

Company Contact: Joan Kessner

Telephone No.: 373-4555

Project Coordinator: KESSNER, JH

Price Code: 7C

Data Turnaround: 15 Days

Project Designation: [illegible] RCBRA [illegible]

Sampling Location: [illegible]

SAF No.: RC-115

Ice Chest No.: AFS-09-051

Field Logbook No.: [illegible]

COA: [illegible]

Method of Shipment: FEDEX

Shipped To: [illegible] (TBSNMLL)

Offsite Property No.: N/A

Bill of Lading/Air Bill No.: FDX 7932 1448 4540

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

SAMPLE ANALYSIS

Preservation	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Type of Container	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
No. of Container(s)	[illegible]	1		1	1	1	1	2	1	
Volume	[illegible]	250mL	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

Sample No.	Matrix *	Sample Date	Sample Time										
[illegible]	WATER	1-22-10	1130	X	X	X	X						
[illegible]	WATER												

CHAIN OF POSSESSION

Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
[illegible]	1-22-10 1730	EMS Ref E K.R.	1-22-10 1730
EMS REF E	1/26/10 1301	SHANNAH JOHNSON	1/26/10 1301
SHANNAH JOHNSON	1/26/10 1300	FDX	
[illegible]	1-27-10 0930	[illegible]	1-27-10/0930
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time

SPECIAL INSTRUCTIONS

(1) [illegible]

(2) [illegible]

Sampler [illegible] from controlled storage. Shipper [illegible] samples from storage location [illegible]

Matrix *

LABORATORY SECTION: Received By: Title: Date/Time:

FINAL SAMPLE DISPOSITION: Disposal Method: Disposed By: Date/Time:

000022

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-115-258 Page 2 of 2

Collector: Eglie Brown

Company Contact: John Kessner Telephone No. 372-[illegible]

Project Coordinator: KESSNER, JH

Price Code: 7C

Data Turnaround: 15 Days

Project Designation: Columbia River Component of the RCBRA - Surface Water

Sampling Location: 100-K KW, N test 1

SAF No. RC-115

Ice Chest No. AFS-CH-0281

Field Logbook No. [illegible]

COA: [illegible]

Method of Shipment: FEDEX

Shipped To: [illegible] SERVICES (RICHMOND)

Offsite Property No. N/A

Bill of Lading/Air Bill No. FDX# 7932144844 0

POSSIBLE SAMPLE HAZARDS/REMARKS
NA

Special Handling and/or Storage
NA

0010028

Preservation	~~HNO3~~ [illegible] 1/22/10
Type of Container	G/P
No. of Container(s)	1
Volume	500mL 3 [illegible] 1/22/10
SAMPLE ANALYSIS	See item (1) in Special Instructions

Sample No.	Matrix *	Sample Date	Sample Time		
J19PR4	WATER				1
J19RR6	WATER	1-22-10	1130	X	

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From: L. Brown R.B.	Date/Time: 1-22-10 1730	Received By/Stored In: EAS REF E	Date/Time: 1-22-10 1730
Relinquished By/Removed From: EAS REF E	Date/Time: 1/26/10 1300	Received By/Stored In: SHANNON JOHNSON	Date/Time: 1/26/10 1300
Relinquished By/Removed From: SHANNON JOHNSON	Date/Time: 1/26/10 1300	Received By/Stored In: FDX	Date/Time:
Relinquished By/Removed From:	Date/Time: 1/27/10 0930	Received By/Stored In: [illegible] Smith	Date/Time: 1/27/10 0930
Relinquished By/Removed From:	Date/Time:	Received By/Stored In:	Date/Time:
Relinquished By/Removed From:	Date/Time:	Received By/Stored In:	Date/Time:

SPECIAL INSTRUCTIONS
3 [illegible] 1/22/10
(1) ICP-METALS-6010 - WATER {Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Titanium, Uranium, Vanadium, Zinc}; [illegible]

Sampler unavailable to remove samples from refrigerated storage. Shipper removing samples from storage and/or taking custody.

Matrix *
[illegible]

LABORATORY SECTION — Received By: Title: Date/Time:

FINAL SAMPLE DISPOSITION — Disposal Method: Disposed By: Date/Time:

WCH-CE-014

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-115-260 Page [illegible] of [illegible]

Collector: [illegible]

Company Contact: [illegible] Kessner Telephone No.: [illegible]

Project Coordinator: KESSNER, JH

Price Code: 7C

Data Turnaround: 15 Days

Project Designation: Columbia River Component of the RCBRA - Surface Water

Sampling Location: 100-K T106K3A

SAF No.: RC-115

Ice Chest No.: APS-01-050

Field Logbook No.: [illegible]

COA: [illegible]

Method of Shipment: FEDEX

Shipped To: EBERLINE SERVICES [✓ LIONVILLE]

Offsite Property No.: N/A

Bill of Lading/Air Bill No.: FDX 793214484540

POSSIBLE SAMPLE HAZARDS/REMARKS
N/A

Special Handling and/or Storage
N/A

0000029

			Preservation	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
			Type of Container	aGP	G/P	G	aGP	aGP	G/P	aGP	G/P	G/P	G/P
			No. of Container(s)	1	1	1	1	1	1	2	2	1	1
			Volume	500mL	250mL	125mL	250mL	1000mL	250mL	1000mL	1000mL	1000mL	1000mL
SAMPLE ANALYSIS				[illegible]	[illegible]	Dissolved Organic Carbon [illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Sample No.	Matrix *	Sample Date	Sample Time										
J19HR5	WATER	1-23-10	1230	X	X	X	X		~~X~~ [illegible] 1-23-10				
J19HT0	WATER												

CHAIN OF POSSESSION	Date/Time	Sign/Print Names	Date/Time
Relinquished By/Removed From E Barnes	1-23-10 1830	Received By/Stored In EHS Ref E BR	1-23-10 1830
Relinquished By/Removed From EHS REF E S	1/26/10 1300	Received By/Stored In SHANNAN JOHNSON	1/26/10 1300
Relinquished By/Removed From SHANNAN JOHNSON	1/26/10 1300	Received By/Stored In FDX	
Relinquished By/Removed From	1/27/10/0930	Received By/Stored In DSmith	1/27/10/0930
Relinquished By/Removed From		Received By/Stored In	
Relinquished By/Removed From		Received By/Stored In	

SPECIAL INSTRUCTIONS

(1) ICP Metals - 6010 [illegible] {Aluminum, Antimony, Arsenic, Barium, Beryllium, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Titanium, Uranium, Vanadium, Zinc}; Mercury - 7470 [illegible]
(2) Gamma Spec - [illegible] {Americium-241, Antimony-125, Beryllium-7, Cerium-144, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106}

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab

Matrix *
S = Soil
SE = Sediment
SO = Solid
SL = Sludge
W = Water
O = Oil
A = Air
DS = Drum Solids
DL = Drum Liquids
T = Tissue
WI = Wipe
L = Liquid
V = Vegetation
X = Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-115-260 Page [illegible] of [illegible]

Collector Rylee Bacon	Company Contact Joan Kessner	Telephone No. 375-4640	Project Coordinator KESSNER, JH
Project Designation Columbia River Component RCBRA - Surface Water	Sampling Location Rock T/0012 3A		SAF No. RC-115
Ice Chest No. AFS-09-054	Field Logbook No. EL-1645	COA RESCRE6581	Method of Shipment FEDEX
Shipped To EBERLINE SERVICES (LIONVILLE)	Offsite Property No. N/A		Bill of Lading/Air Bill No. FDX 793214484540

Price Code 7C

Data Turnaround 15 Days

POSSIBLE SAMPLE HAZARDS/REMARKS

N/A

Special Handling and/or Storage

N/A

Preservation	HNO3 ~~AH~~ none
Type of Container	P/F
No. of Container(s)	
Volume	Stored 3/10/2010
SAMPLE ANALYSIS	See item (1) in Special Instructions

Sample No.	Matrix *	Sample Date	Sample Time	
J19HR6	WATER			
J19HT5	WATER	1-23-10	1230	X

CHAIN OF POSSESSION

Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
E. Bacon RR	1-23-10 1830	E. Bacon EA, REF E RR	1-23-10 1830
EA, REF E RR	1/26/10 1300	SHANNAN JOHNSON	1/26/10 1322
SHANNAN JOHNSON	1/26/10 1322	HDY	
FedEx	1/27/10 0930	[illegible]	1/27/10 0930

SPECIAL INSTRUCTIONS

3/10/2010

(1) FILTERED ICP Metals - 6010TR {Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Titanium, Uranium, Vanadium, Zinc}; FILTERED Mercury - 7470

Sample unavailable to follow samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab

Matrix *

LABORATORY SECTION Received By Title Date/Time

FINAL SAMPLE DISPOSITION Disposal Method Disposed By Date/Time

WCH-EE-011

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

Collector R. [illegible]	Company Contact Joan Kessner	Telephone No. [illegible]	Project Coordinator KESSNER, JH
Project Designation [illegible]	Sampling Location 100H 7100H1A		SAF No. [illegible]
Ice Chest No. APS-04-054	Field Logbook No. [illegible]	COA [illegible]	Method of Shipment FEDEX
Shipped To [illegible] SERVICES [✓ [illegible]]	Offsite Property No. N/A		Bill of Lading/Air Bill No. FDX 793214484640

BC-115-241 Page [illegible]

Price Code 7C

Data Turnaround 15 Days

POSSIBLE SAMPLE HAZARDS/REMARKS

N/A

Special Handling and/or Storage

N/A

			Preservation	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
			Type of Container	G/P	[illegible]	G	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
			No. of Container(s)	[illegible]	1	1	1	1	2	2	1	1	1
			Volume	[illegible]	250mL	125mL	250mL	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
SAMPLE ANALYSIS				[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Sample No.	Matrix *	Sample Date	Sample Time										
[illegible]	WATER	01-24-10	1205	X	X	X	X						
[illegible]	WATER	01-24-10	1205										X

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From R. [illegible] R. [illegible]	Date/Time 01-24-10 1702	Received By/Stored In EAS REF F R. [illegible]	Date/Time 01-24-10 1702
Relinquished By/Removed From EAS REF [illegible]	Date/Time 1/25/10 1400	Received By/Stored In SHANNAN JOHNSON	Date/Time 1/26/10 1345
Relinquished By/Removed From SHANNAN JOHNSON	Date/Time 1/26/10 1300	Received By/Stored In FDX	Date/Time
Relinquished By/Removed From FedEx	Date/Time 1/27/10 0930	Received By/Stored In	Date/Time 1/27/10 0930
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time

SPECIAL INSTRUCTIONS

(1) ICP Metals - 6010 [illegible] Aluminum, Antimony, Arsenic, Barium, Beryllium, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, [illegible] Tin, Titanium, Uranium, Vanadium, Zinc; Mercury - 7470 [illegible]

(2) Gamma Spec [illegible] Americium-241, [illegible] Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, [illegible] 226, [illegible]

(3) ICP [illegible] Metals - 6010 [illegible] Aluminum, Antimony, Arsenic, Barium, Beryllium, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, [illegible] Tin, Titanium, Uranium, Vanadium, Zinc; [illegible]

[illegible]

Matrix *

[illegible]

LABORATORY SECTION — Received By / Title / Date/Time

FINAL SAMPLE DISPOSITION — Disposal Method / Disposed By / Date/Time

BC-FT-241

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-115-242

Collector [illegible] Burgess	Company Contact [illegible]	Telephone No. [illegible]	Project Coordinator [illegible]
Project Designation [illegible] Surface Water	Sampling Location [illegible] T100-HAE		SAF No. [illegible]
Ice Chest No. AES-04-054	Field Logbook No. [illegible]	COA [illegible]	Method of Shipment [illegible]
Shipped To [illegible]	Offsite Property No. N/A		Bill of Lading/Air Bill No. FDX 7932 1448 4540

Price Code 7C

Data Turnaround
15 Days

POSSIBLE SAMPLE HAZARDS/REMARKS

[illegible]

Special Handling and/or Storage

[illegible]

0000332

Preservation	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Type of Container	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
No. of Container(s)	1		1	1	1	2	2	1	1	1
Volume	[illegible]	[illegible]	[illegible]	250mL	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
SAMPLE ANALYSIS	[illegible] *	[illegible]	[illegible] *	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

Sample No.	Matrix *	Sample Date	Sample Time										
J19HH3	WATER	1-24-10	1100	X	X	X	X						
J19HH6	WATER	1-24-10	1100										X

CHAIN OF POSSESSION

Sign/Print Names

Relinquished By/Removed From C. Burgess C.R.	Date/Time 1-24-10 1730	Received By/Stored In EAS [illegible] E. R. R.	Date/Time 1-24-10 1730
Relinquished By/Removed From EAS [illegible]	Date/Time 1/26/10 1322	Received By/Stored In SHANNAN JOHNSON	Date/Time 1/26/10 1322
Relinquished By/Removed From SHANNAN JOHNSON	Date/Time 1/26/10 1322	Received By/Stored In FDX	Date/Time
Relinquished By/Removed From FEDEX 1/27/10/0930	Date/Time	Received By/Stored In D Smith 1/27/10/0930	Date/Time
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time

SPECIAL INSTRUCTIONS

[illegible]

Matrix *

[illegible]

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

[illegible]

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-115-250

Page [illegible] of [illegible]

Collector R[illegible] Baxxxo	Company Contact [illegible] Kessner	Telephone No. 375-4688	Project Coordinator KESSNER, JH
Project Designation Columbia River Component of the RI/FFA - Surface Water	Sampling Location [illegible] 1300535		SAF No. RC-115
Ice Chest No.	Field Logbook No. [illegible]	COA [illegible]	Method of Shipment FED-EX
Shipped To [illegible] [illegible]	Offsite Property No. N/A		Bill of Lading/Air Bill No. FD[illegible] 793214484469

Price Code 7C

Data Turnaround 15 Days

POSSIBLE SAMPLE HAZARDS/REMARKS

N/A

Special Handling and/or Storage

N/A

Preservation	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Type of Container	G/P	G/P	G	G/P	[illegible]	G/P	G/P	G/P	G/P	G/P
No. of Container(s)	1	1	1	1	1	1	2	1	1	1
Volume	[illegible]	250ml	125ml	250ml	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
SAMPLE ANALYSIS	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

Sample No.	Matrix *	Sample Date	Sample Time										
[illegible]	WATER	1-25-10	1100	X	X	X	X	X					
[illegible]	WATER	1-25-10	1100										X

[illegible]

CHAIN OF POSSESSION Sign/Print Names

Relinquished By/Removed From R. Baxxxo R.B.	Date/Time 1730 1-25-10	Received By/Stored In EAS Ref E RB	Date/Time 1730 1-25-10
Relinquished By/Removed From EAS Ref E S	Date/Time 1/26/10 1100	Received By/Stored In SHANNAH JOHNSON	Date/Time 1/26/10 1100
Relinquished By/Removed From SHANNAH JOHNSON	Date/Time 1/26/10 1122	Received By/Stored In FD X	Date/Time
Relinquished By/Removed From	Date/Time 1/27/10/0930	Received By/Stored In	Date/Time 1/27/10/0930
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time

SPECIAL INSTRUCTIONS

[illegible]

(1) ICP Metals - 6010 [illegible] {Aluminum, Antimony, Arsenic, Barium, [illegible], Cadmium, Calcium, [illegible], Cobalt, Copper, Iron, Lead, [illegible], Magnesium, Manganese, Molybdenum, Nickel, [illegible], Potassium, Selenium, Silicon, Silver, Sodium, Strontium, [illegible], Tin, Titanium, [illegible], Zinc}; Mercury - 7470 [illegible]

(2) [illegible]

(3) [illegible]

(4) [illegible]

Matrix *

[illegible]

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-[illegible]

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-115-238

Page 1 of 1

Collector R. Cur[illegible]	Company Contact Jean Kessner	Telephone No. 373-[illegible]
Project Designation [illegible]	Sampling Location [illegible] 5 3008	Project Coordinator KESSNER JH
Ice Chest No. RFS-04-DS4	Field Logbook No. [illegible]-01	COA [illegible]
Shipped To [illegible]	Offsite Property No. N/A	SAF No. RC-115
		Method of Shipment FEDEX
		Bill of Lading/Air Bill No. FDX 7932 1484 5490
Price Code 7C	Data Turnaround 15 Days	

POSSIBLE SAMPLE HAZARDS/REMARKS

N/A

Special Handling and/or Storage

N/A

0000234

Preservation	[illegible]
Type of Container	[illegible]
No. of Container(s)	6
Volume	40mL
SAMPLE ANALYSIS	[illegible]

Sample No.	Matrix *	Sample Date	Sample Time	
[illegible]	WATER	01-25-10	0815	X

CHAIN OF POSSESSION		Sign/Print Names	
Relinquished By/Removed From R. Cur[illegible] R. C[illegible]	Date/Time 01-25-10 1804	Received By/Stored In R. Cur[illegible] EMS REF E	Date/Time 01-25-10 1804
Relinquished By/Removed From FASBEE S	Date/Time 1/26/10 1300	Received By/Stored In SHANNAN JOHNSON	Date/Time 1/26/10 1300
Relinquished By/Removed From SHANNAN JOHNSON	Date/Time 1/26/10 1530	Received By/Stored In FDX	Date/Time
Relinquished By/Removed From FDX	Date/Time 1-27-10 / 0930	Received By/Stored In [illegible]	Date/Time 1-27-10 / 0930
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time

SPECIAL INSTRUCTIONS

[illegible]

[illegible]

Matrix *

[illegible]

LABORATORY SECTION	Received By [illegible] Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method [illegible] Disposed By [illegible] Date/Time

[illegible]

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-115-233

Collector R Curet	Company Contact [illegible]	Telephone No. [illegible]	Project Coordinator [illegible]
Project Designation [illegible]	Sampling Location [illegible] J3008 - Duplicate		SAF No. RC-115
Ice Chest No. AFS-CEI-C01	Field Logbook No. [illegible]	COA [illegible]	Method of Shipment [illegible]
Shipped To [illegible]	Offsite Property No. N/A		Bill of Lading/Air Bill No. FD 793214484469

Price Code 7C

Data Turnaround 15 Days

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

SAMPLE ANALYSIS

S:00KK

Preservation				[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Type of Container				[illegible]	G/P	G	G/P	aG	G/P	G/P	G/P	G/P	G/P
No. of Container(s)				1	1	1	1	2	1	2	1	1	1
Volume				500mL	250mL	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
				[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Sample No.	Matrix *	Sample Date	Sample Time										
[illegible]	WATER	01-25-10	~~1215~~ 1220	X	X	X	X	X					
[illegible]	WATER	01-25-10	1220										X

CHAIN OF POSSESSION

Sign/Print Names

Relinquished By/Removed From R Curet	Date/Time 01-25-10 1307	Received By/Stored In EAS REEF	Date/Time 01-25-10 1307
Relinquished By/Removed From EAS REEF	Date/Time 1/26/10 1100	Received By SHANNAN JOHNSON	Date/Time 1/26/10
Relinquished By/Removed From SHANNAN JOHNSON	Date/Time 1/26/10 1100	Received By/Stored In FDX	Date/Time
Relinquished By/Removed From FedEx	Date/Time 1.27.10/0930	Received By/Stored In D Smith	Date/Time 1.27.10/0930
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time

SPECIAL INSTRUCTIONS

[illegible]

Matrix *

LABORATORY SECTION Received By Title Date/Time

FINAL SAMPLE DISPOSITION Disposal Method Disposed By Date/Time

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-115-256

Page 1 of 1

Collector: R Cure[illegible]

Company Contact: Joan Kessner

Telephone No.: 375-4689

Project Coordinator: KESSNER, JH

Price Code: 7C

Data Turnaround: 15 Days

Project Designation: [illegible] RCBRA - Surface Water

Sampling Location: 300 AREA EQUIPMENT BLANK J3008

SAF No.: [illegible]-115

Ice Chest No.: [illegible]-08-00[illegible]

Field Logbook No.: EL-1615-01

COA: [illegible]

Method of Shipment: FEDEX

Shipped To: [illegible] ([illegible])

Offsite Property No.: N/A

Bill of Lading/Air Bill No.: FDX# 793214484469

POSSIBLE SAMPLE HAZARDS/REMARKS: N/A

Special Handling and/or Storage: N/A

Preservation	[illegible]
Type of Container	[illegible]
No. of Container(s)	3
Volume	40mL
SAMPLE ANALYSIS	See item (1) in Special Instructions

Sample No.	Matrix *	Sample Date	Sample Time	
J[illegible]	WATER	01-25-10	1045	X

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From: R Cure[illegible] R C[illegible]	Date/Time: 01-25-10 1502	Received By/Stored In: R Cure[illegible] CAS REF E	Date/Time: 01-25-10 1502
Relinquished By/Removed From: CAS REF E	Date/Time: 1/26/10 1122	Received By/Stored In: SHANNAN JOHNSON	Date/Time: 1/26/10 1122
Relinquished By/Removed From: SHANNAN JOHNSON	Date/Time: 1/26/10 1122	Received By/Stored In: FDX	Date/Time
Relinquished By/Removed From: FedEx	Date/Time: 1-27-10 0930	Received By/Stored In: [illegible]	Date/Time: 1-27-10/0930
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time

SPECIAL INSTRUCTIONS

(1) VOA - 8260A (TCL) [illegible]

[illegible]

Matrix *: [illegible]

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

[illegible]

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-115-247 Page [illegible]

Collector: Rylie Barron

Company Contact: [illegible] Kessner

Telephone No.: 3[illegible]-4848

Project Coordinator: KESSNER, JH

Price Code: 7C

Data Turnaround: 15 Days

Project Designation: Columbia River Component of the RCBRA - Surface Water

Sampling Location: J1C0W5 TRIP BLANK

SAF No.: RC-115

Ice Chest No.: WCH-09-001

Field Logbook No.: [illegible]

COA: [illegible]

Method of Shipment: FEDEX

Shipped To: [illegible] SERVICES (GOSNELL)

Offsite Property No.: N/A

Bill of Lading/Air Bill No.: FDX: 793214484469

POSSIBLE SAMPLE HAZARDS/REMARKS

N/A

Special Handling and/or Storage

N/A

Preservation	[illegible]
Type of Container	[illegible]
No. of Container(s)	1
Volume	40mL

SAMPLE ANALYSIS: See item (1) in Special Instructions

Sample No.	Matrix *	Sample Date	Sample Time	
J1[illegible]W5	WATER	1-25-10	0800	X

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From: R. Barron RB — Date/Time: 1-25-10 1700

Received By/Stored In: R. Barron / CAS REF E RB — Date/Time: 1700 1-25-10

Relinquished By/Removed From: CAS REF E [illegible] — Date/Time: 1/26/10 1120

Received By/Stored In: SHANNAN JOHNSON — Date/Time: 1/26/10 1120

Relinquished By/Removed From: SHANNAN JOHNSON — Date/Time: 1/26/10 1120

Received By/Stored In: FDX — Date/Time:

Relinquished By/Removed From: FedEx — Date/Time: 1-27-10/0930

Received By/Stored In: DSmith — Date/Time: 1-27-10/0930

Relinquished By/Removed From: — Date/Time:

Received By/Stored In: — Date/Time:

Relinquished By/Removed From: — Date/Time:

Received By/Stored In: — Date/Time:

SPECIAL INSTRUCTIONS

(1) VOA - 8260A [illegible]

[illegible]

Matrix *

[illegible]

LABORATORY SECTION — Received By: — Title: — Date/Time:

FINAL SAMPLE DISPOSITION — Disposal Method: — Disposed By: — Date/Time:

WCH-EF-011

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-115-229

Collector: R. Curry

Company Contact: [illegible]

Telephone No.: [illegible]

Project Coordinator: KESSNER, JH

Price Code: 7C

Data Turnaround: 15 Days

Project Designation: [illegible] Surface Water

Sampling Location: 53008

SAF No.: [illegible]

Ice Chest No.: ACS-08-001

Field Logbook No.: [illegible]-01

COA: [illegible]

Method of Shipment: FEDEX

Shipped To: [illegible]

Offsite Property No.: [illegible]

Bill of Lading/Air Bill No.: FDX 793214484469

POSSIBLE SAMPLE HAZARDS/REMARKS

[illegible]

Special Handling and/or Storage

[illegible]

SAMPLE ANALYSIS

Sample No.	Matrix*	Sample Date	Sample Time										
J19FD9	WATER	01-25-10	1215	X	X	X	X	X					
J19FD9	WATER	01-25-10	1215										X

CHAIN OF POSSESSION

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
R. Curry	01-25-10 1801	CAS REEFE	01-25-10 1801
CAS REEFE	1/26/10 1102	SHANNAN JOHNSON	1/26/10 1102
SHANNAN JOHNSON	1/26/10 1107	FDX	
	1-27-10/0930	D Smith	1-27-10/0930

SPECIAL INSTRUCTIONS

[illegible]

LABORATORY SECTION Received By: Title: Date/Time

FINAL SAMPLE DISPOSITION Disposal Method: Disposed By: Date/Time

Appendix 5

Data Validation Supporting Documentation

INORGANIC ANALYSIS DATA VALIDATION CHECKLIST

VALIDATION LEVEL:	A	B	[✓ C]	D	E

PROJECT:	RCBRA	DATA PACKAGE:	K1917
VALIDATOR:	FLR	LAB: LLI	DATE: 3/27/10
		SDG	K1917

ANALYSES PERFORMED

[✓ SW-846/ICP]	SW-846/GFAA	[✓ SW-846/Hg]	SW-846 Cyanide		

SAMPLES/MATRIX

J19HR4 J19HR8 J19HR6 J19HT0 J19PH2 J19PH4
J19PH3 J19PH5 J19H19 J19H20 J19FC8 J19FC9
J19F85 J19F99

Water

1. DATA PACKAGE COMPLETENESS AND CASE NARRATIVE

Technical verification documentation present? .... Yes [✓ No] N/A

Comments: ______

2. INSTRUMENT PERFORMANCE AND CALIBRATIONS (Levels D and E)

Initial calibrations performed on all instruments? .... Yes No [✓ N/A]

Initial calibrations acceptable? .... Yes No [✓ N/A]

ICP interference checks acceptable? .... Yes No [✓ N/A]

ICV and CCV checks performed on all instruments? .... Yes No [✓ N/A]

ICV and CCV checks acceptable? .... Yes No [✓ N/A]

Standards traceable? .... Yes No [✓ N/A]

Standards expired? .... Yes No [✓ N/A]

Calculation check acceptable? .... Yes No [✓ N/A]

Comments: ______

INORGANIC ANALYSIS DATA VALIDATION CHECKLIST

3. BLANKS (Levels B, C, D, and E)

ICB and CCB checks performed for all applicable analyses? (Levels D, E) .... Yes No [✓ N/A]
ICB and CCB results acceptable? (Levels D, E) .... Yes No [✓ N/A]
Laboratory blanks analyzed? .... [✓ Yes] No N/A
Laboratory blank results acceptable? .... Yes [✓ No] N/A
Field blanks analyzed? (Levels C, D, E) .... Yes [✓ No] N/A
Field blank results acceptable? (Levels C, D, E) .... Yes No [✓ N/A]
Transcription/calculation errors? (Levels D, E) .... Yes No [✓ N/A]
Comments: Aluminum – UJ all detects manganese – UJ all detects
Fe – 85, 58, 83, 86, 87, 84 = UJ
no FB

4. ACCURACY (Levels C, D, and E)

MS/MSD samples analyzed? .... [✓ Yes] No N/A
MS/MSD results acceptable? .... [✓ Yes] No N/A
MS/MSD standards NIST traceable? (Levels D, E) .... Yes No [✓ N/A]
MS/MSD standards expired? (Levels D, E) .... Yes No [✓ N/A]
LCS/BSS samples analyzed? .... [✓ Yes] No N/A
LCS/BSS results acceptable? .... [✓ Yes] No N/A
Standards traceable? (Levels D, E) .... Yes No [✓ N/A]
Standards expired? (Levels D, E) .... Yes No [✓ N/A]
Transcription/calculation errors? (Levels D, E) .... Yes No [✓ N/A]
Performance audit sample(s) analyzed? .... Yes [✓ No] N/A
Performance audit sample results acceptable? .... Yes No [✓ N/A]
Comments: no PAS

INORGANIC ANALYSIS DATA VALIDATION CHECKLIST

5. PRECISION (Levels C, D, and E)

Duplicate RPD values acceptable? .... [✓ Yes] No N/A
Duplicate results acceptable? .... [✓ Yes] No N/A
MS/MSD standards NIST traceable? (Levels D, E) .... Yes No [✓ N/A]
MS/MSD standards expired? (Levels D, E) .... Yes No [✓ N/A]
Field duplicate RPD values acceptable? .... Yes No [✓ N/A]
Field split RPD values acceptable? .... Yes No [✓ N/A]
Transcription/calculation errors? (Levels D, E) .... Yes No [✓ N/A]

Comments:

6. ICP QUALITY CONTROL (Levels D and E)

ICP serial dilution samples analyzed? .... Yes No [✓ N/A]
ICP serial dilution %D values acceptable? .... Yes No [✓ N/A]
ICP post digestion spike required? .... Yes No [✓ N/A]
ICP post digestion spike values acceptable? .... Yes No [✓ N/A]
Standards traceable? .... Yes No [✓ N/A]
Standards expired? .... Yes No [✓ N/A]
Transcription/calculation errors? .... Yes No [✓ N/A]
Comments:

INORGANIC ANALYSIS DATA VALIDATION CHECKLIST

7. FURNACE AA QUALITY CONTROL (Levels D and E)

Duplicate injections performed as required? Yes No [✓ N/A]

Duplicate injection %RSD values acceptable? Yes No [✓ N/A]

Analytical spikes performed as required? Yes No [✓ N/A]

Analytical spike recoveries acceptable? Yes No [✓ N/A]

Standards traceable? Yes No [✓ N/A]

Standards expired? Yes No [✓ N/A]

MSA performed as required? Yes No [✓ N/A]

MSA results acceptable? Yes No [✓ N/A]

Transcription/calculation errors? Yes No [✓ N/A]

Comments:

8. HOLDING TIMES (all levels)

Samples properly preserved? [✓ Yes] No N/A

Sample holding times acceptable? [✓ Yes] No N/A

Comments:

INORGANIC ANALYSIS DATA VALIDATION CHECKLIST

9. RESULT QUANTITATION AND DETECTION LIMITS (all levels)

Results reported for all requested analyses? .... [✓ Yes] No N/A

Results supported in the raw data? (Levels D, E) .... Yes No [✓ N/A]

Samples properly prepared? (Levels D, E) .... Yes No [✓ N/A]

Detection limits meet RDL? .... [✓ Yes] No N/A

Transcription/calculation errors? (Levels D, E) .... Yes No [✓ N/A]

Comments: ______

Appendix 6

Additional Documentation Requested by Client

Metals by SW846 6000/7000 series - Quality Control

Lionville Laboratory

Analyte	Result and Qualifiers		Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch L002012 - SW 3005A										
Blank (L002012-BLK1)				Prepared: 02/01/2010 Analyzed: 02/02/2010						
Aluminum	48.1	B	50.0	ug/L						
Antimony	6.00	U	6.00	ug/L						
Arsenic	10.0	U	10.0	ug/L						
Barium	5.00	U	5.00	ug/L						
Beryllium	0.206	B	2.00	ug/L						
Bismuth	100	U	100	ug/L						
Boron	20.0	U	20.0	ug/L						
Cadmium	2.00	U	2.00	ug/L						
Calcium	47.6	B	1000	ug/L						
Chromium	2.00	U	2.00	ug/L						
Cobalt	20.0	U	20.0	ug/L						
Copper	10.0	U	10.0	ug/L						
Iron	15.6	B	50.0	ug/L						
Lead	5.00	U	5.00	ug/L						
Lithium	25.0	U	25.0	ug/L						
Magnesium	28.9	B	750	ug/L						
Manganese	1.15	B	5.00	ug/L						
Molybdenum	20.0	U	20.0	ug/L						
Nickel	40.0	U	40.0	ug/L						
Phosphorus	50.0	U	50.0	ug/L						
Potassium	4000	U	4000	ug/L						
Selenium	10.0	U	10.0	ug/L						
Silicon	25.0	U	25.0	ug/L						
Silver	2.00	U	2.00	ug/L						
Sodium	500	U	500	ug/L						
Strontium	10.0	U	10.0	ug/L						
Thallium	5.00	U	5.00	ug/L						
Tin	100	U	100	ug/L						
Titanium	5.00	U	5.00	ug/L						
Uranium	200	U	200	ug/L						
Vanadium	25.0	U	25.0	ug/L						
Zinc	10.0	U	10.0	ug/L						

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

WCH Hanford, Inc. 2620 Fermi Avenue Richland WA, 99354	Project: RC-115 Project Number: K1917 Project Manager: Joan Kessner	**Reported:** 02/09/2010 09:15

Metals by SW846 6000/7000 series - Quality Control

Lionville Laboratory

Analyte	Result And Qualifiers	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch L002012 - SW 3005A									
LCS (L002012-BS1)			Prepared: 02/01/2010 Analyzed: 02/02/2010						
Aluminum	4820	50.0	ug/L	5000.0		96	80-120		
Antimony	2990	6.00	ug/L	3000.0		100	80-120		
Arsenic	9910	10.0	ug/L	10000		99	80-120		
Barium	5070	5.00	ug/L	5000.0		101	80-120		
Beryllium	243	2.00	ug/L	250.00		97	80-120		
Bismuth	4900	100	ug/L	5000.0		98	80-120		
Boron	4900	20.0	ug/L	5000.0		98	80-120		
Cadmium	240	2.00	ug/L	250.00		96	80-120		
Calcium	24200	1000	ug/L	25000		97	80-120		
Chromium	486	2.00	ug/L	500.00		97	80-120		
Cobalt	2410	20.0	ug/L	2500.0		96	80-120		
Copper	1220	10.0	ug/L	1250.0		97	80-120		
Iron	4820	50.0	ug/L	5000.0		96	80-120		
Lead	2420	5.00	ug/L	2500.0		97	80-120		
Lithium	5080	25.0	ug/L	5000.0		102	80-120		
Magnesium	24200	750	ug/L	25000		97	80-120		
Manganese	723	5.00	ug/L	750.00		96	80-120		
Molybdenum	4970	20.0	ug/L	5000.0		99	80-120		
Nickel	1960	40.0	ug/L	2000.0		98	80-120		
Phosphorus	5030	50.0	ug/L	5000.0		101	80-120		
Potassium	24600	4000	ug/L	25000		98	80-120		
Selenium	9670	10.0	ug/L	10000		97	80-120		
Silicon	4850	25.0	ug/L	5000.0		97	80-120		
Silver	492	2.00	ug/L	500.00		98	80-120		
Sodium	24700	500	ug/L	25000		99	80-120		
Strontium	5150	10.0	ug/L	5000.0		103	80-120		
Thallium	9730	5.00	ug/L	10000		97	80-120		
Tin	4840	100	ug/L	5000.0		97	80-120		
Titanium	4860	5.00	ug/L	5000.0		97	80-120		
Uranium	4870	200	ug/L	5000.0		97	80-120		
Vanadium	2440	25.0	ug/L	2500.0		98	80-120		
Zinc	976	10.0	ug/L	1000.0		98	80-120		

Metals by SW846 6000/7000 series - Quality Control
Lionville Laboratory

Analyte	Result and Qualifiers		Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch L002012 - SW 3005A										
Duplicate (L002012-DUP1)		**Source: 1001099-02**		**Prepared: 02/01/2010 Analyzed: 02/02/2010**						
Aluminum	22.4	B	50.0	ug/L		45.5			68*	20
Antimony	6.00	U	6.00	ug/L		6.00 U				20
Arsenic	10.0	U	10.0	ug/L		10.0 U				20
Barium	28.9		5.00	ug/L		30.1			4	20
Beryllium	2.00	U	2.00	ug/L		2.00 U				20
Bismuth	100	U	100	ug/L		100 U				20
Boron	10.4	B	20.0	ug/L		10.6			2	20
Cadmium	2.00	U	2.00	ug/L		2.00 U				20
Calcium	18500		1000	ug/L		19200			4	20
Chromium	2.00	U	2.00	ug/L		2.00 U				20
Cobalt	20.0	U	20.0	ug/L		20.0 U				20
Copper	10.0	U	10.0	ug/L		10.0 U				20
Iron	50.0	U	50.0	ug/L		11.0				20
Lead	5.00	U	5.00	ug/L		5.00 U				20
Lithium	25.0	U	25.0	ug/L		25.0 U				20
Magnesium	4700		750	ug/L		4900			4	20
Manganese	1.07	B	5.00	ug/L		1.39			26*	20
Molybdenum	0.718	B	20.0	ug/L		0.867			19	20
Nickel	40.0	U	40.0	ug/L		40.0 U				20
Phosphorus	50.0	U	50.0	ug/L		50.0 U				20
Potassium	757	B	4000	ug/L		762			0.7	20
Selenium	10.0	U	10.0	ug/L		10.0 U				20
Silicon	2060		25.0	ug/L		2140			4	20
Silver	2.00	U	2.00	ug/L		2.00 U				20
Sodium	2290		500	ug/L		2370			4	20
Strontium	102		10.0	ug/L		106			4	20
Thallium	5.00	U	5.00	ug/L		5.00 U				20
Tin	100	U	100	ug/L		100 U				20
Titanium	0.702	B	5.00	ug/L		0.732			4	20
Uranium	200	U	200	ug/L		200 U				20
Vanadium	1.98	B	25.0	ug/L		2.01			1	20
Zinc	10.0	U	10.0	ug/L		10.0 U				20

WCH-Hanford, Inc 2620 Fermi Avenue Richland WA, 99354	Project: RC-115 Project Number: K1917 Project Manager: Joan Kessner	Reported: 02/09/2010 09:15

Metals by SW846 6000/7000 series - Quality Control
Lionville Laboratory

Analyte	Result and Qualifiers	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch L002012 - SW 3005A									
Matrix Spike (L002012-MS1)		Source: 1001099-02		Prepared: 02/01/2010 Analyzed: 02/02/2010					
Aluminum	1960	50.0	ug/L	2000.0	45.3	96	75-125		
Antimony	497	6.00	ug/L	500.00	6.00 U	99	75-125		
Arsenic	2020	10.0	ug/L	2000.0	10.0 U	101	75-125		
Barium	2060	5.00	ug/L	2000.0	30.1	102	75-125		
Beryllium	48.2	2.00	ug/L	50.000	2.00 U	96	75-125		
Bismuth	4940	100	ug/L	5000.0	100 U	99	75-125		
Boron	995	20.0	ug/L	1000.0	10.6	98	75-125		
Cadmium	48.2	2.00	ug/L	50.000	2.00 U	96	75-125		
Calcium	43300	1000	ug/L	25000	19200	96	75-125		
Chromium	194	2.00	ug/L	200.00	2.00 U	97	75-125		
Cobalt	481	20.0	ug/L	500.00	20.0 U	96	75-125		
Copper	239	10.0	ug/L	250.00	10.0 U	96	75-125		
Iron	982	50.0	ug/L	1000.0	11.0	97	75-125		
Lead	482	5.00	ug/L	500.00	5.00 U	96	75-125		
Lithium	1040	25.0	ug/L	1000.0	25.0 U	104	75-125		
Magnesium	28800	750	ug/L	25000	4900	96	75-125		
Manganese	483	5.00	ug/L	500.00	1.39	96	75-125		
Molybdenum	985	20.0	ug/L	1000.0	0.867	98	75-125		
Nickel	487	40.0	ug/L	500.00	40.0 U	97	75-125		
Phosphorus	5150	50.0	ug/L	5000.0	50.0 U	103	75-125		
Potassium	25200	4000	ug/L	25000	762	98	75-125		
Selenium	1970	10.0	ug/L	2000.0	10.0 U	98	75-125		
Silicon	3160	25.0	ug/L	1000.0	2140	102	75-125		
Silver	48.0	2.00	ug/L	50.000	2.00 U	96	75-125		
Sodium	27200	500	ug/L	25000	2370	99	75-125		
Strontium	1140	10.0	ug/L	1000.0	106	103	75-125		
Thallium	1940	5.00	ug/L	2000.0	5.00 U	97	75-125		
Tin	975	100	ug/L	1000.0	100 U	97	75-125		
Titanium	980	5.00	ug/L	1000.0	0.712	98	75-125		
Uranium	4800	200	ug/L	5000.0	200 U	96	75-125		
Vanadium	478	25.0	ug/L	500.00	2.03	95	75-125		
Zinc	488	10.0	ug/L	500.00	10.0 U	98	75-125		

Metals by SW846 6000/7000 series - Quality Control

Lionville Laboratory

Analyte	Result and Qualifiers	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch L002059 - SW 7470A Prep									
Blank (L002059-BLK1)			Prepared: 02/04/2010 Analyzed: 02/05/2010						
Mercury	0.200 U	0.200	ug/L						
LCS (L002059-BS1)			Prepared: 02/04/2010 Analyzed: 02/05/2010						
Mercury	5.18	0.200	ug/L	5.0606		102	80-120		
Duplicate (L002059-DUP1)	Source: 1001099-01		Prepared: 02/04/2010 Analyzed: 02/05/2010						
Mercury	0.200 U	0.200	ug/L		0.200 U				20
Matrix Spike (L002059-MS1)	Source: 1001099-01		Prepared: 02/04/2010 Analyzed: 02/05/2010						
Mercury	1.07	0.200	ug/L	1.0121	0.200 U	106	75-125		

Date: 29 March 2010
To: Washington Closure Hanford Inc. (technical representative)
From: ELR Consulting
Project: Columbia River Component of the RCBRA - Surface Water
Subject: Radiochemistry - Data Package No. K1917-EB

INTRODUCTION

This memo presents the results of data validation on Data Package No. K1917 prepared by Eberline Services (EB). A list of samples validated along with the analyses reported and the method of analysis is provided in the following table.

Sample ID	Sample Date	Media	Validation	Data
J19F85	1/25/10	Water	C	See note 1
J19FC8	1/25/10	Water	C	See note 1
J19FH2	1/24/10	Water	C	See note 1 & 2
J19FH3	1/24/10	Water	C	See note 1 & 2
J19H19	1/25/10	Water	C	See note 1
J19HR4	1/22/10	Water	C	See note 1 & 3
J19HR6	1/23/10	Water	C	See note 1 & 3

1 – Alpha spectroscopy & gamma spectroscopy
2 - Total strontium
3 - Carbon-14, total strontium

Data validation was conducted in accordance with the Washington Closure Hanford (WCH) validation statement of work and the Remedial Investigation Work Plan for Hanford Site Releases to the Columbia River (DOE/RL-2008-11, Rev. 0, September 2008). Appendices 1 through 6 provide the following information as indicated below:

Appendix 1. Glossary of Data Reporting Qualifiers
Appendix 2. Summary of Data Qualification
Appendix 3. Qualified Data Summary and Annotated Laboratory Reports
Appendix 4. Laboratory Narrative and Chain-of-Custody Documentation
Appendix 5. Data Validation Supporting Documentation
Appendix 6. Additional Data Requested by Client

DATA QUALITY PARAMETERS

- **Holding Times**

Holding times are calculated from Chain-of-Custody forms to determine the validity of the results. The maximum holding time for radiochemical analysis is 6 months

All holding times were acceptable.

- **Preparation (Method) Blanks**

Laboratory Blanks

Blank samples are analyzed to determine if positive results are due to laboratory reagent, sample container, or detector contamination. If blank analysis results indicate the presence of an analyte above the minimum detectable activity (MDA), the following qualifiers are applied: All positive sample results less than five times the highest blank concentration are qualified as estimates and flagged "J"; sample results below the MDA are qualified as undetected and flagged "U"; sample results above the MDA and greater than five times the highest blank concentration are not qualified.

All blank results were acceptable.

Field (Equipment) Blank

No field blanks were submitted for analysis.

- **Accuracy**

Accuracy is evaluated from laboratory control sample (LCS) or blank spike sample (BSS) batch samples and spiked samples from the analytical batch. Measured activities are compared to the known added amounts. The acceptable LCS or BSS and matrix spike (MS) recovery range is 70-130%. In addition, samples may be spiked with a radiochemical tracer to assist in isolating the radioisotope of interest with the yield of the tracer being used in calculating sample activity. The acceptable range for tracer recovery is 20% to 105%. Spike sample results outside the above ranges result in associated sample results being qualified as estimates, or not qualified, depending on the activity of the individual sample. Results are rejected for LCS/BSS recoveries of less than 30% and tracer recoveries of less than 20%, and tracer recoveries of greater than 115% for detected results.

Due to the lack of an LCS analysis, all thorium-228 (aspec) and thorium-232 (aspec) results were qualified as estimates and flagged "J".

All other accuracy results were acceptable.

- **Laboratory Duplicates**

Analytical precision is expressed by the relative percent differences (RPD) between the recoveries of duplicate matrix spike analyses performed on a sample in the analytical batch. Precision may alternatively be assessed using unspiked duplicate analyses performed on a sample in the analytical batch. If both sample and replicate activities (concentrations) are greater than five times the contract required detection limit (CRDL) and the RPD is less than 20%, no qualification is required. If either activity (concentration) is less than five times the CRDL, the RPD control limit is less than or equal to two times the CRDL. If the RPD is outside the applicable control limit, associated results are qualified as estimated detects or estimated non-detects.

All duplicate results were acceptable.

Field Duplicates

No field duplicates were submitted for analysis.

- **Detection Levels**

Reported analytical detection levels for undetected analytes are compared against the project RQLs to ensure that laboratory detection levels meet the required criteria. Ten analytes exceeded the RQL. Under the WCH statement of work, no qualification is required. All other analytes met the RQL.

- **Completeness**

Data package No. K1917 was submitted for validation and verified for completeness. Completeness is based on the percentage of data determined to be valid (i.e., not rejected). The completion percentage was 100%.

MAJOR DEFICIENCIES

None found.

MINOR DEFICIENCIES

The following minor deficiencies were noted:

- Due to the lack of an LCS analysis, all thorium-228 (aspec) and thorium-232 (aspec) results were qualified as estimates and flagged "J".

Data flagged "J" indicates that the associated concentration is an estimate, but under the WCH statement of work, the data may be usable for decision-making purposes. All other validated results are considered accurate within the standard error associated with the methods

Ten analytes exceeded the RQL. Under the WCH statement of work, no qualification is required.

REFERENCES

Washington Closure Hanford Contract #S00W307A00 (March 2008). *Data Validation Services*, March 2008.

DOE/RL-2008-11, Rev.0, *Remedial Investigation Work Plan for Hanford Site Releases to the Columbia River*, September 2008.

Appendix 1

Glossary of Data Reporting Qualifiers

Qualifiers which may be applied by data validators in compliance with the WCH statement of work are as follows:

U - Indicates the compound or analyte was analyzed for and not detected above the minimum detectable activity (MDA) in the sample. The value reported is the sample result corrected for sample dilution and moisture content by the laboratory. The data is usable for decision making purposes.

UJ - Indicates the compound or analyte was analyzed for and not detected at concentrations above the minimum detectable activity (MDA) in the sample. Due to a minor QC deficiency identified during the data validation, the associated quantitation limit is an estimate, but is usable for decision making purposes.

J - Indicates the compound or analyte was analyzed for and detected. Due to a minor QC deficiency identified during the data validation, the associated concentration is an estimate, but the data are usable for decision-making purposes.

R - Indicates the compound or analyte was analyzed for, detected, and due to an identified major QC deficiency, the data are unusable.

UR - Indicates the compound or analyte was analyzed for and not detected in the sample. Additionally, the data is unusable due to an identified major QC deficiency.

Appendix 2

Summary of Data Qualification

RADIOCHEMISTRY DATA QUALIFICATION SUMMARY*

SDG: K1917	**REVIEWER: ELR**	**Project: RCBRA**	**PAGE 1 OF 1**
COMPOUND	QUALIFIER	SAMPLES AFFECTED	REASON
Thorium-228 (aspec) Thorium-232 (aspec)	J	All	No MS analysis

* - The Qualified Data Summary Table includes laboratory applied "U" qualifiers not specifically identified here. The laboratory applied "U" qualifiers are included to minimize misinterpretation of results contained in the table.

Appendix 3

Qualified Data Summary and Annotated Laboratory Reports

EBERLINE ANALYTICAL/RICHMOND

SAMPLE DELIVERY GROUP K1917

7755-001

J19F85

DATA SHEET

SDG	7755	Client/Case no	Hanford SDG K1917
Contact	N.Joseph Verville	Contract	No. S00N235A00
Lab sample id	S001138-01	Client sample id	J19F85
Dept sample id	7755-001	Location/Matrix	100A--JJ008 WATER
Received	01/28/10	Collected/Volume	01/25/10 10:15 5 L
		Custody/SAF No	RC-115-229 RC-115

3/27/10

ANALYTE	CAS NO	RESULT pCi/L	2σ ERR (COUNT)	MDA pCi/L	RDL pCi/L	QUALI-FIERS	TEST
Thorium 228	14274-82-9	-0.022	0.088	0.243		U J	TH
Thorium 230	14269-63-7	-0.088	0.11	0.389	1.00	U	TH
Thorium 232	TH-232	0	0.044	0.168	1.00	U J	TH
Uranium 233/234	U-233/234	0.707	0.27	0.200	1.00		U
Uranium 235	15117-96-1	0.032	0.063	0.242	1.00	U	U
Uranium 238	U-238	0.681	0.27	0.200	1.00		U
Plutonium 238	13981-16-3	0.053	0.11	0.203	1.00	U	PU
Plutonium 239/240	PU-239/240	0	0.053	0.201	1.00	U	PU
Potassium 40	13966-00-2	U		79.3		U	GAM
Cobalt 60	10198-40-0	U		6.52	25.0	U	GAM
Cesium 137	10045-97-3	U		5.96	15.0	U	GAM
Radium 226	13982-63-3	U		13.1		U	GAM
Radium 228	15262-20-1	U		29.2		U	GAM
Europium 152	14683-23-9	U		16.7	50.0	U	GAM
Europium 154	15585-10-1	U		18.5	50.0	U	GAM
Europium 155	14391-16-3	U		15.3	50.0	U	GAM
Thorium 228	14274-82-9	U		9.20		U	GAM
Thorium 232	TH-232	U		29.2		U	GAM
Uranium 235	15117-96-1	U		30.5		U	GAM
Uranium 238	U-238	U		779		U	GAM
Americium 241	14596-10-2	U		9.30		U	GAM
Beryllium 7	13966-02-4	U		50.4		U	GAM
Ruthenium 106	13967-48-1	U		54.1		U	GAM
Antimony 125	14234-35-6	U		14.2		U	GAM
Cesium 134	13967-70-9	U		8.74		U	GAM

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SUMMARY DATA SECTION
Page 15

Lab id	EBRLNE
Protocol	Hanford1
Version	Ver 1.0
Form	DVD-DS
Version	1.06
Report date	02/12/10

EBERLINE ANALYTICAL/RICHMOND

SAMPLE DELIVERY GROUP K1917

7755-002

J19FC8

DATA SHEET

SDG	7755	Client/Case no	Hanford SDG K1917
Contact	N Joseph Verville	Contract	No. 00WP35A00
Lab sample id	8001138-02	Client sample id	J19FC8
Dept sample id	7755-002	Location/Matrix	300A--DUPLICATE J3008 WATER
Received	01/28/10	Collected/Volume	01/25/10 11:40 5 L
		Custody/SAF No	KC-115-233 KC-115

3/27/10

ANALYTE	CAS NO	RESULT pCi/L	2σ ERR (COUNT)	MDA pCi/L	RDL pCi/L	QUALI-FIERS	TEST
Thorium 228	14274-82-9	-0.019	0.038	0.147		U J	TH
Thorium 230	14269-63-7	0.057	0.15	0.119	1.00	U	TH
Thorium 232	TH-232	0.019	0.018	0.146	1.00	U J	TH
Uranium 233/234	U-233/234	0.609	0.31	0.292	1.00		U
Uranium 235	15117-96-1	0.037	0.074	0.282	1.00	U	U
Uranium 238	U-238	0.548	0.25	0.231	1.00		U
Plutonium 238	13981-16-3	0	0.051	0.193	1.00	U	PU
Plutonium 239/240	PU-239/240	0	0.050	0.191	1.00	U	PU
Potassium 40	13966-00-2	U		120		U	GAM
Cobalt 60	10198-40-0	U		6.05	25.0	U	GAM
Cesium 137	10045-97-3	U		6.21	15.0	U	GAM
Radium 226	13982-63-3	U		13.2		U	GAM
Radium 228	15262-20-1	U		19.6		U	GAM
Europium 152	14683-23-9	U		18.7	50.0	U	GAM
Europium 154	15585-10-1	U		17.2	50.0	U	GAM
Europium 155	14391-16-3	U		19.0	50.0	U	GAM
Thorium 228	14274-82-9	U		12.6		U	GAM
Thorium 232	TH-232	U		39.6		U	GAM
Uranium 235	15117-96-1	U		45.4		U	GAM
Uranium 238	U-238	U		702		U	GAM
Americium 241	14596-10-2	U		25.8		U	GAM
Beryllium 7	13966-02-4	U		58.0		U	GAM
Ruthenium 106	13967-48-1	U		60.0		U	GAM
Antimony 125	14234-35-6	U		15.4		U	GAM
Cesium 134	13967-70-9	U		7.76		U	GAM

Lab id	EBERLINE
Protocol	Hanford
Version	Ver 1.0
Form	DVD-DS
Version	3.06
Report date	02/12/10

EBERLINE ANALYTICAL/RICHMOND

SAMPLE DELIVERY GROUP K1917

7755-003 J19PH2

DATA SHEET

SDG	7755	Client/Case no	Hanford SDG K1917
Contact	N. Joseph Verville	Contract	No. S00W235A00
Lab sample id	S001130-01	Client sample id	J19PH2
Dept sample id	7755-003	Location/Matrix	100K T100H1A WATER
Received	01/28/10	Collected/Volume	01/24/10 12:02 7 L
		Custody/SAF No	RC-114-241 RC-115

3/27/10

ANALYTE	CAS NO	RESULT pCi/L	2σ ERR (COUNT)	MDA pCi/L	RDL pCi/L	QUALI-FIERS	TEST
Total Strontium	SR RAD	0.199	0.38	0.736	2.00	U	SR
Thorium 228	14274-82-9	0.037	0.075	0.143		U J	TH
Thorium 230	14269-63-7	-0.075	0.15	0.331	1.00	U	TH
Thorium 232	TH 232	0	0.037	0.143	1.00	U J	TH
Uranium 233/234	U-233/234	0.268	0.18	0.228	1.00		U
Uranium 235	15117-96-1	0.036	0.072	0.276	1.00	U	U
Uranium 238	U-238	0.260	0.18	0.228	1.00		U
Plutonium 238	13981-16-3	0	0.047	0.189	1.00	U	PU
Plutonium 239/240	PU-239/240	0.025	0.049	0.189	1.00	U	PU
Potassium 40	13966-00-2	U		225		U	GAM
Cobalt 60	10198-40-0	U		10.4	25.0	U	GAM
Cesium 137	10045-97-3	U		11.7	15.0	U	GAM
Radium 226	13982-63-3	U		20.1		U	GAM
Radium 228	15262-20-1	U		44.1		U	GAM
Europium 152	14683-23-9	U		31.6	50.0	U	GAM
Europium 154	15585-10-1	U		31.2	50.0	U	GAM
Europium 155	14391-16-3	U		30.3	50.0	U	GAM
Thorium 228	14274-82-9	U		17.2		U	GAM
Thorium 232	TH 232	U		44.1		U	GAM
Uranium 235	15117-96-1	U		63.4		U	GAM
Uranium 238	U-238	U		1290		U	GAM
Americium 241	14596-10-2	U		86.5		U	GAM
Beryllium 7	13966-02-4	U		87.7		U	GAM
Ruthenium 106	13967-48-1	U		98.1		U	GAM
Antimony 125	14234-35-6	U		26.1		U	GAM
Cesium 134	13967-70-9	U		11.8		U	GAM

Lab id	EBRLNX
Protocol	Hanford
Version	Ver 1.0
Form	DVD-DS
Version	3.06
Report date	02/12/10

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EBERLINE ANALYTICAL/RICHMOND

SAMPLE DELIVERY GROUP K1917

7755-004

J19FH3

DATA SHEET

SDG 7755
Contact N. Joseph Verville
Client/Case no Hanford
SDG K1917
Contract No. 00M215A00

Lab sample id S001130-04
Dept sample id 7755-004
Received 01/28/10
Client sample id J19FH3
Location/Matrix 100H T100H16 WATER
Collected/Volume 01/24/10 11:00 7 L
Custody/SAF No RC-115-242 RC-115

✓ 3|27|10

ANALYTE	CAS NO	RESULT pCi/L	2σ ERR (COUNT)	MDA pCi/L	RDL pCi/L	QUALI-FIERS	TEST
Total Strontium	SR RAD	0.079	0.39	0.793	2.00	U	SR
Thorium 228	14274-82-9	0.021	0.14	0.281		U J	TH
Thorium 230	14269-63-7	-0.138	0.14	0.389	1.00	U	TH
Thorium 232	TH-232	0.021	0.046	0.176	1.00	U J	TH
Uranium 233/234	U-233/234	0.178	0.15	0.135	1.00	U	U
Uranium 235	15117-96-1	0.031	0.067	0.236	1.00	U	U
Uranium 238	U-238	0.076	0.10	0.195	1.00	U	U
Plutonium 238	13981-16-3	0	0.044	0.168	1.00	U	PU
Plutonium 239/240	PU 239/240	0	0.044	0.168	1.00	U	PU
Potassium 40	13966-00-2	U		73.0		U	GAM
Cobalt 60	10198-40-0	U		7.72	25.0	U	GAM
Cesium 137	10045-97-3	U		7.11	15.0	U	GAM
Radium 226	13982-63-3	U		13.6		U	GAM
Radium 228	15262-20-1	U		30.1		U	GAM
Europium 152	14683-23-9	U		18.9	50.0	U	GAM
Europium 154	15585-10-1	U		22.4	50.0	U	GAM
Europium 155	14391-16-3	U		15.8	50.0	U	GAM
Thorium 228	14274-82-9	U		11.2		U	GAM
Thorium 232	TH-232	U		30.1		U	GAM
Uranium 235	15117-96-1	U		33.2		U	GAM
Uranium 238	U-238	U		806		U	GAM
Americium 241	14596-10-2	U		9.20		U	GAM
Beryllium 7	13966-02-4	U		57.9		U	GAM
Ruthenium 106	13967-48-1	U		58.6		U	GAM
Antimony 125	14234-35-6	U		16.4		U	GAM
Cesium 134	13967-70-9	U		8.52		U	GAM

Lab id EBRLNE
Protocol Hanford1
Version Ver 1.0
Form DVD-DS
Version 3.06
Report date 02/12/10

EBERLINE ANALYTICAL/RICHMOND

SAMPLE DELIVERY GROUP K1917

7755-005 J19H19

DATA SHEET

SDG	7755	Client/Case no	Hanford SDG K1917
Contact	N. Joseph Verville	Contract	No. 500H2&&A90
Lab sample id	S001138-05	Client sample id	J19H19
Dept sample id	7755-005	Location/Matrix	100A T300SJ5, WATER
Received	01/28/10	Collected/Volume	01/25/10 11:00 5 L
		Custody/SAP No	RC-115-250 RC-115

✓ 3/27/10

ANALYTE	CAS NO	RESULT pCi/L	2σ ERR (COUNT)	MDA pCi/L	RDL pCi/L	QUALI-FIERS	TEST
Thorium 228	14274-82-9	0	0.12	0.256		U J	TH
Thorium 230	14269-63-7	-0.125	0.17	0.368	1.00	U	TH
Thorium 232	TH-232	0	0.042	0.159	1.00	U J	TH
Uranium 233/234	U-233/234	1.14	0.38	0.201	1.00		U
Uranium 235	15117-96-1	0.032	0.064	0.241	1.00	U	U
Uranium 238	U-238	0.814	0.32	0.201	1.00		U
Plutonium 238	13981-16-3	0.049	0.050	0.139	1.00	U	PU
Plutonium 239/240	PU-239/240	0	0.049	0.189	1.00	U	PU
Potassium 40	13966-00-2	U		88.2		U	GAM
Cobalt 60	10198-40-0	U		4.19	25.0	U	GAM
Cesium 137	10045-97-3	U		4.26	15.0	U	GAM
Radium 226	13982-63-3	U		9.11		U	GAM
Radium 228	15262-20-1	U		20.7		U	GAM
Europium 152	14683-23-9	U		13.8	50.0	U	GAM
Europium 154	15585-10-1	U		12.0	50.0	U	GAM
Europium 155	14391-16-3	U		15.5	50.0	U	GAM
Thorium 228	14274-82-9	U		9.00		U	GAM
Thorium 232	TH-232	U		20.7		U	GAM
Uranium 235	15117-96-1	U		12.2		U	GAM
Uranium 238	U-238	U		487		U	GAM
Americium 241	14596-10-2	U		16.4		U	GAM
Beryllium 7	13966-02-4	U		42.5		U	GAM
Ruthenium 106	13967-48-1	U		42.2		U	GAM
Antimony 125	14234-35-6	U		20.8		U	GAM
Cesium 134	13967-70-9	U		5.13		U	GAM

Lab id	EBRLNE
Protocol	Hanford1
Version	Ver 1.0
Form	DVD-DS
Version	3.06
Report date	02/12/10

DATA SHEETS
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EBERLINE ANALYTICAL/RICHMOND

SAMPLE DELIVERY GROUP K1917

7755-006 J19HR4

DATA SHEET

SDG	7755	Client/Case no	Hanford SDG_K1917
Contact	N.Joseph Verville	Contract No.	[illegible]
Lab sample id	0001138-06	Client sample id	J19HR4
Dept sample id	7755-006	Location/Matrix	100K KWIN TEST 1 WATER
Received	01/28/10	Collected/Volume	01/22/10 11:30 7 L
		Custody/SAP No	RC-115-258 RC-115

✓ 3/23/10

ANALYTE	CAS NO	RESULT pCi/L	2σ ERR (COUNT)	MDA pCi/L	RDL pCi/L	QUALI-FIERS	TEST
Carbon 14	14762-75-5	-12.0	[illegible]	54.5	200	U	C
Total Strontium	SR-RAD	0.190	0.41	0.740	1.00	U	SR
Thorium 228	14274-82-9	0.062	0.063	0.296		U J	TH
Thorium 230	14269-63-7	-0.216	0.13	0.472	1.00	U	TH
Thorium 232	TH-232	0	0.063	0.236	1.00	U J	TH
Uranium 233/234	U-233/234	0.201	0.17	0.219	1.00	U	U
Uranium 235	15117-96-1	0.069	0.070	0.266	1.00	U	U
Uranium 238	U-238	0.229	0.17	0.219	1.00		U
Plutonium 238	13981-16-3	0.058	0.12	0.222	1.00	U	PU
Plutonium 239/240	PU-239/240	0	0.058	0.222	1.00	U	PU
Potassium 40	13966-00-2	U		144		U	GAM
Cobalt 60	10198-40-0	U		7.71	25.0	U	GAM
Cesium 137	10045-97-3	U		7.35	15.0	U	GAM
Radium 226	13982-63-3	U		14.1		U	GAM
Radium 228	15262-20-1	U		32.8		U	GAM
Europium 152	14683-23-9	U		21.6	50.0	U	GAM
Europium 154	15585-10-1	U		23.5	50.0	U	GAM
Europium 155	14391-16-1	U		21.7	50.0	U	GAM
Thorium 228	14274-82-9	U		11.8		U	GAM
Thorium 232	TH-232	U		32.8		U	GAM
Uranium 235	15117-96-1	U		40.6		U	GAM
Uranium 238	U-238	U		931		U	GAM
Americium 241	14596-10-2	U		46.2		U	GAM
Beryllium 7	13966-02-4	U		65.8		U	GAM
Ruthenium 106	13967-48-1	U		68.5		U	GAM
Antimony 125	14234-35-6	U		17.8		U	GAM
Cesium 134	13967-70-9	U		8.69		U	GAM

DATA SHEETS
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SUMMARY DATA SECTION
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Lab id [illegible]
Protocol Hanford
Version Ver 1.0
Form DVD-DS
Version 1.0A
Report date 02/[illegible]/10

EBERLINE ANALYTICAL/RICHMOND

SAMPLE DELIVERY GROUP K1917

7755-007

J19HR6

DATA SHEET

SOW 7755	Client/Case no Hanford	SDG K1917	
Contact N.Joseph Verville	Contract NO. 500W235A00		
Lab sample id S001118-07	Client sample id J19HR6		
Dept sample id 7755-007	Location/Matrix 100K T100K3A	WATER	
Received 01/28/10	Collected/Volume 01/23/10 13:30	2 L	
	Custody/SAF No RC-115-260	RC-115	

3/27/10

ANALYTE	CAS NO	RESULT pCi/L	2σ ERR (COUNT)	MDA pCi/L	RDL pCi/L	QUALI-FIERS	TEST
Carbon 14	14762-75-5	4.63	34	56.9	300	U	C
Total Strontium	SR-RAD	0.030	0.34	0.685	2.00	U	SR
Thorium 228	14274-82-9	0.019	0.076	0.210		U J	TH
Thorium 230	14269-63-7	-0.114	0.15	0.348	1.00	U	TH
Thorium 232	TH-232	0	0.038	0.145	1.00	U J	TH
Uranium 233/234	U-233/234	0.240	0.18	0.230	1.00		U
Uranium 235	15117-96-1	0	0.073	0.278	1.00	U	U
Uranium 238	U 238	0.210	0.18	0.230	1.00	U	U
Plutonium 238	13981-16-3	-0.030	0.061	0.232	1.00	U	PU
Plutonium 239/240	PU-239/240	0	0.061	0.232	1.00	U	PU
Potassium 40	13966-00-2	U		74.3		U	GAM
Cobalt 60	10198-40-0	U		6.12	25.0	U	GAM
Cesium 137	10045-97-3	U		5.70	15.0	U	GAM
Radium 226	13982-63-3	U		10.3		U	GAM
Radium 228	15262-20-1	U		23.9		U	GAM
Europium 152	14683-23-9	U		15.0	50.0	U	GAM
Europium 154	15585-10-1	U		18.2	50.0	U	GAM
Europium 155	14391-16-3	U		12.6	50.0	U	GAM
Thorium 228	14274-82-9	U		7.59		U	GAM
Thorium 232	TH-232	U		23.7		U	GAM
Uranium 235	15117-96-1	U		26.1		U	GAM
Uranium 238	U 238	U		685		U	GAM
Americium 241	14596-10-2	U		16.8		U	GAM
Beryllium 7	13966-02-4	U		46.5		U	GAM
Ruthenium 106	13967-48-1	U		48.7		U	GAM
Antimony 125	14234-35-6	U		13.1		U	GAM
Cesium 134	13967-70-9	U		6.60		U	GAM

Lab id	EBRLNE
Protocol	Hanford1
Version	Ver 1.0
Form	DVD DS
Version	1.06
Report date	03/12/10

Appendix 4

Laboratory Narrative and Chain-of-Custody Documentation

1.0 GENERAL

Washington Closure Hanford (WCH) Sample Delivery Group K1917 was composed of seven water samples designated under SAF No. RC-115 with a Project Designation of: Columbia River Component of the RCBRA - Surface Water.

The samples were received as stated on the Chain-of-Custody documents. Any discrepancies are noted on the Eberline Analytical Sample Receipt Checklist. The results were sent to WCH via e-mail February 12, 2010.

2.0 ANALYSIS NOTES

2.1 Carbon-14 Analysis

No problems were encountered during the course of the analyses.

2.2 Strontium-90 Analysis

No problems were encountered during the course of the analyses.

2.3 Isotopic Thorium Analysis

No problems were encountered during the course of the analyses.

2.4 Isotopic Uranium Analysis

No problems were encountered during the course of the reanalyses.

2.5 Isotopic Plutonium Analysis

No problems were encountered during the course of the analyses.

2.6 Gamma Spectroscopy

No problems were encountered during the course of the analyses.

3.0 Case Narrative Certification Statement

"I certify that this data package is in compliance with the SOW, both technically and for completeness, for other than the conditions detailed above. Release of the data obtained in this hard copy data package has been authorized by the Laboratory Manager or a designee, as verified by the following signature."

N. Joseph Verville
Client Services Manager

2/12/10
Date

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-115-229

Page 1 of 1

Collector: R. Curet

Company Contact: Joan Kessner

Telephone No.: 375-4668

Project Coordinator: KESSNER, JH

Price Code: 7C

Data Turnaround: 15 Days

Project Designation: Columbia River Component of the RCBRA - Surface Water

Sampling Location: 300A-- T3008 K1417 (7735)

SAF No.: RC-115

Ice Chest No.: ERC-96-069

Field Logbook No.: EL-1645 - 01

COA: BESCRC6520

Method of Shipment: FED EX

Shipped To: [✓ EBERLINE SERVICES] LIONVILLE

Offsite Property No.: N/A

Bill of Lading/Air Bill No.: 7983 4000 5815

POSSIBLE SAMPLE HAZARDS/REMARKS

N/A

Special Handling and/or Storage

N/A

Preservation	HNO3 to pH <2	Cool 4C	Cool 4C	HNO3 or H2SO4 to pH <2	Na2S2O3 HCl to pH <2 Cool	HNO3 to pH <2	HNO3 to pH <2	HNO3 to pH <2	HNO3 to pH <2	None
Type of Container	G/P	G/P	G	G/P	aGs	G/P	G/P	G/P	G/P	G/P
No. of Container(s)	1	1	1	1	3	1	1	1	1	1
Volume	500mL	250mL	125mL	250mL	40mL	1000mL	1000mL	1000mL	1000mL	500mL
SAMPLE ANALYSIS	See item (1) in Special Instructions	Alkalinity - 310.1	Dissolved Organic Carbon 415.1M	Hardness - 130.2	See item (2) in Special Instructions	See item (3) in Special Instructions	Isotopic Uranium	Isotopic Plutonium	Isotopic Thorium	See item (4) in Special Instructions

Sample No.	Matrix *	Sample Date	Sample Time										
J19F85	WATER	01-25-10	1215						X	X	X	X	
J19F89	WATER												

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage to maintain chain of custody of samples for shipment to lab

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
R Curet R. Curet	01-25-10 1409	R. Curet R. Curet EAS REF D	01-25-10 1409
EAS Ref D	1/27/10 1218	SHANNAN JOHNSON	1/27/10 1218
SHANNAN JOHNSON	1/27/10 1215	FDX	
FED EX		M.E. Katz	1/28/10 0915

SPECIAL INSTRUCTIONS

(1) ICP Metals - 6010TR (Clean Lists) (Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Titanium, Uranium, Vanadium, Zinc); Mercury - 7470 - (CV)

(2) VOA - 8260A (TCL) (1,1,1-Trichloroethane, 1,1,2,2-Tetrachloroethane, 1,1,2-Trichloroethane, 1,1-Dichloroethane, 1,1-Dichloroethene, 1,2-Dichloroethane, 1,2-Dichloropropane, 2-Butanone, 2-Hexanone, 4-Methyl-2-Pentanone, Acetone, Benzene, Bromodichloromethane, Bromoform, Bromomethane, Carbon disulfide, Carbon tetrachloride, Chlorobenzene, Chloroethane, Chloroform, Chloromethane, cis-1,2-Dichloroethylene, cis-1,3-Dichloropropene, Dibromochloromethane, Ethyl benzene, Methylene chloride, Styrene, Tetrachloroethene, Toluene, trans-1,2-Dichloroethylene, trans-1,3-Dichloropropene, Trichloroethene, Vinyl chloride, Xylenes (total))

(3) Gamma Spec - (Full List) (Americium-241, Antimony-125, Beryllium-7, Cerium-144, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Sodium-22, Ruthenium-106)

[illegible]

Matrix *

S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION

Received By

Title

Date/Time

FINAL SAMPLE DISPOSITION

Disposal Method

Disposed By

Date/Time

WCH-EE-011

Washington Closure Hanford	**CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST**	RC-115-133	Page 1 of 1
Collector R. Coxset	**Company Contact** Joan Kessner K1917 **Telephone No.** 375-4684 (7755)	**Project Coordinator** KESSNER, JH	**Price Code** 7C **Data Turnaround** 15 Days
Project Designation Columbia River Component of the RCBRA - Surface Water	**Sampling Location** 300A-- Duplicate - J3008	**SAF No.** RC-115	
Ice Chest No. WCH-08-023	**Field Logbook No.** EL-1645-01 / **COA** BESCRC6520	**Method of Shipment** FED EX	
Shipped To EBERLINE SERVICES LIONVILLE	**Offsite Property No.** N/A	**Bill of Lading/Air Bill No.** 7983 4000 5745	

POSSIBLE SAMPLE HAZARDS/REMARKS
N/A

Special Handling and/or Storage
N/A

0001120

			Preservation	HNO3 to pH <2	Cool 4C	Cool 4C	HNO3 or H2SO4 to pH <2	HCl + H2SO4 to pH <2 Cool	HNO3 to pH <2	HNO3 to pH <2	HNO3 to pH <2	HNO3 to pH <2	None
			Type of Container	G/P	G/P	G	G/P	aGs*	G/P	G/P	G/P	G/P	G/P
			No. of Container(s)	1	1	1	1	3	1	2	1	1	1
			Volume	500mL	250mL	125mL	250mL	40mL	1000mL *	1000mL *	1000mL *	1000mL *	500mL
SAMPLE ANALYSIS				See item (1) in Special Instructions	Alkalinity - 310.1	Dissolved Organic Carbon - 415.1	Hardness 130.2	See item (2) in Special Instructions	See item (3) in Special Instructions	Isotopic Uranium	Isotopic Plutonium	Isotopic Thorium	See item (4) in Special Instructions
Sample No.	**Matrix ***	**Sample Date**	**Sample Time**										
J19FC8	WATER	01-25-10	1220						X	X	X	X	
J19FC9	WATER												

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab

CHAIN OF POSSESSION		**Sign/Print Names**	
Relinquished By/Removed From R. Coxset R. Coxset	**Date/Time** 01-25-10 1800	**Received By/Stored In** EAS REF D R. Coxset R. Coxset	**Date/Time** 01-25-10 1800
Relinquished By/Removed From EAS REF D SJ	**Date/Time** 1/27/10 1315	**Received By/Stored In** SHANNAN JOHNSON	**Date/Time** 1/27/10 1315
Relinquished By/Removed From SHANNAN JOHNSON	**Date/Time** 1/27/10 1315	**Received By/Stored In** FDX	**Date/Time**
Relinquished By/Removed From	**Date/Time** FED EX	**Received By/Stored In** EF LAT [illegible]	**Date/Time** [illegible]
Relinquished By/Removed From	**Date/Time**	**Received By/Stored In**	**Date/Time**
Relinquished By/Removed From	**Date/Time**	**Received By/Stored In**	**Date/Time**

SPECIAL INSTRUCTIONS

(1) ICP Metals - 6010TR (Client List) {Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Titanium, Uranium, Vanadium, Zinc}; Mercury - 7470 - (CV)

(2) VOA - 8260A (TCL) {1,1,1-Trichloroethane, 1,1,2,2-Tetrachloroethane, 1,1,2-Trichloroethane, 1,1-Dichloroethane, 1,1-Dichloroethene, 1,2-Dichloroethane, 1,2-Dichloropropane, 2-Butanone, 2-Hexanone, 4-Methyl-2-Pentanone, Acetone, Benzene, Bromodichloromethane, Bromoform, Bromomethane, Carbon disulfide, Carbon tetrachloride, Chlorobenzene, Chloroethane, Chloroform, Chloromethane, cis-1,2-Dichloroethylene, cis-1,3-Dichloropropene, Dibromochloromethane, Ethylbenzene, Methylene chloride, Styrene, Tetrachloroethene, Toluene, trans-1,2-Dichloroethylene, trans-1,3-Dichloropropene, Trichloroethene, Vinyl chloride, Xylenes (total)}

[redacted]

22[illegible], Radium-228 (Ra)

(4) FILTERED ICP Metals - 6010TR {Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-115-241	Page 1 of 1

Collector R. Cuest	Company Contact Joan Kessner	Telephone No. 375-4688	Project Coordinator KESSNER, JH
Project Designation Columbia River Component of the RCBRA - Surface Water	Sampling Location 100H T100H1A	K1917 (7755)	SAF No. RC-115
Ice Chest No. 10CH-08-023	Field Logbook No. EL-1645-01	COA BESCRC6520	Method of Shipment FED EX
Shipped To EBERLINE SERVICES LIONVILLE	Offsite Property No. N/A		Bill of Lading/Air Bill No. 798340005745

Price Code 7C

Data Turnaround 15 Days

POSSIBLE SAMPLE HAZARDS/REMARKS

N/A

Special Handling and/or Storage

N/A

Preservation	HNO3 to pH <2	Cool 4C	Cool 4C	HNO3 or H2SO4 to pH <2	HNO3 to pH <2	HNO3 to pH <2	HNO3 to pH <2	HNO3 to pH <2	HNO3 to pH <2	None
Type of Container	G/P	G/P	G	G/P	G/P	G/P	G/P	G/P	G/P	G/P
No. of Container(s)	1	1	1	1	1	1	2	1	1	1
Volume	500mL	250mL	125mL	250mL	1000mL	1000mL	1000mL	1000mL	1000mL	500mL
SAMPLE ANALYSIS	See item (1) in Special Instructions	Alkalinity 310.1	Dissolved Organic Carbon - 415.1M	Hardness - 130.2	See item (2) in Special Instructions	Strontium-89,90 - Total Sr	Isotopic Uranium	Isotopic Plutonium	Isotopic Thorium	See item (3) in Special Instructions

Sample No.	Matrix *	Sample Date	Sample Time										
J19FH2	WATER	01-24-10	1205					X	X	X	X	X	
J19FH4	WATER												

CHAIN OF POSSESSION

Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
R. Cuest R. Cuest	01-24-10 1704	LAB REF D	01-24-10 1704
ERS REF D	1/27/10 1315	SHANNAN JOHNSON	1/27/10 1315
SHANNAN JOHNSON	1/27/10 1315	FED X	
FED EX			1/28/10 0915

SPECIAL INSTRUCTIONS

(1) ICP Metals - 6010TR (Clean List) {Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Titanium, Uranium, Vanadium, Zinc}; Mercury - 7470 - (CV)

(2) Gamma Spec - (Full List) {Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106}

(3) FILTERED ICP Metals - 6010TR {Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Titanium, Uranium, Vanadium, Zinc}; FILTERED Mercury - 7470

Sampler was unable to remove samples
from controlled storage. Shipper removed
samples from storage location using custody
of samples for shipment to lab

Matrix *
S = Soil
SE = Sediment
SO = Solid
SL = Sludge
W = Water
O = Oil
A = Air
DS = Drum Solids
DL = Drum Liquids
T = Tissue
WI = Wipe
L = Liquid
V = Vegetation
X = Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST		RC-115-242	Page 1 of 1
Collector Kylie Bacon	Company Contact Joan Kessner	Telephone No. 375-4666	Project Coordinator KESSNER, JH	Price Code 7C
Project Designation Columbia River Component of the RCBRA - Surface Water-	Sampling Location 100R 1100H E K1917 (7755)		SAF No. RC-115	Data Turnaround 15 Days
Ice Chest No. WCH-08-023	Field Logbook No. EL-1645	COA BESCRC6520	Method of Shipment FED EX	
Shipped To EBERLINE SERVICES LIONVILLE	Offsite Property No. N/A		Bill of Lading/Air Bill No. 7983 4000 5745	

POSSIBLE SAMPLE HAZARDS/REMARKS

N/A

Special Handling and/or Storage

N/A

0000022

Preservation	HNO3 to pH <2	Cool 4C	Cool 4C	HNO3 or H2SO4 to pH <2	HNO3 to pH <2	HNO3 to pH <2	HNO3 to pH <2	HNO3 to pH <2	HNO3 to pH <2	None
Type of Container	G/P	G/P	G	G/P	G/P	G/P	G/P	G/P	G/P	G/P
No. of Container(s)	1	1	1	1	1	2	1	1	1	1
Volume	500mL	250mL	125mL	250mL	1000mL	1000mL	1000mL	1000mL	1000mL	500mL
SAMPLE ANALYSIS	See item (1) in Special Instructions	Alkalinity 310.1	Dissolved Organic Carbon - 415.1M	Hardness - 130.2	See item (3) in Special Instructions	Strontium-90 - Total Sr	Isotopic Uranium	Isotopic Plutonium	Isotopic Thorium	See item (2) in Special Instructions

Sample No.	Matrix *	Sample Date	Sample Time										
J18FH3	WATER	1-24-10	1100					X	X	X	X	X	
J18FH5	WATER												

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From K. Bacon	Date/Time 1-24-10 1720	Received By/Stored In K. Bacon EAS Ref D	Date/Time 1-24-10 1720
Relinquished By/Removed From EAS REF D	Date/Time 2/1/10 1318	Received By/Stored In SHANNAN JOHNSON	Date/Time 2/1/10 1318
Relinquished By/Removed From SHANNAN JOHNSON	Date/Time 2/1/10 1315	Received By/Stored In FDX	Date/Time
Relinquished By/Removed From	Date/Time FED EX	Received By/Stored In M. Mathews	Date/Time 2/2/10 0915
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time

SPECIAL INSTRUCTIONS

(1) ICP Metals - 6010TR (Client List) {Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Titanium, Uranium, Vanadium, Zinc}; Mercury - 7470 - (CV)
(2) Gamma Spec - (Full List) (Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106)
(3) FILTERED ICP Metals - 6010TR {Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Titanium, Uranium, Vanadium, Zinc}; FILTERED Mercury - 7470

Sampler unavailable to remove samples
from controlled storage. Shipper removed
samples from storage location being used;
samples for shipment to lab.

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Washington Closure Hanford	**CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST**	RC-115-250	Page 1 of 1
Collector Rylie Bacon	Company Contact Joan Kessner Telephone No. 375-4688	Project Coordinator KESSNER, JH	Price Code 7C Data Turnaround 15 Days
Project Designation Columbia River Component of the RCBRA - Surface Water	Sampling Location 100A T[illegible]515 K1917 (7785)	SAF No. RC-115	
Ice Chest No. ERC-96-069	Field Logbook No. EL-1645 COA BESCRC6520	Method of Shipment FED EX	
Shipped To EBERLINE SERVICES RICHMOND	Offsite Property No. N/A	Bill of Lading/Air Bill No. 7983 4000 5815	

POSSIBLE SAMPLE HAZARDS/REMARKS

N/A

Special Handling and/or Storage

N/A

0200023

Preservation	HNO3 to pH <2	Cool 4C	Cool 4C	HNO3 or H2SO4 to pH <2	HCl or H2SO4 to pH <2 Cool	HNO3 to pH <2	HNO3 to pH <2	HNO3 to pH <2	HNO3 to pH <2	None
Type of Container	G/P	G/P	G	G/P	aG*	G/P	G/P	G/P	G/P	G/P
No. of Container(s)	1	1	1	1	3	1	2	1	1	1
Volume	500mL	250mL	125mL	250mL	40mL	1000mL	1000mL	1000mL	1000mL	500mL
SAMPLE ANALYSIS	See item (1) in Special Instructions	Alkalinity - 310.1	Dissolved Organic Carbon 415.1	Hardness 130.2	See item (2) in Special Instructions	See item (3) in Special Instructions	Isotopic Uranium	Isotopic Plutonium	Isotopic Thorium	See item (4) in Special Instructions

Sample No.	Matrix *	Sample Date	Sample Time										
J19H19	WATER	1-25-10	1100						X	X	X	X	
J19H20	WATER												

Sampler used key to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab.

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
R. Bacon RB	1-25-10 1730	B. Vincent EAS Ref D BB	1-25-10 1730
EASREFD	1/27/10 1215	SHANNAN JOHNSON	1/27/10 1215
SHANNAN JOHNSON	1/27/10 1215	FDX	
FDX		T. J. [illegible] #415	

SPECIAL INSTRUCTIONS

(1) ICP Metals - 6010TR (Client List) {Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Titanium, Uranium, Vanadium, Zinc}; Mercury - 7470 - (CV)
(2) VOA - 8260A (TCL) {1,1,1-Trichloroethane, 1,1,2,2-Tetrachloroethane, 1,1,2-Trichloroethane, 1,1-Dichloroethane, 1,1-Dichloroethene, 1,2-Dichloroethane, 1,2-Dichloropropane, 2-Butanone, 2-Hexanone, 4-Methyl-2-Pentanone, Acetone, Benzene, Bromodichloromethane, Bromoform, Bromomethane, Carbon disulfide, Carbon tetrachloride, Chlorobenzene, Chloroethane, Chloroform, Chloromethane, cis-1,2-Dichloroethylene, cis-1,3-Dichloropropene, Dibromochloromethane, Ethylbenzene, Methylene chloride, Styrene, Tetrachloroethene, Toluene, trans-1,2-Dichloroethylene, trans-1,3-Dichloropropene, Trichloroethene, Vinyl chloride, Xylenes (total)}
(3) Gamma Spec - (Full List) {Americium-241, Antimony-125, Beryllium-7, Cerium-144, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106}
(4) FILTERED ICP Metals - 6010TR {Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth

Matrix *

S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-115-258

Page 1 of 1

Collector Rylie Bacon	Company Contact Joan Kessner	Telephone No. 375-4688 K1917	Project Coordinator KESSNER, JH
Price Code 7C	Data Turnaround 15 Days		
Project Designation Columbia River Component of the RCBRA - Surface Water	Sampling Location 100 K KWIN Test 1 (7755)		SAF No. RC-115
Ice Chest No. WCH-DB-023	Field Logbook No. EL-1645	COA BESCRC6520	Method of Shipment FED EX
Shipped To [✓ EBERLINE SERVICES] LIONVILLE	Offsite Property No. N/A		Bill of Lading/Air Bill No. 798340005745

POSSIBLE SAMPLE HAZARDS/REMARKS

N/A

Special Handling and/or Storage

N/A

420000

				Preservation	HNO3 to pH <2	Cool 4C	Cool 4C	HNO3 or H2SO4 to pH <2	HNO3 to pH <2	None	HNO3 to pH <2	HNO3 to pH <2	HNO3 to pH <2	HNO3 to pH <2
				Type of Container	G/P	G/P	G	G/P	G/P	G/P	G/P	G/P	G/P	G/P
				No. of Container(s)	1	1	1	1	1	1	2	3	1	1
				Volume	500mL	750mL	125mL	250mL	1000mL	250mL	1000mL	1000mL	1000mL	1000mL
SAMPLE ANALYSIS					See item (1) in Special Instructions	Alkalinity - 310.1	Dissolved Organic Carbon - 415.1DS	Hardness - 130.2	See item (2) in Special Instructions	Carbon-14	Strontium-89,90 - Total Sr	Isotopic Uranium	Isotopic Plutonium	Isotopic Thorium
Sample No.	**Matrix ***	**Sample Date**	**Sample Time**											
J19HR4	WATER	1-22-10	1130						X	X	X	X	X	X
J19HR8	WATER													

CHAIN OF POSSESSION		**Sign/Print Names**	
Relinquished By/Removed From R. Bacon RB	Date/Time 1-22-10 1730	Received By/Stored In EAS REF D R. Bacon RB	Date/Time 1-22-10 1730
Relinquished By/Removed From EAS REF O	Date/Time 1/29/10 1315	Received By/Stored In SHANNAN JOHNSON	Date/Time 1/29/10 1315
Relinquished By/Removed From SHANNAN JOHNSON	Date/Time 1/29/10 1315	Received By/Stored In FDX	Date/Time
Relinquished By/Removed From	Date/Time FED EX	Received By/Stored In R.F. [illegible]	Date/Time [illegible] 2010 0915
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time

SPECIAL INSTRUCTIONS

(1) ICP Metals - 6010TR [Trace List] {Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Titanium, Uranium, Vanadium, Zinc}, Mercury - 7470 - (CV)

(2) Gamma Spec - (Full List) {Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106}

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab.

Matrix *

S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-115-260

Page 1 of 2

Collector Kylie Barton

Company Contact Joan Kessner

Telephone No. 375-4688

Project Coordinator KESSNER, JH

Price Code 7C

Data Turnaround 15 Days

Project Designation Columbia River Component of the RCBRA - Surface Water

Sampling Location 100 K 7100K3A K1417 (7755)

SAF No. RC-115

Ice Chest No. BHI-94

Field Logbook No. EL-1645

COA BESCRC6510

Method of Shipment FED EX

Shipped To EBERLINE SERVICES LIONVILLE

Offsite Property No. N/A

Bill of Lading/Air Bill No. 7983 4000 5929

POSSIBLE SAMPLE HAZARDS/REMARKS

N/A

Special Handling and/or Storage

N/A

[illegible]

Preservation	HNO3 to pH <2	Cool 4C	Cool 4C	HNO3 or H2SO4 to pH <2	HNO3 to pH <2	None	HNO3 to pH <2	HNO3 to pH <2	HNO3 to pH <2	HNO3 to pH <2
Type of Container	G/P	G/P	G	G/P	G/P	G/P	G/P	G/P	G/P	G/P
No. of Container(s)	1	1	1	1	1	1	2	2	1	1
Volume	500mL	250mL	125mL	250mL	1000mL	250mL	1000mL	1000mL	1000mL	1000mL
SAMPLE ANALYSIS	See item (1) in Special Instructions	Alkalinity - 310.1	Dissolved Organic Carbon - 415.1	Hardness - 130.2	See item (2) in Special Instructions	Carbon-14	Strontium-90 - Total Sr	Isotopic Uranium	Isotopic Plutonium	Isotopic Thorium

Sample No.	Matrix *	Sample Date	Sample Time										
J19HR6	WATER	1-23-10	1230					X	X	X	X	X	X
J19HT0	WATER												

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
K. Barton KB	1-23-10 1630	K. Barton EAS RCFD KB	1-23-10 1930
EAS RCFD	1/25/10	SHANNON JOHNSON	1/25/10
SHANNON JOHNSON	1/25/10	PDX	
	FED EX	[illegible]	01/26/10 0915

SPECIAL INSTRUCTIONS

(1) ICP Metals - 6010TR (Client List) {Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Titanium, Uranium, Vanadium, Zinc}; Mercury - 7470 - (CV)
(2) Gamma Spec - (Full List) {Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106}

Shipper on/above is removing samples from controlled storage. Shipper removed samples from storage location taking custody & relinquish for shipment to lab.

Matrix *

S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION Received By — Title — Date/Time

FINAL SAMPLE DISPOSITION Disposal Method — Disposed By — Date/Time

Appendix 5

Data Validation Supporting Documentation

APPENDIX A

RADIOCHEMICAL DATA VALIDATION CHECKLIST

VALIDATION LEVEL:	A	B	[✓ C]	D	E
PROJECT:	RCBRA		DATA PACKAGE:	K1917	
VALIDATOR:	GLR	LAB: EA		DATE:	3/31/10
			SDG:	K1917	
ANALYSES PERFORMED					
☐ Gross Alpha/Beta	[illegible]	[illegible]	☒ Alpha Spectroscopy	☒ Gamma Spectroscopy	
☐ Total Uranium	[illegible]	[illegible]			
SAMPLES/MATRIX					
J19F85	J19FC8	J19FH2	J19FH3	J19H(2	J19HR4
					Water

1. Completeness ☐ N/A

Technical verification forms present? Yes [✓ No] N/A

Comments:

2. Initial Calibration (Levels D, E) ☒ N/A

Instruments/detectors calibrated? Yes No N/A

Initial calibration acceptable? Yes No N/A

Standards NIST traceable? Yes No N/A

Standards Expired? Yes No N/A

Calculation check acceptable? Yes No N/A

Comments:

3. Continuing Calibration (Levels D, E) ☒ N/A

Calibration checked within required frequency? .... Yes No N/A

Calibration check acceptable? .... Yes No N/A

Calibration check standards traceable? .... Yes No N/A

Calibration check standards expired? .... Yes No N/A

Calculation check acceptable? .... Yes No N/A

Comments:

4. Background Counts (Levels D, E) .... ☒ N/A

Background Counts checked within required frequency? .... Yes No N/A

Background Counts acceptable? .... Yes No N/A

Calculation check acceptable? .... Yes No N/A

Comments:

5. Blanks (Levels B, C, D, E) ☐ N/A

Method blank analyzed within required frequency? [✓ Yes] No N/A

Method blank results acceptable? [✓ Yes] No N/A

Analytes detected in method blank? Yes [✓ No] N/A

Field blank(s) analyzed? Yes [✓ No] N/A

Field blank results acceptable? Yes No [✓ N/A]

Analytes detected in field blank(s)? Yes No [✓ N/A]

Transcription/Calculation Errors? (Levels D, E) Yes No [✓ N/A]

Comments: NO FB

6. Laboratory Control Samples or Blank Spike Samples (Levels C, D, E) ☐ N/A

LCS/BSS analyzed within required frequency? Yes No N/A

LCS/BSS recoveries acceptable? Yes No N/A

LCS/BSS traceable? (Levels D,E) Yes No N/A

LCS/BSS expired? (Levels D,E) Yes No N/A

LCS/BSS levels correct? (Levels D,E) Yes No N/A

Transcription/Calculation Errors? (Levels D, E) Yes No N/A

Comments: NO th-228 or th-232 LCS - Jalf
(95pcs)

7. Chemical Carrier Recovery (Levels C, D, E) ☒ N/A

Chemical carrier added? Yes No N/A

Chemical recovery acceptable? Yes No N/A

Chemical carrier traceable? (Levels D, E) Yes No N/A

Chemical carrier expired? (Levels D, E) .... Yes No N/A

Transcription/Calculation errors? (Levels D, E) .... Yes No N/A

Comments:

8. Tracer Recovery (Levels C, D, E) .... ☐ N/A

Tracer added? .... [✓ Yes] No N/A

Tracer recovery acceptable? .... [✓ Yes] No N/A

Tracer traceable? (Levels D, E) .... Yes No [✓ N/A]

Tracer expired? (Levels D, E) .... Yes No [✓ N/A]

Transcription/Calculation errors? (Levels D, E) .... Yes No [✓ N/A]

Comments:

9. Matrix Spikes (Levels C, D, E) .... ☑ N/A

Matrix spike analyzed? .... Yes No N/A

Spike recoveries acceptable? .... Yes No N/A

Spike source traceable? (Levels D, E) .... Yes No N/A

Spike source expired? Levels D, E) .... Yes No N/A

Transcription/Calculation Errors? (Levels D, E) .... Yes No N/A

Comments:

10. Duplicates (Levels C, D, E) ☐ N/A

Duplicates Analyzed at required frequency? [✓ Yes] No N/A

RPD Values Acceptable? [✓ Yes] No N/A

Transcription/Calculation Errors? (Levels D, E) Yes No [✓ N/A]

Comments:

11. Field QC Samples (Levels C, D E) ☐ N/A

Field duplicate sample(s) analyzed? Yes [✓ No] N/A

Field duplicate RPD values acceptable? Yes No [✓ N/A]

Field split sample(s) analyzed? Yes [✓ No] N/A

Field split RPD values acceptable? Yes No [✓ N/A]

Performance audit sample(s) analyzed? Yes [✓ No] N/A

Performance audit sample results acceptable? Yes No [✓ N/A]

Comments: no field QC

12. Holding Times (All levels)

Are sample holding times acceptable? [✓ Yes] No N/A

Comments:

13. Results and Detection Limits (All Levels).. ☐ N/A

Results reported for all required sample analyses?.. [✓ Yes] No N/A

Results supported in raw data?(Levels D, E).. Yes No [✓ N/A]

Results Acceptable? (Levels D, E) .... Yes No [✓ N/A]

Transcription/Calculation errors? (Levels D, E).. Yes No [✓ N/A]

MDA's meet required detection limits? .... Yes [✓ No] N/A

Transcription/calculation errors? (Levels D, E).. Yes No [✓ N/A]

Comments:

10 out

Appendix 6

Additional Documentation Requested by Client

EBERLINE ANALYTICAL/RICHMOND

SAMPLE DELIVERY GROUP K1917

7755-009 Method Blank

METHOD BLANK

SDG	7755	Client/Case no	Hanford SDG K1917
Contact	N. Joseph Verville	Contract	No. 200W215A00
Lab sample id	G001110-09	Client sample id	Method Blank
Dept sample id	7755-009	Material/Matrix	WATER
		SAF No	RC-115

ANALYTE	CAS NO	RESULT pCi/L	2σ ERR (COUNT)	MDA pCi/L	RDL pCi/L	QUALI-FIERS	TEST
Carbon 14	14762-75-5	1.80	33	55.2	200	U	C
Total Strontium	SR-RAD	-0.010	0.30	0.627	2.00	U	SR
Thorium 228	14274-82-9	0.033	0.065	0.125		U	TH
Thorium 230	14269-63-7	0.049	0.16	0.311	1.00	U	TH
Thorium 232	TH-232	0.011	0.033	0.125	1.00	U	TH
Uranium 233/234	U-233/234	0.048	0.048	0.182	1.00	U	U
Uranium 235	15117-96-1	0	0.058	0.220	1.00	U	U
Uranium 238	U-238	0	0.040	0.182	1.00	U	U
Plutonium 238	13981-16-3	0.075	0.15	0.276	1.00	U	PU
Plutonium 239/240	PU-239/240	0.025	0.050	0.191	1.00	U	PU
Potassium 40	13966-00-2	U		166		U	GAM
Cobalt 60	10198-40-0	U		7.76	25.0	U	GAM
Cesium 137	10045-97-3	U		8.02	15.0	U	GAM
Radium 226	13982-63-3	U		18.0		U	GAM
Radium 228	15262-20-1	U		36.3		U	GAM
Europium 152	14683-23-9	U		25.2	50.0	U	GAM
Europium 154	15585-10-1	U		22.7	50.0	U	GAM
Europium 155	14391-16-3	U		27.9	50.0	U	GAM
Thorium 228	14274-82-9	U		16.2		U	GAM
Thorium 232	TH-232	U		36.3		U	GAM
Uranium 235	15117-96-1	U		60.0		U	GAM
Uranium 238	U-238	U		922		U	GAM
Americium 241	14596-10-2	U		11.7		U	GAM
Beryllium 7	13966-02-4	U		62.6		U	GAM
Ruthenium 106	13967-48-1	U		72.4		U	GAM
Antimony 125	14234-35-6	U		19.9		U	GAM
Cesium 134	13967-70-9	U		9.72		U	GAM

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-DS
Version 3.06
Report date 02/22/10

EBERLINE ANALYTICAL/RICHMOND

SAMPLE DELIVERY GROUP [illegible]

[illegible] Lab Control Sample

LAB CONTROL SAMPLE

SDG [illegible]
Contact [illegible]

Client/Case no Hanford [illegible]
Contract No. [illegible]

Lab sample id [illegible]
Dept sample id [illegible]

Client sample id Lab Control Sample
Material/Matrix WATER
SAT NO [illegible]

ANALYTE	RESULT pCi/L	2σ ERR (COUNT)	MDA pCi/L	RDL pCi/L	QUALI-FIERS	TEST	ADDED pCi/L	2σ ERR pCi/L	REC %	3σ LMTS (TOTAL)	PROTOCOL LIMITS
Tritium [illegible]	7550	140	56.9	200		C	7970	120	95	84-116	80-120
Total Strontium	18.4	2.1	0.653	2.00		SR	17.5	0.72	105	75-125	80-120
Thorium 230	9.39	1.2	0.222	1.00		TH	9.44	0.18	99	78-122	80-120
Uranium 233/234	10.5	1.5	[illegible]	1.00		U	9.28	0.17	111	72-128	80-120
Uranium 235	7.32	1.2	0.280	1.00		U	7.54	[illegible]	97	73-127	80-120
Uranium 238	9.48	1.4	[illegible]	1.00		U	[illegible]	0.40	94	75-125	80-120
Plutonium 238	10.6	1.4	[illegible]	1.00		PU	11.6	0.45	91	[illegible]	80-120
Plutonium 239/240	[illegible]	[illegible]	0.170	1.00		PU	11.2	0.51	89	[illegible]	80-120
Cobalt 60	461	26	13.6	25.0		GAM	462	10	100	85-115	80-120
Cesium 137	468	31	16.2	50.0		GAM	450	10	104	85-115	80-120

[illegible]

LAB CONTROL SAMPLES
page 1
SUMMARY DATA SECTION
page [illegible]

Lab id EBERLINE
Protocol Hanford
Version [illegible]
Form [illegible]
Version [illegible]
Report date [illegible]

EBERLINE ANALYTICAL/RICHMOND

SAMPLE DELIVERY GROUP [illegible]

[illegible] J19004

DUPLICATE

SDG [illegible]		Client Case No HANFORD	[illegible]
Contact N Joseph Verville		Contract [illegible]	
DUPLICATE	ORIGINAL		
Lab sample id [illegible]	Lab sample id [illegible]	Client sample id J19004	
Dept sample id [illegible]	Dept sample id [illegible]	Location/Matrix [illegible]	WATER
	Received [illegible]	Collected/Volume [illegible]	
		Custody/SAF no [illegible]	

ANALYTE	DUPLICATE pCi/L	2σ ERR (COUNT)	MDA pCi/L	RDL pCi/L	QUALI-FIERS	TEST	ORIGINAL pCi/L	2σ ERR (COUNT)	MDA pCi/L	QUALI-FIERS	RPD %	3σ TOT	DER σ
Carbon 14	[illegible]	42	54.9	200	U	[illegible]	12.0	47	54.5	U	-		0.1
Total Strontium	0.049	0.30	0.282	2.00	U	SR	0.190	0.41	0.790	U			0.5
Thorium 228	0.004	0.11	0.251		U	TH	0.062	0.062	0.206	U	-		2.1
Thorium 230	0.028	0.11	0.424	1.00	U	TH	0.216	0.11	0.472	U			2.3
Thorium 232	0	0.055	0.213	1.00	U	TH	0	0.062	0.206	U			0
Uranium 233/234	[illegible]	0.17	0.166	1.00		U	0.201	0.17	0.219	U	26	140	1.5
Uranium 235	0.026	0.052	0.205	1.00	U	U	[illegible]	0.070	0.206	U	-		1.4
Uranium 238	0.140	0.087	0.166	1.00	U	U	0.221	0.17	0.219		55	160	1.0
Plutonium 238	0	[illegible]	0.227	1.00	U	PU	0.058	0.12	0.222	U			1.0
Plutonium 239/240	0	0.047	[illegible]	1.00	U	PU	0	0.068	0.222	U	-		0
Potassium 40	0		65.0		U	GAM	0		114	U	-		1.0
Cobalt 60	0		5.21	25.0	U	GAM	0		7.21	U			0.4
Cesium 137	0		5.44	15.0	U	GAM	0		7.15	U			[illegible]
Radium 226	0		11.0		U	GAM	0		14.1	U	-		0.6
Radium 228	0		24.7		U	GAM	0		17.8	U			0.4
Europium 152	0		[illegible]	50.0	U	GAM	0		21.6	U			0.2
Europium 154	0		16.1	50.0	U	GAM	0		21.5	U			0.5
Europium 155	0		12.8	50.0	U	GAM	0		22.7	U			2.9
Thorium 228	0		7.70		U	GAM	0		11.0	U			0.6
Thorium 232	0		24.2		U	GAM	0		12.8	U			0.6
Uranium 235	0		[illegible]		U	GAM	0		40.6	U			0.6
Uranium 238	0		[illegible]		U	GAM	0		711	U	-		1.5
Americium 241	0		[illegible]		U	GAM	0		46.7	U			1.2
Beryllium 7	0		50.2		U	GAM	0		65.8	U			0.4
Ruthenium 106	0		45.5		U	GAM	0		60.5	U			1.6
Antimony 125	0		12.4		U	GAM	0		[illegible]	U			[illegible]
Cesium 134	0		[illegible]		U	GAM	0		6.69	U			[illegible]

DUPLICATE
PAGE 1
SUMMARY DATA SECTION
PAGE [illegible]

Lab id EBRLNE
Protocol HANFORD
Version Ver 1.0
Form DVD-DUP
Version [illegible]
Report date [illegible]

EBERLINE ANALYTICAL/RICHMOND

SAMPLE DELIVERY GROUP REPORT

[illegible]

[illegible]

MATRIX SPIKE

[illegible] [illegible]		Client/ Ref No [illegible] [illegible]
Contact [illegible] Joseph [illegible]		Contract [illegible] [illegible]
MATRIX SPIKE	ORIGINAL	
Lab sample id [illegible]	Lab sample id [illegible]	Client sample id [illegible]
Dept sample id [illegible]	Dept sample id [illegible]	Location/Matrix [illegible] WATER
	Received [illegible]	Collected/Volume [illegible] [illegible]
		Custody/SAF No [illegible] [illegible]

ANALYTE	SPIKED pCi/L	2σ ERR (COUNT)	MDA pCi/L	RDL pCi/L	QUALIFIERS	TEST	ADDED pCi/L	2σ ERR pCi/L	ORIGINAL pCi/L	2σ ERR (COUNT)	REC %	%MTS (TOTAL)	PROTOCOL LIMITS
Carbon 14	21700	250	[illegible]	200	[illegible]	[illegible]	21900	950	[illegible]	[illegible]	[illegible]	85-115	60-140

[illegible]

Columbia River Component of the [illegible] - Surface Water

MATRIX SPIKES

Page 1

SUMMARY DATA SECTION

Page [illegible]

000037

Lab id [illegible]
Protocol Hanford
Version [illegible]
Form [illegible]
Version [illegible]
Report date [illegible]

F.2.3 Sediment

F.2.3.1 SDG J00733

SAF-RC-116
Columbia River Component of the RCBRA – Sediment
FINAL VALIDATION PACKAGE

COMPLETE COPY OF VALIDATION PACKAGE TO:

Kathy Wendt H4-21

COMMENTS:

SDG J00733 **SAF-RC-116**

Date: 24 March 2010
To: Washington Closure Hanford Inc. (technical representative)
From: ELR Consulting
Project: Columbia River Component of the RCBRA – Sediment
Subject: Wet Chemistry - Data Package No. J00733-TAL

INTRODUCTION

This memo presents the results of data validation on Data Package No. J00733 prepared by TestAmerica Laboratory Inc. (TAL). A list of samples validated along with the analyses reported and the method of analysis is provided in the following table.

Sample ID	Sample Date	Media	Validation	Analyte
J19JN8	2/14/10	Solid	C	See note 1
J19JN9	2/14/10	Solid	C	See note 1

1 – Chromium VI by 7196A.

Data validation was conducted in accordance with the Washington Closure Hanford (WCH) validation statement of work and the Remedial Investigation Work Plan for Hanford Site Releases to the Columbia River (DOE/RL-2008-11, Rev. 0, September 2008). Appendices 1 through 6 provide the following information as indicated below.

Appendix 1. Glossary of Data Reporting Qualifiers
Appendix 2. Summary of Data Qualification
Appendix 3. Annotated Laboratory Reports
Appendix 4. Laboratory Narrative and Chain-of-Custody Documentation
Appendix 5. Data Validation Supporting Documentation
Appendix 6. Additional Documentation Requested by Client

DATA QUALITY PARAMETERS

- **Holding Times**

Analytical holding times for metals are assessed to ascertain whether the holding time requirements were met by the laboratory. The holding time requirements are as follows: Soil samples must be analyzed within 30 days for chromium VI.

If holding times are exceeded, but not by greater than two times the limit, all associated sample results are qualified as estimates and flagged "J" for detects and "UJ" for non-detects. If holding times are exceeded by greater than two times the limit, all associated detectable sample results are qualified as estimates and flagged "J" and all non-detects are rejected and flagged "UR"

All holding times were acceptable.

- **Method Blanks**

Method Blanks

Method blank analyses are performed to determine the extent of laboratory contamination introduced through sampling, sample preparation and analysis. At least one acceptable method blank analysis must be conducted for every 20 samples. No contaminants should be present in the method blank. All blank results must fall below the contract required detection limit (CRQL) to be acceptable.

All method blank results were acceptable.

Field (Equipment) Blank

No field blanks were submitted for analysis.

- **Accuracy**

Matrix Spike and Laboratory Control Sample

Matrix spike (MS) and laboratory control sample (LCS) analyses are used to assess the analytical accuracy of the reported data. The matrix spike is used to assess the effect of the matrix on the ability to accurately quantify sample concentrations. Recoveries must fall within the range of 70% to 130%. Samples with a recovery of less than 30% and a sample result below the IDL are rejected and flagged "UR". Samples with a recovery of 30% to 69% and a sample result less than the IDL are qualified "UJ". Samples with a recovery of greater than 130% or less than 70% and a sample result greater than the IDL are qualified as estimates and flagged "J". Finally, for samples with a recovery greater than 130% and a sample result less than the IDL, no qualification is required.

All accuracy results were acceptable.

- **Precision**

Laboratory Duplicate Samples

Analytical precision is expressed by the relative percent differences (RPD) between the recoveries of matrix spike duplicate (MSD) analyses performed on a sample in the analytical batch. Precision may alternatively be assessed using unspiked duplicate analyses performed on a sample in the analytical batch. If both sample and replicate activities (concentrations) are greater than five times the CRDL and the RPD is less than 30%, no qualification is required. If either activity (concentration) is less than five times the CRDL, the RPD control limit is less than or equal to two times the CRDL. If the RPD is outside the applicable control limit, associated results are qualified as estimated detects or estimated non-detects.

All laboratory duplicate results were acceptable.

Field Duplicate

No field duplicates were submitted for analysis.

- **Analytical Detection Levels**

Reported analytical detection levels are compared against the required quantitation limits (RQLs) to ensure that laboratory detection levels meet the required criteria. All analytes met the RQL.

- **Completeness**

Data package J00733 was submitted for validation and verified for completeness. Completeness is based on the percentage of data determined to be valid (i.e., not rejected). The completion percentage was 100%.

MAJOR DEFICIENCIES

None found.

MINOR DEFICIENCIES

None found.

REFERENCES

Washington Closure Hanford Contract #S00W307A00 (March 2008), *Data Validation Services.*

DOE/RL-2008-11, Rev.0, *Remedial Investigation Work Plan for Hanford Site Releases to the Columbia River*, September 2008.

Appendix 1

Glossary of Data Reporting Qualifiers

Qualifiers which may be applied by data validators in compliance with WCH validation SOW are as follows:

U Indicates the compound or analyte was analyzed for and not detected in the sample. The value reported is the sample quantitation limit corrected for sample dilution and moisture content by the laboratory.

UJ - Indicates the compound or analyte was analyzed for and not detected in the sample. Due to a minor QC deficiency identified during the data validation, the associated quantitation limit is an estimate.

J - Indicates the compound or analyte was analyzed for and detected. Due to a minor QC deficiency identified during the data validation, the associated concentration is an estimate, but the data are usable for decision-making purposes.

BJ - Applied to inorganic analyses only. Indicates the analyte concentration was greater than the IDL but less than the CRDL and is considered an estimated value.

R - Indicates the compound or analyte was analyzed for, detected, and due to an identified major QC deficiency, the data are unusable

UR - Indicates the compound or analyte was analyzed for and not detected in the sample. Additionally, the data is unusable due to an identified major QC deficiency.

NJ Indicates presumptive evidence of a compound at an estimated value. The data may not be valid for some specific applications (i.e., usable for decision-making purposes).

N - Indicates presumptive evidence of a compound. The data may not be valid for some specific applications (i.e., usable for decision-making purposes).

Appendix 2

Summary of Data Qualification

WET CHEMISTRY DATA QUALIFICATION SUMMARY*

SDG: J00733	**REVIEWER:** **ELR**	**Project:** **RCBRA**	**PAGE 1 OF 1**
COMMENTS: No qualifiers assigned			

* - The Qualified Data Summary Table includes laboratory applied "U" qualifiers not specifically identified here. The laboratory applied "U" qualifiers are included to minimize misinterpretation of results contained in the table.

Appendix 3

Annotated Laboratory Reports

Sample Results Summary

Date: 26-Feb-10

TestAmerica FARL

Ordered by Method, Batch No., Client Sample ID.

Report No. : 43366

SDG No: J00733

Batch	Client Id Work Order	Parameter	Result +- Uncertainty (2σ)	Qual	Units	Tracer Yield	MDC or MDA	CRDL	RPD
6046532	7196_CR6								
	J19JN8								
	LV3691AA	HEXCHROME	1.09E+00 +- 0.0E+00		mg/kg	N/A	1.53E-01	1.50E-01	
	J19JN9								
	LVN7P1AA	HEXCHROME	1.02E+00 +- 0.0E+00		mg/kg	N/A	1.47E-01	1.50E-01	
	LVN7P1AE	HEXCHROME	1.38E+00 +- 0.0E+00		mg/kg	N/A	1.48E-01	3.50E-01	29.8

No. of Results: 3

3/23/10

TestAmerica RPD Relative Percent Difference.

rptSTLRchSaSum
mary2 V5.2.5
A/002

Appendix 4

Laboratory Narrative and Chain-of-Custody Documentation

Certificate of Analysis

TestAmerica Laboratories, Inc.

Washington Hanford Closure
2620 Fermi Avenue
Richland, WA 99354

February 26, 2010

Attention: Joan Kessner

SAF Number	:	RC-116
Date SDG Closed	:	February 15, 2010
Number of Samples	:	Two (2)
Sample Type		Other Solid
SDG Number		100733
Data Deliverable		15-Day / Summary

CASE NARRATIVE

I. Introduction

On February 15, 2010 two other solid samples were received at TestAmerica for chemistry analysis. Upon receipt, the samples were assigned the following laboratory ID number to correspond with the Washington Closure Hanford (WCH) specific ID.

WCH ID#	TARL ID#	MATRIX	DATE OF RECEIPT
J19JN8	LVN69	OTHER SOLID	02/15/10
J19JN9	LVN70	OTHER SOLID	02/15/10

II. Sample Receipt

The samples were received in good condition and no anomalies were noted during check-in.

III. Analytical Results/Methodology

The analytical results for this report are presented by laboratory sample ID. Each set of data includes sample identification information, analytical results and the appropriate associated statistical errors.

The requested analyses were:

Chemical Analysis
Hexavalent Chromium by EPA method 7196A

IV. Quality Control

The analytical results for each analysis performed includes a minimum of one laboratory control sample (LCS), one method (reagent) blank, and one duplicate sample analysis. Any exceptions have been noted in the "Comments" section.

QC and sample results are reported in the same units.

V. Comments

Chemical Analysis

Hexavalent Chromium by EPA method 7196A:

The matrix spike recovered low at 71%. The post digestive matrix spike recovered at 98.3% and the insoluble matrix spike recovered within limits at 98.1%. This implies strong reducing capacity in the sample, but not enough to exhaust the more copious insoluble matrix spike. Except as noted, the LCS, batch blank, sample, sample duplicate (J19JN9) and sample matrix spike (J19JN9) results are within contractual requirements.

I certify that this Certificate of Analysis is in compliance with the SOW, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hard copy data package has been authorized by the Laboratory Manager, or a designee as verified by the following signature.

Reviewed and approved:

Sandra Segal

Sandra Segal
Project Manager

Washington Closure Hanford	**CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST**	RC-110-2151	Page [illegible] of [illegible]
Collector: R. [illegible] Barrera	Company Contact: JOAN KESSNER Telephone No.: 373-4636	Project Coordinator: KESSNER, JR	Price Code: 7C
Project Designation: Columbia River Component of the RCBRA - Sediment	Sampling Location: 100 D 7160039	SAF No.: RC-116	Data Turnaround: 15 Days
Ice Chest No.: N/A	Field Logbook No.: EL-1645 COA: [illegible]	Method of Shipment: GROUND TRANSPORT	
Shipped To: TestAmerica Incorporated, Richland	Offsite Property No.: N/A	Bill of Lading/Air Bill No.: N/A	

POSSIBLE SAMPLE HAZARDS/REMARKS
N/A

Special Handling and/or Storage
N/A

Preservation	[illegible]
Type of Container	G/P
No. of Container(s)	[illegible]
Volume	[illegible]
SAMPLE ANALYSIS	[illegible]

Due- 3/02/10
SDG 3007733
J08150414

Sample No.	Matrix *	Sample Date	Sample Time	
J19??8	OTHER SOLID	2-14-10	1710	X

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From: R. Barrera	Date/Time: 2-14-10 1630	Received By/Stored In: EAS REF D R[illegible]	Date/Time: 2-14-10 1520
Relinquished By/Removed From: EAS LOCKED STORAGE	Date/Time: 2/15/10 0740	Received By/Stored In: SHANNON JOHNSON	Date/Time: 2/15/10 0740
Relinquished By/Removed From: SHANNON [illegible]	Date/Time: 2/15/10 [illegible]	Received By/Stored In: [illegible]	Date/Time: 2-15-10 [illegible]
Relinquished By/Removed From:	Date/Time:	Received By/Stored In:	Date/Time:
Relinquished By/Removed From:	Date/Time:	Received By/Stored In:	Date/Time:
Relinquished By/Removed From:	Date/Time:	Received By/Stored In:	Date/Time:

SPECIAL INSTRUCTIONS

LVN69

J08150414

[illegible]

Matrix *
[illegible]

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

ACN-EE-011

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-116-2151 Page 1 of 1

Collector: Sam Gilbert

Company Contact: JOAN KESSNER

Telephone No.: 375-4681

Project Coordinator: KESSNER, JH

Price Code: 7C

Data Turnaround: 15 Days

Project Designation: Columbia River Component of the RCBRA - Sediment

Sampling Location: 100 D J10009

SAF No.: RC-116

Ice Chest No.: [illegible]

Field Logbook No.: EL-1643-121

COA: BESURC***

Method of Shipment: GROUND TRANSPORT

Shipped To: Southwest Laboratory ... Services

Offsite Property No.: N/A

Bill of Lading/Air Bill No.: N/A

POSSIBLE SAMPLE HAZARDS/REMARKS

N/A

Special Handling and/or Storage

N/A

Preservation	None
Type of Container	GP
No. of Container(s)	1
Volume	1L

SAMPLE ANALYSIS

Dup 12/02/10 UDGJ00733 JOB#50414

Sample No.	Matrix *	Sample Date	Sample Time	
J15140	OTHER SOLID	2-14-10	15:20	X

CHAIN OF POSSESSION

Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Sam Gilbert	2-14-10/17:15	EAS Ref #	2-14-10/17:15
FAS Ref # ... SECURED STORAGE D	2/15/10 0740	SHANNON JOHNSON	2/15/10 0740
SHANNON JOHNSON	2/15/10 0900		2/15/10 0900

SPECIAL INSTRUCTIONS

LVN7P

Sample ... [illegible]

Matrix *

LABORATORY SECTION | Received By | Title | Date/Time

FINAL SAMPLE DISPOSITION | Disposal Method | Disposed By | Date/Time

WCH-EE-011

Attachment 4

Page 18 of 21

0000014

Appendix 5

Data Validation Supporting Documentation

GENERAL CHEMISTRY ANALYSIS DATA VALIDATION CHECKLIST

VALIDATION LEVEL:	A	B	[✓ C]	D	E
PROJECT:	RCBRA		DATA PACKAGE:	J00733	
VALIDATOR: ELR		LAB: TAL		DATE: 3/23/06	
			SDG:	J00733	
ANALYSES PERFORMED					
Anions/IC	TOC	TOX	TPH-418.1	Oil and Grease	Alkalinity
Ammonia	BOD/COD	Chloride	[✓ Chromium-VI]	pH	NO_2/NO_3
Sulfate	TDS	TKN	Phosphate		
SAMPLES/MATRIX					
J19JW8	J19JW9				
					solid

1. DATA PACKAGE COMPLETENESS AND CASE NARRATIVE

Technical verification documentation present? .... Yes [✓ No] N/A

Comments:

2. INSTRUMENT PERFORMANCE AND CALIBRATIONS (Levels D and E)

Initial calibrations performed on all instruments? .... Yes No [✓ N/A]

Initial calibrations acceptable? .... Yes No [✓ N/A]

ICV and CCV checks performed on all instruments? .... Yes No [✓ N/A]

ICV and CCV checks acceptable? .... Yes No [✓ N/A]

Standards traceable? .... Yes No [✓ N/A]

Standards expired? .... Yes No [✓ N/A]

Calculation check acceptable? .... Yes No [✓ N/A]

Comments:

GENERAL CHEMISTRY ANALYSIS DATA VALIDATION CHECKLIST

3. BLANKS (Levels B, C, D, and E)

ICB and CCB checks performed for all applicable analyses? (Levels D, E)........ Yes No [✓ N/A]
ICB and CCB results acceptable? (Levels D, E)........ Yes No [✓ N/A]
Laboratory blanks analyzed?........ [✓ Yes] No N/A
Laboratory blank results acceptable?........ [✓ Yes] No N/A
Field blanks analyzed? (Levels C, D, E)........ Yes [✓ No] N/A
Field blank results acceptable? (Levels C, D, E)........ Yes No [✓ N/A]
Transcription/calculation errors? (Levels D, E)........ Yes No [✓ N/A]
Comments: NO FB

4. ACCURACY (Levels C, D, and E)

Spike samples analyzed?........ [✓ Yes] No N/A
Spike recoveries acceptable?........ [✓ Yes] No N/A
Sike standards NIST traceable? (Levels D, E)........ Yes No [✓ N/A]
Spike standards expired? (Levels D, E)........ Yes No [✓ N/A]
LCS/BSS samples analyzed?........ [✓ Yes] No N/A
LCS/BSS results acceptable?........ [✓ Yes] No N/A
Standards traceable? (Levels D, E)........ Yes No [✓ N/A]
Standards expired? (Levels D, E)........ Yes No [✓ N/A]
Transcription/calculation errors? (Levels D, E)........ Yes No [✓ N/A]
Performance audit sample(s) analyzed?........ Yes [✓ No] N/A
Performance audit sample results acceptable?........ Yes No [✓ N/A]
Comments: NO PAS

GENERAL CHEMISTRY ANALYSIS DATA VALIDATION CHECKLIST

5. PRECISION (Levels C, D, and E)

Duplicate RPD values acceptable? .... [✓ Yes] No N/A
Duplicate results acceptable? .... [✓ Yes] No N/A
MS/MSD standards NIST traceable? (Levels D, E) .... Yes No [✓ N/A]
MS/MSD standards expired? (Levels D, E) .... Yes No [✓ N/A]
Field duplicate RPD values acceptable? .... Yes No [✓ N/A]
Field split RPD values acceptable? .... Yes No [✓ N/A]
Transcription/calculation errors? (Levels D, E) .... Yes No [✓ N/A]
Comments:

6. HOLDING TIMES (all levels)

Samples properly preserved? .... [✓ Yes] No N/A
Sample holding times acceptable? .... [✓ Yes] No N/A
Comments:

GENERAL CHEMISTRY ANALYSIS DATA VALIDATION CHECKLIST

7. RESULT QUANTITATION AND DETECTION LIMITS (all levels)

Results reported for all requested analyses? .... [✓ Yes] No N/A

Results supported in the raw data? (Levels D, E) .... Yes No [✓ N/A]

Samples properly prepared? (Levels D, E) .... Yes No [✓ N/A]

Detection limits meet RDL? .... [✓ Yes] No N/A

Transcription/calculation errors? (Levels D, E) .... Yes No [✓ N/A]

Comments: ____________

Appendix 6

Additional Documentation Requested by Client

QC Results Summary

TestAmerica TARL

Ordered by Method, Batch No, QC Type,.

Date: 26-Feb-10

Report No. : 43355 **SDG No.. J00733**

Batch Work Order	Parameter	Result +- Uncertainty (2s)	Qual	Units	Tracer Yield	LCS Recovery	Bias	MDC|MDA
7198_CR6								
0046832 BLANK QC,								
LVPKQ1AA	HEXCHROME	1.55E-01 +- 0.0E+00	U	mg/kg	N/A			1.55E-01
0046832 LCS,								
LVPKQ1AC	HEXCHROME	1.91E+01 +- 0.0E+00		mg/kg	N/A	96%	0.0	1.55E-01
0046832 MATRIX SPIKE, J1J3N9								
LVN7P1AC	HEXCHROME	7.35E+00 +- 0.0E+00		mg/kg	N/A	71%	-0.3	1.30E-01

No. of Results: 3

TestAmerica
rptSTLRchQcSummary V5.2.5 A2002

Bias - (Result/Expected)-1 as defined by ANSI N13.30.
U Qual - Analyzed for but not detected above limiting criteria. Limit criteria is less than the Mdc/Mda or Total Uncert or not identified by gamma scan software.

F.2.3.2 SDG J00736

SAF-RC-116
Columbia River Component of the RCBRA – Sediment
FINAL VALIDATION PACKAGE

COMPLETE COPY OF VALIDATION PACKAGE TO:

Kathy Wendt H4-21

COMMENTS:

SDG J00736 **SAF-RC-116**

Date: 24 March 2010
To: Washington Closure Hanford Inc. (technical representative)
From: ELR Consulting
Project: Columbia River Component of the RCBRA – Sediment
Subject: Wet Chemistry - Data Package No J00736-TAL

INTRODUCTION

This memo presents the results of data validation on Data Package No. J00736 prepared by TestAmerica Laboratory Inc. (TAL). A list of samples validated along with the analyses reported and the method of analysis is provided in the following table.

Sample ID	Sample Date	Media	Validation	Analyte
J19K87	2/15/10	Solid	C	See note 1
J19K88	2/15/10	Solid	C	See note 1

1 – Chromium VI by 7196A.

Data validation was conducted in accordance with the Washington Closure Hanford (WCH) validation statement of work and the Remedial Investigation Work Plan for Hanford Site Releases to the Columbia River (DOE/RL-2008-11, Rev. 0, September 2008). Appendices 1 through 6 provide the following information as indicated below:

Appendix 1. Glossary of Data Reporting Qualifiers
Appendix 2. Summary of Data Qualification
Appendix 3. Annotated Laboratory Reports
Appendix 4. Laboratory Narrative and Chain-of-Custody Documentation
Appendix 5. Data Validation Supporting Documentation
Appendix 6. Additional Documentation Requested by Client

DATA QUALITY PARAMETERS

- **Holding Times**

Analytical holding times for metals are assessed to ascertain whether the holding time requirements were met by the laboratory. The holding time requirements are as follows: Soil samples must be analyzed within 30 days for chromium VI.

If holding times are exceeded, but not by greater than two times the limit, all associated sample results are qualified as estimates and flagged "J" for detects and "UJ" for non-detects. If holding times are exceeded by greater than two times the limit, all associated detectable sample results are qualified as estimates and flagged "J" and all non-detects are rejected and flagged "UR".

All holding times were acceptable.

Method Blanks

Method Blanks

Method blank analyses are performed to determine the extent of laboratory contamination introduced through sampling, sample preparation and analysis. At least one acceptable method blank analysis must be conducted for every 20 samples. No contaminants should be present in the method blank. All blank results must fall below the contract required detection limit (CRQL) to be acceptable.

All method blank results were acceptable.

Field (Equipment) Blank

No field blanks were submitted for analysis.

- **Accuracy**

Matrix Spike and Laboratory Control Sample

Matrix spike (MS) and laboratory control sample (LCS) analyses are used to assess the analytical accuracy of the reported data. The matrix spike is used to assess the effect of the matrix on the ability to accurately quantify sample concentrations. Recoveries must fall within the range of 70% to 130%. Samples with a recovery of less than 30% and a sample result below the IDL are rejected and flagged "UR". Samples with a recovery of 30% to 69% and a sample result less than the IDL are qualified "UJ". Samples with a recovery of greater than 130% or less than 70% and a sample result greater than the IDL are qualified as estimates and flagged "J". Finally, for samples with a recovery greater than 130% and a sample result less than the IDL, no qualification is required.

Due to a matrix spike recovery outside QC limits (42%), all chromium VI results were qualified as estimates and flagged "J".

All other accuracy results were acceptable.

- **Precision**

Laboratory Duplicate Samples

Analytical precision is expressed by the relative percent differences (RPD) between the recoveries of matrix spike duplicate (MSD) analyses performed on a sample in the analytical batch. Precision may alternatively be assessed using unspiked duplicate analyses performed on a sample in the analytical batch. If both sample and replicate activities (concentrations) are greater than five times the CRDL and the RPD is less than 30%, no qualification is required. If either activity (concentration) is less than five times the CRDL, the RPD control limit is less than or equal to two times the CRDL. If

the RPD is outside the applicable control limit, associated results are qualified as estimated detects or estimated non-detects.

All laboratory duplicate results were acceptable.

Field Duplicate

No field duplicates were submitted for analysis.

- **Analytical Detection Levels**

Reported analytical detection levels are compared against the required quantitation limits (RQLs) to ensure that laboratory detection levels meet the required criteria. All analytes met the RQL.

- **Completeness**

Data package J00736 was submitted for validation and verified for completeness. Completeness is based on the percentage of data determined to be valid (i.e., not rejected). The completion percentage was 100%.

MAJOR DEFICIENCIES

None found.

MINOR DEFICIENCIES

The following minor deficiency was noted:

- Due to a matrix spike recovery outside QC limits (42%), all chromium VI results were qualified as estimates and flagged "J".

Data flagged "J" indicates that the associated concentration is an estimate, but under the WCH statement of work, the data may be usable for decision-making purposes. All other validated results are considered accurate within the standard error associated with the methods

REFERENCES

Washington Closure Hanford Contract #S00W307A00 (March 2008), *Data Validation Services*.

DOE/RL-2008-11, Rev.0, *Remedial Investigation Work Plan for Hanford Site Releases to the Columbia River*, September 2008.

Appendix 1

Glossary of Data Reporting Qualifiers

Qualifiers which may be applied by data validators in compliance with WCH validation SOW are as follows:

U Indicates the compound or analyte was analyzed for and not detected in the sample. The value reported is the sample quantitation limit corrected for sample dilution and moisture content by the laboratory.

UJ - Indicates the compound or analyte was analyzed for and not detected in the sample. Due to a minor QC deficiency identified during the data validation, the associated quantitation limit is an estimate.

J - Indicates the compound or analyte was analyzed for and detected. Due to a minor QC deficiency identified during the data validation, the associated concentration is an estimate, but the data are usable for decision-making purposes.

BJ - Applied to inorganic analyses only. Indicates the analyte concentration was greater than the IDL but less than the CRDL and is considered an estimated value.

R - Indicates the compound or analyte was analyzed for, detected, and due to an identified major QC deficiency, the data are unusable.

UR - Indicates the compound or analyte was analyzed for and not detected in the sample. Additionally, the data is unusable due to an identified major QC deficiency.

NJ - Indicates presumptive evidence of a compound at an estimated value. The data may not be valid for some specific applications (i.e., usable for decision-making purposes).

N - Indicates presumptive evidence of a compound. The data may not be valid for some specific applications (i.e., usable for decision-making purposes).

Appendix 2

Summary of Data Qualification

WET CHEMISTRY DATA QUALIFICATION SUMMARY*

SDG: J00736	**REVIEWER:** **ELR**	**Project:** **RCBRA**	**PAGE 1 OF 1**
COMPOUND	QUALIFIER	SAMPLES AFFECTED	REASON
Chromium VI	J	All	MS recovery

* - The Qualified Data Summary Table includes laboratory applied "U" qualifiers not specifically identified here. The laboratory applied "U" qualifiers are included to minimize misinterpretation of results contained in the table.

Appendix 3

Annotated Laboratory Reports

Sample Results Summary

Date: 20 Feb-10

TestAmerica TARL

Ordered by Method, Batch No., Client Sample ID.

Report No. : 43357

SDG No: J00736

Batch	Client Id Work Order	Parameter	Result +- Uncertainty ( )		Qual	Units	Tracer Yield	MDC or MDA	CRDL	RPD
0047243 7196_CR6										
	J19K87									
	LVQC21AA	HEXCHROME	1.92E-01	+- 0.0E+00	J	mg/kg	N/A	1.53E-01	1.56E-01	
	LVQC21AE	HEXCHROME	1.49E-01	+- 0.0E+00	U	mg/kg	N/A	1.49E-01	1.50E-01	25.9
	J19K88									
	LVQC91AA	HEXCHROME	3.02E-01	+- 0.0E+00	J	mg/kg	N/A	1.49E-01	1.56E-01	

No. of Results: 3

3/23/10

TestAmerica
rptSTLRchSaSummary2 V5.2.6
A2002

RPD Relative Percent Difference.

U Qual - Analyzed for but not detected above limiting criteria. Limit criteria is less than the Mdc/Mda or Total Uncert or not identified by gamma scan software.

Appendix 4

Laboratory Narrative and Chain-of-Custody Documentation

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

Certificate of Analysis

TestAmerica Laboratories, Inc.

Washington Hanford Closure
2620 Fermi Avenue
Richland, WA 99354

February 26, 2010

Attention: Joan Kessner

SAF Number	:	RC-116
Date SDG Closed	:	February 16 2010
Number of Samples	:	Two (2)
Sample Type	:	Other Solid
SDG Number		J00716
Data Deliverable	:	15-Day / Summary

CASE NARRATIVE

I. Introduction

On February 16, 2010 two other solid samples were received at TestAmerica for chemistry analysis. Upon receipt, the samples were assigned the following laboratory ID number to correspond with the Washington Closure Hanford (WCH) specific ID:

WCH ID#	TAEL ID#	MATRIX	DATE OF RECEIPT
J19K87	LVQC2	OTHER SOLID	02/16/10
J19K88	LVQC5	OTHER SOLID	02/16/10

II. Sample Receipt

The samples were received in good condition and no anomalies were noted during check-in.

III. Analytical Results/Methodology

The analytical results for this report are presented by laboratory sample ID. Each set of data includes sample identification information, analytical results and the appropriate associated statistical errors.

The requested analyses were:

Chemical Analysis
Hexavalent Chromium by EPA method 7196A

IV. Quality Control

The analytical results for each analysis performed includes a minimum of one laboratory control sample (LCS), one method (reagent) blank, and one duplicate sample analysis. Any exceptions have been noted in the "Comments" section.

QC and sample results are reported in the same units.

V. Comments

Chemical Analysis

Hexavalent Chromium by EPA method 7196A:

The PbCrO4 initial concentration was approaching the linear range of the calibration so it was diluted and re analyzed. The matrix spike recovery (J19K87 MS) was low at 41.6%. Due to an analyst error a PDMS was not analyzed. Except as noted, the LCS, batch blank, samples, sample duplicate (J19K87), sample matrix spike (J19K87) and sample matrix spike duplicate (J19K87) results are within contractual requirements.

I certify that this Certificate of Analysis is in compliance with the *SOW*, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hard copy data package has been authorized by the Laboratory *Manager*, or a designee as verified by the following signature.

Reviewed and approved:

Sandra Seger
Sandra Seger
Project Manager

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-116-2192

Collector Rylie Barron	Company Contact JOAN KESSNER	Telephone No. 372-4588	Project Coordinator KESSNER, JH
Project Designation Columbia River Component for RCRA+ Sediment	Sampling Location NTS JHTS : 9		SAF No. RC 116
Ice Chest No. N/A	Field Logbook No. EL-1645	COA BES2RC0/32	Method of Shipment GROUND TRANSPORT
Shipped To TestAmerica Incorporated, Richland	Offsite Property No. N/A		Bill of Lading/Air Bill No. N/A

Price Code 7C

Data Turnaround
15 Days

POSSIBLE SAMPLE HAZARDS/REMARKS
N/A

Special Handling and/or Storage
N/A

Preservation	Cool 6C
Type of Container	GP
No. of Container(s)	1
Volume	2L

J0B160412

DUE 3/03/10
SDG J00736
JOB 160412

SAMPLE ANALYSIS: Lead Iso — 210

Sample No.	Matrix *	Sample Date	Sample Time	
J19567	OTHER SOLID	2-15-10	1320	X

CHAIN OF POSSESSION

Sign/Print Names

Relinquished By/Removed From R. Barron R.B.	Date/Time 2-15-10 1930	Received By/Stored In EAS REF D R.B. R. Barron	Date/Time 2-15-10 1930
Relinquished By/Removed From EAS LOCKED STORAGE	Date/Time 2/16/10 0750	Received By/Stored In SHANNAN JOHNSON	Date/Time 2/16/10 0750
Relinquished By/Removed From SHANNAN JOHNSON	Date/Time 2/16/10 0815	Received By/Stored In	Date/Time 2/16/10 0815
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time

SPECIAL INSTRUCTIONS

LVQC2

Samples stored under chain of custody with a documented storage... sample for storage... if applicable shipment to lab.

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION — Received By — Title — Date/Time

FINAL SAMPLE DISPOSITION — Disposal Method — Disposed By — Date/Time

WCH-EE-051

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-116-2195 Page 1 of 1

Collector: Sam Gibbo	Company Contact: JOAN KESSNER	Telephone No.: 373-[illegible]	Project Coordinator: KESSNER, JH
Project Designation: Columbia River Component of the RCBRA - Sediment	Sampling Location: HIS IHJ514		SAF No.: RC-116
Ice Chest No.: N/A	Field Logbook No.: EL-1645-01	COA: DESCRA[illegible]	Method of Shipment: GROUND TRANSPORT
Shipped To: TestAmerica Incorporated, Richland	Offsite Property No.: N/A		Bill of Lading/Air Bill No.: N/A

Price Code: 7C

Data Turnaround: 15 Days

POSSIBLE SAMPLE HAZARDS/REMARKS

NA

Special Handling and/or Storage

NA

Preservation	Cool 4C
Type of Container	G/P
No. of Container(s)	1
Volume	125g
SAMPLE ANALYSIS	[illegible]

JOB160912
Due 3/03/10
SDG J00736

Sample No.	Matrix *	Sample Date	Sample Time	
J19488	OTHER SOLID	2-15-10	14 20	X

CHAIN OF POSSESSION Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Sam Gibbo	2-15-10/1645	EKS Ref 0	2-15-10/1645
EKS LOCKED STORAGE	2/16/10 0753	SHANNAN JOHNSON	2/16/10 0753
SHANNAN JOHNSON	2/16/10	[illegible]	2-16-10 0815 Am

SPECIAL INSTRUCTIONS

LVQC9

[illegible]

Matrix *

[illegible]

LABORATORY SECTION	Received By	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method / Disposed By	Date/Time

WCH-EE-011

Page 19 of 22

000014

Appendix 5

Data Validation Supporting Documentation

GENERAL CHEMISTRY ANALYSIS DATA VALIDATION CHECKLIST

VALIDATION LEVEL:	A	B	[✓ C]	D	E

PROJECT: RCBRA

DATA PACKAGE: J00736

VALIDATOR: ELR

LAB: TAL

DATE: 3/24/10

SDG: J00736

ANALYSES PERFORMED

Anions/IC	TOC	TOX	TPH-418.1	Oil and Grease	Alkalinity
Ammonia	BOD/COD	Chloride	[✓ Chromium-VI]	pH	NO_2/NO_3
Sulfate	TDS	TKN	Phosphate		

SAMPLES/MATRIX

J19K87 J19K88

Solid

1. DATA PACKAGE COMPLETENESS AND CASE NARRATIVE

Technical verification documentation present? .... Yes [✓ No] N/A

Comments:

2. INSTRUMENT PERFORMANCE AND CALIBRATIONS (Levels D and E)

Initial calibrations performed on all instruments? .... Yes No [✓ N/A]

Initial calibrations acceptable? .... Yes No [✓ N/A]

ICV and CCV checks performed on all instruments? .... Yes No [✓ N/A]

ICV and CCV checks acceptable? .... Yes No [✓ N/A]

Standards traceable? .... Yes No [✓ N/A]

Standards expired? .... Yes No [✓ N/A]

Calculation check acceptable? .... Yes No [✓ N/A]

Comments:

GENERAL CHEMISTRY ANALYSIS DATA VALIDATION CHECKLIST

3. BLANKS (Levels B, C, D, and E)

ICB and CCB checks performed for all applicable analyses? (Levels D, E) .... Yes No [✓ N/A]

ICB and CCB results acceptable? (Levels D, E) .... Yes No [✓ N/A]

Laboratory blanks analyzed? .... [✓ Yes] No N/A

Laboratory blank results acceptable? .... [✓ Yes] No N/A

Field blanks analyzed? (Levels C, D, E) .... Yes [✓ No] N/A

Field blank results acceptable? (Levels C, D, E) .... Yes No [✓ N/A]

Transcription/calculation errors? (Levels D, E) .... Yes No [✓ N/A]

Comments: No FB

4. ACCURACY (Levels C, D, and E)

Spike samples analyzed? .... [✓ Yes] No N/A

Spike recoveries acceptable? .... Yes [✓ No] N/A

Sike standards NIST traceable? (Levels D, E) .... Yes No [✓ N/A]

Spike standards expired? (Levels D, E) .... Yes No [✓ N/A]

LCS/BSS samples analyzed? .... [✓ Yes] No N/A

LCS/BSS results acceptable? .... [✓ Yes] No N/A

Standards traceable? (Levels D, E) .... Yes No [✓ N/A]

Standards expired? (Levels D, E) .... Yes No [✓ N/A]

Transcription/calculation errors? (Levels D, E) .... Yes No [✓ N/A]

Performance audit sample(s) analyzed? .... Yes [✓ No] N/A

Performance audit sample results acceptable? .... Yes No [✓ N/A]

Comments: MS - 429a - J all

No PAS

GENERAL CHEMISTRY ANALYSIS DATA VALIDATION CHECKLIST

5. PRECISION (Levels C, D, and E)

Duplicate RPD values acceptable? .... [✓ Yes] No N/A
Duplicate results acceptable? .... [✓ Yes] No N/A
MS/MSD standards NIST traceable? (Levels D, E) .... Yes No [✓ N/A]
MS/MSD standards expired? (Levels D, E) .... Yes No [✓ N/A]
Field duplicate RPD values acceptable? .... Yes No [✓ N/A]
Field split RPD values acceptable? .... Yes No [✓ N/A]
Transcription/calculation errors? (Levels D, E) .... Yes No [✓ N/A]
Comments: ______________________________

6. HOLDING TIMES (all levels)

Samples properly preserved? .... [✓ Yes] No N/A
Sample holding times acceptable? .... [✓ Yes] No N/A
Comments: ______________________________

GENERAL CHEMISTRY ANALYSIS DATA VALIDATION CHECKLIST

7. RESULT QUANTITATION AND DETECTION LIMITS (all levels)

Results reported for all requested analyses? .... [✓ Yes] No N/A
Results supported in the raw data? (Levels D, E) .... Yes No [✓ N/A]
Samples properly prepared? (Levels D, E) .... Yes No [✓ N/A]
Detection limits meet RDL? .... [✓ Yes] No N/A
Transcription/calculation errors? (Levels D, E) .... Yes No [✓ N/A]
Comments:

Appendix 6

Additional Documentation Requested by Client

QC Results Summary

Date: 26-Feb-10

TestAmerica PART,

Ordered by Method, Batch No, QC Type,.

Report No. : 43367

SDG No.: J00736

Batch Work Order	Parameter	Result +- Uncertainty (2s)	Qual	Units	Tracer Yield	LCS Recovery	Bias	MDC|MDA
7199_CR6								
0047243 BLANK QC,								
LVQH91AA	HEXCHROME	1.55E-01 +- 0.0E+00	U	mg/kg	N/A			1.50E-01
0047243 LCS,								
LVQH91AC	HEXCHROME	1.04E+01 +- 0.0E+00		mg/kg	N/A	92%	0.1	1.56E-01
0047243 MATRIX SPIKE, J10K67								
LVQC21AC	HEXCHROME	9.83E+00 +- 0.0E+00		mg/kg	N/A	42%	0.0	1.47E-01

No. of Results: 3

TestAmerica Bias - (Result/Expected)-1 as defined by ANSI N13.30.

rptSTLRchQcSummary V5.2.6 A2002 U Qual - Analyzed for but not detected above limiting criteria. Limit criteria is less than the Mdc/Mda or Total Uncert or not identified by gamma scan software.

WET CHEMISTRY DATA QUALIFICATION SUMMARY*

SDG: J00736	**REVIEWER: ELR**	**Project: RCBRA**	**PAGE 1 OF 1**
COMPOUND	QUALIFIER	SAMPLES AFFECTED	REASON
Chromium VI	J	All	MS recovery

* - The Qualified Data Summary Table includes laboratory applied "U" qualifiers not specifically identified here. The laboratory applied "U" qualifiers are included to minimize misinterpretation of results contained in the table.

F.2.3.3 SDG K1918

SAF-RC-116
Columbia River Component of the RCBRA – Sediment
FINAL VALIDATION PACKAGE

COMPLETE COPY OF VALIDATION PACKAGE TO:

Kathy Wendt H4-21

COMMENTS:

SDG K1918 **SAF-RC-116**

Date: 16 April 2010
To: Washington Closure Hanford (technical representative)
From: ELR Consultants
Project: Columbia River Component of the RCBRA - Sediment
Subject: Volatile - Data Package No. K1918-LLI

INTRODUCTION

This memo presents the results of data validation on Data Package No. K1918 prepared by Lionville Laboratory Inc. (LLI). A list of samples validated along with the analyses reported and the method of analysis is provided in the following table.

Sample ID	Sample Date	Media	Validation	Date
J19FD1	1/25/10	Solid	C	See note 1
J19FD8	1/25/10	Solid	C	See note 1
J19FD9	1/25/10	Solid	C	See note 1
J19FB0	1/25/10	Solid	C	See note 1
J19FW9	1/25/10	Solid	C	See note 1
J19FW0	1/25/10	Solid	C	See note 1
J19H28	1/25/10	Solid	C	See note 1
J19FX0	1/25/10	Solid	C	See note 1

1 – Volatiles by 8260C.

Data validation was conducted in accordance with the Washington Closure Hanford (WCH) validation statement of work and the Remedial Investigation Work Plan for Hanford Site Releases to the Columbia River (DOE/RL-2008-11, Rev. 0. September 2008). Appendices 1 through 6 provide the following information as indicated below:

Appendix 1. Glossary of Data Reporting Qualifiers
Appendix 2. Summary of Data Qualification
Appendix 3. Qualified Data Summary and Annotated Laboratory Reports
Appendix 4. Laboratory Narrative and Chain-of-Custody Documentation
Appendix 5. Data Validation Supporting Documentation
Appendix 6 Additional Date Requested by Client

DATA QUALITY OBJECTIVES

Holding Times & Sample Preservation

Analytical holding times were assessed to ascertain whether the holding time requirements were met by the laboratory. The holding time requirements are as follows. Samples must be extracted and analyzed within 14 days of the date of sample collection.

If holding times are exceeded, but not by greater than two times the limit, all associated sample results are qualified as estimates and flagged "J" for detects and "UJ" for non-detects. If holding times are exceeded by greater than two times the limit, all associated detectable sample results are qualified as estimates and flagged "J" and all non-detects are rejected and flagged "UR".

All holding times were acceptable.

- **Method Blanks**

Method blank analyses are conducted to determine the extent of laboratory contamination introduced through sampling, sample preparation and analysis. At least one acceptable method blank analysis must be conducted for every 20 samples. No contaminants should be present in the method blank. Analytical results for analytes present in any sample at less than five times the concentration of that analyte found in the associated blank are qualified as non-detects and flagged "U". Common laboratory contaminants present in samples at less than ten times the concentration of that analyte found in the associated blank are qualified as non-detects. If a sample result is less than the CRQL and is less than five times (or less than ten times for lab contaminants) the highest associated blank result, the sample result value is raised to the CRQL level and qualified as undetected "U".

All method blank results were acceptable.

Field Blanks

No field blanks were submitted for analysis.

- **Accuracy**

Matrix Spike/Matrix Spike Duplicate & Blank Spike Recoveries

Matrix spike/matrix spike duplicate analyses are used to assess the analytical accuracy of the reported data and the effect of the matrix on the ability to accurately quantify sample concentrations. Matrix spike/matrix spike duplicate analyses are performed in duplicate using five compounds for which percent recoveries must be within a range of 50-150% or within laboratory control limits. If spike recoveries are outside control limits, detected sample results less than five times the spike concentration are qualified as estimates and flagged "J". Undetected sample results with spike recoveries below control limits are qualified as estimates and flagged "UJ". Undetected sample results are not qualified if the spike recovery is above control limits. Sample results greater than five times the spike concentration require no qualification.

Due to an MS recovery outside QC limits, the acetone (153%) result in sample J19FW0 was qualified as estimate and flagged "J".

Due to LCS recoveries outside QC limits, the acetone (194%) and 2-hexanone (175%) results in sample J19FW0 were qualified as estimates and flagged "J".

All other accuracy results were acceptable.

Surrogate Recovery

The analyses of surrogate compounds provide a measure of performance for individual samples. Matrix-specific surrogate compound recovery control windows have been established by the EPA CLP program. If two surrogates of the same class of compounds (base/neutral or acid) are out of control limits, all associated sample results greater than the contract required quantitation limit (CRQL) are qualified as estimates and flagged "J". Sample results less than the CRQL and below the lower control limit are qualified as estimates and flagged "UJ". Sample results less than the CRQL with recoveries above the upper control limit require no qualification. If a surrogate recovery is less than 10%, detects are qualified as estimates and flagged "J" and nondetects are rejected and flagged "UR".

All surrogate results were acceptable.

- **Precision**

Matrix Spike/Matrix Spike Duplicate Samples

Matrix spike (MS)/matrix spike duplicate (MSD) results provide matrix-specific information on the precision of the method for specific target compound classes. Precision is expressed by the relative percent difference (RPD) between the recoveries of duplicate matrix spike analyses performed on a sample. Samples results must be within RPD limits of +/-30%. If RPD values are out of specification and the sample concentration is less than five times the spike concentration, all associated detected sample results are qualified as estimates and flagged "J". If RPD values are out of specification and the sample concentration is greater than five times the spike concentration, no qualification is required.

Due to an RPD outside QC limits, the acetone (41%) and 2-butanone (33%) results in samples J19FW9, J19FW0, J19H28 and J19FX0 were qualified as estimates and flagged "J".

All other precision results were acceptable.

Field Duplicate Samples

No field duplicate were submitted for analysis.

- **Analytical Detection Levels**

Reported analytical detection levels are compared against the required quantitation limits (RQL's) to ensure that laboratory detection levels meet the required criteria. Three methylene chloride results exceeded the RQL. Under the WCH statement of work, no qualification is required. All other analyes met the RQL.

- **Completeness**

Data package No. K1918 was submitted for validation and verified for completeness. Completeness is based on the percentage of data determined to be valid (i.e., not rejected). The completion percentage was 100%.

MAJOR DEFICIENCIES

None found.

MINOR DEFICIENCIES

The following minor deficiencies were noted:

- Due to an MS recovery outside QC limits, the acetone (153%) result in sample J19FW0 was qualified as estimate and flagged "J".
- Due to LCS recoveries outside QC limits, the acetone (194%) and 2-hexanone (175%) results in sample J19FW0 were qualified as estimates and flagged "J".
- Due to an RPD outside QC limits, the acetone (41%) and 2-butanone (33%) results in samples J19FW9, J19FW0, J19H28 and J19FX0 were qualified as estimates and flagged "J"

Data flagged "J" indicates that the associated concentration is an estimate, but under the WCH statement of work, the data may be usable for decision-making purposes. All other validated results are considered accurate within the standard error associated with the methods.

Three methylene chloride results exceeded the RQL. Under the WCH statement of work, no qualification is required.

REFERENCES

Washington Closure Hanford Contract #S00W307A00 (March 2008), *Data Validation Services*.

DOE/RL-2008-11, Rev.0, *Remedial Investigation Work Plan for Hanford Site Releases to the Columbia River*, September 2008.

Appendix 1

Glossary of Data Reporting Qualifiers

Qualifiers which may be applied by data validators in compliance with the WCH validation SOW are as follows:

U - Indicates the compound or analyte was analyzed for and not detected in the sample. The value reported is the same quantitation limit corrected for sample dilution and moisture content by the laboratory.

UJ - Indicates the compound or analyte was analyzed for and not detected in the sample. Due to a minor QC deficiency identified during the data validation, the associated quantitation limit is an estimate.

J - Indicates the compound or analyte was analyzed for and detected. Due to a minor QC deficiency identified during the data validation, the associated quantitation limit is an estimate.

R - Indicates the compound or analyte was analyzed for, detected, and due to an identified major QC deficiency, the data are unusable.

UR - Indicates the compound or analyte was analyzed for and not detected in the sample. Additionally, the data is unusable due to an identified major QC deficiency.

NJ - Indicates presumptive evidence of a compound at an estimated value. The data may not be valid for some specific applications (i.e., usable for decision-making purposes).

N - Indicates presumptive evidence of a compound. The data may not be valid for some specific applications usable for decision-making purposes).

Appendix 2

Summary of Data Qualification

VOLATILE ORGANIC DATA QUALIFICATION SUMMARY*

SDG: K1918	**REVIEWER: ELR**	**Project: RCBRA**	**PAGE 1 OF 1**
COMPOUND	QUALIFIER	SAMPLES AFFECTED	REASON
Acetone	J	J19FW0	MS recovery
Acetone 2-hexanone	J	J19FW0	LCS recovery
Acetone 2-Butanone	J	J19FW9, J19FW0 J19H28, J19FX0	RPD

* - The Qualified Data Summary Table includes laboratory applied "U" qualifiers not specifically identified here. The laboratory applied "U" qualifiers are included to minimize misinterpretation of results contained in the table.

Appendix 3

Qualified Data Summary and Annotated Laboratory Reports

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

WC-Hanford, Inc.
2620 Fermi Avenue
Richland WA, 99354

Project: RCS-116
Project Number: K1918
Project Manager: Joan Kessner

Reported:
02/14/2010 08:31

J19FD1

1001098-01 (Solid)

4/14/10

Analyte	Result and Qualifier		Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Lionville Laboratory									
Volatile Organic Compounds by SW846 8260B									
1,1,1-Trichloroethane	4.03	U	4.03	ug/kg	1	L002002	01/29/2010	01/29/2010	8260B
1,1,2,2-Tetrachloroethane	4.03	U	4.03	ug/kg	1	L002002	01/29/2010	01/29/2010	8260B
1,1,2-Trichloroethane	4.03	U	4.03	ug/kg	1	L002002	01/29/2010	01/29/2010	8260B
1,1-Dichloroethane	4.03	U	4.03	ug/kg	1	L002002	01/29/2010	01/29/2010	8260B
1,1-Dichloroethene	4.03	U	4.03	ug/kg	1	L002002	01/29/2010	01/29/2010	8260B
1,2-Dichloroethane	4.84	U	4.84	ug/kg	1	L002002	01/29/2010	01/29/2010	8260B
1,2-Dichloroethene (total)	4.03	U	4.03	ug/kg	1	L002002	01/29/2010	01/29/2010	8260B
1,2-Dichloropropane	4.03	U	4.03	ug/kg	1	L002002	01/29/2010	01/29/2010	8260B
2-Butanone	9.68	U	9.68	ug/kg	1	L002002	01/29/2010	01/29/2010	8260B
2-Hexanone	9.68	U	9.68	ug/kg	1	L002002	01/29/2010	01/29/2010	8260B
4-Methyl-2-pentanone	9.68	U	9.68	ug/kg	1	L002002	01/29/2010	01/29/2010	8260B
Acetone	9.68	U	9.68	ug/kg	1	L002002	01/29/2010	01/29/2010	8260B
Benzene	4.03	U	4.03	ug/kg	1	L002002	01/29/2010	01/29/2010	8260B
Bromodichloromethane	4.84	U	4.84	ug/kg	1	L002002	01/29/2010	01/29/2010	8260B
Bromoform	4.03	U	4.03	ug/kg	1	L002002	01/29/2010	01/29/2010	8260B
Bromomethane	8.06	U	8.06	ug/kg	1	L002002	01/29/2010	01/29/2010	8260B
Carbon Disulfide	4.03	U	4.03	ug/kg	1	L002002	01/29/2010	01/29/2010	8260B
Carbon Tetrachloride	4.03	U	4.03	ug/kg	1	L002002	01/29/2010	01/29/2010	8260B
Chlorobenzene	4.03	U	4.03	ug/kg	1	L002002	01/29/2010	01/29/2010	8260B
Chloroethane	8.06	U	8.06	ug/kg	1	L002002	01/29/2010	01/29/2010	8260B
Chloroform	4.03	U	4.03	ug/kg	1	L002002	01/29/2010	01/29/2010	8260B
Chloromethane	8.06	U	8.06	ug/kg	1	L002002	01/29/2010	01/29/2010	8260B
cis-1,2-Dichloroethene	4.03	U	4.03	ug/kg	1	L002002	01/29/2010	01/29/2010	8260B
cis-1,3-Dichloropropene	4.03	U	4.03	ug/kg	1	L002002	01/29/2010	01/29/2010	8260B
Dibromochloromethane	4.03	U	4.03	ug/kg	1	L002002	01/29/2010	01/29/2010	8260B
Ethylbenzene	4.03	U	4.03	ug/kg	1	L002002	01/29/2010	01/29/2010	8260B
Methylene Chloride	**2.03**	**J**	4.84	ug/kg	1	L002002	01/29/2010	01/29/2010	8260B
Styrene	4.03	U	4.03	ug/kg	1	L002002	01/29/2010	01/29/2010	8260B
Tetrachloroethene	4.03	U	4.03	ug/kg	1	L002002	01/29/2010	01/29/2010	8260B
trans-1,2-Dichloroethene	4.03	U	4.03	ug/kg	1	L002002	01/29/2010	01/29/2010	8260B
Toluene	4.03	U	4.03	ug/kg	1	L002002	01/29/2010	01/29/2010	8260B
trans-1,3-Dichloropropene	4.03	U	4.03	ug/kg	1	L002002	01/29/2010	01/29/2010	8260B
Trichloroethene	4.03	U	4.03	ug/kg	1	L002002	01/29/2010	01/29/2010	8260B
Vinyl chloride	8.06	U	8.06	ug/kg	1	L002002	01/29/2010	01/29/2010	8260B
Xylenes, total	4.03	U	4.03	ug/kg	1	L002002	01/29/2010	01/29/2010	8260B
Surrogate: 1,2-Dichloroethane-d4	73 %		*63-131*			*L002002*	*01/29/2010*	*01/29/2010*	*8260B*
Surrogate: Toluene-d8	90 %		*68-140*			*L002002*	*01/29/2010*	*01/29/2010*	*8260B*
Surrogate: 4-Bromofluorobenzene	97 %		*66-122*			*L002002*	*01/29/2010*	*01/29/2010*	*8260B*

LIONVILLE LABORATORY

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WC-Hanford, Inc 2620 Fermi Avenue Richland WA, 99354	Project: RC-116 Project Number: K1918 Project Manager: Joan Kessner	Reported: 02/14/2010 08:21

J19FD8

1001098-02 (Solid)

4/14/10

Analyte	Result and Qualifier		Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Lionville Laboratory									
Volatile Organic Compounds by SW846 8260B									
1,1,1-Trichloroethane	4.72	U	4.72	ug/kg	1	L002002	01/29/2010	01/29/2010	8260B
1,1,2,2-Tetrachloroethane	4.72	U	4.72	ug/kg	1	L002002	01/29/2010	01/29/2010	8260B
1,1,2-Trichloroethane	4.72	U	4.72	ug/kg	1	L002002	01/29/2010	01/29/2010	8260B
1,1-Dichloroethane	4.72	U	4.72	ug/kg	1	L002002	01/29/2010	01/29/2010	8260B
1,1-Dichloroethene	4.72	U	4.72	ug/kg	1	L002002	01/29/2010	01/29/2010	8260B
1,2-Dichloroethane	5.66	U	5.66	ug/kg	1	L002002	01/29/2010	01/29/2010	8260B
1,2-Dichloroethene (total)	4.72	U	4.72	ug/kg	1	L002002	01/29/2010	01/29/2010	8260B
1,2-Dichloropropane	4.72	U	4.72	ug/kg	1	L002002	01/29/2010	01/29/2010	8260B
2-Butanone	11.3	U	11.3	ug/kg	1	L002002	01/29/2010	01/29/2010	8260B
2-Hexanone	11.3	U	11.3	ug/kg	1	L002002	01/29/2010	01/29/2010	8260B
4-Methyl-2-pentanone	11.3	U	11.3	ug/kg	1	L002002	01/29/2010	01/29/2010	8260B
Acetone	11.3	U	11.3	ug/kg	1	L002002	01/29/2010	01/29/2010	8260B
Benzene	4.72	U	4.72	ug/kg	1	L002002	01/29/2010	01/29/2010	8260B
Bromodichloromethane	5.66	U	5.66	ug/kg	1	L002002	01/29/2010	01/29/2010	8260B
Bromoform	4.72	U	4.72	ug/kg	1	L002002	01/29/2010	01/29/2010	8260B
Bromomethane	9.43	U	9.43	ug/kg	1	L002002	01/29/2010	01/29/2010	8260B
Carbon Disulfide	4.72	U	4.72	ug/kg	1	L002002	01/29/2010	01/29/2010	8260B
Carbon Tetrachloride	4.72	U	4.72	ug/kg	1	L002002	01/29/2010	01/29/2010	8260B
Chlorobenzene	4.72	U	4.72	ug/kg	1	L002002	01/29/2010	01/29/2010	8260B
Chloroethane	9.43	U	9.43	ug/kg	1	L002002	01/29/2010	01/29/2010	8260B
Chloroform	4.72	U	4.72	ug/kg	1	L002002	01/29/2010	01/29/2010	8260B
Chloromethane	9.43	U	9.43	ug/kg	1	L002002	01/29/2010	01/29/2010	8260B
cis-1,2-Dichloroethene	4.72	U	4.72	ug/kg	1	L002002	01/29/2010	01/29/2010	8260B
cis-1,3-Dichloropropene	4.72	U	4.72	ug/kg	1	L002002	01/29/2010	01/29/2010	8260B
Dibromochloromethane	4.72	U	4.72	ug/kg	1	L002002	01/29/2010	01/29/2010	8260B
Ethylbenzene	4.72	U	4.72	ug/kg	1	L002002	01/29/2010	01/29/2010	8260B
Methylene Chloride	2.94	J	5.66	ug/kg	1	L002002	01/29/2010	01/29/2010	8260B
Styrene	4.72	U	4.72	ug/kg	1	L002002	01/29/2010	01/29/2010	8260B
Tetrachloroethene	4.72	U	4.72	ug/kg	1	L002002	01/29/2010	01/29/2010	8260B
trans-1,2-Dichloroethene	4.72	U	4.72	ug/kg	1	L002002	01/29/2010	01/29/2010	8260B
Toluene	1.04	J	4.72	ug/kg	1	L002002	01/29/2010	01/29/2010	8260B
trans-1,3-Dichloropropene	4.72	U	4.72	ug/kg	1	L002002	01/29/2010	01/29/2010	8260B
Trichloroethene	4.72	U	4.72	ug/kg	1	L002002	01/29/2010	01/29/2010	8260B
Vinyl chloride	9.43	U	9.43	ug/kg	1	L002002	01/29/2010	01/29/2010	8260B
Xylenes, total	4.72	U	4.72	ug/kg	1	L002002	01/29/2010	01/29/2010	8260B
Surrogate: 1,2-Dichloroethane-d4	*73 %*		*63-151*			*L002002*	*01/29/2010*	*01/29/2010*	*8260B*
Surrogate: Toluene-d8	*88 %*		*68-140*			*L002002*	*01/29/2010*	*01/29/2010*	*8260B*
Surrogate: 4-Bromofluorobenzene	*93 %*		*66-122*			*L002002*	*01/29/2010*	*01/29/2010*	*8260B*

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Project: RC-116
Project Number: K1918
Project Manager: Joan Kessner

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02/14/2010 08:21

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4/14/10

Lionville Laboratory

Volatile Organic Compounds by SW846 8260B

Analyte	Result and Qualifier	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
1,1,1-Trichloroethane	4.81 U	4.81	ug/kg	1	L002002	01/29/2010	01/29/2010	8260B
1,1,2,2-Tetrachloroethane	4.81 U	4.81	ug/kg	1	L002002	01/29/2010	01/29/2010	8260B
1,1,2-Trichloroethane	4.81 U	4.81	ug/kg	1	L002002	01/29/2010	01/29/2010	8260B
1,1-Dichloroethane	4.81 U	4.81	ug/kg	1	L002002	01/29/2010	01/29/2010	8260B
1,1-Dichloroethene	4.81 U	4.81	ug/kg	1	L002002	01/29/2010	01/29/2010	8260B
1,2-Dichloroethane	5.77 U	5.77	ug/kg	1	L002002	01/29/2010	01/29/2010	8260B
1,2-Dichloroethene (total)	4.81 U	4.81	ug/kg	1	L002002	01/29/2010	01/29/2010	8260B
1,2-Dichloropropane	4.81 U	4.81	ug/kg	1	L002002	01/29/2010	01/29/2010	8260B
2-Butanone	11.5 U	11.5	ug/kg	1	L002002	01/29/2010	01/29/2010	8260B
2-Hexanone	11.5 U	11.5	ug/kg	1	L002002	01/29/2010	01/29/2010	8260B
4-Methyl-2-pentanone	11.5 U	11.5	ug/kg	1	L002002	01/29/2010	01/29/2010	8260B
Acetone	11.5 U	11.5	ug/kg	1	L002002	01/29/2010	01/29/2010	8260B
Benzene	4.81 U	4.81	ug/kg	1	L002002	01/29/2010	01/29/2010	8260B
Bromodichloromethane	5.77 U	5.77	ug/kg	1	L002002	01/29/2010	01/29/2010	8260B
Bromoform	4.81 U	4.81	ug/kg	1	L002002	01/29/2010	01/29/2010	8260B
Bromomethane	9.62 U	9.62	ug/kg	1	L002002	01/29/2010	01/29/2010	8260B
Carbon Disulfide	4.81 U	4.81	ug/kg	1	L002002	01/29/2010	01/29/2010	8260B
Carbon Tetrachloride	4.81 U	4.81	ug/kg	1	L002002	01/29/2010	01/29/2010	8260B
Chlorobenzene	4.81 U	4.81	ug/kg	1	L002002	01/29/2010	01/29/2010	8260B
Chloroethane	9.62 U	9.62	ug/kg	1	L002002	01/29/2010	01/29/2010	8260B
Chloroform	4.81 U	4.81	ug/kg	1	L002002	01/29/2010	01/29/2010	8260B
Chloromethane	9.62 U	9.62	ug/kg	1	L002002	01/29/2010	01/29/2010	8260B
cis-1,2-Dichloroethene	4.81 U	4.81	ug/kg	1	L002002	01/29/2010	01/29/2010	8260B
cis-1,3-Dichloropropene	4.81 U	4.81	ug/kg	1	L002002	01/29/2010	01/29/2010	8260B
Dibromochloromethane	4.81 U	4.81	ug/kg	1	L002002	01/29/2010	01/29/2010	8260B
Ethylbenzene	4.81 U	4.81	ug/kg	1	L002002	01/29/2010	01/29/2010	8260B
Methylene Chloride	**3.54 J**	5.77	ug/kg	1	L002002	01/29/2010	01/29/2010	8260B
Styrene	4.81 U	4.81	ug/kg	1	L002002	01/29/2010	01/29/2010	8260B
Tetrachloroethene	4.81 U	4.81	ug/kg	1	L002002	01/29/2010	01/29/2010	8260B
trans-1,2-Dichloroethene	4.81 U	4.81	ug/kg	1	L002002	01/29/2010	01/29/2010	8260B
Toluene	4.81 U	4.81	ug/kg	1	L002002	01/29/2010	01/29/2010	8260B
trans-1,3-Dichloropropene	4.81 U	4.81	ug/kg	1	L002002	01/29/2010	01/29/2010	8260B
Trichloroethene	4.81 U	4.81	ug/kg	1	L002002	01/29/2010	01/29/2010	8260B
Vinyl chloride	9.62 U	9.62	ug/kg	1	L002002	01/29/2010	01/29/2010	8260B
Xylenes, total	4.81 U	4.81	ug/kg	1	L002002	01/29/2010	01/29/2010	8260B
Surrogate: 1,2-Dichloroethane-d4	*78 %*	*63-151*			*L002002*	*01/29/2010*	*01/29/2010*	*8260B*
Surrogate: Toluene-d8	*91 %*	*68-140*			*L002002*	*01/29/2010*	*01/29/2010*	*8260B*
Surrogate: 4-Bromofluorobenzene	*93 %*	*66-122*			*L002002*	*01/29/2010*	*01/29/2010*	*8260B*

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J19FR0
1001098-04 (Solid)

4/14/10

Analyte	Result and Qualifier		Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method

Lionville Laboratory

Volatile Organic Compounds by SW846 8260B

Analyte	Result	Qualifier	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
1,1,1-Trichloroethane	5.10	U	5.10	ug/kg	1	L002002	01/29/2010	01/29/2010	8260B
1,1,2,2-Tetrachloroethane	5.10	U	5.10	ug/kg	1	L002002	01/29/2010	01/29/2010	8260B
1,1,2-Trichloroethane	5.10	U	5.10	ug/kg	1	L002002	01/29/2010	01/29/2010	8260B
1,1-Dichloroethane	5.10	U	5.10	ug/kg	1	L002002	01/29/2010	01/29/2010	8260B
1,1-Dichloroethene	5.10	U	5.10	ug/kg	1	L002002	01/29/2010	01/29/2010	8260B
1,2-Dichloroethane	6.12	U	6.12	ug/kg	1	L002002	01/29/2010	01/29/2010	8260B
1,2-Dichloroethene (total)	5.10	U	5.10	ug/kg	1	L002002	01/29/2010	01/29/2010	8260B
1,2-Dichloropropane	5.10	U	5.10	ug/kg	1	L002002	01/29/2010	01/29/2010	8260B
2-Butanone	12.2	U	12.2	ug/kg	1	L002002	01/29/2010	01/29/2010	8260B
2-Hexanone	12.2	U	12.2	ug/kg	1	L002002	01/29/2010	01/29/2010	8260B
4-Methyl-2-pentanone	12.2	U	12.2	ug/kg	1	L002002	01/29/2010	01/29/2010	8260B
Acetone	12.2	U	12.2	ug/kg	1	L002002	01/29/2010	01/29/2010	8260B
Benzene	5.10	U	5.10	ug/kg	1	L002002	01/29/2010	01/29/2010	8260B
Bromodichloromethane	6.12	U	6.12	ug/kg	1	L002002	01/29/2010	01/29/2010	8260B
Bromoform	5.10	U	5.10	ug/kg	1	L002002	01/29/2010	01/29/2010	8260B
Bromomethane	10.2	U	10.2	ug/kg	1	L002002	01/29/2010	01/29/2010	8260B
Carbon Disulfide	5.10	U	5.10	ug/kg	1	L002002	01/29/2010	01/29/2010	8260B
Carbon Tetrachloride	5.10	U	5.10	ug/kg	1	L002002	01/29/2010	01/29/2010	8260B
Chlorobenzene	5.10	U	5.10	ug/kg	1	L002002	01/29/2010	01/29/2010	8260B
Chloroethane	10.2	U	10.2	ug/kg	1	L002002	01/29/2010	01/29/2010	8260B
Chloroform	5.10	U	5.10	ug/kg	1	L002002	01/29/2010	01/29/2010	8260B
Chloromethane	10.2	U	10.2	ug/kg	1	L002002	01/29/2010	01/29/2010	8260B
cis-1,2-Dichloroethene	5.10	U	5.10	ug/kg	1	L002002	01/29/2010	01/29/2010	8260B
cis-1,3-Dichloropropene	5.10	U	5.10	ug/kg	1	L002002	01/29/2010	01/29/2010	8260B
Dibromochloromethane	5.10	U	5.10	ug/kg	1	L002002	01/29/2010	01/29/2010	8260B
Ethylbenzene	5.10	U	5.10	ug/kg	1	L002002	01/29/2010	01/29/2010	8260B
Methylene Chloride	**3.15**	**J**	6.12	ug/kg	1	L002002	01/29/2010	01/29/2010	8260B
Styrene	5.10	U	5.10	ug/kg	1	L002002	01/29/2010	01/29/2010	8260B
Tetrachloroethene	5.10	U	5.10	ug/kg	1	L002002	01/29/2010	01/29/2010	8260B
trans-1,2-Dichloroethene	5.10	U	5.10	ug/kg	1	L002002	01/29/2010	01/29/2010	8260B
Toluene	**1.79**	**J**	5.10	ug/kg	1	L002002	01/29/2010	01/29/2010	8260B
trans-1,3-Dichloropropene	5.10	U	5.10	ug/kg	1	L002002	01/29/2010	01/29/2010	8260B
Trichloroethene	5.10	U	5.10	ug/kg	1	L002002	01/29/2010	01/29/2010	8260B
Vinyl chloride	10.2	U	10.2	ug/kg	1	L002002	01/29/2010	01/29/2010	8260B
Xylenes, total	5.10	U	5.10	ug/kg	1	L002002	01/29/2010	01/29/2010	8260B
Surrogate: 1,2-Dichloroethane-d4	*74 %*		*63-131*			*L002002*	*01/29/2010*	*01/29/2010*	*8260B*
Surrogate: Toluene-d8	*88 %*		*68-140*			*L002002*	*01/29/2010*	*01/29/2010*	*8260B*
Surrogate: 4-Bromofluorobenzene	*97 %*		*60-122*			*L002002*	*01/29/2010*	*01/29/2010*	*8260B*

WC-Hanford, Inc.
2620 Fermi Avenue
Richland WA, 99354

Project: RC-116
Project Number: K1918
Project Manager: Joan Kessner

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03/14/2010 08:21

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1001098-05 (Solid)

4/14/10

Lionville Laboratory

Volatile Organic Compounds by SW846 8260B

Analyte	Result and Qualifier	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
1,1,1-Trichloroethane	4.24 U	4.24	ug/kg	1	L002095	02/04/2010	02/04/2010	8260B
1,1,2,2-Tetrachloroethane	4.24 U	4.24	ug/kg	1	L002095	02/04/2010	02/04/2010	8260B
1,1,2-Trichloroethane	4.24 U	4.24	ug/kg	1	L002095	02/04/2010	02/04/2010	8260B
1,1-Dichloroethane	4.24 U	4.24	ug/kg	1	L002095	02/04/2010	02/04/2010	8260B
1,1-Dichloroethene	4.24 U	4.24	ug/kg	1	L002095	02/04/2010	02/04/2010	8260B
1,2-Dichloroethane	5.08 U	5.08	ug/kg	1	L002095	02/04/2010	02/04/2010	8260B
1,2-Dichloroethene (total)	4.24 U	4.24	ug/kg	1	L002095	02/04/2010	02/04/2010	8260B
1,2-Dichloropropane	4.24 U	4.24	ug/kg	1	L002095	02/04/2010	02/04/2010	8260B
2-Butanone	10.2 U J	10.2	ug/kg	1	L002095	02/04/2010	02/04/2010	8260B
2-Hexanone	10.2 U	10.2	ug/kg	1	L002095	02/04/2010	02/04/2010	8260B
4-Methyl-2-pentanone	10.2 U	10.2	ug/kg	1	L002095	02/04/2010	02/04/2010	8260B
Acetone	10.2 U J	10.2	ug/kg	1	L002095	02/04/2010	02/04/2010	8260B
Benzene	4.24 U	4.24	ug/kg	1	L002095	02/04/2010	02/04/2010	8260B
Bromodichloromethane	5.08 U	5.08	ug/kg	1	L002095	02/04/2010	02/04/2010	8260B
Bromoform	4.24 U	4.24	ug/kg	1	L002095	02/04/2010	02/04/2010	8260B
Bromomethane	8.47 U	8.47	ug/kg	1	L002095	02/04/2010	02/04/2010	8260B
Carbon Disulfide	4.24 U	4.24	ug/kg	1	L002095	02/04/2010	02/04/2010	8260B
Carbon Tetrachloride	4.24 U	4.24	ug/kg	1	L002095	02/04/2010	02/04/2010	8260B
Chlorobenzene	4.24 U	4.24	ug/kg	1	L002095	02/04/2010	02/04/2010	8260B
Chloroethane	8.47 U	8.47	ug/kg	1	L002095	02/04/2010	02/04/2010	8260B
Chloroform	4.24 U	4.24	ug/kg	1	L002095	02/04/2010	02/04/2010	8260B
Chloromethane	8.47 U	8.47	ug/kg	1	L002095	02/04/2010	02/04/2010	8260B
cis-1,2-Dichloroethene	4.24 U	4.24	ug/kg	1	L002095	02/04/2010	02/04/2010	8260B
cis-1,3-Dichloropropene	4.24 U	4.24	ug/kg	1	L002095	02/04/2010	02/04/2010	8260B
Dibromochloromethane	4.24 U	4.24	ug/kg	1	L002095	02/04/2010	02/04/2010	8260B
Ethylbenzene	4.24 U	4.24	ug/kg	1	L002095	02/04/2010	02/04/2010	8260B
Methylene Chloride	5.08 U	5.08	ug/kg	1	L002095	02/04/2010	02/04/2010	8260B
Styrene	4.24 U	4.24	ug/kg	1	L002095	02/04/2010	02/04/2010	8260B
Tetrachloroethene	4.24 U	4.24	ug/kg	1	L002095	02/04/2010	02/04/2010	8260B
trans-1,2-Dichloroethene	4.24 U	4.24	ug/kg	1	L002095	02/04/2010	02/04/2010	8260B
Toluene	4.24 U	4.24	ug/kg	1	L002095	02/04/2010	02/04/2010	8260B
trans-1,3-Dichloropropene	4.24 U	4.24	ug/kg	1	L002095	02/04/2010	02/04/2010	8260B
Trichloroethene	4.24 U	4.24	ug/kg	1	L002095	02/04/2010	02/04/2010	8260B
Vinyl chloride	8.47 U	8.47	ug/kg	1	L002095	02/04/2010	02/04/2010	8260B
Xylenes, total	4.24 U	4.24	ug/kg	1	L002095	02/04/2010	02/04/2010	8260B
Surrogate: 1,2-Dichloroethane-d4	*98 %*	*63-151*			*L002095*	*02/04/2010*	*02/04/2010*	*8260B*
Surrogate: Toluene-d8	*93 %*	*68-140*			*L002095*	*02/04/2010*	*02/04/2010*	*8260B*
Surrogate: 4-Bromofluorobenzene	*106 %*	*66-122*			*L002095*	*02/04/2010*	*02/04/2010*	*8260B*

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

WC-Hanford, Inc. 2620 Fermi Avenue Richland WA, 99354	Project: RC-116 Project Number: K1918 Project Manager: Joan Kessner	Reported: 02/14/2010 08:21

J19FW0
1001098-06 (Solid)

4/14/10

Lionville Laboratory

Volatile Organic Compounds by SW846 8260B

Analyte	Result and Qualifier	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
1,1,1-Trichloroethane	4.46 U	4.46	ug/kg	1	L002095	02/04/2010	02/04/2010	8260B
1,1,2,2-Tetrachloroethane	4.46 U	4.46	ug/kg	1	L002095	02/04/2010	02/04/2010	8260B
1,1,2-Trichloroethane	4.46 U	4.46	ug/kg	1	L002095	02/04/2010	02/04/2010	8260B
1,1-Dichloroethane	4.46 U	4.46	ug/kg	1	L002095	02/04/2010	02/04/2010	8260B
1,1-Dichloroethene	4.46 U	4.46	ug/kg	1	L002095	02/04/2010	02/04/2010	8260B
1,2-Dichloroethane	5.36 U	5.36	ug/kg	1	L002095	02/04/2010	02/04/2010	8260B
1,2-Dichloroethene (total)	4.46 U	4.46	ug/kg	1	L002095	02/04/2010	02/04/2010	8260B
1,2-Dichloropropane	4.46 U	4.46	ug/kg	1	L002095	02/04/2010	02/04/2010	8260B
2-Butanone	10.7 U J	10.7	ug/kg	1	L002095	02/04/2010	02/04/2010	8260B
2-Hexanone	3.83 J	10.7	ug/kg	1	L002095	02/04/2010	02/04/2010	8260B
4-Methyl-2-pentanone	10.7 U	10.7	ug/kg	1	L002095	02/04/2010	02/04/2010	8260B
Acetone	12.3 J	10.7	ug/kg	1	L002095	02/04/2010	02/04/2010	8260B
Benzene	4.46 U	4.46	ug/kg	1	L002095	02/04/2010	02/04/2010	8260B
Bromodichloromethane	5.36 U	5.36	ug/kg	1	L002095	02/04/2010	02/04/2010	8260B
Bromoform	4.46 U	4.46	ug/kg	1	L002095	02/04/2010	02/04/2010	8260B
Bromomethane	8.93 U	8.93	ug/kg	1	L002095	02/04/2010	02/04/2010	8260B
Carbon Disulfide	4.46 U	4.46	ug/kg	1	L002095	02/04/2010	02/04/2010	8260B
Carbon Tetrachloride	4.46 U	4.46	ug/kg	1	L002095	02/04/2010	02/04/2010	8260B
Chlorobenzene	4.46 U	4.46	ug/kg	1	L002095	02/04/2010	02/04/2010	8260B
Chloroethane	8.93 U	8.93	ug/kg	1	L002095	02/04/2010	02/04/2010	8260B
Chloroform	4.46 U	4.46	ug/kg	1	L002095	02/04/2010	02/04/2010	8260B
Chloromethane	8.93 U	8.93	ug/kg	1	L002095	02/04/2010	02/04/2010	8260B
cis-1,2-Dichloroethene	4.46 U	4.46	ug/kg	1	L002095	02/04/2010	02/04/2010	8260B
cis-1,3-Dichloropropene	4.46 U	4.46	ug/kg	1	L002095	02/04/2010	02/04/2010	8260B
Dibromochloromethane	4.46 U	4.46	ug/kg	1	L002095	02/04/2010	02/04/2010	8260B
Ethylbenzene	4.46 U	4.46	ug/kg	1	L002095	02/04/2010	02/04/2010	8260B
Methylene Chloride	5.36 U	5.36	ug/kg	1	L002095	02/04/2010	02/04/2010	8260B
Styrene	4.46 U	4.46	ug/kg	1	L002095	02/04/2010	02/04/2010	8260B
Tetrachloroethene	4.46 U	4.46	ug/kg	1	L002095	02/04/2010	02/04/2010	8260B
trans-1,2-Dichloroethene	4.46 U	4.46	ug/kg	1	L002095	02/04/2010	02/04/2010	8260B
Toluene	4.46 U	4.46	ug/kg	1	L002095	02/04/2010	02/04/2010	8260B
trans-1,3-Dichloropropene	4.46 U	4.46	ug/kg	1	L002095	02/04/2010	02/04/2010	8260B
Trichloroethene	4.46 U	4.46	ug/kg	1	L002095	02/04/2010	02/04/2010	8260B
Vinyl chloride	8.93 U	8.93	ug/kg	1	L002095	02/04/2010	02/04/2010	8260B
Xylenes, total	4.46 U	4.46	ug/kg	1	L002095	02/04/2010	02/04/2010	8260B
Surrogate: 1,2-Dichloroethane-d4	*98 %*	*63-151*			*L002095*	*02/04/2010*	*02/04/2010*	*8260B*
Surrogate: Toluene-d8	*93 %*	*68-140*			*L002095*	*02/04/2010*	*02/04/2010*	*8260B*
Surrogate: 4-Bromofluorobenzene	*110 %*	*66-122*			*L002095*	*02/04/2010*	*02/04/2010*	*8260B*

264 Welsh Pool Road
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WCH-Hanford, Inc. 2620 Fermi Avenue Richland WA, 99354	Project: RC-116 Project Number: K1918 Project Manager: Joan Kessner	Reported: 02/14/2010 08:21

J19H28
1001098-09 (Solid)

4/14/10

Analyte	Result and Qualifier	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method

Lionville Laboratory

Volatile Organic Compounds by SW846 8260B

Analyte	Result and Qualifier	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
1,1,1-Trichloroethane	4.81 U	4.81	ug/kg	1	1002095	02/04/2010	02/04/2010	8260B
1,1,2,2-Tetrachloroethane	4.81 U	4.81	ug/kg	1	1002095	02/04/2010	02/04/2010	8260B
1,1,2-Trichloroethane	4.81 U	4.81	ug/kg	1	1002095	02/04/2010	02/04/2010	8260B
1,1-Dichloroethane	4.81 U	4.81	ug/kg	1	1002095	02/04/2010	02/04/2010	8260B
1,1-Dichloroethene	4.81 U	4.81	ug/kg	1	1002095	02/04/2010	02/04/2010	8260B
1,2-Dichloroethane	5.77 U	5.77	ug/kg	1	1002095	02/04/2010	02/04/2010	8260B
1,2-Dichloroethene (total)	4.81 U	4.81	ug/kg	1	1002095	02/04/2010	02/04/2010	8260B
1,2-Dichloropropane	4.81 U	4.81	ug/kg	1	1002095	02/04/2010	02/04/2010	8260B
2-Butanone	11.5 U J	11.5	ug/kg	1	1002095	02/04/2010	02/04/2010	8260B
2-Hexanone	11.5 U	11.5	ug/kg	1	1002095	02/04/2010	02/04/2010	8260B
4-Methyl-2-pentanone	11.5 U	11.5	ug/kg	1	1002095	02/04/2010	02/04/2010	8260B
Acetone	11.5 U J	11.5	ug/kg	1	1002095	02/04/2010	02/04/2010	8260B
Benzene	4.81 U	4.81	ug/kg	1	1002095	02/04/2010	02/04/2010	8260B
Bromodichloromethane	5.77 U	5.77	ug/kg	1	1002095	02/04/2010	02/04/2010	8260B
Bromoform	4.81 U	4.81	ug/kg	1	1002095	02/04/2010	02/04/2010	8260B
Bromomethane	9.62 U	9.62	ug/kg	1	1002095	02/04/2010	02/04/2010	8260B
Carbon Disulfide	4.81 U	4.81	ug/kg	1	1002095	02/04/2010	02/04/2010	8260B
Carbon Tetrachloride	4.81 U	4.81	ug/kg	1	1002095	02/04/2010	02/04/2010	8260B
Chlorobenzene	4.81 U	4.81	ug/kg	1	1002095	02/04/2010	02/04/2010	8260B
Chloroethane	9.62 U	9.62	ug/kg	1	1002095	02/04/2010	02/04/2010	8260B
Chloroform	4.81 U	4.81	ug/kg	1	1002095	02/04/2010	02/04/2010	8260B
Chloromethane	9.62 U	9.62	ug/kg	1	1002095	02/04/2010	02/04/2010	8260B
cis-1,2-Dichloroethene	4.81 U	4.81	ug/kg	1	1002095	02/04/2010	02/04/2010	8260B
cis-1,3-Dichloropropene	4.81 U	4.81	ug/kg	1	1002095	02/04/2010	02/04/2010	8260B
Dibromochloromethane	4.81 U	4.81	ug/kg	1	1002095	02/04/2010	02/04/2010	8260B
Ethylbenzene	4.81 U	4.81	ug/kg	1	1002095	02/04/2010	02/04/2010	8260B
Methylene Chloride	5.77 U	5.77	ug/kg	1	1002095	02/04/2010	02/04/2010	8260B
Styrene	4.81 U	4.81	ug/kg	1	1002095	02/04/2010	02/04/2010	8260B
Tetrachloroethene	4.81 U	4.81	ug/kg	1	1002095	02/04/2010	02/04/2010	8260B
trans-1,2-Dichloroethene	4.81 U	4.81	ug/kg	1	1002095	02/04/2010	02/04/2010	8260B
Toluene	4.81 U	4.81	ug/kg	1	1002095	02/04/2010	02/04/2010	8260B
trans-1,3-Dichloropropene	4.81 U	4.81	ug/kg	1	1002095	02/04/2010	02/04/2010	8260B
Trichloroethene	4.81 U	4.81	ug/kg	1	1002095	02/04/2010	02/04/2010	8260B
Vinyl chloride	9.62 U	9.62	ug/kg	1	1002095	02/04/2010	02/04/2010	8260B
Xylenes, total	4.81 U	4.81	ug/kg	1	1002095	02/04/2010	02/04/2010	8260B
Surrogate: 1,2-Dichloroethane-d4	*97 %*	*63-151*			*1002095*	*02/04/2010*	*02/04/2010*	*8260B*
Surrogate: Toluene-d8	*95 %*	*68-140*			*1002095*	*02/04/2010*	*02/04/2010*	*8260B*
Surrogate: 4-Bromofluorobenzene	*108 %*	*66-122*			*1002095*	*02/04/2010*	*02/04/2010*	*8260B*

204 Welsh Pool Road
Exton, PA 19341
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WC-Hanford, Inc
2620 Fermi Avenue
Richland WA, 99354

Project: RC-116
Project Number: K1918
Project Manager: Joan Kessner

Reported:
02/14/2010 08:21

J19FX0
1001098-13 (Solid)

4/14/10

Analyte	Result and Qualifier		Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Lionville Laboratory									
Volatile Organic Compounds by SW846 8260B									
1,1,1-Trichloroethane	4.17 U		4.17	ug/kg	1	L002095	02/04/2010	02/04/2010	8260B
1,1,2,2-Tetrachloroethane	4.17 U		4.17	ug/kg	1	L002095	02/04/2010	02/04/2010	8260B
1,1,2-Trichloroethane	4.17 U		4.17	ug/kg	1	L002095	02/04/2010	02/04/2010	8260B
1,1-Dichloroethane	4.17 U		4.17	ug/kg	1	L002095	02/04/2010	02/04/2010	8260B
1,1-Dichloroethene	4.17 U		4.17	ug/kg	1	L002095	02/04/2010	02/04/2010	8260B
1,2-Dichloroethane	5.00 U		5.00	ug/kg	1	L002095	02/04/2010	02/04/2010	8260B
1,2-Dichloroethene (total)	4.17 U		4.17	ug/kg	1	L002095	02/04/2010	02/04/2010	8260B
1,2-Dichloropropane	4.17 U		4.17	ug/kg	1	L002095	02/04/2010	02/04/2010	8260B
2-Butanone	10.0 U	J	10.0	ug/kg	1	L002095	02/04/2010	02/04/2010	8260B
2-Hexanone	10.0 U		10.0	ug/kg	1	L002095	02/04/2010	02/04/2010	8260B
4-Methyl-2-pentanone	10.0 U		10.0	ug/kg	1	L002095	02/04/2010	02/04/2010	8260B
Acetone	10.0 U	J	10.0	ug/kg	1	L002095	02/04/2010	02/04/2010	8260B
Benzene	4.17 U		4.17	ug/kg	1	L002095	02/04/2010	02/04/2010	8260B
Bromodichloromethane	5.00 U		5.00	ug/kg	1	L002095	02/04/2010	02/04/2010	8260B
Bromoform	4.17 U		4.17	ug/kg	1	L002095	02/04/2010	02/04/2010	8260B
Bromomethane	8.33 U		8.33	ug/kg	1	L002095	02/04/2010	02/04/2010	8260B
Carbon Disulfide	4.17 U		4.17	ug/kg	1	L002095	02/04/2010	02/04/2010	8260B
Carbon Tetrachloride	4.17 U		4.17	ug/kg	1	L002095	02/04/2010	02/04/2010	8260B
Chlorobenzene	4.17 U		4.17	ug/kg	1	L002095	02/04/2010	02/04/2010	8260B
Chloroethane	8.33 U		8.33	ug/kg	1	L002095	02/04/2010	02/04/2010	8260B
Chloroform	4.17 U		4.17	ug/kg	1	L002095	02/04/2010	02/04/2010	8260B
Chloromethane	8.33 U		8.33	ug/kg	1	L002095	02/04/2010	02/04/2010	8260B
cis-1,2-Dichloroethene	4.17 U		4.17	ug/kg	1	L002095	02/04/2010	02/04/2010	8260B
cis-1,3-Dichloropropene	4.17 U		4.17	ug/kg	1	L002095	02/04/2010	02/04/2010	8260B
Dibromochloromethane	4.17 U		4.17	ug/kg	1	L002095	02/04/2010	02/04/2010	8260B
Ethylbenzene	4.17 U		4.17	ug/kg	1	L002095	02/04/2010	02/04/2010	8260B
Methylene Chloride	5.00 U		5.00	ug/kg	1	L002095	02/04/2010	02/04/2010	8260B
Styrene	4.17 U		4.17	ug/kg	1	L002095	02/04/2010	02/04/2010	8260B
Tetrachloroethene	4.17 U		4.17	ug/kg	1	L002095	02/04/2010	02/04/2010	8260B
trans-1,2-Dichloroethene	4.17 U		4.17	ug/kg	1	L002095	02/04/2010	02/04/2010	8260B
Toluene	4.17 U		4.17	ug/kg	1	L002095	02/04/2010	02/04/2010	8260B
trans-1,3-Dichloropropene	4.17 U		4.17	ug/kg	1	L002095	02/04/2010	02/04/2010	8260B
Trichloroethene	4.17 U		4.17	ug/kg	1	L002095	02/04/2010	02/04/2010	8260B
Vinyl chloride	8.33 U		8.33	ug/kg	1	L002095	02/04/2010	02/04/2010	8260B
Xylenes, total	4.17 U		4.17	ug/kg	1	L002095	02/04/2010	02/04/2010	8260B
Surrogate: 1,2-Dichloroethane-d4	*97 %*		*65-151*			*L002095*	*02/04/2010*	*02/04/2010*	*8260B*
Surrogate: Toluene-d8	*95 %*		*68-140*			*L002095*	*02/04/2010*	*02/04/2010*	*8260B*
Surrogate: 4-Bromofluorobenzene	*106 %*		*66-122*			*L002095*	*02/04/2010*	*02/04/2010*	*8260B*

Appendix 4

Laboratory Narrative and Chain-of-Custody Documentation

[illegible]
[illegible]
[illegible]
[illegible] 280 3041

Case Narrative

Client: WC-HANFORD RC-116
LVL #: 1001098
SDG/SAF # K1918 / RC-116

W.O. #: 60049-001-001-0001-00
Date Received: 01-27-2010

GC/MS VOLATILE

Eight (8) solid samples were collected on 01-25-2010.

The samples and associated QC samples were analyzed according to criteria set forth in Lionville Laboratory SOPs based on SW Method 8260B for TCL Volatile target compounds on 01-29-2010 and 02-04-2010.

The following is a summary of QC results accompanying the sample results. All samples are reported on a wet weight "as received" basis. Lionville Laboratory (LvL) certifies that all test results meet the requirements of NELAC except as noted below:

1. The samples were analyzed within hold time.
2. Non-target compounds were not detected in these samples.
3. All surrogate recoveries were within acceptance criteria.
4. One (1) of seventy (70) matrix spike recoveries was outside acceptance criteria. A copy of the Sample Discrepancy Report (SDR# 10VT022) has been enclosed.
5. One (1) of seventy (70) blank spike recoveries was outside acceptance criteria. A copy of the Sample Discrepancy Report (SDR# 10VT022) has been enclosed.
6. The method blanks were below the reporting limit for all target compounds.
7. All internal standard area and retention time criteria were met.
8. Manual integrations are performed according to SOP QA-125 to produce quality data with utmost integrity. All manual integrations are required to be technically valid and properly documented. Appropriate technical flags are defined in the Glossary ("Technical Flags For Manual Integration").
9. LvL is NELAP accredited by the State of Pennsylvania. For a complete listing of accrediting authorities and the corresponding analytes/methods, please contact your Project Manager

[illegible]

The results presented in this report relate only to the analytical testing and conditions of the samples at receipt and during storage. All pages of this report are integral parts of the analytical data. Therefore, this report should only be reproduced in its entirety of 41C pages.

10. "I certify that this sample data package is in compliance with SOW requirements, both technically and for completeness, other than the conditions detailed above. Release of the data contained in this hard-copy data package has been authorized by the Laboratory Manager or a designee, as verified by the following signature."

Iain Daniels
Laboratory Manager
Lionville Laboratory

2/15/10
Date

Lionville Laboratory Sample Discrepancy Report (SDR)

SDR #: [illegible]

Initiator: [illegible]
Date: [illegible]
Client: [illegible] 14910

Batch: [illegible]
Samples: MS/MSD
Method: SW846-[illegible]

Parameter: VOA
Matrix: Soil
Prep Batch: [illegible]

1. Reason for SDR

a. COC Discrepancy
__ Tech Profile Error
__ Transcription Error
__ Client Request
__ Wrong Test Code
__ Sampler Error on C.O.C.
__ Other ______

b. General Discrepancy
__ Missing Sample/Extract
__ Hold Time Exceeded
__ Improper Bottle Type
__ Container Broken
__ Insufficient Sample
__ Not Amenable to Analysis
__ Wrong Sample Pulled
__ Preservation Wrong
__ Label ID's Illegible
__ Received Past Hold

Note: Verified by (Log-in) or (Prep Group) (circle) signature/date ______

c. Problem (Include all relevant specific results; attach data if necessary)

LCS/MS % recoveries for acetone exceed the upper QC limit of 20-200% (MSDCK)

2. Known or Probable Causes(s) Heated purge used for soil analysis tends to raise acetone recoveries

3. Discussion and Proposed Action
__ Re-log
__ Entire Batch
__ Following Samples: ______
__ Re-leach
__ Re-extract
__ Re-digest
__ Revise EDD
__ Change Test Code to ______
__ Place On/Take Off Hold (circle)

Other Description: Narrate

4. Project Manager Instructions signature/date 2/15/00
✓ Concur with Proposed Action
__ Disagree with Proposed Action, See Instruction
__ Include in Case Narrative
__ Client Contacted
Date/Person ______
__ Add
__ Cancel

5. Final Action signature/date 2/15/00
__ Verified re-[log][leach][extract][digest][analysis] (circle)
✓ Included in Case Narrative
__ Hard Copy COC Revised
__ Electronic COC Revised
__ EDD Corrections Completed

Other Explanation

When Final Action has been recorded, forward original to QA for disposition.

Route
__ Lab Manager: Daniels
L Project Mgr (circle) [✓ Johnson] / Stone
✓ Sample Prep (circle) ~~Ford~~
__ Log-in: King

Route
__ Metals: Welsh / ______
__ Inorganic: Perrone / ______
__ GC/LC: Carey / ______
L MS VOA [✓ Rubino] / ______
__ MS BNA: Carden / ______
__ Other ______

QA-100-A-1208

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-116-2036 Page 1 of 1

Collector: Robin Benson

Company Contact: [illegible] KESSNER

Telephone No.: [illegible]

Project Coordinator: KESSNER, JH

Price Code: 7C

Data Turnaround: 15 Days

Project Designation: Columbia River Component of the RCBRA - [illegible]

Sampling Location: [illegible] T306535 DUP

SAF No.: [illegible]

Ice Chest No.: AFS-08-CEY

Field Logbook No.: [illegible]

COA: [illegible]

Method of Shipment: FEDEX FDX 793214401469

Bill of Lading/Air Bill No.:

Shipped To: [illegible] SERVICES [✓ [illegible]]

Offsite Property No.: N/A

POSSIBLE SAMPLE HAZARDS/REMARKS

N/A

Special Handling and/or Storage

N/A

0100023

Preservation	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Type of Container	G/P	G/P	G/P	G	G	G/P
No. of Container(s)	1	1	1	1	1	1
Volume	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
SAMPLE ANALYSIS	See item (1) in Special Instructions	See item (2) in Special Instructions	See item (3) in Special Instructions	See item (4) in Special Instructions	[illegible]	[illegible]

Sample No.	Matrix *	Sample Date	Sample Time						
J19FD1	OTHER SOLID	1-25-10	1515			X	X	X	X

CHAIN OF POSSESSION	Date/Time	Sign/Print Names	Date/Time
Relinquished By/Removed From: R. Benson RB	1-25-10 1700	Received By/Stored In: R. Benson EAS RCF E RR	1-25-10 1700
Relinquished By/Removed From: CBS RCF E SJ	1/26/10 1102	Received By/Stored In: SHANNAN JOHNSON	1/26/10 1102
Relinquished By/Removed From: SHANNAN JOHNSON	1/26/10 1102	Received By/Stored In: FDX	
Relinquished By/Removed From:	1-27-10 0930	Received By/Stored In:	1-27-10 0930
Relinquished By/Removed From:		Received By/Stored In:	
Relinquished By/Removed From:		Received By/Stored In:	

SPECIAL INSTRUCTIONS

[illegible]

Matrix *

[illegible]

LABORATORY SECTION: Received By: Title: Date/Time:

FINAL SAMPLE DISPOSITION: Disposal Method: Disposed By: Date/Time:

WCH EE-071

Washington Closure Hanford	**CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST**		RC-116-2044 | Page [illegible]
Collector R. Cucit	Company Contact JOAN KESSNER	Telephone No. [illegible]	Project Coordinator KESSNER, JH	Price Code 7C | Data Turnaround 15 Days
Project Designation [illegible]	Sampling Location [illegible] J3008 VOA TRIP		SAF No. [illegible]	
Ice Chest No. HFS-08-004	Field Logbook No. EL-1615-01	COA [illegible]	Method of Shipment FEDEX	
Shipped To [illegible]	Offsite Property No. N/A		Bill of Lading/Air Bill No. FDX 7932144 04469	

POSSIBLE SAMPLE HAZARDS/REMARKS

N/A

Special Handling and/or Storage

N/A

J20002

Preservation	Cool 4C	
Type of Container	G	125 L 5 ml
No. of Container(s)	1	
Volume	40mL	

SAMPLE ANALYSIS

Sample No.	Matrix *	Sample Date	Sample Time	See item (1) in Special Instructions
J19FD8	OTHER SOLID	01-25-10	0805	X

CHAIN OF POSSESSION | Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
R. Cucit	01-25-10 1810	EAS REFE	01-25-10 1810
EAS REFE SJ	1/26/10 1100	SHANNAN JOHNSON	1/26/10 1100
SHANNAN JOHNSON	1/26/10 1100	FDX	
FedEx	1/27/10/0830	D.Small	1-27-10/0830
D	1/27/10		

SPECIAL INSTRUCTIONS

(1) VOA - [illegible]

Matrix *

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-014

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-116-2045 Page 1 of 1

Collector: Rylie Barron

Company Contact: JOAN KESSNER

Telephone No.: 375-4645

Project Coordinator: KESSNER, JE

Price Code: 7C

Data Turnaround: 15 Days

Project Designation: Columbia River Component of the RCBRA - Sediment

Sampling Location: RBS - T300SJS VOA TRIP

SAF No.: RS-116

Ice Chest No.: HTS 08-001

Field Logbook No.: EL-1535

COA: RESCRC650

Method of Shipment: FEDEX

Shipped To: [illegible] (circled: [illegible])

Offsite Property No.: N/A

Bill of Lading/Air Bill No.: FDX 7932 1448 4469

POSSIBLE SAMPLE HAZARDS/REMARKS

N/A

Special Handling and/or Storage

N/A

Preservation	Cool 4°C
Type of Container	G
No. of Container(s)	1
Volume	40mL 250 L

SAMPLE ANALYSIS: [illegible]

Sample No.	Matrix *	Sample Date	Sample Time										
J19T09	OTHER SOLID	1-25-10	0800	X									

CHAIN OF POSSESSION Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
R. Barron RB	1-25-10 1700	EAS Ref 6 RB	1-25-10 1700
EASFEFE SJ	1-26-10 1400	SHANNAN JOHNSON	1-26-10 1400
SHANNAN JOHNSON	1-27-10 1400		
	1-27-10/0930	D. [illegible] Smith	1-27-10/0930

SPECIAL INSTRUCTIONS

(1) VOA - 8260A (TCL) 1,1,1-Trichloroethane; 1,1,2,2-Tetrachloroethane; 1,1,2-Trichloroethane; 1,1-Dichloroethane; 1,1-Dichloroethene; 1,2-Dichloroethane; [illegible] Benzene; Bromoform; Bromodichloromethane; Carbon disulfide; Carbon tetrachloride; Chlorobenzene; [illegible] Ethylbenzene; [illegible] Styrene; Tetrachloroethene; Toluene; [illegible] Trichloroethene; Vinyl chloride; Xylenes (total)

Sample(s) are available to remove samples from controlled storage. Ship (or transport) samples from storage location (bring) custody of samples to be given to Lab

Matrix *: [illegible]

LABORATORY SECTION — Received By: — Title: — Date/Time:

FINAL SAMPLE DISPOSITION — Disposal Method: — Disposed By: — Date/Time:

WCH EE-011

00025

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-116-2027

Page 1 of 1

Collector R Curet	Company Contact JOAN KESSNER Telephone No. [illegible]	Project Coordinator KESSNER, JH	Price Code 7C
Project Designation [illegible]	Sampling Location J3008	SAF No. RC-116	Data Turnaround 15 Days
Ice Chest No. HYS-08-001	Field Logbook No. EL-1441-501	COA [illegible]	Method of Shipment FEDEX
Shipped To [illegible] SERVICES (LIONVILLE)	Offsite Property No. N/A	Bill of Lading/Air Bill No. FL 793214484469	

POSSIBLE SAMPLE HAZARDS/REMARKS

N/A

Special Handling and/or Storage

N/A

Preservation	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Type of Container	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
No. of Container(s)	1	1	1	1	1	[illegible]
Volume	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
SAMPLE ANALYSIS	See item (1) in Special Instructions	See item (2) in Special Instructions	See item (3) in Special Instructions	See item (4) in Special Instructions	[illegible]	[illegible]

Sample No.	Matrix *	Sample Date	Sample Time						
J19FD0	OTHER SOLID	6-25-10	17:30			X	X	X	X

[illegible] 3/12/11

CHAIN OF POSSESSION

Sign/Print Names

Relinquished By/Removed From R. Curet R. Curet	Date/Time 01-25-10 1830	Received By/Stored In EAS REEF E.	Date/Time 01-25-10 1830
Relinquished By/Removed From EAS REEF E.	Date/Time 1/26/10 1102	Received By/Stored In SHANNAN JOHNSON	Date/Time 1/26/10 1102
Relinquished By/Removed From SHANNAN JOHNSON	Date/Time 1/26/10 1102	Received By/Stored In FOX	Date/Time
Relinquished By/Removed From [illegible]	Date/Time 1-27-10/0930	Received By/Stored In [illegible] D. Smith	Date/Time 1-27-10/0930
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time

[illegible]

SPECIAL INSTRUCTIONS

(1) [illegible]

(2) [illegible]

(3) [illegible]

(4) [illegible]

Matrix *

[illegible]

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

0920000

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-116-2067 Page 1 of 1

Collector: R. Curet

Company Contact: JOAN KESSNER
Telephone No.: 375-4688

Project Coordinator: KESSNER, JH

Price Code: 7C

Data Turnaround: 15 Days

Project Designation: [illegible] Components of the RCBRA - Sediment

Sampling Location: 300 AREA - CORE BARREL EQUIPMENT BLANK J3008

SAF No.: RC-116

Ice Chest No.: RTS-ER-001

Field Logbook No.: EL-1643-01

COA: [illegible]

Method of Shipment: FEDEX

Shipped To: EBERLINE SERVICES - [RICHLAND ✓]

Offsite Property No.: N/A

Bill of Lading/Air Bill No.: FE 793214484469

POSSIBLE SAMPLE HAZARDS/REMARKS
N/A

Special Handling and/or Storage
N/A

0000027

		Preservation	Cool 4C	Cool 4C	Cool 4C	
		Type of Container	G/P	G	aG	
		No. of Container(s)	1	1	1	
		Volume	15g	250g	15g	
SAMPLE ANALYSIS				See item (1) in Special Instructions	See item (2) in Special Instructions	TOC - 9060

Sample No.	Matrix *	Sample Date	Sample Time			
J15FW9	OTHER SOLID	01-25-10	1540	X	X	X

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
R Curet R Curet	01-25-10 1520	EAs REEF E	01-25-10 1520
EASREEF E	1/26/10 1122	SHANNAN JOHNSON	1/26/10 1122
SHANNAN JOHNSON	1/26/10 1122	FDX	
FDX	1/27/10 0930	D Smith	1/27/10 0930

SPECIAL INSTRUCTIONS

(1) ICP Metals - 6010 (Full List) {Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Titanium, Vanadium, Zinc}; Mercury - 7471 (CVAA)
(2) VOA - 8260A (TCL) {1,1,1-Trichloroethane, 1,1,2,2-Tetrachloroethane, 1,1,2-Trichloroethane, 1,1-Dichloroethane, 1,1-Dichloroethene, 1,2-Dichloroethane, 1,2-Dichloropropane, 2-Butanone, 2-Hexanone, 4-Methyl-2-Pentanone, Acetone, Benzene, Bromodichloromethane, Bromoform, Bromomethane, Carbon disulfide, Carbon tetrachloride, Chlorobenzene, Chloroethane, Chloroform, Chloromethane, cis-1,2-Dichloroethylene, cis-1,3-Dichloropropene, Dibromochloromethane, Ethylbenzene, Methylene chloride, Styrene, Tetrachloroethene, Toluene, trans-1,2-Dichloroethylene, trans-1,3-Dichloropropene, Trichloroethene, Vinyl chloride, Xylenes (total)}

[illegible]
[illegible]
[illegible]
[illegible]

Matrix *
[illegible]

LABORATORY SECTION — Received By / Title / Date/Time

FINAL SAMPLE DISPOSITION — Disposal Method / Disposed By / Date/Time

WCH-EF-011

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-116-2066 Page 1 of 1

Collector: R. Vic Barron

Company Contact: RYAN KESSNER

Telephone No.: 375-4698

Project Coordinator: KESSNER, JH

Price Code: 7C

Data Turnaround: 15 Days

Project Designation: Columbia River Component of the RCBRA - Sediment

Sampling Location: 300 Area T300515 TRIP BLANK

SAF No.: RC-116

Ice Chest No.: AFS-08-001

Field Logbook No.: EL-1435

COA: HEM9116320

Method of Shipment: FEDEX

Shipped To: EBERLINE SERVICES (LIONVILLE)

Offsite Property No.: N/A

Bill of Lading/Air Bill No.: PO. 793214484469

POSSIBLE SAMPLE HAZARDS/REMARKS

N/A

Special Handling and/or Storage

N/A

Preservation	Cool 6°C
Type of Container	G
No. of Container(s)	1
Volume	10 g

2°C

SAMPLE ANALYSIS

See item (1) in Special Instructions

B20000

Sample No.	Matrix *	Sample Date	Sample Time	
J19FW0	OTHER SOLID	1-25-10	0800	X

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
R. Barron R. B.	1-25-10 1700	EAS Ref. E R.B. R. Barron	1-25-10 1700
EAS REF E SJ	1/26/10 1100	SHANNAN JOHNSON	1/26/10 1100
SHANNAN JOHNSON	1/26/10 1100	FEDX	
FedEx	1/27/10 0930	D. Smith	1/27/10 0930

SPECIAL INSTRUCTIONS

(1) VOA - 8260A (TCL) (1,1,1-Trichloroethane, 1,1,2,2-Tetrachloroethane, 1,1,2-Trichloroethane, 1,1-Dichloroethane, 1,1-Dichloroethene, 1,2-Dichloroethane, 1,2-Dichloropropane, 2-Butanone, 2-Hexanone, 4-Methyl-2-Pentanone, Acetone, Benzene, Bromodichloromethane, Bromoform, Bromomethane, Carbon disulfide, Carbon tetrachloride, Chlorobenzene, Chloroethane, Chloroform, Chloromethane, cis-1,2-Dichloroethylene, cis-1,3-Dichloropropene, Dibromochloromethane, Ethylbenzene, Methylene chloride, Styrene, Tetrachloroethene, Toluene, trans-1,2-Dichloroethylene, trans-1,3-Dichloropropene, Trichloroethene, Vinyl chloride, Xylenes (total))

Sampler [illegible] samples
from Controlled Storage. Sampler [illegible]
samples from Storage [illegible]
samples [illegible]

Matrix *
S = Soil
SE = Sediment
SO = Solid
SL = Sludge
W = Water
O = Oil
A = Air
DS = Drum Solids
DL = Drum Liquids
T = Tissue
WI = Wipe
L = Liquid
V = Vegetation
X = Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-116-2023 Page [illegible]

Collector: Rylie Barron

Company Contact: [illegible] KESSNER
Telephone No.: 375-6065

Project Coordinator: KESSNER, JH

Price Code: 7C

Data Turnaround: 15 Days

Project Designation: Columbia River Component of the RCBRA - Sediment

Sampling Location: [illegible] 7300SJS

SAF No.: RC-116

Ice Chest No.: ATS-08-001

Field Logbook No.: [illegible]

COA: [illegible]

Method of Shipment: FEDEX

Shipped To: [illegible] (KNOXVILLE)

Offsite Property No.: N/A

Bill of Lading/Air Bill No.: FDX 7932 1448 4469

POSSIBLE SAMPLE HAZARDS/REMARKS
N/A

Special Handling and/or Storage
N/A

000029

Preservation	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Type of Container	G/P	G/P	G/P	G	G	G/P
No. of Container(s)	1	1	1	1	1	4
Volume	250g	10g	250g	250g	125g	1000g
SAMPLE ANALYSIS	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

Sample No.	Matrix *	Sample Date	Sample Time						
J19H28	OTHER SOLID	1-25-10	1500			X	X	X	X

CHAIN OF POSSESSION Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
R. Barron	1700 1-25-10	EMS Ref E R	1700 1-25-10
EMS REF E 3	1/26/10 1102	SHANNAN JOHNSON	1/26/10 1102
SHANNAN JOHNSON	1/26/10 1102	FDX	
FedEx	1/27/10 0930		1/27/10 0930

SPECIAL INSTRUCTIONS

[illegible]

(1) Gamma Spec [illegible]

(2) [illegible]

(3) ICP Metals - 6010 [illegible]

[illegible]

Matrix *

[illegible]

LABORATORY SECTION Received By [illegible] Title [illegible] Date/Time

FINAL SAMPLE DISPOSITION Disposal Method [illegible] Disposed By [illegible] Date/Time

WCH-EE-011

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-116-2008 Page 1 of 1

Collector	Rylie Barron
Company Contact	[illegible] KESSNER
Telephone No.	375-4688
Project Coordinator	KESSNER, JH
Price Code	7C
Data Turnaround	15 Days
Project Designation	[illegible] Component of the 100-BRA - [illegible]
Sampling Location	100-AREA POWER GRADE EQUIPMENT BLANK
SAF No.	F10-010
Ice Chest No.	[illegible] CB-001
Field Logbook No.	[illegible]
COA	[illegible]
Method of Shipment	FEDEX
Shipped To	EBERLINE SERVICES [illegible]
Offsite Property No.	N/A
Bill of Lading/Air Bill No.	FEDEX 7932 1448 4469

POSSIBLE SAMPLE HAZARDS/REMARKS

N/A

Special Handling and/or Storage

N/A

000030

			Preservation	Cool 4C	Cool 4C	Cool 4C	
			Type of Container	G/P	G	aG	
			No. of Container(s)	1	1	1	
			Volume	15g	250g	15g	
SAMPLE ANALYSIS				See item (1) in Special Instructions	See item (2) in Special Instructions	[illegible]	
Sample No.	Matrix *	Sample Date	Sample Time				
J19FX0	OTHER SOLID	1-25-10	1430	X	X	X	

CHAIN OF POSSESSION	Date/Time	Sign/Print Names	Date/Time
Relinquished By/Removed From K. Barron RB	1-25-10 1700	Received By/Stored In FAS Ref F KR	1-25-10 1700
Relinquished By/Removed From DKREEFE [illegible]	1/26/10 [illegible]	Received By/Stored In SHANNAN TORNSON	1/26/10 [illegible]
Relinquished By/Removed From SHANNAN JOHNSON	1/26/10 [illegible]	Received By/Stored In FDX	
Relinquished By/Removed From [illegible]	1-27-10 0930	Received By/Stored In [illegible]	1-27-10 0930
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time

SPECIAL INSTRUCTIONS

(1) ICP Metals - 6010 [illegible]; Aluminum, Antimony, Arsenic, Barium, Beryllium, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc; Mercury - 7471 (CV)

(2) VOA - 8260 [illegible] 1,1,1-Trichloroethane, 1,1,2,2-Tetrachloroethane, 1,1,2-Trichloroethane, 1,1-Dichloroethane, 1,1-Dichloroethene, 1,2-Dichloroethane, 2-Butanone, 2-Hexanone, 4-Methyl-2-Pentanone, Acetone, Benzene, Bromodichloromethane, Bromoform, Bromomethane, Carbon disulfide, Carbon tetrachloride, Chlorobenzene, Chloroethane, Chloroform, Chloromethane, cis-1,2-Dichloroethylene, cis-1,3-Dichloropropene, Dibromochloromethane, Ethylbenzene, Methylene chloride, Styrene, Tetrachloroethene, Toluene, trans-1,2-Dichloroethylene, trans-1,3-Dichloropropene, Trichloroethene, Vinyl chloride, Xylenes (total)

Samples [illegible] secured storage. Sampler removed samples from storage location in [illegible] custody of sampler for shipment to lab.

Matrix *

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Appendix 5

Data Validation Supporting Documentation

GC/MS ORGANIC DATA VALIDATION CHECKLIST

VALIDATION LEVEL:	A	B	[✓ C]	D	E
PROJECT: RCBRA			DATA PACKAGE: K1969		
VALIDATOR: ELR		LAB. LLI		DATE: 4/10/10	
			SDG: K1969		
ANALYSES PERFORMED					
[✓ SW-846 8260]		SW-846 8260 (TCLP)	SW-846 8270		SW-846 8270 (TCLP)
SAMPLES/MATRIX					
J19F01	J19FD8	J19FD9	J19FB0	J19FW9	
J19FW0	J19H28	J19FX0			

1. DATA PACKAGE COMPLETENESS AND CASE NARRATIVE

Technical verification documentation present? .... Yes [✓ No] N/A

Comments:

2. INSTRUMENT TUNING AND CALIBRATION (Levels D and E)

GC/MS tuning/performance check acceptable? .... Yes No [✓ N/A]

Initial calibrations acceptable? .... Yes No [✓ N/A]

Continuing calibrations acceptable? .... Yes No [✓ N/A]

Standards traceable? .... Yes No [✓ N/A]

Standards expired? .... Yes No [✓ N/A]

Calculation check acceptable? .... Yes No [✓ N/A]

Comments:

GC/MS ORGANIC DATA VALIDATION CHECKLIST

3. BLANKS (Levels B, C, D, and E)

Calibration blanks analyzed? (Levels D, E) .... Yes No [✓ N/A]
Calibration blank results acceptable? (Levels D, E) .... Yes No [✓ N/A]
Laboratory blanks analyzed? .... [✓ Yes] No N/A
Laboratory blank results acceptable? .... [✓ Yes] No N/A
Field/trip blanks analyzed? (Levels C, D, E) .... Yes [✓ No] N/A
Field/trip blank results acceptable? (Levels C, D, E) .... Yes No [✓ N/A]
Transcription/calculation errors? (Levels D, E) .... Yes No [✓ N/A]
Comments: NO FD

4. ACCURACY (Levels C, D, and E)

Surrogates/system monitoring compounds analyzed? .... [✓ Yes] No N/A
Surrogate/system monitoring compound recoveries acceptable? .... [✓ Yes] No N/A
Surrogates traceable? (Levels D, E) .... Yes No [✓ N/A]
Surrogates expired? (Levels D, E) .... Yes No [✓ N/A]
MS/MSD samples analyzed? .... [✓ Yes] No N/A
MS/MSD results acceptable? .... Yes [✓ No] N/A
MS/MSD standards NIST traceable? (Levels D, E) .... Yes No [✓ N/A]
MS/MSD standards? (Levels D, E) .... Yes No [✓ N/A]
LCS/BSS samples analyzed? .... [✓ Yes] No N/A
LCS/BSS results acceptable? .... Yes [✓ No] N/A
Standards traceable? (Levels D, E) .... Yes No [✓ N/A]
Standards expired? (Levels D, E) .... Yes No [✓ N/A]
Transcription/calculation errors? (Levels D, E) .... Yes No [✓ N/A]
Performance audit sample(s) analyzed? .... Yes [✓ No] N/A
Performance audit sample results acceptable? .... Yes No [✓ N/A]
Comments: MS - acetone - WO - J
LCS - 2-hexanone - J - WO
LCS - acetone - J - WO

NO PAS

GC/MS ORGANIC DATA VALIDATION CHECKLIST

5. PRECISION (Levels C, D, and E)

MS/MSD samples analyzed? .... [✓ Yes] No N/A

MS/MSD RPD values acceptable? .... Yes [✓ No] N/A

MS/MSD standards NIST traceable? (Levels D, E) .... Yes No [✓ N/A]

MS/MSD standards expired? (Levels D, E) .... Yes No [✓ N/A]

Field duplicate RPD values acceptable? .... Yes No [✓ N/A]

Field split RPD values acceptable? .... Yes No [✓ N/A]

Transcription/calculation errors? (Levels D, E) .... Yes No [✓ N/A]

Comments: 95 - acetone - 41% - W9, W0, 28,95 - J
95 - 2-butanone - 33% - " " " - J

6. SYSTEM PERFORMANCE (Levels D and E)

Internal standards analyzed? .... Yes No [✓ N/A]

Internal standard areas acceptable? .... Yes No [✓ N/A]

Internal standard retention times acceptable? .... Yes No [✓ N/A]

Standards traceable? .... Yes No [✓ N/A]

Standards expired? .... Yes No [✓ N/A]

Transcription/calculation errors? .... Yes No [✓ N/A]

Comments:

7. HOLDING TIMES (all levels)

Samples properly preserved? .... [✓ Yes] No N/A

Sample holding times acceptable? .... [✓ Yes] No N/A

Comments:

GC/MS ORGANIC DATA VALIDATION CHECKLIST

8. COMPOUND IDENTIFICATION, QUANTITATION, AND DETECTION LIMITS (all levels)

Compound identification acceptable? (Levels D, E) .... Yes No [✓ N/A]

Compound quantitation acceptable? (Levels D, E) .... Yes No [✓ N/A]

Results reported for all requested analyses? .... [✓ Yes] No N/A

Results supported in the raw data? (Levels D, E) .... Yes No [✓ N/A]

Samples properly prepared? (Levels D, E) .... Yes No [✓ N/A]

Laboratory properly identified and coded all TIC? (Levels D, E) .... Yes No [✓ N/A]

Detection limits meet RDL? .... Yes [✓ No] N/A

Transcription/calculation errors? (Levels D, E) .... Yes No [✓ N/A]

Comments: 3 out

9. SAMPLE CLEANUP (Levels D and E)

GPC cleanup performed? .... Yes No [✓ N/A]

GPC check performed? .... Yes No [✓ N/A]

GPC check recoveries acceptable? .... Yes No [✓ N/A]

GPC calibration performed? .... Yes No [✓ N/A]

GPC calibration check performed? .... Yes No [✓ N/A]

GPC calibration check retention times acceptable? .... Yes No [✓ N/A]

Check/calibration materials traceable? .... Yes No [✓ N/A]

Check/calibration materials Expired? .... Yes No [✓ N/A]

Analytical batch QC given similar cleanup? .... Yes No [✓ N/A]

Transcription/Calculation Errors? .... Yes No [✓ N/A]

Comments:

Appendix 6

Additional Documentation Requested by Client

Volatile Organic Compounds by SW846 8260B - Quality Control
Lionville Laboratory

Analyte	Result and Qualifiers		Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch L002002 - SW 5030B										
Blank (L002002-BLK1)				Prepared & Analyzed: 01/29/2010						
1,1,1-Trichloroethane	5.00	U	5.00	ug/kg						
1,1,2,2-Tetrachloroethane	5.00	U	5.00	ug/kg						
1,1,2-Trichloroethane	5.00	U	5.00	ug/kg						
1,1-Dichloroethane	5.00	U	5.00	ug/kg						
1,1-Dichloroethene	5.00	U	5.00	ug/kg						
1,2-Dichloroethane	6.00	U	6.00	ug/kg						
1,2-Dichloroethene (total)	5.00	U	5.00	ug/kg						
1,2-Dichloropropane	5.00	U	5.00	ug/kg						
2-Butanone	12.0	U	12.0	ug/kg						
2-Hexanone	12.0	U	12.0	ug/kg						
4-Methyl-2-pentanone	12.0	U	12.0	ug/kg						
Acetone	12.0	U	12.0	ug/kg						
Benzene	5.00	U	5.00	ug/kg						
Bromodichloromethane	6.00	U	6.00	ug/kg						
Bromoform	5.00	U	5.00	ug/kg						
Bromomethane	10.0	U	10.0	ug/kg						
Carbon Disulfide	5.00	U	5.00	ug/kg						
Carbon Tetrachloride	5.00	U	5.00	ug/kg						
Chlorobenzene	5.00	U	5.00	ug/kg						
Chloroethane	10.0	U	10.0	ug/kg						
Chloroform	5.00	U	5.00	ug/kg						
Chloromethane	10.0	U	10.0	ug/kg						
cis-1,2-Dichloroethene	5.00	U	5.00	ug/kg						
cis-1,3-Dichloropropene	5.00	U	5.00	ug/kg						
Dibromochloromethane	5.00	U	5.00	ug/kg						
Ethylbenzene	5.00	U	5.00	ug/kg						
Methylene Chloride	6.00	U	6.00	ug/kg						
Styrene	5.00	U	5.00	ug/kg						
Tetrachloroethene	5.00	U	5.00	ug/kg						
trans-1,2-Dichloroethene	5.00	U	5.00	ug/kg						
Toluene	5.00	U	5.00	ug/kg						
trans-1,3-Dichloropropene	5.00	U	5.00	ug/kg						
Trichloroethene	5.00	U	5.00	ug/kg						
Vinyl chloride	10.0	U	10.0	ug/kg						
Xylenes, total	5.00	U	5.00	ug/kg						
Surrogate: 1,2-Dichloroethane-d4	[illegible]			*ug/kg*	*50.000*		*89*	*63-151*		

WCH Hanford, Inc 2620 Fermi Avenue Richland WA, 99354	Project: RC-110 Project Number: K1918 Project Manager: Joan Kessner	Reported: 02/14/2010 08:31

Volatile Organic Compounds by SW846 8260B - Quality Control

Lionville Laboratory

Analyte	Result and Qualifiers	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch L002002 - SW 5030B									
Blank (L002002-BLK1)			Prepared & Analyzed: 01/29/2010						
Surrogate: Toluene-d8	*44.5*		*ug/kg*	*50.000*		*89*	*68-140*		
Surrogate: 4-Bromofluorobenzene	*46.3*		*ug/kg*	*50.000*		*93*	*66-122*		
LCS (L002002-BS1)			Prepared & Analyzed: 01/29/2010						
1,1,1-Trichloroethane	43.7	5.00	ug/kg	50.000		87	60-140		
1,1,2,2-Tetrachloroethane	36.9	5.00	ug/kg	50.000		74	70-130		
1,1,2-Trichloroethane	43.5	5.00	ug/kg	50.000		87	70-130		
1,1-Dichloroethane	48.3	5.00	ug/kg	50.000		97	60-140		
1,1-Dichloroethene	56.7	5.00	ug/kg	50.000		113	60-130		
1,2-Dichloroethane	40.1	5.00	ug/kg	50.000		80	60-140		
1,2-Dichloroethene (total)	95.0	5.00	ug/kg	100.00		95	60-140		
1,2-Dichloropropane	46.0	5.00	ug/kg	50.000		92	70-130		
2-Butanone	76.1	12.0	ug/kg	50.000		152	20-200		
2-Hexanone	54.3	12.0	ug/kg	50.000		109	20-200		
4-Methyl-2-pentanone	37.0	12.0	ug/kg	50.000		74	30-150		
Acetone	103	12.0	ug/kg	50.000		207*	20-200		
Benzene	49.2	5.00	ug/kg	50.000		98	70-130		
Bromodichloromethane	44.6	5.00	ug/kg	50.000		89	60-140		
Bromoform	50.1	5.00	ug/kg	50.000		100	60-140		
Bromomethane	60.9	10.0	ug/kg	50.000		122	50-180		
Carbon Disulfide	51.1	5.00	ug/kg	50.000		102	60-140		
Carbon Tetrachloride	46.2	5.00	ug/kg	50.000		92	60-140		
Chlorobenzene	46.7	5.00	ug/kg	50.000		93	70-130		
Chloroethane	62.1	10.0	ug/kg	50.000		124	50-180		
Chloroform	45.1	5.00	ug/kg	50.000		90	60-140		
Chloromethane	50.7	10.0	ug/kg	50.000		101	50-180		
cis-1,2-Dichloroethene	46.5	5.00	ug/kg	50.000		93	60-140		
cis-1,3-Dichloropropene	41.4	5.00	ug/kg	50.000		83	70-130		
Dibromochloromethane	44.6	5.00	ug/kg	50.000		89	70-130		
Ethylbenzene	43.8	5.00	ug/kg	50.000		88	70-130		
Methylene Chloride	50.2	5.00	ug/kg	50.000		100	50-180		
Styrene	46.8	5.00	ug/kg	50.000		94	70-130		
Tetrachloroethene	52.6	5.00	ug/kg	50.000		105	60-140		
trans-1,2-Dichloroethene	48.7	5.00	ug/kg	50.000		97	60-140		
Toluene	43.5	5.00	ug/kg	50.000		87	70-130		
trans-1,3-Dichloropropene	39.1	5.00	ug/kg	50.000		78	70-130		
Trichloroethene	54.7	5.00	ug/kg	50.000		109	70-130		

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Volatile Organic Compounds by SW846 8260B - Quality Control

Lionville Laboratory

Analyte	Result and Qualifiers	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch L002002 - SW 5030B									
LCS (L002002-BS1)			Prepared & Analyzed: 01/29/2010						
Vinyl chloride	54.2	10.0	ug/kg	50.000		108	50-180		
Xylenes, total	141	5.00	ug/kg	150.00		94	70-130		
Surrogate: 1,2-Dichloroethane-d4	*37.7*		*ug/kg*	*50.000*		*75*	*43-137*		
Surrogate: Toluene-d8	*43.4*		*ug/kg*	*50.000*		*87*	*68-140*		
Surrogate: 4-Bromofluorobenzene	*42.8*		*ug/kg*	*50.000*		*86*	*66-122*		
Matrix Spike (L002002-MS2)		Source: 1001098-01	Prepared & Analyzed: 01/29/2010						
1,1,1-Trichloroethane	35.2	4.39	ug/kg	43.860	4.03 U	80	60-140		
1,1,2,2-Tetrachloroethane	43.8	4.39	ug/kg	43.860	4.03 U	100	70-130		
1,1,2-Trichloroethane	41.4	4.39	ug/kg	43.860	4.03 U	94	70-130		
1,1-Dichloroethane	38.9	4.39	ug/kg	43.860	4.03 U	89	60-140		
1,1-Dichloroethene	42.8	4.39	ug/kg	43.860	4.03 U	98	60-130		
1,2-Dichloroethane	35.5	5.26	ug/kg	43.860	4.84 U	81	60-140		
1,2-Dichloroethene (total)	79.3	4.39	ug/kg	87.719	4.03 U	90	60-140		
1,2-Dichloropropane	38.3	4.39	ug/kg	43.860	4.03 U	87	70-130		
2-Butanone	81.2	10.5	ug/kg	43.860	9.68 U	185	20-200		
2-Hexanone	64.9	10.5	ug/kg	43.860	9.68 U	148	20-200		
4-Methyl-2-pentanone	45.8	10.5	ug/kg	43.860	9.68 U	104	50-150		
Acetone	102	10.5	ug/kg	43.860	9.68 U	233*	20-200		
Benzene	39.6	4.39	ug/kg	43.860	4.03 U	90	70-130		
Bromodichloromethane	36.5	5.26	ug/kg	43.860	4.84 U	83	60-140		
Bromoform	47.0	4.39	ug/kg	43.860	4.03 U	107	60-140		
Bromomethane	44.3	8.77	ug/kg	43.860	8.06 U	101	50-180		
Carbon Disulfide	38.2	4.39	ug/kg	43.860	4.03 U	87	60-140		
Carbon Tetrachloride	36.4	4.39	ug/kg	43.860	4.03 U	83	60-140		
Chlorobenzene	39.7	4.39	ug/kg	43.860	4.03 U	91	70-130		
Chloroethane	46.9	8.77	ug/kg	43.860	8.06 U	107	50-180		
Chloroform	37.4	4.39	ug/kg	43.860	4.03 U	85	60-140		
Chloromethane	33.1	8.77	ug/kg	43.860	8.06 U	75	50-180		
cis-1,2-Dichloroethene	38.9	4.39	ug/kg	43.860	4.03 U	89	60-140		
cis-1,3-Dichloropropene	35.6	4.39	ug/kg	43.860	4.03 U	81	70-130		
Dibromochloromethane	40.7	4.39	ug/kg	43.860	4.03 U	93	70-130		
Ethylbenzene	37.4	4.39	ug/kg	43.860	4.03 U	85	70-130		
Methylene Chloride	39.2	5.26	ug/kg	43.860	2.03	85	40-180		
Styrene	38.7	4.39	ug/kg	43.860	4.03 U	88	70-130		
Tetrachloroethene	40.1	4.39	ug/kg	43.860	4.03 U	91	60-140		
trans-1,2-Dichloroethene	40.4	4.39	ug/kg	43.860	4.03 U	92	60-140		

Volatile Organic Compounds by SW846 8260B - Quality Control
Lionville Laboratory

Analyte	Result and Qualifiers	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch L002002 - SW 5030B									
Matrix Spike (L002002-MS2)		**Source: 1001098-01**	**Prepared & Analyzed: 01/29/2010**						
Toluene	37.4	4.39	ug/kg	43.860	4.03 U	85	70-130		
trans-1,3-Dichloropropene	34.6	4.39	ug/kg	43.860	4.03 U	79	70-130		
Trichloroethene	42.1	4.39	ug/kg	43.860	4.03 U	96	70-130		
Vinyl chloride	38.7	8.77	ug/kg	43.860	8.06 U	88	50-180		
Xylenes, total	114	4.39	ug/kg	131.58	4.03 U	86	70-130		
Surrogate: 1,2-Dichloroethane-d4	*38.1*		*ug/kg*	*43.860*		*87*	*63-137*		
Surrogate: Toluene-d8	*42.7*		*ug/kg*	*43.860*		*97*	*68-140*		
Surrogate: 4-Bromofluorobenzene	*45.7*		*ug/kg*	*43.860*		*104*	*66-132*		
Matrix Spike Dup (L002002-MSD2)		**Source: 1001098-01**	**Prepared & Analyzed: 01/29/2010**						
1,1,1-Trichloroethane	38.1	4.72	ug/kg	47.170	4.03 U	81	60-140	0.6	20
1,1,2,2-Tetrachloroethane	36.1	4.72	ug/kg	47.170	4.03 U	77	70-130	26*	20
1,1,2-Trichloroethane	39.6	4.72	ug/kg	47.170	4.03 U	84	70-130	12	20
1,1-Dichloroethane	40.4	4.72	ug/kg	47.170	4.03 U	86	60-140	3	20
1,1-Dichloroethene	45.1	4.72	ug/kg	47.170	4.03 U	96	60-130	2	20
1,2-Dichloroethane	35.7	5.66	ug/kg	47.170	4.84 U	76	60-140	7	20
1,2-Dichloroethene (total)	84.2	4.72	ug/kg	94.340	4.03 U	89	60-140	1	20
1,2-Dichloropropane	40.2	4.72	ug/kg	47.170	4.03 U	85	70-130	2	20
2-Butanone	68.3	11.3	ug/kg	47.170	9.68 U	145	20-200	24*	20
2-Hexanone	60.5	11.3	ug/kg	47.170	9.68 U	128	20-200	14	20
4-Methyl-2-pentanone	40.3	11.3	ug/kg	47.170	9.68 U	85	50-150	20	20
Acetone	84.4	11.3	ug/kg	47.170	9.68 U	179	20-200	26*	20
Benzene	42.6	4.72	ug/kg	47.170	4.03 U	90	70-130	0.06	20
Bromodichloromethane	38.4	5.66	ug/kg	47.170	4.84 U	81	60-140	2	20
Bromoform	44.1	4.72	ug/kg	47.170	4.03 U	93	60-140	14	20
Bromomethane	45.9	9.43	ug/kg	47.170	8.06 U	97	50-180	4	20
Carbon Disulfide	40.9	4.72	ug/kg	47.170	4.03 U	87	60-140	0.5	20
Carbon Tetrachloride	38.7	4.72	ug/kg	47.170	4.03 U	82	60-140	1	20
Chlorobenzene	42.1	4.72	ug/kg	47.170	4.03 U	89	70-130	2	20
Chloroethane	49.6	9.43	ug/kg	47.170	8.06 U	105	50-180	2	20
Chloroform	40.0	4.72	ug/kg	47.170	4.03 U	85	60-140	0.5	20
Chloromethane	36.4	9.43	ug/kg	47.170	8.06 U	77	50-180	7	20
cis-1,2-Dichloroethene	41.5	4.72	ug/kg	47.170	4.03 U	88	60-140	0.8	20
cis-1,3-Dichloropropene	36.3	4.72	ug/kg	47.170	4.03 U	77	70-130	5	20
Dibromochloromethane	41.4	4.72	ug/kg	47.170	4.03 U	88	70-130	6	20
Ethylbenzene	40.9	4.72	ug/kg	47.170	4.03 U	87	70-130	2	20
Methylene Chloride	41.0	5.66	ug/kg	47.170	2.01	83	50-180	3	20

Volatile Organic Compounds by SW846 8260B - Quality Control

Lionville Laboratory

Analyte	Result and Qualifiers	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch L002002 - SW 5030B									
Matrix Spike Dup (L002002-MSD2)	Source: 1001048-01		Prepared & Analyzed: 01/29/2010						
Styrene	41.8	4.72	ug/kg	47.170	4.03 U	89	70-130	0.6	20
Tetrachloroethene	45.7	4.72	ug/kg	47.170	4.03 U	97	60-140	6	20
trans-1,2-Dichloroethene	42.8	4.72	ug/kg	47.170	4.03 U	91	60-140	2	20
Toluene	39.4	4.72	ug/kg	47.170	4.03 U	84	70-130	2	20
trans-1,3-Dichloropropene	34.0	4.72	ug/kg	47.170	4.03 U	72	70-130	9	20
Trichloroethene	46.5	4.72	ug/kg	47.170	4.03 U	99	70-130	1	20
Vinyl chloride	41.7	9.43	ug/kg	47.170	8.06 U	88	50-130	0.05	20
Xylenes, total	125	4.72	ug/kg	141.51	4.03 U	88	70-130	2	20
Surrogate: 1,2-Dichloroethane-d4	*36.4*		*ug/kg*	*47.170*		*77*	*61-137*		
Surrogate: Toluene-d8	*41.7*		*ug/kg*	*47.170*		*88*	*68-140*		
Surrogate: 4-Bromofluorobenzene	*41.4*		*ug/kg*	*47.170*		*88*	*66-122*		
Batch L002095 - SW 5030B									
Blank (L002095-BLK1)			Prepared & Analyzed: 02/04/2010						
1,1,1-Trichloroethane	5.00 U	5.00	ug/kg						
1,1,2,2-Tetrachloroethane	5.00 U	5.00	ug/kg						
1,1,2-Trichloroethane	5.00 U	5.00	ug/kg						
1,1-Dichloroethane	5.00 U	5.00	ug/kg						
1,1-Dichloroethene	5.00 U	5.00	ug/kg						
1,2-Dichloroethane	6.00 U	6.00	ug/kg						
1,2-Dichloroethene (total)	5.00 U	5.00	ug/kg						
1,2-Dichloropropane	5.00 U	5.00	ug/kg						
2-Butanone	12.0 U	12.0	ug/kg						
2-Hexanone	12.0 U	12.0	ug/kg						
4-Methyl-2-pentanone	12.0 U	12.0	ug/kg						
Acetone	12.0 U	12.0	ug/kg						
Benzene	5.00 U	5.00	ug/kg						
Bromodichloromethane	6.00 U	6.00	ug/kg						
Bromoform	5.00 U	5.00	ug/kg						
Bromomethane	10.0 U	10.0	ug/kg						
Carbon Disulfide	5.00 U	5.00	ug/kg						
Carbon Tetrachloride	5.00 U	5.00	ug/kg						
Chlorobenzene	5.00 U	5.00	ug/kg						
Chloroethane	10.0 U	10.0	ug/kg						
Chloroform	5.00 U	5.00	ug/kg						
Chloromethane	10.0 U	10.0	ug/kg						
cis-1,2-Dichloroethene	5.00 U	5.00	ug/kg						

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WC-Hanford, Inc	Project: RC-116	
2620 Fermi Avenue	Project Number: K1918	Reported:
Richland WA, 99354	Project Manager: Joan Kessner	02/14/2010 08:21

Volatile Organic Compounds by SW846 8260B - Quality Control

Lionville Laboratory

Analyte	Result and Qualifiers	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch L002095 - SW 5030B									
Blank (L002095-BLK1)			Prepared & Analyzed: 02/04/2010						
cis-1,3-Dichloropropene	5.00 U	5.00	ug/kg						
Dibromochloromethane	5.00 U	5.00	ug/kg						
Ethylbenzene	5.00 U	5.00	ug/kg						
Methylene Chloride	6.00 U	6.00	ug/kg						
Styrene	5.00 U	5.00	ug/kg						
Tetrachloroethene	5.00 U	5.00	ug/kg						
trans-1,2-Dichloroethene	5.00 U	5.00	ug/kg						
Toluene	5.00 U	5.00	ug/kg						
trans-1,3-Dichloropropene	5.00 U	5.00	ug/kg						
Trichloroethene	5.00 U	5.00	ug/kg						
Vinyl chloride	10.0 U	10.0	ug/kg						
Xylenes, total	5.00 U	5.00	ug/kg						
Surrogate: 1,2-Dichloroethane-d4	*45.6*		*ug/kg*	*50.000*		*91*	*63-131*		
Surrogate: Toluene-d8	*47.8*		*ug/kg*	*50.000*		*96*	*68-140*		
Surrogate: 4-Bromofluorobenzene	*53.1*		*ug/kg*	*50.000*		*106*	*66-132*		
LCS (L002095-BS1)			Prepared & Analyzed: 02/04/2010						
1,1,1-Trichloroethane	47.3	5.00	ug/kg	50.000		95	60-140		
1,1,2,2-Tetrachloroethane	51.3	5.00	ug/kg	50.000		103	70-130		
1,1,2-Trichloroethane	45.2	5.00	ug/kg	50.000		90	70-130		
1,1-Dichloroethane	48.8	5.00	ug/kg	50.000		98	60-140		
1,1-Dichloroethene	46.9	5.00	ug/kg	50.000		94	60-130		
1,2-Dichloroethane	48.1	5.00	ug/kg	50.000		96	60-140		
1,2-Dichloroethene (total)	91.8	5.00	ug/kg	100.00		92	60-140		
1,2-Dichloropropane	48.1	5.00	ug/kg	50.000		96	70-130		
2-Butanone	95.3	12.0	ug/kg	50.000		191	20-200		
2-Hexanone	87.3	12.0	ug/kg	50.000		175	20-200		
4-Methyl-2-pentanone	59.1	12.0	ug/kg	50.000		118	30-150		
Acetone	97.1	12.0	ug/kg	50.000		194	20-200		
Benzene	47.0	5.00	ug/kg	50.000		94	70-130		
Bromodichloromethane	48.0	5.00	ug/kg	50.000		96	60-140		
Bromoform	51.8	5.00	ug/kg	50.000		104	60-140		
Bromomethane	52.3	10.0	ug/kg	50.000		105	50-180		
Carbon Disulfide	49.2	5.00	ug/kg	50.000		98	60-140		
Carbon Tetrachloride	47.6	5.00	ug/kg	50.000		95	60-140		
Chlorobenzene	44.9	5.00	ug/kg	50.000		90	70-130		
Chloroethane	46.7	10.0	ug/kg	50.000		93	50-180		

Volatile Organic Compounds by SW846 8260B - Quality Control

Lionville Laboratory

Analyte	Result and Qualifiers	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch L002095 - SW 5030B									
LCS (L002095-BS1)			Prepared & Analyzed: 02/04/2010						
Chloroform	46.6	5.00	ug/kg	50.000		93	60-140		
Chloromethane	44.9	10.0	ug/kg	50.000		90	50-150		
cis-1,2-Dichloroethene	45.9	5.00	ug/kg	50.000		92	60-140		
cis-1,3-Dichloropropene	47.6	5.00	ug/kg	50.000		95	70-130		
Dibromochloromethane	47.7	5.00	ug/kg	50.000		95	70-130		
Ethylbenzene	44.0	5.00	ug/kg	50.000		88	70-130		
Methylene Chloride	42.9	6.00	ug/kg	50.000		86	40-150		
Styrene	45.8	5.00	ug/kg	50.000		92	70-130		
Tetrachloroethene	48.2	5.00	ug/kg	50.000		96	60-140		
trans-1,2-Dichloroethene	45.9	5.00	ug/kg	50.000		92	60-140		
Toluene	45.2	5.00	ug/kg	50.000		90	70-130		
trans-1,3-Dichloropropene	47.7	5.00	ug/kg	50.000		95	70-130		
Trichloroethene	46.3	5.00	ug/kg	50.000		93	70-130		
Vinyl chloride	52.3	10.0	ug/kg	50.000		105	50-150		
Xylenes (total)	137	5.00	ug/kg	150.00		91	70-130		
Surrogate: 1,2-Dichloroethane-d4	*48.8*		*ug/kg*	*50.000*		*98*	*61-151*		
Surrogate: Toluene-d8	*47.5*		*ug/kg*	*50.000*		*95*	*68-140*		
Surrogate: 4-Bromofluorobenzene	*51.1*		*ug/kg*	*50.000*		*102*	*66-122*		

WC-Hanford, Inc.
2620 Fermi Avenue
Richland WA, 99354

Project: RC-116
Project Number: K1922
Project Manager: Joan Kessner

Reported:
02/14/2010 08:41

Volatile Organic Compounds by SW846 8260B - Quality Control
Lionville Laboratory

Analyte	Result and Qualifiers	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch L002095 - SW 5030B									
LCS (L002095-BS1)			Prepared & Analyzed: 02/04/2010						
Vinyl chloride	52.3	10.0	ug/kg	50.000		105	50-180		
Xylenes, total	137	5.00	ug/kg	150.00		91	70-130		
Surrogate: 1,2-Dichloroethane-d4	*48.8*		*ug/kg*	*50.000*		*98*	*63-131*		
Surrogate: Toluene-d8	*47.5*		*ug/kg*	*50.000*		*95*	*68-140*		
Surrogate: 4-Bromofluorobenzene	*51.1*		*ug/kg*	*50.000*		*102*	*66-122*		
Matrix Spike (L002095-MS1)		Source: 1002011-05	Prepared & Analyzed: 02/04/2010						
1,1,1-Trichloroethane	47.4	5.21	ug/kg	52.083	4.46 U	91	60-140		
1,1,2,2-Tetrachloroethane	65.4	5.21	ug/kg	52.083	4.46 U	126	70-130		
1,1,2-Trichloroethane	49.8	5.21	ug/kg	52.083	4.46 U	96	70-130		
1,1-Dichloroethane	48.8	5.21	ug/kg	52.083	4.46 U	94	60-140		
1,1-Dichloroethene	44.8	5.21	ug/kg	52.083	4.46 U	86	60-130		
1,2-Dichloroethane	50.3	6.25	ug/kg	52.083	5.36 U	97	60-140		
1,2-Dichloroethene (total)	92.5	5.21	ug/kg	104.17	4.46 U	89	60-140		
1,2-Dichloropropane	50.0	5.21	ug/kg	52.083	4.46 U	96	70-130		
2-Butanone	61.8	12.5	ug/kg	52.083	10.7 U	119	20-200		
2-Hexanone	51.1	12.5	ug/kg	52.083	10.7 U	98	20-200		
4-Methyl-2-pentanone	48.3	12.5	ug/kg	52.083	10.7 U	93	50-150		
Acetone	79.5	12.5	ug/kg	52.083	10.7 U	153	20-200		
Benzene	48.0	5.21	ug/kg	52.083	4.46 U	92	70-130		
Bromodichloromethane	48.8	6.25	ug/kg	52.083	5.36 U	94	60-140		
Bromoform	50.2	5.21	ug/kg	52.083	4.46 U	96	60-140		
Bromomethane	49.1	10.4	ug/kg	52.083	8.93 U	94	50-180		
Carbon Disulfide	44.1	5.21	ug/kg	52.083	4.46 U	85	60-140		
Carbon Tetrachloride	44.4	5.21	ug/kg	52.083	4.46 U	85	60-140		
Chlorobenzene	44.9	5.21	ug/kg	52.083	4.46 U	86	70-130		
Chloroethane	49.9	10.4	ug/kg	52.083	8.93 U	96	50-180		
Chloroform	49.5	5.21	ug/kg	52.083	4.46 U	95	60-140		
Chloromethane	38.4	10.4	ug/kg	52.083	8.93 U	74	30-180		
cis-1,2-Dichloroethene	46.7	5.21	ug/kg	52.083	4.46 U	90	60-140		
cis-1,3-Dichloropropene	45.4	5.21	ug/kg	52.083	4.46 U	87	70-130		
Dibromochloromethane	46.9	5.21	ug/kg	52.083	4.46 U	90	70-130		
Ethylbenzene	44.2	5.21	ug/kg	52.083	4.46 U	85	70-130		
Methylene Chloride	46.4	6.25	ug/kg	52.083	5.36 U	89	50-180		
Styrene	43.0	5.21	ug/kg	52.083	4.46 U	83	70-130		
Tetrachloroethene	43.6	5.21	ug/kg	52.083	4.46 U	84	60-140		
trans-1,2-Dichloroethene	45.8	5.21	ug/kg	52.083	4.46 U	88	60-140		

Volatile Organic Compounds by SW846 8260B - Quality Control

Lionville Laboratory

Analyte	Result and Qualifiers	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch L002095 - SW 5030B									
Matrix Spike (L002095-MS1)	**Source: 1002011-05**		**Prepared & Analyzed: 02/04/2010**						
Toluene	46.1	5.21	ug/kg	52.083	4.46 U	89	70-130		
trans-1,3-Dichloropropene	47.1	5.21	ug/kg	52.083	4.46 U	91	70-130		
Trichloroethene	44.4	5.21	ug/kg	52.083	4.46 U	85	70-130		
Vinyl chloride	50.0	10.4	ug/kg	52.083	8.93 U	96	50-180		
Xylenes, total	132	5.21	ug/kg	156.25	4.46 U	85	70-130		
Surrogate: 1,2-Dichloroethane-d4	*54.9*		*ug/kg*	*52.083*		*105*	*63-137*		
Surrogate: Toluene-d8	*50.9*		*ug/kg*	*52.083*		*98*	*68-140*		
Surrogate: 4-Bromofluorobenzene	*55.9*		*ug/kg*	*52.083*		*107*	*66-122*		
Matrix Spike Dup (L002095-MSD1)	**Source: 1002011-05**		**Prepared & Analyzed: 02/04/2010**						
1,1,1-Trichloroethane	41.5	4.81	ug/kg	48.077	4.46 U	86	60-140	5	20
1,1,2,2-Tetrachloroethane	51.2	4.81	ug/kg	48.077	4.46 U	107	70-130	16	20
1,1,2-Trichloroethane	41.4	4.81	ug/kg	48.077	4.46 U	86	70-130	10	20
1,1-Dichloroethane	43.0	4.81	ug/kg	48.077	4.46 U	89	60-140	5	20
1,1-Dichloroethene	40.3	4.81	ug/kg	48.077	4.46 U	84	60-130	1	20
1,2-Dichloroethane	43.1	5.77	ug/kg	48.077	5.36 U	90	60-140	8	20
1,2-Dichloroethene (total)	80.5	4.81	ug/kg	96.154	4.46 U	84	60-140	6	20
1,2-Dichloropropane	42.6	4.81	ug/kg	48.077	4.46 U	89	70-130	8	20
2-Butanone	40.8	11.5	ug/kg	48.077	10.7 U	85	20-200	33*	20
2-Hexanone	37.9	11.5	ug/kg	48.077	10.7 U	79	20-200	22*	20
4-Methyl-2-pentanone	35.6	11.5	ug/kg	48.077	10.7 U	74	40-150	22*	20
Acetone	48.6	11.5	ug/kg	48.077	10.7 U	101	20-200	41*	20
Benzene	42.4	4.81	ug/kg	48.077	4.46 U	88	70-130	4	20
Bromodichloromethane	39.9	5.77	ug/kg	48.077	5.36 U	83	60-140	12	20
Bromoform	37.9	4.81	ug/kg	48.077	4.46 U	79	60-140	20	20
Bromomethane	43.1	9.62	ug/kg	48.077	8.93 U	90	50-180	5	20
Carbon Disulfide	37.7	4.81	ug/kg	48.077	4.46 U	78	60-140	8	20
Carbon Tetrachloride	35.5	4.81	ug/kg	48.077	4.46 U	74	60-140	14	20
Chlorobenzene	39.2	4.81	ug/kg	48.077	4.46 U	82	70-130	6	20
Chloroethane	46.8	9.62	ug/kg	48.077	8.93 U	97	50-180	2	20
Chloroform	43.6	4.81	ug/kg	48.077	4.46 U	91	60-140	5	20
Chloromethane	33.1	9.62	ug/kg	48.077	8.93 U	69	50-180	7	20
cis-1,2-Dichloroethene	40.6	4.81	ug/kg	48.077	4.46 U	84	60-140	6	20
cis-1,3-Dichloropropene	36.5	4.81	ug/kg	48.077	4.46 U	76	70-130	14	20
Dibromochloromethane	38.1	4.81	ug/kg	48.077	4.46 U	79	70-130	13	20
Ethylbenzene	37.8	4.81	ug/kg	48.077	4.46 U	79	70-130	8	20
Methylene Chloride	41.8	5.77	ug/kg	48.077	5.36 U	87	50-180	2	20

Volatile Organic Compounds by SW846 8260B - Quality Control

Lionville Laboratory

Analyte	Result and Qualifiers	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch L002095 - SW 5030B									
Matrix Spike Dup (L002095-MSD1)		**Source: J002011-05**	Prepared & Analyzed: 02/04/2010						
Styrene	37.8	4.81	ug/kg	48.077	4.46 U	79	70-130	5	20
Tetrachloroethene	37.3	4.81	ug/kg	48.077	4.46 U	78	60-140	8	20
trans-1,2-Dichloroethene	40.0	4.81	ug/kg	48.077	4.46 U	83	60-140	6	20
Toluene	40.8	4.81	ug/kg	48.077	4.46 U	85	70-130	4	20
trans-1,3-Dichloropropene	37.1	4.81	ug/kg	48.077	4.46 U	77	70-130	16	20
Trichloroethene	38.4	4.81	ug/kg	48.077	4.46 U	80	70-130	6	20
Vinyl chloride	44.8	9.62	ug/kg	48.077	8.93 U	93	50-150	3	20
Xylenes, total	114	4.81	ug/kg	144.23	4.46 U	79	70-130	1	20
Surrogate: 1,2-Dichloroethane-d4	*48.1*		*ug/kg*	*48.077*		*100*	*61-131*		
Surrogate: Toluene-d8	*48.2*		*ug/kg*	*48.077*		*100*	*65-140*		
Surrogate: 4-Bromofluorobenzene	*51.7*		*ug/kg*	*48.077*		*108*	*66-122*		

Date: 16 October 2009
To: Washington Closure Hanford Inc. (technical representative)
From: ELR Consulting
Project: Columbia River Component of the RCBRA - Sediment
Subject: Radiochemistry - Data Package No. K1918-EB

INTRODUCTION

This memo presents the results of data validation on Data Package No. K1918 prepared by Eberline Services (EB). A list of samples validated along with the analyses reported and the method of analysis is provided in the following table.

Sample ID	Sample Date	Media	Validation	Date
J19F82-A	1/18/10	Solid	C	See note 1 & 2
J19FB0	1/25/10	Solid	C	See note 1
J19FD1	1/25/10	Solid	C	See note 1
J19FJ2	1/24/10	Solid	C	See note 1 & 2
J19FJ3	1/24/10	Solid	C	See note 1 & 2
J19H28	1/25/10	Solid	C	See note 1
J19HT6	1/24/10	Solid	C	See note 1 & 3
J19HT7	1/22/10	Solid	C	See note 1 & 3
J19HT8	1/23/10	Solid	C	See note 1 & 3
J19JB4	1/23/10	Solid	C	See note 1 & 3

1 – Alpha spectroscopy and gamma spectroscopy
2 – Total strontium.
3 – Total strontium & carbon-14

Data validation was conducted in accordance with the Washington Closure Hanford (WCH) validation statement of work and the Remedial Investigation Work Plan for Hanford Site Releases to the Columbia River (DOE/RL-2008, Rev. 0, September 2006). Appendices 1 through 6 provide the following information as indicated below:

Appendix 1. Glossary of Data Reporting Qualifiers
Appendix 2. Summary of Data Qualification
Appendix 3. Qualified Data Summary and Annotated Laboratory Reports
Appendix 4. Laboratory Narrative and Chain-of-Custody Documentation
Appendix 5 Data Validation Supporting Documentation
Appendix 6. Additional Data Requested by Client

DATA QUALITY PARAMETERS

- **Holding Times**

Holding times are calculated from Chain-of-Custody forms to determine the validity of the results. The maximum holding time for radiochemical analysis is 6 months

All holding times were acceptable.

- **Preparation (Method) Blanks**

Laboratory Blanks

Blank samples are analyzed to determine if positive results are due to laboratory reagent, sample container, or detector contamination. If blank analysis results indicate the presence of an analyte above the minimum detectable activity (MDA), the following qualifiers are applied: All positive sample results less than five times the highest blank concentration are qualified as estimates and flagged "J"; sample results below the MDA are qualified as undetected and flagged "U"; sample results above the MDA and greater than five times the highest blank concentration are not qualified.

All blank results were acceptable (although eight gamma spec analytes exceeded the RQL).

Field (Equipment) Blank

No field blanks were submitted for analysis.

- **Accuracy**

Accuracy is evaluated from laboratory control sample (LCS) or blank spike sample (BSS) batch samples and spiked samples from the analytical batch. Measured activities are compared to the known added amounts. The acceptable LCS or BSS and matrix spike (MS) recovery range is 70-130%. In addition, samples may be spiked with a radiochemical tracer to assist in isolating the radioisotope of interest with the yield of the tracer being used in calculating sample activity. The acceptable range for tracer recovery is 20% to 105%. Spike sample results outside the above ranges result in associated sample results being qualified as estimates, or not qualified, depending on the activity of the individual sample. Results are rejected for LCS/BSS recoveries of less than 30% and tracer recoveries of less than 20%, and tracer recoveries of greater than 115% for detected results.

Due to the lack of an LCS analysis, all thorium-228 (aspec) and thorium-232 (aspec) results were qualified as estimates and flagged "J".

Due to the lack of a matrix spike analysis, all carbon-14 results were qualified as estimates and flagged "J".

All other accuracy results were acceptable.

- **Laboratory Duplicates**

Analytical precision is expressed by the relative percent differences (RPD) between the recoveries of duplicate matrix spike analyses performed on a sample in the analytical batch. Precision may alternatively be assessed using unspiked duplicate analyses performed on a sample in the analytical batch. If both sample and replicate activities (concentrations) are greater than five times the contract required detection limit (CRDL) and the RPD is less than 30%, no qualification is required. If either activity (concentration) is less than five times the CRDL, the RPD control limit is less than or equal to two times the CRDL. If the RPD is outside the applicable control limit, associated results are qualified as estimated detects or estimated non-detects.

All duplicate results were acceptable.

Field Duplicates

No field duplicates were submitted for analysis.

Detection Levels

Reported analytical detection levels for undetected analytes are compared against the RCBRA tissue RQLs to ensure that laboratory detection levels meet the required criteria. Fifteen analytes exceeded the RQL. Under the WCH statement of work, no qualification is required. All other analytes met the RQL.

- **Completeness**

Data package No. K1918 was submitted for validation and verified for completeness. Completeness is based on the percentage of data determined to be valid (i.e., not rejected). The completion percentage was 100%.

MAJOR DEFICIENCIES

None found.

MINOR DEFICIENCIES

The following minor deficiencies were noted:

- Due to the lack of an LCS analysis, all thorium-228 (aspec) and thorium-232 (aspec) results were qualified as estimates and flagged "J".

- Due to the lack of a matrix spike analysis, all carbon-14 results were qualified as estimates and flagged "J".

Data flagged "J" indicates that the associated concentration is an estimate, but under the WCH statement of work, the data may be usable for decision-making purposes. All other validated results are considered accurate within the standard error associated with the methods.

Fifteen analytes exceeded the RQL. Under the WCH statement of work, no qualification is required.

REFERENCES

Washington Closure Hanford Contract #S00W307A00 (March 2008), *Data Validation Services*.

DOE/RL-2008-11, Rev. 0, September 2008, *Remedial Investigation Work Plan for Hanford Site Releases to the Columbia River*.

Appendix 1

Glossary of Data Reporting Qualifiers

Qualifiers which may be applied by data validators in compliance with the WCH statement of work are as follows:

U - Indicates the compound or analyte was analyzed for and not detected above the minimum detectable activity (MDA) in the sample. The value reported is the sample result corrected for sample dilution and moisture content by the laboratory. The data is usable for decision making purposes.

UJ - Indicates the compound or analyte was analyzed for and not detected at concentrations above the minimum detectable activity (MDA) in the sample. Due to a minor QC deficiency identified during the data validation, the associated quantitation limit is an estimate, but is usable for decision making purposes.

J - Indicates the compound or analyte was analyzed for and detected. Due to a minor QC deficiency identified during the data validation, the associated concentration is an estimate, but the data are usable for decision-making purposes.

R - Indicates the compound or analyte was analyzed for, detected, and due to an identified major QC deficiency, the data are unusable.

UR - Indicates the compound or analyte was analyzed for and not detected in the sample. Additionally, the data is unusable due to an identified major QC deficiency.

Appendix 2

Summary of Data Qualification

RADIOCHEMISTRY DATA QUALIFICATION SUMMARY*

SDG: K1918	**REVIEWER: ELR**	**Project: RCBRA**	**PAGE 1 OF 1**
COMPOUND	QUALIFIER	SAMPLES AFFECTED	REASON
Thorium-228 (aspec) Thorium-232 (aspec)	J	All	No LCS analysis
Carbon-14	J	J19HT6, J19HT7 J19HT8, J19JB4	No MS analysis

* - The Qualified Data Summary Table includes laboratory applied "U" qualifiers not specifically identified here. The laboratory applied "U" qualifiers are included to minimize misinterpretation of results contained in the table.

Appendix 3

Qualified Data Summary and Annotated Laboratory Reports

EBERLINE ANALYTICAL/RICHMOND

SAMPLE DELIVERY GROUP K1918

7756-001 J19F62-A

DATA SHEET

SDG	7756	Client/Case no	Hanford SDG K1918
Contact	N. Joseph Verville	Contract	No. 00DW215A00
Lab sample id	S001139-01	Client sample id	J19F62-A
Dept sample id	7756-001	Location/Matrix	100-BC T100BC3C SOLID
Received	01/20/10	Collected/Weight	01/18/10 09:10 117 g
% solids	100.0	Custody/SAF No	RC-116-2013 RC-116

4/14/10

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Total Strontium	SR RAD	0.044	0.15	0.309	1.00	U	SR
Thorium 228	14274-82-9	0.762	0.39	0.456	1.00	J	TH
Thorium 230	14269-63-7	0.142	0.38	0.640	1.00	U	TH
Thorium 232	TH-232	0.474	0.29	0.163	1.00	J	TH
Uranium 233/234	U-233/234	0.360	0.26	0.250	1.00		U
Uranium 235	15117-96-1	0	0.079	0.303	1.00	U	U
Uranium 238	U-238	0.262	0.20	0.250	1.00		U
Plutonium 238	13981-16-3	0	0.075	0.287	1.00	U	PU
Plutonium 239/240	PU-239/240	0	0.075	0.287	1.00	U	PU
Potassium 40	13966-00-2	11.0	0.62	0.357			GAM
Cobalt 60	10198-40-0	U		0.012	0.050	U	GAM
Cesium 137	10045-97-3	U		0.032	0.100	U	GAM
Radium 226	13982-63-3	0.451	0.090	0.077	0.100		GAM
Radium 228	15262-20-1	0.778	0.15	0.151	0.200		GAM
Europium 152	14683-23-9	U		0.081	0.100	U	GAM
Europium 154	15585-10-1	U		0.114	0.100	U	GAM
Europium 155	14391-16-3	U		0.076	0.100	U	GAM
Thorium 228	14274-82-9	0.706	0.042	0.016			GAM
Thorium 232	TH-232	0.778	0.15	0.151			GAM
Uranium 235	15117-96-1	U		0.145		U	GAM
Uranium 238	U-238	U		4.08		U	GAM
Americium 241	14596-10-2	U		0.042		U	GAM
Beryllium 7	13966-02-4	U		0.265		U	GAM
Ruthenium 106	13967-48-1	U		0.372		U	GAM
Antimony 125	14234-35-6	U		0.072		U	GAM
Cesium 134	13967-70-9	U		0.046		U	GAM

DATA SHEETS
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SUMMARY DATA SECTION
Page 14

Lab id	EBERLINE
Protocol	Hanford
Version	Ver 1.0
Form	DVD DS
Version	3.06
Report date	02/12/10

EBERLINE ANALYTICAL/RICHMOND

SAMPLE DELIVERY GROUP K1918

7756-002 J19YB0

DATA SHEET

SDG	7756	Client/Case no	Hanford SDG_K1918
Contact	N.Joseph Verville	Contract	No. 300W215A00
Lab sample id	2001139-02	Client sample id	J19YB0
Dept sample id	7756-002	Location/Matrix	300A--J3008 SOLID
Received	01/28/10	Collected/Weight	01/25/10 17:30 135 g
% solids	100.0	Custody/SAF No	RC 116 2027 RC 116

4/14/10

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Thorium 228	14274-82-9	0.526	0.35	0.387	1.00	J	TH
Thorium 230	14269-63-7	0.594	0.42	0.668	1.00	U	TH
Thorium 232	TH-232	0.839	0.36	0.267	1.00	J	TH
Uranium 233/234	U-233/234	1.02	0.12	0.073	1.00		U
Uranium 235	15117-96-1	0.045	0.033	0.050	1.00	U	U
Uranium 238	U-238	0.842	0.11	0.052	1.00		U
Plutonium 238	13981-16-3	0	0.049	0.187	1.00	U	PU
Plutonium 239/240	PU-239/240	0.024	0.049	0.187	1.00	U	PU
Potassium 40	13966-00-2	11.6	1.1	0.225			GAM
Cobalt 60	10198-40-0	U		0.026	0.050	U	GAM
Cesium 137	10045-97-3	U		0.088	0.100	U	GAM
Radium 226	13982-63-3	0.483	0.060	0.057	0.100		GAM
Radium 228	15262-20-1	0.803	0.13	0.116	0.200		GAM
Europium 152	14683-23-9	U		0.076	0.100	U	GAM
Europium 154	15585-10-1	U		0.083	0.100	U	GAM
Europium 155	14391-16-3	U		0.081	0.100	U	GAM
Thorium 228	14274-82-9	0.840	0.060	0.039			GAM
Thorium 232	TH-232	0.803	0.13	0.116			GAM
Uranium 235	15117-96-1	U		0.170		U	GAM
Uranium 238	U-238	U		1.25		U	GAM
Americium 241	14596-10-2	U		0.094		U	GAM
Beryllium 7	13966-02-4	U		0.208		U	GAM
Ruthenium 106	13967-48-1	U		0.232		U	GAM
Antimony 125	14234-35-6	U		0.061		U	GAM
Cesium 134	13967-70-9	U		0.038		U	GAM

Lab id	EBRLNE
Protocol	Hanford
Version	Ver 1.0
Form	DVD-DS
Version	4.02
Report date	[illegible]

DATA SHEETS
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SUMMARY DATA SECTION
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E B E R L I N E   A N A L Y T I C A L / R I C H M O N D

SAMPLE DELIVERY GROUP K1918

7756-003 J19FD1

D A T A   S H E E T

SDG	7756	Client/Case no	Hanford SDG K1918
Contact	N.Joseph Verville	Contract	No. 00W235A00
Lab sample id	S001132-03	Client sample id	J19FD1
Dept sample id	7756-003	Location/Matrix	300A-TJ00505 DUP SOLID
Received	01/28/10	Collected/Weight	01/25/10 15:15 1.09 g
% solids	100.0	Custody/SAF No	RC-116-2016 RC-116

µ 4/14/10

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Thorium 228	14274-82-9	0.648	0.37	0.349	1.00	I	TH
Thorium 230	14269-63-7	0.273	0.36	0.270	1.00	U	TH
Thorium 232	TH-232	0.818	0.37	0.348	1.00	J	TH
Uranium 233/234	U-233/234	0.560	0.097	0.056	1.00		U
Uranium 235	15117-96-1	0.040	0.036	0.049	1.00	U	U
Uranium 238	U-238	0.420	0.082	0.041	1.00		U
Plutonium 238	13981-16-3	0	0.045	0.173	1.00	U	PU
Plutonium 239/240	PU-239/240	0	0.045	0.173	1.00	U	PU
Potassium 40	13966-00-2	11.1	0.31	0.085			GAM
Cobalt 60	10198-40-0	U		0.009	0.050	U	GAM
Cesium 137	10045-97-3	0.033	0.009	0.010	0.100		GAM
Radium 226	13982-63-3	0.473	0.023	0.017	0.100		GAM
Radium 228	15262-20-1	0.698	0.041	0.040	0.200		GAM
Europium 152	14683-23-9	U		0.024	0.100	U	GAM
Europium 154	15585-10-1	U		0.030	0.100	U	GAM
Europium 155	14391-16-3	U		0.022	0.100	U	GAM
Thorium 228	14274-82-9	0.706	0.014	0.012			GAM
Thorium 232	TH-232	0.698	0.041	0.038			GAM
Uranium 235	15117-96-1	U		0.052		U	GAM
Uranium 238	U-238	U		1.08		U	GAM
Americium 241	14596-10-2	U		0.018		U	GAM
Beryllium 7	13966-02-4	U		0.068		U	GAM
Ruthenium 106	13967-48-1	U		0.068		U	GAM
Antimony 125	14234-35-6	U		0.019		U	GAM
Cesium 134	13967-70-9	U		0.012		U	GAM

Lab id	EBRLNE
Protocol	Hanford1
Version	Ver 1.0
Form	DVD-DS
Version	1.06
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EBERLINE ANALYTICAL/RICHMOND

SAMPLE DELIVERY GROUP K1918

7756-004

J19FJ2

DATA SHEET

SDG	7756	Client/Case no	Hanford	SDG K1918
Contact	N.Joseph Verville	Contract	No. 5000W25A00	
Lab sample id	S001139-04	Client sample id	J19FJ2	
Dept sample id	7756-004	Location/Matrix	100H T100H1	SOLID
Received	01/28/10	Collected/Weight	01/21/10 15:00	1119 g
% solids	100.0	Custody/SAF No	RC 110-2046	RC-110

4/14/10

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Total Strontium	SR RAD	0.011	0.15	0.297	1.00	U	SR
Thorium 228	14274-82-9	0.815	0.38	0.420	1.00	J	TH
Thorium 230	14269-63-7	0.562	0.44	0.617	1.00	U	TH
Thorium 232	TH-232	0.562	0.25	0.239	1.00	J	TH
Uranium 233/234	U-233/234	0.632	0.10	0.055	1.00		U
Uranium 235	15117-96-1	0.026	0.035	0.054	1.00	U	U
Uranium 238	U-238	0.647	0.096	0.045	1.00		U
Plutonium 238	13981-16-3	0.024	0.049	0.186	1.00	U	PU
Plutonium 239/240	PU-239/240	U	0.049	0.186	1.00	U	PU
Potassium 40	13966-00-2	9.95	0.18	0.061			GAM
Cobalt 60	10198-40-0	U		0.006	0.050	U	GAM
Cesium 137	10045-97-3	0.015	0.004	0.005	0.100		GAM
Radium 226	13982-63-3	0.926	0.018	0.014	0.100		GAM
Radium 228	15262-20-1	0.826	0.026	0.022	0.200		GAM
Europium 152	14683-23-9	U		0.020	0.100	U	GAM
Europium 154	15585-10-1	U		0.019	0.100	U	GAM
Europium 155	14391-16-3	U		0.041	0.100	U	GAM
Thorium 228	14274-82-9	0.815	0.012	0.011			GAM
Thorium 232	TH-232	0.826	0.026	0.022			GAM
Uranium 235	15117-96-1	U		0.420		U	GAM
Uranium 238	U-238	U		1.38		U	GAM
Americium 241	14596-10-2	U		0.017		U	GAM
Beryllium 7	13966-02-4	U		0.055		U	GAM
Ruthenium 106	13967-48-1	U		0.050		U	GAM
Antimony 125	14234-35-6	U		0.016		U	GAM
Cesium 134	13967-70-9	U		0.007		U	GAM

Lab id	EBRLNE
Protocol	Hanford1
Version	Ver 1.0
Form	DVD-DS
Version	3.06
Report date	03/12/10

EBERLINE ANALYTICAL/RICHMOND

SAMPLE DELIVERY GROUP K1918

7756-005 J19FJ3

DATA SHEET

SDG	7756	Client/Case no	Hanford	SDG K1918
Contact	N.Joseph Verville	Contract	No. 600M235A00	
Lab sample id	8001119-05	Client sample id	J19FJ3	
Dept sample id	7756 005	Location/Matrix	100H T100H1A	SOLID
Received	01/28/10	Collected/Weight	01/24/10 15:50	356 g
% solids	100.0	Custody/SAF No	RC-116-2049	RC-116

4/14/10

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Total Strontium	SR-RAD	-0.111	0.13	0.295	1.00	U	SR
Thorium 228	14274-82-9	0.474	0.34	0.518	1.00	U J	TH
Thorium 230	14269-63-7	0.270	0.41	0.660	1.00	U	TH
Thorium 232	TH-232	0.811	0.34	0.258	1.00	J	TH
Uranium 233/234	U-233/234	0.466	0.085	0.050	1.00		U
Uranium 235	15117-96-1	0.008	0.025	0.047	1.00	U	U
Uranium 238	U-238	0.403	0.078	0.039	1.00		U
Plutonium 238	13981-16-3	0.027	0.11	0.258	1.00	U	PU
Plutonium 239/240	PU-239/240	0.027	0.054	0.206	1.00	U	PU
Potassium 40	13966-00-2	9.68	0.69	0.177			GAM
Cobalt 60	10198-40-0	U		0.038	0.050	U	GAM
Cesium 137	10045-97-3	U		0.018	0.100	U	GAM
Radium 226	13982-63-3	0.444	0.041	0.063	0.100		GAM
Radium 228	15262-20-1	0.693	0.16	0.165	0.200		GAM
Europium 152	14683-23-9	U		0.091	0.100	U	GAM
Europium 154	15585-10-1	U		0.117	0.100	U	GAM
Europium 155	14391-16-3	U		0.090	0.100	U	GAM
Thorium 228	14274-82-9	0.447	0.044	0.043			GAM
Thorium 232	TH-232	0.693	0.16	0.165			GAM
Uranium 235	15117-96-1	U		0.158		U	GAM
Uranium 238	U-238	U		4.55		U	GAM
Americium 241	14596-10-2	U		0.134		U	GAM
Beryllium 7	13966-02-4	U		0.268		U	GAM
Ruthenium 106	13967-48-1	U		0.300		U	GAM
Antimony 125	14234-35-6	U		0.083		U	GAM
Cesium 134	13967-70-9	U		0.048		U	GAM

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Lab id EBERLINE
Protocol Hanford1
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Version 1.06
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EBERLINE ANALYTICAL/RICHMOND

SAMPLE DELIVERY GROUP K1918

7756-006

J19H28

DATA SHEET

SDG	7756	Client/Case no	Hanford
Contact	N. Joseph Verville	Contract No.	500W235A00
Lab sample id	S001139-06	Client sample id	J19H28
Dept sample id	7756-006	Location/Matrix	300A--T3005JS
Received	01/28/10	Collected/Weight	01/25/10 15:00
% solids	100.0	Custody/SAF No	RC-116-2073

SDG K1918

SOLID

1384.7

RC-116

4/14/10

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Thorium 228	14274-82-9	0.766	0.34	0.349	1.00	J	TH
Thorium 230	14269-63-7	0.537	0.40	0.611	1.00	U	TH
Thorium 232	TH-232	0.707	0.27	0.216	1.00	J	TH
Uranium 233/234	U-233/234	0.643	0.11	0.073	1.00		U
Uranium 235	15117-96-1	0.034	0.034	0.052	1.00	U	U
Uranium 238	U-238	0.608	0.093	0.019	1.00		U
Plutonium 238	13981-16-3	-0.025	0.10	0.242	1.00	U	PU
Plutonium 239/240	PU-239/240	-0.025	0.051	0.193	1.00	U	PU
Potassium 40	13966-00-2	11.8	0.20	0.083			GAM
Cobalt 60	10198-40-0	U		0.009	0.050	U	GAM
Cesium 137	10045-97-3	0.041	0.009	0.010	0.100		GAM
Radium 226	13982-63-3	0.524	0.022	0.019	0.100		GAM
Radium 228	15262-20-1	0.729	0.039	0.036	0.200		GAM
Europium 152	14683-23-9	U		0.023	0.100	U	GAM
Europium 154	15585-10-1	U		0.042	0.100	U	GAM
Europium 155	14391-16-3	U		0.037	0.100	U	GAM
Thorium 228	14274-82-9	0.758	0.014	0.012			GAM
Thorium 232	TH-232	0.729	0.039	0.036			GAM
Uranium 235	15117-96-1	U		0.071		U	GAM
Uranium 238	U-238	U		1.41		U	GAM
Americium 241	14596-10-2	U		0.014		U	GAM
Beryllium 7	13966-02-4	U		0.066		U	GAM
Ruthenium 106	13967-48-1	U		0.071		U	GAM
Antimony 125	14234-35-6	U		0.020		U	GAM
Cesium 134	13967-70-9	U		0.012		U	GAM

Lab id	EBRLNE
Protocol	Hanford1
Version	Ver 1.0
Form	DVD-DS
Version	1.0v
Report date	03/12/10

2756-007 J19HT6

EBERLINE ANALYTICAL/RICHMOND

SAMPLE DELIVERY GROUP K1918

DATA SHEET

SDG	2756	Client/Case no	Hanford SDG K1918
Contact	N. Joseph Verville	Contract	No. 00H235A00
Lab sample id	9001139 07	Client sample id	J19HT6
Dept sample id	2756-007	Location/Matrix	100H T100H1E DUP SOLID
Received	01/28/10	Collected/Weight	01/24/10 15:15 783 g
% solids	100.0	Custody/SAF No	RC-116-2006 RC-116

4/14/10

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALIFIERS	TEST
Carbon 14	14762-75-5	1.94	3.5	6.00	50.0	U J	C
Total Strontium	SR-RAD	0.038	0.13	0.269	1.00	U	SR
Thorium 228	14274-82-9	1.25	0.85	1.15	1.00	J	TH
Thorium 230	14269-63-7	0.722	0.83	1.38	1.00	U	TH
Thorium 232	TH-232	1.03	0.64	0.790	1.00	J	TH
Uranium 233/234	U-233/234	0.525	0.094	0.070	1.00		U
Uranium 235	15117-96-1	0.034	0.034	0.053	1.00	U	U
Uranium 238	U-238	0.532	0.094	0.051	1.00		U
Plutonium 238	13981-16-3	-0.023	0.091	0.218	1.00	U	PU
Plutonium 239/240	PU-239/240	0.046	0.091	0.174	1.00	U	PU
Potassium 40	13966-00-2	11.1	0.20	0.103			GAM
Cobalt 60	10198-40-0	U		0.009	0.050	U	GAM
Cesium 137	10045-97-3	0.021	0.006	0.008	0.100		GAM
Radium 226	13982-63-3	0.894	0.022	0.021	0.100		GAM
Radium 228	15262-20-1	0.947	0.045	0.042	0.200		GAM
Europium 152	14683-23-9	U		0.022	0.100	U	GAM
Europium 154	15585-10-1	U		0.030	0.100	U	GAM
Europium 155	14391-16-3	U		0.047	0.100	U	GAM
Thorium 228	14274-82-9	0.833	0.014	0.012			GAM
Thorium 232	TH-232	0.947	0.045	0.042			GAM
Uranium 235	15117-96-1	U		0.090		U	GAM
Uranium 238	U-238	U		1.11		U	GAM
Americium 241	14596-10-2	U		0.017		U	GAM
Beryllium 7	13966-02-4	U		0.070		U	GAM
Ruthenium 106	13967-48-1	U		0.067		U	GAM
Antimony 125	14234-35-6	U		0.019		U	GAM
Cesium 134	13967-70-9	U		0.014		U	GAM

Lab id	EBRLNE
Protocol	Hanford
Version	Ver 1.0
Form	DVD DS
Version	1.06
Report date	03/12/10

EBERLINE ANALYTICAL/RICHMOND

SAMPLE DELIVERY GROUP K1918

7756-008 J19HT7

DATA SHEET

SDG	7756	Client/Case no	Hanford SDG K1918
Contact	N.Joseph Verville	Contract No.	S00WZ35A00
Lab sample id	S001139.08	Client sample id	J19HT7
Dept sample id	7756-008	Location/Matrix	KWIN ICS+11 SOLID
Received	01/28/10	Collected/Weight	01/22/10 14:30 1102 g
% solids	100.0	Custody/SAP No	RC-116-2087 RC-116

4/14/10

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Carbon 14	14762-75-5	1.19	1.4	5.78	50.0	U J	C
Total Strontium	SR-RAD	-0.018	0.15	0.302	1.00	U	SR
Thorium 228	14274-82-9	0.424	0.26	0.313	1.00	J	TH
Thorium 230	14269-63-7	0.228	0.39	0.644	1.00	U	TH
Thorium 232	TH-232	0.326	0.20	0.249	1.00	J	TH
Uranium 233/234	U-233/234	0.275	0.073	0.054	1.00		U
Uranium 235	15117-96-1	0.005	0.029	0.060	1.00	U	U
Uranium 238	U-238	0.263	0.065	0.050	1.00		U
Plutonium 238	13981-16-3	0.053	0.11	0.202	1.00	U	PU
Plutonium 239/240	PU 239/240	0.076	0.051	0.202	1.00	U	PU
Potassium 40	13966-00-2	10.7	0.26	0.123			GAM
Cobalt 60	10198-40-0	U		0.012	0.050	U	GAM
Cesium 137	10045-97-3	0.121	0.015	0.015	0.100		GAM
Radium 226	13982-63-3	0.398	0.022	0.021	0.100		GAM
Radium 228	15262-20-1	0.594	0.049	0.048	0.200		GAM
Europium 152	14683-23-9	U		0.031	0.100	U	GAM
Europium 154	15585-10-1	U		0.041	0.100	U	GAM
Europium 155	14391-16-3	U		0.049	0.100	U	GAM
Thorium 228	14274-82-9	0.590	0.016	0.016			GAM
Thorium 232	TH-232	0.594	0.049	0.048			GAM
Uranium 235	15117-96-1	U		0.107		U	GAM
Uranium 238	U-238	U		1.42		U	GAM
Americium 241	14596-10-2	U		0.079		U	GAM
Beryllium 7	13966-02-4	U		0.093		U	GAM
Ruthenium 106	13967-48-1	U		0.093		U	GAM
Antimony 125	14234-35-6	U		0.025		U	GAM
Cesium 134	13967-70-9	U		0.015		U	GAM

Lab id	EBRLNE
Protocol	Hanford1
Version	Ver 1.0
Form	DVD DS
Version	3.06
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EBERLINE ANALYTICAL/RICHMOND

SAMPLE DELIVERY GROUP K1910

7756-009 J19HT8

DATA SHEET

SDG	7756	Client/Case no	Hanford SDG_K1910
Contact	N.Joseph Verville	Contract	No. 500W235A00
Lab sample id	S001139-09	Client sample id	J19HT8
Dept sample id	7756-009	Location/Matrix	100K T100K1A SOLID
Received	01/28/10	Collected/Weight	01/23/10 16:30 767 g
% solids	100.0	Custody/SAF No	RC-116-2088 RC-116

4/14/10

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Carbon 14	14762-75-5	-0.745	3.4	5.85	50.0	U J	C
Total Strontium	SR-RAD	0.410	0.14	0.199	1.00		SR
Thorium 228	14274-82-9	0.888	0.43	0.324	1.00	J	TH
Thorium 230	14269-63-7	0.422	0.42	0.715	1.00	U	TH
Thorium 232	TH-232	0.928	0.43	0.323	1.00	J	TH
Uranium 233/234	U-233/234	0.496	0.078	0.048	1.00		U
Uranium 235	15117-96-1	0.043	0.029	0.027	1.00		U
Uranium 238	U-238	0.488	0.078	0.040	1.00		U
Plutonium 238	13981-16-3	0.076	0.10	0.251	1.00	U	PU
Plutonium 239/240	PU-239/240	0.079	0.10	0.200	1.00	U	PU
Potassium 40	13966-00-2	14.6	0.43	0.214			GAM
Cobalt 60	10198-40-0	U		0.018	0.050	U	GAM
Cesium 137	10045-97-3	U		0.018	0.100	U	GAM
Radium 226	13982-63-3	0.636	0.041	0.037	0.100		GAM
Radium 228	15262-20-1	1.14	0.076	0.065	0.200		GAM
Europium 152	14683-23-9	U		0.042	0.100	U	GAM
Europium 154	15585-10-1	U		0.063	0.100	U	GAM
Europium 155	14391-16-3	U		0.053	0.100	U	GAM
Thorium 228	14274-82-9	0.972	0.026	0.021			GAM
Thorium 232	TH-232	1.14	0.076	0.065			GAM
Uranium 235	15117-96-1	U		0.140		U	GAM
Uranium 238	U-238	U		3.32		U	GAM
Americium 241	14596-10-2	U		0.043		U	GAM
Beryllium 7	13966-02-4	U		0.141		U	GAM
Ruthenium 106	13967-48-1	U		0.136		U	GAM
Antimony 125	14234-35-6	U		0.046		U	GAM
Cesium 134	13967-70-9	U		0.028		U	GAM

Lab id	EBRLINE
Protocol	Hanford
Version	Ver 1.0
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EBERLINE ANALYTICAL/RICHMOND

SAMPLE DELIVERY GROUP K1918

7756-010 J19JB4

DATA SHEET

SDG 7756	Client/Case no Hanford	SDG K1918	
Contact N.Joseph Verville	Contract No. 300W235A00		
Lab sample id 0001139-10	Client sample id J19JB4		
Dept sample id 7756-010	Location/Matrix 100K T100K3A DUP	SOLID	
Received 01/28/10	Collected/Weight 01/23/10 16:30	2.75 g	
% solids 100.0	Custody/SAF No KC-116-2185	KC-116	

4/14/10

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	MDL pCi/g	QUALI-FIERS	TEST
Carbon 14	14762-75-5	4.24	4.5	6.27	50.0	U J	C
Total Strontium	SR-RAD	0.067	0.16	0.314	1.00	U	SR
Thorium 228	14274-82-9	1.14	0.48	0.362	1.00	J	TH
Thorium 230	14269-63-7	0.754	0.48	0.762	1.00	U	TH
Thorium 232	TH-232	0.049	0.39	0.161	1.00	J	TH
Uranium 233/234	U-233/234	0.664	0.10	0.043	1.00		U
Uranium 235	15117-96-1	0.030	0.025	0.041	1.00	U	U
Uranium 238	U-238	0.629	0.10	0.039	1.00		U
Plutonium 238	13981-16-3	0	0.052	0.198	1.00	U	PU
Plutonium 239/240	PU-239/240	0	0.047	0.198	1.00	U	PU
Potassium 40	13966-00-2	U		38.0		U	GAM
Cobalt 60	10198-40-0	U		2.04	0.050	U	GAM
Cesium 137	10045-97-3	U		2.31	0.100	U	GAM
Radium 226	13982-63-3	U		4.86	0.100	U	GAM
Radium 228	15262-20-1	U		10.0	0.200	U	GAM
Europium 152	14683-23-9	U		6.12	0.100	U	GAM
Europium 154	15585-10-1	U		6.14	0.100	U	GAM
Europium 155	14391-16-3	U		4.64	0.100	U	GAM
Thorium 228	14274-82-9	U		3.50		U	GAM
Thorium 232	TH-232	U		10.0		U	GAM
Uranium 235	15117-96-1	U		10.6		U	GAM
Uranium 238	U-238	U		384		U	GAM
Americium 241	14596-10-2	U		2.41		U	GAM
Beryllium 7	13966-02-4	U		18.1		U	GAM
Ruthenium 106	13967-48-1	U		19.3		U	GAM
Antimony 125	14234-35-6	U		5.13		U	GAM
Cesium 134	13967-70-9	U		2.96		U	GAM

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Lab id EBERLINE
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Version 3.06
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Appendix 4

Laboratory Narrative and Chain-of-Custody Documentation

1.0 GENERAL

Washington Closure Hanford (WCH) Sample Delivery Group K1918 was composed of ten solid (other solid) samples designated under SAF No. RC-116 with a Project Designation of: Columbia River Component of the RCBRA – Sediment.

The samples were received as stated on the Chain-of-Custody documents. Any discrepancies are noted on the Eberline Analytical Sample Receipt Checklist. The results were sent to WCH via e-mail February 12, 2010.

Ms. Joan Kessner requested on February 3, 2010 that sample J19F62 be moved from SDG K1918 to SDG K1908, however, because analysis of sample J19F62 had already commenced by the time the phone call was received, it was decided to designate sample J19F62 with an "-A" and report its results in SDG K1918.

2.0 ANALYSIS NOTES

2.1 Carbon-14 Analysis

No problems were encountered during the course of the analyses.

2.2 Strontium-90 Analysis

No problems were encountered during the course of the analyses.

2.3 Isotopic Thorium Analysis

The Th-229 tracer yield for sample J19HT8 was 25%, less than the control limit of 30%. Due to time constraints, the sample was not reanalyzed. As a consequence of the low yield, the MDA was slightly elevated. No other problems were encountered during the course of the analyses.

2.4 Isotopic Uranium Analysis

No problems were encountered during the course of the reanalyses.

2.5 Isotopic Plutonium Analysis

No problems were encountered during the course of the analyses.

2.6 Gamma Spectroscopy

No problems were encountered during the course of the analyses.

3.0 Case Narrative Certification Statement

"I certify that this data package is in compliance with the SOW, both technically and for completeness, for other than the conditions detailed above. *Release of the data obtained in this hard copy data package has been authorized by the Laboratory Manager or a designee, as verified by the following signature.*"

N. Joseph Verville
Client Services Manager

2/12/10
Date

Washington Closure Hanford	**CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST**	RC-116-2013	Page 1 of 2
Collector R. Cwest	Company Contact JOAN KESSNER Telephone No. 375-4658 K1918	Project Coordinator KESSNER, JH	Price Code 7C Data Turnaround 15 Days
Project Designation Columbia River Component of the RCBRA - Sediment	Sampling Location 100-BC T100BC3C (7756)	SAF No. RC-116	
Ice Chest No. ~~ERC-99-062~~ BHI-40	Field Logbook No. EL-1645-01 COA BESCRC6520	Method of Shipment FED EX	
Shipped To EBERLINE SERVICES RICHMOND 1/20/10	Offsite Property No. N/A	Bill of Lading/Air Bill No. 7983 4000 5929	

POSSIBLE SAMPLE HAZARDS/REMARKS

N/A

Special Handling and/or Storage

N/A

Preservation	None	None	Cool 4C	Cool 4C	None
Type of Container	G/P	G/P	G/P	aG	G/P
No. of Container(s)	1	1	1	1	1
Volume	1500g	10g	15g	15g	1500g
SAMPLE ANALYSIS	See item (1) in Special Instructions	See item (2) in Special Instructions	See item (3) in Special Instructions	TOC - 9060	Particle Size (Dry Sieve) - D422

0000023

Sample No.	Matrix *	Sample Date	Sample Time					
J16F62 - A	OTHER SOLID	01-18-10	1610	X	X			

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
R. Cwest	01-18-10 1822	EAS REF D	01-18-10 1822
EAS REF D	1/20/10 1550	SHANNAN JOHNSON	1/20/10 1550
SHANNAN JOHNSON	1/20/10 1550	~~FEX~~ 1/20/10	
EAS REF D	1/21/10 1330	SHANNAN JOHNSON	1/21/10 1330
SHANNAN JOHNSON	1330	FDX	
	FED EX	TE, [illegible]	01/22/10 0915

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) [Americium-241, Antimony-125, Beryllium-7, Cerium-144, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238]
(2) Strontium-89,90 -- Total Sr, Isotopic Thorium (Thorium-232), Isotopic Uranium (Uranium-233/234, Uranium-235, Uranium-238); Isotopic Plutonium
(3) ICP Metals - 6010 (Full List) {Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc}; Mercury - 7471 - (CV)

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location using custody of samples for shipment to lab.

Matrix *

S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-116-2013 Page 2 of 2

Collector R. Cuest	Company Contact JOAN KESSNER	Telephone No. 375-4658 KF118	Project Coordinator KESSNER, JH
Project Designation Columbia River Component of the RCBRA - Sediment	Sampling Location RO-BE T100 BC 3C (7756)		SAF No. RC-116
Ice Chest No. N/A	Field Logbook No. EL-1645-01	COA HESCRC6520	Method of Shipment FEDEX
Shipped To EBERLINE SERVICES LIONVILLE (RAS)	Offsite Property No. N/A		Bill of Lading/Air Bill No. 7985 4020 5929

Price Code 7C

Data Turnaround 15 Days

POSSIBLE SAMPLE HAZARDS/REMARKS

NA

Special Handling and/or Storage

NA

000024

			Preservation	None	None	Cool 4C	Cool 4C	None	None		
			Type of Container	G/P	G/P	G/P	aG	G/P	P		
			No. of Container(s)	1	1	1	1	1	1		
			Volume	150g	10g	15g	15g	400g	400g		
SAMPLE ANALYSIS				See item (1) in Special Instructions	See item (2) in Special Instructions	See item (3) in Special Instructions	TOC - 415.1	Particle Size (Dry Sieve) D422	RCF SHIPPING SCREEN GEA		
Sample No.	Matrix *	Sample Date	Sample Time							RCF	
J19F62 - A	OTHER SOLID	01-18-10	1610	X	X				Y	E3504	123g

1/20/10

CHAIN OF POSSESSION

Sign/Print Names

Relinquished By/Removed From R. Cuest R. C	Date/Time 01-19-10 1822	Received By/Stored In R. Cuest EAS REF D	Date/Time 01-19-10 1822
Relinquished By/Removed From EAS REF D	Date/Time 1/20/10 1210	Received By/Stored In SHANNAN JOHNSON	Date/Time 1/20/10 1210
Relinquished By/Removed From SHANNAN JOHNSON	Date/Time 1/20/10	Received By/Stored In PEX Shed 10	Date/Time 1/20/10
Relinquished By/Removed From SHANNAN JOHNSON	Date/Time 1/20/10 1220	Received By/Stored In D. Miller RCF	Date/Time 1220 1-20-10
Relinquished By/Removed From [illegible]	Date/Time [illegible]	Received By/Stored In SHANNAN JOHNSON	Date/Time 1/25/10 925
Relinquished By/Removed From SHANNAN JOHNSON	Date/Time 1/25/10 930	Received By/Stored In EAS REF D	Date/Time 1/25/10 935

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) {Americium-241, Antimony-125, Beryllium-7, Cerium-144, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238}

(2) Strontium-89,90 - Total Sr; Isotopic Thorium {Thorium-228, Thorium-230, Thorium-232}; Isotopic Uranium {Uranium-233/234, Uranium-235, Uranium-238}; Isotopic Plutonium

(3) ICP Metals - 6010 (Full List) {Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc}; Mercury - 7471 - (CV)

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab.

Matrix *

[illegible]

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Washington Closure Hanford	**CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST**			RC-116-2027	Page 1 of X 25
Collector R. Curet	Company Contact JOAN KESSNER	Telephone No. 375-4688 K1918	Project Coordinator KESSNER, JH	Price Code 7C	Data Turnaround 1/2/11 15 Days
Project Designation Columbia River Component of the RCBRA - Sediment	Sampling Location 300A-- 33008 (7756)		SAF No. RC-116		
Ice Chest No. ERC-96 0169	Field Logbook No. EL-1645 EL-1645 81	COA DESCRC6520	Method of Shipment FED EX		
Shipped To EBERLINE SERVICES - LIONVILLE	Offsite Property No. N/A		Bill of Lading/Air Bill No. 7983 4000 5815		

POSSIBLE SAMPLE HAZARDS/REMARKS
N/A

Special Handling and/or Storage
N/A

000025

Preservation	None	None	Cool 4C	Cool 4C	Cool 4C	None						
Type of Container	G/P	G/P	G/P	G	aG	G/P						
No. of Container(s)	1	1	1	1	1	1						
Volume	1500g	10g	15g	100g	15g	1000g						
SAMPLE ANALYSIS	See item (1) in Special Instructions	See item (2) in Special Instructions	See item (3) in Special Instructions	See item (4) in Special Instructions	TOC - 415.1	Particle Size (Dry Sieve) - D422						

Sample No.	Matrix *	Sample Date	Sample Time									
J18FB0	OTHER SOLID	1-25-10	17:36	X	X							

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab.

CHAIN OF POSSESSION		**Sign/Print Names**	
Relinquished By/Removed From R. Curet R. C.	Date/Time 01-25-10 1831	Received By/Stored In R. Curet EAS REF D	Date/Time 01-25-10 1831
Relinquished By/Removed From EAS REF D	Date/Time 1/27/10	Received ~~By/Stored In~~ SHANNAN JOHNSON	Date/Time 1/27/10
Relinquished By/Removed From SHANNAN JOHNSON	Date/Time 1/27/10	Received By/Stored In FDX	Date/Time
Relinquished By/Removed From	Date/Time FED EX	Received By/Stored In M. [illegible]	Date/Time [illegible]
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) [Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238]
(2) ~~Strontium-89/90 - Total Sr~~; Isotopic Thorium [Thorium-232]; Isotopic Uranium [Uranium-233/234, Uranium-235, ~~Uranium-238~~]; Isotopic Plutonium
(3) ICP Metals - 6010 (Full List) [Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc]; Mercury - 7471 - (CV)
(4) VOA - 8260A (TCL) [1,1,1-Trichloroethane, 1,1,2,2-Tetrachloroethane, 1,1,2-Trichloroethane, 1,1-Dichloroethane, 1,1-Dichloroethene, 1,2-Dichloroethane, 1,2-Dichloropropane, 2-Butanone, 2-Hexanone, 4-Methyl-2-Pentanone, Acetone, Benzene, Bromodichloromethane, Bromoform, Bromomethane, Carbon disulfide, Carbon tetrachloride, Chlorobenzene, Chloroethane, Chloroform, Chloromethane, cis-1,2-Dichloroethylene, cis-1,3-Dichloropropene, Dibromochloromethane, Ethylbenzene, Methylene chloride, Styrene, Tetrachloroethene, Toluene, [illegible]

Matrix *
[illegible]

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

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Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST		RC-116-2027	Page ~~1~~ of ~~1~~ SJ
Collector R. Curet	Company Contact JOAN KESSNER	Telephone No. 373-4668 K1918	Project Coordinator KESSNER, JH	Price Code 7C	Data Turnaround 1/26/11 15 Days
Project Designation Columbia River Component of the RCBRA - Sediment	Sampling Location 300A - 33008 (7756)		SAF No RC-116	
Ice Chest No. N/A	Field Logbook No. EL-1645 81	COA BESCRC6520	Method of Shipment FED EX	
Shipped To (EBERLINE SERVICES) / LIONVILLE (RAF)	Offsite Property No. N/A		Bill of Lading/Air Bill No. 7988 4000 5815	

POSSIBLE SAMPLE HAZARDS/REMARKS
N/A

Special Handling and/or Storage
N/A

1004126

			Preservation	None	None	Cool 4C	Cool 4C	Cool 4C	None	Done			
			Type of Container	G/P	G/P	G/P	G	aG	G/P	P			
			No. of Container(s)	1	1	1	1	1	1	1			
			Volume	1100g	1/27/10	11g	100g	13g	1000g	1000g			
SAMPLE ANALYSIS				See item (1) in Special Instructions	See item (2) in Special Instructions	See item (3) in Special Instructions	See item (4) in Special Instructions	TOC - 415.1	Particle Size (Dry Sieve) - D422	RCF SHIPPING SCREEN GEA			
Sample No	Matrix *	Sample Date	Sample Time								RCF		
J19F00	OTHER SOLID	1-25-10	17:30	X	X					X	23653	127g	

Sampler unavailable to remove samples from continued storage. Shannan removing samples from storage location taking custody of samples for shipment to lab.

CHAIN OF POSSESSION		Sign/Print Names	
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
R Curet R. Curet	01-25-10 1831	R. Curet R. Curet EAS REF D	01-25-10 1831
EAS REF D SJ	1/26/10 855	SHANNAN JOHNSON	1/26/10 855
SHANNAN JOHNSON	1/26/10 915	RCF	1-26-10 915
RCF	1/27/10 1125	SHANNAN JOHNSON	1/27/10 1125
SHANNAN JOHNSON	1/27/10 1140	ESB RSF # D SJ	1/27/10 1140

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List): Americium-241, Antimony-125, Beryllium-7, Cerium-144, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238)
(2) Strontium-89,90 -- Total Sr, Isotopic Thorium (Thorium-232), Isotopic Uranium (Uranium-233/234, Uranium-235, Uranium-238), Isotopic Plutonium
(3) ICP Metals - 6010 (Full List): Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc), Mercury - 7471 - (CV)
(4) VOA - 8260A (TCL): 1,1,1-Trichloroethane, 1,1,2,2-Tetrachloroethane, 1,1,2-Trichloroethane, 1,1-Dichloroethane, 1,1-Dichloroethene, 1,2-Dichloroethane, 1,2-Dichloropropane, 2-Butanone, 2-Hexanone, 4-Methyl-2-Pentanone, Acetone, Benzene, Bromodichloromethane, Bromoform, Bromomethane, Carbon disulfide, Carbon tetrachloride, Chlorobenzene, Chloroethane, Chloroform, Chloromethane, cis-1,2-Dichloroethylene, cis-1,3-Dichloropropene, Dibromochloromethane, Ethylbenzene, Methylene chloride, Styrene, Tetrachloroethene, Toluene, 1,2-Dichloroethylene

Matrix *

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST		RC-116-1036	Page 1 of 1
Collector Rylie Barton	Company Contact JOAN KESSNER	Telephone No. 373-4631 K1918	Project Coordinator KESSNER, JH	Price Code 7C	Data Turnaround 15 Days
Project Designation Columbia River Component of the RCBRA - Sediment	Sampling Location 300A - T300 STS RUC (9756)		SAF No. RC-116	
Ice Chest No. BHI-94	Field Logbook No. EL-1645	COA B1SCRC6520	Method of Shipment FED EX	
Shipped To EBERLINE SERVICES/LIONVILLE	Offsite Property No. N/A		Bill of Lading/Air Bill No. 7983 4008 5929	

POSSIBLE SAMPLE HAZARDS/REMARKS

N/A

Special Handling and/or Storage

N/A

220000

		Preservation	None	None	Cool 4C	Cool 4C	Cool 4C	None				
		Type of Container	G/P	G/P	G/P	G	aG	G/P				
		No. of Container(s)	1	1	1	1	1	1				
		Volume	1500g	10g	15g	10g	15g	1000g				
SAMPLE ANALYSIS			See item (1) in Special Instructions	See item (2) in Special Instructions	See item (3) in Special Instructions	See item (4) in Special Instructions	TOC - 415.1	Particle Size (Dry Sieve) - D422				
Sample No.	Matrix *	Sample Date	Sample Time									
J19FD1	OTHER SOLID	1-25-10	1515	X	X							

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab

CHAIN OF POSSESSION		Sign/Print Names	
Relinquished By/Removed From R. Barton R-B	Date/Time 1700 1-25-10	Received By/Stored In R. Barton EAS REF 0 RB	Date/Time 1700 1-25-10
Relinquished By/Removed From EAS REF 0 SJ	Date/Time 1/27/10 1330	Received By/Stored In SHANNAN JOHNSON	Date/Time 1/27/10 1330
Relinquished By/Removed From SHANNAN JOHNSON	Date/Time 1/27/10 1330	Received By/Stored In FDX	Date/Time
Relinquished By/Removed From	Date/Time FED EX	Received By/Stored In [illegible]	Date/Time 1/28/10 0935
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) (Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238)
(2) ~~Strontium-90 - Total Sr~~, Isotopic Thorium (Thorium-232), Isotopic Uranium (Uranium-233/234, Uranium-235, Uranium-238), Isotopic Plutonium SJ 1/27/10
(3) ICP Metals - 6010 (Full List) (Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc), Mercury - 7471 - (CV)
(4) VOA - 8260A (TCL) (1,1,1-Trichloroethane, 1,1,2,2-Tetrachloroethane, 1,1,2-Trichloroethane, 1,1-Dichloroethane, 1,1-Dichloroethene, 1,2-Dichloroethane, 1,2-Dichloropropane, 2-Butanone, 2-Hexanone, 4-Methyl-2-Pentanone, Acetone, Benzene, Bromodichloromethane, Bromoform, Bromomethane, Carbon disulfide, Carbon tetrachloride, Chlorobenzene, Chloroethane, Chloroform, Chloromethane, cis-1,2-Dichloroethylene, cis-1,3-Dichloropropene, Dibromochloromethane, Ethylbenzene, Methylene chloride, Styrene, Tetrachloroethene, Toluene, trans-1,2-Dichloroethylene, [illegible]

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-116-2046

Page 1 of 1

Collector Kylie Barron	**Company Contact** JOAN KESSNER	**Telephone No.** 372-4688 K1918	**Project Coordinator** KESSNER, JH
Project Designation Columbia River Component of the RCBRA - Sediment	**Sampling Location** 100H T100H1E (7756)		**SAF No.** RC-116
Ice Chest No. BAI-94	**Field Logbook No.** EL-1645	**COA** RESCRC0520	**Method of Shipment** FED EX
Shipped To [✓ EBERLINE SERVICES] LIONVILLE	**Offsite Property No.** N/A		**Bill of Lading/Air Bill No.** 7983 4000 5929

Price Code 7C

Data Turnaround 15 Days

POSSIBLE SAMPLE HAZARDS/REMARKS

N/A

Special Handling and/or Storage

N/A

Preservation				None	None	Cool 4C	Cool 4C	None			
Type of Container				G/P	G/P	G/P	aG	G/P			
No. of Container(s)				1	1	1	1	1			
Volume				1500g	10g	15g	15g	1000g			
SAMPLE ANALYSIS				See item (1) in Special Instructions	See item (2) in Special Instructions	See item (3) in Special Instructions	TOC - 415.2	Particle Size (Dry Sieve) D422			
Sample No	**Matrix ***	**Sample Date**	**Sample Time**								
J19FJ2	OTHER SOLID	1-24-10	1500	X	X						

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
R. Barron RB	1-24-10 1630	R. Barron EAS Ref D RB	1630 1-24-10
EAS REF D	[illegible] 1348	SHANNAN JOHNSON	[illegible]
~~SHANNAN JOHNSON~~	1/27/10 [illegible]	FDX	
FED EX		M. [illegible]	01/28/10 [illegible]

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) {Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238}

(2) Strontium-89,90 – Total Sr; Isotopic Thorium {Thorium-232}; Isotopic Uranium {Uranium-233/234, Uranium-235, Uranium-238}; Isotopic Plutonium

(3) ICP Metals - 6010 (Full List) {Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc}; Mercury - 7471 - (CV)

[illegible]

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab.

Matrix *

S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Washington Closure Hanford	**CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST**	RC-116-2047	Page 1 of ~~X~~ 25 1/25/10
Collector R. Carret	Company Contact JOAN KESSNER Telephone No. 375-4688 K1918	Project Coordinator KESSNER, JH	Price Code 7C Data Turnaround 15 Days
Project Designation Columbia River Component of the RCBRA - Sediment	Sampling Location 100H T100H1A (7756)	SAF No. RC-116	
Ice Chest No. BHF-94	Field Logbook No. EL-1645-01 COA DESCRC6520	Method of Shipment FED EX	
Shipped To EBERLINE SERVICES RICHMOND	Offsite Property No. N/A	Bill of Lading/Air Bill No. 7985 4000 5929	

POSSIBLE SAMPLE HAZARDS/REMARKS
N/A

Special Handling and/or Storage
N/A

000029

Preservation	None	None	Cool 4C	Cool 4C	None
Type of Container	G/P	G/P	G/P	aG	G/P
No. of Container(s)	1	1	1	1	1
Volume	1500g	10g	15g	15g	1000g
SAMPLE ANALYSIS	See item (1) in Special Instructions	See item (2) in Special Instructions	See item (3) in Special Instructions	TOC - 415.1	Particle Size (Dry Sieve) D422

Sample No.	Matrix *	Sample Date	Sample Time					
J19FJ3	OTHER SOLID	01-24-10	1550	X	X			

CHAIN OF POSSESSION	Date/Time	Sign/Print Names	Date/Time
Relinquished By/Removed From Robert R. Carret	01-24-10 1701	Received By/Stored In EAS REF D	01-24-10 1701
Relinquished By/Removed From EAS REF D	1/27/10 1238	Received By/Stored In SHANNAN JOHNSON	1/27/10 1238
Relinquished By/Removed From SHANNAN JOHNSON	1/27/10 1330	Received By/Stored In FDX	
Relinquished By/Removed From	FEDEX	Received By/Stored In	01/28/10 915
Relinquished By/Removed From		Received By/Stored In	
Relinquished By/Removed From		Received By/Stored In	

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) {Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238}
(2) Strontium-89,90 -- Total Sr; Isotopic Thorium {Thorium-232}; Isotopic Uranium {Uranium-233/234, Uranium-235, Uranium-238}; Isotopic Plutonium
(3) ICP Metals - 6010 (Full List) {Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc}; Mercury - 7471 - (CV)

Sampler unavailable to retrieve samples
from controlled storage. Shipper removed
samples from storage location using custody
& samples for shipment to lab

Matrix *
[illegible]

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-116-2047 Page ~~1~~ 2 of 2

Collector R. Scarcet	Company Contact JOAN KESSNER	Telephone No. 375-4681 K191A	Project Coordinator KESSNER, JH
Project Designation Columbia River Component of the RCBRA - Sediment	Sampling Location 100H F100H1A (7756)		SAF No. RC-116
Ice Chest No. N/A	Field Logbook No. EL-1645-01	COA BESCRC6550	Method of Shipment FEDEX
Shipped To EBERLINE SERVICES RCP LIONVILLE	Offsite Property No. N/A		Bill of Lading/Air Bill No. 7983 40025939

Price Code 7C

Data Turnaround 15 Days

POSSIBLE SAMPLE HAZARDS/REMARKS

NA

Special Handling and/or Storage

NA

Preservation	None	None	Cool 4C	Cool 4C	None	NONE
Type of Container	G/P	G/P	G/P	aG	G/P	P
No. of Container(s)	1		1	1	1	1
Volume	1500g	10g	15g	15g	1000g	40g
SAMPLE ANALYSIS	See item (1) in Special Instructions	See item (2) in Special Instructions	See item (3) in Special Instructions	TOC - 415	Particle Size (Dry Sieve) - D422	RCP SHIPPING SCREEN GEA

Sample No.	Matrix *	Sample Date	Sample Time							RCF	
J19FJ3	OTHER SOLID	01-24-10	1550	X	X				X	2753	142g

000030

CHAIN OF POSSESSION	Date/Time	Sign/Print Names	Date/Time
Relinquished By/Removed From R. Scarcet R. Scarcet	01-24-10 1701	Received By/Stored In R. Scarcet EAS REF D	01-24-10 1701
Relinquished By/Removed From EAS REF D SJ	1/25/10 1330	Received By/Stored In SHANNAN JOHNSON	1/25/10 1330
Relinquished By/Removed From SHANNAN JOHNSON	1/25/10	Received By/Stored In	0835 1-26-10
Relinquished By/Removed From		Received By/Stored In SHANNAN JOHNSON	1/26/10 0930
Relinquished By/Removed From SHANNAN JOHNSON	1/26/10	Received By/Stored In EAS REF D	1/26/10 0940
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) {Americium-241, Antimony-125, Beryllium-7, Cerium-144, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238};
(2) Strontium-89/90 - Total Sr; Isotopic Thorium {Thorium-232}; Isotopic Uranium {Uranium-233/234, Uranium-235, Uranium-238}; Isotopic Plutonium
(3) ICP Metals - 6010 (Full List) {Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc}; Mercury - 7471 - (CV)

Sampler shall take custody of samples from controlled storage. Sampler removed samples from storage location taking custody of samples for shipment to lab

Matrix *

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH EE-011

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-116-2073 Page 1 of 1

Collector Rylie Barron

Company Contact JOAN KESSNER

Telephone No. 375-4688 K1918

Project Coordinator KESSNER, JH

Price Code 7C

Data Turnaround 15 Days

Project Designation Columbia River Component of the RCBRA - Sediment

Sampling Location 300A-- T300 SIS (7756)

SAF No. RC-116

Ice Chest No. BHI-94

Field Logbook No. EL-1645

COA DESCRC6520

Method of Shipment FEDEX

Shipped To [✓ EBERLINE SERVICES] LIONVILLE

Offsite Property No. N/A

Bill of Lading/Air Bill No. 7983 4002 5929

POSSIBLE SAMPLE HAZARDS/REMARKS

N/A

Special Handling and/or Storage

N/A

Preservation	None	None	Cool 4C	Cool 4C	Cool 4C	None
Type of Container	G/P	G/P	G/P	G	aG	G/P
No. of Container(s)	1	1	1	1	1	1
Volume	1500g	10g	250g	250g	125g	1000g
SAMPLE ANALYSIS	See item (1) in Special Instructions	See item (2) in Special Instructions	See item (3) in Special Instructions	See item (4) in Special Instructions	TOC - 415.1	Particle Size (Dry Sieve) - D422

Sample No.	Matrix *	Sample Date	Sample Time						
J19H29	OTHER SOLID	1-25-10	1500	X	X				

Sampler unavailable to remove samples from [illegible] storage. Shipper removed samples from storage location using custody - [illegible] samples for shipment to lab

CHAIN OF POSSESSION Sign/Print Names

Relinquished By/Removed From R. Barron R.B.	Date/Time 1-25-10 1700	Received By/Stored In R. Barron EAS REF D R.B.	Date/Time 1-25-10 1700
Relinquished By/Removed From EAS REF D	Date/Time 1/27/10 1530	Received By/Stored In SHANNAN JOHNSON	Date/Time 1/27/10 1530
Relinquished By/Removed From SHANNAN JOHNSON	Date/Time 1/27/10 1530	Received By/Stored In FDX	Date/Time
Relinquished By/Removed From	Date/Time FedEx	Received By/Stored In [illegible]	Date/Time 01/28/10 0915
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) (Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238); [illegible]
(2) ~~[illegible]~~ Isotopic Thorium (Thorium-232), Isotopic Uranium (Uranium-233/234, Uranium-235, Uranium-238); Isotopic Plutonium
(3) ICP Metals - 6010 (Full List) (Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium Tin, Uranium, Vanadium, Zinc); Mercury - 7471 - (CV)
(4) VOA - 8260A (TCL) (1,1,1-Trichloroethane, 1,1,2,2-Tetrachloroethane, 1,1,2-Trichloroethane, 1,1-Dichloroethane, 1,1-Dichloroethene, 1,2-Dichloroethane, 1,2-Dichloropropane, 2-Butanone, 2-Hexanone, 4-Methyl-2-Pentanone, Acetone, Benzene, Bromodichloromethane, Bromoform, Bromomethane, Carbon disulfide, Carbon tetrachloride, Chlorobenzene, Chloroethane, Chloroform, Chloromethane, cis-1,2-Dichloroethylene, cis-1,3-Dichloropropene, Dibromochloromethane, Ethylbenzene, Methylene chloride, Styrene, Tetrachloroethene, Toluene, trans-1,2-Dichloroethylene

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

E000031

Washington Closure Hanford	**CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST**			RC-116-2086	Page 1 of 1
Collector Rylie Barton	Company Contact JOAN KESSNER K1918	Telephone No. 375-4688 (7756)	Project Coordinator KESSNER, JH	Price Code 7C	Data Turnaround 15 Days
Project Designation Columbia River Component of the RCBRA - Sediment	Sampling Location ~~100-K~~ 100 H J100H/E DUP RB 1-24-10		SAF No. RC-116		
Ice Chest No. ERC-96-069	Field Logbook No. EL-1645	COA 8ESCHC6510	Method of Shipment FED EX		
Shipped To EBERLINE SERVICES LIONVILLE	Offsite Property No. N/A		Bill of Lading/Air Bill No. 7983 4000 5515		

POSSIBLE SAMPLE HAZARDS/REMARKS

N/A

Special Handling and/or Storage

N/A

000003

Preservation	None	Cool 4C	Cool 4C	None	None	None
Type of Container	G/P	G/P	aG	G/P	G/P	G/P
No. of Container(s)	1	1	1	~~1~~ 2 [illegible] 1/26/10	1	1
Volume	1500g	250g	125g	~~100 g~~	~~10 g~~	1000g
SAMPLE ANALYSIS	See item (1) in Special Instructions	See item (2) in Special Instructions	TOC - 415.1	Carbon-14	See item (3) in Special Instructions	Particle Size (Dry Sieve) - D422

Sample No.	Matrix *	Sample Date	Sample Time						
J19HT8	OTHER SOLID	1-24-10	1515	X			X	X	

CHAIN OF POSSESSION	Date/Time	Sign/Print Names Received By/Stored In	Date/Time
Relinquished By/Removed From R. Barton RR	1700 1-24-10	Received By/Stored In R. Barton EAS CEF D RR	1700 1-24-10
Relinquished By/Removed From EAS CEF D	1/27/10	Received By/Stored In SHANNAN JOHNSON	1/27/10
Relinquished By/Removed From SHANNAN JOHNSON	1/27/10	Received By/Stored In FDX	Date/Time
Relinquished By/Removed From FDX	Date/Time	Received By/Stored In H. [illegible]	1/28/10 0915
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) (Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238)
(2) ICP Metals - 6010 (Full List) (Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc); Mercury - 7471 - (CV)
(3) Strontium-89,90 -- Total Sr, Isotopic Thorium, Isotopic Uranium, Isotopic Plutonium

Samples stored taken at [illegible] from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-116-2087 | Page 1 of 1

Collector: Rylie Baron

Contact: JOAN KESSNER

Telephone No.: 375-4688

K1918

Project Coordinator: KESSNER, JH

Price Code: 7C

Data Turnaround: 15 Days

Project Designation: Columbia River Component of the RCBRA - Sediment

Sampling Location: 100K - PW N. 7E5+1 (7756)

SAF No.: RC-116

Ice Chest No.: PRI-94

Field Logbook No.: EL-1645

COA: RESCNC6520

Method of Shipment: FED EX

Shipped To: EBERLINE SERVICES / RICHMOND / OAKVILLE

Offsite Property No.: N/A

Bill of Lading/Air Bill No.: 7983 40005929

POSSIBLE SAMPLE HAZARDS/REMARKS
N/A

Special Handling and/or Storage
N/A

Preservation	None	Cool 4C	Cool 4C	None	None	None
Type of Container	G/P	G/P	aG	G/P	G/P	G/P
No. of Container(s)	1	1	1	1	1	1
Volume	1500g	250g	125g	100g	10g	1000g
SAMPLE ANALYSIS	See item (1) in Special Instructions	See item (2) in Special Instructions	TOC - 9060	Carbon 14	See item (3) in Special Instructions	Particle Size (Dry Sieve) - D421

11/12 12-6-10

000033

Sample No.	Matrix *	Sample Date	Sample Time						
J19HT7	OTHER SOLID	1-22-10	1430	X			X	X	

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
K.Baron	1-22-10 1731	R. Baron EAS Ref D	1-22-10 1731
EAS REF D	2/2/10 1330	SHANNAN JOHNSON	2/2/10 1330
SHANNAN JOHNSON	2/2/10 1330	FOX	
FOX			0915

SPECIAL INSTRUCTIONS

(1) Gamma Spec - 901.1 (add.) [Americium-241, Antimony-125, Beryllium-7, Cerium-144, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238]

(2) ICP Metals - 6010 (Full List) (Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc); Mercury - 7471 (CV)

(3) Strontium-89,90 - Total Sr; Isotopic Thorium, Isotopic Uranium, Isotopic Plutonium

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab.

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION — Received By: | Title | Date/Time

FINAL SAMPLE DISPOSITION — Disposal Method | Disposed By | Date/Time

WCH-EE-011

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-116-2088

Page 1 of 1

Collector: Rylie Barron	Company Contact: JOAN KESSNER Telephone No.: 375-4688 K1918	Project Coordinator: KESSNER, JH	Price Code: 7C Data Turnaround: 15 Days
Project Designation: Columbia River Component of the RCBRA - Sediment	Sampling Location: 100 K H00K3K (7756)	SAF No.: RC-116	
Ice Chest No.: BHI-94	Field Logbook No.: EL-1645 COA: DESC RC6520	Method of Shipment: FED EX	
Shipped To: [✓ EBERLINE SERVICES] LIONVILLE	Offsite Property No.: N/A	Bill of Lading/Air Bill No.: 7983 4000 5929	

POSSIBLE SAMPLE HAZARDS/REMARKS

N/A

Special Handling and/or Storage

N/A

0000384

Preservation	None	Cool 4C	Cool 4C	None	None	None
Type of Container	G/P	G/P	aG	G/P	G/P	G/P
No. of Container(s)	1	1	1	1	1	1
Volume	1500g	250g	125g	~~100g~~ 40 J/26/10	~~10g~~ 40 J/26/10	1000g
SAMPLE ANALYSIS	See item (1) in Special Instructions	See item (2) in Special Instructions	TOC - 415.1	Carbon-14	See item (3) in Special Instructions	Particle Size (Dry Sieve) - D422

Sample No.	Matrix *	Sample Date	Sample Time						
J19HTB	OTHER SOLID	1-23-10	1630	X			X	X	

CHAIN OF POSSESSION	Date/Time	Sign/Print Names	Date/Time
Relinquished By/Removed From: R. Barron R.B.	1-27-10 1830	Received By/Stored In: EAS REF D R.B.	1-27-10 1830
Relinquished By/Removed From: EAS REF D SJ	1/28/10	Received By/Stored In: SHANNAN JOHNSON	1/28/10
Relinquished By/Removed From: SHANNAN JOHNSON	1/28/10 1530	Received By/Stored In: FOL	Date/Time
Relinquished By/Removed From: Fed EX	Date/Time	Received By/Stored In: TF LATA	01/29/10 @ 0915
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) (Americium-241, Antimony-125, Beryllium-7, Cerium-144, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238)
(2) ICP Metals - 6010 (Full List) (Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc); Mercury - 7471 - (CV)
(3) Strontium-89,90 – Total Sr, Isotopic Thorium, Isotopic Uranium, Isotopic Plutonium

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location using [illegible] for shipment to lab.

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

2123 1/22/10

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-116-2086 Page 1 of 1

Collector: Kylie Barron

Company Contact: JOAN KESSNER

Telephone No.: 375-4618 K1918

Project Coordinator: KESSNER, JH

Price Code: 7C

Data Turnaround: 15 Days

Project Designation: Columbia River Component of the RCBRA - Sediment

Sampling Location: 100 K T100KS3A DUP (7756)

SAF No.: RC-116

Ice Chest No.: BHI-94

Field Logbook No.: EL-1645

COA: HFSCRC6520

Method of Shipment: FED EX

Shipped To: (EBERLINE SERVICES) LIONVILLE

Offsite Property No.: N/A

Bill of Lading/Air Bill No.: 7983 4000 5929

POSSIBLE SAMPLE HAZARDS/REMARKS

N/A

Special Handling and/or Storage

N/A

000035

Preservation	None	Cool 4C	Cool 4C	None	None	None
Type of Container	G/P [illegible]	G/P	aG	G/P	G/P [illegible]	G/P
No. of Container(s)	[illegible]	1	1	1 [illegible]	[illegible]	1
Volume	1500g	250g	125g	100 g	10 g	1000g
SAMPLE ANALYSIS	See item (1) in Special Instructions	See item (2) in Special Instructions	TOC - 415.1	Carbon-14	See item (3) in Special Instructions	Particle Size (Dry Sieve) D422

Sample No.	Matrix *	Sample Date	Sample Time						
~~[illegible]~~ 1/22/10 J19JB4	OTHER SOLID	1-23-10	1630	X			X	X	

CHAIN OF POSSESSION Sign/Print Names

Relinquished By/Removed From: K. Barron R-12	Date/Time: 1-23-10 1930	Received By/Stored In: R. [illegible] EAS REF D R-12	Date/Time: 1-23-10 1930
Relinquished By/Removed From: EAS REF D 8	Date/Time: 1/23/10 1330	Received By/Stored In: SHANNAN JOHNSON	Date/Time: 1/27/10 1330
Relinquished By/Removed From: SHANNAN JOHNSON	Date/Time: 1/27/10 1330	Received By/Stored In: FDX	Date/Time:
Relinquished By/Removed From:	Date/Time: FED EX	Received By/Stored In: M. [illegible]	Date/Time: 01/28/10 0915
Relinquished By/Removed From:	Date/Time:	Received By/Stored In:	Date/Time:
Relinquished By/Removed From:	Date/Time:	Received By/Stored In:	Date/Time:

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) (Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238)
(2) ICP Metals - 6010 (Full List) (Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc), Mercury - 7471 - (CV)
(3) Strontium-89,90 -- Total Sr, Isotopic Thorium, Isotopic Uranium, Isotopic Plutonium

Sampler unavailable to remove samples [illegible] controlled storage. Shipper removed samples from storage location taking custody [illegible] samples for shipment to lab.

Matrix * [illegible]

LABORATORY SECTION | Received By | Title | Date/Time

FINAL SAMPLE DISPOSITION | Disposal Method | Disposed By | Date/Time

WCH-EE-011

Appendix 5

Data Validation Supporting Documentation

APPENDIX A

RADIOCHEMICAL DATA VALIDATION CHECKLIST

VALIDATION LEVEL:	A	B	[✓ C]	D	E

PROJECT: Rcrbt

DATA PACKAGE: K1918

VALIDATOR: ELR

LAB: EA

DATE: 4/10/10

SDG: K1518

ANALYSES PERFORMED

☐ GPC Alpha/Beta ☐ Total Uranium	☒ Strontium-90 ☐ Radium-226	☐ Isotopic Uranium ☐ Tritium	☒ Alpha Spectroscopy X-C-714	☒ Gamma Spectroscopy

SAMPLES/MATRIX

J19F62-A J19F63 J19FD1 J19PJ2 J19PJ3
J19H17 J19H76 J19H77 J19H78 J19J04

Soil

1. Completeness .... ☐ N/A

Technical verification forms present? .... Yes [✓ No] N/A

Comments:

2. Initial Calibration (Levels D, E) .... ☒ N/A

Instruments/detectors calibrated? .... Yes No N/A

Initial calibration acceptable? .... Yes No N/A

Standards NIST traceable? .... Yes No N/A

Standards Expired? .... Yes No N/A

Calculation check acceptable? .... Yes No N/A

Comments:

3. Continuing Calibration (Levels D, E) ☒ N/A

Calibration checked within required frequency? .... Yes No N/A

Calibration check acceptable? .... Yes No N/A

Calibration check standards traceable? .... Yes No N/A

Calibration check standards expired? .... Yes No N/A

Calculation check acceptable? .... Yes No N/A

Comments:

4. Background Counts (Levels D, E) .... ☒ N/A

Background Counts checked within required frequency? .... Yes No N/A

Background Counts acceptable? .... Yes No N/A

Calculation check acceptable? .... Yes No N/A

Comments:

5. Blanks (Levels B, C, D, E) ☐ N/A

Method blank analyzed within required frequency? [✓ Yes] No N/A

Method blank results acceptable? [✓ Yes] No N/A

Analytes detected in method blank? Yes [✓ No] N/A

Field blank(s) analyzed? Yes [✓ No] N/A

Field blank results acceptable? Yes No [✓ N/A]

Analytes detected in field blank(s)? Yes No [✓ N/A]

Transcription/Calculation Errors? (Levels D, E) Yes No [✓ N/A]

Comments: (8 cm RaLs)

no FB

6. Laboratory Control Samples or Blank Spike Samples (Levels C, D, E) ☐ N/A

LCS/BSS analyzed within required frequency? [✓ Yes] No N/A

LCS/BSS recoveries acceptable? [✓ Yes] No N/A

LCS/BSS traceable? (Levels D,E) Yes No [✓ N/A]

LCS/BSS expired? (Levels D,E) Yes No [✓ N/A]

LCS/BSS levels correct? (Levels D,E) Yes No [✓ N/A]

Transcription/Calculation Errors? (Levels D, E) Yes No [✓ N/A]

Comments: No th 228 or th 232 (cspec) LCS - Jeff

7. Chemical Carrier Recovery (Levels C, D, E) ☒ N/A

Chemical carrier added? Yes No N/A

Chemical recovery acceptable? Yes No N/A

Chemical carrier traceable? (Levels D, E) Yes No N/A

Chemical carrier expired? (Levels D, E) .... Yes No N/A

Transcription/Calculation errors? (Levels D, E) .... Yes No N/A

Comments:

8. Tracer Recovery (Levels C, D, E) .... ☐ N/A

Tracer added? .... [✓ Yes] No N/A

Tracer recovery acceptable? .... [✓ Yes] No N/A

Tracer traceable? (Levels D, E) .... Yes No [✓ N/A]

Tracer expired? (Levels D, E) .... Yes No [✓ N/A]

Transcription/Calculation errors? (Levels D, E) .... Yes No [✓ N/A]

Comments:

9. Matrix Spikes (Levels C, D, E) .... ☐ N/A

Matrix spike analyzed? .... Yes [✓ No] N/A

Spike recoveries acceptable? .... Yes No [✓ N/A]

Spike source traceable? (Levels D, E) .... Yes No [✓ N/A]

Spike source expired? Levels D, E) .... Yes No [✓ N/A]

Transcription/Calculation Errors? (Levels D, E) .... Yes No [✓ N/A]

Comments: NO C-14 MS - J all

10. Duplicates (Levels C, D, E) ☐ N/A

Duplicates Analyzed at required frequency? [✓ Yes] No N/A

RPD Values Acceptable? [✓ Yes] No N/A

Transcription/Calculation Errors? (Levels D, E) Yes No [✓ N/A]

Comments:

11. Field QC Samples (Levels C, D E) ☐ N/A

Field duplicate sample(s) analyzed? Yes [✓ No] N/A

Field duplicate RPD values acceptable? Yes No [✓ N/A]

Field split sample(s) analyzed? Yes [✓ No] N/A

Field split RPD values acceptable? Yes No [✓ N/A]

Performance audit sample(s) analyzed? Yes [✓ No] N/A

Performance audit sample results acceptable? Yes No [✓ N/A]

Comments: No field QC

12. Holding Times (All levels)

Are sample holding times acceptable? [✓ Yes] No N/A

Comments:

13. Results and Detection Limits (All Levels).. ☐ N/A

Results reported for all required sample analyses?.................................... [✓ Yes] No N/A

Results supported in raw data?(Levels D, E).. Yes No [✓ N/A]

Results Acceptable? (Levels D, E) .... Yes No [✓ N/A]

Transcription/Calculation errors? (Levels D, E).. Yes No [✓ N/A]

MDA's meet required detection limits? .... Yes [✓ No] N/A

Transcription/calculation errors? (Levels D, E).. Yes No [✓ N/A]

Comments: 15 out

Appendix 6

Additional Documentation Requested by Client

E B E R L I N E   A N A L Y T I C A L / R I C H M O N D

SAMPLE DELIVERY GROUP K1918

7756-012 Method Blank

M E T H O D   B L A N K

SDG	7756	Client/Case no	Hanford SDG K1918
Contact	N. Joseph Verville	Contract	No. 800W235A00
Lab sample id	8001130 12	Client sample id	Method Blank
Dept sample id	7756-012	Material/Matrix	SOLID
		SAF No	RC-116

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Carbon 14	14762 75-5	0.066	4.0	6.76	50.0	U	C
Total Strontium	SR-RAD	-0.001	0.13	0.270	1.00	U	SR
Thorium 228	14274-82-9	[illegible]	[illegible]	[illegible]	1.00	U	TH
Thorium 230	14269-63 7	0.263	0.33	0.651	1.00	U	TH
Thorium 232	TH-232	0.033	0.066	0.252	1.00	U	TH
Uranium 233/234	U-233/234	-0.010	0.019	0.052	1.00	U	U
Uranium 235	15117 96-1	0.008	0.015	0.030	1.00	U	U
Uranium 238	U-238	0.006	0.013	0.024	1.00	U	U
Plutonium 238	13981 16-3	0.020	0.040	0.153	1.00	U	PU
Plutonium 239/240	PU-239/240	0	0.040	0.151	1.00	U	PU
Potassium 40	13966-00-2	U		0.808		U	GAM
Cobalt 60	10198 40-0	U		0.074	0.050	U	GAM
Cesium 137	10045-97-3	U		0.065	0.100	U	GAM
Radium 226	13982-63-3	U		0.147	0.100	U	GAM
Radium 228	15262 20-1	U		0.298	0.200	U	GAM
Europium 152	14683-23-9	U		0.191	0.100	U	GAM
Europium 154	15585-10-1	U		0.234	0.100	U	GAM
Europium 155	14391-16-3	U		0.139	0.100	U	GAM
Thorium 228	14274 82-9	U		0.110		U	GAM
Thorium 232	TH-232	U		0.298		U	GAM
Uranium 235	15117-96-1	U		0.320		U	GAM
Uranium 238	U 238	U		2.10		U	GAM
Americium 241	14596-10-2	U		0.078		U	GAM
Beryllium 7	13966-02-4	U		0.521		U	GAM
Ruthenium 106	13967-48 1	U		0.604		U	GAM
Antimony 125	14234-35 6	U		0.149		U	GAM
Cesium 134	13967-70-9	U		0.100		U	GAM

METHOD BLANKS
Page 1
SUMMARY DATA SECTION
Page 9

Lab id EBERLNE
Protocol Hanford3
Version Ver 1.0
Form DVD.05
Version 1.06
Report date 08/12/10

EBERLINE ANALYTICAL/RICHMOND

SAMPLE DELIVERY GROUP REPORT

[illegible] Lab Control Sample

LAB CONTROL SAMPLE

SDG	7756	Client/Case No	Hanford [illegible]
Contact	N. Joseph Verville	Contract No	[illegible]
Lab Sample ID	[illegible]	Client Sample ID	Lab Control Sample
Dept Sample ID	[illegible]	Material/Matrix	SOIL
		SAF No	[illegible]

ANALYTE	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALIFIERS	TEST	ADDED pCi/g	2σ ERR pCi/g	REC %	3σ LMTS (TOTAL)	PROTOCOL LIMITS
Carbon 14	1160	64	14.[illegible]	50.0		C	1190	119	98	84-116	80-120
Total Strontium	10.0	0.66	0.711	1.00		SR	9.85	0.19	102	91-115	80-120
Thorium 230	22.6	1.0	0.046	1.00		TH	22.[illegible]	0.91	100	76-124	80-120
Uranium 233/234	9.51	0.44	0.222	1.00		U	9.66	0.39	98	85-115	80-120
Uranium 235	2.76	0.40	0.029	1.00		U	2.44	[illegible]	99	85-115	80-120
Uranium 238	9.81	0.46	0.211	1.00		U	10.5	0.42	94	86-114	80-120
Plutonium 238	[illegible]	1.1	0.148	1.00		PU	21.9	0.56	[illegible]	85-115	80-120
Plutonium 239/240	11.5	1.5	0.145	1.00		PU	[illegible]	0.61	85	83-117	80-120
Cobalt 60	2.15	0.22	[illegible]	0.050		GAM	1.26	0.11	95	85-115	80-120
Cesium 137	1.00	0.22	[illegible]	0.050		GAM	1.18	0.14	91	86-114	80-120

QC LCS [illegible]

LAB CONTROL SAMPLES
Page 1
SUMMARY DATA SECTION
Page [illegible]

Lab id	COMLAB
Protocol	Hanford
Version	Ver 1.0
Form	[illegible]
Version	[illegible]
Report date	[illegible]

EBERLINE ANALYTICAL/RICHMOND

SAMPLE DELIVERY GROUP [illegible]

7756-014

[illegible]

DUPLICATE

SDG 7756

Contact [illegible]

DUPLICATE

Lab sample id [illegible]

Dept sample id 7756-014

% solids 100.0

ORIGINAL

Lab sample id [illegible]

Dept sample id 7756-002

Received 01/28/10

% solids 100.0

Client/Case no Hanford [illegible] SDG [illegible]

Contract No [illegible]

Client sample id [illegible]

Location/Matrix [illegible] SOLID

Collected/Weight [illegible]

Custody/SAF No [illegible]

ANALYTE	DUPLICATE pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALIFIERS	TEST	ORIGINAL pCi/g	2σ ERR (COUNT)	MDA pCi/g	QUALIFIERS	RPD %	3σ TOT	DER σ
Carbon 14	1.47	2.4	5.10	50.0	U	[illegible]	-0.745	3.4	5.05	U	-		0.1
Total Strontium	0.213	0.16	0.256	1.00		SR	0.410	0.21	0.199		27	65	0.5
Thorium 228	1.04	0.44	0.416	1.00		TH	0.800	0.41	0.524		26	17	0.5
Thorium 230	0.475	0.52	0.764	1.00	U	TH	0.422	0.42	0.725	U			0.2
Thorium 232	1.00	0.44	0.110	1.00		TH	0.928	0.44	0.123		15	91	0.5
Uranium 233/234	0.500	0.061	0.039	1.00		U	0.496	0.070	0.040		-	50	0.1
Uranium 235	0.011	0.021	0.042	1.00	U	U	0.043	0.029	0.027		118	282	1.7
Uranium 238	0.499	0.062	0.010	1.00		U	0.499	0.078	0.040		0	18	0.1
Plutonium 238	0	[illegible]	0.196	1.00	U	PU	0.026	[illegible]	0.251	U			0.5
Plutonium 239/240	0.077	0.10	0.196	1.00	U	PU	-0.079	[illegible]	0.200	U	-		0
Potassium 40	14.7	1.41	0.390			GAM	14.6	2.41	0.214		0	16	0
Cobalt 60	0		0.020	0.050	U	GAM	0		0.050	U			0.1
Cesium 137	0		0.019	0.100	U	GAM	0		0.018	U	-		0.1
Radium 226	0.454	0.042	0.018	0.100		GAM	0.414	0.041	0.037		1	20	0.4
Radium 228	1.15	0.077	0.090	0.200		GAM	1.14	0.076	0.065		1	22	0.4
Europium 152	0		0.045	0.100	U	GAM	0		0.048	U	-		0.1
Europium 154	0		0.067	0.100	U	GAM	0		0.064	U			0.1
Europium 155	0		0.054	0.100	U	GAM	0		0.051	U	-		0
Thorium 228	0.900	0.027	0.022			GAM	0.922	0.026	0.021		1	16	0.4
Thorium 232	1.15	0.077	0.090			GAM	1.14	0.076	0.065		1	22	0.4
Uranium 235	0		0.134		U	GAM	0		0.140	U	-		0.1
Uranium 238	0		2.36		U	GAM	0		2.32	U			0.5
Americium 241	0		0.015		U	GAM	0		0.013	U	-		0.1
Beryllium 7	0		0.148		U	GAM	0		0.145	U	-		0.1
Ruthenium 106	0		0.155		U	GAM	0		0.148	U			0.1
Antimony 125	0		0.038		U	GAM	0		0.036	U			[illegible]
Cesium 134	0		0.025		U	GAM	0		0.020	U			[illegible]

Lab id [illegible]

Protocol HANFORD

Version Ver 1.0

Form DVD DUP

Version 3.06

Report date [illegible]

DUPLICATE

PAGE 1

SUMMARY DATA SECTION

PAGE 17

Date	16 April 2010
To:	Washington Closure Hanford Inc. (technical representative)
From:	ELR Consulting
Project:	Columbia River Component of the RCBRA – Sediment
Subject:	Metals - Data Package No. K1918-LLI

INTRODUCTION

This memo presents the results of data validation on Data Package No. K1918 prepared by Lionville Laboratories Inc. (LLI). A list of samples validated along with the analyses reported and the method of analysis is provided in the following table.

Sample ID	Sample Date	Media	Validation	Date
J19FD1	1/25/10	Solid	C	See note 1
J19FB0	1/25/10	Solid	C	See note 1
J19FW9	1/25/10	Solid	C	See note 1
J19FJ2	1/24/10	Solid	C	See note 1
J19FJ3	1/24/10	Solid	C	See note 1
J19H28	1/25/10	Solid	C	See note 1
J19HT6	1/24/10	Solid	C	See note 1
J19HT7	1/22/10	Solid	C	See note 1
J19HT8	1/23/10	Solid	C	See note 1
J19FX0	1/25/10	Solid	C	See note 1

1 - ICP metals by 6010B and mercury by 7471A

Data validation was conducted in accordance with the Washington Closure Hanford (WCH) validation statement of work and the Remedial Investigation Work Plan for Hanford Site Releases to the Columbia River (DOE/RL-2008-11, Rev. 0, September 2008). Appendices 1 through 6 provide the following information as indicated below:

Appendix 1. Glossary of Data Reporting Qualifiers
Appendix 2. Summary of Data Qualification
Appendix 3. Qualified Data Summary and Annotated Laboratory Reports
Appendix 4. Laboratory Narrative and Chain-of-Custody Documentation
Appendix 5. Data Validation Supporting Documentation
Appendix 6. Additional Documentation Requested by Client

DATA QUALITY PARAMETERS

· Holding Times

Analytical holding times for metals are assessed to ascertain whether the holding time requirements were met by the laboratory. The holding time requirements are as follows: Soil samples must be analyzed within 6 months for ICP metals and 28 days for mercury.

All holding times were acceptable.

- **Preparation (Method) Blanks**

Preparation Blanks

At least one preparation blank, consisting of deionized distilled water processed through each sample preparation and analysis procedure, must be prepared and analyzed with every sample delivery group. In the case of positive blank results, samples with digestate concentrations less than five times the preparation blank value have had their associated values qualified as non-detected and flagged "U". Samples with concentrations of greater than five times the highest blank concentration do not require qualification.

In the case of negative blank results, if the absolute value exceeds the contract required detection limit (CRDL), all nondetects are rejected and flagged "UR" and all detects that are less than ten times the absolute value of the associated preparation blank result are qualified as estimates and flagged "J". If the absolute value of the negative preparation blank is greater than the instrument detection limit (IDL) and less than or equal to the CRDL, all nondetects are qualified as estimates and flagged "UJ" and all detects less than ten times the absolute value of the blank are qualified as estimates and flagged "J". If the sample results are greater than ten times the absolute value of the preparation blank, no qualification is necessary.

Due to method blank contamination, all tin results were qualified as undetected and flagged "UJ".

All other preparation blank results were acceptable.

Field (Equipment) Blank

No field blanks were submitted for analysis.

- **Accuracy**

Matrix Spike and Laboratory Control Sample

Matrix spike (MS) and laboratory control sample (LCS) analyses are used to assess the analytical accuracy of the reported data. The matrix spike is used to assess the effect of the matrix on the ability to accurately quantify sample concentrations. Recoveries must fall within the range of 70% to 130% Samples with a recovery of less than 30% and a sample result below the IDL are rejected and flagged "UR". Samples with a recovery of 30% to 69% and a sample result less than the IDL are qualified "UJ". Samples with a recovery of greater than 130% or less than 70% and a sample result greater than the IDL are qualified as estimates and flagged "J". Finally, for samples with a recovery greater than 130% and a sample result less than the IDL, no qualification is required.

Due to matrix spike recoveries outside QC limits, all antimony (50%), calcium (52%), magnesium (56%) and zinc (69%) results were qualified as estimates and flagged "J"

Due to an LCS recovery outside QC limits (69%), all silicon results were qualified as estimates and flagged "J".

All accuracy results were acceptable.

- **Precision**

Laboratory Duplicate Samples

Analytical precision is expressed by the relative percent differences (RPD) between the recoveries of matrix spike duplicate (MSD) analyses performed on a sample in the analytical batch. Precision may alternatively be assessed using unspiked duplicate analyses performed on a sample in the analytical batch. If both sample and replicate activities (concentrations) are greater than five times the CRDL and the RPD is less than 30%, no qualification is required. If either activity (concentration) is less than five times the CRDL, the RPD control limit is less than or equal to two times the CRDL. If the RPD is outside the applicable control limit, associated results are qualified as estimated detects or estimated non-detects.

All laboratory duplicate results were acceptable.

Field Duplicate

No field duplicate were submitted for analysis.

- **Analytical Detection Levels**

Reported analytical detection levels are compared against the project RQLs to ensure that laboratory detection levels meet the required criteria. All results met the RQL.

- **Completeness**

Data package No. K1918 was submitted for validation and verified for completeness. Completeness is based on the percentage of data determined to be valid (i.e., not rejected). The completion percentage was 100%.

MAJOR DEFICIENCIES

None found.

MINOR DEFICIENCIES

The following minor deficiencies were noted:

- Due to method blank contamination, all tin results were qualified as undetected and flagged "UJ".
- Due to matrix spike recoveries outside QC limits, all antimony (50%), calcium (52%), magnesium (56%) and zinc (69%) results were qualified as estimates and flagged "J".
- Due to an LCS recovery outside QC limits (69%), all silicon results were qualified as estimates and flagged "J".

Data flagged "J" indicates that the associated concentration is an estimate, but under the WCH statement of work, the data may be usable for decision-making purposes. All other validated results are considered accurate within the standard error associated with the methods.

REFERENCES

Washington Closure Hanford Contract #S00W307A00 (March 2008), *Data Validation Services*.

DOE/RL-2008-11, Rev.0, *Remedial Investigation Work Plan for Hanford Site Releases to the Columbia River*, September 2008.

Appendix 1

Glossary of Data Reporting Qualifiers

Qualifiers which may be applied by data validators in compliance with WCH validation SOW are as follows:

U - Indicates the compound or analyte was analyzed for and not detected in the sample. The value reported is the sample quantitation limit corrected for sample dilution and moisture content by the laboratory.

UJ - Indicates the compound or analyte was analyzed for and not detected in the sample. Due to a minor QC deficiency identified during the data validation, the associated quantitation limit is an estimate.

J - Indicates the compound or analyte was analyzed for and detected. Due to a minor QC deficiency identified during the data validation, the associated concentration is an estimate, but the data are usable for decision-making purposes.

BJ - Applied to inorganic analyses only. Indicates the analyte concentration was greater than the IDL but less than the CRDL and is considered an estimated value.

R - Indicates the compound or analyte was analyzed for, detected, and due to an identified major QC deficiency, the data are unusable.

UR - Indicates the compound or analyte was analyzed for and not detected in the sample. Additionally, the data is unusable due to an identified major QC deficiency.

NJ - Indicates presumptive evidence of a compound at an estimated value. The data may not be valid for some specific applications (i.e., usable for decision-making purposes).

N - Indicates presumptive evidence of a compound. The data may not be valid for some specific applications (i.e., usable for decision-making purposes).

Appendix 2

Summary of Data Qualification

METALS DATA QUALIFICATION SUMMARY*

SDG: K1918	**REVIEWER: ELR**	**Project: RCBRA**	**PAGE 1 OF 1**
COMPOUND	QUALIFIER	SAMPLES AFFECTED	REASON
Tin	UJ	All	Method blank contamination
Antimony Calcium Magnesium Zinc	J	All	MS recovery
Silicon	J	All	LCS recovery

* - The Qualified Data Summary Table includes laboratory applied "U" qualifiers not specifically identified here. The laboratory applied "U" qualifiers are included to minimize misinterpretation of results contained in the table.

Appendix 3

Qualified Data Summary and Annotated Laboratory Reports

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

WC Hanford, Inc
2620 Fermi Avenue
Richland WA, 99354

Project: RCI-116
Project Number: K1918
Project Manager: Joan Kessner

Reported:
02/05/2010 13:35

J19FD1

1001098-01 (Solid)

4/14/10

Analyte	Result and Qualifier	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method

Lionville Laboratory

Metals by SW846 6000/7000 series

Analyte	Result and Qualifier	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Aluminum	7630	3.97	mg/kg	1	L002045	02/03/2010	02/04/2010	6010B
Antimony	0.476 U J	0.476	mg/kg	1	L002045	02/03/2010	02/04/2010	6010B
Arsenic	3.01	0.794	mg/kg	1	L002045	02/03/2010	02/04/2010	6010B
Barium	58.8	0.397	mg/kg	1	L002045	02/03/2010	02/04/2010	6010B
Beryllium	0.292	0.159	mg/kg	1	L002045	02/03/2010	02/04/2010	6010B
Bismuth	7.94 U	7.94	mg/kg	1	L002045	02/03/2010	02/04/2010	6010B
Boron	1.03 B	1.59	mg/kg	1	L002045	02/03/2010	02/04/2010	6010B
Cadmium	0.229	0.159	mg/kg	1	L002045	02/03/2010	02/04/2010	6010B
Calcium	4560 J	79.4	mg/kg	1	L002045	02/03/2010	02/04/2010	6010B
Chromium	11.8	0.238	mg/kg	1	L002045	02/03/2010	02/04/2010	6010B
Cobalt	4.72	1.59	mg/kg	1	L002045	02/03/2010	02/04/2010	6010B
Copper	9.68	0.794	mg/kg	1	L002045	02/03/2010	02/04/2010	6010B
Iron	12500	15.9	mg/kg	1	L002045	02/03/2010	02/04/2010	6010B
Lead	5.64	0.397	mg/kg	1	L002045	02/03/2010	02/04/2010	6010B
Lithium	7.79	1.98	mg/kg	1	L002045	02/03/2010	02/04/2010	6010B
Magnesium	3950 J	59.5	mg/kg	1	L002045	02/03/2010	02/04/2010	6010B
Manganese	167	3.97	mg/kg	1	L002045	02/03/2010	02/04/2010	6010B
Molybdenum	0.274 B	1.59	mg/kg	1	L002045	02/03/2010	02/04/2010	6010B
Nickel	9.08	3.17	mg/kg	1	L002045	02/03/2010	02/04/2010	6010B
Phosphorus	360	39.7	mg/kg	1	L002045	02/03/2010	02/04/2010	6010B
Potassium	1210	317	mg/kg	1	L002045	02/03/2010	02/04/2010	6010B
Selenium	0.352 B	0.794	mg/kg	1	L002045	02/03/2010	02/04/2010	6010B
Silicon	586 J	1.59	mg/kg	1	L002045	02/03/2010	02/04/2010	6010B
Silver	0.159 U	0.159	mg/kg	1	L002045	02/03/2010	02/04/2010	6010B
Sodium	137	39.7	mg/kg	1	L002045	02/03/2010	02/04/2010	6010B
Strontium	24.0	0.794	mg/kg	1	L002045	02/03/2010	02/04/2010	6010B
Thallium	0.397 U	0.397	mg/kg	1	L002045	02/03/2010	02/04/2010	6010B
Tin	1.56 B UJ	7.94	mg/kg	1	L002045	02/03/2010	02/04/2010	6010B
Uranium	15.9 U	15.9	mg/kg	1	L002045	02/03/2010	02/04/2010	6010B
Vanadium	25.1	1.98	mg/kg	1	L002045	02/03/2010	02/04/2010	6010B
Zinc	51.5 J	7.94	mg/kg	1	L002045	02/03/2010	02/04/2010	6010B
Mercury	0.0237 U	0.0237	mg/kg	1	L002019	02/01/2010	02/02/2010	7471A

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

WCH-Hanford, Inc 2620 Fermi Avenue Richland WA, 99354	Project: RC-116 Project Number: K1918 Project Manager: Joan Kessner	Reported: 02/05/2010 13:35

J19FB0
1001098-04 (Solid)

w 4/14/10

Analyte	Result and Qualifier		Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method

Lionville Laboratory

Metals by SW846 6000/7000 series

Analyte	Result	Qualifier	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Aluminum	7650		3.21	mg/kg	1	1002045	02/03/2010	02/04/2010	6010B
Antimony	0.385	U J	0.385	mg/kg	1	1002045	02/03/2010	02/04/2010	6010B
Arsenic	1.43		0.641	mg/kg	1	1002045	02/03/2010	02/04/2010	6010B
Barium	147		0.321	mg/kg	1	1002045	02/03/2010	02/04/2010	6010B
Beryllium	0.335		0.128	mg/kg	1	1002045	02/03/2010	02/04/2010	6010B
Bismuth	0.518	B	6.41	mg/kg	1	1002045	02/03/2010	02/04/2010	6010B
Boron	0.880	B	1.28	mg/kg	1	1002045	02/03/2010	02/04/2010	6010B
Cadmium	0.225		0.128	mg/kg	1	1002045	02/03/2010	02/04/2010	6010B
Calcium	6230	J	64.1	mg/kg	1	1002045	02/03/2010	02/04/2010	6010B
Chromium	17.0		0.192	mg/kg	1	1002045	02/03/2010	02/04/2010	6010B
Cobalt	4.92		1.28	mg/kg	1	1002045	02/03/2010	02/04/2010	6010B
Copper	9.56		0.641	mg/kg	1	1002045	02/03/2010	02/04/2010	6010B
Iron	15000		12.8	mg/kg	1	1002045	02/03/2010	02/04/2010	6010B
Lead	6.34		0.321	mg/kg	1	1002045	02/03/2010	02/04/2010	6010B
Lithium	6.32		1.60	mg/kg	1	1002045	02/03/2010	02/04/2010	6010B
Magnesium	3060	J	48.1	mg/kg	1	1002045	02/03/2010	02/04/2010	6010B
Manganese	157		3.21	mg/kg	1	1002045	02/03/2010	02/04/2010	6010B
Molybdenum	0.324	B	1.28	mg/kg	1	1002045	02/03/2010	02/04/2010	6010B
Nickel	7.59		2.56	mg/kg	1	1002045	02/03/2010	02/04/2010	6010B
Phosphorus	383		32.1	mg/kg	1	1002045	02/03/2010	02/04/2010	6010B
Potassium	1610		256	mg/kg	1	1002045	02/03/2010	02/04/2010	6010B
Selenium	0.641	U	0.641	mg/kg	1	1002045	02/03/2010	02/04/2010	6010B
Silicon	337	J	1.28	mg/kg	1	1002045	02/03/2010	02/04/2010	6010B
Silver	0.128	U	0.128	mg/kg	1	1002045	02/03/2010	02/04/2010	6010B
Sodium	182		32.1	mg/kg	1	1002045	02/03/2010	02/04/2010	6010B
Strontium	36.0		0.641	mg/kg	1	1002045	02/03/2010	02/04/2010	6010B
Thallium	0.321	U	0.321	mg/kg	1	1002045	02/03/2010	02/04/2010	6010B
Tin	2.15	B UJ	6.41	mg/kg	1	1002045	02/03/2010	02/04/2010	6010B
Uranium	12.8	U	12.8	mg/kg	1	1002045	02/03/2010	02/04/2010	6010B
Vanadium	41.5		1.60	mg/kg	1	1002045	02/03/2010	02/04/2010	6010B
Zinc	40.7	J	6.41	mg/kg	1	1002045	02/03/2010	02/04/2010	6010B
Mercury	0.0281	U	0.0281	mg/kg	1	1002019	02/01/2010	02/02/2010	7471A

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WC-Hanford, Inc 2620 Fermi Avenue Richland WA, 99354	Project: RC-116 Project Number: K1918 Project Manager: Joan Kessner	Reported: 02/05/2010 13:35

J19FW9
1001098-05 (Solid)

V 4/14/10

Analyte	Result and Qualifier	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method

Lionville Laboratory

Metals by SW846 6000/7000 series

Analyte	Result and Qualifier	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Aluminum	**151**	4.90	mg/kg	1	1002045	02/03/2010	02/04/2010	6010B
Antimony	0.588 U J	0.588	mg/kg	1	1002045	02/03/2010	02/04/2010	6010B
Arsenic	0.559 B	0.980	mg/kg	1	1002045	02/03/2010	02/04/2010	6010B
Barium	**1.44**	0.490	mg/kg	1	1002045	02/03/2010	02/04/2010	6010B
Beryllium	0.196 U	0.196	mg/kg	1	1002045	02/03/2010	02/04/2010	6010B
Bismuth	9.80 U	9.80	mg/kg	1	1002045	02/03/2010	02/04/2010	6010B
Boron	1.96 U	1.96	mg/kg	1	1002045	02/03/2010	02/04/2010	6010B
Cadmium	0.196 U	0.196	mg/kg	1	1002045	02/03/2010	02/04/2010	6010B
Calcium	33.2 B J	98.0	mg/kg	1	1002045	02/03/2010	02/04/2010	6010B
Chromium	0.229 B	0.294	mg/kg	1	1002045	02/03/2010	02/04/2010	6010B
Cobalt	1.96 U	1.96	mg/kg	1	1002045	02/03/2010	02/04/2010	6010B
Copper	0.980 U	0.980	mg/kg	1	1002045	02/03/2010	02/04/2010	6010B
Iron	**183**	19.6	mg/kg	1	1002045	02/03/2010	02/04/2010	6010B
Lead	0.317 B	0.490	mg/kg	1	1002045	02/03/2010	02/04/2010	6010B
Lithium	2.45 U	2.45	mg/kg	1	1002045	02/03/2010	02/04/2010	6010B
Magnesium	24.1 B J	73.5	mg/kg	1	1002045	02/03/2010	02/04/2010	6010B
Manganese	3.25 B	4.90	mg/kg	1	1002045	02/03/2010	02/04/2010	6010B
Molybdenum	1.96 U	1.96	mg/kg	1	1002045	02/03/2010	02/04/2010	6010B
Nickel	3.92 U	3.92	mg/kg	1	1002045	02/03/2010	02/04/2010	6010B
Phosphorus	6.67 B	49.0	mg/kg	1	1002045	02/03/2010	02/04/2010	6010B
Potassium	33.6 B	392	mg/kg	1	1002045	02/03/2010	02/04/2010	6010B
Selenium	0.980 U	0.980	mg/kg	1	1002045	02/03/2010	02/04/2010	6010B
Silicon	**199** J	1.96	mg/kg	1	1002045	02/03/2010	02/04/2010	6010B
Silver	0.196 U	0.196	mg/kg	1	1002045	02/03/2010	02/04/2010	6010B
Sodium	49.0 U	49.0	mg/kg	1	1002045	02/03/2010	02/04/2010	6010B
Strontium	0.533 B	0.980	mg/kg	1	1002045	02/03/2010	02/04/2010	6010B
Thallium	0.490 U	0.490	mg/kg	1	1002045	02/03/2010	02/04/2010	6010B
Tin	1.00 B UJ	9.80	mg/kg	1	1002045	02/03/2010	02/04/2010	6010B
Uranium	19.6 U	19.6	mg/kg	1	1002045	02/03/2010	02/04/2010	6010B
Vanadium	0.301 B	2.45	mg/kg	1	1002045	02/03/2010	02/04/2010	6010B
Zinc	9.80 U J	9.80	mg/kg	1	1002045	02/03/2010	02/04/2010	6010B
Mercury	0.0257 U	0.0257	mg/kg	1	1002019	02/01/2010	02/02/2010	7471A

WC-Hanford, Inc. 2620 Fermi Avenue Richland WA, 99354	Project: RC-116 Project Number: K1918 Project Manager: Joan Kessner	Reported: 02/05/2010 13:35

J19FJ2
1001098-07 (Solid)

K 4/14/10

Analyte	Result and Qualifier	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
		Lionville Laboratory						
Metals by SW846 6000/7000 series								
Aluminum	10100	4.39	mg/kg	1	1002045	02/03/2010	02/04/2010	6010B
Antimony	0.526 U J	0.526	mg/kg	1	1002045	02/03/2010	02/04/2010	6010B
Arsenic	3.98	0.877	mg/kg	1	1002045	02/03/2010	02/04/2010	6010B
Barium	217	0.439	mg/kg	1	1002045	02/03/2010	02/04/2010	6010B
Beryllium	0.406	0.175	mg/kg	1	1002045	02/03/2010	02/04/2010	6010B
Bismuth	8.77 U	8.77	mg/kg	1	1002045	02/03/2010	02/04/2010	6010B
Boron	1.06 B	1.75	mg/kg	1	1002045	02/03/2010	02/04/2010	6010B
Cadmium	0.241	0.175	mg/kg	1	1002045	02/03/2010	02/04/2010	6010B
Calcium	17600 J	87.7	mg/kg	1	1002045	02/03/2010	02/04/2010	6010B
Chromium	11.1	0.263	mg/kg	1	1002045	02/03/2010	02/04/2010	6010B
Cobalt	5.96	1.75	mg/kg	1	1002045	02/03/2010	02/04/2010	6010B
Copper	11.6	0.877	mg/kg	1	1002045	02/03/2010	02/04/2010	6010B
Iron	15400	17.5	mg/kg	1	1002045	02/03/2010	02/04/2010	6010B
Lead	8.01	0.439	mg/kg	1	1002045	02/03/2010	02/04/2010	6010B
Lithium	6.61	2.19	mg/kg	1	1002045	02/03/2010	02/04/2010	6010B
Magnesium	3010 J	65.8	mg/kg	1	1002045	02/03/2010	02/04/2010	6010B
Manganese	937	4.39	mg/kg	1	1002045	02/03/2010	02/04/2010	6010B
Molybdenum	0.620 B	1.75	mg/kg	1	1002045	02/03/2010	02/04/2010	6010B
Nickel	8.97	3.51	mg/kg	1	1002045	02/03/2010	02/04/2010	6010B
Phosphorus	448	43.9	mg/kg	1	1002045	02/03/2010	02/04/2010	6010B
Potassium	1090	351	mg/kg	1	1002045	02/03/2010	02/04/2010	6010B
Selenium	0.877 U	0.877	mg/kg	1	1002045	02/03/2010	02/04/2010	6010B
Silicon	947 J	1.75	mg/kg	1	1002045	02/03/2010	02/04/2010	6010B
Silver	0.175 U	0.175	mg/kg	1	1002045	02/03/2010	02/04/2010	6010B
Sodium	157	43.9	mg/kg	1	1002045	02/03/2010	02/04/2010	6010B
Strontium	39.5	0.877	mg/kg	1	1002045	02/03/2010	02/04/2010	6010B
Thallium	0.439 U	0.439	mg/kg	1	1002045	02/03/2010	02/04/2010	6010B
Tin	2.55 B UJ	8.77	mg/kg	1	1002045	02/03/2010	02/04/2010	6010B
Uranium	17.5 U	17.5	mg/kg	1	1002045	02/03/2010	02/04/2010	6010B
Vanadium	43.7	2.19	mg/kg	1	1002045	02/03/2010	02/04/2010	6010B
Zinc	48.9 J	8.77	mg/kg	1	1002045	02/03/2010	02/04/2010	6010B
Mercury	0.0265 U	0.0265	mg/kg	1	1002019	02/01/2010	02/02/2010	7471A

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WC-Hanford, Inc
2620 Fermi Avenue
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Project: RC-116
Project Number: K1918
Project Manager: Joan Kessner

Reported:
02/05/2010 13:35

J19FJ3
1001098-08 (Solid)

4/14/10

Analyte	Result and Qualifier	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Lionville Laboratory								
Metals by SW846 6000/7000 series								
Aluminum	12200	1.08	mg/kg	1	1002045	02/03/2010	02/04/2010	6010B
Antimony	0.405 U J	0.405	mg/kg	1	1002045	02/03/2010	02/04/2010	6010B
Arsenic	2.56	0.676	mg/kg	1	1002045	02/03/2010	02/04/2010	6010B
Barium	66.5	0.338	mg/kg	1	1002045	02/03/2010	02/04/2010	6010B
Beryllium	0.299	0.135	mg/kg	1	1002045	02/03/2010	02/04/2010	6010B
Bismuth	0.599 B	6.76	mg/kg	1	1002045	02/03/2010	02/04/2010	6010B
Boron	1.18 B	1.35	mg/kg	1	1002045	02/03/2010	02/04/2010	6010B
Cadmium	0.169	0.135	mg/kg	1	1002045	02/03/2010	02/04/2010	6010B
Calcium	3870 J	67.6	mg/kg	1	1002045	02/03/2010	02/04/2010	6010B
Chromium	14.3	0.203	mg/kg	1	1002045	02/03/2010	02/04/2010	6010B
Cobalt	5.01	1.35	mg/kg	1	1002045	02/03/2010	02/04/2010	6010B
Copper	11.5	0.676	mg/kg	1	1002045	02/03/2010	02/04/2010	6010B
Iron	15500	13.5	mg/kg	1	1002045	02/03/2010	02/04/2010	6010B
Lead	5.31	0.338	mg/kg	1	1002045	02/03/2010	02/04/2010	6010B
Lithium	5.51	1.69	mg/kg	1	1002045	02/03/2010	02/04/2010	6010B
Magnesium	3290 J	50.7	mg/kg	1	1002045	02/03/2010	02/04/2010	6010B
Manganese	255	3.38	mg/kg	1	1002045	02/03/2010	02/04/2010	6010B
Molybdenum	0.226 B	1.35	mg/kg	1	1002045	02/03/2010	02/04/2010	6010B
Nickel	8.00	2.70	mg/kg	1	1002045	02/03/2010	02/04/2010	6010B
Phosphorus	383	33.8	mg/kg	1	1002045	02/03/2010	02/04/2010	6010B
Potassium	1550	270	mg/kg	1	1002045	02/03/2010	02/04/2010	6010B
Selenium	0.676 U	0.676	mg/kg	1	1002045	02/03/2010	02/04/2010	6010B
Silicon	517 J	1.35	mg/kg	1	1002045	02/03/2010	02/04/2010	6010B
Silver	0.135 U	0.135	mg/kg	1	1002045	02/03/2010	02/04/2010	6010B
Sodium	336	33.8	mg/kg	1	1002045	02/03/2010	02/04/2010	6010B
Strontium	28.9	0.676	mg/kg	1	1002045	02/03/2010	02/04/2010	6010B
Thallium	0.338 U	0.338	mg/kg	1	1002045	02/03/2010	02/04/2010	6010B
Tin	2.11 B UJ	6.76	mg/kg	1	1002045	02/03/2010	02/04/2010	6010B
Uranium	13.5 U	13.5	mg/kg	1	1002045	02/03/2010	02/04/2010	6010B
Vanadium	33.9	1.69	mg/kg	1	1002045	02/03/2010	02/04/2010	6010B
Zinc	47.9 J	6.76	mg/kg	1	1002045	02/03/2010	02/04/2010	6010B
Mercury	0.0250 U	0.0250	mg/kg	1	1002019	02/01/2010	02/02/2010	7471A

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WCH-Hanford, Inc 2620 Fermi Avenue Richland WA, 99354	Project: RC 116 Project Number: K1918 Project Manager: Joan Kessner	Reported: 02/05/2010 14:35

J19HZ8
1001098-09 (Solid)

4/14/10

Analyte	Result and Qualifier		Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method

Lionville Laboratory

Metals by SW846 6000/7000 series

Analyte	Result	Qualifier	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Aluminum	7170		3.42	mg/kg	1	1002045	02/03/2010	02/04/2010	6010B
Antimony	0.411	U J	0.411	mg/kg	1	1002045	02/03/2010	02/04/2010	6010B
Arsenic	2.83		0.685	mg/kg	1	1002045	02/03/2010	02/04/2010	6010B
Barium	58.5		0.342	mg/kg	1	1002045	02/03/2010	02/04/2010	6010B
Beryllium	0.270		0.137	mg/kg	1	1002045	02/03/2010	02/04/2010	6010B
Bismuth	0.366	B	6.85	mg/kg	1	1002045	02/03/2010	02/04/2010	6010B
Boron	0.962	B	1.37	mg/kg	1	1002045	02/03/2010	02/04/2010	6010B
Cadmium	0.227		0.137	mg/kg	1	1002045	02/03/2010	02/04/2010	6010B
Calcium	4120	J	68.5	mg/kg	1	1002045	02/03/2010	02/04/2010	6010B
Chromium	11.1		0.205	mg/kg	1	1002045	02/03/2010	02/04/2010	6010B
Cobalt	4.38		1.37	mg/kg	1	1002045	02/03/2010	02/04/2010	6010B
Copper	9.03		0.685	mg/kg	1	1002045	02/03/2010	02/04/2010	6010B
Iron	11400		13.7	mg/kg	1	1002045	02/03/2010	02/04/2010	6010B
Lead	5.35		0.342	mg/kg	1	1002045	02/03/2010	02/04/2010	6010B
Lithium	7.29		1.71	mg/kg	1	1002045	02/03/2010	02/04/2010	6010B
Magnesium	3710	J	51.4	mg/kg	1	1002045	02/03/2010	02/04/2010	6010B
Manganese	152		3.42	mg/kg	1	1002045	02/03/2010	02/04/2010	6010B
Molybdenum	0.323	B	1.37	mg/kg	1	1002045	02/03/2010	02/04/2010	6010B
Nickel	8.83		2.74	mg/kg	1	1002045	02/03/2010	02/04/2010	6010B
Phosphorus	348		34.2	mg/kg	1	1002045	02/03/2010	02/04/2010	6010B
Potassium	1140		274	mg/kg	1	1002045	02/03/2010	02/04/2010	6010B
Selenium	0.491		0.685	mg/kg	1	1002045	02/03/2010	02/04/2010	6010B
Silicon	520	J	1.37	mg/kg	1	1002045	02/03/2010	02/04/2010	6010B
Silver	0.137	U	0.137	mg/kg	1	1002045	02/03/2010	02/04/2010	6010B
Sodium	135		34.2	mg/kg	1	1002045	02/03/2010	02/04/2010	6010B
Strontium	22.9		0.685	mg/kg	1	1002045	02/03/2010	02/04/2010	6010B
Thallium	0.342	U	0.342	mg/kg	1	1002045	02/03/2010	02/04/2010	6010B
Tin	1.45	B UJ	6.85	mg/kg	1	1002045	02/03/2010	02/04/2010	6010B
Uranium	13.7	U	13.7	mg/kg	1	1002045	02/03/2010	02/04/2010	6010B
Vanadium	23.7		1.71	mg/kg	1	1002045	02/03/2010	02/04/2010	6010B
Zinc	50.3	J	6.85	mg/kg	1	1002045	02/03/2010	02/04/2010	6010B
Mercury	0.0281	U	0.0281	mg/kg	1	1002019	02/01/2010	02/02/2010	7471A

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WC-Hanford, Inc 2620 Fermi Avenue Richland WA, 99354	Project: RC-116 Project Number: K1918 Project Manager: Joan Kessner	Reported: 02/05/2010 13:35

J191T6
1001098-10 (Solid)

✓ 4/14/10

Analyte	Result and Qualifier	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method

Lionville Laboratory

Metals by SW846 6000/7000 series

Analyte	Result and Qualifier	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Aluminum	9800	4.03	mg/kg	1	L002045	02/03/2010	02/04/2010	6010B
Antimony	0.484 U J	0.484	mg/kg	1	L002045	02/03/2010	02/04/2010	6010B
Arsenic	3.54	0.806	mg/kg	1	L002045	02/03/2010	02/04/2010	6010B
Barium	227	0.403	mg/kg	1	L002045	02/03/2010	02/04/2010	6010B
Beryllium	0.412	0.161	mg/kg	1	L002045	02/03/2010	02/04/2010	6010B
Bismuth	8.06 U	8.06	mg/kg	1	L002045	02/03/2010	02/04/2010	6010B
Boron	0.981 B	1.61	mg/kg	1	L002045	02/03/2010	02/04/2010	6010B
Cadmium	0.230	0.161	mg/kg	1	L002045	02/03/2010	02/04/2010	6010B
Calcium	14000 J	80.6	mg/kg	1	L002045	02/03/2010	02/04/2010	6010B
Chromium	10.6	0.242	mg/kg	1	L002045	02/03/2010	02/04/2010	6010B
Cobalt	6.94	1.61	mg/kg	1	L002045	02/03/2010	02/04/2010	6010B
Copper	10.8	0.806	mg/kg	1	L002045	02/03/2010	02/04/2010	6010B
Iron	14700	16.1	mg/kg	1	L002045	02/03/2010	02/04/2010	6010B
Lead	15.9	0.403	mg/kg	1	L002045	02/03/2010	02/04/2010	6010B
Lithium	6.34	2.02	mg/kg	1	L002045	02/03/2010	02/04/2010	6010B
Magnesium	2830 J	60.5	mg/kg	1	L002045	02/03/2010	02/04/2010	6010B
Manganese	793	4.03	mg/kg	1	L002045	02/03/2010	02/04/2010	6010B
Molybdenum	0.447 B	1.61	mg/kg	1	L002045	02/03/2010	02/04/2010	6010B
Nickel	8.94	3.23	mg/kg	1	L002045	02/03/2010	02/04/2010	6010B
Phosphorus	383	40.3	mg/kg	1	L002045	02/03/2010	02/04/2010	6010B
Potassium	979	121	mg/kg	1	L002045	02/03/2010	02/04/2010	6010B
Selenium	0.806 U	0.806	mg/kg	1	L002045	02/03/2010	02/04/2010	6010B
Silicon	658 J	1.61	mg/kg	1	L002045	02/03/2010	02/04/2010	6010B
Silver	0.161 U	0.161	mg/kg	1	L002045	02/03/2010	02/04/2010	6010B
Sodium	136	40.3	mg/kg	1	L002045	02/03/2010	02/04/2010	6010B
Strontium	40.0	0.806	mg/kg	1	L002045	02/03/2010	02/04/2010	6010B
Thallium	0.403 U	0.403	mg/kg	1	L002045	02/03/2010	02/04/2010	6010B
Tin	1.89 B UJ	8.06	mg/kg	1	L002045	02/03/2010	02/04/2010	6010B
Uranium	16.1 U	16.1	mg/kg	1	L002045	02/03/2010	02/04/2010	6010B
Vanadium	39.7	2.02	mg/kg	1	L002045	02/03/2010	02/04/2010	6010B
Zinc	44.4 J	8.06	mg/kg	1	L002045	02/03/2010	02/04/2010	6010B
Mercury	0.0231 U	0.0231	mg/kg	1	L002019	02/01/2010	02/02/2010	7471A

WC-Hanford, Inc	Project: RC-116	
2620 Fermi Avenue	Project Number: K1918	**Reported:**
Richland WA, 99354	Project Manager: Joan Kessner	02/05/2010 13:35

J19HT7
1001098-11 (Solid)

V— 4/14/10

Analyte	Result and Qualifier	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
	Lionville Laboratory							
Metals by SW846 6000/7000 series								
Aluminum	4590	1.17	mg/kg	1	1002045	02/03/2010	02/04/2010	6010B
Antimony	0.500 U J	0.500	mg/kg	1	1002045	02/03/2010	02/04/2010	6010B
Arsenic	2.16	0.833	mg/kg	1	1002045	02/03/2010	02/04/2010	6010B
Barium	34.8	0.417	mg/kg	1	1002045	02/03/2010	02/04/2010	6010B
Beryllium	0.0961 B	0.167	mg/kg	1	1002045	02/03/2010	02/04/2010	6010B
Bismuth	8.33 U	8.33	mg/kg	1	1002045	02/03/2010	02/04/2010	6010B
Boron	0.730 B	1.67	mg/kg	1	1002045	02/03/2010	02/04/2010	6010B
Cadmium	0.923	0.167	mg/kg	1	1002045	02/03/2010	02/04/2010	6010B
Calcium	3050 J	83.3	mg/kg	1	1002045	02/03/2010	02/04/2010	6010B
Chromium	36.9	0.250	mg/kg	1	1002045	02/03/2010	02/04/2010	6010B
Cobalt	4.33	1.67	mg/kg	1	1002045	02/03/2010	02/04/2010	6010B
Copper	15.7	0.833	mg/kg	1	1002045	02/03/2010	02/04/2010	6010B
Iron	11400	16.7	mg/kg	1	1002045	02/03/2010	02/04/2010	6010B
Lead	12.1	0.417	mg/kg	1	1002045	02/03/2010	02/04/2010	6010B
Lithium	4.75	2.08	mg/kg	1	1002045	02/03/2010	02/04/2010	6010B
Magnesium	2700 J	62.5	mg/kg	1	1002045	02/03/2010	02/04/2010	6010B
Manganese	118	4.17	mg/kg	1	1002045	02/03/2010	02/04/2010	6010B
Molybdenum	0.316 B	1.67	mg/kg	1	1002045	02/03/2010	02/04/2010	6010B
Nickel	8.55	3.33	mg/kg	1	1002045	02/03/2010	02/04/2010	6010B
Phosphorus	365	41.7	mg/kg	1	1002045	02/03/2010	02/04/2010	6010B
Potassium	653	333	mg/kg	1	1002045	02/03/2010	02/04/2010	6010B
Selenium	0.833 U	0.833	mg/kg	1	1002045	02/03/2010	02/04/2010	6010B
Silicon	517 J	1.67	mg/kg	1	1002045	02/03/2010	02/04/2010	6010B
Silver	0.167 U	0.167	mg/kg	1	1002045	02/03/2010	02/04/2010	6010B
Sodium	194	41.7	mg/kg	1	1002045	02/03/2010	02/04/2010	6010B
Strontium	16.9	0.833	mg/kg	1	1002045	02/03/2010	02/04/2010	6010B
Thallium	0.417 U	0.417	mg/kg	1	1002045	02/03/2010	02/04/2010	6010B
Tin	1.66 B UJ	8.33	mg/kg	1	1002045	02/03/2010	02/04/2010	6010B
Uranium	16.7 U	16.7	mg/kg	1	1002045	02/03/2010	02/04/2010	6010B
Vanadium	28.2	2.08	mg/kg	1	1002045	02/03/2010	02/04/2010	6010B
Zinc	160 J	8.33	mg/kg	1	1002045	02/03/2010	02/04/2010	6010B
Mercury	0.0112 B	0.0250	mg/kg	1	1002019	02/01/2010	02/02/2010	7471A

WC Hanford, Inc. 2620 Fermi Avenue Richland WA, 99354	Project: RC-116 Project Number: K1918 Project Manager: Joan Kessner	Reported: 02/05/2010 13:35

J19HT8
1001098-12 (Solid)

4/14/10

Analyte	Result and Qualifier		Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
			Lionville Laboratory						
Metals by SW846 6000/7000 series									
Aluminum	5800		4.72	mg/kg	1	1002045	02/03/2010	02/04/2010	6010B
Antimony	0.566	U J	0.566	mg/kg	1	1002045	02/03/2010	02/04/2010	6010B
Arsenic	2.47		0.943	mg/kg	1	1002045	02/03/2010	02/04/2010	6010B
Barium	40.4		0.472	mg/kg	1	1002045	02/03/2010	02/04/2010	6010B
Beryllium	0.159	B	0.189	mg/kg	1	1002045	02/03/2010	02/04/2010	6010B
Bismuth	9.43	U	9.43	mg/kg	1	1002045	02/03/2010	02/04/2010	6010B
Boron	0.710	B	1.89	mg/kg	1	1002045	02/03/2010	02/04/2010	6010B
Cadmium	0.0572	B	0.189	mg/kg	1	1002045	02/03/2010	02/04/2010	6010B
Calcium	2640	J	94.3	mg/kg	1	1002045	02/03/2010	02/04/2010	6010B
Chromium	18.7		0.283	mg/kg	1	1002045	02/03/2010	02/04/2010	6010B
Cobalt	4.50		1.89	mg/kg	1	1002045	02/03/2010	02/04/2010	6010B
Copper	7.61		0.943	mg/kg	1	1002045	02/03/2010	02/04/2010	6010B
Iron	14400		18.9	mg/kg	1	1002045	02/03/2010	02/04/2010	6010B
Lead	3.61		0.472	mg/kg	1	1002045	02/03/2010	02/04/2010	6010B
Lithium	7.15		2.36	mg/kg	1	1002045	02/03/2010	02/04/2010	6010B
Magnesium	3360	J	70.8	mg/kg	1	1002045	02/03/2010	02/04/2010	6010B
Manganese	164		4.72	mg/kg	1	1002045	02/03/2010	02/04/2010	6010B
Molybdenum	0.482	B	1.89	mg/kg	1	1002045	02/03/2010	02/04/2010	6010B
Nickel	12.7		3.77	mg/kg	1	1002045	02/03/2010	02/04/2010	6010B
Phosphorus	452		47.2	mg/kg	1	1002045	02/03/2010	02/04/2010	6010B
Potassium	783		377	mg/kg	1	1002045	02/03/2010	02/04/2010	6010B
Selenium	0.943	U	0.943	mg/kg	1	1002045	02/03/2010	02/04/2010	6010B
Silicon	663	J	1.89	mg/kg	1	1002045	02/03/2010	02/04/2010	6010B
Silver	0.189	U	0.189	mg/kg	1	1002045	02/03/2010	02/04/2010	6010B
Sodium	135		47.2	mg/kg	1	1002045	02/03/2010	02/04/2010	6010B
Strontium	21.2		0.943	mg/kg	1	1002045	02/03/2010	02/04/2010	6010B
Thallium	0.472	U	0.472	mg/kg	1	1002045	02/03/2010	02/04/2010	6010B
Tin	1.98	B UJ	9.43	mg/kg	1	1002045	02/03/2010	02/04/2010	6010B
Uranium	18.9	U	18.9	mg/kg	1	1002045	02/03/2010	02/04/2010	6010B
Vanadium	34.3		2.36	mg/kg	1	1002045	02/03/2010	02/04/2010	6010B
Zinc	32.2	J	9.43	mg/kg	1	1002045	02/03/2010	02/04/2010	6010B
Mercury	0.0265	U	0.0265	mg/kg	1	1002019	02/01/2010	02/02/2010	7471A

WC Hanford, Inc	Project: RSC-116	
2620 Fermi Avenue	Project Number: K1918	Reported:
Richland WA, 99354	Project Manager: Joan Kessner	02/05/2010 13:35

J19FX0
1001098-13 (Solid)

4/14/10

Lionville Laboratory

Metals by SW846 6000/7000 series

Analyte	Result and Qualifier	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Aluminum	144	3.12	mg/kg	1	L002045	02/03/2010	02/04/2010	6010B
Antimony	0.375 U J	0.375	mg/kg	1	L002045	02/03/2010	02/04/2010	6010B
Arsenic	0.221 B	0.625	mg/kg	1	L002045	02/03/2010	02/04/2010	6010B
Barium	1.38	0.312	mg/kg	1	L002045	02/03/2010	02/04/2010	6010B
Beryllium	0.125 U	0.125	mg/kg	1	L002045	02/03/2010	02/04/2010	6010B
Bismuth	6.25 U	6.25	mg/kg	1	L002045	02/03/2010	02/04/2010	6010B
Boron	1.25 U	1.25	mg/kg	1	L002045	02/03/2010	02/04/2010	6010B
Cadmium	0.125 U	0.125	mg/kg	1	L002045	02/03/2010	02/04/2010	6010B
Calcium	604 J	62.5	mg/kg	1	L002045	02/03/2010	02/04/2010	6010B
Chromium	0.184 B	0.188	mg/kg	1	L002045	02/03/2010	02/04/2010	6010B
Cobalt	1.25 U	1.25	mg/kg	1	L002045	02/03/2010	02/04/2010	6010B
Copper	0.625 U	0.625	mg/kg	1	L002045	02/03/2010	02/04/2010	6010B
Iron	236	12.5	mg/kg	1	L002045	02/03/2010	02/04/2010	6010B
Lead	0.317	0.312	mg/kg	1	L002045	02/03/2010	02/04/2010	6010B
Lithium	1.56 U	1.56	mg/kg	1	L002045	02/03/2010	02/04/2010	6010B
Magnesium	267 J	46.9	mg/kg	1	L002045	02/03/2010	02/04/2010	6010B
Manganese	4.92	3.12	mg/kg	1	L002045	02/03/2010	02/04/2010	6010B
Molybdenum	1.25 U	1.25	mg/kg	1	L002045	02/03/2010	02/04/2010	6010B
Nickel	2.50 U	2.50	mg/kg	1	L002045	02/03/2010	02/04/2010	6010B
Phosphorus	5.17 B	31.2	mg/kg	1	L002045	02/03/2010	02/04/2010	6010B
Potassium	31.9 B	250	mg/kg	1	L002045	02/03/2010	02/04/2010	6010B
Selenium	0.625 U	0.625	mg/kg	1	L002045	02/03/2010	02/04/2010	6010B
Silicon	166 J	1.25	mg/kg	1	L002045	02/03/2010	02/04/2010	6010B
Silver	0.125 U	0.125	mg/kg	1	L002045	02/03/2010	02/04/2010	6010B
Sodium	31.2 U	31.2	mg/kg	1	L002045	02/03/2010	02/04/2010	6010B
Strontium	0.647	0.625	mg/kg	1	L002045	02/03/2010	02/04/2010	6010B
Thallium	0.312 U	0.312	mg/kg	1	L002045	02/03/2010	02/04/2010	6010B
Tin	0.815 B UJ	6.25	mg/kg	1	L002045	02/03/2010	02/04/2010	6010B
Uranium	12.5 U	12.5	mg/kg	1	L002045	02/03/2010	02/04/2010	6010B
Vanadium	0.373 B	1.56	mg/kg	1	L002045	02/03/2010	02/04/2010	6010B
Zinc	1.00 B J	6.25	mg/kg	1	L002045	02/03/2010	02/04/2010	6010B
Mercury	0.0237 U	0.0237	mg/kg	1	L002019	02/01/2010	02/02/2010	7471A

Appendix 4

Laboratory Narrative and Chain-of-Custody Documentation

LVL
LIONVILLE LABORATORY
[illegible]

264 Welsh Pool Road
Exton, Pennsylvania 19341
Phone (610) 280-3000
Fax (610) 280-3041

Case Narrative

Client: WC-HANFORD RC-116
LVL#: 1001098
SDG/SAF#: K1918/RC-116

W.O.#: 60049-001-001-0001-00
Date Received: 01-27-10

METALS

The following is a summary of the QC results accompanying the sample results. Lionville Laboratory (LvL) certifies that all test results meet the requirements of NELAC except as noted below.

All soil samples are reported on a dry weight basis unless requested by the client, required by the method, or noted otherwise.

1. This narrative covers the analyses of 10 "other solid" samples.
2. The samples were prepared and analyzed in accordance with methods listed on the data report forms. The samples were reported on a wet weight, 'as-received' basis.
3. All analyses were performed within the required holding times.
4. Please refer to the Sample Receipt Check List for any sample discrepancies in LvLI's sample acceptance policy.
5. All Initial and Continuing Calibration Verifications (ICV/CCVs) were within the 90-110% control limits (80-120% for Mercury).
6. All Initial and Continuing Calibration Blanks (ICB/CCBs) were within control limits (less than the LOQ).
7. All preparation/method blanks (MB) were within method criteria (less than the Limit of Quantitation (3-10X the LOD), or samples greater than 20X MB value).
8. All ICP Interference Check Standards were within control limits.
9. All Standard Reference Material (SRM) analytes were within the Prediction Interval control limits supplied by the manufacturer.
10. The matrix spike (MS) recoveries for 13 analytes were outside the 75-125% control limits.
11. For analytes where the ICP MS is out-of-control, a post-digestion MS (PDS) and serial dilution are performed. A PDS was prepared at meaningful concentration level for the

following analytes:

Sample ID	Element	PDS Concentration (ppb)	PDS % Recovery
J19FD1	Aluminum	22,000	64.7
	Antimony	100	87.4
	Calcium	20,800	69.1
	Copper	100	80.7
	Iron	42,000	54.7
	Magnesium	21,600	67.3
	Manganese	1,000	67.9
	Lead	600	75.0
	Phosphorous	2,000	80.4
	Silicon	2,600	86.1
	Thallium	100	73.3
	Vanadium	1,000	82.5
	Zinc	1,100	81.8

12. The duplicate analyses for 15 analytes were outside the 20% Relative Percent Difference (RPD) control limit critieria. The ± 20% RPD control limit applies to sample results greater than ten times the MDL. The sample results for Arsenic, Beryllium, Boron, Cadmium, and Cobalt, were less than ten times the MDL.

13. For the purposes of this report, the data have been reported to the Limit of Detection (LOD). Values between the LOD and the Limit of Quantitation (LOQ) are acquired in a region of less-certain quantification.

14. LvL is NELAP accredited by the State of Pennsylvania. For a complete listing of accrediting authorities and the corresponding analytes/methods, please contact your Project Manager.

15. I certify that this sample data package is in compliance with SOW requirements, both technically and for completeness, other than the conditions detailed above. Release of the data contained in this hard-copy data package has been authorized by the Laboratory Manager or a designee, as verified by the following signature.

Iain Daniels
Laboratory Manager
Lionville Laboratory

2/9/10
Date

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-116-2036

Collector	Robin Beamon
Project Designation	[illegible]
Ice Chest No.	AES-CS-001
Shipped To	[illegible]
POSSIBLE SAMPLE HAZARDS/REMARKS	N/A
Special Handling and/or Storage	N/A
Company Contact	JOAN KESSNER
Telephone No.	375-4634
Sampling Location	T300SJS OUP
Field Logbook No.	[illegible]
COA	[illegible]
Offsite Property No.	N/A
Project Coordinator	KESSNER, JH
SAF No.	[illegible]
Method of Shipment	FEDEX
Bill of Lading/Air Bill No.	FDX 793214484469
Price Code	7C
Data Turnaround	15 Days

4/26/15

0000023

Preservation	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Type of Container	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
No. of Container(s)	1	1			1	1
Volume	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
SAMPLE ANALYSIS	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

Sample No.	Matrix *	Sample Date	Sample Time						
J19ED1	OTHER SOLID	1-25-10	1515			X	X	X	X

CHAIN OF POSSESSION	Date/Time	Sign/Print Names	Date/Time
Relinquished By/Removed From: R. Beamon RB	1-25-10 1700	Received By/Stored In: R. Beamon EAS REF E RR	1-25-10 1700
Relinquished By/Removed From: EAS REF E	1/26/10 1122	Received By/Stored In: SUANNAH JOHNSON	1/26/10 1122
Relinquished By/Removed From: SUANNAH JOHNSON	1/26/10 1122	Received By/Stored In: FDX	
Relinquished By/Removed From: 1-27-10	0930	Received By/Stored In: 1-27-10	0930
Relinquished By/Removed From		Received By/Stored In	
Relinquished By/Removed From		Received By/Stored In	

SPECIAL INSTRUCTIONS

[illegible]

Matrix *

LABORATORY SECTION	Received By	Title / Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By / Date/Time

[illegible]

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-116-2027

Collector R Curet	Company Contact JOAN KESSNER	Telephone No. [illegible]	Project Coordinator KESSNER, JH
Project Designation Columbia River Component of the RCBRA - Sediment	Sampling Location [illegible] J3008		SAF No. RC-116
Ice Chest No. HFS-08-001	Field Logbook No. EL-1685 CL-1641581	COA [illegible]	Method of Shipment FEDEX
Shipped To [illegible]	Offsite Property No. N/A		Bill of Lading/Air Bill No. FL 793214484469

Price Code 7C

Data Turnaround 15 Days

POSSIBLE SAMPLE HAZARDS/REMARKS

N/A

Special Handling and/or Storage

N/A

Preservation	None	None	Cool 4C	Cool 4C	Cool 4C	None					
Type of Container	G/P	G/T	G/P	G	aG	G/P					
No. of Container(s)	1	1	1	1	1	NS 1/26/10					
Volume	1500g	10g	10g	10g	10g	1000g					
SAMPLE ANALYSIS	[illegible]	[illegible]	[illegible] ✓	[illegible] ✓	[illegible] ✓	[illegible] ✓					

Sample No.	Matrix *	Sample Date	Sample Time										
J19FB0	OTHER SOLID	1-25-10	12.30			X	X	X	X				

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From R. Curet R Curet	Date/Time 01-25-10 1430	Received By/Stored In EMS REEF E	Date/Time 01-25-10 1432
Relinquished By/Removed From EMS REEF	Date/Time 1/26/10 1102	Received By/Stored In SHANNAN JOHNSON	Date/Time 1/26/10 1102
Relinquished By/Removed From SHANNAN JOHNSON	Date/Time 1/26/10 1102	Received By/Stored In FOX	Date/Time
Relinquished By/Removed From	Date/Time 1.27.10/0930	Received By/Stored In D Smith	Date/Time 1.27.10/0930
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time

SPECIAL INSTRUCTIONS

[illegible]

Matrix *

LABORATORY SECTION — Received By — Title — Date/Time

FINAL SAMPLE DISPOSITION — Disposal Method — Disposed By — Date/Time

0000124

[illegible] Closure Hanford	**CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST**	RC-116-2067	[illegible]
R. Curet	Company Contact JOAN KESSNER · Telephone No. 375-[illegible]	Project Coordinator KESSNER, JH	Price Code 7C · Data Turnaround 35 Days
Project Designation [illegible] River Component (the RCBRA - Sediments	Sampling Location [illegible] AREA - CORE BARREL EQUIPMENT BLANK J3008	SAF No. RC116	
Ice Chest No. ATS-CB-C01	Field Logbook No. EL-1645-01 · COA [illegible]	Method of Shipment FEDEX	
Shipped To EBERLINE SERVICES (RICHMOND)	Offsite Property No. N/A	Bill of Lading/Air Bill No. FD 793214484469	

POSSIBLE SAMPLE HAZARDS/REMARKS

NA

Special Handling and/or Storage

NA

0000025

		Preservation	[illegible]	[illegible]	[illegible]	
		Type of Container	[illegible]	[illegible]	[illegible]	
		No. of Container(s)	1	1	1	
		Volume	[illegible]	250g	[illegible]	
SAMPLE ANALYSIS			[illegible]	[illegible]	[illegible]	
Sample No.	Matrix *	Sample Date	Sample Time			
J19W9	OTHER SOLID	01-25-10	1540	X	X	X

CHAIN OF POSSESSION	Date/Time	Sign/Print Names	Date/Time
Relinquished By/Removed From R. Curet R.C.	01-25-10 1320	Received By/Stored In FAS REEF E	01-25-10 1320
Relinquished By/Removed From FASREEF E	1/26/10 1102	Received By/Stored In SHANNAH JOHNSON	1/26/10 1102
Relinquished By/Removed From SHANNAH JOHNSON	1/26/10 1102	Received By/Stored In FDX	Date/Time
Relinquished By/Removed From FDX	1/27/10/0930	Received By/Stored In D Smith	1/27/10/0930
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time

SPECIAL INSTRUCTIONS

(1) ICP Metals - 6010 [illegible]: Aluminum, Antimony, Arsenic, [illegible], Beryllium, Cadmium, [illegible] Calcium, Chromium, Cobalt, Copper, Iron, Lead, [illegible], Magnesium, Manganese, [illegible] Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, [illegible] Tin, Uranium, Vanadium, Zinc; Mercury - 7471 (CVA); (2) [illegible]; (3) [illegible]

[illegible]

Matrix *

[illegible]

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-116-2046 [illegible]

Collector [illegible]	Company Contact HAYE KESSNER Telephone No. 373-4[illegible]	Project Coordinator KESSNER, JH	Price Code 7C Data Turnaround 15 Days
Project Designation [illegible] of the RCBRA - Sediment	Sampling Location [illegible] 7100 H1E	SAF No. [illegible]	
Ice Chest No. AES-04-0341	Field Logbook No. [illegible]	COA [illegible]	Method of Shipment [illegible]
Shipped To [illegible]	Offsite Property No. N/A	Bill of Lading/Air Bill No. FDX# 793214484540	

POSSIBLE SAMPLE HAZARDS/REMARKS

[illegible]

Special Handling and/or Storage

[illegible]

Preservation	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Type of Container	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
No. of Container(s)	[illegible]	1	1	[illegible]	1
Volume	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
SAMPLE ANALYSIS	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

Sample No.	Matrix *	Sample Date	Sample Time					
[illegible]	OTHER SOLID	1-24-10	1500			X	X	X

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From [illegible]	Date/Time 1-24-10 1630	Received By/Stored In R. Burgess REF F 1C-12	Date/Time 1-24-10 1630
Relinquished By/Removed From REF F	Date/Time 1/26/10 1300	Received By/Stored In SHANNAN JOHNSON	Date/Time 1/26/10 1300
Relinquished By/Removed From SHANNAN JOHNSON	Date/Time 1/26/10 1330	Received By/Stored In FDX	Date/Time
Relinquished By/Removed From	Date/Time 1-27-10/0930	Received By/Stored In D Smith	Date/Time 1-27-10/0930
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time

SPECIAL INSTRUCTIONS

[illegible]

ICP Metals [illegible]

[illegible]

Status *

[illegible]

LABORATORY SECTION	Received By	Title Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By Date/Time

[illegible]

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

[illegible]-2047 Page 1 of 1

Collector: R. [illegible]

Company Contact: JEAN KESSNER Telephone No.: 375-[illegible]

Project Coordinator: KESSNER, JE

Price Code: 7C

Data Turnaround: 15 Days

Project Designation: [illegible]

Sampling Location: [illegible] 7100H1A

SAF No.: [illegible]

Ice Chest No.: MPS-04-054

Field Logbook No.: [illegible] - 01

COA: [illegible]

Method of Shipment: FEDEX

Shipped To: Mario [illegible] [✓ [illegible]]

Offsite Property No.: N/A

Bill of Lading/Air Bill No.: FDX 793214484540

POSSIBLE SAMPLE HAZARDS/REMARKS
N/A

Special Handling and/or Storage
N/A

4200000

Preservation	None	None	[illegible]	[illegible]	None
Type of Container	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
No. of Container(s)	1	1	1	1	1
Volume	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
SAMPLE ANALYSIS	[illegible] Special Instructions	[illegible] Special Instructions	[illegible] Special Instructions	[illegible]	[illegible]

MISSING
JD 1/26/10

Sample No.	Matrix *	Sample Date	Sample Time					
J[illegible]	OTHER SOLID	01-24-10	1550			X	X	X

CHAIN OF POSSESSION	Date/Time	Sign/Print Names	Date/Time
Relinquished By/Removed From: R. [illegible]	01-24-10 1656	Received By/Stored In: R. [illegible] EAS REF C	01-24-10 1656
Relinquished By/Removed From: EAS REF C	1/26/10 1200	Received By/Stored In: SHANNAN JOHNSON	1/26/10 1200
Relinquished By/Removed From: SHANNAN JOHNSON	1/26/10 1200	Received By/Stored In: FDX	
Relinquished By/Removed From: FedEx	1/27/10/0930	Received By/Stored In: [illegible]	1/27/10/0930
Relinquished By/Removed From:		Received By/Stored In:	
Relinquished By/Removed From:		Received By/Stored In:	

SPECIAL INSTRUCTIONS

(1) Gamma Spec - [illegible]; Americium-241; [illegible] Cobalt-60; Europium-152, Europium-154, Europium-155; Potassium-40; Radium-226; Radium-228; Ruthenium-106; Uranium-235; Uranium-238}
(2) Strontium-89/90 - Total Sr; Isotopic [illegible]; Uranium-233/234, Uranium-235, Uranium-238}; Isotopic Plutonium
(3) ICP Metals - 6010 [illegible] {Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Titanium, Vanadium, Zinc}; Mercury - [illegible]

Samples [illegible]
[illegible] controlled storage [illegible]
[illegible] from storage [illegible]
[illegible] samples for shipment [illegible]

Matrix *
[illegible]

LABORATORY SECTION Received By: Title: Date/Time:

FINAL SAMPLE DISPOSITION Disposal Method: Disposed By: Date/Time:

Washington Closure Hanford	**CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST**	RC-116-2021	Page [illegible]
Collector Rylie Brown	Company Contact [illegible]	Telephone No. [illegible]	Project Coordinator [illegible]
Project Designation [illegible]	Sampling Location [illegible] J3005JS		SAF No. [illegible]
Ice Chest No. AFS-06-001	Field Logbook No. [illegible]	COA [illegible]	Method of Shipment FEDEX
Shipped To [illegible]	Offsite Property No. N/A		Bill of Lading/Air Bill No. FDX 793214484469
Price Code 7C	Data Turnaround 15 Days		

POSSIBLE SAMPLE HAZARDS/REMARKS
[illegible]

Special Handling and/or Storage
[illegible]

			Preservation	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
			Type of Container	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
			No. of Container(s)	1	1	1	1	1	1
			Volume	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
SAMPLE ANALYSIS				[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Sample No.	Matrix *	Sample Date	Sample Time						
J19H28	OTHER SOLID	1-25-10	1500			X	X	X	X

CHAIN OF POSSESSION	Date/Time	Sign/Print Names	Date/Time
Relinquished By/Removed From R. Brown R.B.	1700 1-25-10	Received By/Stored In EAS [illegible]	1700 1-25-10
Relinquished By/Removed From EAS [illegible]	1/26/10 1102	Received By/Stored In SHANNAN JOHNSON	1/26/10 1102
Relinquished By/Removed From SHANNAN JOHNSON	1/26/10 1102	Received By/Stored In FDX	
Relinquished By/Removed From FedEx	1/27/10/0930	Received By/Stored In [illegible]	1/27/10/0930
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time

SPECIAL INSTRUCTIONS
[illegible]

Matrix *
[illegible]

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EF-013

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-116-2086

Collector: Rylie Rector	Company Contact: JOAN KESSNER	Telephone No.: 375-4686	Project Coordinator: KESSNER, JH
Project Designation: Columbia River Component of the RI/FS - Sediment	Sampling Location: ~~100K~~ 100H T100H-1E OUP RR 1-26-10		SAF No.: RC-116
Ice Chest No.: APS-09-054	Field Logbook No.: EL-1645	COA: [illegible]	Method of Shipment: FEDEX
Shipped To: EBERLINE SERVICES (ONSITE)	Offsite Property No.: N/A		Bill of Lading/Air Bill No.: FDX# 793214484540

Price Code: 7C

Data Turnaround: 15 Days

POSSIBLE SAMPLE HAZARDS/REMARKS

N/A

Special Handling and/or Storage

N/A

Preservation	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Type of Container	G/P	G/P	aG	G/P	G/P	G/P
No. of Container(s)	1	1	1	1	1	1
Volume	[illegible]	500g	125g	[illegible]	[illegible]	[illegible]
SAMPLE ANALYSIS	See item (1) in Special Instructions	See item (2) in Special Instructions	[illegible]	[illegible]	See item (3) in Special Instructions	[illegible]

Sample No.	Matrix *	Sample Date	Sample Time						
J194T6	OTHER SOLID	1-24-10	1515		X	X			X

CHAIN OF POSSESSION		Sign/Print Names	
Relinquished By/Removed From: R. Rector R.C	Date/Time: 1705 1-24-10	Received By/Stored In: R. Rector EAST REFER	Date/Time: 1705 1-24-10
Relinquished By/Removed From: EAST REFER	Date/Time: 1/26/10 1250	Received By/Stored In: SHANNAN JOHNSON	Date/Time: 1/26/10 1250
Relinquished By/Removed From: SHANNAN JOHNSON	Date/Time: 1/26/10 1300	Received By/Stored In: FDY	Date/Time:
Relinquished By/Removed From: FDX	Date/Time: 1-27-10 0930	Received By/Stored In: DSmith	Date/Time: 1-27-10 0930
Relinquished By/Removed From:	Date/Time:	Received By/Stored In:	Date/Time:
Relinquished By/Removed From:	Date/Time:	Received By/Stored In:	Date/Time:

SPECIAL INSTRUCTIONS

(1) Gamma Spec - [illegible] (Americium-241, Antimony-125, [illegible] 152, Cobalt-60, Europium-152, Europium-154, Europium-155, [illegible] 226, [illegible] 228, Ruthenium-106, Uranium-235, Uranium-238);
(2) ICP Metals - 6010 (Full List) (Aluminum, Antimony, Arsenic, Barium, Beryllium, [illegible] Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, [illegible] Tin, Uranium, Vanadium, Zinc); Mercury - 7471 - [illegible];
(3) Strontium-89/90 - Total Sr; Isotopic Thorium; Isotopic Uranium; Isotopic [illegible]

Matrix *

LABORATORY SECTION	Received By: [illegible]
FINAL SAMPLE DISPOSITION	Disposal Method: [illegible]

WCH-EE-021

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-110-2087 | Page 1 of 1

Collector: Rylie Barron

Company Contact: JOAN KESSNER

Telephone No.: [illegible]

Project Coordinator: KESSNER, JD

Price Code: 7C

Data Turnaround: 15 Days

Project Designation: Columbia River Component of the RCBRA - Sediment

Sampling Location: [illegible] RCWIN TEST 1

SAF No.: RC-110

Ice Chest No.: AES-04-054

Field Logbook No.: EL-1645

COA: [illegible]

Method of Shipment: FEDEX

Shipped To: EBERLINE SERVICES LIONVILLE

Offsite Property No.: N/A

Bill of Lading/Air Bill No.: FDX# 793214484540

POSSIBLE SAMPLE HAZARDS/REMARKS

NA

Special Handling and/or Storage

NA

0010030

		Preservation	None	None	Cool 4C	None	None	None				
		Type of Container	GP	GP	P	GP	GP	GP				
		No. of Container(s)	1	1	1	1	1	1				
		Volume	1500g	250g	125g	[illegible]	5g	10mg				
SAMPLE ANALYSIS			[illegible] Special Instructions	[illegible] Special Instructions	[illegible]	[illegible]	[illegible] Special Instructions	[illegible]				
Sample No.	Matrix *	Sample Date	Sample Time										
J19H17	OTHER SOLID	1-22-10	1430		X	X			X				

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
R. Barron R.R.	1-22-10 1730	EAS REF E R.R.	1-22-10 1730
EAS REF E 9	1/26/10 1300	SHANNAN JOHNSON	1/26/10 1300
SHANNAN JOHNSON	1/26/10 1312	FDX	
FDX	1.27.10 0930	J. Smith	1.27.10 0930

SPECIAL INSTRUCTIONS

(1) Gamma Spec - [illegible] Americium-241, Antimony-125, [illegible] Cesium-137, [illegible] Europium-152, Europium-154, Europium-155, [illegible] Radium-226, [illegible] 228, Ruthenium-106, [illegible], Uranium-238.

(2) ICP Metals - 6010 [illegible] (Aluminum, Antimony, Arsenic, Barium, Beryllium, [illegible] Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, [illegible] Tin, Titanium, Vanadium, Zinc); Mercury - 7471 - (CVAA)

(4) Semivolatile-8270 - [illegible]

Sample is [illegible] to remove samples from controlled storage. Sampler removed samples from storage [illegible]

Matrix *: [illegible]

LABORATORY SECTION	Received By:	Title:	Date/Time:
FINAL SAMPLE DISPOSITION	Disposal Method:	Disposed By:	Date/Time:

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-116-2088 | Page 1 of 1

Collector: Rylia Benson

Company Contact: JOAN KESSNER

Telephone No.: 375-2188 [illegible]

Project Coordinator: KESSNER, JH

Price Code: 7C

Data Turnaround: 15 Days

Project Designation: Columbia River Component of the RC/DRA - Solomon [illegible]

Sampling Location: 100K TIOCK-3A

SAF No.: RC-116

Ice Chest No.: DTS-CK1-059

Field Logbook No.: [illegible]

COA: [illegible]

Method of Shipment: FED EX

Shipped To: TESTAMERICA, RICHLAND [illegible] (EOSAVILLE)

Offsite Property No.: N/A

Bill of Lading/Air Bill No.: FDX# 7932 1448 4540

POSSIBLE SAMPLE HAZARDS/REMARKS

N/A

Special Handling and/or Storage

N/A

000031

Preservation	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Type of Container	G/P	G/P	aG	G/P	G/P	G/P
No. of Container(s)	1	1	1	1	1	1
Volume	1000g	250g	125g	2g	5g	1000g
SAMPLE ANALYSIS	See item (1) in Special Instructions	See item (2) in Special Instructions	[illegible]	[illegible]	See item (3) in Special Instructions	[illegible]

Sample No.	Matrix *	Sample Date	Sample Time						
J19HT8	OTHER SOLID	1-23-10	1630		X	X			X

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From: R Benson R B	Date/Time: 1-23-10 1830	Received By/Stored In: R Benson EAS ReF E RA	Date/Time: 1-23-10 1830
Relinquished By/Removed From: EAS REF E S	Date/Time: 1/26/10 1300	Received By/Stored In: SHANNAN JOHNSON	Date/Time: 1/26/10 1300
Relinquished By/Removed From: SHANNAN JOHNSON	Date/Time: 1/26/10 1355	Received By/Stored In: FDX	Date/Time:
Relinquished By/Removed From: FDX	Date/Time: 1/27/10 0930	Received By/Stored In: D Smith	Date/Time: 1/27/10 0930
Relinquished By/Removed From:	Date/Time:	Received By/Stored In:	Date/Time:
Relinquished By/Removed From:	Date/Time:	Received By/Stored In:	Date/Time:

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) (Americium 241, [illegible] Europium 152, Europium 154, Europium 155, [illegible] Radium 226, Ruthenium 106, Uranium 235, Uranium 238)

(2) ICP Metals - 6010 (Full List) (Aluminum, Antimony, Arsenic, Barium, Beryllium, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc); Mercury - 7471 - (CVAA)

(3) Strontium 89,90 - Total Sr; Isotopic Thorium; Isotopic Uranium; [illegible]

Sampler authorized to remove samples
from controlled storage. Shipper released
samples from storage location for custody
of samples for shipment to lab

Matrix * [illegible]

LABORATORY SECTION | Received By | Title | Date/Time

FINAL SAMPLE DISPOSITION | Disposal Method | Disposed By | Date/Time

WCH-EE-011

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-116-2068

Page 1 of 1

Collector	Rylie Britton
Company Contact	JOAN KESSNER
Telephone No.	375-4695
Project Coordinator	KESSNER, JH
Price Code	7C
Data Turnaround	15 Days
Project Designation	[illegible] River Component of the 300 IRA - Sediment
Sampling Location	300 AREA - POWER GRADE EQUIPMENT BLANK
SAF No.	RC-116
Ice Chest No.	DFS-CS-001
Field Logbook No.	EL-1645
COA	[illegible]
Method of Shipment	FEDEX
Shipped To	TEST AMERICA SERVICES [✓ KNOXVILLE]
Offsite Property No.	N/A
Bill of Lading/Air Bill No.	FDX 793214484469

POSSIBLE SAMPLE HAZARDS/REMARKS

N/A

Special Handling and/or Storage

N/A

0000032

Preservation	Cool 4C	Cool 4C	Cool 4C
Type of Container	aG	G	aG
No. of Container(s)	1	1	1
Volume	15g	250g	15g
SAMPLE ANALYSIS	See item (1) in Special Instructions	See item (2) in Special Instructions	[illegible]

Sample No.	Matrix *	Sample Date	Sample Time			
[illegible]	OTHER SOLID	1-25-10	1430	X	X	X

CHAIN OF POSSESSION	Date/Time	Sign/Print Names	Date/Time
Relinquished By/Removed From R. Britton	1-25-10 1700	Received By/Stored In FAS Ref [illegible]	1-25-10 1700
Relinquished By/Removed From [illegible]	1/26/10 1102	Received By/Stored In SHANNAN JOHNSON	1/26/10 1102
Relinquished By/Removed From SHANNAN JOHNSON	1/26/10 1102	Received By/Stored In FDX	Date/Time
Relinquished By/Removed From [illegible]	1/27/10 0930	Received By/Stored In [illegible]	1/27/10 0930
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time

SPECIAL INSTRUCTIONS

(1) ICP Metals [illegible] Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, [illegible] Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, [illegible] Tin, Uranium, Vanadium, Zinc; Mercury [illegible]
(2) VOA [illegible] 1,1,1-Trichloroethane, 1,1,2,2-Tetrachloroethane, 1,1,2-Trichloroethane, 1,1-Dichloroethane, 1,1-Dichloroethene, 1,2-Dichloroethane, [illegible] 4-Methyl-2-Pentanone, Acetone, [illegible] Bromomethane, Carbon disulfide, Carbon tetrachloride, Chlorobenzene, [illegible] Chloromethane, [illegible] Ethylbenzene, Methylene chloride, Styrene, Tetrachloroethene, Toluene, [illegible] trans-1,3-Dichloropropene, Trichloroethene, Vinyl chloride, Xylenes (total)

[illegible]

Matrix *
[illegible]

LABORATORY SECTION	Received By		Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Appendix 5

Data Validation Supporting Documentation

INORGANIC ANALYSIS DATA VALIDATION CHECKLIST

VALIDATION LEVEL:	A	B	[✓ C]	D	E

PROJECT: RCBRA		DATA PACKAGE: K1918	
VALIDATOR: ELR	LAB: LLI		DATE: 4/10/00
		SDG: K1918	

ANALYSES PERFORMED

[✓ SW-846/ICP]	SW-846/GFAA	[✓ SW-846/Hg]	SW-846 Cyanide		

SAMPLES/MATRIX

J19PD1	J19F80	J19FW9	J19F32	~~[illegible]~~
J19FJ3	J19H29	J19HT6	J19HT7	J19HT8
J19PX0				
				solid

1. DATA PACKAGE COMPLETENESS AND CASE NARRATIVE

Technical verification documentation present? .... Yes [✓ No] N/A

Comments:

2. INSTRUMENT PERFORMANCE AND CALIBRATIONS (Levels D and E)

Initial calibrations performed on all instruments? .... Yes No [✓ N/A]

Initial calibrations acceptable? .... Yes No [✓ N/A]

ICP interference checks acceptable? .... Yes No [✓ N/A]

ICV and CCV checks performed on all instruments? .... Yes No [✓ N/A]

ICV and CCV checks acceptable? .... Yes No [✓ N/A]

Standards traceable? .... Yes No [✓ N/A]

Standards expired? .... Yes No [✓ N/A]

Calculation check acceptable? .... Yes No [✓ N/A]

Comments:

INORGANIC ANALYSIS DATA VALIDATION CHECKLIST

3. BLANKS (Levels B, C, D, and E)

ICB and CCB checks performed for all applicable analyses? (Levels D, E)........ Yes No [✓ N/A]

ICB and CCB results acceptable? (Levels D, E)........ Yes No [✓ N/A]

Laboratory blanks analyzed?........ [✓ Yes] No N/A

Laboratory blank results acceptable?........ Yes [✓ No] N/A

Field blanks analyzed? (Levels C, D, E)........ Yes [✓ No] N/A

Field blank results acceptable? (Levels C, D, E)........ Yes No [✓ N/A]

Transcription/calculation errors? (Levels D, E)........ Yes No [✓ N/A]

Comments: Tin – UJ all

4. ACCURACY (Levels C, D, and E)

MS/MSD samples analyzed?........ [✓ Yes] No N/A

MS/MSD results acceptable?........ Yes [✓ No] N/A

MS/MSD standards NIST traceable? (Levels D, E)........ Yes No [✓ N/A]

MS/MSD standards expired? (Levels D, E)........ Yes No [✓ N/A]

LCS/BSS samples analyzed?........ [✓ Yes] No N/A

LCS/BSS results acceptable?........ Yes [✓ No] N/A

Standards traceable? (Levels D, E)........ Yes No [✓ N/A]

Standards expired? (Levels D, E)........ Yes No [✓ N/A]

Transcription/calculation errors? (Levels D, E)........ Yes No [✓ N/A]

Performance audit sample(s) analyzed?........ Yes [✓ No] N/A

Performance audit sample results acceptable?........ Yes No [✓ N/A]

Comments: antimony (50%) calcium (52%) magnesium (56%) zinc (49%) – MS – J all

LCS – Silicon (49% – J all

NO PAS

INORGANIC ANALYSIS DATA VALIDATION CHECKLIST

5. PRECISION (Levels C, D, and E)

Duplicate RPD values acceptable? .... [✓ Yes] No N/A
Duplicate results acceptable? .... [✓ Yes] No N/A
MS/MSD standards NIST traceable? (Levels D, E) .... Yes No [✓ N/A]
MS/MSD standards expired? (Levels D, E) .... Yes No [✓ N/A]
Field duplicate RPD values acceptable? .... Yes No [✓ N/A]
Field split RPD values acceptable? .... Yes No [✓ N/A]
Transcription/calculation errors? (Levels D, E) .... Yes No [✓ N/A]

Comments:

6. ICP QUALITY CONTROL (Levels D and E)

ICP serial dilution samples analyzed? .... Yes No [✓ N/A]
ICP serial dilution %D values acceptable? .... Yes No [✓ N/A]
ICP post digestion spike required? .... Yes No [✓ N/A]
ICP post digestion spike values acceptable? .... Yes No [✓ N/A]
Standards traceable? .... Yes No [✓ N/A]
Standards expired? .... Yes No [✓ N/A]
Transcription/calculation errors? .... Yes No [✓ N/A]

Comments:

INORGANIC ANALYSIS DATA VALIDATION CHECKLIST

7. FURNACE AA QUALITY CONTROL (Levels D and E)

Duplicate injections performed as required? .... Yes No [✓ N/A]

Duplicate injection %RSD values acceptable? .... Yes No [✓ N/A]

Analytical spikes performed as required? .... Yes No [✓ N/A]

Analytical spike recoveries acceptable? .... Yes No [✓ N/A]

Standards traceable? .... Yes No [✓ N/A]

Standards expired? .... Yes No [✓ N/A]

MSA performed as required? .... Yes No [✓ N/A]

MSA results acceptable? .... Yes No [✓ N/A]

Transcription/calculation errors? .... Yes No [✓ N/A]

Comments:

8. HOLDING TIMES (all levels)

Samples properly preserved? .... [✓ Yes] No N/A

Sample holding times acceptable? .... [✓ Yes] No N/A

Comments:

INORGANIC ANALYSIS DATA VALIDATION CHECKLIST

9. RESULT QUANTITATION AND DETECTION LIMITS (all levels)

Results reported for all requested analyses? .... [✓ Yes] No N/A

Results supported in the raw data? (Levels D, E) .... Yes No [✓ N/A]

Samples properly prepared? (Levels D, E) .... Yes No [✓ N/A]

Detection limits meet RDL? .... [✓ Yes] No N/A

Transcription/calculation errors? (Levels D, E) .... Yes No [✓ N/A]

Comments:

Appendix 6

Additional Documentation Requested by Client

208 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

WC Hanford, Inc.
2620 Fermi Avenue
Richland WA, 99354

Project: RC-116
Project Number: K1918
Project Manager: Joan Kessner

Reported:
02/05/2010 13:35

Metals by SW846 6000/7000 series - Quality Control

Lionville Laboratory

Analyte	Result and Qualifiers	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch L002019 - SW 7471A Prep									
Blank (L002019-BLK1)			Prepared: 02/01/2010 Analyzed: 02/02/2010						
Mercury	0.0100 U	0.0100	mg/kg						
Duplicate (L002019-DUP1)		Source: 1001098-01	Prepared: 02/01/2010 Analyzed: 02/02/2010						
Mercury	0.0250 U	0.0250	mg/kg		0.0237 U				20
Matrix Spike (L002019-MS1)		Source: 1001098-01	Prepared: 02/01/2010 Analyzed: 02/02/2010						
Mercury	0.147	0.0237	mg/kg	0.1158	0.0237 U	112	75-125		
Reference (L002019-SRM1)			Prepared: 02/01/2010 Analyzed: 02/02/2010						
Mercury	1.33	0.0290	mg/kg	1.2600		106	65.9-133.3		
Batch L002045 - SW 3050B									
Blank (L002045-BLK1)			Prepared: 02/03/2010 Analyzed: 02/04/2010						
Aluminum	4.90 U	4.90	mg/kg						
Antimony	0.588 U	0.588	mg/kg						
Arsenic	0.980 U	0.980	mg/kg						
Barium	0.490 U	0.490	mg/kg						
Beryllium	0.196 U	0.196	mg/kg						
Bismuth	9.80 U	9.80	mg/kg						
Boron	1.96 U	1.96	mg/kg						
Cadmium	0.196 U	0.196	mg/kg						
Calcium	98.0 U	98.0	mg/kg						
Chromium	0.196 U	0.196	mg/kg						
Cobalt	1.96 U	1.96	mg/kg						
Copper	0.980 U	0.980	mg/kg						
Iron	19.6 U	19.6	mg/kg						
Lead	0.490 U	0.490	mg/kg						
Lithium	2.45 U	2.45	mg/kg						
Magnesium	2.14 B	2.45	mg/kg						
Manganese	4.90 U	4.90	mg/kg						
Molybdenum	1.96 U	1.96	mg/kg						
Nickel	1.97 U	1.97	mg/kg						
Phosphorus	49.0 U	49.0	mg/kg						
Potassium	392 U	392	mg/kg						
Selenium	0.980 U	0.980	mg/kg						
Silicon	1.96 U	1.96	mg/kg						
Silver	0.196 U	0.196	mg/kg						
Sodium	49.0 U	49.0	mg/kg						

Metals by SW846 6000/7000 series - Quality Control

Lionville Laboratory

Analyte	Result and Qualifiers		Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch L002045 - SW 3050B										
Blank (L002045-BLK1)				Prepared: 02/03/2010 Analyzed: 02/04/2010						
Strontium	0.980	U	0.980	mg/kg						
Thallium	0.490	U	0.490	mg/kg						
Tin	1.32	B	9.80	mg/kg						
Uranium	19.6	U	19.6	mg/kg						
Vanadium	2.45	U	2.45	mg/kg						
Zinc	9.80	U	9.80	mg/kg						
Duplicate (L002045-DUP2)		Source: L001098-01		Prepared: 02/03/2010 Analyzed: 02/04/2010						
Aluminum	5930		4.81	mg/kg		7630			25*	20
Antimony	0.577	U	0.577	mg/kg		0.476 U				20
Arsenic	2.36		0.962	mg/kg		3.01			24*	20
Barium	46.5		0.481	mg/kg		58.8			23*	20
Beryllium	0.230		0.192	mg/kg		0.292			24*	20
Bismuth	9.62	U	9.62	mg/kg		7.94 U				20
Boron	0.813	B	1.92	mg/kg		1.03			24*	20
Cadmium	0.186	B	0.192	mg/kg		0.229			21*	20
Calcium	3510		96.2	mg/kg		4560			26*	20
Chromium	9.31		0.192	mg/kg		11.8			23*	20
Cobalt	3.80		1.92	mg/kg		4.72			22*	20
Copper	7.67		0.962	mg/kg		9.68			23*	20
Iron	9900		19.2	mg/kg		12500			23*	20
Lead	4.60		0.481	mg/kg		5.64			20	20
Lithium	6.20		2.40	mg/kg		7.79			23*	20
Magnesium	1550		72.1	mg/kg		1950			22*	20
Manganese	130		4.81	mg/kg		167			25*	20
Molybdenum	1.92	U	1.92	mg/kg		0.274				20
Nickel	7.31		3.85	mg/kg		9.08			22*	20
Phosphorus	288		48.1	mg/kg		360			22*	20
Potassium	958		481	mg/kg		1210			23*	20
Selenium	0.962	U	0.962	mg/kg		0.352				20
Silicon	603		1.92	mg/kg		586			3	20
Silver	0.192	U	0.192	mg/kg		0.159 U				20
Sodium	117		48.1	mg/kg		137			15	20
Strontium	18.4		0.962	mg/kg		24.0			26*	20
Thallium	0.481	U	0.481	mg/kg		0.397 U				20
Tin	1.64	B	9.62	mg/kg		1.56			5	20
Uranium	19.2	U	19.2	mg/kg		15.9 U				20

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

WC Hanford, Inc. 2620 Fermi Avenue Richland WA, 99354	Project: RC 116 Project Number: K1918 Project Manager: Joan Kessner	**Reported:** 02/05/2010 11:35

Metals by SW846 6000/7000 series - Quality Control

Lionville Laboratory

Analyte	Result and Qualifiers	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch L002045 - SW 3050B									
Duplicate (L002045-DUP2)	Source: 1001098-01		Prepared: 02/03/2010 Analyzed: 02/04/2010						
Vanadium	19.6	2.30	mg/kg		25.1			24*	20
Zinc	41.0	0.62	mg/kg		31.5			21*	20
Matrix Spike (L002045-MS2)	Source: 1001098-01		Prepared: 02/03/2010 Analyzed: 02/04/2010						
Aluminum	7960	1.33	mg/kg	133.33	7630	246*	75-125		
Antimony	16.7	0.400	mg/kg	33.333	0.476 U	50*	75-125		
Arsenic	109	0.667	mg/kg	133.33	3.01	80	75-125		
Barium	167	0.133	mg/kg	133.33	58.8	81	75-125		
Beryllium	2.90	0.133	mg/kg	3.3333	0.292	78	75-125		
Bismuth	284	6.67	mg/kg	333.33	7.94 U	85	75-125		
Boron	52.8	1.33	mg/kg	66.667	1.04	78	75-125		
Cadmium	3.02	0.133	mg/kg	3.3333	0.229	84	75-125		
Calcium	5420	66.7	mg/kg	1666.7	4560	52*	75-125		
Chromium	21.8	0.133	mg/kg	13.333	11.8	75	75-125		
Cobalt	30.6	1.33	mg/kg	33.333	4.72	78	75-125		
Copper	21.6	0.667	mg/kg	16.667	9.68	71*	75-125		
Iron	11100	13.3	mg/kg	66.667	12500	-1640*	75-125		
Lead	30.2	0.333	mg/kg	33.333	5.64	74*	75-125		
Lithium	66.6	1.67	mg/kg	66.667	7.79	88	75-125		
Magnesium	4890	50.0	mg/kg	1666.7	3950	56*	75-125		
Manganese	170	3.33	mg/kg	33.333	167	7*	75-125		
Molybdenum	54.4	1.33	mg/kg	66.667	0.274	81	75-125		
Nickel	34.5	2.67	mg/kg	33.333	9.08	76	75-125		
Phosphorus	596	13.3	mg/kg	333.33	360	71*	75-125		
Potassium	2530	267	mg/kg	1666.7	1210	80	75-125		
Selenium	104	0.667	mg/kg	133.33	0.152	78	75-125		
Silicon	548	1.33	mg/kg	66.667	586	-58*	75-125		
Silver	2.78	0.133	mg/kg	3.3333	0.159 U	83	75-125		
Sodium	1600	33.3	mg/kg	1666.7	137	88	75-125		
Strontium	79.3	0.667	mg/kg	66.667	24.0	83	75-125		
Thallium	97.7	0.333	mg/kg	133.33	0.197 U	71*	75-125		
Tin	52.9	6.67	mg/kg	66.667	1.56	77	75-125		
Uranium	253	13.3	mg/kg	133.33	15.9 U	76	75-125		
Vanadium	49.6	1.67	mg/kg	33.333	25.1	74*	75-125		
Zinc	74.5	6.67	mg/kg	33.333	31.5	69*	75-125		

WC-Hanford, Inc	Project: RC-116	
2620 Fermi Avenue	Project Number: K1918	Reported:
Richland WA, 99354	Project Manager: Joan Kessner	02/05/2010 13:35

Metals by SW846 6000/7000 series - Quality Control

Lionville Laboratory

Analyte	Result and Qualifiers	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch L002045 - SW 3050B									
Reference (L002045-SRM1)				Prepared: 02/03/2010 Analyzed: 02/04/2010					
Aluminum	7520	10.0	mg/kg	6766.6		111	0-225.5		
Antimony	66.0	1.20	mg/kg	56.630		117	0-225.6		
Arsenic	112	2.00	mg/kg	113.85		98	85-115		
Barium	293	1.00	mg/kg	298.35		98	75.7-124.3		
Beryllium	101	0.400	mg/kg	108.33		93	85.2-114.8		
Boron	78.3	4.00	mg/kg	86.380		91	68.5-131.6		
Cadmium	215	0.400	mg/kg	224.09		96	84.9-115.1		
Calcium	3180	200	mg/kg	3305.9		96	82.8-117.2		
Chromium	76.5	0.400	mg/kg	77.590		99	76.8-123.2		
Cobalt	155	4.00	mg/kg	163.49		95	79.4-120.6		
Copper	256	2.00	mg/kg	265.65		96	82.4-117.6		
Iron	7970	40.0	mg/kg	8202.8		97	78.9-121.1		
Lead	180	1.00	mg/kg	187.62		96	81.5-118.5		
Lithium	116	5.00	mg/kg	113.01		103	33.8-166.2		
Magnesium	8080	150	mg/kg	8352.3		97	84.2-115.8		
Manganese	887	10.0	mg/kg	951.35		93	69-131		
Molybdenum	232	4.00	mg/kg	234.78		99	80.1-119.9		
Nickel	211	8.00	mg/kg	220.85		95	81.4-118.6		
Potassium	13800	800	mg/kg	14177		97	85.7-114.3		
Selenium	184	2.00	mg/kg	187.99		98	78.8-121.2		
Silicon	646	4.00	mg/kg	939.78		69	0-272.1		
Silver	78.2	0.400	mg/kg	83.960		93	81.9-118.1		
Sodium	9300	100	mg/kg	9587.1		97	83.5-116.4		
Strontium	177	2.00	mg/kg	171.65		103	67.5-132.5		
Thallium	79.9	4.00	mg/kg	85.410		94	77.1-122.9		
Tin	95.3	20.0	mg/kg	101.60		94	86.7-113.2		
Titanium	101	1.00	mg/kg	92.540		109	39-160.9		
Vanadium	96.7	5.00	mg/kg	97.410		99	75.8-124.2		
Zinc	187	20.0	mg/kg	196.52		95	78.9-121.1		

Date: 16 April 2010
To. Washington Closure Hanford Inc. (technical representative)
From: ELR Consulting
Project: Columbia River Component of the RCBRA – Sediment
Subject: Wet Chemistry - Data Package No. K1918-LLI

INTRODUCTION

This memo presents the results of data validation on Data Package No. K1918 prepared by Eberline Services (EB). A list of samples validated along with the analyses reported and the method of analysis is provided in the following table.

Sample ID	Sample Date	Media	Validation	Data
J19FD1	1/25/10	Solid	C	See note 1
J19FW9	1/25/10	Solid	C	See note 1
J19FJ2	1/24/10	Solid	C	See note 1
J19H28	1/25/10	Solid	C	See note 1
J19HT6	1/24/10	Solid	C	See note 1
J19HT7	1/22/10	Solid	C	See note 1
J19HT8	1/23/10	Solid	C	See note 1
J19FX0	1/25/10	Solid	C	See note 1

1 = Total organic carbon (TOC) by 415.1.

Appendix 1. Glossary of Data Reporting Qualifiers
Appendix 2. Summary of Data Qualification
Appendix 3. Qualified Data Summary and Annotated Laboratory Reports
Appendix 4. Laboratory Narrative and Chain-of-Custody Documentation
Appendix 5. Data Validation Supporting Documentation
Appendix 6. Additional Documentation Requested by Client

DATA QUALITY PARAMETERS

- **Holding Times**

Analytical holding times for metals are assessed to ascertain whether the holding time requirements were met by the laboratory. The holding time requirements are as follows: Soil samples must be analyzed within 28 days for total organic carbon

If holding times are exceeded, but not by greater than two times the limit, all associated sample results are qualified as estimates and flagged "J" for detects and "UJ" for non-detects. If holding times are exceeded by greater than two times the limit, all associated detectable sample results are qualified as estimates and flagged "J" and all non-detects are rejected and flagged "UR".

Due to the holding time being exceeded by greater than twice the limit, all TOC results were qualified as estimates and flagged "J".

- **Method Blanks**

Method Blanks

Method blank analyses are performed to determine the extent of laboratory contamination introduced through sampling, sample preparation and analysis. At least one acceptable method blank analysis must be conducted for every 20 samples. No contaminants should be present in the method blank. All blank results must fall below the contract required detection limit (CRQL) to be acceptable.

All method blank results were acceptable.

Field (Equipment) Blank

No field blanks were submitted for analysis.

- **Accuracy**

Matrix Spike and Laboratory Control Sample

Matrix spike (MS) and laboratory control sample (LCS) analyses are used to assess the analytical accuracy of the reported data. The matrix spike is used to assess the effect of the matrix on the ability to accurately quantify sample concentrations. Recoveries must fall within the range of 70% to 130%. Samples with a recovery of less than 30% and a sample result below the IDL are rejected and flagged "UR". Samples with a recovery of 30% to 69% and a sample result less than the IDL are qualified "UJ". Samples with a recovery of greater than 130% or less than 70% and a sample result greater than the IDL are qualified as estimates and flagged "J". Finally, for samples with a recovery greater than 130% and a sample result less than the IDL, no qualification is required.

All accuracy results were acceptable.

- **Precision**

Laboratory Duplicate Samples

Analytical precision is expressed by the relative percent differences (RPD) between the recoveries of matrix spike duplicate (MSD) analyses performed on a sample in the analytical batch. Precision may alternatively be assessed using unspiked duplicate analyses performed on a sample in the analytical batch. If both sample and replicate activities (concentrations) are greater than five times the CRDL and the RPD is less than 30%, no qualification is required. If either activity (concentration) is less than five times the CRDL, the RPD control limit is less than or equal to two times the CRDL. If the RPD is outside the applicable control limit, associated results are qualified as estimated detects or estimated non-detects.

All laboratory duplicate results were acceptable.

Field Duplicate

No field duplicates were submitted for analysis.

- **Analytical Detection Levels**

Reported analytical detection levels are compared against the required quantitation limits (RQLs) to ensure that laboratory detection levels meet the required criteria. All analytes met the RQL.

- **Completeness**

Data package No. K1918 was submitted for validation and verified for completeness. Completeness is based on the percentage of data determined to be valid (i.e., not rejected). The completion percentage was 100%.

MAJOR DEFICIENCIES

None found.

MINOR DEFICIENCIES

The following minor deficiencies were noted:

- Due to the holding time being exceeded by greater than twice the limit, all TOC results were qualified as estimates and flagged "J".

Data flagged "J" indicates that the associated concentration is an estimate, but under the WCH statement of work, the data may be usable for decision-making purposes. All other validated results are considered accurate within the standard error associated with the methods.

REFERENCES

Washington Closure Hanford Contract #S00W307A00 (March 2008), *Data Validation Services*.

DOE/RL-2008-11, Rev.0, *Remedial Investigation Work Plan for Hanford Site Releases to the Columbia River*, September 2008.

Appendix 1

Glossary of Data Reporting Qualifiers

Qualifiers which may be applied by data validators in compliance with WCH validation SOW are as follows:

U - Indicates the compound or analyte was analyzed for and not detected in the 134sample. The value reported is the sample quantitation limit corrected for sample dilution and moisture content by the laboratory.

UJ - Indicates the compound or analyte was analyzed for and not detected in the sample. Due to a minor QC deficiency identified during the data validation, the associated quantitation limit is an estimate.

J - Indicates the compound or analyte was analyzed for and detected. Due to a minor QC deficiency identified during the data validation, the associated concentration is an estimate, but the data are usable for decision-making purposes.

BJ - Applied to inorganic analyses only. Indicates the analyte concentration was greater than the IDL but less than the CRDL and is considered an estimated value.

R - Indicates the compound or analyte was analyzed for, detected, and due to an identified major QC deficiency, the data are unusable.

UR - Indicates the compound or analyte was analyzed for and not detected in the sample. Additionally, the data is unusable due to an identified major QC deficiency.

NJ - Indicates presumptive evidence of a compound at an estimated value. The data may not be valid for some specific applications (i.e., usable for decision-making purposes).

N - Indicates presumptive evidence of a compound. The data may not be valid for some specific applications (i.e., usable for decision-making purposes).

Appendix 2

Summary of Data Qualification

WET CHEMISTRY DATA QUALIFICATION SUMMARY*

SDG: K1918	**REVIEWER:** **ELR**	**Project:** **RCBRA**	**PAGE 1 OF 1**
COMPOUND	QUALIFIER	SAMPLES AFFECTED	REASON
Total organic carbon	J	All	Hold time

* - The Qualified Data Summary Table includes laboratory applied "U" qualifiers not specifically identified here. The laboratory applied "U" qualifiers are included to minimize misinterpretation of results contained in the table.

Appendix 3

Qualified Data Summary and Annotated Laboratory Reports

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

WC-Hanford, Inc. 2620 Fermi Avenue Richland WA, 99354	Project: RC-116 Project Number: K1918 Project Manager: Joan Kessner	Reported: 03/08/2010 13:21

W 4/16/10

Wet Chemistry
Lionville Laboratory

Analyte	Result and Qualifier	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
J19FD1 (1001098-01) Other Solid								
Total Organic Carbon	31500 J	20.0	mg/kg	1	L003041	03/02/2010	03/02/2010	EPA 415.1
J19FW9 (1001098-05) Other Solid								
Total Organic Carbon	20.0 U J	20.0	mg/kg	1	L003041	03/02/2010	03/02/2010	EPA 415.1
J19FJ2 (1001098-07) Other Solid								
Total Organic Carbon	2650 J	20.0	mg/kg	1	L003041	03/02/2010	03/02/2010	EPA 415.1
J19H28 (1001098-09) Other Solid								
Total Organic Carbon	2320 J	20.0	mg/kg	1	L003041	03/02/2010	03/02/2010	EPA 415.1
J19HT6 (1001098-10) Other Solid								
Total Organic Carbon	623 J	20.0	mg/kg	1	L003041	03/02/2010	03/02/2010	EPA 415.1
J19HT7 (1001098-11) Other Solid								
Total Organic Carbon	1000 J	20.0	mg/kg	1	L003041	03/02/2010	03/02/2010	EPA 415.1
J19HT8 (1001098-12) Other Solid								
Total Organic Carbon	103 J	20.0	mg/kg	1	L003041	03/02/2010	03/02/2010	EPA 415.1
J19FX0 (1001098-13) Other Solid								
Total Organic Carbon	81.0 J	20.0	mg/kg	1	L003041	03/02/2010	03/02/2010	EPA 415.1

Appendix 4

Laboratory Narrative and Chain-of-Custody Documentation

264 Welsh Pool Road
Exton, Pennsylvania 19341
Phone (610) 280-3000
Fax (610) 280-3041

Case Narrative

Client: WC-HANFORD RC-116 K1918
LVL#: 1001098

W.O.#: 60049-001-001
Date Received: 01-27-10

INORGANIC NARRATIVE

1. This narrative covers the analysis of 8 solid samples.

2. The samples were prepared and analyzed in accordance with the methods indicated on the data summary report.

   Lionville Lab (LvL) is NELAP accredited by the State of Pennsylvania. For a complete list of accrediting authorities and the corresponding analytes/methods, please contact your Project Manager. LvL certifies that all test results meet the requirements of NELAC with any exception noted in the following statements.

3. Sample holding times as required by the method and/or contract were not met due to the extensive organic carbon and inorganic carbon backlogs as well as the limited daily sample through-put for solid matrix samples.

4. The results presented in this report are derived from samples that met LvL's sample acceptance policy.

5. The method blank was within the method criteria.

6. The Laboratory Control Sample (LCS) was within the laboratory control limits.

7. The matrix spike recovery was within the 75-125% control limits.

8. The replicate analysis was outside the 20% Relative Percent Difference (RPD) control limit at 25% that may be attributed to sample inhomogeneity.

9. Total Organic Carbon samples are dried prior to analysis.

10. I certify that this sample data package is in compliance with SOW requirements, both technically and for completeness, other than the conditions detailed above. Release of the data contained in this hard copy package has been authorized by the Laboratory Manager or a designee, as verified by the following signature.

Alain Damois
Laboratory Manager
Lionville Laboratory

3/15/10
Date

inpa1t 098

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

WC-Hanford, Inc.
2620 Fermi Avenue
Richland WA, 99354

Project: RC-116
Project Number: K1918
Project Manager: Joan Kessner

Reported:
03/08/2010 13:21

Analytical Report for Wet Chemistry

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
J19FD1	1001098-01	Other Solid	01/25/2010 15:15	01/27/2010 09:30
J19FW9	1001098-05	Other Solid	01/25/2010 15:40	01/27/2010 09:30
J19FJ2	1001098-07	Other Solid	01/24/2010 15:00	01/27/2010 09:30
J19H28	1001098-09	Other Solid	01/25/2010 15:00	01/27/2010 09:30
J19HT6	1001098-10	Other Solid	01/24/2010 15:15	01/27/2010 09:30
J19HT7	1001098-11	Other Solid	01/22/2010 14:30	01/27/2010 09:30
J19HT8	1001098-12	Other Solid	01/23/2010 16:30	01/27/2010 09:30
J19FX0	1001098-13	Other Solid	01/25/2010 14:30	01/27/2010 09:30

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-[illegible]-2036 | Page [illegible]

Collector R[illegible] Barron	Company Contact [illegible] KESSNER	Telephone No. 375-4688	Project Coordinator KESSNER, [illegible]
Project Designation Columbia River Component of the RC[illegible] - Sediment	Sampling Location [illegible] 7 3005 J5 DUP		SAF No. [illegible]
Ice Chest No. AES CS-CCY	Field Logbook No. [illegible]	COA [illegible]	Method of Shipment [illegible] FDX 7932 1448 4469
Shipped To [illegible] SERVICES ([illegible])	Offsite Property No. N/A		Bill of Lading/Air Bill No.

Price Code 7C

Data Turnaround 15 Days

POSSIBLE SAMPLE HAZARDS/REMARKS

N/A

Special Handling and/or Storage

N/A

Preservation	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Type of Container	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
No. of Container(s)	1	1	1	1	1	1
Volume	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
SAMPLE ANALYSIS	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

Sample No.	Matrix *	Sample Date	Sample Time						
J19[illegible]	OTHER SOLID	1-25-10	1515			X	X	X	X

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From R. Barron RB	Date/Time 1700 1-25-10	Received By/Stored In R. [illegible] EAS REF E RR	Date/Time 1700 1-25-10
Relinquished By/Removed From [illegible]	Date/Time 1/26/10 1123	Received By/Stored In SHANNAN JOHNSON	Date/Time 1/26/10 1123
Relinquished By/Removed From SHANNAN JOHNSON	Date/Time 1/26/10 1126	Received By/Stored In FDX	Date/Time
Relinquished By/Removed From FDX	Date/Time 1 27 10 0930	Received By/Stored In [illegible] [illegible]	Date/Time 1 27 10 0930
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time

SPECIAL INSTRUCTIONS

[illegible]

Matrix *

[illegible]

LABORATORY SECTION | Received By | Title | Date/Time

FINAL SAMPLE DISPOSITION | Disposal Method | Disposed By | Date/Time

[illegible]

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST		RC-116-2067	Page [illegible]
Collector R. Curet	Company Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator KESSNER, JH	Price Code 7C
Project Designation [illegible] of the RCBRA - Sediment	Sampling Location 100 AREA - CORE BARREL EQUIPMENT BLANK J3008		SAF No. RC-[illegible]	Data Turnaround 15 Days
Ice Chest No. ATS-08-001	Field Logbook No. EL-1645-01	COA [illegible]	Method of Shipment FEDEX	
Shipped To [illegible] (circled: [illegible])	Offsite Property No. N/A		Bill of Lading/Air Bill No. FL 7932144884469	

POSSIBLE SAMPLE HAZARDS/REMARKS
N/A

Special Handling and/or Storage
N/A

Preservation		Cool 4C	Cool 4C	Cool 4C
Type of Container		[illegible]	[illegible]	[illegible]
No. of Container(s)		1	1	1
Volume		[illegible]	[illegible]	[illegible]
SAMPLE ANALYSIS		See item (1) in Special Instructions	See item (2) in Special Instructions	[illegible]
Sample No.	Matrix *	Sample Date	Sample Time			
J19LW8	OTHER SOLID	01-25-10	1540	X	X	X

CHAIN OF POSSESSION		Sign/Print Names	
Relinquished By/Removed From R. Curet	Date/Time 01-25-10 1820	Received By/Stored In R. Curet / GAS REEFE	Date/Time 01-25-10 1820
Relinquished By/Removed From EAS REEF E [illegible]	Date/Time 1/26/10 1127	Received By/Stored In SHANNAN JOHNSON	Date/Time 1/26/10 1127
Relinquished By/Removed From SHANNAN JOHNSON	Date/Time 1/26/10 1128	Received By/Stored In FDX	Date/Time
Relinquished By/Removed From FDX	Date/Time 1/27/10/0930	Received By/Stored In [illegible]	Date/Time 1/27/10/0930
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time

SPECIAL INSTRUCTIONS

(1) ICP Metals - 6010 (Full List) {Aluminum, Antimony, Arsenic, Barium, Beryllium, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, [illegible], Potassium, Selenium, Silicon, Silver, Sodium, [illegible], Tin, Uranium, Vanadium, Zinc}; Mercury - 7471 (CVAA)

(2) [illegible] - 8260 [illegible], 1,1,2,2-Tetrachloroethane, [illegible], 1,1-Dichloroethane, [illegible], [illegible], 4-Methyl-2-Pentanone, Acetone, [illegible], Bromodichloromethane, [illegible], Carbon tetrachloride, Chlorobenzene, [illegible], Chloromethane, [illegible], [illegible], Methylene chloride, Styrene, Tetrachloroethene, [illegible], Trichloroethene, [illegible], Vinyl chloride, Xylenes (total)}

[illegible]

Matrix *
[illegible]

LABORATORY SECTION	Received By		Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method		Disposed By	Date/Time

[illegible]

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-116-2046

Collector	[illegible]
Project Designation	[illegible]
Ice Chest No.	HES 04-031
Shipped To	[illegible] SERVICES (ELOSAVE?) [illegible]
Possible Sample Hazards/Remarks	
Special Handling and/or Storage	
Company Contact	JOAN KESSNER
Telephone No.	[illegible]
Sampling Location	[illegible]
Field Logbook No.	[illegible]
COA	[illegible]
Offsite Property No.	N/A
Project Coordinator	KESSNER, JH
SAF No.	RC-116
Method of Shipment	FEDEX
Bill of Lading/Air Bill No.	FDX 793214484540
Price Code	7C
Data Turnaround	15 Days

000015

Sample No.	Matrix *	Sample Date	Sample Time					
[illegible]	OTHER SOLID	1-24-10	1500			X	X	X

CHAIN OF POSSESSION	Date/Time	Sign/Print Names	Date/Time
Relinquished By/Removed From	1-24-10 1630	Received By/Stored In	1-24-10 1630
Relinquished By/Removed From	1/26/10 1300	Received By/Stored In SHANNAN JOHNSON	1/26/10 1300
Relinquished By/Removed From SHANNAN JOHNSON	1/26/10 1246	Received By/Stored In FDX	Date/Time
Relinquished By/Removed From	1-27-10/0930	Received By/Stored In D Smith	1-27-10/0930
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time

SPECIAL INSTRUCTIONS

[illegible]

Matrix *

LABORATORY SECTION | Received By | Title | Date/Time

FINAL SAMPLE DISPOSITION | Disposal Method | Disposed By | Date/Time

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC116-2071

Collector Rodie Brown	Company Contact RYAN KESSNER	Telephone No. 375-4678	Project Coordinator KESSNER, RD
Project Designation Columbia River Component [illegible] - Sediment	Sampling Location T300SJS		SAF No. E3-116
Ice Chest No. ATS-CB-001	Field Logbook No. EL-1665	COA [illegible]	Method of Shipment FEDEX
Shipped To EBERLINE SERVICES [illegible]	Offsite Property No. N/A		Bill of Lading/Air Bill No. FDX 7932 1448 4469

Price Code 7C

Data Turnaround 45 Days

POSSIBLE SAMPLE HAZARDS/REMARKS

N/A

Special Handling and/or Storage

N/A

9100016

Preservation	None	None	Cool 4C	[illegible]	[illegible]	None
Type of Container	G/P	G/P	G/P	[illegible]	[illegible]	G/P
No. of Container(s)	1	1	1	1	1	1
Volume	1500g	10g	25g	[illegible]	[illegible]	[illegible]
SAMPLE ANALYSIS	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	Particle Size [illegible]

Sample No.	Matrix *	Sample Date	Sample Time						
J1D020	OTHER SOLID	1-25-10	1500			X	X	X	X

CHAIN OF POSSESSION	Date/Time	Sign/Print Names	Date/Time
Relinquished By/Removed From L. Brown	1700 1-25-10	Received By/Stored In EHS R.F. E KR	1700 1-25-10
Relinquished By/Removed From EHS [illegible]	1/26/10 1100	Received By/Stored In SHANNAN JOHNSON	1/26/10 1100
Relinquished By/Removed From SHANNAN JOHNSON	1/26/10 1100	Received By/Stored In FDX	Date/Time
Relinquished By/Removed From FedEx	1/27/10 0930	Received By/Stored In D. Smith	1/27/10/0930
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time

SPECIAL INSTRUCTIONS

[illegible]

Matrix *

[illegible]

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

[illegible]

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-116-2086

Collector: Rylie Becker

Company Contact: JOAN KESSNER

Telephone No.: 373-4086

Project Coordinator: KESSNER, JH

Price Code: 7C

Data Turnaround: 15 Days

Project Designation: Columbia River Component of the RCBRA - Sediment

Sampling Location: ~~[illegible]~~ 100H T100H1E OVP

SAF No.: RC-116

Ice Chest No.: HFS-04-054

Field Logbook No.: EL-1645 [illegible] 1-24-10

COA: [illegible]

Method of Shipment: FEDEX

Shipped To: EBERLINE SERVICES (RICHMOND)

Offsite Property No.: N/A

Bill of Lading/Air Bill No.: FDX# 793214484540

POSSIBLE SAMPLE HAZARDS/REMARKS

N/A

Special Handling and/or Storage

N/A

2100017

Preservation	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Type of Container	G/P	G/P	[illegible]	G/P	G/P	G/P
No. of Container(s)	1	1	1	1	1	1
Volume	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
SAMPLE ANALYSIS	See item (1) in Special Instructions	See item (2) in Special Instructions	[illegible]	[illegible]	See item (3) in Special Instructions	[illegible]

Sample No.	Matrix *	Sample Date	Sample Time						
J19HT6	OTHER SOLID	1-24-10	1515		X	X			X

CHAIN OF POSSESSION	Date/Time	Sign/Print Names	Date/Time
Relinquished By/Removed From: R. Becker R.B.	1-24-10 1700	Received By/Stored In: EAS KEFFER	1-24-10 1700
Relinquished By/Removed From: EAS KEFFER	1/26/10 1320	Received By/Stored In: SHANNAN JOHNSON	1/26/10 1320
Relinquished By/Removed From: SHANNAN JOHNSON	1/26/10 1320	Received By/Stored In: FDX	
Relinquished By/Removed From:	1.27.10 0930	Received By/Stored In: D Smith	1.27.10 0930
Relinquished By/Removed From		Received By/Stored In	
Relinquished By/Removed From		Received By/Stored In	

SPECIAL INSTRUCTIONS

[1] Gamma Spec - (Full List) {Americium-241, Antimony-125, [illegible] Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238}

[2] ICP Metals - 6010 (Full List) {Aluminum, Antimony, Arsenic, Barium, Beryllium, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc}; Mercury - 7471 - (CVAA)

[3] Strontium-89/90 - Total Sr; Isotopic Thorium; Isotopic Uranium; Isotopic Plutonium

Matrix *

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-018

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-116-2087 | Page 1 of 1

Collector Rylie Barron	Company Contact JOAN KESSNER	Telephone No. 372-[illegible]	Project Coordinator KESSNER, JH
Price Code 7C	Data Turnaround 15 Days		
Project Designation [illegible] Component of the RCBRA - Soil/Water	Sampling Location SOIL RWIN Test 1		SAF No. [illegible]
Ice Chest No. AES-04-054	Field Logbook No. EL-1645	COA [illegible]	Method of Shipment FEDEX
Shipped To [illegible] SERVICES (EBERLINE)	Offsite Property No. N/A		Bill of Lading/Air Bill No. FDX 7932 1448 4540

POSSIBLE SAMPLE HAZARDS/REMARKS
N/A

Special Handling and/or Storage
N/A

000018

Preservation	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Type of Container	G/P	G/P	[illegible]	[illegible]	G/P	G/P
No. of Container(s)	1	1	1	1	1	1
Volume	1500g	250g	125g	[illegible]	[illegible]	[illegible]
SAMPLE ANALYSIS	See item (1) in Special Instructions	See item (2) in Special Instructions	[illegible]	[illegible]	See item (3) in Special Instructions	[illegible]

Sample No.	Matrix *	Sample Date	Sample Time						
J19H17	OTHER SOLID	1-22-10	1430		X	X			X

CHAIN OF POSSESSION	Date/Time	Sign/Print Names	Date/Time
Relinquished By/Removed From R. Barron R.B.	1-22-10 1730	Received By/Stored In FAS REF E R.B.	1-22-10 1732
Relinquished By/Removed From FAS REF E	1/26/10 1308	Received By/Stored In SHANNAN JOHNSON	1/26/10 1308
Relinquished By/Removed From SHANNAN JOHNSON	1/26/10 1322	Received By/Stored In FDX	
Relinquished By/Removed From FedEx	1/27/10 0930	Received By/Stored In Smith	1/27/10 0930
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time

SPECIAL INSTRUCTIONS

(1) Gamma Spec - [illegible] Americium-241, Antimony-125, [illegible] Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Thorium-228, Uranium-238;
(2) ICP Metals - [illegible] Aluminum, Antimony, Arsenic, Barium, Beryllium, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Titanium, Vanadium, Zinc; Mercury - 7471 - [illegible]
(3) Strontium-90 [illegible] Total Sr; Isotopic Thorium; Isotopic Uranium; Isotopic Plutonium [illegible]

[illegible]
Sample [illegible]
[illegible]
[illegible]

Matrix *
[illegible]

LABORATORY SECTION	Received By	Title / Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By / Date/Time

WCH-CF-031

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-116-2088 | Pg [illegible]

Collector Eylie Barron	Company Contact JOAN KESSNER	Telephone No. 375-4684	Project Coordinator KESSNER, JH
Project Description Columbia River Component of the RCBRA - Sediment	Sampling Location DATA T100K3A		SAF No. RE-10-[illegible]
Ice Chest No. DTS-04-054	Field Logbook No. EL-1685	COA RESCPC 6530	Method of Shipment FEDEX
Shipped To [illegible] (CONVERT)	Offsite Property No. N/A		Bill of Lading/Air Bill No. FDX 7932144845 40

Price Code 7C

Data Turnaround 15 Days

POSSIBLE SAMPLE HAZARDS/REMARKS

N/A

Special Handling and/or Storage

N/A

Preservation	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]					
Type of Container	G/P	G/P	[illegible]	G/P	G/P	G/P					
No. of Container(s)	1	1	1	1		1					
Volume	150g	25g	125g	2g	2g	100g					
SAMPLE ANALYSIS	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]					

Sample No.	Matrix *	Sample Date	Sample Time											
J19H36	OTHER SOLID	1-23-10	1630		X	X			X					

CHAIN OF POSSESSION	Date/Time	Sign/Print Names	Date/Time
Relinquished By/Removed From R. Barron R.B	1-23-10 1830	Received By/Stored In R. Barron RAS REF E RR	1-27-10 1830
Relinquished By/Removed From RAS REF E S	1/26/10 1202	Received By/Stored In SHANNAN JOHNSON	1/26/10 1202
Relinquished By/Removed From SHANNAN JOHNSON	1/26/10 1[illegible]	Received By/Stored In FDX	Date/Time
Relinquished By/Removed From [illegible] 1.27.10/0930	Date/Time	Received By/Stored In D Smith 1.27.10/0930	Date/Time
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) [illegible] 241, Antimony-125, [illegible] Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, [illegible], [illegible] 235, Uranium-238
(2) ICP Metals - 6010 (Full List) [illegible] Aluminum, Antimony, Arsenic, Barium, Beryllium, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc; Mercury - 7471 - (CVAA)
(4) [illegible] 9060 - Total [illegible] [illegible] [illegible]

Sampler [illegible] to remove samples from [illegible] storage. [illegible] removed samples from storage [illegible] [illegible] samples for [illegible]

Matrix *
[illegible]

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

A-6[illegible]

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-116-2068 Page 1 of 1

Collector Kylie Barron	Company Contact RYAN KESSNER	Telephone No. 375-4688
Project Designation Columbia River Component of the RCBRA - Sediment	Sampling Location 100 AREA - POWER GEARS EQUIPMENT BLANK	
Ice Chest No. APS 08-201	Field Logbook No. EL-1648	COA [illegible]
Shipped To [illegible]	Offsite Property No. N/A	

Project Coordinator
KESSNER, RJ III

SAF No.
X10-126

Price Code 7C

Data Turnaround
15 Days

Method of Shipment
FEDEX

Bill of Lading/Air Bill No.
FEDEX 7932 1448 4469

POSSIBLE SAMPLE HAZARDS/REMARKS
N/A

Special Handling and/or Storage
N/A

Preservation	Cool 4C	Cool 4C	Cool 4C
Type of Container	[illegible]	[illegible]	[illegible]
No. of Container(s)	1	1	1
Volume	[illegible]	250g	[illegible]

SAMPLE ANALYSIS

Sample No.	Matrix *	Sample Date	Sample Time	See item (1) in Special Instructions	See item (2) in Special Instructions	[illegible]
J19TA0	OTHER SOLID	1-25-10	1430	X	X	X

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From K. Barron	Date/Time 1700 1-25-10	Received By/Stored In EAS Ref [illegible]	Date/Time 1700 1-25-10
Relinquished By/Removed From [illegible]	Date/Time 1/26/10 1100	Received By/Stored In SHANNAN JOHNSON	Date/Time 1/26/10 1100
Relinquished By/Removed From SHANNAN JOHNSON	Date/Time 1/26/10 1100	Received By/Stored In FDX	Date/Time
Relinquished By/Removed From FedEx 1 27 10 / 0830	Date/Time	Received By/Stored In [illegible] 1 27 10 / 0930	Date/Time
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time

SPECIAL INSTRUCTIONS

(1) ICP Metals - 6010 [illegible] Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Titanium, Vanadium, Zinc}; Mercury - 7471 (CVAA)

(2) VOA - 8260 [illegible]

[illegible]

Matrix *
[illegible]

LABORATORY SECTION Received By Title Date/Time

FINAL SAMPLE DISPOSITION Disposal Method Disposed By Date/Time

0000020

Appendix 5

Data Validation Supporting Documentation

GENERAL CHEMISTRY ANALYSIS DATA VALIDATION CHECKLIST

VALIDATION LEVEL:	A	B	[✓ C]	D	E

PROJECT: RCBRA		DATA PACKAGE: K1918	
VALIDATOR: ELR	LAB: LLI		DATE: 4/10/10
		SDG: K1918	

ANALYSES PERFORMED					
Anions/IC	[✓ TOC]	TOX	TPH 418.1	Oil and Grease	Alkalinity
Ammonia	BOD/COD	Chloride	Chromium-VI	pH	NO_3/NO_2
Sulfate	TDS	TKN	Phosphate		

SAMPLES/MATRIX

J19FD1 J19FW9 J19FJ2 J19H28 J19HT6

J19HT7 J19HT8 J19FX0

solid

1. DATA PACKAGE COMPLETENESS AND CASE NARRATIVE

Technical verification documentation present? .... Yes [✓ No] N/A

Comments:

2. INSTRUMENT PERFORMANCE AND CALIBRATIONS (Levels D and E)

Initial calibrations performed on all instruments? .... Yes No [✓ N/A]

Initial calibrations acceptable? .... Yes No [✓ N/A]

ICV and CCV checks performed on all instruments? .... Yes No [✓ N/A]

ICV and CCV checks acceptable? .... Yes No [✓ N/A]

Standards traceable? .... Yes No [✓ N/A]

Standards expired? .... Yes No [✓ N/A]

Calculation check acceptable? .... Yes No [✓ N/A]

Comments:

GENERAL CHEMISTRY ANALYSIS DATA VALIDATION CHECKLIST

3. BLANKS (Levels B, C, D, and E)

ICB and CCB checks performed for all applicable analyses? (Levels D, E)........ Yes No [✓ N/A]

ICB and CCB results acceptable? (Levels D, E)........ Yes No [✓ N/A]

Laboratory blanks analyzed?........ [✓ Yes] No N/A

Laboratory blank results acceptable?........ [✓ Yes] No N/A

Field blanks analyzed? (Levels C, D, E)........ Yes [✓ No] N/A

Field blank results acceptable? (Levels C, D, E)........ Yes No [✓ N/A]

Transcription/calculation errors? (Levels D, E)........ Yes No [✓ N/A]

Comments: No FB

4. ACCURACY (Levels C, D, and E)

Spike samples analyzed?........ [✓ Yes] No N/A

Spike recoveries acceptable?........ [✓ Yes] No N/A

Sike standards NIST traceable? (Levels D, E)........ Yes No [✓ N/A]

Spike standards expired? (Levels D, E)........ Yes No [✓ N/A]

LCS/BSS samples analyzed?........ [✓ Yes] No N/A

LCS/BSS results acceptable?........ [✓ Yes] No N/A

Standards traceable? (Levels D, E)........ Yes No [✓ N/A]

Standards expired? (Levels D, E)........ Yes No [✓ N/A]

Transcription/calculation errors? (Levels D, E)........ Yes No [✓ N/A]

Performance audit sample(s) analyzed?........ Yes [✓ No] N/A

Performance audit sample results acceptable?........ Yes No [✓ N/A]

Comments: No PAS

GENERAL CHEMISTRY ANALYSIS DATA VALIDATION CHECKLIST

5. PRECISION (Levels C, D, and E)

Duplicate RPD values acceptable? .... [✓ Yes] No N/A

Duplicate results acceptable? .... [✓ Yes] No N/A

MS/MSD standards NIST traceable? (Levels D, E) .... Yes No [✓ N/A]

MS/MSD standards expired? (Levels D, E) .... Yes No [✓ N/A]

Field duplicate RPD values acceptable? .... Yes No [✓ N/A]

Field split RPD values acceptable? .... Yes No [✓ N/A]

Transcription/calculation errors? (Levels D, E) .... Yes No [✓ N/A]

Comments: ____________________

6. HOLDING TIMES (all levels)

Samples properly preserved? .... [✓ Yes] No N/A

Sample holding times acceptable? .... Yes [✓ No] N/A

Comments: HT <2x — J all

GENERAL CHEMISTRY ANALYSIS DATA VALIDATION CHECKLIST

7. RESULT QUANTITATION AND DETECTION LIMITS (all levels)

Results reported for all requested analyses? .... [✓ Yes] No N/A

Results supported in the raw data? (Levels D, E) .... Yes No [✓ N/A]

Samples properly prepared? (Levels D, E) .... Yes No [✓ N/A]

Detection limits meet RDL? .... [✓ Yes] No N/A

Transcription/calculation errors? (Levels D, E) .... Yes No [✓ N/A]

Comments:

Appendix 6

Additional Documentation Requested by Client

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

WCH Hanford, Inc 2620 Fermi Avenue Richland WA, 99354	Project: RC-116 Project Number: K1918 Project Manager: Joan Kessner	**Reported:** 03/08/2010 13:21

Wet Chemistry - Quality Control

Lionville Laboratory

Analyte	Result and Qualifiers	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch L003041 - Default Prep GenChem									
Blank (L003041-BLK1)			Prepared & Analyzed: 03/02/2010						
Total Organic Carbon	20.0 U	20.0	mg/kg						
LCS (L003041-BS1)			Prepared & Analyzed: 03/02/2010						
Total Organic Carbon	418	20.0	mg/kg	400.00		104	80-120		
Duplicate (L003041-DUP1)	**Source: 1001098-10**		Prepared & Analyzed: 03/02/2010						
Total Organic Carbon	797	20.0	mg/kg		673			25*	20
Matrix Spike (L003041-MS1)	**Source: 1001098-10**		Prepared & Analyzed: 03/02/2010						
Total Organic Carbon	6300	20.0	mg/kg	5200.0	623	109	75-125		

F.3 FISH TISSUE VALIDATION

F.3.1 Fish

F.3.1.1 SDG K1608

SAF-RC-118
Columbia River Component of the RCBRA – Tissues
FINAL VALIDATION PACKAGE

COMPLETE COPY OF VALIDATION PACKAGE TO:

Kathy Wendt H4-21

COMMENTS:

SDG K1608 **SAF-RC-118**

Sampling Location: **100SA-WF1 – WF-4, FILLET**
100SA-WF1 - WF-4, CARCASS
300SA-WF1 – WF-5 FILLET
300SA-WF1 – WF-5, CARCASS
LWSA-WF1 – WF-5, FILLET
LWSA-WF1 – WF-5, CARCASS

Date: 12 October 2009
To: Washington Closure Hanford Inc. (technical representative)
From: ELR Consulting
Project: Columbia River Component of the RCBRA - Tissue
Subject: Radiochemistry - Data Package No. K1608-EB

INTRODUCTION

This memo presents the results of data validation on Data Package No. K1608 prepared by Eberline Services (EB). A list of samples validated along with the analyses reported and the method of analysis is provided in the following table.

Sample ID	Sample Date	Media	Validation	Data
J18J84	4/27/09	Solid	C	See note 1
J18J85	4/27/09	Solid	C	See note 1
J18J86	4/27/09	Solid	C	See note 1
J18J87	4/27/09	Solid	C	See note 1
J18K21	4/23/09	Solid	C	See note 1
J18K22	4/23/09	Solid	C	See note 1
J18K23	4/23/09	Solid	C	See note 1
J18K24	4/23/09	Solid	C	See note 1
J18K37	4/22/09	Solid	C	See note 1
J18K38	4/22/09	Solid	C	See note 1
J18K39	4/22/09	Solid	C	See note 1
J18K40	4/22/09	Solid	C	See note 1
J18K36	4/21/09	Solid	C	See note 1
J18K63	4/20/09	Solid	C	See note 1
J18K64	4/20/09	Solid	C	See note 1
J18K65	4/21/09	Solid	C	See note 1
J18K66	4/21/09	Solid	C	See note 1
J18K67	4/21/09	Solid	C	See note 1
J18K78	4/13/09	Solid	C	See note 1
J18K79	4/14/09	Solid	C	See note 1
J18K80	4/14/09	Solid	C	See note 1
J18K81	4/15/09	Solid	C	See note 1
J18K82	4/15/09	Solid	C	See note 1
J18KD8	4/16/09	Solid	C	See note 1
J18KD9	4/16/09	Solid	C	See note 1
J18KF0	4/16/09	Solid	C	See note 1
J18KF1	4/16/09	Solid	C	See note 1
J18KF2	4/20/09	Solid	C	See note 1

1 = Tritium, carbon-14, total strontium, technetium-99, alpha spectroscopy and gamma spectroscopy

Data validation was conducted in accordance with the Washington Closure Hanford (WCH) validation statement of work and the Remedial Investigation Work Plan for Hanford Site Releases to the Columbia River (DOE/RL-2008, Rev. 0, September 2006). Appendices 1 through 6 provide the following information as indicated below:

Appendix 1. Glossary of Data Reporting Qualifiers
Appendix 2. Summary of Data Qualification
Appendix 3. Qualified Data Summary and Annotated Laboratory Reports
Appendix 4. Laboratory Narrative and Chain-of-Custody Documentation
Appendix 5. Data Validation Supporting Documentation
Appendix 6. Additional Data Requested by Client

DATA QUALITY PARAMETERS

- **Holding Times**

Holding times are calculated from Chain-of-Custody forms to determine the validity of the results. The maximum holding time for radiochemical analysis is 6 months.

All holding times were acceptable.

- **Preparation (Method) Blanks**

Laboratory Blanks

Blank samples are analyzed to determine if positive results are due to laboratory reagent, sample container, or detector contamination. If blank analysis results indicate the presence of an analyte above the minimum detectable activity (MDA), the following qualifiers are applied: All positive sample results less than five times the highest blank concentration are qualified as estimates and flagged "J"; sample results below the MDA are qualified as undetected and flagged "U"; sample results above the MDA and greater than five times the highest blank concentration are not qualified.

All blank results were acceptable.

Field (Equipment) Blank

No field blanks were submitted for analysis.

- **Accuracy**

Accuracy is evaluated from laboratory control sample (LCS) or blank spike sample (BSS) batch samples and spiked samples from the analytical batch. Measured activities are compared to the known added amounts. The acceptable LCS or BSS and matrix spike (MS) recovery range is 70-130%. In addition, samples may be spiked with a radiochemical tracer to assist in isolating the radioisotope of interest with the yield of the tracer being used in calculating sample activity. The acceptable range for tracer recovery is 20% to 105%. Spike sample results outside the above ranges result in associated sample results being qualified as estimates, or not qualified, depending on the activity of the individual sample. Results are rejected for LCS/BSS recoveries of less than 30% and tracer recoveries of less than 20%, and tracer recoveries of greater than 115% for detected results.

Due to the lack of an LCS analysis, all thorium-228 (aspec) and thorium-232 (aspec) results were qualified as estimates and flagged "J".

Due to the lack of a matrix spike analysis, all tritium and carbon-14 results were qualified as estimates and flagged "J".

All other accuracy results were acceptable.

- **Laboratory Duplicates**

Analytical precision is expressed by the relative percent differences (RPD) between the recoveries of duplicate matrix spike analyses performed on a sample in the analytical batch. Precision may alternatively be assessed using unspiked duplicate analyses performed on a sample in the analytical batch. If both sample and replicate activities (concentrations) are greater than five times the contract required detection limit (CRDL) and the RPD is less than 30%, no qualification is required. If either activity (concentration) is less than five times the CRDL, the RPD control limit is less than or equal to two times the CRDL. If the RPD is outside the applicable control limit, associated results are qualified as estimated detects or estimated non-detects.

All duplicate results were acceptable.

Field Duplicates

No field duplicates were submitted for analysis.

- **Detection Levels**

Reported analytical detection levels for undetected analytes are compared against the RCBRA tissue RQLs to ensure that laboratory detection levels meet the required criteria. Fifty-three analytes exceeded the RQL. Under the WCH statement of work, no qualification is required. All other analytes met the RQL

- **Completeness**

Data package No. K1606 was submitted for validation and verified for completeness. Completeness is based on the percentage of data determined to be valid (i.e., not rejected). The completion percentage was 100%.

MAJOR DEFICIENCIES

None found.

MINOR DEFICIENCIES

The following minor deficiencies were noted:

- Due to the lack of an LCS analysis, all thorium-228 (aspec) and thorium-232 (aspec) results were qualified as estimates and flagged "J".
- Due to the lack of a matrix spike analysis, all tritium and carbon-14 results were qualified as estimates and flagged "J".

Data flagged "J" indicates that the associated concentration is an estimate, but under the WCH statement of work, the data may be usable for decision-making purposes. All other validated results are considered accurate within the standard error associated with the methods.

Fifty-three analytes exceeded the RQL. Under the WCH statement of work, no qualification is required.

REFERENCES

Washington Closure Hanford Contract #S00W307A00 (March 2008), *Data Validation Services*.

DOE/RL-2008-11, Rev. 0, September 2008, *Remedial Investigation Work Plan for Hanford Site Releases to the Columbia River*.

Appendix 1

Glossary of Data Reporting Qualifiers

Qualifiers which may be applied by data validators in compliance with the WCH statement of work are as follows:

U - Indicates the compound or analyte was analyzed for and not detected above the minimum detectable activity (MDA) in the sample. The value reported is the sample result corrected for sample dilution and moisture content by the laboratory. The data is usable for decision making purposes.

UJ - Indicates the compound or analyte was analyzed for and not detected at concentrations above the minimum detectable activity (MDA) in the sample. Due to a minor QC deficiency identified during the data validation, the associated quantitation limit is an estimate, but is usable for decision making purposes.

J - Indicates the compound or analyte was analyzed for and detected. Due to a minor QC deficiency identified during the data validation, the associated concentration is an estimate, but the data are usable for decision-making purposes.

R - Indicates the compound or analyte was analyzed for, detected, and due to an identified major QC deficiency, the data are unusable.

UR - Indicates the compound or analyte was analyzed for and not detected in the sample. Additionally, the data is unusable due to an identified major QC deficiency.

Appendix 2

Summary of Data Qualification

RADIOCHEMISTRY DATA QUALIFICATION SUMMARY*

SDG: K1608	**REVIEWER: ELR**	**Project: RCBRA**	**PAGE 1 OF 1**
COMPOUND	QUALIFIER	SAMPLES AFFECTED	REASON
Thorium-228 (aspec) Thorium-232 (aspec)	J	All	No LCS analysis
Tritium Carbon-14	J	All	No MS analysis

* - The Qualified Data Summary Table includes laboratory applied "U" qualifiers not specifically identified here. The laboratory applied "U" qualifiers are included to minimize misinterpretation of results contained in the table.

Appendix 3

Qualified Data Summary and Annotated Laboratory Reports

EBERLINE ANALYTICAL/RICHMOND

SAMPLE DELIVERY GROUP K1608

7364-001

J18J84

DATA SHEET

SDG	7364	Client/Case no	Hanford SDG K1608
Contact	R. Joseph Verville	Contract	No. 00W235A00
Lab sample id	K904142-01	Client sample id	J18J84
Dept sample id	7364-001	Location/Matrix	100SA WF1,FILLET SOLID
Received	04/29/09	Collected/Weight	04/27/09 08:00 1368 g
% solids	100.0	Custody/SAP No	RC-118 41 RC-118

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Tritium	10028-17-8	0	4.0	6.89	400	U J	H
Carbon 14	14762-75-5	1.60	3.4	5.61	50.0	U J	C
Total Strontium	SR-RAD	-0.019	0.15	0.318	1.00	U	SR
Technetium 99	14133-76-7	0.057	0.17	0.385	15.0	U	TC
Thorium 228	14274-82-9	-0.099	0.30	0.760	1.00	U J	TH
Thorium 230	14269-63-7	0.445	0.30	0.378	1.00		TH
Thorium 232	TH-232	0	0.099	0.378	1.00	U J	TH
Uranium 233/234	U-233/234	0	0.055	0.212	1.00	U	U
Uranium 235	15117-96-1	0	0.067	0.257	1.00	U	U
Uranium 238	U-238	0	0.055	0.212	1.00	U	U
Plutonium 238	13981-16-3	-0.027	0.053	0.203	1.00	U	PU
Plutonium 239/240	PU-239/240	0	0.053	0.203	1.00	U	PU
Potassium 40	13966-00-2	U		3.09		U	GAM
Cobalt 60	10198-40-0	U		0.028	0.050	U	GAM
Cesium 137	10045-97-3	U		0.029	0.100	U	GAM
Radium 226	13982-63-3	U		0.057	0.100	U	GAM
Radium 228	15262-20-1	U		0.110	0.200	U	GAM
Europium 152	14683-23-9	U		0.065	0.100	U	GAM
Europium 154	15585-10-1	U		0.087	0.100	U	GAM
Europium 155	14391-16-3	U		0.051	0.100	U	GAM
Thorium 228	14274-82-9	U		0.041		U	GAM
Thorium 232	TH-232	U		0.110		U	GAM
Uranium 235	15117-96-1	U		0.122		U	GAM
Uranium 238	U-238	U		3.44		U	GAM
Americium 241	14596-10-2	U		0.024		U	GAM
Beryllium 7	13966-02-4	U		0.226		U	GAM
Ruthenium 106	13967-48-1	U		0.242		U	GAM
Antimony 125	14234-35-6	U		0.064		U	GAM

ColumbiaRiver:Comp.ofRCHRA-Tissue

10/10/09

Lab id	EBRLNE
Protocol	Hanford1
Version	Ver 1.0
Form	DVD-DS
Version	3.06
Report date	06/15/09

EBERLINE ANALYTICAL/RICHMOND

SAMPLE DELIVERY GROUP K1608

7364-001

J18J84

DATA SHEET, cont

SDG	7364	Client/Case no	Hanford	SDG K1608
Contact	N. Joseph Verville	Contract	No. 500W235A00	
Lab sample id	R904149-01	Client sample id	J18J84	
Dept sample id	7364-001	Location/Matrix	100SA-WF1,FILLET	SOLID
Received	04/29/09	Collected/Weight	04/27/09 08:00	1368 g
% solids	100.0	Custody/SAF No	RC-118-41	RC-118

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Cesium 134	13967-70-9	U		0.033		U	GAM

ColumbiaRiverComp.ofRCBRA Tissue

✓ 10/10/09

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Lab id EBRLNE
Protocol Hanford1
Version Ver 1.0
Form DVD-DS
Version 3.06
Report date 06/15/09

EBERLINE ANALYTICAL/RICHMOND

SAMPLE DELIVERY GROUP K1608

7364-002

J18J85

DATA SHEET

SDG	7364	Client/Case no	Hanford SDG K1608
Contact	N. Joseph Verville	Contract	No. 300W215A00
Lab sample id	K904149-02	Client sample id	J18J85
Dept sample id	7364-002	Location/Matrix	100BA-WP2,FILLET SOLID
Received	04/29/09	Collected/Weight	04/27/09 10:30 1089 g
% solids	100.0	Custody/SAF No	RC 110-42 RC-110

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Tritium	10028-17-8	1.06	4.4	7.53	400	U J	H
Carbon 14	14762-75-5	1.06	3.6	6.04	50.0	U J	C
Total Strontium	SR-RAD	0.104	0.17	0.317	1.00	U	SR
Technetium 99	14133-76-7	0.110	0.13	0.407	15.0	U	TC
Thorium 228	14274-82-9	-0.064	0.11	0.356	1.00	U J	TH
Thorium 230	14269-63-7	0.865	0.39	0.307	1.00		TH
Thorium 232	TH-232	0	0.064	0.245	1.00	U J	TH
Uranium 233/234	U 233/234	0.029	0.059	0.224	1.00	U	U
Uranium 235	15117-96-1	0	0.071	0.271	1.00	U	U
Uranium 238	U-238	0	0.059	0.224	1.00	U	U
Plutonium 238	13981-16-3	0.111	0.17	0.308	1.00	U	PU
Plutonium 239/240	PU-239/240	0.078	0.056	0.213	1.00	U	PU
Potassium 40	13966-00-2	U		4.17		U	GAM
Cobalt 60	10198-40-0	U		0.029	0.050	U	GAM
Cesium 137	10045-97-3	U		0.024	0.100	U	GAM
Radium 226	13982-63-3	U		0.049	0.100	U	GAM
Radium 228	15262-20-1	U		0.108	0.200	U	GAM
Europium 152	14683-23-9	U		0.060	0.100	U	GAM
Europium 154	15585-10-1	U		0.084	0.100	U	GAM
Europium 155	14391-16-3	U		0.049	0.100	U	GAM
Thorium 228	14274-82-9	U		0.040		U	GAM
Thorium 232	TH-232	U		0.100		U	GAM
Uranium 235	15117-96-1	U		0.115		U	GAM
Uranium 238	U-238	U		2.96		U	GAM
Americium 241	14596-10-2	U		0.026		U	GAM
Beryllium 7	13966-02-4	U		0.220		U	GAM
Ruthenium 106	13967-48-1	U		0.224		U	GAM
Antimony 125	14234-35-6	U		0.056		U	GAM

ColumbiaRiverComp.ofRCBRA-Tissue

10/10/09

Lab id	EBRLNE
Protocol	Hanford1
Version	Ver 1.0
Form	DVD-DS
Version	3.06
Report date	06/15/09

EBERLINE ANALYTICAL/RICHMOND

SAMPLE DELIVERY GROUP K1608

7364-002

J18J85

DATA SHEET, cont

SDG	7364	Client/Case no	Hanford SDG K1608
Contact	N. Joseph Verville	Contract	No. S00W21SA00
Lab sample id	K904149-02	Client sample id	J18J85
Dept sample id	7364-002	Location/Matrix	100SA-HP2 FILLET SOLID
Received	04/29/09	Collected/weight	04/27/09 10:30 1089 g
% solids	100.0	Custody/SAF No	RC-118-42 RC-118

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALIFIERS	TEST
Cesium 134	13967-70-9	U		0.031		U	GAM

ColumbiaRiverComp.ofRCBRA-Tissue

10/10/09

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Lab id	EBRLINE
Protocol	Hanford1
Version	Ver 1.0
Form	DVD DS
Version	3.06
Report date	06/15/09

E B E R L I N E   A N A L Y T I C A L / R I C H M O N D
SAMPLE DELIVERY GROUP K1608

7364-003

J18J86

D A T A   S H E E T

SDG	7364	Client/Case no	Hanford SDG K1608
Contact	N. Joseph Verville	Contract	No. 800W215A00
Lab sample id	R904149-03	Client sample id	J18J86
Dept sample id	7364-003	Location/Matrix	100SA-WFJ,FILLET SOLID
Received	04/29/09	Collected/Weight	04/27/09 11:45 850 g
% solids	100.0	Custody/SAF No	RC-118-43 RC-118

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	MDL pCi/g	QUALI-FIERS	TEST
Tritium	10028-17-8	1.04	3.9	6.59	400	UJ	H
Carbon 14	14762-75-5	1.63	3.2	5.30	50.0	UJ	C
Total Strontium	SR RAD	0.120	0.14	0.324	1.00	U	SR
Technetium 99	14133-76-7	0.069	0.14	0.365	15.0	U	TC
Thorium 228	14274-82-9	0	0.11	0.365	1.00	UJ	TH
Thorium 230	14269-63-7	0.821	0.11	0.251	1.00	B	TH
Thorium 232	TH-232	0	0.066	0.251	1.00	UJ	TH
Uranium 233/234	U 233/234	0.077	0.077	0.294	1.00	U	U
Uranium 235	15117-96-1	0	0.093	0.356	1.00	U	U
Uranium 238	U 238	0.038	0.077	0.294	1.00	U	U
Plutonium 238	13981-16-3	0	0.063	0.340	1.00	U	PU
Plutonium 239/240	PU-239/240	0	0.063		1.00	U	PU
Potassium 40	13966-00-2	U		3.43		U	GAM
Cobalt 60	10198-40-0	U		0.024	0.050	U	GAM
Cesium 137	10045-97-3	U		0.024	0.100	U	GAM
Radium 226	13982-63-3	U		0.051	0.100	U	GAM
Radium 228	15262-20-1	U		0.108	0.200	U	GAM
Europium 152	14683-23-9	U		0.066	0.100	U	GAM
Europium 154	15585-10-1	U		0.064	0.100	U	GAM
Europium 155	14391-16-3	U		0.068	0.100	U	GAM
Thorium 228	14274-82-9	U		0.045		U	GAM
Thorium 232	TH 232	U		0.108		U	GAM
Uranium 235	15117-96-1	U		0.138		U	GAM
Uranium 238	U 238	U		2.70		U	GAM
Americium 241	14596-10-2	U		0.057		U	GAM
Beryllium 7	13966-02-4	U		0.225		U	GAM
Ruthenium 106	13967-48-1	U		0.178		U	GAM
Antimony 125	14234-35-6	U		0.062		U	GAM

ColumbiaRiverComp.ofRCNRA-Tissue

✓ 10/10/09

Lab id	EBRLNE
Protocol	Hanford1
Version	Ver 1.0
Form	DVD-DS
Version	3.06
Report date	06/15/09

EBERLINE ANALTYICAL/RICHMOND

SAMPLE DELIVERY GROUP K1608

7364-003

J18J86

DATA SHEET, cont

SDG 7364
Contact N. Joseph Verville

Lab sample id R904149-03
Dept sample id 7364-003
Received 04/29/09
% solids 100.0

Client/Case no Hanford SDG K1608
Contract No. S00W335A00

Client sample id J18J86
Location/Matrix 100SA-WF1,FILLET SOLID
Collected/Weight 04/27/09 13:45 850 g
Custody/SAF No RC-118 43 RC 118

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Cesium 134	13967-70-9	U		0.027		U	GAM

ColumbiaRiverComp.ofRCBRA-Tissue

10/6/09

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Lab id EBERLNE
Protocol Hanford1
Version Ver 1.0
Form DVD-DS
Version 1.06
Report date 06/15/09

EBERLINE ANALYTICAL/RICHMOND

SAMPLE DELIVERY GROUP K1608

7364-004 J18J87

DATA SHEET

SDG	7364	Client/Case no	Hanford SDG_K1608
Contact	N. Joseph Verville	Contract	No. S00W235A00
Lab sample id	R904149 04	Client sample id	J18J87
Dept sample id	7364-004	Location/Matrix	100SA-WP4,FILLET SOLID
Received	04/29/09	Collected/Weight	04/27/09 14:10 1097 g
% solids	100.0	Custody/SAP No	RC-118-44 RC 118

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Tritium	10028-17-8	0.600	3.7	6.40	400	U J	H
Carbon 14	14762 75-5	0.952	4.2	5.41	50.0	U J	C
Total Strontium	SR-RAD	-0.102	0.13	0.294	1.00	U	SR
Technetium 99	14133-76-7	0.123	0.20	0.378	15.0	U	TC
Thorium 228	14274-82-9	-0.072	0.072	0.344	1.00	U J	TH
Thorium 230	14269-63-7	0.250	0.22	0.274	1.00	U	TH
Thorium 232	TH-232	0	0.072	0.274	1.00	U J	TH
Uranium 233/234	U-233/234	0	0.066	0.251	1.00	U	U
Uranium 235	15117-96-1	0	0.079	0.304	1.00	U	U
Uranium 238	U-238	0	0.066	0.251	1.00	U	U
Plutonium 238	13981-16-3	0.030	0.12	0.233	1.00	U	PU
Plutonium 239/240	PU-239/240	0	0.061	0.233	1.00	U	PU
Potassium 40	13966-00-2	U		5.81		U	GAM
Cobalt 60	10198-40-0	U		0.040	0.050	U	GAM
Cesium 137	10045-97-3	U		0.043	0.100	U	GAM
Radium 226	13982-63-3	U		0.093	0.100	U	GAM
Radium 228	15262-20-1	U		0.193	0.200	U	GAM
Europium 152	14683-23-9	U		0.113	0.100	U	GAM
Europium 154	15585-10-1	U		0.120	0.100	U	GAM
Europium 155	14391-16-3	U		0.105	0.100	U	GAM
Thorium 228	14274 82-9	U		0.064		U	GAM
Thorium 232	TH-232	U		0.191		U	GAM
Uranium 235	15117 96-1	U		0.242		U	GAM
Uranium 238	U-238	U		4.62		U	GAM
Americium 241	14596 10-2	U		0.159		U	GAM
Beryllium 7	13966-02-4	U		0.384		U	GAM
Ruthenium 106	13967 48 1	U		0.354		U	GAM
Antimony 125	14234-35-6	U		0.096		U	GAM

ColumbiaRiverComp.ofRCBRA-Tissue

10/10/09

Lab id	EBRLNE
Protocol	Hanford1
Version	Ver 1.0
Form	DVD-DS
Version	1.06
Report date	06/15/09

EBERLINE ANALTYICAL/RICHMOND
SAMPLE DELIVERY GROUP K1608

7364-004

J18J87

DATA SHEET, cont

SDG	7364	Client/Case no	Hanford SDG K1608
Contact	N. Joseph Verville	Contract	No. 800W235A00
Lab sample id	K904149-04	Client sample id	J18J87
Dept sample id	7364-004	Location/Matrix	100BA-WP4 FILLET SOLID
Received	04/29/09	Collected/Weight	04/27/09 14:30 1097 g
% solids	100.0	Custody/SAF No	RC-118-44 RC-118

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Cesium 134	13967-70-9	U		0.061		U	GAM

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EBERLINE ANALYTICAL/RICHMOND

SAMPLE DELIVERY GROUP K1608

7364-005

J18K21

DATA SHEET

SDG	7364	Client/Case no	Hanford SDG K1608
Contact	N. Joseph Verville	Contract	No. 500W225A00
Lab sample id	R904149 05	Client sample id	J18K21
Dept sample id	7364-005	Location/Matrix	100SA-HF1,CARCASS SOLID
Received	04/29/09	Collected/Weight	04/23/09 08:00 1429 g
% solids	100.0	Custody/SAF No	RC 118-06 RC 118

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Tritium	10028-17-8	3.34	4.0	6.68	400	UJ	H
Carbon 14	14762-75-5	0.762	3.2	5.34	50.0	UJ	C
Total Strontium	SR-RAD	0.062	0.13	0.251	1.00	U	SR
Technetium 99	14133-76-7	0.136	0.20	0.404	15.0	U	TC
Thorium 228	14274-82-9	0.378	0.61	0.929	1.00	UJ	TH
Thorium 230	14269-63-7	0.676	0.46	0.575	1.00		TH
Thorium 232	TH-232	0	0.15	0.575	1.00	UJ	TH
Uranium 233/234	U 233/234	0.025	0.050	0.191	1.00	U	U
Uranium 235	15117-96-1	0	0.060	0.231	1.00	U	U
Uranium 238	U-238	0	0.050	0.191	1.00	U	U
Plutonium 238	13981 16 3	0	0.070	0.269	1.00	U	PU
Plutonium 239/240	PU-239/240	0	0.070	0.269	1.00	U	PU
Potassium 40	13966-00-2	U		2.76		U	GAM
Cobalt 60	10198 40-0	U		0.031	0.050	U	GAM
Cesium 137	10045-97-3	U		0.032	0.100	U	GAM
Radium 226	13982 63-3	U		0.060	0.100	U	GAM
Radium 228	15262-20-1	U		0.133	0.200	U	GAM
Europium 152	14683 23-9	U		0.083	0.100	U	GAM
Europium 154	15585-10-1	U		0.091	0.100	U	GAM
Europium 155	14391-16 3	U		0.063	0.100	U	GAM
Thorium 228	14274-82-9	U		0.043		U	GAM
Thorium 232	TH-232	U		0.133		U	GAM
Uranium 235	15117-96-1	U		0.146		U	GAM
Uranium 238	U-238	U		3.76		U	GAM
Americium 241	14596-10-2	U		0.123		U	GAM
Beryllium 7	13966-02-4	U		0.289		U	GAM
Ruthenium 106	13967-48-1	U		0.253		U	GAM
Antimony 125	14234-35-6	U		0.074		U	GAM

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7364-005

J18K21

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SDG	7364	Client/Case no	Hanford
			SDG K1608
Contact	N. Joseph Verville	Contract	No. 500W215A00
Lab sample id	R904149 05	Client sample id	J18K21
Dept sample id	7364-005	Location/Matrix	100SA-WF1 CARCASS SOLID
Received	04/29/09	Collected/Weight	04/21/09 08:00 1429 g
% solids	100.0	Custody/SAF No	RC-118-66 RC 118

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Cesium 134	13967-70-9	U		0.035		U	GAM

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SDG	7364	Client/Case no	Hanford SDG_K1608
Contact	N. Joseph Verville	Contract	No. S00W235A00
Lab sample id	R904142-06	Client sample id	J18K22
Dept sample id	7364-006	Location/Matrix	100SA-WF2,CARCASS SOLID
Received	04/29/09	Collected/Weight	04/23/09 10:00 906 g
% solids	100.0	Custody/CAF No	RC-118-67 RC-118

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Tritium	10028-17-8	2.76	3.7	6.08	400	U J	H
Carbon 14	14762-75-5	1.92	2.9	4.85	50.0	U J	C
Total Strontium	SR-RAD	-0.062	0.099	0.223	1.00	U	SR
Technetium 99	14133-76-7	0.015	0.13	0.304	15.0	U	TC
Thorium 228	14274-82-9	-0.038	0.15	0.360	1.00	U J	TH
Thorium 230	14269-63-7	0.524	0.10	0.286	1.00		TH
Thorium 232	TH-232	0	0.075	0.286	1.00	U J	TH
Uranium 233/234	U 233/234	0	0.050	0.223	1.00	U	U
Uranium 235	15117-96-1	0	0.071	0.270	1.00	U	U
Uranium 238	U-238	0.029	0.058	0.223	1.00	U	U
Plutonium 238	13981-16-3	-0.052	0.052	0.250	1.00	U	PU
Plutonium 239/240	PU-239/240	0	0.052	0.200	1.00	U	PU
Potassium 40	13966-00-2	U		2.82		U	GAM
Cobalt 60	10198-40-0	U		0.054	0.050	U	GAM
Cesium 137	10045-97-3	U		0.041	0.100	U	GAM
Radium 226	13982-63-3	U		0.082	0.100	U	GAM
Radium 228	15262-20-1	U		0.189	0.200	U	GAM
Europium 152	14683-23-9	U		0.108	0.100	U	GAM
Europium 154	15585-10-1	U		0.109	0.100	U	GAM
Europium 155	14391-16-3	U		0.105	0.100	U	GAM
Thorium 228	14274-82-9	U		0.074		U	GAM
Thorium 232	TH-232	U		0.189		U	GAM
Uranium 235	15117-96-1	U		0.239		U	GAM
Uranium 238	U 238	U		4.14		U	GAM
Americium 241	14596-10-2	U		0.096		U	GAM
Beryllium 7	13966-02-4	U		0.422		U	GAM
Ruthenium 106	13967-48-1	U		0.337		U	GAM
Antimony 125	14234-35-6	U		0.094		U	GAM

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SAMPLE DELIVERY GROUP K1608

7364-006

J18K22

DATA SHEET, cont

SDG	7364	Client/Case no	Hanford
Contact	N. Joseph Verville	Contract	No. 800W235A00
		SDG	K1608
Lab sample id	R904149-06	Client sample id	J18K22
Dept sample id	7364-006	Location/Matrix	100SA-WF2,CARCASS SOLID
Received	04/29/09	Collected/Weight	04/23/09 10:00 986 g
% solids	100.0	Custody/SAF No	RC-118-67 RC 110

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Cesium 134	13967-70-9	U		0.047		U	GAM

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SAMPLE DELIVERY GROUP K1608

7364-007

J18K23

DATA SHEET

SDG	7364	Client/Case no	Hanford SDG K1608
Contact	N. Joseph Verville	Contract	No. S00W215A00
Lab sample id	R904149-07	Client sample id	J18K23
Dept sample id	7364-007	Location/Matrix	100SA-WP3,CARCASS SOLID
Received	04/29/09	Collected/Weight	04/21/09 12:00 315 g
% solids	100.0	Custody/SAF No	RC-118.60 RC-118

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Tritium	10028-17-8	1.98	3.6	6.02	400	U J	H
Carbon 14	14762-75-5	0.370	2.8	4.80	50.0	U J	C
Total Strontium	SR-RAD	-0.048	0.11	0.227	1.00	U	SR
Technetium 99	14133-76-7	0.061	0.16	0.403	15.0	U	TC
Thorium 228	14274-82-9	U	0.21	0.505	1.00	U J	TH
Thorium 230	14269-63-7	0.630	0.42	0.401	1.00		TH
Thorium 232	TH 232	U	0.10	0.401	1.00	U J	TH
Uranium 233/234	U-233/234	0.038	0.076	0.146	1.00	U	U
Uranium 235	15117-96-1	0	0.046	0.177	1.00	U	U
Uranium 238	U 238	0.019	0.076	0.146	1.00	U	U
Plutonium 238	13981-16-3	0.027	0.11	0.201	1.00	U	PU
Plutonium 239/240	PU-239/240	0	0.053	0.203	1.00	U	PU
Potassium 40	13966-00-2	U		1.79		U	GAM
Cobalt 60	10198-40-0	U		0.056	0.050	U	GAM
Cesium 137	10045-97-3	U		0.057	0.100	U	GAM
Radium 226	13982-63-3	U		0.135	0.100	U	GAM
Radium 228	15262-20-1	U		0.268	0.200	U	GAM
Europium 152	14683-23-9	U		0.156	0.100	U	GAM
Europium 154	15585-10-1	U		0.183	0.100	U	GAM
Europium 155	14391-16-3	U		0.315	0.100	U	GAM
Thorium 228	14274-82-9	U		0.088		U	GAM
Thorium 232	TH-232	U		0.268		U	GAM
Uranium 235	15117-96-1	U		0.273		U	GAM
Uranium 238	U-238	U		6.71		U	GAM
Americium 241	14596-10-2	U		0.104		U	GAM
Beryllium 7	13966-02-4	U		0.607		U	GAM
Ruthenium 106	13967-48-1	U		0.518		U	GAM
Antimony 125	14234-35-6	U		0.135		U	GAM

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7364-007

J18K23

DATA SHEET, cont

SDG	7364	Client/Case no	Hanford SDG K1608
Contact	N. Joseph Verville	Contract	No. 900M235A00
Lab sample id	R904149-07	Client sample id	J18K23
Dept sample id	7364-007	Location/Matrix	100SA-WF3,CARCASS SOLID
Received	04/29/09	Collected/Weight	04/21/09 12:00 915 g
% solids	100.0	Custody/SAF No	RC-118-68 RC-118

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Cesium 134	13967-70-9	U		0.081		U	GAM

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Lab id	EBERLNE
Protocol	Hanford1
Version	Ver 1.0
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EBERLINE ANALYTICAL/RICHMOND

SAMPLE DELIVERY GROUP K1608

7364-008

J18K24

DATA SHEET

SDG	7364	Client/Case no	Hanford SDG K1608
Contact	N. Joseph Verville	Contract	No. 500W235A00
Lab sample id	E904149-08	Client sample id	J18K24
Dept sample id	7364-008	Location/Matrix	100SA-WP4,CARCASS SOLID
Received	04/29/09	Collected/Weight	04/23/09 14:00 953 g
% solids	100.0	Custody/SAF No	RC-118-69 RC-118

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Tritium	10028-17-8	-0.890	3.6	6.11	400	U J	H
Carbon 14	14762-75-5	2.21	3.0	5.03	50.0	U J	C
Total Strontium	SR RAD	-0.071	0.13	0.276	1.00	U	SR
Technetium 99	14133-76-7	0.242	0.28	0.422	15.0	U	TC
Thorium 228	14274-82-9	-0.061	0.24	0.672	1.00	U J	TH
Thorium 230	14269-63-7	0.484	0.37	0.463	1.00		TH
Thorium 232	TH 232	0.061	0.12	0.463	1.00	U J	TH
Uranium 233/234	U-233/234	0.031	0.061	0.234	1.00	U	U
Uranium 235	15117-96-1	0.037	0.074	0.283	1.00	U	U
Uranium 238	U-238	0	0.061	0.234	1.00	U	U
Plutonium 238	13981-16-3	-0.028	0.057	0.216	1.00	U	PU
Plutonium 239/240	PU 239/240	0	0.056	0.216	1.00	U	PU
Potassium 40	13966-00-2	U		2.27		U	GAM
Cobalt 60	10198-40-0	U		0.032	0.050	U	GAM
Cesium 137	10045-97-3	U		0.033	0.100	U	GAM
Radium 226	13982-63-3	U		0.062	0.100	U	GAM
Radium 228	15262-20-1	U		0.114	0.200	U	GAM
Europium 152	14683-23-9	U		0.082	0.100	U	GAM
Europium 154	15585-10-1	U		0.091	0.100	U	GAM
Europium 155	14391-16-3	U		0.054	0.100	U	GAM
Thorium 228	14274-82-9	U		0.104		U	GAM
Thorium 232	TH-232	U		0.114		U	GAM
Uranium 235	15117-96-1	U		0.139		U	GAM
Uranium 238	U-238	U		1.54		U	GAM
Americium 241	14596-10-2	U		0.029		U	GAM
Beryllium 7	13966-02-4	U		0.326		U	GAM
Ruthenium 106	13967-48-1	U		0.274		U	GAM
Antimony 125	14234-35-6	U		0.068		U	GAM

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SAMPLE DELIVERY GROUP K1606

7364-008

J18K24

DATA SHEET, cont

SDG	7364	Client/Case no	Hanford SDG K1606
Contact	N. Joseph Verville	Contract	No. 000W235A00
Lab sample id	R904149-08	Client sample id	J18K24
Dept sample id	7364-008	Location/Matrix	100SA-WF4.CARCASS SOLID
Received	04/29/09	Collected/Weight	04/23/09 14:00 953 g
% solids	100.0	Custody/SAF No	RC-118-69 RC 118

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALIFIERS	TEST
Cesium 134	13967-70-9	U		0.036		U	GAM

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SAMPLE DELIVERY GROUP K1608

7364-009

J10XJ7

DATA SHEET

SDG	7364	Client/Case no	Hanford SDG K1608
Contact	N. Joseph Verville	Contract	No. 500W235A00
Lab sample id	R904149-09	Client sample id	J10XJ7
Dept sample id	7364-009	Location/Matrix	300SA-WF2,FILLET SOLID
Received	04/29/09	Collected/Weight	04/22/09 08:00 990 g
% solids	100.0	Custody/SAF No	RC-118-82 RC-118

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Tritium	10028-17-8	1.84	3.7	6.21	400	UJ	H
Carbon 14	14762-75-5	1.80	3.0	4.96	50.0	UJ	C
Total Strontium	SR-RAD	0.091	0.13	0.244	1.00	U	SR
Technetium 99	14133-76-7	0.030	0.20	0.386	15.0	U	TC
Thorium 228	14274-82-9	0	0.076	0.291	1.00	UJ	TH
Thorium 230	14269-63-7	0.227	0.23	0.289	1.00	U	TH
Thorium 232	TH-232	0.038	0.076	0.289	1.00	UJ	TH
Uranium 233/234	U 233/234	0.080	0.11	0.203	1.00	U	U
Uranium 235	15117-96-1	0.032	0.064	0.246	1.00	U	U
Uranium 238	U-238	0	0.053	0.203	1.00	U	U
Plutonium 238	13981-16-3	0.110	0.11	0.211	1.00	U	PU
Plutonium 239/240	PU-239/240	0	0.055	0.210	1.00	U	PU
Potassium 40	13966-00-2	U		7.25		U	GAM
Cobalt 60	10198-40-0	U		0.083	0.050	U	GAM
Cesium 137	10045-97-3	U		0.083	0.100	U	GAM
Radium 226	13982-63-3	U		0.188	0.100	U	GAM
Radium 228	15262-20-1	U		0.403	0.200	U	GAM
Europium 152	14683-23-9	U		0.220	0.100	U	GAM
Europium 154	15585-10-1	U		0.272	0.100	U	GAM
Europium 155	14391-16-3	U		0.178	0.100	U	GAM
Thorium 228	14274-82-9	U		0.137		U	GAM
Thorium 232	TH-232	U		0.403		U	GAM
Uranium 235	15117-96-1	U		0.437		U	GAM
Uranium 238	U-238	U		10.1		U	GAM
Americium 241	14596-10-2	U		0.075		U	GAM
Beryllium 7	13966-02-4	U		0.827		U	GAM
Ruthenium 106	13967-48-1	U		0.694		U	GAM
Antimony 125	14234-35-6	U		0.197		U	GAM

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E B E R L I N E A N A L T Y I C A L / R I C H M O N D

SAMPLE DELIVERY GROUP K1608

7364-009

J18K37

D A T A S H E E T , c o n t

SDG 7364
Contact N. Joseph Verville

Lab sample id R904142-09
Dept sample id 7364-009
Received 04/29/09
% solids 100.0

Client/Case no Hanford SDG K1608
Contract No. 00002J5A00

Client sample id J18K37
Location/Matrix 300SA-WF2,FILLET SOLID
Collected/Weight 04/22/09 08:00 990 g
Custody/SAF No RC-118 02 RC-118

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Cesium 134	13967-70-9	U		0.098		U	GAM

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EBERLINE ANALYTICAL/RICHMOND

SAMPLE DELIVERY GROUP K1608

7364-010

J18K38

DATA SHEET

SDG: 7364
Contact: N. Joseph Verville
Client/Case no: Hanford
SDG K1608
Contract: No. SOOM235A00

Lab sample id: R904149-10
Dept sample id: 7364 010
Received: 04/29/09
% solids: 100.0
Client sample id: J18K38
Location/Matrix: 300SA-WF3.FILLET
SOLID
Collected/Weight: 04/22/09 10:00
1012 g
Custody/SAF No: RC-118-03
RC-118

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Tritium	10028-17-8	2.36	3.4	6.02	400	U J	H
Carbon 14	14762-75-5	1.37	2.9	4.79	50.0	U J	C
Total Strontium	SR-RAD	0.055	0.12	0.233	1.00	U	SR
Technetium 99	14133-76-7	0.016	0.21	0.304	15.0	U	TC
Thorium 228	14274-82-9	0.034	0.068	0.261	1.00	U J	TH
Thorium 230	14269-63-7	0.272	0.27	0.325	1.00	U	TH
Thorium 232	TH-232	0	0.068	0.260	1.00	U J	TH
Uranium 233/234	U 233/234	0.061	0.063	0.240	1.00	U	U
Uranium 235	15117-96-1	0	0.076	0.291	1.00	U	U
Uranium 238	U-238	0	0.063	0.240	1.00	U	U
Plutonium 238	13981-16-3	0.027	0.11	0.261	1.00	U	PU
Plutonium 239/240	PU 239/240	0.027	0.055	0.210	1.00	U	PU
Potassium 40	13966-00-2	U		4.77		U	GAM
Cobalt 60	10198-40-0	U		0.040	0.050	U	GAM
Cesium 137	10045-97-3	U		0.040	0.100	U	GAM
Radium 226	13982-63-3	U		0.090	0.100	U	GAM
Radium 228	15262-20-1	U		0.196	0.200	U	GAM
Europium 152	14683-23-9	U		0.110	0.100	U	GAM
Europium 154	15585-10-1	U		0.125	0.100	U	GAM
Europium 155	14391-16-3	U		0.083	0.100	U	GAM
Thorium 228	14274-82-9	U		0.064		U	GAM
Thorium 232	TH-232	U		0.196		U	GAM
Uranium 235	15117-96-1	U		0.189		U	GAM
Uranium 238	U 238	U		4.68		U	GAM
Americium 241	14596-10-2	U		0.071		U	GAM
Beryllium 7	13966-02-4	U		0.397		U	GAM
Ruthenium 106	13967-48-1	U		0.329		U	GAM
Antimony 125	14234-35-6	U		0.092		U	GAM

ColumbiaRiverComp.of RCBRA-Tissue

10/10/09

Lab id: EBRLNE
Protocol: Hanford1
Version: Ver 1.0
Form: DVD-DS
Version: 1.06
Report date: 06/11/09

EBERLINE ANALYTICAL/RICHMOND

SAMPLE DELIVERY GROUP K1608

7364-010 J18K38

DATA SHEET, cont

SDG 7364
Contact N. Joseph Verville
Client/Case no Hanford SDG_K1608
Contract No. 500W235A00

Lab sample id K904149-10
Dept sample id 7364-010
Received 04/29/09
% solids 100.0

Client sample id J18K38
Location/Matrix 300SA-WP3,FILLET SOLID
Collected/Weight 04/22/09 10:00 1032 g
Custody/SAP No RC-118-03 RC-118

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Cesium 134	13967-70-9	U		0.065		U	GAM

ColumbiaRiverComp.ofRCBRA-Tissue

10/10/09

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Lab id EBERLINE
Protocol Hanford
Version Ver 1.0
Form DVD-DS
Version 3.06
Report date 06/15/09

EBERLINE ANALYTICAL/RICHMOND

SAMPLE DELIVERY GROUP K1608

7364-011

J18K39

DATA SHEET

SDG	7364	Client/Case no	Hanford SDG K1608
Contact	N. Joseph Verville	Contract	No. 000W235A00
Lab sample id	R904149-11	Client sample id	J18K39
Dept sample id	7364-011	Location/Matrix	300SA-WF4,FILLET SOLID
Received	04/29/09	Collected/Weight	04/22/09 12:00 892 g
% solids	100.0	Custody/SAF No	RC-118-04 RC-118

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Tritium	10028-17-8	1.51	3.8	6.45	400	U J	H
Carbon 14	14762-75-5	2.10	3.1	5.16	50.0	U J	C
Total Strontium	SR-RAD	0.020	0.12	0.238	1.00	U	SR
Technetium 99	14133-76-7	0.136	0.16	0.381	15.0	U	TC
Thorium 228	14274-82-9	0	0.11	0.320	1.00	U J	TH
Thorium 230	14269-63-7	0.066	0.20	0.328	1.00	U	TH
Thorium 232	TH-232	0.066	0.067	0.254	1.00	U J	TH
Uranium 233/234	U-233/234	0.027	0.054	0.205	1.00	U	U
Uranium 235	15117-96-1	0	0.065	0.248	1.00	U	U
Uranium 238	U-238	0	0.054	0.205	1.00	U	U
Plutonium 238	13981-16-3	0	0.060	0.231	1.00	U	PU
Plutonium 239/240	PU-239/240	0.010	0.060	0.231	1.00	U	PU
Potassium 40	13966-00-2	U		3.52		U	GAM
Cobalt 60	10198-40-0	U		0.045	0.050	U	GAM
Cesium 137	10045-97-3	U		0.025	0.100	U	GAM
Radium 226	13982-63-3	U		0.051	0.100	U	GAM
Radium 228	15262-20-1	U		0.111	0.200	U	GAM
Europium 152	14683-23-9	U		0.072	0.100	U	GAM
Europium 154	15585-10-1	U		0.064	0.100	U	GAM
Europium 155	14391-16-3	U		0.067	0.100	U	GAM
Thorium 228	14274-82-9	U		0.048		U	GAM
Thorium 232	TH-232	U		0.113		U	GAM
Uranium 235	15117-96-1	U		0.148		U	GAM
Uranium 238	U-238	U		2.82		U	GAM
Americium 241	14596-10-2	U		0.062		U	GAM
Beryllium 7	13966-02-4	U		0.350		U	GAM
Ruthenium 106	13967-48-1	U		0.216		U	GAM
Antimony 125	14234-35-6	U		0.058		U	GAM

ColumbiaRiverComp.ofRCBRA Tissue

10/10/09

Lab id	EBERLINE
Protocol	Hanford1
Version	Ver 1.0
Form	DVD-DS
Version	3.06
Report date	06/15/09

EBERLINE ANALYTICAL/RICHMOND

SAMPLE DELIVERY GROUP K1608

7364-011

J18K39

DATA SHEET, cont

SDG	7364	Client/Case no	Hanford SDG K1608
Contact	M. Joseph Verville	Contract	No. 300M235A00
Lab sample id	E904149-11	Client sample id	J18K39
Dept sample id	7364-011	Location/Matrix	300SA-HF4,FILLET SOLID
Received	04/29/09	Collected/Weight	04/22/09 12:00 892 g
% solids	100.0	Custody/SAF No	RC-118-04 RC-118

ANALYTE	**CAS NO**	**RESULT pCi/g**	**2σ ERR (COUNT)**	**MDA pCi/g**	**RDL pCi/g**	**QUALI-FIERS**	**TEST**
Cesium 134	13967-70-9	U		0.027		U	GAM

ColumbiaRiverComp.ofRCBRA-Tissue

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Lab id	EBRLNX
Protocol	Hanford1
Version	Ver 1.0
Form	DVD-DS
Version	3.06
Report date	06/15/09

EBERLINE ANALYTICAL/RICHMOND

SAMPLE DELIVERY GROUP K1608

7364-012 J18K40

DATA SHEET

SDG	7364	Client/Case no	Hanford SDG_K1608
Contact	N. Joseph Verville	Contract	No. 300W235A00
Lab sample id	R904149-12	Client sample id	J18K40
Dept sample id	7364-012	Location/Matrix	100SA WFS FILLET SOLID
Received	04/29/09	Collected/Weight	04/22/09 14:00 799 g
% solids	100.0	Custody/SAF No	RC-118-85 RC-118

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Tritium	10028-17-8	1.26	4.0	6.74	400	U J	H
Carbon 14	14762-75-5	1.26	3.3	5.47	50.0	U J	C
Total Strontium	SR-RAD	0.027	0.11	0.226	1.00	U	SR
Technetium 99	14133-76-7	0.016	0.23	0.303	15.0	U	TC
Thorium 228	14274-82-9	-0.062	0.32	0.344	1.00	U J	TH
Thorium 230	14269-63-7	0.186	0.19	0.237	1.00	U	TH
Thorium 232	TH-232	0	0.062	0.237	1.00	U J	TH
Uranium 233/234	U-233/234	0.025	0.050	0.190	1.00	U	U
Uranium 235	15117-96-1	0.030	0.060	0.230	1.00	U	U
Uranium 238	U-238	0.025	0.050	0.190	1.00	U	U
Plutonium 238	13981-16-3	0.025	0.10	0.244	1.00	U	PU
Plutonium 239/240	PU-239/240	0	0.053	0.195	1.00	U	PU
Potassium 40	13966-00-2	U		1.69		U	GAM
Cobalt 60	10198-40-0	U		0.058	0.050	U	GAM
Cesium 137	10045-97-3	U		0.056	0.100	U	GAM
Radium 226	13982-63-3	U		0.129	0.100	U	GAM
Radium 228	15262-20-1	U		0.274	0.200	U	GAM
Europium 152	14683-23-9	U		0.151	0.100	U	GAM
Europium 154	15585-10-1	U		0.175	0.100	U	GAM
Europium 155	14391-16-3	U		0.126	0.100	U	GAM
Thorium 228	14274-82-9	U		0.097		U	GAM
Thorium 232	TH-232	U		0.274		U	GAM
Uranium 235	15117-96-1	U		0.314		U	GAM
Uranium 238	U-238	U		6.88		U	GAM
Americium 241	14596-10-2	U		0.051		U	GAM
Beryllium 7	13966-02-4	U		0.561		U	GAM
Ruthenium 106	13967-48-1	U		0.471		U	GAM
Antimony 125	14234-35-6	U		0.147		U	GAM

ColumbiaRiverComp.ofRCBRA-Tissue

10/10/09

Lab id	EBRLNE
Protocol	Hanford1
Version	Ver 1.0
Form	DVD-DS
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7364-012

J18K40

DATA SHEET, cont

SDG	7364	Client/Case no	Hanford SDG K1608
Contact	N. Joseph Verville	Contract	No. 500M215A00
Lab sample id	R904149-12	Client sample id	J18K40
Dept sample id	7364-012	Location/Matrix	300SA-NPS FILLET SOLID
Received	04/29/09	Collected/Weight	04/22/09 14:00 799 g
% solids	100.0	Custody/SAF No	RC-118-05 RC-118

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Cesium 134	13967-70-9	U		0.068		U	GAM

ColumbiaRiverComp ofRCBRA-Tissue

10/10/09

Lab id	EBRLNE
Protocol	Hanford1
Version	Ver 1.0
Form	DVD-DS
Version	3.06
Report date	06/11/09

EBERLINE ANALYTICAL/RICHMOND

SAMPLE DELIVERY GROUP K1589

7363-001

J18K36

DATA SHEET

SDG	7363	Client/Case no	Hanford SDG K1608
Contact	N. Joseph Verville	Contract	No. 500W215A00
Lab sample id	E904099-01	Client sample id	J18K36
Dept sample id	7363-001	Location/Matrix	100SA-WFL FILLET SOLID
Received	04/23/09	Collected/Weight	04/21/09 14:00 871 g
% solids	100.0	Custody/SAF No	RC-118 01 RC-118

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Tritium	10028-17-8	-2.71	3.4	6.13	400	U J	H
Carbon 14	14762-75-5	1.11	2.9	4.79	50.0	U J	C
Total Strontium	SR-RAD	-0.004	0.18	0.366	1.00	U	SR
Technetium 99	14133-76-7	0.209	0.41	0.494	15.0	U	TC
Thorium 228	14274-82-9	0.063	0.13	0.302	1.00	U J	TH
Thorium 230	14269-63-7	0.471	0.32	0.300	1.00		TH
Thorium 232	TH-232	0.031	0.063	0.240	1.00	U J	TH
Uranium 233/234	U-233/234	0	0.055	0.210	1.00	U	U
Uranium 235	15117-96-1	0	0.067	0.255	1.00	U	U
Uranium 238	U-238	0.055	0.055	0.210	1.00	U	U
Plutonium 238	13981-16-3	0.024	0.040	0.065	1.00	U	PU
Plutonium 239/240	PU-239/240	-0.008	0.016	0.049	1.00	U	PU
Potassium 40	13966-00-2	U		3.41		U	GAM
Cobalt 60	10198-40-0	U		0.025	0.050	U	GAM
Cesium 137	10045-97-3	U		0.025	0.100	U	GAM
Radium 226	13982-63-3	U		0.054	0.100	U	GAM
Radium 228	15262-20-1	U		0.111	0.200	U	GAM
Europium 152	14683-23-9	U		0.078	0.100	U	GAM
Europium 154	15585-10-1	U		0.068	0.100	U	GAM
Europium 155	14391-16-3	U		0.065	0.100	U	GAM
Thorium 228	14274-82-9	U		0.100		U	GAM
Thorium 232	TH 232	U		0.111		U	GAM
Uranium 235	15117-96-1	U		0.148		U	GAM
Uranium 238	U 238	U		2.90		U	GAM
Americium 241	14596-10-2	U		0.062		U	GAM
Beryllium 7	13966-02-4	U		0.232		U	GAM
Ruthenium 106	13967-48-1	U		0.211		U	GAM
Antimony 125	14234-35-6	U		0.063		U	GAM

ColumbiaRiverComp.ofRCBRA-Tissue

10/11/05

Lab id	EBERLINE
Protocol	Hanford1
Version	Ver 1.0
Form	DVD-DS
Version	A.06
Report date	06/11/09

EBERLINE ANALYTICAL/RICHMOND

SAMPLE DELIVERY GROUP K1589

7363-001

J18K36

DATA SHEET, cont

SDG 7363
Contact N. Joseph Verville
Client/Case no Hanford SDG K1608
Contract No. 800W215A00

Lab sample id R904099-01
Dept sample id 7363-001
Received 04/23/09
% solids 100.0

Client sample id J18K36
Location/Matrix 300SA-WE1, FILLET SOLID
Collected/Weight 04/21/09 14:00 871 g
Custody/SAP No RC-118-01 RC-118

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Cesium 134	13967-70-9	U		0.029		U	GAM

ColumbiaRiverComp.ofRCBRA-Tissue

✓ 10/10/09

Lab id EBRLNE
Protocol Hanford1
Version Ver 1.0
Form DVD-DS
Version 1.06
Report date 06/11/09

EBERLINE ANALYTICAL/RICHMOND

SAMPLE DELIVERY GROUP K1589

7363-002

J18K63

DATA SHEET

SDG	7363	Client/Case no	Hanford SDG K1608
Contact	N. Joseph Verville	Contract	No. 00W215A00
Lab sample id	K904099-02	Client sample id	J18K63
Dept sample id	7363-002	Location/Matrix	300SA WF1,CARCASS SOLID
Received	04/23/09	Collected/Weight	04/20/09 08:00 946 g
% solids	100.0	Custody/SAF No	RC-118-101 RC-118

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Tritium	10028-17-8	0.940	3.0	6.16	400	UJ	H
Carbon 14	14762-75-5	4.92	3.0	4.80	50.0	J	C
Total Strontium	SR RAD	0.181	0.22	0.416	1.00	U	SR
Technetium 99	14133-76-7	0.202	0.26	0.380	15.0	U	TC
Thorium 228	14274-82-9	0.089	0.36	0.716	1.00	UJ	TH
Thorium 230	14269-63-7	0.442	0.36	0.338	1.00		TH
Thorium 232	TH-232	0.044	0.088	0.338	1.00	UJ	TH
Uranium 233/234	U-233/234	0	0.047	0.179	1.00	U	U
Uranium 235	15117-96-1	0	0.057	0.217	1.00	U	U
Uranium 238	U-238	0.047	0.047	0.179	1.00	U	U
Plutonium 238	13981-16-3	0.020	0.031	0.060	1.00	U	PU
Plutonium 239/240	PU-239/240	0.011	0.021	0.030	1.00		PU
Potassium 40	13966-00-2	U		1.15		U	GAM
Cobalt 60	10198-40-0	U		0.040	0.050	U	GAM
Cesium 137	10045-97-3	U		0.098	0.100	U	GAM
Radium 226	13982-63-3	U		0.091	0.100	U	GAM
Radium 228	15262-20-1	U		0.180	0.200	U	GAM
Europium 152	14683-23-9	U		0.117	0.100	U	GAM
Europium 154	15585-10-1	U		0.108	0.100	U	GAM
Europium 155	14391-16-3	U		0.111	0.100	U	GAM
Thorium 228	14274-82-9	U		0.065		U	GAM
Thorium 232	TH-232	U		0.180		U	GAM
Uranium 235	15117-96-1	U		0.239		U	GAM
Uranium 238	U-238	U		4.48		U	GAM
Americium 241	14596-10-2	U		0.149		U	GAM
Beryllium 7	13966-02-4	U		0.375		U	GAM
Ruthenium 106	13967-48-1	U		0.333		U	GAM
Antimony 125	14234-35-6	U		0.093		U	GAM

ColumbiaRiverComp.of/RCBRA-Tissue

10/14/09

Lab id EBERLINE
Protocol Hanford1
Version Ver 1.0
Form DVD-DS
Version 3.06
Report date 06/11/09

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7363-002

J18K63

DATA SHEET, cont

SDG	7363	Client/Case no	Hanford	SDG K1608
Contact	N. Joseph Verville	Contract	No. S00W235A00	
Lab sample id	E904099-02	Client sample id	J18K63	
Dept sample id	7363-002	Location/Matrix	100GA-WP1,CARCASS	SOLID
Received	04/23/09	Collected/Weight	04/20/09 08:00	946 g
% solids	100.0	Custody/SAF No	RC-118-101	RC-118

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Cesium 134	13967-70-9	U		0.061		U	GAM

ColumbiaRiverComp.ofRCBRA-Tissue

✓
10/16/09

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Lab id	EBERLINE
Protocol	Hanford1
Version	Ver 1.0
Form	DVD-DS
Version	3.06
Report date	06/11/09

EBERLINE ANALYTICAL/RICHMOND

SAMPLE DELIVERY GROUP K1589

7363-003

J18K64

DATA SHEET

SDG	7363	Client/Case no	Hanford	SDG K1600
Contact	N. Joseph Verville	Contract	No. 500H235A00	
Lab sample id	8904099-03	Client sample id	J18K64	
Dept sample id	7363 003	Location/Matrix	3000A-WF2 CARCASS	SOLID
Received	04/23/09	Collected/Weight	04/20/09 14:00	934 g
% solids	100.0	Custody/SAF No	RC-118-102	RC-118

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Tritium	10028-17-8	-1.47	3.9	6.90	400	U J	H
Carbon 14	14762-75-5	0.591	3.2	5.38	50.0	U J	C
Total Strontium	SR-RAD	-0.074	0.14	0.291	1.00	U	SR
Technetium 99	14133-76-7	0.140	0.28	0.350	15.0	U	TC
Thorium 228	14274-82-9	0.065	0.19	0.358	1.00	U J	TH
Thorium 230	14269-63-7	0.070	0.39	0.309	1.00		TH
Thorium 232	TH 232	0.064	0.065	0.247	1.00	U J	TH
Uranium 233/234	U-233/234	0	0.054	0.208	1.00	U	U
Uranium 235	15117-96-1	0	0.066	0.252	1.00	U	U
Uranium 238	U-238	0	0.054	0.208	1.00	U	U
Plutonium 238	13981-16-3	0.058	0.12	0.223	1.00	U	PU
Plutonium 239/240	PU 239/240	0	0.058	0.223	1.00	U	PU
Potassium 40	13966-00-2	U		6.39		U	GAM
Cobalt 60	10198-40-0	U		0.054	0.050	U	GAM
Cesium 137	10045-97-3	U		0.053	0.100	U	GAM
Radium 226	13982-63-3	U		0.123	0.100	U	GAM
Radium 228	15262-20-1	U		0.255	0.200	U	GAM
Europium 152	14683-23-9	U		0.159	0.100	U	GAM
Europium 154	15585-10-1	U		0.168	0.100	U	GAM
Europium 155	14391-16-3	U		0.125	0.100	U	GAM
Thorium 228	14274-82-9	U		0.097		U	GAM
Thorium 232	TH-232	U		0.255		U	GAM
Uranium 235	15117-96-1	U		0.317		U	GAM
Uranium 238	U-238	U		6.40		U	GAM
Americium 241	14596-10-2	U		0.051		U	GAM
Beryllium 7	13966-02-4	U		0.505		U	GAM
Ruthenium 106	13967-48-1	U		0.444		U	GAM
Antimony 125	14234-35-6	U		0.130		U	GAM

ColumbiaRiverComp.ofRCBRA-Tissue

10/10/09

Lab id	EBRLNE
Protocol	Hanford1
Version	Ver 1.0
Form	DVD-DS
Version	3.06
Report date	06/11/09

EBERLINE ANALYTICAL/RICHMOND

SAMPLE DELIVERY GROUP K1589

7363-003

J18K64

DATA SHEET, cont

SDG	7363	Client/Case no	Hanford SDG_K1608
Contact	N. Joseph Verville	Contract	No. S00W235A00
Lab sample id	R904029-03	Client sample id	J18K64
Dept sample id	7363-003	Location/Matrix	100DA WP2,CARCASS SOLID
Received	04/23/09	Collected/Weight	04/20/09 14:00 934 g
% solids	100.0	Custody/SAP No	RC 118-103 RC-118

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Cesium 134	13967 70 9	U		0.065		U	GAM

ColumbiaRiverComp.ofRCBRA Tissue

✓ 10/10/09

Lab id	EBRLNE
Protocol	Hanford1
Version	Ver 1.0
Form	DVD-DS
Version	1.06
Report date	06/11/09

EBERLINE ANALYTICAL/RICHMOND

SAMPLE DELIVERY GROUP K1589

7363-004

J18K65

DATA SHEET

SDG	7363	Client/Case no	Hanford SDG K1608
Contact	N. Joseph Verville	Contract	No. S00W235A00
Lab sample id	R904099 04	Client sample id	J18K65
Dept sample id	7363-004	Location/Matrix	100SA WF3 CARCASS SOLID
Received	04/23/09	Collected/Weight	04/21/09 00:00 246 g
% solids	100.0	Custody/SAF No	RC-118-103 RC-110

ANALYTE	CAS NO	RESULT pCi/g	1σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Tritium	10028-17-8	-0.669	3.6	6.27	400	UJ	H
Carbon 14	14762-75-5	-0.803	2.8	4.86	50.0	UJ	C
Total Strontium	SR-RAD	0.066	0.19	0.363	1.00	U	SR
Technetium 99	14133-76-7	0.115	0.34	0.369	15.0	U	TC
Thorium 228	14274-82 9	-0.058	0.12	0.318	1.00	UJ	TH
Thorium 230	14269 63-7	0.373	0.23	0.219	1.00		TH
Thorium 232	TH-232	0	0.057	0.219	1.00	UJ	TH
Uranium 233/234	U-233/234	0.055	0.055	0.208	1.00	U	U
Uranium 235	15117-96-1	0	0.066	0.252	1.00	U	U
Uranium 238	U-238	0.027	0.055	0.208	1.00	U	U
Plutonium 238	13981-16-3	-0.029	0 12	0.277	1.00	U	PU
Plutonium 239/240	PU-239/240	0	0.058	0.221	1.00	U	PU
Potassium 40	13966-00-2	U		1.29		U	GAM
Cobalt 60	10198-40-0	U		0.045	0.050	U	GAM
Cesium 137	10045 97-3	U		0.047	0.100	U	GAM
Radium 226	13982-63-3	U		0.099	0.100	U	GAM
Radium 228	15262-20 1	U		0.204	0.200	U	GAM
Europium 152	14683-23-9	U		0.125	0.100	U	GAM
Europium 154	15585-10-1	U		0.120	0.100	U	GAM
Europium 155	14391-16-3	U		0.110	0.100	U	GAM
Thorium 228	14274-82 9	U		0.072		U	GAM
Thorium 232	TH-232	U		0.204		U	GAM
Uranium 235	15117-96-1	U		0.259		U	GAM
Uranium 238	U-238	U		4.76		U	GAM
Americium 241	14596-10-2	U		0.180		U	GAM
Beryllium 7	13966-02-4	U		0.414		U	GAM
Ruthenium 106	13967-48 1	U		0.366		U	GAM
Antimony 125	14234-35-6	U		0.106		U	GAM

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Protocol Hanford1
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EBERLINE ANALYTICAL/RICHMOND
SAMPLE DELIVERY GROUP K1589

7363-004

DATA SHEET, cont

J18K65

SDG 7363
Contact N. Joseph Verville
Client/Case no Hanford SDG K1608
Contract No. S00W735A00

Lab sample id R904099-04
Dept sample id 7363 004
Received 04/23/09
% solids 100.0

Client sample id J18K65
Location/Matrix 100SA WF1.CARCASS SOLID
Collected/Weight 04/21/09 08:00 946 g
Custody/SAF No RC-118-103 RC-118

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Cesium 134	13967-70-9	U		0.055		U	GAM

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SAMPLE DELIVERY GROUP K1589

7363-005

J18K66

DATA SHEET

SDG 7363
Contact N. Joseph Verville
Lab sample id B904099-05
Dept sample id 7363-005
Received 04/21/09
% solids 100.0

Client/Case no Hanford SDG K1608
Contract No. 500W235A00
Client sample id J18K66
Location/Matrix 100BA-HR4,CARCASS SOLID
Collected/Weight 04/21/09 10:00 1028 g
Custody/SAF No RC-118-104 RC 118

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Tritium	10028-17-8	6.63	3.9	6.12	400	J	H
Carbon 14	14762-75-5	0.685	2.8	4.78	50.0	UJ	C
Total Strontium	SR-RAD	-0.108	0.16	0.336	1.00	U	SR
Technetium 99	14133-76-7	0.104	0.18	0.406	15.0	U	TC
Thorium 228	14274-82-9	0.030	0.12	0.288	1.00	UJ	TH
Thorium 230	14269-63-7	0.629	0.30	0.207	1.00		TH
Thorium 232	TH-232	0.030	0.060	0.229	1.00	UJ	TH
Uranium 233/234	U-233/234	0.081	0.081	0.108	1.00	U	U
Uranium 235	15117-96-1	0	0.098	0.373	1.00	U	U
Uranium 238	U-238	0.081	0.081	0.308	1.00	U	U
Plutonium 238	13981-16-3	-0.036	0.14	0.346	1.00	U	PU
Plutonium 239/240	PU-239/240	0.036	0.072	0.276	1.00	U	PU
Potassium 40	13966-00-2	U		2.57		U	GAM
Cobalt 60	10198-40-0	U		0.031	0.050	U	GAM
Cesium 137	10045-97-3	U		0.031	0.100	U	GAM
Radium 226	13982-63-3	U		0.060	0.100	U	GAM
Radium 228	15262-20-1	U		0.112	0.200	U	GAM
Europium 152	14683-23-9	U		0.070	0.100	U	GAM
Europium 154	15585-10-1	U		0.087	0.100	U	GAM
Europium 155	14391-16-3	U		0.050	0.100	U	GAM
Thorium 228	14274-82-9	U		0.043		U	GAM
Thorium 232	TH-232	U		0.112		U	GAM
Uranium 235	15117-96-1	U		0.115		U	GAM
Uranium 238	U-238	U		3.44		U	GAM
Americium 241	14596-10-2	U		0.025		U	GAM
Beryllium 7	13966-02-4	U		0.238		U	GAM
Ruthenium 106	13967-48-1	U		0.232		U	GAM
Antimony 125	14234-35-6	U		0.066		U	GAM

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Protocol Hanford1
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EBERLINE ANALYTICAL/RICHMOND

SAMPLE DELIVERY GROUP K1589

7363-005

J18K66

DATA SHEET, cont

SDG 7363

Contact N. Joseph Verville

Client/Case no Hanford SDG K1598

Contract No. 500W235A00

Lab sample id E904099-05

Dept sample id 7363-005

Received 04/21/09

% solids 100.0

Client sample id J18K66

Location/Matrix 300SA-WF4.CARCASS SOLID

Collected/Weight 04/21/09 10:00 1028 g

Custody/SAF No RC-110-104 RC-118

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALIFIERS	TEST
Cesium 134	13967-70-9	U		0.037		U	GAM

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Lab id EBERLINE

Protocol Hanford1

Version Ver 1.0

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Version 3.06

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SAMPLE DELIVERY GROUP K1569

7363-006

J18K67

DATA SHEET

SDG 7363
Contact N. Joseph Verville
Client/Case no Hanford SDG K1608
Contract No. 500W215A00

Lab sample id 8904099-06
Dept sample id 7363-006
Received 04/23/09
% solids 100.0
Client sample id J18K67
Location/Matrix 300SA-WFS.CARCASS SOLID
Collected/Weight 04/21/09 12:00 533 g
Custody/SAF No RC-118-105 RC-118

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Tritium	10028-17-8	0.408	3.9	6.68	400	UJ	H
Carbon 14	14762-75-5	2.24	3.2	5.22	50.0	UJ	C
Total Strontium	SR-RAD	-0.076	0.17	0.360	1.00	U	SR
Technetium 99	14133-76-7	0.126	0.23	0.380	15.0	U	TC
Thorium 228	14274-82-9	0.095	0.25	0.423	1.00	UJ	TH
Thorium 230	14269-63-7	0.944	0.38	0.241	1.00		TH
Thorium 232	TH 232	0	0.063	0.341	1.00	UJ	TH
Uranium 233/234	U-233/234	0.090	0.090	0.172	1.00	U	U
Uranium 235	15117-96-1	0	0.054	0.208	1.00	U	U
Uranium 238	U-238	0	0.045	0.172	1.00	U	U
Plutonium 238	13981-16-3	0.030	0.18	0.371	1.00	U	PU
Plutonium 239/240	PU 239/240	-0.030	0.061	0.232	1.00	U	PU
Potassium 40	13966-00-2	U		2.70		U	GAM
Cobalt 60	10198-40-0	U		0.045	0.050	U	GAM
Cesium 137	10045-97-3	U		0.025	0.100	U	GAM
Radium 226	13982-63-3	U		0.051	0.100	U	GAM
Radium 228	15262-20-1	U		0.170	0.200	U	GAM
Europium 152	14683-23-9	U		0.079	0.100	U	GAM
Europium 154	15585-10-1	U		0.076	0.100	U	GAM
Europium 155	14391-16-3	U		0.069	0.100	U	GAM
Thorium 228	14274-82-9	U		0.049		U	GAM
Thorium 232	TH-232	U		0.120		U	GAM
Uranium 235	15117-96-1	U		0.151		U	GAM
Uranium 238	U-238	U		2.92		U	GAM
Americium 241	14596-10-2	U		0.061		U	GAM
Beryllium 7	13966-02-4	U		0.235		U	GAM
Ruthenium 106	13967-48-1	U		0.216		U	GAM
Antimony 125	14234-35-6	U		0.067		U	GAM

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SAMPLE DELIVERY GROUP K1589

7363-006

DATA SHEET, cont

J18K67

SIX;	7363	Client/Case no	Hanford SDG K1608
Contact	N. Joseph Verville	Contract	No. 500W215A00
Lab sample id	R904099-06	Client sample id	J18K67
Dept sample id	7363-006	Location/Matrix	300SA-WFS,CARCASS SOLID
Received	04/23/09	Collected/Weight	04/21/09 12:00 533 g
% solids	100.0	Custody/SAF No	RC-118-105 RC-118

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Cesium 134	13967-70-9	U		0.031		U	GAM

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SAMPLE DELIVERY GROUP K1589

7363-007

J18K78

DATA SHEET

SDG 7363
Contact N. Joseph Verville
Client/Case no Hanford SDG K1608
Contract No. 00W235A00

Lab sample id R904099-07
Dept sample id 7363-007
Received 04/23/09
% solids 100.0
Client sample id J18K78
Location/Matrix LWSA-WP1,FILLET SOLID
Collected/Weight 04/13/09 11:55 1473 g
Custody/SAF No RC-118-116 RC-118

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Tritium	10028-17-8	-1.13	3.5	6.16	400	U J	H
Carbon 14	14762-75-5	1.50	2.9	4.85	50.0	U J	C
Total Strontium	SR-RAD	-0.028	0.15	0.119	1.00	U	SR
Technetium 99	14133-76-7	0.140	0.19	0.363	15.0	U	TC
Thorium 228	14274-82-9	0.036	0.22	0.485	1.00	U J	TH
Thorium 230	14269-63-7	0.902	0.37	0.276	1.00		TH
Thorium 232	TH-232	0.036	0.072	0.276	1.00	U J	TH
Uranium 233/234	U-233/234	0	0.056	0.215	1.00	U	U
Uranium 235	15117-96-1	0	0.068	0.260	1.00	U	U
Uranium 238	U-238	0.020	0.056	0.215	1.00	U	U
Plutonium 238	13981-16-3	0	0.055	0.211	1.00	U	PU
Plutonium 239/240	PU-239/240	0.028	0.055	0.211	1.00	U	PU
Potassium 40	13966-00-2	U		3.60		U	GAM
Cobalt 60	10198-40-0	U		0.036	0.050	U	GAM
Cesium 137	10045-97-3	U		0.034	0.100	U	GAM
Radium 226	13982-63-3	U		0.070	0.100	U	GAM
Radium 228	15262-20-1	U		0.159	0.200	U	GAM
Europium 152	14683-23-9	U		0.095	0.100	U	GAM
Europium 154	15585-10-1	U		0.109	0.100	U	GAM
Europium 155	14391-16-3	U		0.076	0.100	U	GAM
Thorium 228	14274-82-9	U		0.057		U	GAM
Thorium 232	TH-232	U		0.159		U	GAM
Uranium 235	15117-96-1	U		0.170		U	GAM
Uranium 238	U-238	U		4.43		U	GAM
Americium 241	14596-10-2	U		0.141		U	GAM
Beryllium 7	13966-02-4	U		0.371		U	GAM
Ruthenium 106	13967-48-1	U		0.286		U	GAM
Antimony 125	14234-35-6	U		0.086		U	GAM

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SAMPLE DELIVERY GROUP K1589

7363-007

J18K78

DATA SHEET, cont

SDG	7363	Client/Case no	Hanford SDG K1600
Contact	N. Joseph Verville	Contract	No. 500W235A00
Lab sample id	R904099-07	Client sample id	J18K78
Dept sample id	7363-007	Location/Matrix	LHSA-WF1 FILLET SOLID
Received	04/21/09	Collected/Weight	04/13/09 11:55 1473 g
% solids	100.0	Custody/SAP No	RC-118-116 RC-118

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Cesium 134	13967-70-9	U		0.042		U	GAM

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EBERLINE ANALYTICAL/RICHMOND

SAMPLE DELIVERY GROUP X1589

7363-008

J18K79

DATA SHEET

SDG	7363	Client/Case no	Hanford — SDG X1608
Contact	N. Joseph Verville	Contract	No. 000W235A00
Lab sample id	E904092-08	Client sample id	J18K79
Dept sample id	7363-008	Location/Matrix	LWSA WFZ PILLET — SOLID
Received	04/23/09	Collected/Weight	04/14/09 10:25 — 1037 g.
% solids	100.0	Custody/SAP No	EC 118-117 — EC-118

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Tritium	10028-17-8	2.92	3.7	6.17	400	U J	H
Carbon 14	14762-75-5	0.264	3.8	4.80	50.0	U J	C
Total Strontium	SR-RAD	-0.033	0.18	0.380	1.00	U	SR
Technetium 99	14133-76-7	0.126	0.33	0.365	15.0	U	TC
Thorium 228	14274-82-9	0	0.17	0.415	1.00	U J	TH
Thorium 230	14269-63-7	0.432	0.35	0.330	1.00		TH
Thorium 232	TH-232	0	0.086	0.330	1.00	U J	TH
Uranium 233/234	U-233/234	0.034	0.067	0.257	1.00	U	U
Uranium 235	15117-96-1	0	0.081	0.311	1.00	U	U
Uranium 238	U-238	0	0.067	0.257	1.00	U	U
Plutonium 238	13981-16-3	0	0.054	0.206	1.00	U	PU
Plutonium 239/240	PU-239/240	0	0.054	0.206	1.00	U	PU
Potassium 40	13966-00-2	U		6.39		U	GAM
Cobalt 60	10198-40-0	U		0.060	0.050	U	GAM
Cesium 137	10045-97-3	U		0.058	0.100	U	GAM
Radium 226	13982-63-3	U		0.132	0.100	U	GAM
Radium 228	15262-20-1	U		0.260	0.200	U	GAM
Europium 152	14683-23-9	U		0.158	0.100	U	GAM
Europium 154	15585-10-1	U		0.174	0.100	U	GAM
Europium 155	14391-16-3	U		0.132	0.100	U	GAM
Thorium 228	14274-82-9	U		0.102		U	GAM
Thorium 232	TH-232	U		0.260		U	GAM
Uranium 235	15117-96-1	U		0.335		U	GAM
Uranium 238	U-238	U		7.08		U	GAM
Americium 241	14596-10-2	U		0.059		U	GAM
Beryllium 7	13966-02-4	U		0.613		U	GAM
Ruthenium 106	13967-48-1	U		0.496		U	GAM
Antimony 125	14234-35-6	U		0.139		U	GAM

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SAMPLE DELIVERY GROUP K1589

7363-008

J18K79

DATA SHEET, cont

SDG	7363	Client/Case no	Hanford SDG K1608
Contact	N. Joseph Valville	Contract	No. 000N235A00
Lab sample id	R904099-08	Client sample id	J18K79
Dept sample id	7363-008	Location/Matrix	LWSA-WF2,FILLET SOLID
Received	04/23/09	Collected/Weight	04/14/09 10:25 1037 g
% solids	100.0	Custody/SAF No	RC-118,117 RC-118

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Cesium 134	13967-70-9	U		0.069		U	GAM

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Lab id	EBERLINE
Protocol	Hanford1
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EBERLINE ANALYTICAL/RICHMOND

SAMPLE DELIVERY GROUP K1589

7363-009

J18K80

DATA SHEET

SDG	7363	Client/Case no	Hanford	SDG_K1608
Contact	N. Joseph Verville	Contract	No. 000M235A00	
Lab sample id	R904099.09	Client sample id	J18K80	
Dept sample id	7363 009	Location/Matrix	LWSA WFL FILLET	SOLID
Received	04/23/09	Collected/Weight	04/14/09 13:00	879 g
% solids	100.0	Custody/SAF No	RC 118-118	RC-118

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Tritium	10028-17-8	2.44	4.4	7.28	400	U J	H
Carbon 14	14762-75-5	3.06	3.4	5.67	50.0	U J	C
Total Strontium	SR-RAD	-0.012	0.18	0.387	1.00	U	SR
Technetium 99	14133-76-7	0.210	0.25	0.400	15.0	U	TC
Thorium 228	14274-82-9	0.088	0.27	0.408	1.00	U J	TH
Thorium 230	14269-63-7	0.924	0.45	0.337	1.00		TH
Thorium 232	TH-232	0	0.088	0.337	1.00	U J	TH
Uranium 233/234	U-233/234	0.037	0.063	0.242	1.00	U	U
Uranium 235	15117-96-1	0	0.077	0.294	1.00	U	U
Uranium 238	U-238	0	0.063	0.242	1.00	U	U
Plutonium 238	13981-16-3	-0.025	0.051	0.193	1.00	U	PU
Plutonium 239/240	PU 239/240	0	0.050	0.191	1.00	U	PU
Potassium 40	13966-00-2	U		1.55		U	GAM
Cobalt 60	10198-40-0	U		0.034	0.050	U	GAM
Cesium 137	10045-97-3	U		0.029	0.100	U	GAM
Radium 226	13982-63-3	U		0.061	0.100	U	GAM
Radium 228	15262-20-1	U		0.133	0.200	U	GAM
Europium 152	14683-23-9	U		0.074	0.100	U	GAM
Europium 154	15585-10-1	U		0.096	0.100	U	GAM
Europium 155	14391-16-3	U		0.056	0.100	U	GAM
Thorium 228	14274-82-9	U		0.044		U	GAM
Thorium 232	TH-232	U		0.133		U	GAM
Uranium 235	15117-96-1	U		0.142		U	GAM
Uranium 238	U-238	U		1.59		U	GAM
Americium 241	14596-10-2	U		0.030		U	GAM
Beryllium 7	13966-02-4	U		0.292		U	GAM
Ruthenium 106	13967-48-1	U		0.237		U	GAM
Antimony 125	14234-35-6	U		0.069		U	GAM

ColumbiaRiverComp.ofRCBRA-Tissue

10/10/09

Lab id	EBRLNE
Protocol	Hanford1
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EBERLINE ANALYTICAL/RICHMOND

SAMPLE DELIVERY GROUP K1589

7363-009

J18KA0

DATA SHEET, cont

SDG	7363	Client/Case no	Hanford SDG K1608
Contact	N. Joseph Verville	Contract	No. 00W215A00
Lab sample id	E904099-09	Client sample id	J18KA0
Dept sample id	7363-009	Location/Matrix	LWSA-WF3,FILLET SOLID
Received	04/23/09	Collected/Weight	04/14/09 13:00 879 g
% solids	100.0	Custody/SAF No	RC-118-118 RC-118

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Cesium 134	13967-70-9	U		0.036		U	GAM

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Protocol Hanford1
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Version 1.06
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EBERLINE ANALYTICAL/RICHMOND

SAMPLE DELIVERY GROUP K1589

7363-010

J18K81

DATA SHEET

SDG	7363	Client/Case no	Hanford
			SDG K1608
Contact	N. Joseph Verville	Contract	No. 500W235A00
Lab sample id	R904099-10	Client sample id	J18K81
Dept sample id	7363-010	Location/Matrix	LWSA WP4 FILLET SOLID
Received	04/23/09	Collected/Weight	04/15/09 10:45 726 g
% solids	100.0	Custody/SAP No	RC 118-119 RC-118

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Tritium	10028-17-8	-1.66	3.9	6.82	400	UJ	H
Carbon 14	14762-75-5	1.54	3.2	5.37	50.0	UJ	C
Total Strontium	SR-RAD	-0.026	0.16	0.328	1.00	U	SR
Technetium 99	14133-76-7	0.393	0.36	0.445	15.0	U	TC
Thorium 228	14274-82-9	0	0.20	0.477	1.00	UJ	TH
Thorium 230	14269-63-7	0.447	0.40	0.380	1.00		TH
Thorium 232	TH 232	0	0.099	0.380	1.00	UJ	TH
Uranium 233/234	U-233/234	0.032	0.064	0.244	1.00	U	U
Uranium 235	15117-96-1	0	0.077	0.295	1.00	U	U
Uranium 238	U 238	0	0.064	0.244	1.00	U	U
Plutonium 238	13981-16-3	0.069	0.21	0.380	1.00	U	PU
Plutonium 239/240	PU-239/240	0.034	0.069	0.261	1.00	U	PU
Potassium 40	13966-00-2	U		1.37		U	GAM
Cobalt 60	10198-40-0	U		0.045	0.050	U	GAM
Cesium 137	10045-97-3	U		0.049	0.100	U	GAM
Radium 226	13982-63-3	U		0.103	0.100	U	GAM
Radium 228	15262-20-1	U		0.212	0.200	U	GAM
Europium 152	14683-23-9	U		0.128	0.100	U	GAM
Europium 154	15585-10-1	U		0.137	0.100	U	GAM
Europium 155	14391-16-3	U		0.107	0.100	U	GAM
Thorium 228	14274-82-9	U		0.073		U	GAM
Thorium 232	TH-232	U		0.212		U	GAM
Uranium 235	15117-96-1	U		0.278		U	GAM
Uranium 238	U-238	U		5.48		U	GAM
Americium 241	14596-10-2	U		0.178		U	GAM
Beryllium 7	13966-02-4	U		0.456		U	GAM
Ruthenium 106	13967-48-1	U		0.375		U	GAM
Antimony 125	14234-35-6	U		0.115		U	GAM

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Lab id	EBRLNE
Protocol	Hanford1
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EBERLINE ANALYTICAL/RICHMOND

SAMPLE DELIVERY GROUP K1589

7363 010

J18K81

DATA SHEET, cont

SDG	7363	Client/Case no	Hanford	SDG K1600
Contact	N. Joseph Verville	Contract	No. 500W235A00	
Lab sample id	R904099-10	Client sample id	J18K81	
Dept sample id	7363-010	Location/Matrix	LWSA-WF4 FILLET	SOLID
Received	04/23/09	Collected/Weight	04/15/09 10:45	726 g
% solids	100.0	Custody/SAP No	RC-118-119	RC-118

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Cesium 134	13967-70-9	U		0.057		U	GAM

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EBERLINE ANALYTICAL/RICHMOND

SAMPLE DELIVERY GROUP K1509

7363-011

J18K82

DATA SHEET

SDC 7363
Contact N. Joseph Verville
Client/Case no Hanford SDG K1608
Contract No. 000W235A00

Lab sample id E904099-11
Dept sample id 7363-011
Received 04/23/09
% solids 100.0
Client sample id J18K82
Location/Matrix LWSA-WFS,FILLET SOLID
Collected/Weight 04/15/09 13:00 702 g
Custody/SAP No RC 110-120 RC-118

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI- FIERS	TEST
Tritium	10028-17-8	1.35	4.3	7.36	400	UJ	H
Carbon 14	14762-75-5	2.42	3.5	5.77	50.0	UJ	C
Total Strontium	SR-RAD	-0.025	0.21	0.428	1.00	U	SR
Technetium 99	14133-76-7	0.108	0.34	0.372	15.0	U	TC
Thorium 228	14274-82-9	0	0.16	0.431	1.00	UJ	TH
Thorium 230	14269-63-7	0.815	0.19	0.297	1.00		TH
Thorium 232	TH-232	0.039	0.078	0.297	1.00	UJ	TH
Uranium 233/234	U-233/234	0	0.056	0.215	1.00	U	U
Uranium 235	15117-96-1	0.034	0.068	0.260	1.00	U	U
Uranium 238	U-238	0	0.056	0.219	1.00	U	U
Plutonium 238	13981-16-3	0	0.046	0.177	1.00	U	PU
Plutonium 239/240	PU 239/240	0	0.046	0.177	1.00	U	PU
Potassium 40	13966-00-2	U		3.11		U	GAM
Cobalt 60	10198-40-0	U		0.031	0.050	U	GAM
Cesium 137	10045-97-3	U		0.031	0.100	U	GAM
Radium 226	13982-63-3	U		0.063	0.100	U	GAM
Radium 228	15262-20-1	U		0.122	0.200	U	GAM
Europium 152	14683-23-9	U		0.076	0.100	U	GAM
Europium 154	15585-10-1	U		0.092	0.100	U	GAM
Europium 155	14391-16-3	U		0.054	0.100	U	GAM
Thorium 228	14274-82-9	U		0.047		U	GAM
Thorium 232	TH-232	U		0.122		U	GAM
Uranium 235	15117-96-1	U		0.124		U	GAM
Uranium 238	U-238	U		5.08		U	GAM
Americium 241	14596-10-2	U		0.026		U	GAM
Beryllium 7	13966-02-4	U		0.276		U	GAM
Ruthenium 106	13967-48-1	U		0.265		U	GAM
Antimony 125	14234-35-6	U		0.070		U	GAM

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DATA SHEET, cont

SDG	7363	Client/Case no	Hanford SDG K1600
Contact	N. Joseph Verville	Contract	No. 500N235A00
Lab sample id	R904099 11	Client sample id	J18K82
Dept sample id	7363-011	Location/Matrix	LWCA-WPS,FILLET SOLID
Received	04/23/09	Collected/Weight	04/15/09 13:00 702 g
% solids	100.0	Custody/SAF No	RC-118-120 RC-118

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Cesium 134	13967-70-9	U		0.037		U	GAM

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Form	DVD-DS
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7363-012

J18KD8

DATA SHEET

SDG	7363	Client/Case no	Hanford SDG K1608
Contact	M. Joseph Vorville	Contract	No. S00W235A00
Lab sample id	E904099-12	Client sample id	J18KD8
Dept sample id	7363-012	Location/Matrix	LWSA WF1 CARCASS SOLID
Received	04/23/09	Collected/Weight	04/16/09 08:30 347 g
% solids	100.0	Custody/SAF No	RC-119-136 RC-119

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Tritium	10028-17-8	2.24	3.7	6.13	400	U J	H
Carbon 14	14762-75-5	1.84	2.9	4.77	50.0	U J	C
Total Strontium	SR-RAD	-0.009	0.15	0.310	1.00	U	SR
Technetium 99	14133-76-7	0.218	0.27	0.386	15.0	U	TC
Thorium 228	14274-82-9	0.110	0.22	0.430	1.00	U J	TH
Thorium 230	14269-63-7	0.710	0.44	0.418	1.00		TH
Thorium 232	TH-232	0	0.11	0.418	1.00	U J	TH
Uranium 233/234	U-233/234	0.059	0.059	0.235	1.00	U	U
Uranium 235	15117-96-1	0	0.071	0.272	1.00	U	U
Uranium 238	U-238	0.029	0.059	0.225	1.00	U	U
Plutonium 238	13981-16-3	0.060	0.060	0.230	1.00	U	PU
Plutonium 239/240	PU-239/240	0	0.060	0.230	1.00	U	PU
Potassium 40	13966-00-2	U		2.86		U	GAM
Cobalt 60	10198-40-0	U		0.034	0.050	U	GAM
Cesium 137	10045-97-3	U		0.031	0.100	U	GAM
Radium 226	13982-63-3	U		0.094	0.100	U	GAM
Radium 228	15262-20-1	U		0.146	0.200	U	GAM
Europium 152	14683-23-9	U		0.084	0.100	U	GAM
Europium 154	15585-10-1	U		0.104	0.100	U	GAM
Europium 155	14391-16-3	U		0.066	0.100	U	GAM
Thorium 228	14274-82-9	U		0.046		U	GAM
Thorium 232	TH-232	U		0.146		U	GAM
Uranium 235	15117-96-1	U		0.137		U	GAM
Uranium 238	U-238	U		3.88		U	GAM
Americium 241	14596-10-2	U		0.112		U	GAM
Beryllium 7	13966-02-4	U		0.334		U	GAM
Ruthenium 106	13967-48-1	U		0.261		U	GAM
Antimony 125	14234-35-6	U		0.069		U	GAM

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Lab id	EBRLINE
Protocol	Hanford1
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7363-012

J18KD8

DATA SHEET, cont

SDG	7363	Client/Case no	Hanford SDG K1608
Contact	N. Joseph Verville	Contract	No. 500W235A00
Lab sample id	E904099-12	Client sample id	J18KD8
Dept sample id	7363-012	Location/Matrix	LWCA-WF1 CARCASS SOLID
Received	04/23/09	Collected/Weight	04/16/09 08:30 947 g
% solids	100.0	Custody/SAP No	RC-118-136 RC-118

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALIFIERS	TEST
Cesium 134	13967-70-9	U		0.036		U	GAM

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EBERLINE ANALYTICAL/RICHMOND

SAMPLE DELIVERY GROUP K1589

7363-013

J18KD9

DATA SHEET

SDG	7363	Client/Case no	Hanford — SDG K1608
Contact	N. Joseph Verville	Contract	No. 900W235A00
Lab sample id	R904099-13	Client sample id	J18KD9
Dept sample id	7363-013	Location/Matrix	LWSA-WP2 CARCASS — SOLID
Received	04/23/09	Collected/Weight	04/16/09 10:30 — 1053 g
% solids	100.0	Custody/SAP No	RC-110 137 — RC-110

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Tritium	10028-17-8	2.24	3.4	6.13	400	U J	H
Carbon 14	14762-75-5	1.16	2.8	4.77	50.0	U J	C
Total Strontium	SR RAD	0.045	0.14	0.298	1.00	U	SR
Technetium 99	14133-76-7	0.109	0.18	0.389	15.0	U	TC
Thorium 228	14274-82-9	0.102	0.20	0.376	1.00	U J	TH
Thorium 230	14269-63-7	0.440	0.27	0.259	1.00		TH
Thorium 232	TH-232	0	0.068	0.259	1.00	U J	TH
Uranium 233/234	U-233/234	0.031	0.062	0.236	1.00	U	U
Uranium 235	15117-96-1	0	0.075	0.286	1.00	U	U
Uranium 238	U-238	0	0.062	0.236	1.00	U	U
Plutonium 238	13981-16-3	0.075	0.098	0.188	1.00	U	PU
Plutonium 239/240	PU-239/240	0	0.049	0.188	1.00	U	PU
Potassium 40	13966-00-2	U		2.69		U	GAM
Cobalt 60	10198-40-0	U		0.024	0.050	U	GAM
Cesium 137	10045-97-3	U		0.025	0.100	U	GAM
Radium 226	13982-63-3	U		0.054	0.100	U	GAM
Radium 228	15262-20-1	U		0.104	0.200	U	GAM
Europium 152	14683-23-9	U		0.074	0.100	U	GAM
Europium 154	15585-10-1	U		0.067	0.100	U	GAM
Europium 155	14391-16-3	U		0.071	0.100	U	GAM
Thorium 228	14274-82-9	U		0.047		U	GAM
Thorium 232	TH-232	U		0.104		U	GAM
Uranium 235	15117-96-1	U		0.147		U	GAM
Uranium 238	U-238	U		2.84		U	GAM
Americium 241	14596-10-2	U		0.064		U	GAM
Beryllium 7	13966-02-4	U		0.260		U	GAM
Ruthenium 106	13967-48-1	U		0.210		U	GAM
Antimony 125	14234-35-6	U		0.060		U	GAM

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SAMPLE DELIVERY GROUP K1569

7363-013

J18XD4

DATA SHEET, cont

SDG	7363	Client/Case no	Hanford SDG K1608
Contact	N. Joseph Verville	Contract	No. 900W235A00
Lab sample id	R904099-13	Client sample id	J18XD9
Dept sample id	7363-013	Location/Matrix	LWGA-WEZ CARCASS SOLID
Received	04/23/09	Collected/Weight	04/16/09 10:30 1053 g
% solids	100.0	Custody/SAP No	RC-118-137 RC-118

ANALYTE	CAS NO	RESULT pCi/g	1σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Cesium 134	13967-70-9	U		0.031		U	GAM

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Lab id EBERLINE
Protocol Hanford
Version Ver 1.0
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EBERLINE ANALYTICAL/RICHMOND

SAMPLE DELIVERY GROUP K1589

7363-014 J18KF0

DATA SHEET

SDG	7363	Client/Case no	Hanford SDG K1608
Contact	N. Joseph Verville	Contract	No. 800W235A00
Lab sample id	R904039-14	Client sample id	J18KF0
Dept sample id	7363-014	Location/Matrix	LWSA-WF3,CARCASS SOLID
Received	04/23/09	Collected/Weight	04/16/09 12:30 1064 g
% solids	100.0	Custody/SAF No	RC-118-138 RC 118

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Tritium	10028-17-8	4.57	4.0	6.52	400	U J	H
Carbon 14	14762-75-5	3.71	3.1	5.10	50.0	U J	C
Total Strontium	SR-RAD	0.011	0.15	0.301	1.00	U	SR
Technetium 99	14133-76-7	0.193	0.12	0.377	15.0	U	TC
Thorium 228	14274-82-9	0	0.15	0.366	1.00	U J	TH
Thorium 230	14269-63-7	0.419	0.31	0.291	1.00		TH
Thorium 232	TH-232	0	0.076	0.291	1.00	U J	TH
Uranium 233/234	U 233/234	0.025	0.049	0.189	1.00	U	U
Uranium 235	15117-96-1	0	0.060	0.228	1.00	U	U
Uranium 238	U-238	0.025	0.049	0.189	1.00	U	U
Plutonium 238	13981-16-3	0.027	0.054	0.208	1.00	U	PU
Plutonium 239/240	PU-239/240	0.027	0.054	0.208	1.00	U	PU
Potassium 40	13966-00-2	U		2.82		U	GAM
Cobalt 60	10198-40-0	U		0.028	0.050	U	GAM
Cesium 137	10045-97-3	U		0.023	0.100	U	GAM
Radium 226	13982-63-3	U		0.047	0.100	U	GAM
Radium 228	15262-20-1	U		0.110	0.200	U	GAM
Europium 152	14683-23-9	U		0.062	0.100	U	GAM
Europium 154	15585-10-1	U		0.084	0.100	U	GAM
Europium 155	14391-16-3	U		0.048	0.100	U	GAM
Thorium 228	14274-82-9	U		0.035		U	GAM
Thorium 232	TH-232	U		0.110		U	GAM
Uranium 235	15117-96-1	U		0.113		U	GAM
Uranium 238	U-238	U		3.04		U	GAM
Americium 241	14596-10-2	U		0.025		U	GAM
Beryllium 7	13966-02-4	U		0.253		U	GAM
Ruthenium 106	13967-48-1	U		0.220		U	GAM
Antimony 125	14234-35-6	U		0.053		U	GAM

ColumbiaRiverComp,ofRCBRA-Tissue

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Lab id	EBRLNE
Protocol	Hanford1
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EBERLINE ANALYTICAL/RICHMOND

SAMPLE DELIVERY GROUP K1589

7363-014

J18KF0

DATA SHEET, cont

SDG	7363	Client/Case no	Hanford SDG K1608
Contact	N. Joseph Verville	Contract	No. 600W235A00
Lab sample id	E904099-14	Client sample id	J18KF0
Dept sample id	7363-014	Location/Matrix	LWSA-WP3,CARCASS SOLID
Received	04/21/09	Collected/Weight	04/16/09 12:30 1064 g
% solids	100.0	Custody/SAF No	RC-118 138 RC-118

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALIFIERS	TEST
Cesium 134	13967-70-9	U		0.030		U	GAM

ColumbiaRiverComp.ofRCBRA-Tissue

✓
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Lab id	EBRLNE
Protocol	Hanford1
Version	Ver 1.0
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EBERLINE ANALYTICAL/RICHMOND

SAMPLE DELIVERY GROUP K1589

7363-015 J18KF1

DATA SHEET

SDG	7363	Client/Case no	Hanford SDG K1600
Contact	N. Joseph Verville	Contract	No. 500W215A00
Lab sample id	E904099-15	Client sample id	J18KF1
Dept sample id	7363-015	Location/Matrix	LWSA WF4,CARCASE SOLID
Received	04/23/09	Collected/Weight	04/16/09 14:00 1116 g
% solids	100.0	Custody/SAF No	RC-118-139 RC-118

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALIFIERS	TEST
Tritium	10028-17-8	1.81	4.2	7.42	400	U J	H
Carbon 14	14762-75-5	1.91	3.5	5.78	50.0	U J	C
Total Strontium	SR-RAD	-0.007	0.13	0.275	1.00	U	SR
Technetium 99	14133-76-7	0.149	0.18	0.369	15.0	U	TC
Thorium 228	14274-82-9	0	0.064	0.244	1.00	U J	TH
Thorium 230	14269-63-7	0.508	0.32	0.304	1.00		TH
Thorium 232	TH-232	0.095	0.11	0.243	1.00	U J	TH
Uranium 233/234	U-233/234	0.103	0.10	0.197	1.00	U	U
Uranium 235	15117-96-1	0.062	0.062	0.238	1.00	U	U
Uranium 238	U-238	0.026	0.051	0.197	1.00	U	U
Plutonium 238	13981-16-3	0.050	0.12	0.279	1.00	U	PU
Plutonium 239/240	PU-239/240	0	0.058	0.222	1.00	U	PU
Potassium 40	13966-00-2	U		4.80		U	GAM
Cobalt 60	10198-40-0	U		0.041	0.050	U	GAM
Cesium 137	10045-97-3	U		0.042	0.100	U	GAM
Radium 226	13982-63-3	U		0.090	0.100	U	GAM
Radium 228	15262-20-1	U		0.191	0.200	U	GAM
Europium 152	14683-23-9	U		0.116	0.100	U	GAM
Europium 154	15585-10-1	U		0.116	0.100	U	GAM
Europium 155	14391-16-3	U		0.106	0.100	U	GAM
Thorium 228	14274-82-9	U		0.123		U	GAM
Thorium 232	TH-232	U		0.191		U	GAM
Uranium 235	15117-96-1	U		0.225		U	GAM
Uranium 238	U-238	U		4.44		U	GAM
Americium 241	14596-10-2	U		0.160		U	GAM
Beryllium 7	13966-02-4	U		0.434		U	GAM
Ruthenium 106	13967-48-1	U		0.114		U	GAM
Antimony 125	14234-35-6	U		0.095		U	GAM

ColumbiaRiverComp.ofRCBRA-Tissue

10/10/09

Lab id	EBRLNE
Protocol	Hanford1
Version	Ver 1.0
Form	DVD-DS
Version	3.06
Report date	06/11/09

DATA SHEET, cont

SDG	7363	Client/Case no	Hanford SDG_K1608
Contact	N. Joseph Verville	Contract	No. S00W235A00
Lab sample id	E904099-15	Client sample id	J18KF1
Dept sample id	7363-015	Location/Matrix	LWSA WF4,CARCASS SOLID
Received	04/23/09	Collected/Weight	04/16/09 14:00 1116 g
% solids	100.0	Custody/SAP No	RC-118-139 RC-118

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Cesium 134	13967-70-9	U		0.051		U	GAM

ColumbiaRiverComp.ofRCBRA-Tissue

10/16/09

Lab id	EBERLINE
Protocol	Hanford1
Version	Ver 1.0
Form	DVD-DS
Version	3.06
Report date	06/11/09

EBERLINE ANALYTICAL/RICHMOND

SAMPLE DELIVERY GROUP K1589

7363-016

J18KF2

DATA SHEET

SDG	7363	Client/Case no	Hanford SDG_K1608
Contact	M. Joseph Verville	Contract	No. 300W235A00
Lab sample id	R904099-16	Client sample id	J18KF2
Dept sample id	7363-016	Location/Matrix	LWGA-WPG.CARCASS SOLID
Received	04/21/09	Collected/Weight	04/20/09 10:00 933 g
% solids	100.0	Custody/SAF No	RC-118-140 RC_118

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Tritium	10028-17-8	0.470	1.6	6.17	400	UJ	H
Carbon 14	14762-75-5	141	6.4	5.09	50.0	J	C
Total Strontium	SR RAD	0.051	0.14	0.278	1.00	U	SR
Technetium 99	14133-76-7	0.061	0.18	0.406	15.0	U	TC
Thorium 228	14274-82-9	0.414	0.26	0.305	1.00	J	TH
Thorium 230	14269-63-7	0.025	0.39	0.304	1.00		TH
Thorium 232	TH-232	0.317	0.19	0.243	1.00	J	TH
Uranium 233/234	U-233/234	0	0.062	0.237	1.00	U	U
Uranium 235	15117-96-1	0.037	0.075	0.287	1.00	U	U
Uranium 238	U-238	0.093	0.12	0.237	1.00	U	U
Plutonium 238	13981-16-3	0.047	0.094	0.179	1.00	U	PU
Plutonium 239/240	PU-239/240	0.023	0.047	0.179	1.00	U	PU
Potassium 40	13966-00-2	U		1.59		U	GAM
Cobalt 60	10198-40-0	U		0.055	0.050	U	GAM
Cesium 137	10045-97-3	U		0.055	0.100	U	GAM
Radium 226	13982-63-3	U		0.122	0.100	U	GAM
Radium 228	15262-20-1	U		0.253	0.200	U	GAM
Europium 152	14683-23-9	U		0.146	0.100	U	GAM
Europium 154	15585-10-1	U		0.179	0.100	U	GAM
Europium 155	14391-16-3	U		0.119	0.100	U	GAM
Thorium 228	14274-82-9	U		0.093		U	GAM
Thorium 232	TH-232	U		0.253		U	GAM
Uranium 235	15117-96-1	U		0.302		U	GAM
Uranium 238	U-238	U		6.46		U	GAM
Americium 241	14596-10-2	U		0.049		U	GAM
Beryllium 7	13966-02-4	U		0.518		U	GAM
Ruthenium 106	13967-48-1	U		0.476		U	GAM
Antimony 125	14234-35-6	U		0.125		U	GAM

ColumbiaRiver:Comp.of RCBRA-Tissue

10/10/09

Lab id	EBERLINE
Protocol	Hanford1
Version	Ver 1.0
Form	DVD-DS
Version	1.06
Report date	06/11/09

DATA SHEET, cont

SDG	7363	Client/Case no	Hanford SDG K1608
Contact	N. Joseph Verville	Contract	No. 000W235A00
Lab sample id	8904099-16	Client sample id	J18XF2
Dept sample id	7363-016	Location/Matrix	LWSA WFS,CARCASS SOLID
Received	04/23/09	Collected/Weight	04/20/09 10:00 911 g
% solids	100.0	Custody/SAF No	RC-118-140 RC 118

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Cesium 134	13967-70-9	0		0.068		U	GAM

ColumbiaRiverComp.ofRCBRA-Tissue

V 10/10/09

DATA SHEETS
Page 32
SUMMARY DATA SECTION
Page 48

Lab id EBERLNE
Protocol Hanford1
Version Ver 1.0
Form DVD-DS
Version 3.06
Report date 06/11/09

Appendix 4

Laboratory Narrative and Chain-of-Custody Documentation

1.0 GENERAL

Washington Closure Hanford (WCH) Sample Delivery Group K1608 was composed of twelve solid (other solid) samples designated under SAF No. RC-118 with a Project Designation of: Columbia River Component of the RCBRA – Tissues.

The samples were received as stated on the Chain-of-Custody documents. Any discrepancies are noted on the Eberline Analytical Sample Receipt Checklist. The results were sent to WCH via e-mail June 15, 2009.

2.0 ANALYSIS NOTES

2.1 Carbon-14 Analysis

No problems were encountered during the course of the analyses.

2.2 Tritium Analysis

No problems were encountered during the course of the analyses.

2.3 Strontium-90 Analysis

No problems were encountered during the course of the analyses.

2.4 Technetium-99 Analysis

No problems were encountered during the course of the analyses.

2.5 Isotopic Thorium Analysis

No problems were encountered during the course of the analyses.

2.6 Isotopic Uranium Analysis

No problems were encountered during the course of the analyses.

2.7 Isotopic Plutonium Analysis

No problems were encountered during the course of the analyses.

2.8 Gamma Spectroscopy

No problems were encountered during the course of the analyses.

3.0 Case Narrative Certification Statement

"I certify that this data package is in compliance with the SOW, both technically and for completeness, for other than the conditions detailed above. Release of the data obtained in this hard copy data package has been authorized by the Laboratory Manager or a designee, as verified by the following signature."

6/15/09

N. Joseph Verville
Client Services Manager

Date

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-118-41

Page 1 of 1

Collector: Josh McGough

Company Contact: JOAN KESSNER

Telephone No.: 375-4688

Project Coordinator: KESSNER, JH

Price Code: 9K N

Data Turnaround: 45 Days

Project Designation: Columbia River Component of the RCBRA - Tissues

Sampling Location: 100BA-WF1, FILLET K1608 (7364)

SAF No.: RC-118

Ice Chest No.: 267

Field Logbook No.: 1633

COA: BESCRC6520

Method of Shipment: FED EX

Shipped To: EBERLINE SERVICES / LIONVILLE

Offsite Property No.: N/A

Bill of Lading/Air Bill No.: Fdx# 79655867733

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

COOL 4C "MATRIX COMPOSED OF FISH"

000068

Preservation	None	None	None	None	Cool 4C	Cool 4C	None			
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	G/P			
No. of Container(s)	1	1	1	1	1	1	1			
Volume	1500g	100g	100g	10g	250g	120g	10g			
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Tritium - H3	See item (2) in Special Instructions	See item (3) in Special Instructions	Pesticides - 8081	Technetium-99			

Sample No.	Matrix *	Sample Date	Sample Time										
J18J84	OTHER SOLID	4/27/09	0800	X	X	X	X			X			

CHAIN OF POSSESSION	Date/Time	Sign/Print Names Received By/Stored In	Date/Time
Relinquished By/Removed From: Josh McGough	4/27/09 0800	Received By/Stored In: EAS Locked Storage	4/27/09 0805
Relinquished By/Removed From: EAS LOCKED STORAGE	04/28/09 1200	Received By/Stored In: SHANNAN JOHNSON	04/28/09 1200
Relinquished By/Removed From: SHANNAN JOHNSON	1200	Received By/Stored In: FDX# 79655867733	
Relinquished By/Removed From: FED EX		Received By/Stored In: [illegible]	4/29/09 0910
Relinquished By/Removed From		Received By/Stored In	
Relinquished By/Removed From		Received By/Stored In	

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) {Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238}

(2) Strontium-89,90 -- Total Sr; Isotopic Thorium {Thorium-232}; Isotopic Uranium {Uranium-233/234, Uranium-235, Uranium-238}; Isotopic Plutonium

(3) ICP Metals - 6010 (Full List) {Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc}; Mercury - 7471 - (CV)

Sampler unavailable to relinquish samples from EAS Refrigerator. EAS Custodian removed samples for shipping on 04/28/09

Matrix *

S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Washington Closure Hanford	**CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST**	RC-118-42	Page 1 of 1
Collector Josh McGough	**Company Contact** JOAN KESSNER **Telephone No.** 375-4688	**Project Coordinator** KESSNER, JH	**Price Code** 9K ✓ **Data Turnaround** 45 Days
Project Designation Columbia River Component of the RCBRA - Tissues	**Sampling Location** 100SA-WP2, FILLET KILLS (7364)	**SAF No.** RC-118	
Ice Chest No. 267	**Field Logbook No.** 1633 **COA** BESCRC6520	**Method of Shipment** FED EX	
Shipped To EBERLINE SERVICES LIONVILLE	**Offsite Property No.** N/A	**Bill of Lading/Air Bill No.** Fdx# 796558677333	

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage
COOL 4C "MATRIX COMPOSED OF FISH"

690000

Preservation	None	None	None	None	Cool 4C	Cool 4C	None			
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	G/P			
No. of Container(s)	1	1	1	1	1	1	1			
Volume	1500g	100g	100g	10g	250g	120g	10g			
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Tritium - H3	See item (2) in Special Instructions	See item (3) in Special Instructions	Pesticides - 8081	Technetium-99			

Sample No.	Matrix *	Sample Date	Sample Time										
J18J85	OTHER SOLID	4/27/09 ~~1030~~	1030	X	X	X	X			X			

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Josh McGough	4/27/09 1030	EAS LOCKED STORAGE	4/27/09 1035
EAS LOCKED STORAGE	04/28/09 1200	SHANNAN JOHNSON	04/28/09 1200
SHANNAN JOHNSON	04/28/09 1200	FDX# 796558677333	
FEDEX			04/29/09 0910

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) {Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238}
(2) Strontium-89,90 – Total Sr; Isotopic Thorium {Thorium-232}; Isotopic Uranium {Uranium-233/234, Uranium-235, Uranium-238}; Isotopic Plutonium
(3) ICP Metals - 6010 (Full List) {Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc}; Mercury - 7471 - (CV)

Sampler unavailable to relinquish samples from EAS Refrigerator. EAS Custodian received samples for shipping on 04/28/09

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Washington Closure Hanford	**CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST**	RC-118-43	Page 1 of 1
Collector Josh McGough	**Company Contact** JOAN KESSNER **Telephone No.** 375-4688	**Project Coordinator** KESSNER, JH	**Price Code** 9K ✓ **Data Turnaround** 45 Days
Project Designation Columbia River Component of the RCBRA - Tissues	**Sampling Location** 100BA-WF3, FILLET K1608 (T3G4)	**SAF No.** RC-118	
Ice Chest No. 267	**Field Logbook No.** 1633 **COA** BESCRC6520	**Method of Shipment** FED EX	
Shipped To [✓ EBERLINE SERVICES] / LIONVILLE	**Offsite Property No.** N/A	**Bill of Lading/Air Bill No.** FDX# 796558677333	

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage
COOL 4C "MATRIX COMPOSED OF FISH"

Preservation	None	None	None	None	Cool 4C	Cool 4C	None			
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	G/P			
No. of Container(s)	1	1	1	1	1	1	1			
Volume	1500g	100g	100g	10g	250g	130g	10g			
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Tritium - H3	See item (2) in Special Instructions	See item (3) in Special Instructions	Pesticides - 8081	Technetium-99			

Sample No.	Matrix *	Sample Date	Sample Time										
J18J86	OTHER SOLID	4/27/09	1345	X	X	X	X			X			

CHAIN OF POSSESSION		**Sign/Print Names**	
Relinquished By/Removed From Josh McGough	**Date/Time** 4/27/09 1345	**Received By/Stored In** EAS Locked Storage	**Date/Time** 4/27/09 1345
Relinquished By/Removed From EAS LOCKED STORAGE	**Date/Time** 04/28/09 1200	**Received By/Stored In** SHANNAN JOHNSON	**Date/Time** 04/28/09 1200
Relinquished By/Removed From SHANNAN JOHNSON	**Date/Time** 04/28/09 1200	**Received By/Stored In** FDX# 796558677333	**Date/Time**
Relinquished By/Removed From FED EX	**Date/Time**	**Received By/Stored In** R.F. WATHWAN	**Date/Time** 04/29/09 0910
Relinquished By/Removed From	**Date/Time**	**Received By/Stored In**	**Date/Time**
Relinquished By/Removed From	**Date/Time**	**Received By/Stored In**	**Date/Time**

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) (Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238)
(2) Strontium-89,90 – Total Sr; Isotopic Thorium (Thorium-232); Isotopic Uranium (Uranium-233/234, Uranium-235, Uranium-238); Isotopic Plutonium
(3) ICP Metals - 6010 (Full List) (Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc); Mercury - 7471 - (CV)

Sampler unavailable to relinquish samples from EAS Refrigerator. EAS Custodian removed samples for shipping on 04/28/09

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W = Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	**Received By**	**Title**	**Date/Time**
FINAL SAMPLE DISPOSITION	**Disposal Method**	**Disposed By**	**Date/Time**

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-118-44

Page 1 of 1

Collector Josh McGaugh

Company Contact JOAN KESSNER

Telephone No. 375-4688

Project Coordinator KESSNER, JH

Price Code 9K N

Data Turnaround 45 Days

Project Designation Columbia River Component of the RCBRA - Tissues

Sampling Location 100SA-WP4, FILLET K1608 (7304)

SAF No. RC-118

Ice Chest No. 2167

Field Logbook No. 1633

COA BESCRC6520

Method of Shipment FED EX

Shipped To EBERLINE SERVICES LIONVILLE

Offsite Property No. N/A

Bill of Lading/Air Bill No. Fdx# 796558677333

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage
COOL 4C "MATRIX COMPOSED OF FISH"

0000721

Preservation	None	None	None	None	Cool 4C	Cool 4C	None			
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	G/P			
No. of Container(s)	1	1	1	1	1	1	1			
Volume	1500g	100g	100g	10g	250g	120g	10g			
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Tritium - H3	See item (2) in Special Instructions	See item (3) in Special Instructions	Pesticides - 8081	Technetium-99			

Sample No.	Matrix *	Sample Date	Sample Time										
J18J87	OTHER SOLID	4/27/09	1430	X	X	X	X			X			

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Josh McGaugh	4/27/09 1430	EAS Locked Storage #2	4/27/09 1430
EAS LOCKED STORAGE #2	04/28/09 1230	SHANNAN JOHNSON	04/28/09 1230
SHANNAN JOHNSON	04/28/09 12:20	Fdx# 796558677333	
Fed Ex		F. WATHUK...	04/29/09 0950

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) (Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238)
(2) Strontium-89,90 -- Total Sr; Isotopic Thorium (Thorium-232); Isotopic Uranium (Uranium-233/234, Uranium-235, Uranium-238); Isotopic Plutonium
(3) ICP Metals - 6010 (Full List) (Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc); Mercury - 7471 - (CV)

Samples unavailable to relinquish samples from EAS Refrigerator. EAS Custodian removed samples for shipping on 04/28/09

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION — Received By — Title — Date/Time

FINAL SAMPLE DISPOSITION — Disposal Method — Disposed By — Date/Time

WCH-EE-011

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-118-66

Page 1 of 1

Collector Josh McGough

Company Contact JOAN KESSNER

Telephone No. 375-4688

Project Coordinator KESSNER, JH

Price Code 9K

Data Turnaround 45 Days

Project Designation Columbia River Component of the RCBRA - Tissues

Sampling Location 100SA-WF1, CARCASS K1608 (73C17)

SAP No. RC-118

Ice Chest No. 267

Field Logbook No. 1633

COA BESCRC6520

Method of Shipment FED EX Fdx# 796558677333

Shipped To EBERLINE SERVICES LIONVILLE

Offsite Property No. N/A

Bill of Lading/Air Bill No.

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage
COOL 4C "MATRIX COMPOSED OF FISH"

0000722

SAMPLE ANALYSIS

Preservation	None	None	None	None	Cool 4C	Cool 4C	None			
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	G/P			
No. of Container(s)	1/2	1/0	1/0	1/0	1	1	1/0			
Volume	1500g	100g	100g	10g	250g	120g	10g			
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Tritium - H3	See item (2) in Special Instructions	See item (3) in Special Instructions	Pesticides - 8081	Technetium-99			

4/28/09

Sample No.	Matrix *	Sample Date	Sample Time										
J18K21	OTHER SOLID	4/23/09	0800	Y	X	X	X			X			

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Josh McGough	4/23/09 0800	EAS Locked Storage #	4/23/09 0808
EAS LOCKED STORAGE # 2	04/28/09	SHANNAN JOHNSON	04/28/09 1200
SHANNAN JOHNSON	04/28/09 1200	Fdx# 796558677333	
FED EX		R.F. Ustrukt	04/29/09 0903

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) {Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238}
(2) Strontium-89,90 – Total Sr; Isotopic Thorium {Thorium-232}; Isotopic Uranium {Uranium-233/234, Uranium-235, Uranium-238}; Isotopic Plutonium
(3) ICP Metals - 6010 (Full List) {Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc}; Mercury - 7471 - (CV)

Sampler unavailable to relinquish samples from EAS Refrigerator. EAS Custodian removed samples for shipping on [illegible]

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W = Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-118-67

Page 1 of 1

Collector Josh McGough

Company Contact JOAN KESSNER

Telephone No. 373-4688

Project Coordinator KESSNER, JH

Price Code 9K ✓ 4/28/09

Data Turnaround 45 Days

Project Designation Columbia River Component of the RCBRA - Tissues

Sampling Location 100SA-WF2, CARCASS K1008 (7304)

SAF No. RC-118

Ice Chest No. 267

Field Logbook No. 1833

COA BESCRC6520

Method of Shipment FED EX

Shipped To EBERLINE SERVICES, RICHMOND... ALIONVILLE

Offsite Property No. N/A

Bill of Lading/Air Bill No. FOX# 796558677333

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage
COOL 4C "MATRIX COMPOSED OF FISH"

000273

Preservation	None	None	None	None	Cool 4C	Cool 4C	None			
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	G/P			
No. of Container(s)	1	1	1	1	1	1	1			
Volume	1500g	100g	100g	10g	250g	120g	10g			
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Tritium - H3	See item (2) in Special Instructions	See item (3) in Special Instructions	Pesticides - 8081	Technetium-99			

Sample No.	Matrix *	Sample Date	Sample Time										
J18K22	OTHER SOLID	4/23/09	1000	X	X	X	X			X			

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Josh McGough	4/23/09 10:00	EAS Locked Storage	4/23/09 10:05
EAS LOCKED STORAGE #2	04/28/09 1200	SHANNAN JOHNSON	04/28/09 1200
SHANNAN JOHNSON	04/28/09 1300	FOX# 796558677333	
FED EX		M. PILLTAWATHA	4/29/09 0950

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) (Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238)
(2) Strontium-89,90 -- Total Sr; Isotopic Thorium (Thorium-232); Isotopic Uranium (Uranium-233/234, Uranium-235, Uranium-238); Isotopic Plutonium
(3) ICP Metals - 6010 (Full List) (Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc); Mercury - 7471 - (CV)

Sampler unavailable to relinquish samples from EAS Refrigerator. EAS Custodian removed samples for shipping on 04/28/09

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-118-60

Page 1 of 1

Collector Josh McGough

Company Contact JOAN KESSNER

Telephone No. 375-4688

Project Coordinator KESSNER, JH

Price Code 9K ✓ 4/28/09

Data Turnaround 45 Days

Project Designation Columbia River Component of the RCBRA - Tissues

Sampling Location 100BA-WF3, CARCASS K1008 (7SLH)

SAF No. RC-118

Ice Chest No. 267

Field Logbook No. 1633

COA BESCRC6520

Method of Shipment FED EX

Shipped To [✓ EBERLINE SERVICES] LIONVILLE

Offsite Property No. N/A

Bill of Lading/Air Bill No. Fdx# 796558677333

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage
COOL 4C "MATRIX COMPOSED OF FISH"

000074

Preservation	None	None	None	None	Cool 4C	Cool 4C	None			
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	G/P			
No. of Container(s)	1	1	1	1	1	1	1			
Volume	1500g	100g	100g	10g	250g	130g	10g			
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Tritium - H3	See item (2) in Special Instructions	See item (3) in Special Instructions	Pesticides - 8081	Technetium-99			

Sample No.	Matrix *	Sample Date	Sample Time										
J18K23	OTHER SOLID	4/23/09	12:00	X	X	X	X			X			

CHAIN OF POSSESSION		Sign/Print Names	
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Josh McGough	4/23/09 12:00	EAS Locked Storage	4/23/09 12:05
EAS LOCKED STORAGE	04/28/09 1200	SHANNAN JOHNSON	04/28/09 1200
SHANNAN JOHNSON	04/28/09 1200	Fdx# 796558677333	
Fed Ex		RF [illegible]	4/29/09 0900

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) {Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238}
(2) Strontium-89,90 -- Total Sr; Isotopic Thorium {Thorium-232}; Isotopic Uranium {Uranium-233/234, Uranium-235, Uranium-238}; Isotopic Plutonium
(3) ICP Metals - 6010 (Full List) {Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc}; Mercury - 7471 - (CV)

Sampler unavailable to relinquish samples from EAS Refrigerator. EAS Custodian removed samples for shipping on 04/28/09

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W = Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-110-69

Page 1 of 1

Collector Josh McGough	Company Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator KESSNER, JH
Project Designation Columbia River Component of the RCBRA - Tissues	Sampling Location 100SA-WF4, CARCASS	K[illegible] (7364)	SAF No. RC-118
Ice Chest No. 267	Field Logbook No. 1633	COA BESCRC6520	Method of Shipment FED EX
Shipped To EBERLINE SERVICES LIONVILLE	Offsite Property No. N/A		Bill of Lading/Airbill No. FDX# 796558677333

Price Code 9K ✓ [illegible]

Data Turnaround 45 Days

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

COOL 4C "MATRIX COMPOSED OF FISH"

Preservation	None	None	None	None	Cool 4C	Cool 4C	None
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	G/P
No. of Container(s)	1	1	1	1	1	1	1
Volume	1500g	100g	100g	10g	250g	120g	10g
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Tritium - H3	See item (2) in Special Instructions	See item (3) in Special Instructions	Pesticides - 8081	Technetium-99

Sample No.	Matrix *	Sample Date	Sample Time										
[redacted]				[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
J18K24	OTHER SOLID	1/23/09	1400	X	X	X	X			X			

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Josh McGough [illegible]	1/23/09 1400	[illegible] EAS LOCKED STORAGE	1/23/09 1405
EAS LOCKED STORAGE #2	04/18/09 1200	SHANNAN JOHNSON	04/18/09 1200
SHANNAN JOHNSON	04/20/09 1200	Fdx# 796558677333	
FED EX		[illegible]	[illegible]

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) (Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238)
(2) Strontium-89,90 -- Total Sr; Isotopic Thorium (Thorium-232); Isotopic Uranium (Uranium-233/234, Uranium-235, Uranium-238); Isotopic Plutonium
(3) ICP Metals - 6010 (Full List) (Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc); Mercury - 7471 - (CV)

Sampler unavailable to relinquish samples from EAS Refrigerator. EAS Custodian removed samples for shipping on 04/20/09

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-118-02 | Page 1 of 1

Collector Josh McGough	**Company Contact** JOAN KESSNER	**Telephone No.** 375-4688	**Project Coordinator** KESSNER, JH
Project Designation Columbia River Component of the RCBRA - Tissues	**Sampling Location** 300SA-WF2, FILLET KIGO8 (7324)		**SAF No.** RC-118
Ice Chest No. 2167	**Field Logbook No.** 1633	**COA** BESCRC6530	**Method of Shipment** FED EX
Shipped To EBERLINE SERVICES /LIONVILLE	**Offsite Property No.** N/A		**Bill of Lading/Air Bill No.** Fdx# 796558677333

Price Code 9K
Data Turnaround 45 Days

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage
COOL 4C "MATRIX COMPOSED OF FISH"

000076

Preservation	None	None	None	None	Cool 4C	Cool 4C	None			
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	G/P			
No. of Container(s)	1	1	1	1	1	1	1			
Volume	1300g	100g	100g	10g	250g	130g	10g			
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Tritium - H3	See item (2) in Special Instructions	See item (3) in Special Instructions	Pesticides - 8081	Technetium-99			

Sample No.	Matrix *	Sample Date	Sample Time										
J18K37	OTHER SOLID	4/22/09	0800	X	X	X	X			X			

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Josh McGough	04/22/09 0800	EAS Locked Storage	04/22/09 0805
EAS LOCKED STORAGE #2	4/28/09 1200	SHANNAN JOHNSON	04/28/09 1200
SHANNAN JOHNSON	04/28/09 1200	FDX# 796558677333	
Fed Ex		R F AUSTRAW	4/29/09 0900

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) {Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238}
(2) Strontium-89,90 – Total Sr; Isotopic Thorium {Thorium-232}; Isotopic Uranium {Uranium-233/234, Uranium-235, Uranium-238}; Isotopic Plutonium
(3) ICP Metals - 6010 (Full List) {Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc}; Mercury - 7471 - (CV)

Sampler unavailable to relinquish samples from EAS Refrigerator. EAS Custodian released samples for shipping on 04/28/09

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W = Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-118-43

Page 1 of 1

Collector Josh McGough

Company Contact JOAN KESSNER

Telephone No. 375-4688

Project Coordinator KESSNER, JH

Price Code 9K 4/28/09

Data Turnaround 45 Days

Project Designation Columbia River Component of the RCBRA - Tissues

Sampling Location 300SA-WF3, FILLET K1663 (3364)

SAF No. RC-118

Ice Chest No. 267

Field Logbook No. 1633

COA DESCRC6530

Method of Shipment FED EX

Shipped To OVERLINE SERVICES LIONVILLE

Offsite Property No. N/A

Bill of Lading/Air Bill No. Fdx# 796558677333

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage
COOL 4C "MATRIX COMPOSED OF FISH"

Preservation	None	None	None	None	Cool 4C	Cool 4C	None			
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	G/P			
No. of Container(s)	1	1	1	1	1	1	1			
Volume	1500g	100g	100g	10g	250g	120g	10g			
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Tritium - H3	See item (2) in Special Instructions	See item (3) in Special Instructions	Pesticides - 8081	Technetium-99			

Sample No.	Matrix *	Sample Date	Sample Time										
J18K38	OTHER SOLID	4/22/09	1000	X	X	X	X			X			

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Josh McGough	4/22/09 1000	EAS Locked Storage #2	4/22/09 1005
EAS LOCKED STORAGE #2	04/28/09 1200	SHANNAN JOHNSON	04/28/09 1200
SHANNAN JOHNSON	04/30/09 1200	Fdx# 796558677333	
Fed Ex		M LIATRUIKA	5/1/09 0900

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) {Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238}
(2) Strontium-89,90 -- Total Sr; Isotopic Thorium {Thorium-232}; Isotopic Uranium {Uranium-233/234, Uranium-235, Uranium-238}; Isotopic Plutonium
(3) ICP Metals - 6010 (Full List) {Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc}; Mercury - 7471 - (CV)

Sampler unavailable to relinquish samples from EAS Refrigerator. EAS Custodian removed samples for shipping on 04-28-09

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-110-04 | Page 1 of 1

Collector Josh McGough	Company Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator KESSNER, JH	Price Code 9K Data Turnaround 45 Days
Project Designation Columbia River Component of the RCBRA - Tissues	Sampling Location 300SA-WP4, FILLET K1608 (736)		SAF No. RC-118	
Ice Chest No. 267	Field Logbook No. 1633	COA BESCRC6520	Method of Shipment FED EX	
Shipped To EBERLINE SERVICES RICHMOND/ ALIONVILLE	Offsite Property No. N/A		Bill of Lading/Air Bill No. Fdx# 796558677333	

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage
COOL 4C "MATRIX COMPOSED OF FISH"

82000

Preservation	None	None	None	None	Cool 4C	Cool 4C	None
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	G/P
No. of Container(s)	1	1	1	1	1	1	1
Volume	1500g	100g	100g	10g	250g	120g	10g
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Tritium - H3	See item (2) in Special Instructions	See item (3) in Special Instructions	Pesticides - 8081	Technetium-99

Sample No.	Matrix *	Sample Date	Sample Time										
J1BK39	OTHER SOLID	4/22/09	12:00	X	X	X	X			X			

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Josh McGough	4/22/09 12:00	EAS Locked Storage	4/22/09 12:05
EAS LOCKED STORAGE #2	04/28/09 1222	SHANNAN JOHNSON	04/28/09 1222
SHANNAN JOHNSON	04/28/09 1220	Fdx# 796558677333	
Fed Ex		HE METRAUKANO	04/29/09 0900

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) (Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238)
(2) Strontium-89,90 -- Total Sr; Isotopic Thorium (Thorium-232); Isotopic Uranium (Uranium-233/234, Uranium-235, Uranium-238); Isotopic Plutonium
(3) ICP Metals - 6010 (Full List) (Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc); Mercury - 7471 - (CV)

Sampler unavailable to relinquish samples from EAS Refrigerator. EAS Custodian removed samples for shipping on 04/28/09

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Washington Closure Hanford	**CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST**		RC-118-85	Page 1 of 1
Collector Josh McGough	**Company Contact** JOAN KESSNER	**Telephone No.** 375-4688	**Project Coordinator** KESSNER, JH	**Price Code** 9K 4/30/9 **Data Turnaround** 45 Days
Project Designation Columbia River Component of the RCBRA - Tissues	**Sampling Location** 300SA-WFS, FILLET K1603 (7364)		**SAF No.** RC-118	
Ice Chest No. 267	**Field Logbook No.** 1633	**COA** BESCRC6520	**Method of Shipment** FED EX	
Shipped To EBERLINE SERVICES /LIONVILLE	**Offsite Property No.** N/A		**Bill of Lading/Air Bill No.** FDX# 796558677333	

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage
COOL 4C "MATRIX COMPOSED OF FISH"

620000

Preservation	None	None	None	None	Cool 4C	Cool 4C	None			
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	G/P			
No. of Container(s)	1	1	1	1	1	1	1			
Volume	1500g	100g	100g	10g	250g	130g	10g			
SAMPLE ANALYSIS	See item (1) in Special Instructions.	Carbon-14	Tritium - H3	See item (2) in Special Instructions.	See item (3) in Special Instructions.	Pesticides - 8081	Technetium-99			

Sample No.	Matrix *	Sample Date	Sample Time										
J18K40	OTHER SOLID	04/22/09	1400	X	X	X	X			X			

CHAIN OF POSSESSION		**Sign/Print Names**	
Relinquished By/Removed From Josh McGough Josh McG	Date/Time 4/22/09 1400	Received By/Stored In EAS Locked Storage	Date/Time 4/22/09 1405
Relinquished By/Removed From EAS LOCKED STORAGE #2	Date/Time 04/28/09 1200	Received By/Stored In SHANNAN JOHNSON	Date/Time 04/28/09 1200
Relinquished By/Removed From SHANNAN JOHNSON	Date/Time 04/28/09 1700	Received By/Stored In FDX# 796558677333	Date/Time
Relinquished By/Removed From FED EX	Date/Time	Received By/Stored In R F Waterman	Date/Time 04/29/09 0915
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) (Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238)
(2) Strontium-89,90 – Total Sr; Isotopic Thorium (Thorium-232); Isotopic Uranium (Uranium-233/234, Uranium-235, Uranium-238); Isotopic Plutonium
(3) ICP Metals - 6010 (Full List) (Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc); Mercury - 7471 - (CV)

Sampler unavailable to relinquish samples from EAS Refrigerator. EAS Custodian [illegible] for shipping on 04/28/09

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

Eberline Analytical
W.O. No. R9-04-099-7363

Washington Closure Hanford
SDG K1608

Case Narrative

Page 1 of 1

1.0 GENERAL

Washington Closure Hanford (WCH) Sample Delivery Group K1589 was composed of sixteen solid (other solid) samples designated under SAF No. RC-118 with a Project Designation of Columbia River Component of the RCBRA – Tissues.

The samples were received as stated on the Chain-of-Custody documents. Any discrepancies are noted on the Eberline Analytical Sample Receipt Checklist. The results were sent to WCH via e-mail June 11, 2009.

2.0 ANALYSIS NOTES

2.1 Carbon-14 Analysis

No problems were encountered during the course of the analyses.

2.2 Tritium Analysis

No problems were encountered during the course of the analyses

2.3 Strontium-90 Analysis

No problems were encountered during the course of the analyses.

2.4 Technetium-99 Analysis

No problems were encountered during the course of the analyses.

2.5 Isotopic Thorium Analysis

No problems were encountered during the course of the analyses.

2.6 Isotopic Uranium Analysis

No problems were encountered during the course of the analyses.

2.7 Isotopic Plutonium Analysis

No problems were encountered during the course of the analyses.

2.8 Gamma Spectroscopy

No problems were encountered during the course of the analyses.

3.0 Case Narrative Certification Statement

"I certify that this data package is in compliance with the SOW, both technically and for completeness, for other than the conditions detailed above. Release of the data obtained in this hard copy data package has been authorized by the Laboratory Manager or a designee, as verified by the following signature."

N. Joseph Verville
Client Services Manager

6/11/09
Date

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-118-81

Page 1 of 1

Collector Josh McGough

Company Contact JOAN KESSNER

Telephone No. 375-4688 w. 4/11/09

Project Coordinator KESSNER, JH

Price Code 9K N

Data Turnaround 45 Days

Project Designation Columbia River Component of the RCBRA - Tissues

Sampling Location 300SA-WP1, FILLET Elfose K4587 (7303)

SAF No. RC-118

Ice Chest No. DOG-002

Field Logbook No. 1633

COA BESCRC6520

Method of Shipment FED EX

Shipped To [✓ EBERLINE SERVICES] LIONVILLE

Offsite Property No. N/A

Bill of Lading/Air Bill No. Fdx# 797530431271

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage
COOL 4C "MATRIX COMPOSED OF FISH"

000081

Preservation	None	None	None	None	Cool 4C	Cool 4C	None			
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	G/P			
No. of Container(s)	1	1	1	1	1	1	1			
Volume	1500g	100g	100g	10g	250g	120g	10g			
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Tritium - H3	See item (2) in Special Instructions	See item (3) in Special Instructions	Pesticides - 8081	Technetium-99			

Sample No.	Matrix *	Sample Date	Sample Time										
J18K30	OTHER SOLID	4/21/09	1400	X	X	X	X			X			

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Josh McGough	4/21/09 1400	EAS Locked Storage	4/21/09 1405
EAS LOCKED STORAGE	4/22/09 1230	SHANNAN JOHNSON	4/22/09 1230
SHANNAN JOHNSON	4/22/09 1230	Fdx# 797530431271	
FEDEX		M.E. KATHAWA[illegible]	04/23/09 0909

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) {Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, ~~Radium-226~~, Radium-228, Ruthenium-106, Uranium-235, Uranium-238}
(2) ~~Strontium-89,90~~ – Total Sr; Isotopic Thorium {Thorium-232}; Isotopic Uranium {Uranium-233/234, Uranium-235, Uranium-238}; Isotopic Plutonium
(3) ICP Metals - 6010 (Full List) {Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc}; Mercury - 7471 - (CV)

Sampler unavailable to relinquish samples from EAS Refrigerator. EAS Custodian removed samples for shipping on 4/22/09

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Washington Closure Hanford	**CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST**	**RC-118-101**	**Page** 1 **of** 1

Collector Josh McGaugh	**Company Contact** JOAN KESSNER	**Telephone No.** 375-4688 ka 5/11/09	**Project Coordinator** KESSNER, JH
Project Designation Columbia River Component of the RCBRA - Tissues	**Sampling Location** 300SA-WF1, CARCASS K1008 (7363)		**SAF No.** RC-118
Ice Chest No. 009-002	**Field Logbook No.** 1633	**COA** BESCRC6520	**Method of Shipment** FED EX
Shipped To EBERLINE SERVICES/LIONVILLE	**Offsite Property No.** N/A		**Bill of Lading/Air Bill No.** Fdx# 797530439271

Price Code 9KN

Data Turnaround 45 Days

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage
*COOL 4C *MATRIX COMPOSED OF FISH**

2800001

			Preservation	None	None	None	None	Cool 4C	Cool 4C	None
			Type of Container	G/P	G/P	G/P	G/P	G/P	aG	G/P
			No. of Container(s)	1	1	1	1	1	1	1
			Volume	1500g	100g	100g	10g	250g	120g	10g
			SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Tritium - H3	See item (2) in Special Instructions	See item (3) in Special Instructions	Pesticides - 8081	Technetium-99
Sample No.	**Matrix ***	**Sample Date**	**Sample Time**							
J18K63	OTHER SOLID	04/20/09	0800	X	X	X	X			X

CHAIN OF POSSESSION — **Sign/Print Names**

Relinquished By/Removed From Josh McGaugh	**Date/Time** 04/20/09 0800	**Received By/Stored In** EAS Locked Storage	**Date/Time** 04/20/09 0805
Relinquished By/Removed From EAS LOCKED STORAGE	**Date/Time** 4/22/09 1220	**Received By/Stored In** SHANNAN JOHNSON	**Date/Time** 4/22/09 1220
Relinquished By/Removed From SHANNAN JOHNSON	**Date/Time** 4/22/09 1230	**Received By/Stored In** FDX# 797530439271	**Date/Time**
Relinquished By/Removed From FED EX	**Date/Time**	**Received By/Stored In** M. F. HATHAWAY	**Date/Time** 4/23/09 0900
Relinquished By/Removed From	**Date/Time**	**Received By/Stored In**	**Date/Time**
Relinquished By/Removed From	**Date/Time**	**Received By/Stored In**	**Date/Time**

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) (Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238)
(2) Strontium-89,90 -- Total Sr; Isotopic Thorium (Thorium-232); Isotopic Uranium (Uranium-233/234, Uranium-235, Uranium-238); Isotopic Plutonium
(3) ICP Metals - 6010 (Full List) (Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc); Mercury - 7471 - (CV)

Sampler unavailable to relinquish samples from EAS Refrigerator. EAS Custodian relinquished samples for shipping on 4-22-09

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	**Received By**	**Title**	**Date/Time**
FINAL SAMPLE DISPOSITION	**Disposal Method**	**Disposed By**	**Date/Time**

WCH-EE-011

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-118-102

Page 1 of 1

Collector Josh McGough

Company Contact JOAN KESSNER

Telephone No. 375-4688 JK 6/11/09

Project Coordinator KESSNER, JH

Price Code 9K

Data Turnaround 45 Days

Project Designation Columbia River Component of the RCBRA - Tissues

Sampling Location KF008 ~~K1584~~ (7363) 300SA-WP2, CARCASS

SAF No. RC-118

Ice Chest No. 009-002

Field Logbook No. 1633

COA BESCRC6520

Method of Shipment FED EX

Shipped To EBERLINE SERVICES LIONVILLE

Offsite Property No. N/A

Bill of Lading/Air Bill No. Fdx# 797530439271

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

COOL 4C "MATRIX COMPOSED OF FISH"

000083

Preservation	None	None	None	None	Cool 4C	Cool 4C	None			
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	G/P			
No. of Container(s)	1	1	1	1	1	1	1			
Volume	1500g	100g	100g	10g	250g	120g	10g			
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Tritium - H3	See item (2) in Special Instructions	See item (3) in Special Instructions	Pesticides - 8081	Technetium-99			

Sample No.	Matrix *	Sample Date	Sample Time										
J18K64	OTHER SOLID	04/20/09	1400 hrs	X	X	X	X			X			

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Josh McGough	04/20/09 1400	EAS Locked Storage	04/20/09 1405
EAS LOCKED STORAGE	4/22/09 1230	SHANNAN JOHNSON	4/22/09 1230
SHANNAN JOHNSON	4/22/09 1230	Fdx# 797530439271	
Fed Ex		M. Watanabe	4/23/09 0950

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) (Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238)
(2) Strontium-89,90 -- Total Sr; Isotopic Thorium (Thorium-232); Isotopic Uranium (Uranium-233/234, Uranium-235, Uranium-238); Isotopic Plutonium
(3) ICP Metals - 6010 (Full List) (Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc); Mercury - 7471 - (CV)

Sampler unavailable to relinquish
samples from EAS Refrigerator. EAS
Custodian removed samples for
shipping on 4-22-09

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION Received By | Title | Date/Time

FINAL SAMPLE DISPOSITION Disposal Method | Disposed By | Date/Time

WCH-EE-011

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-110-103

Page 1 of 1

Collector: Josh McGough

Company Contact: JOAN KESSNER

Telephone No.: 375-4688

Project Coordinator: KESSNER, JH

Price Code: 9K

Data Turnaround: 45 Days

Project Designation: Columbia River Component of the RCBRA - Tissues

Sampling Location: 300SA-WF3, CARCASS ~~K1554~~ (7363)

SAF No.: RC-118

Ice Chest No.: 009-002

Field Logbook No.: 1633

COA: BESCRC6530

Method of Shipment: FED EX

Shipped To: EBERLINE SERVICES LIONVILLE

Offsite Property No.: N/A

Bill of Lading/Air Bill No.: Fdx# 797530437271

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage: *COOL 4C "MATRIX COMPOSED OF FISH"*

480084

Preservation	None	None	None	None	Cool 4C	Cool 4C	None
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	G/P
No. of Container(s)	1	1	1	1	1	1	1
Volume	1500g	100g	100g	10g	250g	120g	10g
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Tritium - H3	See item (2) in Special Instructions	See item (3) in Special Instructions	Pesticides - 8081	Technetium-99

Sample No.	Matrix *	Sample Date	Sample Time							
J18X65	OTHER SOLID	04/21/09	0800	X	X	X	X			X

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Josh McGough	04/21/09 0800	EAS Locked Storage	04/21/09 0805
EAS LOCKED STORAGE	4/22/09 1230	SHANNAN JOHNSON	4/22/09
SHANNAN JOHNSON	4/22/09	FDX# 797530437271	
FED EX		M.F. [illegible]	4/23/09 0905

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) (Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238)

(2) Strontium-89,90 – Total Sr; Isotopic Thorium (Thorium-232); Isotopic Uranium (Uranium-233/234, Uranium-235, Uranium-238); Isotopic Plutonium

(3) ICP Metals - 6010 (Full List) (Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc); Mercury - 7471 - (CV)

Sampler unavailable to relinquish samples from EAS Refrigerator. EAS Custodian removed samples for shipping on 4/22/09

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-118-184 | Page 1 of 1

Collector Josh McGough	Company Contact JOAN KESSNER	Telephone No. 373-4688 yp 5/11/09	Project Coordinator KESSNER, JH
Project Designation Columbia River Component of the RCBRA - Tissues	Sampling Location 300SA-WP4, CARCASS	KR-2E K-1584 (7363)	SAF No. RC-118
Ice Chest No. 009-002	Field Logbook No. 1633	COA BESCRC6520	Method of Shipment FED EX
Shipped To EBERLINE SERVICES LIONVILLE	Offsite Property No. N/A		Bill of Lading/Air Bill No. Fdx# 797530439271

Price Code 9K ✓

Data Turnaround 45 Days

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage
COOL 4C "MATRIX COMPOSED OF FISH"

Preservation	None	None	None	None	Cool 4C	Cool 4C	None			
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	G/P			
No. of Container(s)	1	1	1	1	1	1	1			
Volume	1500g	100g	100g	10g	250g	120g	10g			
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Tritium - H3	See item (2) in Special Instructions	See item (3) in Special Instructions	Pesticides - 8081	Technetium-99			

Sample No.	Matrix *	Sample Date	Sample Time										
J18K65	OTHER SOLID	04/21/09	1000	X	X	X	X			X			

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Josh McGough	04/21/09 1000	EAS LOCKED STORAGE	04/21/09 1000
EAS LOCKED STORAGE	4/22/09 1230	SHANNAN JOHNSON	4/22/09
SHANNAN JOHNSON	4/22/09	FDX# 797530439271	
FED EX		R.F. MATTHEWS	04/23/09 0900

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) {Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238}
(2) Strontium-89,90 -- Total Sr; Isotopic Thorium {Thorium-232}; Isotopic Uranium {Uranium-233/234, Uranium-235, Uranium-238}; Isotopic Plutonium
(3) ICP Metals - 6010 (Full List) {Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc}; Mercury - 7471 - (CV)

Sampler unavailable to relinquish samples from EAS Refrigerator. EAS Custodian removed samples for shipping on 4/22/09

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-118-105

Page 1 of 1

Collector: Josh McGough

Company Contact: JOAN KESSNER

Telephone No.: 375-4684 [illegible] 5/11/09

Project Coordinator: KESSNER, JH

Price Code: 9K ✓

Data Turnaround: 45 Days

Project Designation: Columbia River Component of the RCBRA - Tissues

Sampling Location: 300SA-WFS, CARCASS [illegible] K-58-1 (73.3)

SAF No.: RC-118

Ice Chest No.: AFS-04-007

Field Logbook No.: 1633

COA: BESCRC6520

Method of Shipment: FED EX

Shipped To: EBERLINE SERVICES LIONVILLE

Offsite Property No.: N/A

Bill of Lading/Air Bill No.: Fdx# 796542638131

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage: COOL 4C "MATRIX COMPOSED OF FISH"

980000

Preservation	None	None	None	None	Cool 4C	Cool 4C	None			
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	G/P			
No. of Container(s)	1	1	1	1	1	1	1			
Volume	1500g	100g	100g	10g	250g	120g	10g			
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Tritium - H3	See item (2) in Special Instructions	See item (3) in Special Instructions	Pesticides - 8081	Technetium-99			

Sample No.	Matrix *	Sample Date	Sample Time										
J1BK87	OTHER SOLID	4/21/09	1200	X	X	X	X			X			

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Josh McGough	4/21/09 1200	EAS LOCKED STORAGE	4/21/09 1205
EAS LOCKED STORAGE	4/22/09 1200	SHANNAN JOHNSON	4/22/09 1200
SHANNAN JOHNSON	4/22/09 1200	FDX# 796542638131	
FED EX		R.F. [illegible]	04/23/09 0905

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) [Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238]
(2) Strontium-89,90 -- Total Sr, Isotopic Thorium [Thorium-232]; Isotopic Uranium [Uranium-233/234, Uranium-235, Uranium-238]; Isotopic Plutonium
(3) ICP Metals - 6010 (Full List) [Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc]; Mercury - 7471 - (CV)

Sampler unavailable to relinquish
samples from EAS Refrigerator. EAS
Custodian removed samples for
shipping on 4/22/09

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION — Received By: Title: Date/Time:

FINAL SAMPLE DISPOSITION — Disposal Method: Disposed By: Date/Time:

WCH-EE-011

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-118-116

Page 1 of 1

Collector JAM 4/13/09 Jeremy Doane Josh McGaugh	**Company Contact** JOAN KESSNER	**Telephone No.** 375-4688	**Project Coordinator** KESSNER, JH
Project Designation Columbia River Component of the RCBRA - Tissues	**Sampling Location** LWSA-WF1, FILLET K1587 (7363)		**SAP No.** RC-118
Ice Chest No. AFS-04-007	**Field Logbook No.** 1633	**COA** BESCRC6520	**Method of Shipment** FED EX
Shipped To EBERLINE SERVICES LIONVILLE	**Offsite Property No.** N/A		**Bill of Lading/Air Bill No.** Fdx# 796542638131

Price Code 9K

Data Turnaround 45 Days

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

COOL 4C "MATRIX COMPOSED OF FISH"

Preservation	None	None	None	None	Cool 4C	Cool 4C	None
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	G/P
No. of Container(s)	~~1~~ 2	~~1~~ 0	~~1~~ 0	~~1~~ 0	1	1	~~1~~ 0
Volume	1500g	100g	100g	10g	250g	120g	10g
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Tritium - H3	See item (2) in Special Instructions	See item (3) in Special Instructions	Pesticides - 8081	Technetium-99

Sample No.	Matrix *	Sample Date	Sample Time							
J18K78	OTHER SOLID	4/13/09	1155	X	X	X	X			X

CHAIN OF POSSESSION	Date/Time	Sign/Print Names	Date/Time
Relinquished By/Removed From Jeremy Doane	4/13/09 1155	**Received By/Stored In** EAS locked Storage	4/13/09 1200
Relinquished By/Removed From EAS LOCKED STORAGE	4/22/09 1220	**Received By/Stored In** SHANNAN JOHNSON	4/22/09 1220
Relinquished By/Removed From SHANNAN JOHNSON	4/22/09 1220	**Received By/Stored In** FDX# 796542638131	
Relinquished By/Removed From FED EX		**Received By/Stored In** ME [illegible]	04/23/09 0900
Relinquished By/Removed From		**Received By/Stored In**	
Relinquished By/Removed From		**Received By/Stored In**	

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) {Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238}
(2) Strontium-89,90 -- Total Sr, Isotopic Thorium (Thorium-232), Isotopic Uranium {Uranium-233/234, Uranium-235, Uranium-238}; Isotopic Plutonium
(3) ICP Metals - 6010 (Full List) {Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc}; Mercury - 7471 - (CV)

Sampler unavailable to relinquish samples from EAS Refrigerator. EAS Custodian removed samples for shipping on 4/22/09

Matrix *

S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-118-137 | Page 1 of 1

Collector: Josh McGough

Company Contact: JOAN KESSNER | Telephone No.: 375-4688 [illegible]

Project Coordinator: KESSNER, JH

Price Code: 9K N [illegible]

Data Turnaround: 45 Days

Project Designation: Columbia River Component of the RCBRA - Tissues

Sampling Location: [illegible] K1589 (7363) LWSA-WF2, FILLET

SAF No.: RC-118

Ice Chest No.: APS-04-007

Field Logbook No.: 1633

COA: BESCRC6520

Method of Shipment: FED EX

Shipped To: EBERLINE SERVICES LIONVILLE

Offsite Property No.: N/A

Bill of Lading/Air Bill No.: Fdx# 796542638131

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

COOL 4C "MATRIX COMPOSED OF FISH"

Preservation	None	None	None	None	Cool 4C	Cool 4C	None		
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	G/P		
No. of Container(s)	1	1	1	1	1	1	1		
Volume	1500g	100g	100g	10g	250g	120g	10g		
SAMPLE ANALYSIS	See item (1) in Special Instructions.	Carbon-14	Tritium - H3	See item (2) in Special Instructions.	See item (3) in Special Instructions.	Pesticides - 8081	Technetium-99		

Sample No.	Matrix *	Sample Date	Sample Time									
J18K79	OTHER SOLID	4/14/09	1025	X	X	X	X			X		

CHAIN OF POSSESSION	Date/Time	Sign/Print Names Received By/Stored In	Date/Time
Relinquished By/Removed From: Josh McGough [illegible]	04/14/09 10:25	EAS Locked Storage	04/14/09 10:30 a.m.
Relinquished By/Removed From: EAS LOCKED STORAGE	4/22/09 1200	Received By/Stored In: SHANNAN JOHNSON	4/22/09 1200
Relinquished By/Removed From: SHANNAN JOHNSON	4/23/09 1200	Received By/Stored In: FDX# 796542638131	
Relinquished By/Removed From: FED EX		Received By/Stored In: L.F. HATHAWAY	4/27/09 1900
Relinquished By/Removed From		Received By/Stored In	
Relinquished By/Removed From		Received By/Stored In	

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) [Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238]
(2) Strontium-89,90 – Total Sr; Isotopic Thorium [Thorium-232]; Isotopic Uranium [Uranium-233/234, Uranium-235, Uranium-238]; Isotopic Plutonium
(3) ICP Metals - 6010 (Full List) [Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc]; Mercury - 7471 - (CV)

Sampler unavailable to relinquish samples from EAS Refrigerator. EAS Custodian removed samples for shipping on 4/22/09

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-110-118 | Page 1 of 1

Collector Josh McGough	Company Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator KESSNER, JH
Project Designation Columbia River Component of the RCBRA - Tissues	Sampling Location LWSA-WF3, FILLET K-21328 ~~K-1584~~ (7363)		SAF No. RC-118
Ice Chest No. AFS-04-007	Field Logbook No. 1633	COA BESCRC6320	Method of Shipment FED EX
Shipped To EBERLINE SERVICES RICHMOND / LIONVILLE	Offsite Property No. N/A		Bill of Lading/Air Bill No. Fdx# 79654263 8131

Price Code 9K ✓

Data Turnaround 45 Days

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage
COOL 4C "MATRIX COMPOSED OF FISH"

Preservation	None	None	None	None	Cool 4C	Cool 4C	None			
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	G/P			
No. of Container(s)	1	1	1	1	1	1	1			
Volume	1500g	100g	100g	10g	250g	120g	10g			
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Tritium - H3	See item (2) in Special Instructions	See item (3) in Special Instructions	Pesticides - 8081	Technetium-99			

Sample No.	Matrix *	Sample Date	Sample Time										
J18K80	OTHER SOLID	4/14/09	1300	X	X	X	X			X			

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Josh McGough Josh McGough	04/14/09 1300	EAS Locked Storage	04/14/09 1305
EAS LOCKED STORAGE	4/22/16	SHANNAN JOHNSON	4/22/09 1200
SHANNAN JOHNSON	4/22/09	FDX# 79654263 8131	
FED EX		M.E. MAT[illegible]	04/23/09 0900

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) {Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238}
(2) Strontium-89,90 -- Total Sr; Isotopic Thorium {Thorium-232}; Isotopic Uranium {Uranium-233/234, Uranium-235, Uranium-238}; Isotopic Plutonium
(3) ICP Metals - 6010 (Full List) {Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc}; Mercury - 7471 - (CV)

Sampler unavailable to relinquish samples from EAS Refrigerator. EAS Custodian removed samples for shipping on 4/22/25

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-118-119

Page 1 of 1

Collector: Josh McGough

Company Contact: JOAN KESSNER

Telephone No.: 375-4688 per 5/11/09

Project Coordinator: KESSNER, JH

Price Code: 9K ✓ [illegible]

Data Turnaround: 45 Days

Project Designation: Columbia River Component of the RCBRA - Tissues

Sampling Location: LWSA-WF4, FILLET K-235 ~~K1587~~ (7363)

SAF No.: RC-118

Ice Chest No.: AFS-04-007

Field Logbook No.: 1633

COA: BESCRC6520

Method of Shipment: FED EX

Shipped To: EBERLINE SERVICES LIONVILLE

Offsite Property No.: N/A

Bill of Lading/Air Bill No.: Fdx# 796542638131

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage: COOL 4C "MATRIX COMPOSED OF FISH"

Preservation		None	None	None	None	Cool 4C	Cool 4C	None		
Type of Container		G/P	G/P	G/P	G/P	G/P	aG	G/P		
No. of Container(s)		1	1	1	1	1	1	1		
Volume		1500g	100g	100g	10g	250g	120g	10g		
SAMPLE ANALYSIS		See item (1) in Special Instructions	Carbon-14	Tritium - H3	See item (2) in Special Instructions	See item (3) in Special Instructions	Pesticides - 8081	Technetium-99		

Sample No.	Matrix *	Sample Date	Sample Time										
J18K81	OTHER SOLID	04/15/09	1045	X	X	X	X			X			

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Josh McGough	04/15/09 10:45	EAS Locked Storage	04/15/09 10:50
EAS LOCKED STORAGE	4/22/09 1200	SHANNAN JOHNSON	4/22/09 1200
SHANNAN JOHNSON	4/22/09 1400	FDX# 796542638131	
FED EX		R.F. MATHEWMAN	04/23/09 0950

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) [Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238]
(2) Strontium-89,90 – Total Sr; Isotopic Thorium (Thorium-232); Isotopic Uranium (Uranium-233/234, Uranium-235, Uranium-238); Isotopic Plutonium
(3) ICP Metals - 6010 (Full List) [Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc]; Mercury - 7471 - (CV)

Sampler unavailable to relinquish samples from EAS Refrigerator. EAS Custodian removed samples for shipping on 4/22/09

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION — Received By: Title: Date/Time:

FINAL SAMPLE DISPOSITION — Disposal Method: Disposed By: Date/Time:

WCH-EE-011

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-118-120

Page 1 of 1

Collector Josh McGough	**Company Contact** JOAN KESSNER	**Telephone No.** 375-4688	**Project Coordinator** KESSNER, JH
Project Designation Columbia River Component of the RCBRA - Tissues	**Sampling Location** LWSA-WP5, FILLET		**SAF No.** RC-118
Ice Chest No. AFS-04-007	**Field Logbook No.** 1633	**COA** BESCRC6520	**Method of Shipment** FED EX
Shipped To EBERLINE SERVICES LIONVILLE	**Offsite Property No.** N/A		**Bill of Lading/Air Bill No.** FDX# 796542638131

Price Code 9KN

Data Turnaround 45 Days

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

COOL 4C "MATRIX COMPOSED OF FISH"

000091

Preservation	None	None	None	None	Cool 4C	Cool 4C	None			
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	G/P			
No. of Container(s)	1	1	1	1	1	1	1			
Volume	1500g	100g	100g	10g	250g	120g	10g			
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Tritium - H3	See item (2) in Special Instructions	See item (3) in Special Instructions	Pesticides - 8081	Technetium-99			

Sample No.	Matrix *	Sample Date	Sample Time										
J18K82	OTHER SOLID	04/15/09	1300	X	X	X	X			X			

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Josh McGough	04/15/09 1300	EAS LOCKED Storage	04/15/09 1305
EAS LOCKED STORAGE	4/22/09 1200	SHANNAN JOHNSON	4/22/09 1200
SHANNAN JOHNSON	4/22/09 1200	FDX# 796542638131	
FedEx			4/23/09 0905

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) [Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238]
(2) Strontium-89,90 -- Total Sr; Isotopic Thorium [Thorium-232]; Isotopic Uranium [Uranium-233/234, Uranium-235, Uranium-238]; Isotopic Plutonium
(3) ICP Metals - 6010 (Full List) [Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc]; Mercury - 7471 - (CV)

Sampler unavailable to relinquish samples from EAS Refrigerator. EAS Custodian removed samples for shipping on 4/22/09

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W = Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title		Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By		Date/Time

WCH-EE-011

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-118-136 | Page 1 of 1

Collector Josh McGough	**Company Contact** JOAN KESSNER **Telephone No.** 375-4688	**Project Coordinator** KESSNER, JH	**Price Code** 9K
Project Designation Columbia River Component of the RCBRA - Tissues	**Sampling Location** LWSA-WF1, CARCASS K1C58 ~~K1587~~ (7365)	**SAF No.** RC-118	**Data Turnaround** 45 Days
Ice Chest No. AFS-04-007	**Field Logbook No.** 1633 **COA** BESCRC6520	**Method of Shipment** FED EX	
Shipped To EBERLINE SERVICES / LIONVILLE	**Offsite Property No.** N/A	**Bill of Lading/Air Bill No.** FDX# 796542658134	

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage
COOL 4C "MATRIX COMPOSED OF FISH"

0000092

Preservation	None	None	None	None	Cool 4C	Cool 4C	None
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	G/P
No. of Container(s)	1	1	1	1	1	1	1
Volume	1500g	100g	100g	10g	250g	120g	10g
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Tritium - H3	See item (2) in Special Instructions	See item (3) in Special Instructions	Pesticides - 8081	Technetium-99

Sample No.	Matrix *	Sample Date	Sample Time							
J18KD8	OTHER SOLID	4/16/09	0830	X	X	X	X			X

CHAIN OF POSSESSION	Date/Time	Sign/Print Names Received By/Stored In	Date/Time
Relinquished By/Removed From Josh McGough	4/16/09 8:30	EAS Locked storage	4/16/09 8:35
Relinquished By/Removed From EAS LOCKED STORAGE	4/22/09 1200	Received By/Stored In SHANNAN JOHNSON	4/22/09 1200
Relinquished By/Removed From SHANNAN JOHNSON	4/22/09 1200	Received By/Stored In FDX# 796542658131	
Relinquished By/Removed From FED EX		Received By/Stored In [illegible]	4/23/09 0900
Relinquished By/Removed From		Received By/Stored In	
Relinquished By/Removed From		Received By/Stored In	

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) {Americium-241, Antimony-125, Beryllium-7, Cerium-144, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238}
(2) Strontium-89,90 – Total Sr; Isotopic Thorium {Thorium-232}; Isotopic Uranium {Uranium-233/234, Uranium-235, Uranium-238}; Isotopic Plutonium
(3) ICP Metals - 6010 (Full List) {Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc}; Mercury - 7471 - (CV)

Sampler unavailable to relinquish samples from EAS Refrigerator. EAS Custodian removed samples for shipping on 4/22/09

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-118-137

Page 1 of 1

Collector: Josh McGough

Company Contact: JOAN KESSNER

Telephone No.: 375-4688 Hu 9/1/09

Project Coordinator: KESSNER, JH

Price Code: 9K ✓ Gwpt

Data Turnaround: 45 Days

Project Designation: Columbia River Component of the RCBRA - Tissues

Sampling Location: LWSA-WP2, CARCASS CRAYS K1588 (7363)

SAF No.: RC-118

Ice Chest No.: AFS-04-007

Field Logbook No.: 1633

COA: BESCRC6520

Method of Shipment: FED EX

Shipped To: EBERLINE SERVICES - LIONVILLE

Offsite Property No.: N/A

Bill of Lading/Air Bill No.: Fdx# 796542658131

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

COOL 4C "MATRIX COMPOSED OF FISH"

Preservation	None	None	None	None	Cool 4C	Cool 4C	None			
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	G/P			
No. of Container(s)	1	1	1	1	1	1	1			
Volume	1300g	100g	100g	10g	250g	130g	10g			
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Tritium - H3	See item (2) in Special Instructions	See item (3) in Special Instructions	Pesticides - 8081	Technetium-99			

Sample No.	Matrix *	Sample Date	Sample Time										
J18XD9	OTHER SOLID	4/16/09	1030	X	X	X	X			X			

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Josh McGough Josh McGough	04/16/09 10:30	EAS Locked Storage	04/16/09 10:35
EAS Locked Storage	4/22/09 1200	SHANNAN JOHNSON	4/22/09 1200
SHANNAN JOHNSON	4/22/09 1200	FedEx# 796542658131	
Fed Ex		[illegible]	4/23/09 0900

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) (Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238)
(2) Strontium-89,90 – Total Sr; Isotopic Thorium (Thorium-232); Isotopic Uranium (Uranium-233/234, Uranium-235, Uranium-238); Isotopic Plutonium
(3) ICP Metals - 6010 (Full List) (Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc); Mercury - 7471 - (CV)

Sampler unavailable to relinquish samples from EAS Refrigerator. EAS Custodian removed samples for shipping on 4/22/09

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W = Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION — Received By — Title — Date/Time

FINAL SAMPLE DISPOSITION — Disposal Method — Disposed By — Date/Time

WCH-EE-011

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-110-130

Page 1 of 1

Collector: Josh McGough

Company Contact: JOAN KESSNER

Telephone No.: 375-4688 ~~Ke.~~ ~~[illegible]~~

Project Coordinator: KESSNER, JH

Price Code: 9K ✓ [illegible]

Data Turnaround: 45 Days

Project Designation: Columbia River Component of the RCBRA - Tissues

Sampling Location: LWSA-WF3, CARCASS K1609 ~~K1589~~ (7363)

SAF No.: RC-118

Ice Chest No.: AF5-04-007

Field Logbook No.: 1633

COA: BESCRC6320

Method of Shipment: FED EX

Shipped To: EBERLINE SERVICES / LIONVILLE

Offsite Property No.: N/A

Bill of Lading/Air Bill No.: Fdx# 796542638131

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage
COOL 4C "MATRIX COMPOSED OF FISH"

				Preservation	None	None	None	None	Cool 4C	Cool 4C	None			
				Type of Container	G/P	G/P	G/P	G/P	G/P	aG	G/P			
				No. of Container(s)	1	1	1	1	1	1	1			
				Volume	1500g	100g	100g	10g	250g	120g	10g			
SAMPLE ANALYSIS					See item (1) in Special Instructions.	Carbon-14	Tritium - H3	See item (2) in Special Instructions.	See item (3) in Special Instructions.	Pesticides - 8081	Technetium-99			
Sample No.	Matrix *	Sample Date	Sample Time											
J18KF0	OTHER SOLID	4/16/09	1230		X	X	X	X			X			

CHAIN OF POSSESSION	Date/Time	Sign/Print Names	Date/Time
Relinquished By/Removed From: JoshMcGough	04/16/09 12:30	Received By/Stored In: EAS Locked Storage	04/16/09 12:35
Relinquished By/Removed From: EAS LOCKED STORAGE	4/22/09 1200	Received By/Stored In: SHANNON JOHNSON	4/22/09 1200
Relinquished By/Removed From: SHANNAN JOHNSON	4/22/09 1200	Received By/Stored In: FDX# 796542638131	
Relinquished By/Removed From: FED EX		Received By/Stored In: [illegible]	04/23/09 0900
Relinquished By/Removed From		Received By/Stored In	
Relinquished By/Removed From		Received By/Stored In	

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) (Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238)
(2) Strontium-89,90 - Total Sr; Isotopic Thorium (Thorium-232); Isotopic Uranium (Uranium-233/234, Uranium-235, Uranium-238); Isotopic Plutonium
(3) ICP Metals - 6010 (Full List) (Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc); Mercury - 7471 - (CV)

Sampler unavailable to relinquish samples from EAS Refrigerator. EAS Custodian removed samples for shipping on 4/22/09

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W = Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

Washington Closure Hanford		RC-110-139	Page 1 of 1
Collector: Josh McGough	Company Contact: JOAN KESSNER Telephone No.: 373-4688	Project Coordinator: KESSNER, JH	Price Code: 9K ✓ Data Turnaround: 45 Days
Project Designation: Columbia River Component of the RCBRA - Tissues	Sampling Location: LWSA-WF4, CARCASS K-589 (73C3)	SAF No.: RC-118	
Ice Chest No.: AFS-04-007	Field Logbook No.: 1633 COA: BESCRC6520	Method of Shipment: FED EX	
Shipped To: EBERLINE SERVICES / LIONVILLE	Offsite Property No.: N/A	Bill of Lading/Air Bill No.: FDX# 796542638131	

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage
COOL 4C "MATRIX COMPOSED OF FISH"

000095

Preservation	None	None	None	None	Cool 4C	Cool 4C	None
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	G/P
No. of Container(s)	1	1	1	1	1	1	1
Volume	1500g	100g	100g	10g	250g	120g	10g
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Tritium - 3H	See item (2) in Special Instructions	See item (3) in Special Instructions	Pesticides - 8081	Technetium-99

Sample No.	Matrix *	Sample Date	Sample Time							
J18KF1	OTHER SOLID	4/16/09	1400	X	X	X	X			X

CHAIN OF POSSESSION

Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Josh McGough	04/16/09 1400	EAS Locked Storage	04/16/09 1405
EAS LOCKED STORAGE	4/22/09 1220	SHANNAN JOHNSON	4/22/09 1220
SHANNAN JOHNSON	4/22/09 1220	FDX# 796542638131	
FED EX		[illegible]	04/23/09 0900

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) {Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238}
(2) Strontium-89,90 – Total Sr; Isotopic Thorium {Thorium-232}; Isotopic Uranium {Uranium-233/234, Uranium-235, Uranium-238}; Isotopic Plutonium
(3) ICP Metals - 6010 (Full List) {Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc}; Mercury - 7471 - (CV)

Sampler unavailable to relinquish samples from EAS Refrigerator. EAS Custodian removed samples for shipping on 4/22/09

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-118-140

Page 1 of 1

Collector: Josh McGogh

Company Contact: JOAN KESSNER

Telephone No.: 375-4688

Project Coordinator: KESSNER, JH

Price Code: 9K

Data Turnaround: 45 Days

Project Designation: Columbia River Component of the RCBRA - Tissues

Sampling Location: LWSA-WPS, CARCASS K1588 (7363)

SAF No.: RC-118

Ice Chest No.: 009-002

Field Logbook No.: 1633

COA: HESCRC6320

Method of Shipment: FED EX

Shipped To: EBERLINE SERVICES LIONVILLE

Offsite Property No.: N/A

Bill of Lading/Air Bill No.: Fdx# 797530439271

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

COOL 4C "MATRIX COMPOSED OF FISH"

960000

			Preservation	None	None	None	None	Cool 4C	Cool 4C	None		
			Type of Container	G/P	G/P	G/P	G/P	G/P	aG	G/P		
			No. of Container(s)	1	1	1	1	1	1	1		
			Volume	1500g	100g	100g	10g	250g	120g	10g		
SAMPLE ANALYSIS				See item (1) in Special Instructions	Carbon-14	Tritium - H3	See item (2) in Special Instructions	See item (3) in Special Instructions	Pesticides - 8081	Technetium-99		
Sample No.	Matrix *	Sample Date	Sample Time									
J18KF2	OTHER SOLID	04/20/09	1000	X	X	X	X			X		

CHAIN OF POSSESSION

Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Josh McGogh	04/20/09 1000	EAS Locked Storage	04/20/09 1005
EAS LOCKED STORAGE	4/22/09 1230	SHANNAN JOHNSON	4/22/09 1230
SHANNAN JOHNSON	4/22/09 1330	FDX# 797530439271	
Fed Ex		MF Hatawuyan	4/23/09 0900

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) (Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238)
(2) Strontium-89,90 -- Total Sr; Isotopic Thorium (Thorium-232); Isotopic Uranium (Uranium-233/234, Uranium-235, Uranium-238); Isotopic Plutonium
(3) ICP Metals - 6010 (Full List) (Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc); Mercury - 7471 - (CV)

Sampler unavailable to relinquish samples from EAS Refrigerator. EAS Custodian removed samples for shipping on 4/22/09

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Appendix 5

Data Validation Supporting Documentation

APPENDIX A

RADIOCHEMICAL DATA VALIDATION CHECKLIST

VALIDATION LEVEL:	A	B	[✓ C]	D	E
PROJECT:	RCBRA		DATA PACKAGE:	K1609	
VALIDATOR:	ELR	LAB: EB		DATE: 10/9/09	
			SDG:	K1609	

ANALYSES PERFORMED

☐ Gross Alpha/Beta	☐ Strontium-90	☐ Technetium-99	☐ Alpha Spectroscopy	Gamma Spectroscopy	
☐ Total Uranium	☐ Radium-226	Tritium			

SAMPLES/MATRIX J18K36 J18K63 J18K64 J18K65 J18K66
J18K67 J18K78 J18K79 J18K80 J18K81 J18K82
J18KD8 J18KD9 J18KF0 J18KF1 J18KF2 J18K84
J18K85 J18K86 J18K87 J18K21 J18K22 J18K23
J18K24 J18K37 J18K38 J18K39 J18K40
Solid

1. Completeness ☐ N/A

Technical verification forms present? Yes [✓ No] N/A

Comments:

2. Initial Calibration (Levels D, E) ☒ N/A

Instruments/detectors calibrated? Yes No N/A

Initial calibration acceptable? Yes No N/A

Standards NIST traceable? Yes No N/A

Standards Expired? Yes No N/A

Calculation check acceptable? Yes No N/A

Comments:

3. Continuing Calibration (Levels D, E) ☒ N/A

Calibration checked within required frequency? .... Yes No N/A

Calibration check acceptable? .... Yes No N/A

Calibration check standards traceable? .... Yes No N/A

Calibration check standards expired? .... Yes No N/A

Calculation check acceptable? .... Yes No N/A

Comments:

4. Background Counts (Levels D, E) .... ☒ N/A

Background Counts checked within required frequency? .... Yes No N/A

Background Counts acceptable? .... Yes No N/A

Calculation check acceptable? .... Yes No N/A

Comments:

5. Blanks (Levels B, C, D, E) .... ☐ N/A

Method blank analyzed within required frequency?..[✓ Yes] No N/A

Method blank results acceptable? ....[✓ Yes] No N/A

Analytes detected in method blank? ....Yes [✓ No] N/A

Field blank(s) analyzed? ....Yes [✓ No] N/A

Field blank results acceptable? ....Yes No [✓ N/A]

Analytes detected in field blank(s)?...Yes No [✓ N/A]

Transcription/Calculation Errors? (Levels D, E) ....Yes No [✓ N/A]

Comments: no FB

6. Laboratory Control Samples or Blank Spike Samples (Levels C, D, E) .... ☐ N/A

LCS /BSS analyzed within required frequency? ....[✓ Yes] No N/A

LCS/BSS recoveries acceptable?..[✓ Yes] No N/A

LCS/BSS traceable? (Levels D,E) ....Yes No [✓ N/A]

LCS/BSS expired? (Levels D,E)..Yes No [✓ N/A]

LCS/BSS levels correct? (Levels D,E) ....Yes No [✓ N/A]

Transcription/Calculation Errors? (Levels D, E) ....Yes No [✓ N/A]

Comments: NO Thorium-228 or Thorium-232 LCS - Jeff Cosper

7. Chemical Carrier Recovery (Levels C, D, E) .... ☒ N/A

Chemical carrier added? ....Yes No N/A

Chemical recovery acceptable?..Yes No N/A

Chemical carrier traceable? (Levels D, E) ....Yes No N/A

Chemical carrier expired? (Levels D, E) .... Yes No N/A

Transcription/Calculation errors? (Levels D, E) .... Yes No N/A

Comments:

8\. Tracer Recovery (Levels C, D, E) .... ☐ N/A

Tracer added? .... [✓ Yes] No N/A

Tracer recovery acceptable? .... [✓ Yes] No N/A

Tracer traceable? (Levels D, E) .... Yes No [✓ N/A]

Tracer expired? (Levels D, E) .... Yes No [✓ N/A]

Transcription/Calculation errors? (Levels D, E) .... Yes No [✓ N/A]

Comments:

9\. Matrix Spikes (Levels C, D, E) .... ☐ N/A

Matrix spike analyzed? .... Yes [✓ No] N/A

Spike recoveries acceptable? .... Yes No [✓ N/A]

Spike source traceable? (Levels D, E) .... Yes No [✓ N/A]

Spike source expired? Levels D, E) .... Yes No [✓ N/A]

Transcription/Calculation Errors? (Levels D, E) .... Yes No [✓ N/A]

Comments: NO MS ~~of~~ C-14 or 3H –

10. Duplicates (Levels C, D, E) .... ☐ N/A

Duplicates Analyzed at required frequency? .... [✓ Yes] No N/A

RPD Values Acceptable? .... [✓ Yes] No N/A

Transcription/Calculation Errors? (Levels D, E) .... Yes No [✓ N/A]

Comments:

11. Field QC Samples (Levels C, D E) .... ☐ N/A

Field duplicate sample(s) analyzed? .... Yes [✓ No] N/A

Field duplicate RPD values acceptable? .... Yes No [✓ N/A]

Field split sample(s) analyzed? .... Yes [✓ No] N/A

Field split RPD values acceptable? .... Yes No [✓ N/A]

Performance audit sample(s) analyzed? .... Yes [✓ No] N/A

Performance audit sample results acceptable? .... Yes No [✓ N/A]

Comments: No Field QC

12. Holding Times (All levels)

Are sample holding times acceptable? .... [✓ Yes] No N/A

Comments:

13. Results and Detection Limits (All Levels) ☐ N/A

Results reported for all required sample analyses? [✓ Yes] No N/A

Results supported in raw data? (Levels D, E) Yes No [✓ N/A]

Results Acceptable? (Levels D, E) Yes No [✓ N/A]

Transcription/Calculation errors? (Levels D, E) Yes No [✓ N/A]

MDA's meet required detection limits? Yes [✓ No] N/A

Transcription/calculation errors? (Levels D, E) Yes No [✓ N/A]

Comments: 5+2+1+5+6+~~6+4~~+6+3 = 33

~~6+~~3+6+6+4+5 = 24

~~53~~ 55 min

100

53 min

Appendix 6

Additional Documentation Requested by Client

7364-014

Method Blank

METHOD BLANK

SDG	7364	Client/Case no	Hanford	SDG_K1608
Contact	N. Joseph Verville	Contract	No. S00M235A00	
Lab sample id	K904149-14	Client sample id	Method Blank	
Dept sample id	7364-014	Material/Matrix		SOLID
		SAF No	RC 110	

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Tritium	10028-17-8	0	4.4	7.68	400	U	H
Carbon 14	14762-75-5	0.900	3.7	6.30	50.0	U	C
Total Strontium	SR-RAD	-0.014	0.12	0.243	1.00	U	SR
Technecium 99	14133-76-7	0.068	0.18	0.376	15.0	U	TC
Thorium 228	14274-82-9	0	0.13	0.371	1.00	U	TH
Thorium 230	14269-63-7	0.267	0.27	0.255	1.00		TH
Thorium 232	TH-232	0.031	0.067	0.255	1.00	U	TH
Uranium 233/234	U-233/234	0.034	0.067	0.257	1.00	U	U
Uranium 235	15117-96-1	0	0.081	0.311	1.00	U	U
Uranium 238	U-238	0	0.067	0.257	1.00	U	U
Plutonium 238	13981-16-3	0	0.049	0.187	1.00	U	PU
Plutonium 239/240	PU-239/240	0.024	0.049	0.187	1.00	U	PU
Potassium 40	13966-00-2	U		0.635		U	GAM
Cobalt 60	10198-40-0	U		0.030	0.050	U	GAM
Cesium 137	10045-97-3	U		0.030	0.100	U	GAM
Radium 226	13982-63-3	U		0.067	0.100	U	GAM
Radium 228	15262-20-1	U		0.143	0.200	U	GAM
Europium 152	14683-23-9	U		0.097	0.100	U	GAM
Europium 154	15585-10-1	U		0.075	0.100	U	GAM
Europium 155	14391-16-3	U		0.090	0.100	U	GAM
Thorium 228	14274-82-9	U		0.059		U	GAM
Thorium 232	TH 232	U		0.143		U	GAM
Uranium 235	15117-96-1	U		0.189		U	GAM
Uranium 238	U 238	U		1.25		U	GAM
Americium 241	14596-10-2	U		0.075		U	GAM
Beryllium 7	13966-02-4	U		0.210		U	GAM
Ruthenium 106	13967-48-1	U		0.246		U	GAM
Antimony 125	14234-35-6	U		0.076		U	GAM
Cesium 134	13967-70-9	U		0.035		U	GAM

ColumbiaRiverComp.ofRCBRA-Tissue

Lab id	EBRLNE
Protocol	Hanford1
Version	Ver 1.0
Form	DVD-DS
Version	1.06
Report date	06/15/09

7364-014 **Method Blank**

BLANK, cont.

SDG 7364
Contact N. Joseph Verville
Client/Case no Hanford SDG K1608
Contract No. SDOW235A00

Lab sample id E904149-14
Dept sample id 7364-014
Client sample id Method Blank
Material/Matrix SOLID
SAF No RC 118

QC-BLANK #69844

Lab id EBRLNE
Protocol Hanford1
Version Ver 1.0
Form DVD-DC
Version 1.06
Report date 06/15/99

EBERLINE ANALYTICAL/RICHMOND

SAMPLE DELIVERY GROUP [illegible]

7364-011

Lab Control Sample

LAB CONTROL SAMPLE

SDG	7364	Client/Case no	Hanford [illegible]
Contract	[illegible]	Contract	[illegible]
Lab sample id	[illegible]	Client sample id	Lab Control Sample
Dept sample id	7364-011	Material/Matrix	SOLID
		SAF No	[illegible]

ANALYTE	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALIFIERS	TEST	ADDED pCi/g	2σ ERR pCi/g	REC %	3σ LMTS (TOTAL)	PROTOCOL LIMITS
Tritium	998	72	7.40	400		H	1160	45	86	86-114	80-120
Carbon 14	3210	45	14.0	50.0		C	3190	130	101	81-117	80-120
Total Strontium	4.04	0.55	0.257	1.00		SR	4.10	0.34	99	81-119	80-120
Technetium 99	124	1.1	0.183	15.0		TC	109	4.4	114	76-124	80-120
Thorium 230	19.2	2.5	0.750	1.00		TH	18.9	0.74	102	76-124	80-120
Uranium 233/234	4.46	0.84	0.517	1.00		U	4.46	0.26	100	69-131	80-120
Uranium 235	1.47	0.32	0.251	1.00		U	1.52	0.14	96	68-132	80-120
Uranium 238	4.69	0.85	0.492	1.00		U	4.84	0.19	97	71-129	80-120
Plutonium 238	5.16	0.79	0.183	1.00		PU	5.26	0.26	98	78-122	80-120
Plutonium 239/240	5.45	0.80	0.183	1.00		PU	6.00	0.26	91	79-121	80-120
Cobalt 60	1.98	0.088	0.053	0.050		GAM	1.90	0.076	104	86-114	80-120
Cesium 137	2.41	0.084	0.060	0.100		GAM	2.29	0.092	105	86-114	80-120

ColumbiaRiverComp.ofRCBRA Tissue

QC-LCS #[illegible]

LAB CONTROL SAMPLES
PAGE 1
SUMMARY DATA SECTION
Page 13

Lab id	EBRLNE
Protocol	Hanford1
Version	Ver 1.0
Form	DVD-LCS
Version	1.06
Report date	[illegible]

7364-015

EBERLINE ANALYTICAL/RICHMOND

SAMPLE DELIVERY GROUP [illegible]

[illegible]

DUPLICATE

SDG	[illegible]			Client/Case no	Hanford SDG [illegible]
Contact	N. Joseph Verville			Contract	NO. [illegible]
	DUPLICATE		ORIGINAL		
Lab sample id	[illegible]	Lab sample id	[illegible]	Client sample id	[illegible]
Dept sample id	7364-015	Dept sample id	7364-001	Location/Matrix	[illegible] SOLID
		Received	04/29/09	Collected/Weight	04/27/09 [illegible] [illegible] g
% moisture	100.0	% moisture	100.0	Custody/RAF No	RC-114 41 RC-114

ANALYTE	DUPLICATE pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALIFIERS	TEST	ORIGINAL pCi/g	2σ ERR (COUNT)	MDA pCi/g	QUALIFIERS	RPD %	3σ TOT	DER σ
Tritium	-0.187	3.6	6.19	400	U	H	0	4.0	6.85	U			0.1
Carbon 14	2.71	1.4	3.25	50.0	U	C	1.60	1.4	4.61	U	-		0.5
Total Strontium	[illegible]	0.12	0.219	1.00	U	SR	-0.010	0.15	0.314	U			0.5
Technetium 99	0.126	0.16	0.41[illegible]	15.0	U	TC	0.057	0.17	0.386	U			0.6
Thorium 228	-0.005	0.056	0.091	1.00	U	TH	0.089	0.13	[illegible]	U			0.8
Thorium 230	0.184	0.11	0.176	1.00	U	TH	0.445	0.30	0.178		15	117	0.4
Thorium 232	0	0.010	0.055	1.00	U	TH	0	0.049	0.208	U			0
Uranium 233/234	0.061	0.061	0.213	1.00	U	U	0	0.054	0.217	U			1.5
Uranium 235	0	0.074	0.081	1.00	U	U	0	0.067	0.257	U	-		0
Uranium 238	0	0.041	0.212	1.00	U	U	0	0.055	0.213	U			0
Plutonium 238	0.026	0.11	0.155	1.00	U	PU	0.027	0.061	0.263	U	-		0
Plutonium 239/240	0	0.055	0.201	1.00	U	PU	0	0.052	0.201	U			0
Potassium 40	U		1.58		U	GAM	U		1.09	U			5
Cobalt 60	U		0.026	0.050	U	GAM	U		0.028	U	-		0.4
Cesium 137	U		0.034	0.100	U	GAM	U		0.024	U	-		0.2
Radium 226	U		0.061	0.100	U	GAM	U		0.057	U	-		0.1
Radium 228	U		0.141	0.200	U	GAM	U		0.119	U	-		0.1
Europium 152	U		0.085	0.100	U	GAM	U		0.066	U	-		0.4
Europium 154	U		0.108	0.100	U	GAM	U		0.087	U	-		0.3
Europium 155	U		0.074	0.100	U	GAM	U		0.051	U			0.6
Thorium 228	U		0.046		U	GAM	U		0.041	U			0.2
Thorium 232	U		0.141		U	GAM	U		0.310	U	-		0.1
Uranium 235	U		0.157		U	GAM	U		0.172	U			0.4
Uranium 238	U		1.74		U	GAM	U		1.44	U	-		0.1
Americium 241	U		0.126		U	GAM	U		0.098	U			1.6
Beryllium 7	U		0.208		U	GAM	U		0.230	U			0.5
Ruthenium 106	U		0.266		U	GAM	U		0.247	U			0.2
Antimony 125	U		0.077		U	GAM	U		0.061	U			0.1

ColumbiaRiverComp.ofaqua Tissue

Lab id EBERLINE
Protocol Hanford
Version Ver 1.0
Form DVD-DUP
Version 1.06
Report date 06/15/09

DUPLICATE, cont.

SDG 7364
Contact N. Joseph Verville

Client/Case no Hanford SDG K1605
Contract No. 500M230A00

DUPLICATE		ORIGINAL			
Lab sample id	9904L149-15	Lab sample id	9904L149-01	Client sample id	J1BJ44
Dept sample id	7364-015	Dept sample id	7364-001	Location/Matrix	100NR-W21,FILLET SOLID
		Received	04/29/99	Collected/Weight	04/27/99 08:00 1100 g
% solids	100.0	% solids	100.0	Custody/SAF No	BC-110-41 PC 118

ANALYTE	DUPLICATE pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST	ORIGINAL pCi/g	2σ ERR (COUNT)	MDA pCi/g	QUALI-FIERS	RPD %	3σ TOT	DER σ
Cesium 134	0		0.018		U	GAM	0		0.033	U			0.1

ColumbiaRiverComp ofRCBRA Tissue

QC-DUP#1 48855

DUPLICATES
Page 2
SUMMARY DATA SECTION
Page 15

Lab id EBERLINE
Protocol Hanford
Version Ver 1.0
Form DVD-DUP
Version 3.06
Report date 06/15/99

METHOD BLANK

SDG 7363
Contact N. Joseph Verville
Lab sample id R904099-18
Dept sample id 7363-018
Client/Case no Hanford SDG K1608
Contract No. 500W235A00
Client sample id Method Blank
Material/Matrix SOLID
SAF No RC-118

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Tritium	10028-17-8	3.75	5.3	8.78	400	U	H
Carbon 14	14762-75-5	2.28	3.8	6.28	50.0	U	C
Total Strontium	SR-RAD	-0.016	0.16	0.326	1.00	U	SR
Technetium 99	14133-76-7	0.154	0.20	0.367	15.0	U	TC
Thorium 228	14274-82-9	0.160	0.26	0.428	1.00	U	TH
Thorium 230	14269-63-7	0.223	0.19	0.244	1.00	U	TH
Thorium 232	TH-232	0.096	0.11	0.244	1.00	U	TH
Uranium 233/234	U-233/234	0.090	0.12	0.229	1.00	U	U
Uranium 235	15117-96-1	0	0.073	0.277	1.00	U	U
Uranium 238	U-238	0	0.060	0.229	1.00	U	U
Plutonium 238	13981-16-3	0	0.051	0.195	1.00	U	PU
Plutonium 239/240	PU-239/240	0.026	0.051	0.195	1.00	U	PU
Potassium 40	13966-00-2	U		0.603		U	GAM
Cobalt 60	10198-40-0	U		0.029	0.050	U	GAM
Cesium 137	10045-97-3	U		0.028	0.100	U	GAM
Radium 226	13982-63-3	U		0.060	0.100	U	GAM
Radium 228	15262-20-1	U		0.130	0.200	U	GAM
Europium 152	14683-23-9	U		0.080	0.100	U	GAM
Europium 154	15585-10-1	U		0.074	0.100	U	GAM
Europium 155	14391-16-3	U		0.074	0.100	U	GAM
Thorium 228	14274-82-9	U		0.053		U	GAM
Thorium 232	TH-232	U		0.130		U	GAM
Uranium 235	15117-96-1	U		0.169		U	GAM
Uranium 238	U-238	U		3.10		U	GAM
Americium 241	14596-10-2	U		0.067		U	GAM
Beryllium 7	13966-02-4	U		0.188		U	GAM
Ruthenium 106	13967-48-1	U		0.226		U	GAM
Antimony 125	14234-35-6	U		0.067		U	GAM
Cesium 134	13967-70-9	U		0.029		U	GAM

ColumbiaRiverComp.ofRCBRA Tissue

Lab id EBRLNE
Protocol Hanford1
Version Ver 1.0
Form DVD-DS
Version 3.06
Report date 06/11/09

EBERLINE ANALYTICAL/RICHMOND

SAMPLE DELIVERY GROUP [illegible]

7363-017

Lab Control Sample

LAB CONTROL SAMPLE

RDD	[illegible]	Client/Case no	Hanford SDG [illegible]
Contact	N. Joseph Verville	Contract	no. [illegible]
Lab sample id	[illegible]	Client sample id	Lab Control Sample
Dept. sample id	7363-017	Material/Matrix	SOLID
		SAF No	RC-118

ANALYTE	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	MDL pCi/g	QUALIFIERS	TEST	ADDED pCi/g	2σ ERR pCi/g	REC %	3σ LMTS (TOTAL)	PROTOCOL LIMITS
Tritium	974	22	4.46	405		H	1160	46	84	84-114	80-120
Carbon 14	1250	46	14.3	50.0		C	3190	170	102	83-117	80-120
Total Strontium	10.0	0.52	0.210	1.00		SR	9.10	0.36	110	80-120	80-120
Technetium 99	121	1.2	0.449	15.7		TC	109	4.4	111	76-124	80-120
Thorium 230	16.0	2.3	0.167	1.00		TH	18.9	0.76	85	78-122	80-120
Uranium 233/234	4.34	0.21	0.028	1.00		U	4.46	0.18	97	70-130	80-120
Uranium 235	3.68	0.24	0.256	1.00		U	3.62	0.14	102	66-134	80-120
Uranium 238	4.75	0.27	0.509	1.00		U	4.84	0.19	98	70-130	80-120
Plutonium 238	5.26	0.29	0.067	1.00		PU	5.00	0.21	91	86-114	80-120
Plutonium 239/240	6.17	0.32	0.031	1.00		PU	6.60	0.26	93	85-115	80-120
Cobalt 60	1.93	0.14	0.098	0.050		GAM	1.90	0.076	102	84-116	80-120
Cesium 137	2.40	0.16	0.127	0.100		GAM	2.29	0.092	105	83-117	80-120

[illegible]

QC LCS [illegible]

LAB CONTROL SAMPLES
Page 1
SUMMARY DATA SECTION
Page 14

Lab id	EBRICH
Protocol	Hanford
Version	Ver 1.0
Form	DVD-LCS
Version	3.00
Report date	[illegible]

EBERLINE ANALYTICAL/RICHMOND

SAMPLE DELIVERY GROUP E1599

7163-019

J18R36

DUPLICATE

SDG	7163			Client/Case no	Hanford SDG E1599
Contract	M. Joseph Verville			Contract	No. [illegible]
	DUPLICATE		ORIGINAL		
Lab sample id	9904099-19	Lab sample id	9904099-01	Client sample id	J18R36
Dept sample id	7163-019	Dept sample id	7163-001	Location/Matrix	100-A WEL FILLET SOLID
		Received	04/23/99	Collected/Weight	04/21/99 14:00 [illegible] g
% solids	100.0	% solids	100.0	Custody/SAF No	EC-[illegible] EC-[illegible]

ANALYTE	DUPLICATE pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALIFIERS	TEST	ORIGINAL pCi/g	2σ ERR (COUNT)	MDA pCi/g	QUALIFIERS	RPD %	3σ TOT	DER σ
Tritium	5.161	2.8	4.61	400	U	H	2.71	1.4	4.31	U			1.1
Carbon 14	2.12	1.1	5.20	50.0	U	C	3.11	2.9	4.74	U			0.5
Total Strontium	-0.066	0.14	0.308	1.00	U	SR	0.004	0.18	0.366	U	-		0.5
Technetium 99	0.137	0.36	0.364	15.0	U	TC	0.209	0.41	0.394	U	-		0.4
Thorium 228	-0.090	0.24	0.111	1.00	U	TH	0.061	0.11	0.302	U	-		1.0
Thorium 230	0.119	0.24	0.105	1.00		TH	0.471	0.32	0.100		18	171	0.8
Thorium 232	0.040	0.060	0.105	1.00	U	TH	0.031	0.062	0.240	U	-		0.7
Uranium 233/234	0	0.052	0.198	1.00	U	U	0	0.055	0.210	U	-		0
Uranium 235	0.033	0.063	0.239	1.00	U	U	0	0.047	0.255	U			0.7
Uranium 238	0.026	0.052	0.178	1.00	U	U	0.055	0.055	0.210	U			0.8
Plutonium 238	0	0.051	0.144	1.00	U	PU	0.024	0.040	0.065	U			0.7
Plutonium 239/240	0	0.051	0.144	1.00	U	PU	-0.008	0.016	0.049	U	-		0.3
Potassium 40	0		1.13		U	GAM	0		0.41	U			[illegible]
Cobalt 60	0		0.052	0.050	U	GAM	0		0.025	U	-		0.9
Cesium 137	0		0.050	0.100	U	GAM	0		0.024	U	-		0.9
Radium 226	0		0.100	0.100	U	GAM	0		0.054	U			0.8
Radium 228	0		[illegible]	0.200	U	GAM	0		0.131	U			0.9
Europium 152	0		0.127	0.100	U	GAM	0		0.078	U			0.7
Europium 154	0		0.153	0.100	U	GAM	0		0.068	U	-		1.0
Europium 155	0		0.086	0.100	U	GAM	0		0.065	U			0.4
Thorium 228	0		0.071		U	GAM	0		0.100	U	-		0.5
Thorium 232	0		0.224		U	GAM	0		0.111	U			0.9
Uranium 235	0		0.216		U	GAM	0		0.148	U	-		0.5
Uranium 238	0		5.74		U	GAM	0		2.90	U			0.9
Americium 241	0		0.040		U	GAM	0		0.062	U			0.6
Beryllium 7	0		0.404		U	GAM	0		0.313	U			0.9
Ruthenium 106	0		0.520		U	GAM	0		0.211	U	-		0.4
Antimony 125	0		0.111		U	GAM	0		0.063	U			0.0

Calculations/Comp of RCBRA Tissue

Lab id	[illegible]
Protocol	Hanford
Version	Ver 1.0
Form	DVD-DUP
Version	3.06
Report date	06/1[illegible]/99

DUPLICATES
Page 1
SUMMARY DATA SECTION
Page 15

DUPLICATE, cont.

SDG	7161			Client/Case no	Hanford SDG K1600
Contact	N. Joseph Verville			Contract	No. 80042/SA90
	DUPLICATE		ORIGINAL		
Lab sample id	9904099-17	Lab sample id	9904099-01	Client sample id	J19KJ6
Dept sample id	7161-019	Dept sample id	7161-001	Location/Matrix	300SA-ND1 PILLET SOLID
		Received	04/23/99	Collected/Weight	04/21/99 14:00 891 g
% solids	100.0	% solids	100.0	Custody/SAF No	BC-119-61 BC-119

ANALYTE	DUPLICATE pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST	ORIGINAL pCi/g	2σ ERR (COUNT)	MDA pCi/g	QUALI FIERS	RPD %	3σ TOT	DER σ
Cesium 137	U		0.042		U	GAM	U		0.026	U			1.0

[illegible]

QC batch 19748

Lab id EBERLINE
Protocol Hanford
Version Ver 1.0
Form DVD DUP
Version 3.06
Report date 05/11/99

Date: 12 October 2009
To: Washington Closure Hanford Inc. (technical representative)
From: ELR Consulting
Project: Columbia River Component of the RCBRA - Tissue
Subject: Pesticides - Data Package No. K1608-EB

INTRODUCTION

This memo presents the results of data validation on Data Package No. K1608 prepared by Eberline Services (EB). A list of samples validated along with the analyses reported and the method of analysis is provided in the following table.

Sample ID	Sample Date	Media	Validation	Date
J18J84	4/27/09	Solid	C	See note 1
J18J85	4/27/09	Solid	C	See note 1
J18J86	4/27/09	Solid	C	See note 1
J18J87	4/27/09	Solid	C	See note 1
J18K21	4/23/09	Solid	C	See note 1
J18K22	4/23/09	Solid	C	See note 1
J18K23	4/23/09	Solid	C	See note 1
J18K24	4/23/09	Solid	C	See note 1
J18K37	4/22/09	Solid	C	See note 1
J18K38	4/22/09	Solid	C	See note 1
J18K39	4/22/09	Solid	C	See note 1
J18K40	4/22/09	Solid	C	See note 1
J18K36	4/21/09	Solid	C	See note 1
J18K63	4/20/09	Solid	C	See note 1
J18K64	4/20/09	Solid	C	See note 1
J18K65	4/21/09	Solid	C	See note 1
J18K66	4/21/09	Solid	C	See note 1
J18K67	4/21/09	Solid	C	See note 1
J18K78	4/13/09	Solid	C	See note 1
J18K79	4/14/09	Solid	C	See note 1
J18K80	4/14/09	Solid	C	See note 1
J18K81	4/15/09	Solid	C	See note 1
J18K82	4/15/09	Solid	C	See note 1
J18KD8	4/16/09	Solid	C	See note 1
J18KD9	4/16/09	Solid	C	See note 1
J18KF0	4/16/09	Solid	C	See note 1
J18KF1	4/16/09	Solid	C	See note 1
J18KF2	4/20/09	Solid	C	See note 1

1 – Pesticides by 8081A

Data validation was conducted in accordance with the Washington Closure Hanford (WCH) validation statement of work and the Remedial Investigation Work Plan for Hanford Site Releases to the Columbia River (DOE/RL-2008, Rev. 0, September 2006). Appendices 1 through 6 provide the following information as indicated below:

Appendix 1. Glossary of Data Reporting Qualifiers
Appendix 2. Summary of Data Qualification
Appendix 3. Annotated Laboratory Reports
Appendix 4. Laboratory Narrative and Chain-of-Custody Documentation
Appendix 5. Data Validation Supporting Documentation
Appendix 6. Additional Documentation Requested by Client

DATA QUALITY OBJECTIVES

- **Holding Times**

Sample data were assessed to ascertain whether the holding time requirements were met by the laboratory. The holding time requirements are as follows: Soil samples must be extracted within 14 days of the date of sample collection and analyzed within 40 days from the date of extraction.

If holding times are exceeded by less than two times the limit, all associated sample results are qualified as estimates and flagged "J" for detects and "UJ" for non-detects. If holding times are exceeded by greater than two times the limit, all associated detected sample results are qualified as estimates and flagged "J" and all non-detects are rejected and flagged "UR".

All holding times were acceptable.

- **Method Blank**

Method blank analyses are performed to determine the extent of laboratory contamination introduced through sampling, sample preparation or analysis. At least one method blank analysis must be conducted for every 20 samples. Method blanks should not contain target compounds at a concentration greater than required quantitation limit (RQL). If target compounds are present, sample results less than five times the blank concentration are qualified as undetected and flagged "U". If the sample result is less than five times the blank concentration and less than RQL, the result is qualified as undetected and elevated to the RQL.

All method blank results were acceptable.

Field Blanks

No field blanks were submitted for analysis.

Accuracy

Matrix Spike & Laboratory Control Sample

Matrix spike (MS) and laboratory control sample (LCS) analyses are used to assess the analytical accuracy of the reported data. The matrix spike is used to assess the effect of the matrix on the ability to accurately quantify sample concentrations. Recoveries must fall within the range of 50% to 150%. If spike recoveries are outside control limits, detected sample results less than five times the spike concentration are qualified as estimates and flagged "J". Non-detected sample results with spike recoveries outside control limits are qualified as estimates and flagged "UJ". Sample results greater than five times the spike concentration require no qualification.

Due to matrix spike and matrix spike duplicate recoveries outside QC limits, the delta-BHC (49% & 44%) results in samples J18KD8, J18KD9, J18KF0, J18KF1, J18K78, J18K79, J18K80, J18K81 and J18K82 were qualified as estimates and flagged "J".

Due to matrix spike duplicate recoveries outside QC limits, the 4,4-DDT (39%) and endrin aldehyde (45%) results in samples J18KD8, J18KD9, J18KF0, J18KF1, J18K78, J18K79, J18K80, J18K81 and J18K82 were qualified as estimates and flagged "J".

Due to a matrix spike and matrix spike duplicate results outside QC limits, the delta-BHC (39% & 43%) results in samples J18KF2, J18K21, J18K22, J18K23, J18K24, J18K36, J18K37, J18K38, J18K39, J18K40, J18K63, J18K64, J18K65, J18K66, J18K67, J18K84, J18K85, J18K86 and J18K87 were qualified as estimates and flagged "J".

Due to the lack of a matrix spike, matrix spike duplicate or LCS analysis, all toxaphene results were qualified as estimates and flagged "J".

All other accuracy results were acceptable.

Surrogate Recovery

The analysis of surrogate compounds provides a measure of performance for individual samples. Matrix-specific surrogate compound recovery control windows have been established by the laboratory. When a surrogate compound recovery is outside the control window, all positively identified target compounds associated with the unacceptable surrogate recoveries are qualified as estimates and flagged "J". Non-detected compounds with surrogate recoveries less than the lower control limit are qualified as having an estimated detection limit and flagged "UJ". Non-detected compounds with surrogate recoveries above the upper control limit require no qualification.

Due to surrogate recoveries outside QC limits, all pesticide results in samples J18KF0, J18KF1, J18K78, J18K79, J18K63, J18K64, J18K65, J18K66 and J18K67 were qualified as estimates and flagged "J".

All other surrogate results were acceptable.

- **Precision**

Matrix Spike/Matrix Spike Duplicate Samples

Matrix spike/matrix spike duplicate results provide matrix-specific information on the precision of the method for specific target compound classes. Precision is expressed as the relative percent difference (RPD) between the recoveries of duplicate matrix spike analyses performed on a sample. For soil samples, results must be within RPD limits of plus/minus 30%. If RPD values are out of specification and the sample concentration is less than five times the spike concentration, all associated detected sample results are qualified as estimates and flagged "J". If RPD values are out of specification and the sample concentration is greater than five times the spike concentration, no qualification is required.

Due to RPDs outside QC limits, the 4,4-DDT (67%) and methoxychlor (51%) results in samples J18KD8, J18KD9, J18KF0, J18KF1, J18K78, J18K79, J18K80, J18K81 and J18K82 were qualified as estimates and flagged "J".

Due to the lack of a matrix spike and matrix spike duplicate analysis, all toxaphene results were qualified as estimates and flagged "J".

All other precision results were acceptable.

Field Duplicate Samples

No field duplicates were submitted.

- **Analytical Detection Levels**

Reported analytical detection levels are compared against the project RQLs to ensure that laboratory detection levels meet the required criteria. All undetected analytes with a specified RQL exceeded the RQL (except toxaphene, methoxychlor, heptachlor, heptachlor epoxide and gamma chlordane). Under the WCH statement of work, no qualification is required.

- **Completeness**

Data Package No. K1608 was submitted for validation and verified for completeness. Completeness is based on the percentage of data determined to be valid (i.e., not rejected). The completion percentage was 100%.

MAJOR DEFICIENCIES

None found.

MINOR DEFICIENCIES

The following minor deficiencies were noted:

- Due to matrix spike and matrix spike duplicate recoveries outside QC limits, the delta-BHC (49% & 44%) results in samples J18KD8, J18KD9, J18KF0, J18KF1, J18K78, J18K79, J18K80, J18K81 and J18K82 were qualified as estimates and flagged "J".
- Due to matrix spike duplicate recoveries outside QC limits, the 4,4-DDT (39%) and endrin aldehyde (45%) results in samples J18KD8, J18KD9, J18KF0, J18KF1, J18K78, J18K79, J18K80, J18K81 and J18K82 were qualified as estimates and flagged "J".
- Due to a matrix spike and matrix spike duplicate results outside QC limits, the delta-BHC (39% & 43%) results in samples J18KF2, J18K21, J18K22, J18K23, J18K24, J18K36, J18K37, J18K38, J18K39, J18K40, J18K63, J18K64, J18K65, J18K66, J18K67, J18K84, J18K85, J18K86 and J18K87 were qualified as estimates and flagged "J".
- Due to the lack of a matrix spike, matrix spike duplicate or LCS analysis, all toxaphene results were qualified as estimates and flagged "J".
- Due to surrogate recoveries outside QC limits, all pesticide results in samples J18KF0, J18KF1, J18K78, J18K79, J18K63, J18K64, J18K65, J18K66 and J18K67 were qualified as estimates and flagged "J".
- Due to RPDs outside QC limits, the 4,4-DDT (67%) and methoxychlor (51%) results in samples J18KD8, J18KD9, J18KF0, J18KF1, J18K78, J18K79, J18K80, J18K81 and J18K82 were qualified as estimates and flagged "J".

Data flagged "J" indicates that the associated concentration is an estimate, but under the WCH statement of work, the data may be usable for decision-making purposes. All other validated results are considered accurate within the standard error associated with the methods.

REFERENCES

Washington Closure Hanford Contract #S00W307A00 (March 2008), *Data Validation Services*, March 2008.

DOE/RL-2008-11, Rev. 0, September 2008, *Remedial Investigation Work Plan for Hanford Site Releases to the Columbia River.*

Appendix 1

Glossary of Data Reporting Qualifiers

Qualifiers which may be applied by data validators in compliance with the procedures herein are as follows:

U - Indicates the compound or analyte was analyzed for and not detected in the sample. The value reported is the sample quantitation limit corrected for sample dilution and moisture content by the laboratory.

UJ - Indicates the compound or analyte was analyzed for and not detected in the sample. Due to a minor QC deficiency identified during the data validation, the associated quantitation limit is an estimate.

J - Indicates the compound or analyte was analyzed for and detected Due to a minor QC deficiency identified during the data validation, the associated quantitation limit is an estimate.

R - Indicates the compound or analyte was analyzed for, detected, and due to an identified major QC deficiency, the data are unusable.

UR - Indicates the compound or analyte was analyzed for and not detected in the sample. Additionally, the data is unusable due to an identified major QC deficiency.

NJ - Indicates presumptive evidence of a compound at an estimated value. The data may not be valid for some specific applications (i.e., usable for decision-making purposes).

N - Indicates presumptive evidence of a compound. The data may not be valid for some specific applications (i.e., usable for decision-making purposes).

Appendix 2

Summary of Data Qualification

PESTICIDE DATA QUALIFICATION SUMMARY*

SDG: K1608	**REVIEWER: ELR**	**Project: RCBRA**	**PAGE 1 OF 1**
COMPOUND	QUALIFIER	SAMPLES AFFECTED	REASON
Delta-BHC	J	J18KD8, J18KD9 J18KF0, J18KF1 J18K78, J18K79 J18K80, J18K81 J18K82	MS/MSD recovery
4,4-DDT Endrin Aldehyde	J	J18KD8, J18KD9 J18KF0, J18KF1 J18K78, J18K79 J19K80, J18K81 J18K82	MSD recovery
Delta-BHC	J	J18KF2, J18K21 J18K22, J18K23 J18K24, J18K36 J18K37, J18K38 J18K39, J18K40 J18K63, J18K64 J18K65, J18K66 J18K67, J18K84 J18K85, J18K86 J18K87	MS/MSD recovery
Toxaphene	J	All	No MS, MSD or LCS analysis
All	J	J18K63, J18K64 J18K65, J18K66 J18K67 J18KF0 J18KF1, J18K78 J18K79	Surrogate recovery
4,4-DDT Methoxychlor	J	J18KD8, J18KD9 J18KF0, J18KF1 J18K78, J18K79 J18K80, J18K81 J18K82	RPD

* - The Qualified Data Summary Table includes laboratory applied "U" qualifiers not specifically identified here. The laboratory applied "U" qualifiers are included to minimize misinterpretation of results contained in the table.

Appendix 3

Annotated Laboratory Reports

LVL

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

WC-Hanford, Inc. 2620 Fermi Avenue Richland WA, 99354	Project: RC-118 Project Number: K1608 Project Manager: Joan Kessner	Reported: 06/11/2009 13:24

J18KP2

0904069-01 (Solid)

Analyte	Result and Qualifier	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Lionville Laboratory								
Organochlorine Pesticides by SW846 8081A								
alpha-BHC	9.70 U	9.70	ug/kg wet	1	L904188	04/29/2009	04/30/2009	8081A
gamma-BHC	9.70 U	9.70	ug/kg wet	1	L904188	04/29/2009	04/30/2009	8081A
beta-BHC	9.70 U	9.70	ug/kg wet	1	L904188	04/29/2009	04/30/2009	8081A
delta-BHC	**10.7** J J	9.70	ug/kg wet	1	L904188	04/29/2009	04/30/2009	8081A
Heptachlor	9.70 U	9.70	ug/kg wet	1	L904188	04/29/2009	04/30/2009	8081A
Aldrin	9.70 U	9.70	ug/kg wet	1	L904188	04/29/2009	04/30/2009	8081A
Heptachlor epoxide	9.70 U	9.70	ug/kg wet	1	L904188	04/29/2009	04/30/2009	8081A
gamma-Chlordane	9.70 U	9.70	ug/kg wet	1	L904188	04/29/2009	04/30/2009	8081A
alpha-Chlordane	9.70 U	9.70	ug/kg wet	1	L904188	04/29/2009	04/30/2009	8081A
Endosulfan I	9.70 U	9.70	ug/kg wet	1	L904188	04/29/2009	04/30/2009	8081A
4,4'-DDE	**413**	9.70	ug/kg wet	1	L904188	04/29/2009	04/30/2009	8081A
Dieldrin	**30.1** J	9.70	ug/kg wet	1	L904188	04/29/2009	04/30/2009	8081A
Endrin	9.70 U	9.70	ug/kg wet	1	L904188	04/29/2009	04/30/2009	8081A
4,4'-DDD	**144**	9.70	ug/kg wet	1	L904188	04/29/2009	04/30/2009	8081A
Endosulfan II	9.70 U	9.70	ug/kg wet	1	L904188	04/29/2009	04/30/2009	8081A
4,4'-DDT	**42.5** J	9.70	ug/kg wet	1	L904188	04/29/2009	04/30/2009	8081A
Endrin aldehyde	**16.5** J	9.70	ug/kg wet	1	L904188	04/29/2009	04/30/2009	8081A
Endosulfan sulfate	9.70 U	9.70	ug/kg wet	1	L904188	04/29/2009	04/30/2009	8081A
Methoxychlor	9.70 U	9.70	ug/kg wet	1	L904188	04/29/2009	04/30/2009	8081A
Endrin ketone	9.70 U	9.70	ug/kg wet	1	L904188	04/29/2009	04/30/2009	8081A
Toxaphene	146 U J	146	ug/kg wet	1	L904188	04/29/2009	04/30/2009	8081A
Surrogate: Tetrachloro-meta-xylene	*83.2 %*	*28-166*			*L904188*	*04/29/2009*	*04/30/2009*	*8081A*
Surrogate: Decachlorobiphenyl	*61.5 %*	*37-151*			*L904188*	*04/29/2009*	*04/30/2009*	*8081A*

10/10/09

[redacted]

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

WC Hanford, Inc. 2620 Fermi Avenue Richland WA, 99354	Project: RC-118 Project Number: K1608 Project Manager: Joan Kessner	Reported: 06/11/2009 13:24

J18K21

0904069-02 (Solid)

Lionville Laboratory

Analyte	Result and Qualifier	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Organochlorine Pesticides by SW846 8081A								
alpha-BHC	9.51 U	9.51	ug/kg wet	1	L904188	04/29/2009	04/30/2009	8081A
gamma-BHC	9.51 U	9.51	ug/kg wet	1	L904188	04/29/2009	04/30/2009	8081A
beta-BHC	9.51 U	9.51	ug/kg wet	1	L904188	04/29/2009	04/30/2009	8081A
delta-BHC	**28.6** J	9.51	ug/kg wet	1	L904188	04/29/2009	04/30/2009	8081A
Heptachlor	9.51 U	9.51	ug/kg wet	1	L904188	04/29/2009	04/30/2009	8081A
Aldrin	9.51 U	9.51	ug/kg wet	1	L904188	04/29/2009	04/30/2009	8081A
Heptachlor epoxide	9.51 U	9.51	ug/kg wet	1	L904188	04/29/2009	04/30/2009	8081A
gamma-Chlordane	9.51 U	9.51	ug/kg wet	1	L904188	04/29/2009	04/30/2009	8081A
alpha-Chlordane	9.51 U	9.51	ug/kg wet	1	L904188	04/29/2009	04/30/2009	8081A
Endosulfan I	9.51 U	9.51	ug/kg wet	1	L904188	04/29/2009	04/30/2009	8081A
4,4'-DDE	**410**	9.51	ug/kg wet	1	L904188	04/29/2009	04/30/2009	8081A
Dieldrin	**51.4**	9.51	ug/kg wet	1	L904188	04/29/2009	04/30/2009	8081A
Endrin	9.51 U	9.51	ug/kg wet	1	L904188	04/29/2009	04/30/2009	8081A
4,4'-DDD	**130**	9.51	ug/kg wet	1	L904188	04/29/2009	04/30/2009	8081A
Endosulfan II	9.51 U	9.51	ug/kg wet	1	L904188	04/29/2009	04/30/2009	8081A
4,4'-DDT	**26.7** J	9.51	ug/kg wet	1	L904188	04/29/2009	04/30/2009	8081A
Endrin aldehyde	9.51 U	9.51	ug/kg wet	1	L904188	04/29/2009	04/30/2009	8081A
Endosulfan sulfate	9.51 U	9.51	ug/kg wet	1	L904188	04/29/2009	04/30/2009	8081A
Methoxychlor	9.51 U	9.51	ug/kg wet	1	L904188	04/29/2009	04/30/2009	8081A
Endrin ketone	9.51 U	9.51	ug/kg wet	1	L904188	04/29/2009	04/30/2009	8081A
Toxaphene	143 U J	143	ug/kg wet	1	L904188	04/29/2009	04/30/2009	8081A
Surrogate: Tetrachloro-meta-xylene	*81.7 %*	*28-166*			*L904188*	*04/29/2009*	*04/30/2009*	*8081A*
Surrogate: Decachlorobiphenyl	*62.5 %*	*37-153*			*L904188*	*04/29/2009*	*04/30/2009*	*8081A*

10/16/09

264 Welsh Pool Road
Exton, PA 19341
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WCH-Hanford, Inc. 2620 Fermi Avenue Richland WA, 99354	Project: RC-118 Project Number: K1608 Project Manager: Joan Kessner	Reported: 05/11/2009 13:24

J18K22

0904069-03 (Solid)

Lionville Laboratory

Organochlorine Pesticides by SW846 8081A

Analyte	Result and Qualifier	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
alpha-BHC	9.25 U	9.25	ug/kg wet	1	L904188	04/29/2009	04/30/2009	8081A
gamma-BHC	9.25 U	9.25	ug/kg wet	1	L904188	04/29/2009	04/30/2009	8081A
beta-BHC	9.25 U	9.25	ug/kg wet	1	L904188	04/29/2009	04/30/2009	8081A
delta-BHC	28.7 J	9.25	ug/kg wet	1	L904188	04/29/2009	04/30/2009	8081A
Heptachlor	9.25 U	9.25	ug/kg wet	1	L904188	04/29/2009	04/30/2009	8081A
Aldrin	9.25 U	9.25	ug/kg wet	1	L904188	04/29/2009	04/30/2009	8081A
Heptachlor epoxide	9.25 U	9.25	ug/kg wet	1	L904188	04/29/2009	04/30/2009	8081A
gamma-Chlordane	9.25 U	9.25	ug/kg wet	1	L904188	04/29/2009	04/30/2009	8081A
alpha-Chlordane	9.25 U	9.25	ug/kg wet	1	L904188	04/29/2009	04/30/2009	8081A
Endosulfan I	9.25 U	9.25	ug/kg wet	1	L904188	04/29/2009	04/30/2009	8081A
4,4'-DDE	771	9.25	ug/kg wet	1	L904188	04/29/2009	04/30/2009	8081A
Dieldrin	34.3 J	9.25	ug/kg wet	1	L904188	04/29/2009	04/30/2009	8081A
Endrin	9.25 U	9.25	ug/kg wet	1	L904188	04/29/2009	04/30/2009	8081A
4,4'-DDD	148	9.25	ug/kg wet	1	L904188	04/29/2009	04/30/2009	8081A
Endosulfan II	9.25 U	9.25	ug/kg wet	1	L904188	04/29/2009	04/30/2009	8081A
4,4'-DDT	10.2 J	9.25	ug/kg wet	1	L904188	04/29/2009	04/30/2009	8081A
Endrin aldehyde	9.25 U	9.25	ug/kg wet	1	L904188	04/29/2009	04/30/2009	8081A
Endosulfan sulfate	9.25 U	9.25	ug/kg wet	1	L904188	04/29/2009	04/30/2009	8081A
Methoxychlor	9.25 U	9.25	ug/kg wet	1	L904188	04/29/2009	04/30/2009	8081A
Endrin ketone	9.25 U	9.25	ug/kg wet	1	L904188	04/29/2009	04/30/2009	8081A
Toxaphene	139 U J	139	ug/kg wet	1	L904188	04/29/2009	04/30/2009	8081A
Surrogate: Tetrachloro-meta-xylene	*65.4 %*	*28-166*			*L904188*	*04/29/2009*	*04/30/2009*	*8081A*
Surrogate: Decachlorobiphenyl	*54.2 %*	*37-153*			*L904188*	*04/29/2009*	*04/30/2009*	*8081A*

10/20/09

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WC-Hanford, Inc 2620 Fermi Avenue Richland WA, 99354	Project: RC 118 Project Number: K1608 Project Manager: Joan Kessner	Reported: 06/11/2009 13:24

J18K23
0904069-04 (Solid)

Analyte	Result and Qualifier	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Lionville Laboratory								
Organochlorine Pesticides by SW846 8081A								
alpha-BHC	7.51 U	7.51	ug/kg wet	1	L904188	04/29/2009	04/30/2009	8081A
gamma-BHC	7.51 U	7.51	ug/kg wet	1	L904188	04/29/2009	04/30/2009	8081A
beta-BHC	7.51 U	7.51	ug/kg wet	1	L904188	04/29/2009	04/30/2009	8081A
delta-BHC	**24.8** J	7.51	ug/kg wet	1	L904188	04/29/2009	04/30/2009	8081A
Heptachlor	7.51 U	7.51	ug/kg wet	1	L904188	04/29/2009	04/30/2009	8081A
Aldrin	7.51 U	7.51	ug/kg wet	1	L904188	04/29/2009	04/30/2009	8081A
Heptachlor epoxide	7.51 U	7.51	ug/kg wet	1	L904188	04/29/2009	04/30/2009	8081A
gamma-Chlordane	7.51 U	7.51	ug/kg wet	1	L904188	04/29/2009	04/30/2009	8081A
alpha-Chlordane	7.51 U	7.51	ug/kg wet	1	L904188	04/29/2009	04/30/2009	8081A
Endosulfan I	7.51 U	7.51	ug/kg wet	1	L904188	04/29/2009	04/30/2009	8081A
4,4'-DDE	**462**	7.51	ug/kg wet	1	L904188	04/29/2009	04/30/2009	8081A
Dieldrin	**33.1**	7.51	ug/kg wet	1	L904188	04/29/2009	04/30/2009	8081A
Endrin	7.51 U	7.51	ug/kg wet	1	L904188	04/29/2009	04/30/2009	8081A
4,4'-DDD	**99.2**	7.51	ug/kg wet	1	L904188	04/29/2009	04/30/2009	8081A
Endosulfan II	7.51 U	7.51	ug/kg wet	1	L904188	04/29/2009	04/30/2009	8081A
4,4'-DDT	7.51 U	7.51	ug/kg wet	1	L904188	04/29/2009	04/30/2009	8081A
Endrin aldehyde	7.51 U	7.51	ug/kg wet	1	L904188	04/29/2009	04/30/2009	8081A
Endosulfan sulfate	7.51 U	7.51	ug/kg wet	1	L904188	04/29/2009	04/30/2009	8081A
Methoxychlor	7.51 U	7.51	ug/kg wet	1	L904188	04/29/2009	04/30/2009	8081A
Endrin ketone	7.51 U	7.51	ug/kg wet	1	L904188	04/29/2009	04/30/2009	8081A
Toxaphene	113 U J	113	ug/kg wet	1	L904188	04/29/2009	04/30/2009	8081A
Surrogate: Tetrachloro-meta-xylene	*76.2 %*	*28-166*			*L904188*	*04/29/2009*	*04/30/2009*	*8081A*
Surrogate: Decachlorobiphenyl	*88.5 %*	*37-153*			*L904188*	*04/29/2009*	*04/30/2009*	*8081A*

10/16/09

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WC-Hanford, Inc	Project: RC-118	
2620 Fermi Avenue	Project Number: K1608	**Reported:**
Richland WA, 99354	Project Manager: Joan Kessner	06/11/2009 10:24

J18K24

0904069-05 (Solid)

Analyte	Result and Qualifier	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
		Lionville Laboratory						
Organochlorine Pesticides by SW846 8081A								
alpha-BHC	7.87 U	7.87	ug/kg wet	1	L904188	04/29/2009	04/30/2009	8081A
gamma-BHC	7.87 U	7.87	ug/kg wet	1	L904188	04/29/2009	04/30/2009	8081A
beta-BHC	7.87 U	7.87	ug/kg wet	1	L904188	04/29/2009	04/30/2009	8081A
delta-BHC	7.87 U J	7.87	ug/kg wet	1	L904188	04/29/2009	04/30/2009	8081A
Heptachlor	7.87 U	7.87	ug/kg wet	1	L904188	04/29/2009	04/30/2009	8081A
Aldrin	7.87 U	7.87	ug/kg wet	1	L904188	04/29/2009	04/30/2009	8081A
Heptachlor epoxide	7.87 U	7.87	ug/kg wet	1	L904188	04/29/2009	04/30/2009	8081A
gamma-Chlordane	7.87 U	7.87	ug/kg wet	1	L904188	04/29/2009	04/30/2009	8081A
alpha-Chlordane	7.87 U	7.87	ug/kg wet	1	L904188	04/29/2009	04/30/2009	8081A
Endosulfan I	7.87 U	7.87	ug/kg wet	1	L904188	04/29/2009	04/30/2009	8081A
4,4'-DDE	769	7.87	ug/kg wet	1	L904188	04/29/2009	04/30/2009	8081A
Dieldrin	21.5 J	7.87	ug/kg wet	1	L904188	04/29/2009	04/30/2009	8081A
Endrin	7.87 U	7.87	ug/kg wet	1	L904188	04/29/2009	04/30/2009	8081A
4,4'-DDD	135	7.87	ug/kg wet	1	L904188	04/29/2009	04/30/2009	8081A
Endosulfan II	7.87 U	7.87	ug/kg wet	1	L904188	04/29/2009	04/30/2009	8081A
4,4'-DDT	12.6 J	7.87	ug/kg wet	1	L904188	04/29/2009	04/30/2009	8081A
Endrin aldehyde	7.87 U	7.87	ug/kg wet	1	L904188	04/29/2009	04/30/2009	8081A
Endosulfan sulfate	7.87 U	7.87	ug/kg wet	1	L904188	04/29/2009	04/30/2009	8081A
Methoxychlor	7.87 U	7.87	ug/kg wet	1	L904188	04/29/2009	04/30/2009	8081A
Endrin ketone	7.87 U	7.87	ug/kg wet	1	L904188	04/29/2009	04/30/2009	8081A
Toxaphene	118 U J	118	ug/kg wet	1	L904188	04/29/2009	04/30/2009	8081A
Surrogate: Tetrachloro-meta-xylene	*67.8 %*	*28-166*			*L904188*	*04/29/2009*	*04/30/2009*	*8081A*
Surrogate: Decachlorobiphenyl	*48.1 %*	*37-153*			*L904188*	*04/29/2009*	*04/30/2009*	*8081A*

10/10/09

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WC-Hanford, Inc 2620 Fermi Avenue Richland WA, 99354	Project: RC-11A Project Number: K1608 Project Manager: John Kessner	Reported: 06/11/2009 13:24

J18K36

0904069-06 (Solid)

Lionville Laboratory

Analyte	Result and Qualifier	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Organochlorine Pesticides by SW846 8081A								
alpha-BHC	6.89 U	6.89	ug/kg wet	1	L904188	04/29/2009	05/01/2009	8081A
gamma-BHC	6.89 U	6.89	ug/kg wet	1	L904188	04/29/2009	05/01/2009	8081A
beta-BHC	6.89 U	6.89	ug/kg wet	1	L904188	04/29/2009	05/01/2009	8081A
delta-BHC	6.89 U J	6.89	ug/kg wet	1	L904188	04/29/2009	05/01/2009	8081A
Heptachlor	6.89 U	6.89	ug/kg wet	1	L904188	04/29/2009	05/01/2009	8081A
Aldrin	6.89 U	6.89	ug/kg wet	1	L904188	04/29/2009	05/01/2009	8081A
Heptachlor epoxide	6.89 U	6.89	ug/kg wet	1	L904188	04/29/2009	05/01/2009	8081A
gamma-Chlordane	6.89 U	6.89	ug/kg wet	1	L904188	04/29/2009	05/01/2009	8081A
alpha-Chlordane	6.89 U	6.89	ug/kg wet	1	L904188	04/29/2009	05/01/2009	8081A
Endosulfan I	6.89 U	6.89	ug/kg wet	1	L904188	04/29/2009	05/01/2009	8081A
4,4'-DDE	**120**	6.89	ug/kg wet	1	L904188	04/29/2009	05/01/2009	8081A
Dieldrin	**19.3 J**	6.89	ug/kg wet	1	L904188	04/29/2009	05/01/2009	8081A
Endrin	6.89 U	6.89	ug/kg wet	1	L904188	04/29/2009	05/01/2009	8081A
4,4'-DDD	**72.4**	6.89	ug/kg wet	1	L904188	04/29/2009	05/01/2009	8081A
Endosulfan II	6.89 U	6.89	ug/kg wet	1	L904188	04/29/2009	05/01/2009	8081A
4,4'-DDT	6.89 U	6.89	ug/kg wet	1	L904188	04/29/2009	05/01/2009	8081A
Endrin aldehyde	6.89 U	6.89	ug/kg wet	1	L904188	04/29/2009	05/01/2009	8081A
Endosulfan sulfate	6.89 U	6.89	ug/kg wet	1	L904188	04/29/2009	05/01/2009	8081A
Methoxychlor	6.89 U	6.89	ug/kg wet	1	L904188	04/29/2009	05/01/2009	8081A
Endrin ketone	6.89 U	6.89	ug/kg wet	1	L904188	04/29/2009	05/01/2009	8081A
Toxaphene	103 U J	103	ug/kg wet	1	L904188	04/29/2009	05/01/2009	8081A
Surrogate: Tetrachloro-meta-xylene	*73.3 %*	*28-166*			*L904188*	*04/29/2009*	*05/01/2009*	*8081A*
Surrogate: Decachlorobiphenyl	*91.5 %*	*37-133*			*L904188*	*04/29/2009*	*05/01/2009*	*8081A*

10/10/09

WCH-Hanford, Inc 2620 Fermi Avenue Richland WA, 99354	Project: RC-118 Project Number: K1608 Project Manager: Joan Kessner	Reported: 05/11/2009 13:24

J18K37

0904069-07 (Solid)

Analyte	Result and Qualifier	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
			Lionville Laboratory					
Organochlorine Pesticides by SW846 8081A								
alpha-BHC	8.84 U	8.84	ug/kg wet	1	1904188	04/29/2009	05/01/2009	8081A
gamma-BHC	8.84 U	8.84	ug/kg wet	1	1904188	04/29/2009	05/01/2009	8081A
beta-BHC	8.84 U	8.84	ug/kg wet	1	1904188	04/29/2009	05/01/2009	8081A
delta-BHC	8.84 U J	8.84	ug/kg wet	1	1904188	04/29/2009	05/01/2009	8081A
Heptachlor	8.84 U	8.84	ug/kg wet	1	1904188	04/29/2009	05/01/2009	8081A
Aldrin	8.84 U	8.84	ug/kg wet	1	1904188	04/29/2009	05/01/2009	8081A
Heptachlor epoxide	8.84 U	8.84	ug/kg wet	1	1904188	04/29/2009	05/01/2009	8081A
gamma-Chlordane	8.84 U	8.84	ug/kg wet	1	1904188	04/29/2009	05/01/2009	8081A
alpha-Chlordane	8.84 U	8.84	ug/kg wet	1	1904188	04/29/2009	05/01/2009	8081A
Endosulfan I	8.84 U	8.84	ug/kg wet	1	1904188	04/29/2009	05/01/2009	8081A
4,4'-DDE	317	8.84	ug/kg wet	1	1904188	04/29/2009	05/01/2009	8081A
Dieldrin	31.0 J	8.84	ug/kg wet	1	1904188	04/29/2009	05/01/2009	8081A
Endrin	8.84 U	8.84	ug/kg wet	1	1904188	04/29/2009	05/01/2009	8081A
4,4'-DDD	92.9	8.84	ug/kg wet	1	1904188	04/29/2009	05/01/2009	8081A
Endosulfan II	8.84 U	8.84	ug/kg wet	1	1904188	04/29/2009	05/01/2009	8081A
4,4'-DDT	8.84 U	8.84	ug/kg wet	1	1904188	04/29/2009	05/01/2009	8081A
Endrin aldehyde	8.84 U	8.84	ug/kg wet	1	1904188	04/29/2009	05/01/2009	8081A
Endosulfan sulfate	8.84 U	8.84	ug/kg wet	1	1904188	04/29/2009	05/01/2009	8081A
Methoxychlor	8.84 U	8.84	ug/kg wet	1	1904188	04/29/2009	05/01/2009	8081A
Endrin ketone	8.84 U	8.84	ug/kg wet	1	1904188	04/29/2009	05/01/2009	8081A
Toxaphene	133 U J	133	ug/kg wet	1	1904188	04/29/2009	05/01/2009	8081A
Surrogate: Tetrachloro-meta-xylene	*80.7 %*	*25-166*			*1904188*	*04/29/2009*	*05/01/2009*	*8081A*
Surrogate: Decachlorobiphenyl	*80.5 %*	*37-153*			*1904188*	*04/29/2009*	*05/01/2009*	*8081A*

10/10/09

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WC-Hanford, Inc 2620 Fermi Avenue Richland WA, 99354	Project: RC-118 Project Number: K1608 Project Manager: Joan Kessner	Reported: 06/11/2009 13:24

J18K38
0904069-08 (Solid)

Lionville Laboratory

Organochlorine Pesticides by SW846 8081A

Analyte	Result and Qualifier	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
alpha-BHC	9.01	9.00	ug/kg wet	1	L904188	04/29/2009	05/01/2009	8081A
gamma-BHC	9.00 U	9.00	ug/kg wet	1	L904188	04/29/2009	05/01/2009	8081A
beta-BHC	9.00 U	9.00	ug/kg wet	1	L904188	04/29/2009	05/01/2009	8081A
delta-BHC	9.00 U J	9.00	ug/kg wet	1	L904188	04/29/2009	05/01/2009	8081A
Heptachlor	9.00 U	9.00	ug/kg wet	1	L904188	04/29/2009	05/01/2009	8081A
Aldrin	9.00 U	9.00	ug/kg wet	1	L904188	04/29/2009	05/01/2009	8081A
Heptachlor epoxide	9.00 U	9.00	ug/kg wet	1	L904188	04/29/2009	05/01/2009	8081A
gamma-Chlordane	9.00 U	9.00	ug/kg wet	1	L904188	04/29/2009	05/01/2009	8081A
alpha-Chlordane	9.00 U	9.00	ug/kg wet	1	L904188	04/29/2009	05/01/2009	8081A
Endosulfan I	9.00 U	9.00	ug/kg wet	1	L904188	04/29/2009	05/01/2009	8081A
4,4'-DDE	240	9.00	ug/kg wet	1	L904188	04/29/2009	05/01/2009	8081A
Dieldrin	27.0 J	9.00	ug/kg wet	1	L904188	04/29/2009	05/01/2009	8081A
Endrin	9.00 U	9.00	ug/kg wet	1	L904188	04/29/2009	05/01/2009	8081A
4,4'-DDD	96.4	9.00	ug/kg wet	1	L904188	04/29/2009	05/01/2009	8081A
Endosulfan II	9.00 U	9.00	ug/kg wet	1	L904188	04/29/2009	05/01/2009	8081A
4,4'-DDT	9.00 U	9.00	ug/kg wet	1	L904188	04/29/2009	05/01/2009	8081A
Endrin aldehyde	9.00 U	9.00	ug/kg wet	1	L904188	04/29/2009	05/01/2009	8081A
Endosulfan sulfate	9.00 U	9.00	ug/kg wet	1	L904188	04/29/2009	05/01/2009	8081A
Methoxychlor	9.00 U	9.00	ug/kg wet	1	L904188	04/29/2009	05/01/2009	8081A
Endrin ketone	9.00 U	9.00	ug/kg wet	1	L904188	04/29/2009	05/01/2009	8081A
Toxaphene	135 U J	135	ug/kg wet	1	L904188	04/29/2009	05/01/2009	8081A
Surrogate: Tetrachloro-meta-xylene	*80.4 %*	*28-166*			*L904188*	*04/29/2009*	*05/01/2009*	*8081A*
Surrogate: Decachlorobiphenyl	*55.1 %*	*37-153*			*L904188*	*04/29/2009*	*05/01/2009*	*8081A*

10/14/09

WCH-Hanford, Inc	Project: RC-118	
2620 Fermi Avenue	Project Number: K1608	Reported:
Richland WA, 99354	Project Manager: Joan Kessner	06/11/2009 13:24

J18K39
0904069-09 (Solid)

Lionville Laboratory

Organochlorine Pesticides by SW846 8081A

Analyte	Result and Qualifier	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
alpha-BHC	8.84 U	8.84	ug/kg wet	1	L904188	04/29/2009	05/01/2009	8081A
gamma-BHC	8.84 U	8.84	ug/kg wet	1	L904188	04/29/2009	05/01/2009	8081A
beta-BHC	8.84 U	8.84	ug/kg wet	1	L904188	04/29/2009	05/01/2009	8081A
delta-BHC	8.84 U J	8.84	ug/kg wet	1	L904188	04/29/2009	05/01/2009	8081A
Heptachlor	8.84 U	8.84	ug/kg wet	1	L904188	04/29/2009	05/01/2009	8081A
Aldrin	8.84 U	8.84	ug/kg wet	1	L904188	04/29/2009	05/01/2009	8081A
Heptachlor epoxide	8.84 U	8.84	ug/kg wet	1	L904188	04/29/2009	05/01/2009	8081A
gamma-Chlordane	8.84 U	8.84	ug/kg wet	1	L904188	04/29/2009	05/01/2009	8081A
alpha-Chlordane	8.84 U	8.84	ug/kg wet	1	L904188	04/29/2009	05/01/2009	8081A
Endosulfan I	8.84 U	8.84	ug/kg wet	1	L904188	04/29/2009	05/01/2009	8081A
4,4'-DDE	**281**	8.84	ug/kg wet	1	L904188	04/29/2009	05/01/2009	8081A
Dieldrin	**28.3 J**	8.84	ug/kg wet	1	L904188	04/29/2009	05/01/2009	8081A
Endrin	8.84 U	8.84	ug/kg wet	1	L904188	04/29/2009	05/01/2009	8081A
4,4'-DDD	**102**	8.84	ug/kg wet	1	L904188	04/29/2009	05/01/2009	8081A
Endosulfan II	8.84 U	8.84	ug/kg wet	1	L904188	04/29/2009	05/01/2009	8081A
4,4'-DDT	8.84 U	8.84	ug/kg wet	1	L904188	04/29/2009	05/01/2009	8081A
Endrin aldehyde	8.84 U	8.84	ug/kg wet	1	L904188	04/29/2009	05/01/2009	8081A
Endosulfan sulfate	8.84 U	8.84	ug/kg wet	1	L904188	04/29/2009	05/01/2009	8081A
Methoxychlor	8.84 U	8.84	ug/kg wet	1	L904188	04/29/2009	05/01/2009	8081A
Endrin ketone	8.84 U	8.84	ug/kg wet	1	L904188	04/29/2009	05/01/2009	8081A
Toxaphene	133 U J	133	ug/kg wet	1	L904188	04/29/2009	05/01/2009	8081A
Surrogate: Tetrachloro-meta-xylene	*88.7 %*	*28-166*			*L904188*	*04/29/2009*	*05/01/2009*	*8081A*
Surrogate: Decachlorobiphenyl	*99.3 %*	*37-153*			*L904188*	*04/29/2009*	*05/01/2009*	*8081A*

10/19/09

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WCH-Hanford, Inc 2620 Fermi Avenue Richland WA, 99354	Project: RCT-118 Project Number: K1608 Project Manager: Joan Kessner	Reported: 06/11/2009 13:24

J18K40

0904069-10 (Solid)

Lionville Laboratory

Analyte	Result and Qualifier	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Organochlorine Pesticides by SW846 8081A								
alpha-BHC	9.17 U	9.17	ug/kg wet	1	L904188	04/29/2009	05/01/2009	8081A
gamma-BHC	9.17 U	9.17	ug/kg wet	1	L904188	04/29/2009	05/01/2009	8081A
beta-BHC	9.17 U	9.17	ug/kg wet	1	L904188	04/29/2009	05/01/2009	8081A
delta BHC	9.17 U J	9.17	ug/kg wet	1	L904188	04/29/2009	05/01/2009	8081A
Heptachlor	9.17 U	9.17	ug/kg wet	1	L904188	04/29/2009	05/01/2009	8081A
Aldrin	9.17 U	9.17	ug/kg wet	1	L904188	04/29/2009	05/01/2009	8081A
Heptachlor epoxide	9.17 U	9.17	ug/kg wet	1	L904188	04/29/2009	05/01/2009	8081A
gamma-Chlordane	9.17 U	9.17	ug/kg wet	1	L904188	04/29/2009	05/01/2009	8081A
alpha-Chlordane	9.17 U	9.17	ug/kg wet	1	L904188	04/29/2009	05/01/2009	8081A
Endosulfan I	9.17 U	9.17	ug/kg wet	1	L904188	04/29/2009	05/01/2009	8081A
4,4'-DDE	120	9.17	ug/kg wet	1	L904188	04/29/2009	05/01/2009	8081A
Dieldrin	33.6 J	9.17	ug/kg wet	1	L904188	04/29/2009	05/01/2009	8081A
Endrin	9.17 U	9.17	ug/kg wet	1	L904188	04/29/2009	05/01/2009	8081A
4,4'-DDD	124	9.17	ug/kg wet	1	L904188	04/29/2009	05/01/2009	8081A
Endosulfan II	9.17 U	9.17	ug/kg wet	1	L904188	04/29/2009	05/01/2009	8081A
4,4'-DDT	9.17 U	9.17	ug/kg wet	1	L904188	04/29/2009	05/01/2009	8081A
Endrin aldehyde	9.17 U	9.17	ug/kg wet	1	L904188	04/29/2009	05/01/2009	8081A
Endosulfan sulfate	9.17 U	9.17	ug/kg wet	1	L904188	04/29/2009	05/01/2009	8081A
Methoxychlor	9.17 U	9.17	ug/kg wet	1	L904188	04/29/2009	05/01/2009	8081A
Endrin ketone	9.17 U	9.17	ug/kg wet	1	L904188	04/29/2009	05/01/2009	8081A
Toxaphene	138 U J	138	ug/kg wet	1	L904188	04/29/2009	05/01/2009	8081A
Surrogate: Tetrachloro-meta-xylene	*86.8 %*	*28-166*			*L904188*	*04/29/2009*	*05/01/2009*	*8081A*
Surrogate: Decachlorobiphenyl	*14.7 %*	*37-153*			*L904188*	*04/29/2009*	*05/01/2009*	*8081A*

10/10/09

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WC-Hanford, Inc 2620 Fermi Avenue Richland WA, 99354	Project: RC-118 Project Number: K1608 Project Manager: Joan Kessner	Reported: 06/11/2009 13:24

J18K63
0904069-11 (Solid)

Analyte	Result and Qualifier	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Lionville Laboratory								
Organochlorine Pesticides by SW846 8081A								
alpha-BHC	8.84 U J	8.84	ug/kg wet	1	L904188	04/29/2009	05/01/2009	8081A
gamma-BHC	8.84 U J	8.84	ug/kg wet	1	L904188	04/29/2009	05/01/2009	8081A
beta-BHC	8.84 U J	8.84	ug/kg wet	1	L904188	04/29/2009	05/01/2009	8081A
delta-BHC	8.84 U J	8.84	ug/kg wet	1	L904188	04/29/2009	05/01/2009	8081A
Heptachlor	8.84 U	8.84	ug/kg wet	1	L904188	04/29/2009	05/01/2009	8081A
Aldrin	8.84 U	8.84	ug/kg wet	1	L904188	04/29/2009	05/01/2009	8081A
Heptachlor epoxide	8.84 U	8.84	ug/kg wet	1	L904188	04/29/2009	05/01/2009	8081A
gamma-Chlordane	8.84 U	8.84	ug/kg wet	1	L904188	04/29/2009	05/01/2009	8081A
alpha-Chlordane	8.84 U	8.84	ug/kg wet	1	L904188	04/29/2009	05/01/2009	8081A
Endosulfan I	8.84 U	8.84	ug/kg wet	1	L904188	04/29/2009	05/01/2009	8081A
4,4'-DDE	238	8.84	ug/kg wet	1	L904188	04/29/2009	05/01/2009	8081A
Dieldrin	31.0 Z	8.84	ug/kg wet	1	L904188	04/29/2009	05/01/2009	8081A
Endrin	8.84 U	8.84	ug/kg wet	1	L904188	04/29/2009	05/01/2009	8081A
4,4'-DDD	115	8.84	ug/kg wet	1	L904188	04/29/2009	05/01/2009	8081A
Endosulfan II	8.84 U	8.84	ug/kg wet	1	L904188	04/29/2009	05/01/2009	8081A
4,4'-DDT	8.85 Z	8.84	ug/kg wet	1	L904188	04/29/2009	05/01/2009	8081A
Endrin aldehyde	8.84 U	8.84	ug/kg wet	1	L904188	04/29/2009	05/01/2009	8081A
Endosulfan sulfate	8.84 U	8.84	ug/kg wet	1	L904188	04/29/2009	05/01/2009	8081A
Methoxychlor	8.84 U	8.84	ug/kg wet	1	L904188	04/29/2009	05/01/2009	8081A
Endrin ketone	8.84 U J	8.84	ug/kg wet	1	L904188	04/29/2009	05/01/2009	8081A
Toxaphene	133 U J	133	ug/kg wet	1	L904188	04/29/2009	05/01/2009	8081A
Surrogate: Tetrachloro-meta-xylene	*77.3 %*	*28-166*			*L904188*	*04/29/2009*	*05/01/2009*	*8081A*
Surrogate: Decachlorobiphenyl	*33.9 % **	*37-153*			*L904188*	*04/29/2009*	*05/01/2009*	*8081A*

10/10/09

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WC-Hanford, Inc. 2620 Fermi Avenue Richland WA, 99354	Project: RC-118 Project Number: K1608 Project Manager: Joan Kessner	Reported: 06/11/2009 13 24

J18K64
0904069-12 (Solid)

Lionville Laboratory

Analyte	Result and Qualifier	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Organochlorine Pesticides by SW846 8081A								
alpha-BHC	8.54 U J	8.54	ug/kg wet	1	L904188	04/29/2009	05/01/2009	8081A
gamma-BHC	8.54 U J	8.54	ug/kg wet	1	L904188	04/29/2009	05/01/2009	8081A
beta-BHC	8.54 U J	8.54	ug/kg wet	1	L904188	04/29/2009	05/01/2009	8081A
delta-BHC	8.54 U J	8.54	ug/kg wet	1	L904188	04/29/2009	05/01/2009	8081A
Heptachlor	8.54 U	8.54	ug/kg wet	1	L904188	04/29/2009	05/01/2009	8081A
Aldrin	8.54 U	8.54	ug/kg wet	1	L904188	04/29/2009	05/01/2009	8081A
Heptachlor epoxide	8.54 U	8.54	ug/kg wet	1	L904188	04/29/2009	05/01/2009	8081A
gamma-Chlordane	8.54 U	8.54	ug/kg wet	1	L904188	04/29/2009	05/01/2009	8081A
alpha-Chlordane	8.54 U	8.54	ug/kg wet	1	L904188	04/29/2009	05/01/2009	8081A
Endosulfan I	8.54 U	8.54	ug/kg wet	1	L904188	04/29/2009	05/01/2009	8081A
4,4'-DDE	**1190**	8.54	ug/kg wet	1	L904188	04/29/2009	05/01/2009	8081A
Dieldrin	**20.2** J	8.54	ug/kg wet	1	L904188	04/29/2009	05/01/2009	8081A
Endrin	8.54 U	8.54	ug/kg wet	1	L904188	04/29/2009	05/01/2009	8081A
4,4'-DDD	**37.6** J	8.54	ug/kg wet	1	L904188	04/29/2009	05/01/2009	8081A
Endosulfan II	8.54 U	8.54	ug/kg wet	1	L904188	04/29/2009	05/01/2009	8081A
4,4'-DDT	**15.4** J	8.54	ug/kg wet	1	L904188	04/29/2009	05/01/2009	8081A
Endrin aldehyde	8.54 U	8.54	ug/kg wet	1	L904188	04/29/2009	05/01/2009	8081A
Endosulfan sulfate	8.54 U	8.54	ug/kg wet	1	L904188	04/29/2009	05/01/2009	8081A
Methoxychlor	8.54 U	8.54	ug/kg wet	1	L904188	04/29/2009	05/01/2009	8081A
Endrin ketone	8.54 U	8.54	ug/kg wet	1	L904188	04/29/2009	05/01/2009	8081A
Toxaphene	128 U J	128	ug/kg wet	1	L904188	04/29/2009	05/01/2009	8081A
Surrogate: Tetrachloro-meta-xylene	*76.1 %*	*28-166*			*L904188*	*04/29/2009*	*05/01/2009*	*8081A*
Surrogate: Decachlorobiphenyl	*24.3 % **	*37-153*			*L904188*	*04/29/2009*	*05/01/2009*	*8081A*

10/10/09

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WC-Hanford, Inc. 2620 Fermi Avenue Richland WA, 99354	Project: RC-118 Project Number: K1608 Project Manager: Joan Kessner	**Reported:** 06/11/2009 13:24

J18K65

0904069-13 (Solid)

Lionville Laboratory

Analyte	Result and Qualifier	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Organochlorine Pesticides by SW846 8081A								
alpha-BHC	8.92 U J	8.92	ug/kg wet	1	1904188	04/29/2009	05/01/2009	8081A
gamma-BHC	18.8 J J	8.92	ug/kg wet	1	1904188	04/29/2009	05/01/2009	8081A
beta-BHC	8.92 U J	8.92	ug/kg wet	1	1904188	04/29/2009	05/01/2009	8081A
delta-BHC	8.92 U J	8.92	ug/kg wet	1	1904188	04/29/2009	05/01/2009	8081A
Heptachlor	8.92 U	8.92	ug/kg wet	1	1904188	04/29/2009	05/01/2009	8081A
Aldrin	8.92 U	8.92	ug/kg wet	1	1904188	04/29/2009	05/01/2009	8081A
Heptachlor epoxide	8.92 U	8.92	ug/kg wet	1	1904188	04/29/2009	05/01/2009	8081A
gamma-Chlordane	8.92 U	8.92	ug/kg wet	1	1904188	04/29/2009	05/01/2009	8081A
alpha-Chlordane	8.92 U	8.92	ug/kg wet	1	1904188	04/29/2009	05/01/2009	8081A
Endosulfan I	8.92 U	8.92	ug/kg wet	1	1904188	04/29/2009	05/01/2009	8081A
4,4'-DDE	**340**	8.92	ug/kg wet	1	1904188	04/29/2009	05/01/2009	8081A
Dieldrin	**30.4** J	8.92	ug/kg wet	1	1904188	04/29/2009	05/01/2009	8081A
Endrin	8.92 U	8.92	ug/kg wet	1	1904188	04/29/2009	05/01/2009	8081A
4,4'-DDD	**120**	8.92	ug/kg wet	1	1904188	04/29/2009	05/01/2009	8081A
Endosulfan II	8.92 U	8.92	ug/kg wet	1	1904188	04/29/2009	05/01/2009	8081A
4,4'-DDT	**14.3** J	8.92	ug/kg wet	1	1904188	04/29/2009	05/01/2009	8081A
Endrin aldehyde	8.92 U	8.92	ug/kg wet	1	1904188	04/29/2009	05/01/2009	8081A
Endosulfan sulfate	8.92 U	8.92	ug/kg wet	1	1904188	04/29/2009	05/01/2009	8081A
Methoxychlor	8.92 U	8.92	ug/kg wet	1	1904188	04/29/2009	05/01/2009	8081A
Endrin ketone	8.92 U	8.92	ug/kg wet	1	1904188	04/29/2009	05/01/2009	8081A
Toxaphene	134 U J	134	ug/kg wet	1	1904188	04/29/2009	05/01/2009	8081A
Surrogate: Tetrachloro-meta-xylene	*63.4 %*	*28-166*			*1904188*	*04/29/2009*	*05/01/2009*	*8081A*
Surrogate: Decachlorobiphenyl	*21.2 % **	*37-153*			*1904188*	*04/29/2009*	*05/01/2009*	*8081A*

10/10/09

WC-Hanford, Inc 2620 Fermi Avenue Richland WA, 99354	Project: RC-118 Project Number: K1608 Project Manager: Joan Kessner	Reported: 05/11/2009 13:24

J18K66

0904069-14 (Solid)

Lionville Laboratory

Organochlorine Pesticides by SW846 8081A

Analyte	Result and Qualifier	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
alpha-BHC	7.87 U J	7.87	ug/kg wet	1	1904188	04/29/2009	05/01/2009	8081A
gamma-BHC	7.87 U J	7.87	ug/kg wet	1	1904188	04/29/2009	05/01/2009	8081A
beta-BHC	7.87 U J	7.87	ug/kg wet	1	1904188	04/29/2009	05/01/2009	8081A
delta-BHC	7.87 U J	7.87	ug/kg wet	1	1904188	04/29/2009	05/01/2009	8081A
Heptachlor	7.87 U	7.87	ug/kg wet	1	1904188	04/29/2009	05/01/2009	8081A
Aldrin	7.87 U	7.87	ug/kg wet	1	1904188	04/29/2009	05/01/2009	8081A
Heptachlor epoxide	7.87 U	7.87	ug/kg wet	1	1904188	04/29/2009	05/01/2009	8081A
gamma-Chlordane	7.87 U	7.87	ug/kg wet	1	1904188	04/29/2009	05/01/2009	8081A
alpha-Chlordane	7.87 U	7.87	ug/kg wet	1	1904188	04/29/2009	05/01/2009	8081A
Endosulfan I	7.87 U	7.87	ug/kg wet	1	1904188	04/29/2009	05/01/2009	8081A
4,4'-DDE	353	7.87	ug/kg wet	1	1904188	04/29/2009	05/01/2009	8081A
Dieldrin	24.4 J	7.87	ug/kg wet	1	1904188	04/29/2009	05/01/2009	8081A
Endrin	7.87 U	7.87	ug/kg wet	1	1904188	04/29/2009	05/01/2009	8081A
4,4'-DDD	9.45 J	7.87	ug/kg wet	1	1904188	04/29/2009	05/01/2009	8081A
Endosulfan II	7.87 U	7.87	ug/kg wet	1	1904188	04/29/2009	05/01/2009	8081A
4,4'-DDT	7.87 U	7.87	ug/kg wet	1	1904188	04/29/2009	05/01/2009	8081A
Endrin aldehyde	7.87 U	7.87	ug/kg wet	1	1904188	04/29/2009	05/01/2009	8081A
Endosulfan sulfate	7.87 U	7.87	ug/kg wet	1	1904188	04/29/2009	05/01/2009	8081A
Methoxychlor	7.87 U	7.87	ug/kg wet	1	1904188	04/29/2009	05/01/2009	8081A
Endrin ketone	7.87 U	7.87	ug/kg wet	1	1904188	04/29/2009	05/01/2009	8081A
Toxaphene	118 U J	118	ug/kg wet	1	1904188	04/29/2009	05/01/2009	8081A
Surrogate: Tetrachloro-meta-xylene	*77.7 %*	*28-166*			*1904188*	*04/29/2009*	*05/01/2009*	*8081A*
Surrogate: Decachlorobiphenyl	*27.8 % **	*37-153*			*1904188*	*04/29/2009*	*05/01/2009*	*8081A*

10/10/09

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WCH-Hanford, Inc 2620 Fermi Avenue Richland WA, 99354	Project: RC-118 Project Number: K1608 Project Manager: Joan Kessner	Reported: 06/11/2009 13:24

J18K67

0904069-15 (Solid)

Lionville Laboratory

Organochlorine Pesticides by SW846 8081A

Analyte	Result and Qualifier	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
alpha-BHC	8.47 U J	8.47	ug/kg wet	1	L904188	04/29/2009	05/01/2009	8081A
gamma-BHC	8.47 U J	8.47	ug/kg wet	1	L904188	04/29/2009	05/01/2009	8081A
beta-BHC	8.47 U J	8.47	ug/kg wet	1	L904188	04/29/2009	05/01/2009	8081A
delta-BHC	8.47 U J	8.47	ug/kg wet	1	L904188	04/29/2009	05/01/2009	8081A
Heptachlor	8.47 U	8.47	ug/kg wet	1	L904188	04/29/2009	05/01/2009	8081A
Aldrin	8.47 U	8.47	ug/kg wet	1	L904188	04/29/2009	05/01/2009	8081A
Heptachlor epoxide	8.47 U	8.47	ug/kg wet	1	L904188	04/29/2009	05/01/2009	8081A
gamma-Chlordane	8.47 U	8.47	ug/kg wet	1	L904188	04/29/2009	05/01/2009	8081A
alpha-Chlordane	8.47 U	8.47	ug/kg wet	1	L904188	04/29/2009	05/01/2009	8081A
Endosulfan I	8.47 U	8.47	ug/kg wet	1	L904188	04/29/2009	05/01/2009	8081A
4,4'-DDE	**226**	8.47	ug/kg wet	1	L904188	04/29/2009	05/01/2009	8081A
Dieldrin	**32.2** J	8.47	ug/kg wet	1	L904188	04/29/2009	05/01/2009	8081A
Endrin	8.47 U	8.47	ug/kg wet	1	L904188	04/29/2009	05/01/2009	8081A
4,4'-DDD	**176**	8.47	ug/kg wet	1	L904188	04/29/2009	05/01/2009	8081A
Endosulfan II	8.47 U	8.47	ug/kg wet	1	L904188	04/29/2009	05/01/2009	8081A
4,4'-DDT	8.47 U	8.47	ug/kg wet	1	L904188	04/29/2009	05/01/2009	8081A
Endrin aldehyde	8.47 U	8.47	ug/kg wet	1	L904188	04/29/2009	05/01/2009	8081A
Endosulfan sulfate	8.47 U	8.47	ug/kg wet	1	L904188	04/29/2009	05/01/2009	8081A
Methoxychlor	8.47 U	8.47	ug/kg wet	1	L904188	04/29/2009	05/01/2009	8081A
Endrin ketone	8.47 U ↓	8.47	ug/kg wet	1	L904188	04/29/2009	05/01/2009	8081A
Toxaphene	127 U J	127	ug/kg wet	1	L904188	04/29/2009	05/01/2009	8081A
Surrogate: Tetrachloro-meta-xylene	*55.1 %*	*28-106*			*L904188*	*04/29/2009*	*05/01/2009*	*8081A*
Surrogate: Decachlorobiphenyl	*34.1 % **	*37-153*			*L904188*	*04/29/2009*	*05/01/2009*	*8081A*

12/10/09

WC Hanford, Inc
2620 Fermi Avenue
Richland WA, 99354

Project: RC-118
Project Number: K1608
Project Manager: Joan Kessner

Reported:
06/11/2009 13 24

J18J84
0904069-16 (Solid)

Analyte	Result and Qualifier	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Lionville Laboratory								
Organochlorine Pesticides by SW846 8081A								
alpha-BHC	7.74 U	7.74	ug/kg wet	1	L904188	04/29/2009	05/01/2009	8081A
gamma-BHC	7.74 U	7.74	ug/kg wet	1	L904188	04/29/2009	05/01/2009	8081A
beta-BHC	7.74 U	7.74	ug/kg wet	1	L904188	04/29/2009	05/01/2009	8081A
delta-BHC	7.74 U J	7.74	ug/kg wet	1	L904188	04/29/2009	05/01/2009	8081A
Heptachlor	7.74 U	7.74	ug/kg wet	1	L904188	04/29/2009	05/01/2009	8081A
Aldrin	7.74 U	7.74	ug/kg wet	1	L904188	04/29/2009	05/01/2009	8081A
Heptachlor epoxide	7.74 U	7.74	ug/kg wet	1	L904188	04/29/2009	05/01/2009	8081A
gamma-Chlordane	7.74 U	7.74	ug/kg wet	1	L904188	04/29/2009	05/01/2009	8081A
alpha-Chlordane	7.74 U	7.74	ug/kg wet	1	L904188	04/29/2009	05/01/2009	8081A
Endosulfan I	7.74 U	7.74	ug/kg wet	1	L904188	04/29/2009	05/01/2009	8081A
4,4'-DDE	177	7.74	ug/kg wet	1	L904188	04/29/2009	05/01/2009	8081A
Dieldrin	33.3 J	7.74	ug/kg wet	1	L904188	04/29/2009	05/01/2009	8081A
Endrin	7.74 U	7.74	ug/kg wet	1	L904188	04/29/2009	05/01/2009	8081A
4,4'-DDD	92.2	7.74	ug/kg wet	1	L904188	04/29/2009	05/01/2009	8081A
Endosulfan II	7.74 U	7.74	ug/kg wet	1	L904188	04/29/2009	05/01/2009	8081A
4,4'-DDT	7.74 U	7.74	ug/kg wet	1	L904188	04/29/2009	05/01/2009	8081A
Endrin aldehyde	7.74 U	7.74	ug/kg wet	1	L904188	04/29/2009	05/01/2009	8081A
Endosulfan sulfate	7.74 U	7.74	ug/kg wet	1	L904188	04/29/2009	05/01/2009	8081A
Methoxychlor	7.74 U	7.74	ug/kg wet	1	L904188	04/29/2009	05/01/2009	8081A
Endrin ketone	7.74 U	7.74	ug/kg wet	1	L904188	04/29/2009	05/01/2009	8081A
Toxaphene	116 U J	116	ug/kg wet	1	L904188	04/29/2009	05/01/2009	8081A
Surrogate: Tetrachloro-meta-xylene	*78.8 %*	*28-166*			*L904188*	*04/29/2009*	*05/01/2009*	*8081A*
Surrogate: Decachlorobiphenyl	*38.4 %*	*37-153*			*L904188*	*04/29/2009*	*05/01/2009*	*8081A*

10/10/05

LVL
LIONVILLE LABORATORY

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WC-Hanford, Inc. 2620 Fermi Avenue Richland WA, 99354	Project: BC-118 Project Number: K1608 Project Manager: Joan Kessner	**Reported:** 06/11/2009 13:24

J18J85
0904069-17 (Solid)

Lionville Laboratory

Analyte	Result and Qualifier	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Organochlorine Pesticides by SW846 8081A								
alpha-BHC	7.63 U	7.63	ug/kg wet	1	L904188	04/29/2009	05/04/2009	8081A
gamma-BHC	19.1 J	7.63	ug/kg wet	1	L904188	04/29/2009	05/04/2009	8081A
beta-BHC	7.63 U	7.63	ug/kg wet	1	L904188	04/29/2009	05/04/2009	8081A
delta-BHC	7.63 U J	7.63	ug/kg wet	1	L904188	04/29/2009	05/04/2009	8081A
Heptachlor	7.63 U	7.63	ug/kg wet	1	L904188	04/29/2009	05/04/2009	8081A
Aldrin	7.63 U	7.63	ug/kg wet	1	L904188	04/29/2009	05/04/2009	8081A
Heptachlor epoxide	7.63 U	7.63	ug/kg wet	1	L904188	04/29/2009	05/04/2009	8081A
gamma-Chlordane	7.63 U	7.63	ug/kg wet	1	L904188	04/29/2009	05/04/2009	8081A
alpha-Chlordane	7.63 U	7.63	ug/kg wet	1	L904188	04/29/2009	05/04/2009	8081A
Endosulfan I	7.63 U	7.63	ug/kg wet	1	L904188	04/29/2009	05/04/2009	8081A
4,4'-DDE	121	7.63	ug/kg wet	1	L904188	04/29/2009	05/04/2009	8081A
Dieldrin	11.5 J	7.63	ug/kg wet	1	L904188	04/29/2009	05/04/2009	8081A
Endrin	7.63 U	7.63	ug/kg wet	1	L904188	04/29/2009	05/04/2009	8081A
4,4'-DDD	108	7.63	ug/kg wet	1	L904188	04/29/2009	05/04/2009	8081A
Endosulfan II	7.63 U	7.63	ug/kg wet	1	L904188	04/29/2009	05/04/2009	8081A
4,4'-DDT	7.63 U	7.63	ug/kg wet	1	L904188	04/29/2009	05/04/2009	8081A
Endrin aldehyde	7.63 U	7.63	ug/kg wet	1	L904188	04/29/2009	05/04/2009	8081A
Endosulfan sulfate	7.63 U	7.63	ug/kg wet	1	L904188	04/29/2009	05/04/2009	8081A
Methoxychlor	7.63 U	7.63	ug/kg wet	1	L904188	04/29/2009	05/04/2009	8081A
Endrin ketone	7.63 U	7.63	ug/kg wet	1	L904188	04/29/2009	05/04/2009	8081A
Toxaphene	115 U J	115	ug/kg wet	1	L904188	04/29/2009	05/04/2009	8081A
Surrogate: Tetrachloro-meta-xylene	*86.1 %*	*23-166*			*L904188*	*04/29/2009*	*05/04/2009*	*8081A*
Surrogate: Decachlorobiphenyl	*62.3 %*	*37-153*			*L904188*	*04/29/2009*	*05/04/2009*	*8081A*

10/10/09

LVL

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WC-Hanford, Inc. 2620 Fermi Avenue Richland WA, 99354	Project: RC-118 Project Number: K1608 Project Manager: Joan Kessner	Reported: 06/11/2009 13:24

J1BJ86
0904069-18 (Solid)

Analyte	Result and Qualifier	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Lionville Laboratory								
Organochlorine Pesticides by SW846 8081A								
alpha-BHC	6.36 U	6.36	ug/kg wet	1	L904188	04/29/2009	05/04/2009	8081A
gamma-BHC	**11.5 J**	6.36	ug/kg wet	1	L904188	04/29/2009	05/04/2009	8081A
beta-BHC	6.36 U	6.36	ug/kg wet	1	L904188	04/29/2009	05/04/2009	8081A
delta-BHC	6.36 U J	6.36	ug/kg wet	1	L904188	04/29/2009	05/04/2009	8081A
Heptachlor	6.36 U	6.36	ug/kg wet	1	L904188	04/29/2009	05/04/2009	8081A
Aldrin	6.36 U	6.36	ug/kg wet	1	L904188	04/29/2009	05/04/2009	8081A
Heptachlor epoxide	6.36 U	6.36	ug/kg wet	1	L904188	04/29/2009	05/04/2009	8081A
gamma-Chlordane	6.36 U	6.36	ug/kg wet	1	L904188	04/29/2009	05/04/2009	8081A
alpha-Chlordane	6.36 U	6.36	ug/kg wet	1	L904188	04/29/2009	05/04/2009	8081A
Endosulfan I	6.36 U	6.36	ug/kg wet	1	L904188	04/29/2009	05/04/2009	8081A
4,4'-DDE	**148**	6.36	ug/kg wet	1	L904188	04/29/2009	05/04/2009	8081A
Dieldrin	**25.5 J**	6.36	ug/kg wet	1	L904188	04/29/2009	05/04/2009	8081A
Endrin	6.36 U	6.36	ug/kg wet	1	L904188	04/29/2009	05/04/2009	8081A
4,4'-DDD	**60.3**	6.36	ug/kg wet	1	L904188	04/29/2009	05/04/2009	8081A
Endosulfan II	6.36 U	6.36	ug/kg wet	1	L904188	04/29/2009	05/04/2009	8081A
4,4'-DDT	6.36 U	6.36	ug/kg wet	1	L904188	04/29/2009	05/04/2009	8081A
Endrin aldehyde	6.36 U	6.36	ug/kg wet	1	L904188	04/29/2009	05/04/2009	8081A
Endosulfan sulfate	6.36 U	6.36	ug/kg wet	1	L904188	04/29/2009	05/04/2009	8081A
Methoxychlor	6.36 U	6.36	ug/kg wet	1	L904188	04/29/2009	05/04/2009	8081A
Endrin ketone	6.36 U	6.36	ug/kg wet	1	L904188	04/29/2009	05/04/2009	8081A
Toxaphene	95.5 U J	95.5	ug/kg wet	1	L904188	04/29/2009	05/04/2009	8081A
Surrogate: Tetrachloro-meta-xylene	*87.5 %*	*28-166*			*L904188*	*04/29/2009*	*05/04/2009*	*8081A*
Surrogate: Decachlorobiphenyl	*68.5 %*	*17-153*			*L904188*	*04/29/2009*	*05/04/2009*	*8081A*

10/10/09

WC-Hanford, Inc 2620 Fermi Avenue Richland WA, 99354	Project: RC 118 Project Number: K1608 Project Manager: Joan Kessner	Reported: 06/11/2009 13:24

J18J87

0904069-19 (Solid)

Lionville Laboratory

Analyte	Result and Qualifier	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Organochlorine Pesticides by SW846 8081A								
alpha-BHC	7.51 U	7.51	ug/kg wet	1	L904188	04/29/2009	05/04/2009	8081A
gamma-BHC	7.51 U	7.51	ug/kg wet	1	L904188	04/29/2009	05/04/2009	8081A
beta-BHC	7.51 U	7.51	ug/kg wet	1	L904188	04/29/2009	05/04/2009	8081A
delta-BHC	7.51 U J	7.51	ug/kg wet	1	L904188	04/29/2009	05/04/2009	8081A
Heptachlor	7.51 U	7.51	ug/kg wet	1	L904188	04/29/2009	05/04/2009	8081A
Aldrin	7.51 U	7.51	ug/kg wet	1	L904188	04/29/2009	05/04/2009	8081A
Heptachlor epoxide	7.51 U	7.51	ug/kg wet	1	L904188	04/29/2009	05/04/2009	8081A
gamma-Chlordane	7.51 U	7.51	ug/kg wet	1	L904188	04/29/2009	05/04/2009	8081A
alpha-Chlordane	7.51 U	7.51	ug/kg wet	1	L904188	04/29/2009	05/04/2009	8081A
Endosulfan I	7.51 U	7.51	ug/kg wet	1	L904188	04/29/2009	05/04/2009	8081A
4,4'-DDE	**492**	7.51	ug/kg wet	1	L904188	04/29/2009	05/04/2009	8081A
Dieldrin	**21.8 J**	7.51	ug/kg wet	1	L904188	04/29/2009	05/04/2009	8081A
Endrin	7.51 U	7.51	ug/kg wet	1	L904188	04/29/2009	05/04/2009	8081A
4,4'-DDD	**105**	7.51	ug/kg wet	1	L904188	04/29/2009	05/04/2009	8081A
Endosulfan II	7.51 U	7.51	ug/kg wet	1	L904188	04/29/2009	05/04/2009	8081A
4,4'-DDT	7.51 U	7.51	ug/kg wet	1	L904188	04/29/2009	05/04/2009	8081A
Endrin aldehyde	7.51 U	7.51	ug/kg wet	1	L904188	04/29/2009	05/04/2009	8081A
Endosulfan sulfate	7.51 U	7.51	ug/kg wet	1	L904188	04/29/2009	05/04/2009	8081A
Methoxychlor	7.51 U	7.51	ug/kg wet	1	L904188	04/29/2009	05/04/2009	8081A
Endrin ketone	7.51 U	7.51	ug/kg wet	1	L904188	04/29/2009	05/04/2009	8081A
Toxaphene	113 U J	113	ug/kg wet	1	L904188	04/29/2009	05/04/2009	8081A
Surrogate: Tetrachloro-meta-xylene	*83.9 %*	*28-166*			*L904188*	*04/29/2009*	*05/04/2009*	*8081A*
Surrogate: Decachlorobiphenyl	*54.5 %*	*37-153*			*L904188*	*04/29/2009*	*05/04/2009*	*8081A*

10/6/09

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WC-Hanford, Inc 2620 Fermi Avenue Richland WA, 99354	Project: RC-118 Project Number: K1608 Project Manager: Joan Kessner	Reported: 06/02/2009 11:32

J18KD8

0904044-01 (Solid)

Analyte	Result and Qualifier	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
			Lionville Laboratory					
Organochlorine Pesticides by SW846 8081A								
alpha-BHC	4.92 U	4.92	ug/kg wet	1	L904116	04/21/2009	04/22/2009	8081A
gamma-BHC	4.92 U	4.92	ug/kg wet	1	L904116	04/21/2009	04/22/2009	8081A
beta-BHC	4.92 U	4.92	ug/kg wet	1	L904116	04/21/2009	04/22/2009	8081A
delta-BHC	4.92 U J	4.92	ug/kg wet	1	L904116	04/21/2009	04/22/2009	8081A
Heptachlor	4.92 U	4.92	ug/kg wet	1	L904116	04/21/2009	04/22/2009	8081A
Aldrin	4.92 U	4.92	ug/kg wet	1	L904116	04/21/2009	04/22/2009	8081A
Heptachlor epoxide	4.92 U	4.92	ug/kg wet	1	L904116	04/21/2009	04/22/2009	8081A
gamma-Chlordane	4.92 U	4.92	ug/kg wet	1	L904116	04/21/2009	04/22/2009	8081A
alpha-Chlordane	4.92 U	4.92	ug/kg wet	1	L904116	04/21/2009	04/22/2009	8081A
Endosulfan I	4.92 U	4.92	ug/kg wet	1	L904116	04/21/2009	04/22/2009	8081A
4,4'-DDE	244	4.92	ug/kg wet	1	L904116	04/21/2009	04/22/2009	8081A
Dieldrin	7.39 J	4.92	ug/kg wet	1	L904116	04/21/2009	04/22/2009	8081A
Endrin	4.92 U	4.92	ug/kg wet	1	L904116	04/21/2009	04/22/2009	8081A
4,4'-DDD	64.0	4.92	ug/kg wet	1	L904116	04/21/2009	04/22/2009	8081A
Endosulfan II	4.92 U	4.92	ug/kg wet	1	L904116	04/21/2009	04/22/2009	8081A
4,4'-DDT	4.92 U J	4.92	ug/kg wet	1	L904116	04/21/2009	04/22/2009	8081A
Endrin aldehyde	4.93 Z J	4.92	ug/kg wet	1	L904116	04/21/2009	04/22/2009	8081A
Endosulfan sulfate	4.92 U	4.92	ug/kg wet	1	L904116	04/21/2009	04/22/2009	8081A
Methoxychlor	4.92 U J	4.92	ug/kg wet	1	L904116	04/21/2009	04/22/2009	8081A
Endrin ketone	4.92 U	4.92	ug/kg wet	1	L904116	04/21/2009	04/22/2009	8081A
Toxaphene	73.9 U J	73.9	ug/kg wet	1	L904116	04/21/2009	04/22/2009	8081A
Surrogate: Tetrachloro-meta-xylene	*93.0 %*	*28-166*			*L904116*	*04/21/2009*	*04/22/2009*	*8081A*
Surrogate: Decachlorobiphenyl	*76.6 %*	*37-133*			*L904116*	*04/21/2009*	*04/22/2009*	*8081A*

10/10/09

WC-Hanford, Inc	Project: RC-118	
2620 Fermi Avenue	Project Number: K1608	Reported:
Richland WA, 99354	Project Manager: Joan Kessner	06/02/2009 11:32

J18KD9

0904044-02 (Solid)

Lionville Laboratory

Organochlorine Pesticides by SW846 8081A

Analyte	Result and Qualifier	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
alpha-BHC	4.95 U	4.95	ug/kg wet	1	L904116	04/21/2009	04/22/2009	8081A
gamma-BHC	4.95 U	4.95	ug/kg wet	1	L904116	04/21/2009	04/22/2009	8081A
beta-BHC	4.95 U	4.95	ug/kg wet	1	L904116	04/21/2009	04/22/2009	8081A
delta-BHC	23.8 ~~J~~ J	4.95	ug/kg wet	1	L904116	04/21/2009	04/22/2009	8081A
Heptachlor	20.8 J	4.95	ug/kg wet	1	L904116	04/21/2009	04/22/2009	8081A
Aldrin	4.95 U	4.95	ug/kg wet	1	L904116	04/21/2009	04/22/2009	8081A
Heptachlor epoxide	4.95 U	4.95	ug/kg wet	1	L904116	04/21/2009	04/22/2009	8081A
gamma-Chlordane	4.95 U	4.95	ug/kg wet	1	L904116	04/21/2009	04/22/2009	8081A
alpha-Chlordane	4.95 U	4.95	ug/kg wet	1	L904116	04/21/2009	04/22/2009	8081A
Endosulfan I	4.95 U	4.95	ug/kg wet	1	L904116	04/21/2009	04/22/2009	8081A
4,4'-DDE	261	4.95	ug/kg wet	1	L904116	04/21/2009	04/22/2009	8081A
Dieldrin	15.8 J	4.95	ug/kg wet	1	L904116	04/21/2009	04/22/2009	8081A
Endrin	4.95 U	4.95	ug/kg wet	1	L904116	04/21/2009	04/22/2009	8081A
4,4'-DDD	76.7	4.95	ug/kg wet	1	L904116	04/21/2009	04/22/2009	8081A
Endosulfan II	4.95 U	4.95	ug/kg wet	1	L904116	04/21/2009	04/22/2009	8081A
4,4'-DDT	10.4 ~~J~~ J	4.95	ug/kg wet	1	L904116	04/21/2009	04/22/2009	8081A
Endrin aldehyde	9.90 J J	4.95	ug/kg wet	1	L904116	04/21/2009	04/22/2009	8081A
Endosulfan sulfate	4.95 U	4.95	ug/kg wet	1	L904116	04/21/2009	04/22/2009	8081A
Methoxychlor	4.95 U J	4.95	ug/kg wet	1	L904116	04/21/2009	04/22/2009	8081A
Endrin ketone	4.95 U	4.95	ug/kg wet	1	L904116	04/21/2009	04/22/2009	8081A
Toxaphene	74.3 U J	74.3	ug/kg wet	1	L904116	04/21/2009	04/22/2009	8081A
Surrogate: Tetrachloro-meta-xylene	*91.5 %*	*28-166*			*L904116*	*04/21/2009*	*04/22/2009*	*8081A*
Surrogate: Decachlorobiphenyl	*41.2 %*	*37-153*			*L904116*	*04/21/2009*	*04/22/2009*	*8081A*

10/10/09

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WC-Hanford, Inc 2620 Fermi Avenue Richland WA 99354	Project: RC-118 Project Number: K1608 Project Manager: Joan Kessner	Reported: 06/02/2009 11:32

J18KF0

0904044-03 (Solid)

Lionville Laboratory

Organochlorine Pesticides by SW846 8081A

Analyte	Result and Qualifier		Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
alpha-BHC	4.90	U J	4.90	ug/kg wet	1	L904116	04/21/2009	04/22/2009	8081A
gamma-BHC	4.90	U	4.90	ug/kg wet	1	L904116	04/21/2009	04/22/2009	8081A
beta-BHC	4.90	U	4.90	ug/kg wet	1	L904116	04/21/2009	04/22/2009	8081A
delta-BHC	**9.51**		4.90	ug/kg wet	1	L904116	04/21/2009	04/22/2009	8081A
Heptachlor	4.90	U	4.90	ug/kg wet	1	L904116	04/21/2009	04/22/2009	8081A
Aldrin	4.90	U	4.90	ug/kg wet	1	L904116	04/21/2009	04/22/2009	8081A
Heptachlor epoxide	4.90	U	4.90	ug/kg wet	1	L904116	04/21/2009	04/22/2009	8081A
gamma-Chlordane	4.90	U	4.90	ug/kg wet	1	L904116	04/21/2009	04/22/2009	8081A
alpha-Chlordane	4.90	U	4.90	ug/kg wet	1	L904116	04/21/2009	04/22/2009	8081A
Endosulfan I	4.90	U	4.90	ug/kg wet	1	L904116	04/21/2009	04/22/2009	8081A
4,4'-DDE	**2.54**		4.90	ug/kg wet	1	L904116	04/21/2009	04/22/2009	8081A
Dieldrin	**21.1**	J	4.90	ug/kg wet	1	L904116	04/21/2009	04/22/2009	8081A
Endrin	4.90	U	4.90	ug/kg wet	1	L904116	04/21/2009	04/22/2009	8081A
4,4'-DDD	**10.3**	J	4.90	ug/kg wet	1	L904116	04/21/2009	04/22/2009	8081A
Endosulfan II	4.90	U	4.90	ug/kg wet	1	L904116	04/21/2009	04/22/2009	8081A
4,4'-DDT	4.90	U	4.90	ug/kg wet	1	L904116	04/21/2009	04/22/2009	8081A
Endrin aldehyde	**9.80**	J	4.90	ug/kg wet	1	L904116	04/21/2009	04/22/2009	8081A
Endosulfan sulfate	4.90	U	4.90	ug/kg wet	1	L904116	04/21/2009	04/22/2009	8081A
Methoxychlor	4.90	U	4.90	ug/kg wet	1	L904116	04/21/2009	04/22/2009	8081A
Endrin ketone	4.90	U	4.90	ug/kg wet	1	L904116	04/21/2009	04/22/2009	8081A
Toxaphene	73.5	U	73.5	ug/kg wet	1	L904116	04/21/2009	04/22/2009	8081A
Surrogate: Tetrachloro-meta-xylene	*110 %*		*28-106*			*L904116*	*04/21/2009*	*04/22/2009*	*8081A*
Surrogate: Decachlorobiphenyl	*30.9 % S*		*37-153*			*L904116*	*04/21/2009*	*04/22/2009*	*8081A*

10/10/09

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2620 Fermi Avenue
Richland WA, 99354

Project: RC-118
Project Number: K1608
Project Manager: Joan Kessner

Reported:
06/02/2009 11:37

J18KF1
0904044-04 (Solid)

Analyte	Result and Qualifier	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method

Lionville Laboratory

Organochlorine Pesticides by SW846 8081A

Analyte	Result and Qualifier	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
alpha-BHC	4.92 U	4.92	ug/kg wet	1	L904116	04/21/2009	04/22/2009	8081A
gamma-BHC	4.92 U	4.92	ug/kg wet	1	L904116	04/21/2009	04/22/2009	8081A
beta-BHC	4.92 U	4.92	ug/kg wet	1	L904116	04/21/2009	04/22/2009	8081A
delta-BHC	11.4 J	4.92	ug/kg wet	1	L904116	04/21/2009	04/22/2009	8081A
Heptachlor	17.2	4.92	ug/kg wet	1	L904116	04/21/2009	04/22/2009	8081A
Aldrin	4.92 U	4.92	ug/kg wet	1	L904116	04/21/2009	04/22/2009	8081A
Heptachlor epoxide	4.92 U	4.92	ug/kg wet	1	L904116	04/21/2009	04/22/2009	8081A
gamma-Chlordane	4.92 U	4.92	ug/kg wet	1	L904116	04/21/2009	04/22/2009	8081A
alpha-Chlordane	4.92 U	4.92	ug/kg wet	1	L904116	04/21/2009	04/22/2009	8081A
Endosulfan I	4.92 U	4.92	ug/kg wet	1	L904116	04/21/2009	04/22/2009	8081A
4,4'-DDE	192	4.92	ug/kg wet	1	L904116	04/21/2009	04/22/2009	8081A
Dieldrin	10.3 J	4.92	ug/kg wet	1	L904116	04/21/2009	04/22/2009	8081A
Endrin	4.92 U	4.92	ug/kg wet	1	L904116	04/21/2009	04/22/2009	8081A
4,4'-DDD	61.1	4.92	ug/kg wet	1	L904116	04/21/2009	04/22/2009	8081A
Endosulfan II	4.92 U	4.92	ug/kg wet	1	L904116	04/21/2009	04/22/2009	8081A
4,4'-DDT	4.92 U	4.92	ug/kg wet	1	L904116	04/21/2009	04/22/2009	8081A
Endrin aldehyde	8.87 J	4.92	ug/kg wet	1	L904116	04/21/2009	04/22/2009	8081A
Endosulfan sulfate	4.92 U	4.92	ug/kg wet	1	L904116	04/21/2009	04/22/2009	8081A
Methoxychlor	4.92 U	4.92	ug/kg wet	1	L904116	04/21/2009	04/22/2009	8081A
Endrin ketone	4.92 U	4.92	ug/kg wet	1	L904116	04/21/2009	04/22/2009	8081A
Toxaphene	73.9 U	73.9	ug/kg wet	1	L904116	04/21/2009	04/22/2009	8081A
Surrogate: Tetrachloro-meta-xylene	*99.3 %*	*28-166*			*L904116*	*04/21/2009*	*04/22/2009*	*8081A*
Surrogate: Decachlorobiphenyl	*78.0 % **	*17-151*			*L904116*	*04/21/2009*	*04/22/2009*	*8081A*

10/10/09

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

WC-Hanford, Inc 7620 Fermi Avenue Richland WA, 99354	Project: RCS-11A Project Number: K1608 Project Manager: Joan Kessner	Reported: 06/02/2009 11:32

J18K78

0904044-05 (Solid)

Analyte	Result and Qualifier	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method

Lionville Laboratory

Organochlorine Pesticides by SW846 8081A

Analyte	Result and Qualifier	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
alpha-BHC	5.00 U J	5.00	ug/kg wet	1	L904116	04/21/2009	04/22/2009	8081A
gamma-BHC	5.00 U	5.00	ug/kg wet	1	L904116	04/21/2009	04/22/2009	8081A
beta-BHC	5.00 U	5.00	ug/kg wet	1	L904116	04/21/2009	04/22/2009	8081A
delta-BHC	5.00 U	5.00	ug/kg wet	1	L904116	04/21/2009	04/22/2009	8081A
Heptachlor	**8.00** J	5.00	ug/kg wet	1	L904116	04/21/2009	04/22/2009	8081A
Aldrin	5.00 U	5.00	ug/kg wet	1	L904116	04/21/2009	04/22/2009	8081A
Heptachlor epoxide	5.00 U	5.00	ug/kg wet	1	L904116	04/21/2009	04/22/2009	8081A
gamma-Chlordane	5.00 U	5.00	ug/kg wet	1	L904116	04/21/2009	04/22/2009	8081A
alpha-Chlordane	5.00 U	5.00	ug/kg wet	1	L904116	04/21/2009	04/22/2009	8081A
Endosulfan I	5.00 U	5.00	ug/kg wet	1	L904116	04/21/2009	04/22/2009	8081A
4,4'-DDE	**88.5**	5.00	ug/kg wet	1	L904116	04/21/2009	04/22/2009	8081A
Dieldrin	**16.5** J	5.00	ug/kg wet	1	L904116	04/21/2009	04/22/2009	8081A
Endrin	5.00 U	5.00	ug/kg wet	1	L904116	04/21/2009	04/22/2009	8081A
4,4'-DDD	**28.0**	5.00	ug/kg wet	1	L904116	04/21/2009	04/22/2009	8081A
Endosulfan II	5.00 U	5.00	ug/kg wet	1	L904116	04/21/2009	04/22/2009	8081A
4,4'-DDT	5.00 U	5.00	ug/kg wet	1	L904116	04/21/2009	04/22/2009	8081A
Endrin aldehyde	**10.0** J	5.00	ug/kg wet	1	L904116	04/21/2009	04/22/2009	8081A
Endosulfan sulfate	5.00 U	5.00	ug/kg wet	1	L904116	04/21/2009	04/22/2009	8081A
Methoxychlor	5.00 U	5.00	ug/kg wet	1	L904116	04/21/2009	04/22/2009	8081A
Endrin ketone	5.00 U	5.00	ug/kg wet	1	L904116	04/21/2009	04/22/2009	8081A
Toxaphene	75.0 U	75.0	ug/kg wet	1	L904116	04/21/2009	04/22/2009	8081A
Surrogate: Tetrachloro-meta-xylene	*85.9 %*	*28-166*			*L904116*	*04/21/2009*	*04/22/2009*	*8081A*
Surrogate: Decachlorobiphenyl	*31.3 % **	*37-151*			*L904116*	*04/21/2009*	*04/22/2009*	*8081A*

10/10/09

WC Hanford, Inc	Project: RC-118	
2620 Fermi Avenue	Project Number: K1608	Reported:
Richland WA, 99354	Project Manager: Joan Kessner	06/02/2009 11:32

J18K79

0904044-06 (Solid)

Lionville Laboratory

Organochlorine Pesticides by SW846 8081A

Analyte	Result and Qualifier	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
alpha-BHC	4.97 U J	4.97	ug/kg wet	1	L904116	04/21/2009	04/22/2009	8081A
gamma-BHC	4.97 U	4.97	ug/kg wet	1	L904116	04/21/2009	04/22/2009	8081A
beta-BHC	4.97 U	4.97	ug/kg wet	1	L904116	04/21/2009	04/22/2009	8081A
delta-BHC	4.97 U	4.97	ug/kg wet	1	L904116	04/21/2009	04/22/2009	8081A
Heptachlor	**18.4** Z	4.97	ug/kg wet	1	L904116	04/21/2009	04/22/2009	8081A
Aldrin	4.97 U	4.97	ug/kg wet	1	L904116	04/21/2009	04/22/2009	8081A
Heptachlor epoxide	4.97 U	4.97	ug/kg wet	1	L904116	04/21/2009	04/22/2009	8081A
gamma-Chlordane	4.97 U	4.97	ug/kg wet	1	L904116	04/21/2009	04/22/2009	8081A
alpha-Chlordane	4.97 U	4.97	ug/kg wet	1	L904116	04/21/2009	04/22/2009	8081A
Endosulfan I	4.97 U	4.97	ug/kg wet	1	L904116	04/21/2009	04/22/2009	8081A
4,4'-DDE	**110**	4.97	ug/kg wet	1	L904116	04/21/2009	04/22/2009	8081A
Dieldrin	**19.4** Z	4.97	ug/kg wet	1	L904116	04/21/2009	04/22/2009	8081A
Endrin	4.97 U	4.97	ug/kg wet	1	L904116	04/21/2009	04/22/2009	8081A
4,4'-DDD	**39.8**	4.97	ug/kg wet	1	L904116	04/21/2009	04/22/2009	8081A
Endosulfan II	4.97 U	4.97	ug/kg wet	1	L904116	04/21/2009	04/22/2009	8081A
4,4'-DDT	4.97 U	4.97	ug/kg wet	1	L904116	04/21/2009	04/22/2009	8081A
Endrin aldehyde	**4.98** Z	4.97	ug/kg wet	1	L904116	04/21/2009	04/22/2009	8081A
Endosulfan sulfate	4.97 U	4.97	ug/kg wet	1	L904116	04/21/2009	04/22/2009	8081A
Methoxychlor	4.97 U	4.97	ug/kg wet	1	L904116	04/21/2009	04/22/2009	8081A
Endrin ketone	4.97 U	4.97	ug/kg wet	1	L904116	04/21/2009	04/22/2009	8081A
Toxaphene	74.6 U	74.6	ug/kg wet	1	L904116	04/21/2009	04/22/2009	8081A
Surrogate: Tetrachloro-meta-xylene	*113 %*	*28-166*			*L904116*	*04/21/2009*	*04/22/2009*	*8081A*
Surrogate: Decachlorobiphenyl	*28.2 % **	*37-153*			*L904116*	*04/21/2009*	*04/22/2009*	*8081A*

12/10/09

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WCH-Hanford, Inc
2620 Fermi Avenue
Richland WA, 99354

Project: RC-118
Project Number: K1608
Project Manager: John Kessner

Reported:
10/02/2009 11:32

J18K80
0904044-07 (Solid)

Lionville Laboratory

Analyte	Result and Qualifier	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Organochlorine Pesticides by SW846 8081A								
alpha-BHC	4.92 U	4.92	ug/kg wet	1	L904116	04/21/2009	04/23/2009	8081A
gamma-BHC	4.92 U	4.92	ug/kg wet	1	L904116	04/21/2009	04/23/2009	8081A
beta-BHC	4.92 U	4.92	ug/kg wet	1	L904116	04/21/2009	04/23/2009	8081A
delta-BHC	4.92 U J	4.92	ug/kg wet	1	L904116	04/21/2009	04/23/2009	8081A
Heptachlor	4.92 U	4.92	ug/kg wet	1	L904116	04/21/2009	04/23/2009	8081A
Aldrin	4.92 U	4.92	ug/kg wet	1	L904116	04/21/2009	04/23/2009	8081A
Heptachlor epoxide	4.92 U	4.92	ug/kg wet	1	L904116	04/21/2009	04/23/2009	8081A
gamma-Chlordane	4.92 U	4.92	ug/kg wet	1	L904116	04/21/2009	04/23/2009	8081A
alpha-Chlordane	7.39 J	4.92	ug/kg wet	1	L904116	04/21/2009	04/23/2009	8081A
Endosulfan I	4.92 U	4.92	ug/kg wet	1	L904116	04/21/2009	04/23/2009	8081A
4,4'-DDE	160	4.92	ug/kg wet	1	L904116	04/21/2009	04/23/2009	8081A
Dieldrin	33.5	4.92	ug/kg wet	1	L904116	04/21/2009	04/23/2009	8081A
Endrin	4.92 U	4.92	ug/kg wet	1	L904116	04/21/2009	04/23/2009	8081A
4,4'-DDD	61.6	4.92	ug/kg wet	1	L904116	04/21/2009	04/23/2009	8081A
Endosulfan II	4.92 U	4.92	ug/kg wet	1	L904116	04/21/2009	04/23/2009	8081A
4,4'-DDT	4.92 U J	4.92	ug/kg wet	1	L904116	04/21/2009	04/23/2009	8081A
Endrin aldehyde	4.92 U J	4.92	ug/kg wet	1	L904116	04/21/2009	04/23/2009	8081A
Endosulfan sulfate	4.92 U	4.92	ug/kg wet	1	L904116	04/21/2009	04/23/2009	8081A
Methoxychlor	4.92 U J	4.92	ug/kg wet	1	L904116	04/21/2009	04/23/2009	8081A
Endrin ketone	4.92 U	4.92	ug/kg wet	1	L904116	04/21/2009	04/23/2009	8081A
Toxaphene	73.9 U J	73.9	ug/kg wet	1	L904116	04/21/2009	04/23/2009	8081A
Surrogate: Tetrachloro-meta-xylene	*114 %*	*28-166*			*L904116*	*04/21/2009*	*04/23/2009*	*8081A*
Surrogate: Decachlorobiphenyl	*78.9 %*	*37-153*			*L904116*	*04/21/2009*	*04/23/2009*	*8081A*

10/6/09

208 Welsh Pool Road
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WC Hanford, Inc.
2620 Fermi Avenue
Richland WA, 99354

Project: RC-118
Project Number: K1608
Project Manager: Joan Kessner

Reported:
06/02/2009 11:32

J18K81

0904044-08 (Solid)

Analyte	Result and Qualifier	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Lionville Laboratory								
Organochlorine Pesticides by SW846 8081A								
alpha-BHC	4.95 U	4.95	ug/kg wet	1	L904116	04/21/2009	04/23/2009	8081A
gamma-BHC	4.95 U	4.95	ug/kg wet	1	L904116	04/21/2009	04/23/2009	8081A
beta-BHC	4.95 U	4.95	ug/kg wet	1	L904116	04/21/2009	04/23/2009	8081A
delta-BHC	4.95 U J	4.95	ug/kg wet	1	L904116	04/21/2009	04/23/2009	8081A
Heptachlor	4.95 U	4.95	ug/kg wet	1	L904116	04/21/2009	04/23/2009	8081A
Aldrin	4.95 U	4.95	ug/kg wet	1	L904116	04/21/2009	04/23/2009	8081A
Heptachlor epoxide	4.95 U	4.95	ug/kg wet	1	L904116	04/21/2009	04/23/2009	8081A
gamma-Chlordane	4.95 U	4.95	ug/kg wet	1	L904116	04/21/2009	04/23/2009	8081A
alpha-Chlordane	4.95 U	4.95	ug/kg wet	1	L904116	04/21/2009	04/23/2009	8081A
Endosulfan I	4.95 U	4.95	ug/kg wet	1	L904116	04/21/2009	04/23/2009	8081A
4,4'-DDE	**185**	4.95	ug/kg wet	1	L904116	04/21/2009	04/23/2009	8081A
Dieldrin	**38.6**	4.95	ug/kg wet	1	L904116	04/21/2009	04/23/2009	8081A
Endrin	4.95 U	4.95	ug/kg wet	1	L904116	04/21/2009	04/23/2009	8081A
4,4'-DDD	**64.9**	4.95	ug/kg wet	1	L904116	04/21/2009	04/23/2009	8081A
Endosulfan II	**7.92 J**	4.95	ug/kg wet	1	L904116	04/21/2009	04/23/2009	8081A
4,4'-DDT	4.95 U J	4.95	ug/kg wet	1	L904116	04/21/2009	04/23/2009	8081A
Endrin aldehyde	4.95 U J	4.95	ug/kg wet	1	L904116	04/21/2009	04/23/2009	8081A
Endosulfan sulfate	4.95 U	4.95	ug/kg wet	1	L904116	04/21/2009	04/23/2009	8081A
Methoxychlor	4.95 U J	4.95	ug/kg wet	1	L904116	04/21/2009	04/23/2009	8081A
Endrin ketone	4.95 U	4.95	ug/kg wet	1	L904116	04/21/2009	04/23/2009	8081A
Toxaphene	74.3 U J	74.3	ug/kg wet	1	L904116	04/21/2009	04/23/2009	8081A
Surrogate: Tetrachloro-meta-xylene	*120 %*	*28-166*			*L904116*	*04/21/2009*	*04/23/2009*	*8081A*
Surrogate: Decachlorobiphenyl	*70.8 %*	*37-153*			*L904116*	*04/21/2009*	*04/23/2009*	*8081A*

10/10/09

LVL
264 Welsh Pool Road
Exton, PA 19341
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WC-Hanford, Inc 2620 Fermi Avenue Richland WA 99354	Project: RC-118 Project Number: K1608 Project Manager: Joan Kessner	Reported: 06/02/2009 11:32

J18K82

0904044-09 (Solid)

Analyte	Result and Qualifier	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method

Lionville Laboratory

Organochlorine Pesticides by SW846 8081A

Analyte	Result and Qualifier	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
alpha-BHC	4.92 U	4.92	ug/kg wet	1	L904116	04/21/2009	04/23/2009	8081A
gamma-BHC	4.92 U	4.92	ug/kg wet	1	L904116	04/21/2009	04/23/2009	8081A
beta-BHC	4.92 U	4.92	ug/kg wet	1	L904116	04/21/2009	04/23/2009	8081A
delta-BHC	4.92 U J	4.92	ug/kg wet	1	L904116	04/21/2009	04/23/2009	8081A
Heptachlor	4.92 U	4.92	ug/kg wet	1	L904116	04/21/2009	04/23/2009	8081A
Aldrin	4.92 U	4.92	ug/kg wet	1	L904116	04/21/2009	04/23/2009	8081A
Heptachlor epoxide	4.92 U	4.92	ug/kg wet	1	L904116	04/21/2009	04/23/2009	8081A
gamma-Chlordane	4.92 U	4.92	ug/kg wet	1	L904116	04/21/2009	04/23/2009	8081A
alpha-Chlordane	4.92 U	4.92	ug/kg wet	1	L904116	04/21/2009	04/23/2009	8081A
Endosulfan I	4.92 U	4.92	ug/kg wet	1	L904116	04/21/2009	04/23/2009	8081A
4,4'-DDE	**188**	4.92	ug/kg wet	1	L904116	04/21/2009	04/23/2009	8081A
Dieldrin	**36.3**	4.92	ug/kg wet	1	L904116	04/21/2009	04/23/2009	8081A
Endrin	4.92 U	4.92	ug/kg wet	1	L904116	04/21/2009	04/23/2009	8081A
4,4'-DDD	**78.8**	4.92	ug/kg wet	1	L904116	04/21/2009	04/23/2009	8081A
Endosulfan II	**7.88** J	4.92	ug/kg wet	1	L904116	04/21/2009	04/23/2009	8081A
4,4'-DDT	4.92 U J	4.92	ug/kg wet	1	L904116	04/21/2009	04/23/2009	8081A
Endrin aldehyde	4.92 U J	4.92	ug/kg wet	1	L904116	04/21/2009	04/23/2009	8081A
Endosulfan sulfate	4.92 U	4.92	ug/kg wet	1	L904116	04/21/2009	04/23/2009	8081A
Methoxychlor	4.92 U J	4.92	ug/kg wet	1	L904116	04/21/2009	04/23/2009	8081A
Endrin ketone	4.92 U	4.92	ug/kg wet	1	L904116	04/21/2009	04/23/2009	8081A
Toxaphene	73.9 U J	73.9	ug/kg wet	1	L904116	04/21/2009	04/23/2009	8081A
Surrogate: Tetrachloro-meta-xylene	*119 %*	*28-166*			*L904116*	*04/21/2009*	*04/23/2009*	*8081A*
Surrogate: Decachlorobiphenyl	*67.2 %*	*37-153*			*L904116*	*04/21/2009*	*04/23/2009*	*8081A*

10/10/09

Appendix 4

Laboratory Narrative and Chain-of-Custody Documentation

LVL
LIONVILLE LABORATORY

264 Welsh Pool Road
Exton, Pennsylvania 19341
Phone (610) 280-3000
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Case Narrative

Client: WC-HANFORD RC-118
LVL #: 0904069
SDG/SAF # K1608 /RC-118

W.O. #: 60049-001-001-0001-00
Date Received: 04-29-2009

CHLORINATED PESTICIDES

Nineteen (19) fish samples were collected on 04-20,21,22,23,27-2009.

The samples and their associated QC samples were extracted on 04-29-2009 and analyzed according to Lionville Laboratory SOPs based on SW846, 3rd Edition procedure on 04-30-2009 and 05-01,04-2009. The extraction procedure was based on method 3540C and the extracts were analyzed based on method 8081A.

All samples are reported on a wet weight basis. The following is a summary of the QC results accompanying the sample results. Lionville Laboratory (LvL) certifies that all test results meet the requirements of NELAC except as noted below:

1. All required holding times for extraction and analysis have been met.
2. The method blank was below the reporting limit for all target compounds.
3. Five (5) of forty-six (46) surrogate recoveries were outside acceptance criteria. However, surrogate recovery acceptance criteria were met (i.e., no more than one outlier per sample).
4. All blank spike recoveries were within acceptance criteria.
5. Five (5) of forty (40) matrix spike recoveries were outside acceptance criteria. A copy of the Sample Discrepancy Report (SDR# 09GC127) has been enclosed.
6. All initial calibrations associated with this data set were within acceptance criteria.
7. All continuing calibration standards analyzed prior to sample extracts were within acceptance criteria.

[illegible]

8. LvL is NELAP accredited by the State of Pennsylvania. For a complete listing of accrediting authorities and the corresponding analytes/methods, please contact your Project Manager.

9. I certify that this sample data package is in compliance with SOW requirements, both technically and for completeness, other than the conditions detailed above. Release of the data contained in this hard-copy data package has been authorized by the laboratory manager or a designee, as verified by the following signature.

Iain Daniels
Laboratory Manager
Lionville Laboratory

6/12/07
Date

Lionville Laboratory Sample Discrepancy Report (SDR)

SDR #: 096127

Initiator: Robert Carden
Date: 6/10/09
Client: [illegible]

Batch: 09[illegible]
Samples: MS/MSD
Method: [✓ SW846]/MCAWW/CLP/

Parameter: 0609H
Matrix: Solid (Fish)
Prep Batch: [illegible]

1. Reason for SDR

a. COC Discrepancy

__ Tech Profile Error
__ Transcription Error
__ Client Request
__ Wrong Test Code
Sampler Error on C-O-C
Other ______

b. General Discrepancy

__ Missing Sample/Extract*
__ Hold Time Exceeded
__ Improper Bottle Type
Container Broken
__ Insufficient Sample*
__ Not Amenable to Analysis
Wrong Sample Pulled
__ Preservation Wrong
__ Label ID's Illegible
Received Past Hold

Note*: Verified by [Login] or [Prep Group] (circle) signature/date ______

c. Problem (Include all relevant specific results, attach data if necessary)

Several spike recoveries outside QC acceptance criteria in MS/MSD

BS is good

2. Known or Probable Causes(s)

Matrix effects of fish samples

3. Discussion and Proposed Action

Other Description

__ Re-log
Entire Batch
__ Following Samples ______
__ Re-leach
Re-extract
__ Re-digest
__ Revise LOD
__ Change Test Code to ______
__ Place On/Take Off Hold (circle)

Narrative
[illegible]

4. Project Manager Instructions signature/date 6/10/09

✓ Concur with Proposed Action
Disagree with Proposed Action: See Instruction
__ Include in Case Narrative
Client Contacted
Date/Person ______ ______
Add
__ Cancel

5. Final Action signature/date 6/11/09

Other Explanation

__ Verified re-[log][leach][extract][digest][analysis] (circle)
✓ Included in Case Narrative
__ Hard Copy COC Revised
__ Electronic COC Revised
__ EOD Corrections Completed

When Final Action has been recorded, forward original to QA for disposition

Route
__ Lab Manager Daniels
1 Project Mgr (circle) [✓ Johnson] Stone
__ Sample Prep (circle) Ford
__ Login King

Route
Metals Walsh / ______
Inorganic Perfone ______
2 GC/LC [✓ Carey] ______
MS VOA Robins ______
MS BNA Sanders ______
Other ______

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-118-340 | Page 1 of 1

Collector Josh McGaugh	Company Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator KESSNER, JE
Project Designation Columbia River Component of the RCBRA - Tissues	Sampling Location EWSA-WFS, CARCASS		SAF No. RC-118
Ice Chest No. GWSC-050	Field Logbook No. 1633	COA BESCRC6520	Method of Shipment FED EX
Shipped To EBERLINE SERVICES (RICHMOND)	Offsite Property No. N/A		Bill of Lading/Air Bill No. Fdx# 796557072683

Price Code 9K

Data Turnaround 45 Days

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage
CORE OF MATRIX COMPOSED OF [illegible]

0000044

Preservation	None	None	None	None	Cool 4C	Cool 4C	None
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	G/P
No. of Container(s)	1	1	1	1	1	1	1
Volume	1500g	100g	100g	10g	250g	120g	10g
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Tritium - H3	See item (2) in Special Instructions	See item (3) in Special Instructions	Pesticides - 8081	Technetium-99

Sample No.	Matrix *	Sample Date	Sample Time							
J10KT2	OTHER SOLID	04/20/09	1000					X	X	

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Josh McGaugh	04/20/09 1000	EAS Locked Storage #2	04/20/09 1005
EAS LOCKED STORAGE #2	04/28/09 1013	SHANNAN JOHNSON	04/28/09 1013
SHANNAN JOHNSON	04/28/09 1015	FDX# 796557072683	
[illegible]	4-29-09 0920	D. [illegible]	4-29-09 0920

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) {Americium-241, Antimony-125, Beryllium-7, Cerium-144, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238}
(2) Strontium-89,90 - Total Sr, Isotopic Thorium {Thorium-232}, Isotopic Uranium {Uranium-233/234, Uranium-235, Uranium-238}, Isotopic Plutonium
(3) ICP Metals - 6010 (Full List) {Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc}; Mercury - 7471 - {CV}

sampled relinquished by relinquisher
samples from EAS Refrigerator EAS
Custodian returned samples for
shipping on 04/28/09

Matrix *

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-015

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-118-66

Page 1 of 1

Collector: Josh McGough

Company Contact: JOAN KESSNER

Telephone No.: 373-4688

Project Coordinator: KESSNER, JH

Price Code: 9K

Data Turnaround: 45 Days

Project Designation: Columbia River Component of the RCBRA - Tissue

Sampling Location: 100SA-WFL CARCASS

SAF No.: RC-118

Ice Chest No.: GWSC-050

Field Logbook No.: 1633

COA: BESCRC6520

Method of Shipment: FED EX

Shipped To: EBERLINE SERVICES [✓ LIONVILLE]

Offsite Property No.: N/A

Bill of Lading/Air Bill No.: Fdx# 796557872683

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage: *COOL 4C *MATRIX COMPOSED OF FISH*

000045

Preservation	None	None	None	None	Cool 4C	Cool 4C	None
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	G/P
No. of Container(s)	1	1	1	1	1	1	1
Volume	1500g	100g	100g	10g	250g	120g	10g
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Tritium - H3	See item (2) in Special Instructions	See item (3) in Special Instructions	[illegible]	Technetium-99

Sample No.	Matrix *	Sample Date	Sample Time							
J18K21	OTHER SOLID	4/23/09	0800					X	X	

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Josh McGough	4/23/09 0800	EAS LOCKED STORAGE	4/23/09 0805
EAS LOCKED STORAGE	4/28/09 1015	SHANNAN JOHNSON	04/28/09 1015
SHANNAN JOHNSON	04/28/09 1015	Fdx# 796557872683	
	4.29.09 1030		4.29.09 1030

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) {Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238}

(2) Strontium-89,90 – Total Sr, Isotopic Thorium {Thorium-232}, Isotopic Uranium {Uranium-233/234, Uranium-235, Uranium-238}, Isotopic Plutonium

(3) ICP Metals - 6010 (Full List) {Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc}; Mercury - 7471 - (CV)

Sampler unavailable to relinquish samples from EAS Refrigerator. EAS Custodian removed samples for shipping on 04/28/09

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION — Received By: — Title: — Date/Time:

FINAL SAMPLE DISPOSITION — Disposal Method: — Disposed By: — Date/Time:

WCH-EE-011

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-118-67

Page 1 of 1

Collector: Josh McGough

Company Contact: JOAN KESSNER

Telephone No.: 375-4688

Project Coordinator: KESSNER, JH

Price Code: 9K

Data Turnaround: 45 Days

Project Designation: Columbia River Component of the RCBRA - Tissues

Sampling Location: 100SA-WF2, CARCASS

SAF No.: RC-118

Ice Chest No.: GWSC-050

Field Logbook No.: 1633

COA: DFSCRC6520

Method of Shipment: FED EX

Shipped To: EBERLINE SERVICES (LIONVILLE)

Offsite Property No.: N/A

Bill of Lading/Air Bill No.: Fdx# 796557872663

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage: COOL 4C TREATED COMPOSED OF FISH

000046

Preservation	None	None	None	None	Cool 4C	Cool 4C	None			
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	G/P			
No. of Container(s)	1	1	1	1	1	1	1			
Volume	1500g	120g	100g	10g	250g	120g	10g			
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Tritium - H3	See item (2) in Special Instructions	See item (3) in Special Instructions	Pesticides - 8081	Technetium-99			

Sample No.	Matrix *	Sample Date	Sample Time										
J18K22	OTHER SOLID	4/23/09	10:00					X	X				

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Josh McGough	4/23/09 10:00	EAS LOCKED STORAGE	4/23/09 10:15
SJ EAS LOCKED STORAGE	#2 04/28/09 1015	SHANNAN JOHNSON	04/28/09 1015
SHANNAN JOHNSON	04/28/09 1015	Fdx# 796557872683	
	4-29-09 0920		4-29-09 0920

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) (Americium-241, Antimony-125, Beryllium-7, Cerium-144, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238)

(2) Strontium-89,90 - Total Sr, Isotopic Thorium (Thorium-232), Isotopic Uranium (Uranium-233/234, Uranium-235, Uranium-238); Isotopic Plutonium

(3) ICP Metals - 6010 (Full List) (Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc), Mercury - 7471 - (CV)

samples unavailable to relinquish samples from EAS Refrigerator. EAS Custodian removed samples for shipping on [illegible]

Matrix *
S = Soil
SE = Sediment
SO = Solid
SL = Sludge
W = Water
O = Oil
A = Air
DS = Drum Solids
DL = Drum Liquids
T = Tissue
WI = Wipe
L = Liquid
V = Vegetation
X = Other

LABORATORY SECTION

Received By:

Title:

Date/Time:

FINAL SAMPLE DISPOSITION

Disposal Method:

Disposed By:

Date/Time:

WCH-EE-011

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-118-68

Page 1 of 1

Collector Josh McGough	Company Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator KESSNER, JH
Project Designation Columbia River Component of the RCBRA - Tissues	Sampling Location 100SA-WE3, CARCASS		SAF No. RC-118
Ice Chest No. GWSC-050	Field Logbook No. 1633	COA BESCRC6320	Method of Shipment FED EX
Shipped To EBERLINE SERVICES - LIONVILLE	Offsite Property No. N/A		Bill of Lading/Air Bill No. Fdx# 796557872683

Price Code 9K

Data Turnaround 45 Days

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage
COOL 4C *MATRIX COMPOSED OF FISH*

Preservation	None	None	None	None	Cool 4C	Cool 4C	None
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	G/P
No. of Container(s)	1	1	1	1	1	1	1
Volume	1500g	100g	100g	10g	250g	120g	10g
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Tritium - 3H	See item (2) in Special Instructions	See item (3) in Special Instructions	Percent Moisture	Technetium-99

400004

Sample No.	Matrix *	Sample Date	Sample Time							
J18K23	OTHER SOLID	4/23/09	12:00					X	X	

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Josh McGough	4/23/09 12:00	CASE-ASO Storage	4/23/09 12:05
EAS LOCKED STORAGE #20	4/28/09 1015	SHANNAN JOHNSON	04/28/09 1015
SHANNAN JOHNSON	04/28/09 1015	Fdx# 796557872683	
	4-29-09 1020		4-29-09 1020

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) (Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238)
(2) Strontium-89,90 - Total Sr, Isotopic Thorium (Thorium-232), Isotopic Uranium (Uranium-233/234, Uranium-235, Uranium-238); Isotopic Plutonium
(3) ICP Metals - 6010 (Full List) (Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc); Mercury - 7471 - (CV)

Sampler unavailable to relinquish samples from EAS Refrigerator. EAS Custodian removed samples for shipping on 04/28/09

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-118-69

Page 1 of 1

Collector Josh McGough	Company Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator KESSNER, JH
Project Designation Columbia River Component of the RCBRA - Tissues	Sampling Location 100SA-WF4, CARCASS		SAF No. RC-118
Ice Chest No. GWSC-050	Field Logbook No. 1633	COA RESCRC6520	Method of Shipment FED EX
Shipped To EBERLINE SERVICES (RICHMOND) ~~OAK RIDGE~~	Offsite Property No. N/A		Bill of Lading/Air Bill No. FOX# 796557072683

Price Code 9K

Data Turnaround 45 Days

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

COOL 4C *MATRIX COMPOSED OF FISH*

Preservation	None	None	None	None	Cool 4C	Cool 4C	None
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	G/P
No. of Container(s)	1	1	1	1	1	1	1
Volume	1500g	100g	300g	10g	250g	120g	10g
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Tritium - H3	See item (2) in Special Instructions	See item (3) in Special Instructions	Pesticides - 8081	Technetium-99

Sample No.	Matrix *	Sample Date	Sample Time							
J18K24	OTHER SOLID	4/23/09	1400					X	X	

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From Josh McGough	Date/Time 4/23/09 1400	Received By/Stored In EAS Locked Storage	Date/Time 4/23/09 1405
Relinquished By/Removed From EAS LOCKED STORAGE #2	Date/Time 04/28/09 1015	Received By/Stored In SHANNAN JOHNSON	Date/Time 04/28/09 1015
Relinquished By/Removed From SHANNAN JOHNSON	Date/Time 04/28/09 1015	Received By/Stored In FOX# 796557072683	Date/Time
Relinquished By/Removed From	Date/Time 4-29-09 1020	Received By/Stored In	Date/Time 4-29-09 1020
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) (Americium-241, Antimony-125, Beryllium-7, Cerium-144, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238)
(2) Strontium-89,90 – Total Sr; Isotopic Thorium (Thorium-232); Isotopic Uranium (Uranium-233/234, Uranium-235, Uranium-238); Isotopic Plutonium
(3) ICP Metals - 6010 (Full List (Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc). Mercury - 7471 - (CV)

Sampler unavailable to relinquish samples from EAS Refrigerator. EAS Custodian removed samples for shipping on 04/28/09

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-118-81 Page 1 of 1

Collector Josh McGough	Company Contact JOAN KESSNER	Telephone No. 373-4648	Project Coordinator KESSNER, JH
Project Designation Columbia River Component of the RCBRA - Tissues	Sampling Location 300SA-WP1, FILLET		SAF No. RC-118
Ice Chest No. CWSC-050	Field Logbook No. 1633	COA DESCRC6520	Method of Shipment FED EX
Shipped To EBERLINE SERVICES (LIONVILLE)	Offsite Property No. N/A		Bill of Lading/Air Bill No. Fdx# 796557872683

Price Code 9K

Data Turnaround 45 Days

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage
COOL 4C *MATRIX COMPOSED OF FISH*

600049

Preservation	Cool 4C	None	None	None	Cool 4C	Cool 4C	None
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	G/P
No. of Container(s)	1	1	1	1	1	1	1
Volume	1500g	100g	100g	10g	250g	120g	10g
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Tritium - H3	See item (2) in Special Instructions	See item (3) in Special Instructions	Pesticides - 8081	Technetium-99

Sample No.	Matrix *	Sample Date	Sample Time							
J1AK36	OTHER SOLID	4/21/09	1400					X	X	

CHAIN OF POSSESSION	Date/Time	Sign/Print Names	Date/Time
Relinquished By/Removed From Josh McGough	4/21/09 1400	Received By/Stored In EAS Locked Storage	4/21/09 1405
Relinquished By/Removed From EAS LOCKED STORAGE #2	04/29/09 1015	Received By/Stored In SHANNAN JOHNSON	04/29/09 1015
Relinquished By/Removed From SHANNAN JOHNSON	04/29/09 1015	Received By/Stored In FedEx 796557872683	
Relinquished By/Removed From	4-30-09 0920	Received By/Stored In	4-30-09 0920
Relinquished By/Removed From		Received By/Stored In	
Relinquished By/Removed From		Received By/Stored In	

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) {Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238}
(2) Strontium-89,90 -- Total Sr; Isotopic Thorium (Thorium-230); Isotopic Uranium (Uranium-233/234, Uranium-235, Uranium-238); Isotopic Plutonium
(3) ICP Metals - 6010 (Full List) {Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc}; Mercury - 7471 - (CV)

Sampler unavailable to relinquish samples from EAS Refrigerator. EAS Custodian removed samples for shipping on 04/29/09

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

Washington Closure Hanford	**CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST**	RC-118-82	Page 1 of 1
Collector Josh McGough	Company Contact JOAN KESSNER Telephone No. 375-4688	Project Coordinator KESSNER, JH	Price Code 9K Data Turnaround 45 Days
Project Designation Columbia River Component of the RCBRA - Tissue	Sampling Location 300SA-WF2, FILLET	SAF No. RC-118	
Ice Chest No. GWSC-050	Field Logbook No. 1633 COA BESCRC6520	Method of Shipment FED EX	
Shipped To GEL ENG SERVICES (LIONVILLE)	Offsite Property No. N/A	Bill of Lading/Air Bill No. Fdx# 796557872683	

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

COOL 4C "MATRIX COMPOSED OF FISH"

050000

Preservation	None	None	None	None	Cool 4C	Cool 4C	None			
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	G/P			
No. of Container(s)	1	1	1	1	1	1	1			
Volume	1500g	100g	100g	10g	250g	120g	50g			
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Tritium - H3	See item (2) in Special Instructions	See item (3) in Special Instructions	Pesticides - 8081	Technetium-99			

Sample No.	Matrix *	Sample Date	Sample Time										
J18K37	OTHER SOLID	4/22/09	0800					X	X				

CHAIN OF POSSESSION	Date/Time	Sign/Print Names	Date/Time
Relinquished By/Removed From Josh McGough	4/22/09 0800	Received By/Stored In EAS Locked Storage	4/22/09 0805
Relinquished By/Removed From ~~EAS LOCKED STORAGE~~	04/28/09 1015	Received By/Stored In SHANNAN JOHNSON	04/28/09 1015
Relinquished By/Removed From SHANNAN JOHNSON	04/28/09 1015	Received By/Stored In ~~FDX# 796557872683~~	
Relinquished By/Removed From	4 [illegible] 09 1000	Received By/Stored In	4 [illegible] 09 [illegible]
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) {Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238}

(2) Strontium-89,90 -- Total Sr, Isotopic Thorium {Thorium-232}, Isotopic Uranium {Uranium-233/234, Uranium-235, Uranium-238}; Isotopic Plutonium

(3) ICP Metals - 6010 (Full List) {Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc}; Mercury - 7471 - (CV)

samples unavailable to relinquish
samples from EAS Refrigerator. EAS
Custodian removed samples for
shipping on 4-[illegible] 2009

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-118-83 | Page 1 of 1

Collector: Josh McGaugh	Company Contact: JOAN KESSNER	Telephone No.: 375-4688
Project Designation: Columbia River Component of the RCBRA - Tissues	Sampling Location: 300SA-WF3, FILLET	
Ice Chest No.: EWSC-050	Field Logbook No.: 1633	COA: BESCRC6570
Shipped To: EBERLINE SERVICES (LIONVILLE)	Offsite Property No.: N/A	

Project Coordinator: KESSNER, JH	Price Code: 9K
SAF No.: RC-118	Data Turnaround: 45 Days
Method of Shipment: FED EX	
Bill of Lading/Air Bill No.: Fdx# 796557872683	

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

COOL 4C [illegible] COMPOSITE [illegible]

Preservation	None	None	None	None	Cool 4C	Cool 4C	None			
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	G/P			
No. of Container(s)	1	1	1	1	1	1	1			
Volume	1500g	100g	100g	15g	330g	120g	10g			
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Tritium - H3	See item (2) in Special Instructions	See item (3) in Special Instructions	Pesticides - 8081	Technetium-99			

Sample No.	Matrix *	Sample Date	Sample Time										
J10K38	OTHER SOLID	4/22/09	1000					X	X				

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Josh McGaugh	4/22/09 1000	EAS LOCKED STORAGE	4/22/09 1005
EAS LOCKED STORAGE	4/28/09 1015	SHANNAN JOHNSON	04/28/09 1015
SHANNAN JOHNSON	04/28/09 1015	Fdx# 796557872683	
[illegible]	4.29.09 0930	[illegible]	4.29.09/0930

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) {Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238}
(2) Strontium-89,90 - Total Sr, Isotopic Thorium {Thorium-232}, Isotopic Uranium {Uranium-233/234, Uranium-235, Uranium-238}, Isotopic Plutonium
(3) ICP Metals - 6010 (Full List) {Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc}, Mercury - 7471 - (CV)

sampler unavailable to relinquish samples from EAS Refrigerator. EAS custodian removed samples for shipping on 04/28/09

Matrix *

[illegible]

LABORATORY SECTION	Received By	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method / Disposed By	Date/Time

WCH-EE-011

0000051

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-118-84 | Page 1 of 1

Collector Joel McGough	Company Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator KESSNER, JH
Project Designation Columbia River Component of the RCBRA - Tasks	Sampling Location 300SA-WE4, FILLET		SAF No. RC-118
Ice Chest No. GWS-050	Field Logbook No. 1613	COA BESCRC6520	Method of Shipment FED EX
Shipped To GENERAL ENGINEERING LABS / ~~ESS~~ (KNOXVILLE)	Offsite Property No. N/A		Bill of Lading/Air Bill No. Fdx# 796557872683

Price Code 9K

Data Turnaround 45 Days

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

[illegible]

000052

Preservation	None	None	None	None	Cool 4C	Cool 4C	None			
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	G/P			
No. of Container(s)	1	1	1	1	1	1	1			
Volume	1500g	100g	100g	10g	250g	120g	10g			
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Tritium - H3	See item (2) in Special Instructions	See item (3) in Special Instructions	Percent Moisture	Technetium-99			

Sample No.	Matrix *	Sample Date	Sample Time										
J19K30	OTHER SOLID	4/22/09	1200					X	X				

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From Joel McGough	Date/Time 4/22/09 1200	Received By/Stored In EAS Locked Storage	Date/Time 4/22/09 12:05
Relinquished By/Removed From EAS LOCKED STORAGE #12	Date/Time 04/28/09 1015	Received By/Stored In SHANNAN JOHNSON	Date/Time 04/28/09 1015
Relinquished By/Removed From SHANNAN JOHNSON	Date/Time 04/28/09 1015	Received By/Stored In FDX# 796557872683	Date/Time
Relinquished By/Removed From [illegible]	Date/Time 4-29-09 0920	Received By/Stored In	Date/Time 4-29-09 0920
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) {Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238}

(2) Strontium-89,90 - Total Sr, Isotopic Thorium {Thorium-232}, Isotopic Uranium {Uranium-233/234, Uranium-235, Uranium-238}, Isotopic Plutonium

(3) ICP Metals - 6010 (Full List) {Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc}, Mercury - 7471 - (CV)

samples unavailable to relinquish
sampled from EAS Refrigerator EAS
Custodian removed samples by
shipping on [illegible]

Matrix *

S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

Washington Closure Hanford	**CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST**	RC-118-85	Page 1 of 1
Collector: Josh McGough	Company Contact: JOAN KESSNER Telephone No. 375-4688	Project Coordinator: KESSNER, JH	Price Code 9K Data Turnaround 45 Days
Project Designation: Columbia River Component of the RCBRA - Tissues	Sampling Location: 300SA-WFS, FILLET	SAF No. RC-118	
Ice Chest No. GWSC-050	Field Logbook No. 1631 COA: BTSCRC6520	Method of Shipment: FED EX	
Shipped To: EBERLINE SERVICES [✓ RICHMOND]	Offsite Property No. N/A	Bill of Lading/Air Bill No. Fdx# 796557872683	

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

FREEZE OR ANALYZE COMPOSITED UPON RECEIPT

0000053

Preservation	None	None	None	None	Cool 4C	Cool 4C	None			
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	G/P			
No. of Container(s)	1	1	1	1	1	1	1			
Volume	1500g	100g	100g	10g	250g	120g	10g			
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Chlorine-36	See item (2) in Special Instructions	See item (3) in Special Instructions	Pesticides - 8081	Technetium-99			

Sample No.	Matrix *	Sample Date	Sample Time										
J18K40	OTHER SOLID	4/22/09	14:00					X	X				

CHAIN OF POSSESSION	Date/Time	Sign/Print Names	Date/Time
Relinquished By/Removed From: Josh McGough	4/22/09 1400	Received By/Stored In: EAS Locked Storage #2	4/22/09 1405
Relinquished By/Removed From: EAS LOCKED STORAGE #2	04/28/09 1015	Received By/Stored In: SHANNAN JOHNSON	04/28/09 1015
Relinquished By/Removed From: SHANNAN JOHNSON	04/28/09 1015	Received By/Stored In: FDX# 796557872683	
Relinquished By/Removed From:	4-29-09 0930	Received By/Stored In:	4-29-09 0930
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List [Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238]
(2) Strontium-89,90 - Total Sr; Isotopic Thorium [Thorium-232]; Isotopic Uranium [Uranium-233/234, Uranium-235, Uranium-238]; Isotopic Plutonium
(3) ICP Metals - 6010 (Full List) [Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc]; Mercury - 7471 - (CV)

Sampler unavailable to relinquish samples from EAS Refrigerator. EAS Custodian relinquished samples for shipping on 4/28/09.

Matrix *

S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title / Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By / Date/Time

WCH-EE-013

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-118-101

Page 1 of 1

Collector: Jack McGonagle

Company Contact: JOAN KESSNER

Telephone No.: 375-4688

Project Coordinator: KESSNER, JH

Price Code: 9K

Data Turnaround: 45 Days

Project Designation: Columbia River Component of the RCBRA - Tissues

Sampling Location: 100SA-WF1, CARCASS

SAF No.: RC-118

Ice Chest No.: GLWSC-050

Field Logbook No.: 1631

COA: BFSCRC0520

Method of Shipment: FED EX

Shipped To: EBERLINE SERVICES (RICHMOND)

Offsite Property No.: N/A

Bill of Lading/Air Bill No.: Fdx# 796557872683

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage: COOL TO 4C AND HOLD CONTAINERS AT 4C

Preservation	None	None	None	None	Cool 4C	Cool 4C	None			
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	G/P			
No. of Container(s)	1	1	1	1	1	1	1			
Volume	1500g	100g	100g	10g	150g	130g	10g			
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Tritium - (H3)	See item (2) in Special Instructions	See item (3) in Special Instructions	Pesticides - 8081	Technetium-99			

000054

Sample No.	Matrix *	Sample Date	Sample Time										
J18KE1	OTHER SOLID	4/20/09	1800					X	X				

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
[illegible]	4/20/09 1800	EAS Locked Storage	4/20/09 1805
EAS LOCKED STORAGE 1	04/24/09 1015	SHANNAN JOHNSON	04/24/09 1015
SHANNAN JOHNSON	04/24/09 1015	FDX# 796557072683	
Fed Ex	4-25-09 1050	[illegible]	4-25-09 1050

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) (Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238); (2) Strontium-89,90 - Total Sr, Isotopic Thorium (Thorium-232), Isotopic Uranium (Uranium-233/234, Uranium-235, Uranium-238), Isotopic Plutonium; (3) ICP Metals - 6010 (Full List) (Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc), Mercury - 7471 - (CV)

samples unavailable to relinquish
samples from EAS Refrigerator EAS
Custodian removed samples for
shipping on 04/24/09

Matrix *
S = Soil
SE = Sediment
SO = Solid
SL = Sludge
W = Water
O = Oil
A = Air
DS = Drum Solids
DL = Drum Liquids
T = Tissue
WI = Wipe
L = Liquid
V = Vegetation
X = Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-118-102 | Page 1 of 1

Collector Josh McGrath	Company Contact JOAN KESSNER	Telephone No. 373-4688	Project Coordinator KESSNER, JH
Project Designation Columbia River Component of the RCBRA - Tissue	Sampling Location 300SA-WF2, CARCASS		SAF No. RC-118
Ice Chest No. GWSC-050	Field Logbook No. 1633	COA DESCRC0520	Method of Shipment FED EX
Shipped To EBERLINE SERVICES - LIONVILLE	Offsite Property No. N/A		Bill of Lading/Air Bill No. FdX# 796557072683

Price Code 9K

Data Turnaround 45 Days

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage
COOL 4C *MATRIX COMPOSED OF TISSUE

550000

Preservation	None	None	None	None	Cool 4C	Cool 4C	None			
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	G/P			
No. of Container(s)	1	1	1	1	1	1	1			
Volume	1500g	100g	100g	10g	250g	120g	10g			
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Tritium - 3H	See item (2) in Special Instructions	See item (3) in Special Instructions	Pesticides - 8081	Technetium-99			

Sample No.	Matrix *	Sample Date	Sample Time										
J18K64	OTHER SOLID	01/20/2009	1900					X	X				

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Josh McGrath	01/20/09 1900	EAS Locked Storage #2	01/20/09 1905
EAS LOCKED STORAGE #2	04/28/09 1015	SHANNAN JOHNSON	04/28/09 1015
SHANNAN JOHNSON	04/28/09 1015	FDX# 796557072683	
	4-29-09 1030		4-29-09 1030

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) [Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238]
(2) Strontium-89,90 - Total Sr, Isotopic Thorium (Thorium-232), Isotopic Uranium (Uranium-233/234, Uranium-235, Uranium-238), Isotopic Plutonium
(3) ICP Metals - 6010 (Full List) [Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc]; Mercury - 7471 - (CV)

Samples unavailable to relinquish;
samples from EAS Refrigerator. EAS
Custodian removed samples for
shipping on 04/28/09

Matrix *
S = Soil
SE = Sediment
SO = Solid
SL = Sludge
W = Water
O = Oil
A = Air
DS = Drum Solids
DL = Drum Liquids
T = Tissue
WI = Wipe
L = Liquid
V = Vegetation
X = Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-118-103 Page 1 of 1

Collector: Jack McGaugh

Company Contact: JOAN KESSNER

Telephone No.: 375-4688

Project Coordinator: KESSNER, JH

Price Code: 9K

Data Turnaround: 45 Days

Project Designation: Columbia River Component of the RCBRA - Tissues

Sampling Location: 100SA-WP3, CARCASS

SAF No.: RC-118

Ice Chest No.: GWSC-050

Field Logbook No.: 1633

COA: DESCRC6520

Method of Shipment: FED EX

Shipped To: EBERLINE SERVICES [illegible]

Offsite Property No.: N/A

Bill of Lading/Air Bill No.: Fdx# 796557872683

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage: COOL 4C - MATRIX COMPOSED OF FISH

090056

Preservation	None	None	None	None	Cool 4C	Cool 4C	None			
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	G/P			
No. of Container(s)	1	1	1	1	1	1	1			
Volume	1500g	100g	100g	10g	250g	120g	10g			
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Tritium - H3	See item (2) in Special Instructions	See item (3) in Special Instructions	[illegible]	Technetium-99			

Sample No.	Matrix *	Sample Date	Sample Time										
J18K65	OTHER SOLID	04/21/09	0800					X	X				

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Jack McGaugh	04/21/09 0805	CAS Locked Storage #2	4/21/09 0805
CAS LOCKED STORAGE #2	04/28/09 1015	SHANNAN JOHNSON	04/28/09 1015
SHANNAN JOHNSON	04/28/09 1015	FDX# 796557872683	
	4.29.09 1033		4.29.09 1030

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) {Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238}

(2) Strontium-89,90 - Total Sr, Isotopic Thorium {Thorium-232}; Isotopic Uranium {Uranium-233/234, Uranium-235, Uranium-238}, Isotopic Plutonium

(3) ICP Metals - 6010 (Full List) {Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc}, Mercury - 7471 - (CV)

samples unavailable to relinquish
samples from EAS Refrigerator. EAS
Custodian removed samples for
shipping on 04/28/09

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION — Received By — Title — Date/Time

FINAL SAMPLE DISPOSITION — Disposal Method — Disposed By — Date/Time

WCH-EE-011

Washington Closure Hanford	**CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST**	RC-118-104	Page 1 of 1
Collector Jacob McGough	Company Contact JOAN KESSNER Telephone No. 375-4688	Project Coordinator KESSNER, JH	Price Code 9K Data Turnaround 45 Days
Project Designation Columbia River Component of the RCBRA - Tissues	Sampling Location 300SA-WF4, CARCASS	SAF No. RC-118	
Ice Chest No. 6WSC-050	Field Logbook No. 1633 COA DESCRC6520	Method of Shipment FED EX	
Shipped To ENERGINT SERVICES (LIONVILLE)	Offsite Property No. N/A	Bill of Lading/Air Bill No. Fdx# 796557872683	

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

[illegible]

450000

Preservation	None	None	None	None	Cool 4C	Cool 4C	None
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	G/P
No. of Container(s)	1	1	1	1	1	1	1
Volume	1500g	100g	100g	10g	250g	120g	10g
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Tritium - H3	See item (2) in Special Instructions	See item (3) in Special Instructions	Pesticides - 8081	Technetium-99

Sample No.	Matrix *	Sample Date	Sample Time							
J18K66	OTHER SOLID	04/21/09	1000					X	X	

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Jacob McGough	4/21/09 1000	EAS Locked Storage	4/21/09 1000
EAS LOCKED STORAGE #2	4/28/09 1015	SHANNAN JOHNSON	4/28/09 1015
SHANNAN JOHNSON	4/28/09 1645	FDX# 796557872683	
	4-29-09 1050		4-29-09 1050

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) {Americium-241, Antimony-125, Beryllium-7, Cerium-144, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238}

(2) Strontium-89,90 -- Total Sr; Isotopic Thorium {Thorium-232}; Isotopic Uranium {Uranium-233/234, Uranium-235, Uranium-238}; Isotopic Plutonium

(3) ICP Metals - 6010 (Full List) {Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc}; Mercury - 7471 - (CV)

Samples unavailable to relinquish samples from EAS Refrigerator. EAS Custodian removed samples for shipping on 04/28/09

Matrix *

[illegible]

LABORATORY SECTION	Received By	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH EE-011

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-118-105 | Page 1 of 1

Collector: Jack McGough	Company Contact: JOAN KESSNER	Telephone No.: 375-4688	Project Coordinator: KESSNER, JH
Project Designation: Columbia River Component of the RCBRA - Tissues	Sampling Location: 300SA-WFS, CARCASS		SAF No.: RC-118
Ice Chest No.: GWSC-050	Field Logbook No.: 1633	COA: RESCRC6520	Method of Shipment: FED EX
Shipped To: [illegible] SERVICES [illegible]ONVILLE	Offsite Property No.: N/A		Bill of Lading/Air Bill No.: Fdx# 796557872683

Price Code: 9K

Data Turnaround: 45 Days

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

COOL TO [illegible]

8500000

Preservation	None	None	None	None	Cool 4C	Cool 4C	None			
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	G/P			
No. of Container(s)	1	1	1	1	1	1	1			
Volume	1500g	100g	100g	10g	250g	120g	20g			
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Tritium (H3)	See item (2) in Special Instructions	See item (3) in Special Instructions	Pesticides - 8081	[illegible]			

Sample No.	Matrix *	Sample Date	Sample Time										
J18K67	OTHER SOLID	4/21/09	1200					X	X				

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Jack McGough [illegible]	4/21/09 1400	EAS Locked Storage	4/21/09 1205
EAS LOCKED STORAGE	4/28/09 1015	SHANNAN JOHNSON	4/28/09 1015
SHANNAN JOHNSON	4/28/09 1015	FDX# 796557872683	
[illegible]	4.29.09 0930	[illegible]	4.29.09 0930

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) (Americium-241, Antimony-125, Beryllium-7, Cerium-144, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238)

(2) Strontium-89,90 -- Total Sr; Isotopic Thorium (Thorium-232), Isotopic Uranium (Uranium-233/234, Uranium-235, Uranium-238); Isotopic Plutonium

(3) ICP Metals - 6010 (Full List) (Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc); Mercury - 7471 - (CV)

Sampler unavailable to relinquish samples from EAS Refrigerator. EAS Custodian removed samples for shipping on 4/28/2009

Matrix *

S = Soil
SE = Sediment
SO = Solid
SL = Sludge
W = Water
O = Oil
A = Air
DS = Drum Solids
DL = Drum Liquids
T = Tissue
WI = Wipe
L = Liquid
V = Vegetation
X = Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-118-41 | Page 1 of 1

Collector: Josh McGough

Company Contact: JOAN KESSNER

Telephone No.: 375-4688

Project Coordinator: KESSNER, JH

Price Code: 9K

Data Turnaround: 45 Days

Project Designation: Columbia River Component of the RCBRA - Tissues

Sampling Location: 100BA-WFE, FILLET

SAF No.: RC-118

Ice Chest No.: CW5C-050

Field Logbook No.: 1633

COA: BESCRC6520

Method of Shipment: FED EX

Shipped To: EBERLINE SERVICES (LIONVILLE)

Offsite Property No.: N/A

Bill of Lading/Air: FDX# 796557072683

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage: COOL 4C. MATRIX COMPOSED OF FISH

Preservation	None	None	None	None	Cool 4C	Cool 4C	None	
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	G/P	
No. of Container(s)	1	1	1	1	1	1	1	
Volume	1500g	600g	100g	10g	250g	120g	10g	
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Tritium - H3	See item (2) in Special Instructions	See item (3) in Special Instructions	[illegible]	Technetium-99	

Sample No.	Matrix *	Sample Date	Sample Time									
J18J94	OTHER SOLID	4/22/09	0800					X	X			

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Josh McGough	4/22/09 0800	EAS Locked Storage	4/22/09 0815
EAS LOCKED STORAGE	04/23/09 1015	SHANNAN JOHNSON	04/23/09 1015
SHANNAN JOHNSON	04/23/09 1017	FDX# 796557072683	
Fed Ex	4-29-09/1530		4-29-09/1530

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) [Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238]

(2) Strontium-89,90 - Total Sr; Isotopic Thorium [Thorium-232], Isotopic Uranium [Uranium-233/234, Uranium-235, Uranium-238]; Isotopic Plutonium

(3) ICP Metals - 6010 (Full List) [Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc]; Mercury - 7471 - (CV)

Sampler unavailable to relinquish samples from EAS Refrigerator. EAS Custodian removed samples for shipping on 04/23/09

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION — Received By | Title | Date/Time

FINAL SAMPLE DISPOSITION — Disposal Method | Disposed By | Date/Time

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-118-42 | Page 1 of 1

Collector: Josh McGough

Company Contact: JOAN KESSNER | Telephone No. 375-4688

Project Coordinator: KESSNER, JH

Price Code: 9K

Data Turnaround: 45 Days

Project Designation: Columbia River Component of the RCBRA - Tissues

Sampling Location: 100SA-WTZ, FILLET

SAF No. RC-118

Ice Chest No. EWSC-050

Field Logbook No. 1633

COA: BESCRC6520

Method of Shipment: FED EX

Shipped To: EBERLINE SERVICES ~~LIONVILLE~~

Offsite Property No. N/A

Bill of Lading/Air Bill No. Fdx# 796557072683

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

COOL 4C "SAMPLES COMPOSED OF FISH"

0900000

Preservation	None	None	None	None	Cool 4C	Cool 4C	None			
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	G/P			
No. of Container(s)	1	1	1	1	1	1	1			
Volume	1500g	100g	100g	10g	250g	120g	10g			
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Tritium - [illegible]	See item (2) in Special Instructions	See item (3) in Special Instructions	Pesticides 8081	Technetium-99			

Sample No.	Matrix *	Sample Date	Sample Time										
J18JR5	OTHER SOLID	4/27/09	10:30					X	X				

CHAIN OF POSSESSION	Date/Time	Sign/Print Names	Date/Time
Relinquished By/Removed From Josh McGough	4/27/09 1030	Received By/Stored In EAS Locked Storage	4/27/09 1035
Relinquished By/Removed From EAS LOCKED STORAGE	4/28/09 1015	Received By/Stored In SHANNAN JOHNSON	04/28/09 1015
Relinquished By/Removed From SHANNAN JOHNSON	4/28/09 1015	Received By/Stored In Fdx# 796557072683	
Relinquished By/Removed From	4-29-09/0920	Received By/Stored In	4-29-09/0920
Relinquished By/Removed From		Received By/Stored In	
Relinquished By/Removed From		Received By/Stored In	

SPECIAL INSTRUCTIONS

(1) Gamma Spec - {Full List (Americium-241, Antimony-125, Beryllium-7, Cerium-144, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238)}

(2) Strontium-89,90 - Total Sr; Isotopic Thorium (Thorium-232); Isotopic Uranium (Uranium-233/234, Uranium-235, Uranium-238); Isotopic Plutonium

(3) ICP Metals - 6010 (Full List) (Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc); Mercury - 7471 - (CV)

Sampler unavailable to relinquish samples from EAS Refrigerator. EAS custodian removed samples for shipping on 04/28/09

Matrix *

[illegible]

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-118-43

Page 1 of 1

Collector: Josh McGough

Company Contact: JOAN KESSNER

Telephone No.: 375-4688

Project Coordinator: KESSNER, JH

Price Code: 9K

Data Turnaround: 45 Days

Project Designation: Columbia River Component of the RCBRA - Tissues

Sampling Location: 100SA-WFT, FILLET

SAF No.: RC-118

Ice Chest No.: EL0SC-050

Field Logbook No.: 1633

COA: HESCRC6520

Method of Shipment: FED EX

Offsite Property No.: N/A

Bill of Lading/Air Bill No.: Fdx# 796557872603

Shipped To: EBERLINE SERVICES [LIONVILLE]

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage: [illegible]

000061

Preservation	None	None	None	None	Cool 4C	Cool 4C	None			
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	G/P			
No. of Container(s)	1	1	1	1	1	1	1			
Volume	1500g	100g	100g	10g	250g	120g	10g			
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Tritium - H3	See item (2) in Special Instructions	See item (3) in Special Instructions	Pesticides - 8081	Technetium-99			

Sample No.	Matrix *	Sample Date	Sample Time										
J10J86	OTHER SOLID	4/27/09	1345					X	X				

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Josh McGough	4/27/09 1345	EAS Locked Storage #2	4/27/09 1345
EAS LOCKED STORAGE #2	4/28/09 1015	SHANNAN JOHNSON	4/28/09 1015
SHANNAN JOHNSON	4/28/09 1015	Fdx# 796557872603	
	4 29 09 0825		4 29 09 0825

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) {Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238}

(2) Strontium-89,90 -- Total Sr, Isotopic Thorium {Thorium-232}; Isotopic Uranium {Uranium-233/234, Uranium-235, Uranium-238}, Isotopic Plutonium

(3) ICP Metals - 6010 (Full List) {Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc}, Mercury - 7471 - (CV)

samples unavailable to relinquish
samples from EAS Refrigerator EAS
custodian removed samples for
shipping on 4/29/09

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EF-011

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-118-44

Page 1 of 1

Collector: Josh McGonagle

Company Contact: JOAN KESSNER

Telephone No.: 375-4688

Project Coordinator: KESSNER, JH

Price Code: 9K

Data Turnaround: 45 Days

Project Designation: Columbia River Component of the RCBRA - Tribes

Sampling Location: 100SA-WT4, FILLEY

SAF No.: RC-118

Ice Chest No.: GWSC-050

Field Logbook No.: 1633

COA: RESCRC6520

Method of Shipment: FEDEX

Shipped To: EBERLINE SERVICES (LIONVILLE)

Offsite Property No.: N/A

Bill of Lading/Air Bill No.: Fdx# 796557872603

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

TYPE 4A - MATRIX COMPOSED OF [illegible]

0000062

Preservation	None	None	None	None	Cool 4C	Cool 4C	None			
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	G/P			
No. of Container(s)	1	1	1	1	1	1	1			
Volume	1500g	100g	100g	10g	250g	120g	10g			
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Tritium - H3	See item (2) in Special Instructions	See item (3) in Special Instructions	Pesticides - 8081	Technetium-99			

Sample No.	Matrix *	Sample Date	Sample Time										
J18J87	OTHER SOLID	4/27/09	1930					X	X				

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Josh McGonagle	4/27/09 1430	EAS Locked Storage	4/27/09 1430
EAS LOCKED STORAGE	04/28/09 1015	SHANNAN JOHNSON	04/28/09 1015
SHANNAN JOHNSON	04/28/09 1015	FDX# 796557872603	
	4.29.09/0930		4.29.09/0930

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) [Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238]
(2) Strontium-89,90 -- Total Sr; Isotopic Thorium (Thorium-232); Isotopic Uranium (Uranium-233/234, Uranium-235, Uranium-238); Isotopic Plutonium
(3) ICP Metals - 6010 (Full List) [Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc]; Mercury - 7471 - (CV)

Sampler unavailable to relinquish samples from EAS Refrigerator. EAS Custodian removed samples for shipping on 4/28/09

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION — Received By / Title / Date/Time

FINAL SAMPLE DISPOSITION — Disposal Method / Disposed By / Date/Time

WCH-EE-011

LVL
LIONVILLE LABORATORY

264 Welsh Pool Road
Exton, Pennsylvania 19341
Phone (610) 280-3000
Fax (610) 280-3041

Case Narrative

Client: WC-HANFORD RC-118
LVL #: 0904044
SDG/SAF # K1608 /RC-118

W.O. #: 60049-001-001-0001-00
Date Received: 04-21-2009

CHLORINATED PESTICIDES

Nine (9) fish samples were collected on 04-13,14,15,16-2009.

The samples and their associated QC samples were extracted on 04-21-2009 and analyzed according to Lionville Laboratory SOPs based on SW846, 3rd Edition procedure on 04-22,23-2009. The extraction procedure was based on method 3540C and the extracts were analyzed based on method 8081A.

All samples are reported on a wet weight basis. The following is a summary of the QC results accompanying the sample results. Lionville Laboratory (LvL) certifies that all test results meet the requirements of NELAC except as noted below:

1. All required holding times for extraction and analysis have been met.
2. The samples and associated QC samples received Copper-Sulfur cleanups according to Lionville Laboratory SOPs based on SW846 methods 3660A.
3. The method blank was below the reporting limit for all target compounds.
4. Four (4) of twenty-six (26) surrogate recoveries were outside acceptance criteria. However, surrogate recovery acceptance criteria were met (i.e., no more than one outlier per sample).
5. All blank spike recoveries were within acceptance criteria.
6. Fifteen (15) of forty (40) matrix spike recoveries were outside acceptance criteria. A copy of the Sample Discrepancy Report (SDR# 09GC122) has been enclosed.
7. Due to the nature of these samples (fish), the chromatograms contain many small peaks, and it is possible that some of the reported hits are a result of coincidence, and the data user should use caution when making decisions based on this data.

8. All initial calibrations associated with this data set were within acceptance criteria.

9. All continuing calibration standards analyzed prior to sample extracts were within acceptance criteria.

10. LvL is NELAP accredited by the State of Pennsylvania. For a complete listing of accrediting authorities and the corresponding analytes/methods, please contact your Project Manager.

11. I certify that this sample data package is in compliance with SOW requirements, both technically and for completeness, other than the conditions detailed above. Release of the data contained in this hard-copy data package has been authorized by the laboratory manager or a designee, as verified by the following signature.

Iain Daniels
Laboratory Manager
Lionville Laboratory

6-3-9
Date

Lionville Laboratory Sample Discrepancy Report (SDR)

SDR #: 09GC122

Initiator: [illegible]
Date: 6-1-09
Client: WC Hanford RC [illegible]

Batch: 0904044
Samples: [illegible]
Method: SW846/MCAWW/CLP [illegible]

Parameter: 06084
Matrix: Fish
Prep Batch: G904116

1. Reason for SDR

a. COC Discrepancy
- Tech Profile Error
- Transcription Error
- Client Request
- Wrong Test Code
- Sampler Error on C-O-C
- Other

b. General Discrepancy
- Missing Sample/Extract
- Hold Time Exceeded
- Improper Bottle Type
- Container Broken
- Insufficient Sample
- Not Amenable to Analysis
- Wrong Sample Pulled
- Preservation Wrong
- Label ID's Illegible
- Received Past Hold

Note: Verified by [Log-In] or [Prep Group] (circle) signature/date

c. Problem (Include all relevant specific results, attach data if necessary)

Fifteen of fourty Matrix spike recoveries outside the acceptance range.

2. Known or Probable Causes(s)

Bad Matrix and interference from Indigenous analytes
JD

3. Discussion and Proposed Action
- Re-log
  - Entire Batch
  - Following Samples
- Re-leach
- Re-extract
- Re-digest
- Revise EDD
- Change Test Code to
- Place On/Take Off Hold (circle)

Other Description:

Narrate
JD

4. Project Manager Instructions signature/date
- Concur with Proposed Action
- Disagree with Proposed Action, See Instruction
- Include in Case Narrative
- Client Contacted
- Date/Person
- Add
- Cancel

6/2/09

5. Final Action signature/date
- Verified re-[log][leach][extract][digest][analysis] (circle)
- ✓ Included in Case Narrative
- Hard Copy COC Revised
- Electronic COC Revised
- EDD Corrections Completed

Other Explanation

When Final Action has been recorded, forward original to QA for disposition.

Route
- ✓ Lab Manager [illegible]
- ✓ Project Mgr [illegible]
- Sample Prep [illegible]
- Login [illegible]

Route
- Metals [illegible]
- Inorganic [illegible]
- GC/LC [illegible]
- MS VOA [illegible]
- MS BNA [illegible]
- Other

000065

0709 044

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-110-136 | Page 1 of 1

Collector Josh McGough	**Company Contact** JOAN KESSNER	**Telephone No.** 375-4688	**Project Coordinator** KESSNER, JR
Project Designation Columbia River Component of the RCBRA - Tissues	**Sampling Location** LWSA-WEL CARCASS		**SAF No.** RC-118
Ice Chest No. GRP 06084	**Field Logbook No.** 1633	**COA** BESCRC6520	**Method of Shipment** FED EX
Shipped To EBERLINE SERVICES [✓ LIONVILLE]	**Offsite Property No.** N/A		**Bill of Lading/Air Bill No.** 7975 2317 6088

Price Code 9K

Data Turnaround 45 Days

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage
COOL 4C "MATRIX COMPOSED OF FISH"

990066

Preservation	None	None	None	None	Cool 4C	Cool 4C	None			
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	G/P			
No. of Container(s)	1	1	1	1	1	1	1			
Volume	1500g	100g	100g	10g	210g	120g	10g			
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Isotopic - Ni63	See item (2) in Special Instructions	See item (3) in Special Instructions	Pesticides - 8081	Technetium-99			

Sample No.	Matrix *	Sample Date	Sample Time										
J1BKD8	OTHER SOLID	04/16/09	0870					X	X				

CHAIN OF POSSESSION — **Sign/Print Names**

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Josh McGough	04/16/09 8:30	EAS Locked Storage	04/16/09 8:35 a
EAS locked Storage	04/16/09 1300	Jeremy Dunn SHANNAH JOHNSON	4-20-09 1300
SHANNAH JOHNSON	4/20/09 1300	FED EX	
FED EX	4-21-09 0910		4-21-09 0910

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) (Americium-241, Antimony-125, Beryllium-7, Cerium-144, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238)
(2) Strontium-89,90 - Total Sr; Isotopic Thorium (Thorium-232); Isotopic Uranium (Uranium-233/234, Uranium-235, Uranium-238); Isotopic Plutonium
(3) ICP Metals - 6010 (Full List) (Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc); Mercury - 7471 - (CV)

Sampler unavailable to relinquish samples from EAS Refrigerator. EAS Custodian removed samples for shipping on 4/20/09

Matrix *
[illegible]

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH EE 011

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-118-137

Page 1 of 1

Collector	Josh McGough
Company Contact	JOAN KESSNER
Telephone No.	375-4688
Project Coordinator	KESSNER, JH
Price Code	9K
Data Turnaround	45 Days
Project Designation	Columbia River Component of the RCBRA - Tissues
Sampling Location	LWSA-WF2, CARCASS
SAF No.	RC-118
Ice Chest No.	GRP 06004
Field Logbook No.	1633
COA	BE5CRC6520
Method of Shipment	FED EX
Shipped To	EBERLINE SERVICES / LIONVILLE
Offsite Property No.	N/A
Bill of Lading/Air Bill No.	7975 2317 6688

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage
COOL 4C "MATRIX COMPOSED OF FISH"

Preservation				None	None	None	None	Cool 4C	Cool 4C	None
Type of Container				G/P	G/P	G/P	G/P	G/P	aG	G/P
No. of Container(s)				1	1	1	1	1	1	1
Volume				1500g	100g	100g	40g	250g	120g	35g
SAMPLE ANALYSIS				See item (1) in Special Instructions	Carbon-14	Tritium - H3	See item (2) in Special Instructions	See item (3) in Special Instructions	Pesticides - 8081	Technetium-99
Sample No.	Matrix *	Sample Date	Sample Time							
J18KD9	OTHER SOLID	04/16/09	1030					X	X	

CHAIN OF POSSESSION	Date/Time	Sign/Print Names Received By/Stored In	Date/Time
Relinquished By/Removed From Josh McGough	04/16/09 10:30	EAS Locked Storage	04/16/09 1035
Relinquished By/Removed From EAS Locked Storage	04/20/09 1300	Shannon Johnson SHANNON JOHNSON	4/20/09 1300
Relinquished By/Removed From Shannon Johnson SHANNON JOHNSON	4/20/09 1300	FED EX	
Relinquished By/Removed From		Received By/Stored In	
Relinquished By/Removed From		Received By/Stored In	
Relinquished By/Removed From		Received By/Stored In	

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) (Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238)
(2) Strontium-89,90 - Total Sr; Isotopic Thorium (Thorium-232); Isotopic Uranium (Uranium-233/234, Uranium-235, Uranium-238); Isotopic Plutonium
(3) ICP Metals - 6010 (Full List) (Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc); Mercury - 7471 - (CV)

Sampler unavailable to relinquish samples from EAS Refrigerator. EAS Custodian removed samples for shipping on 4/20/09

Matrix *
S = Soil
SE = Sediment
SO = Solid
SL = Sludge
W = Water
O = Oil
A = Air
DS = Drum Solids
DL = Drum Liquids
T = Tissue
WI = Wipe
L = Liquid
V = Vegetation
X = Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-01

Washington Closure Hanford	**CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST**	RC-118-138	Page 1 of 1
Collector Josh McGough	**Company Contact** JOAN KESSNER **Telephone No.** 375-4688	**Project Coordinator** KESSNER, JH	**Price Code** 9K **Data Turnaround** 45 Days
Project Designation Columbia River Component of the RCBRA - Tissues	**Sampling Location** LWSA-WF3, CARCASS	**SAF No.** RC-118	
Ice Chest No. SRP 06004	**Field Logbook No.** 1633 **COA** DESCRC6620	**Method of Shipment** FED EX	
Shipped To EBERLINE SERVICES (LIONVILLE)	**Offsite Property No.** N/A	**Bill of Lading/Air Bill No.** 7975 2317 6688	

3966608C3

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage
COOL 4C "MATRIX COMPOSED OF FISH"

890000

	Preservation	None	None	None	None	Cool 4C	Cool 4C	None			
	Type of Container	G/P	G/P	G/P	G/P	G/P	aG	G/P			
	No. of Container(s)	1	1	1	1	1	1	1			
	Volume	1500g	100g	100g	10g	250g	120g	10g			
SAMPLE ANALYSIS		See item (1) in Special Instructions	Carbon-14	Tritium - H3	See item (2) in Special Instructions	See item (3) in Special Instructions	Pesticides - 8081	Technetium-99			

Sample No.	Matrix *	Sample Date	Sample Time										
J18KF0	OTHER SOLID	04/16/09	1230					X	X				

CHAIN OF POSSESSION	Date/Time	**Sign/Print Names**	Date/Time
Relinquished By/Removed From Josh McGough	04/16/09 1230	Received By/Stored In EAS Locked Storage	04/16/09 1235
Relinquished By/Removed From EAS locked storage	04/16/09 1300	Received By/Stored In SHANNAN JOHNSON	04/16/09 1300
Relinquished By/Removed From SHANNAN JOHNSON	04/16/09 1700	Received By/Stored In FED EX	
Relinquished By/Removed From FED EX	4-21-09 0910	Received By/Stored In	4-21-09 0910
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) {Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238}
(2) Strontium-89,90 -- Total Sr; Isotopic Thorium {Thorium-232}; Isotopic Uranium {Uranium-233/234, Uranium-235, Uranium-238}; Isotopic Plutonium
(3) ICP Metals - 6010 (Full List) {Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc}; Mercury - 7471 - (CV)

Samples unavailable to relinquish samples from EAS Refrigerator. EAS Custodian removed samples for shipping on 4/20/09

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-118-139 | Page 1 of 1

Collector: Josh McGough

Company Contact: JOAN KESSNER

Telephone No.: 375-4688

Project Coordinator: KESSNER, JR

Price Code: 9K

Data Turnaround: 45 Days

Project Designation: Columbia River Component of the RCBRA - Tissues

Sampling Location: LWSA-WF4, CARCASS

SAF No.: RC-118

Ice Chest No.: GRP 06004

Field Logbook No.: 1633

COA: HUSCRC6570

Method of Shipment: FED EX

Shipped To: EBERLINE SERVICES [✓ CONVILLE]

Offsite Property No.: N/A

Bill of Lading/Air Bill No.: 7975 2317 6698

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage
COOL 4C; MATRIX COMPOSED OF FISH

Preservation	None	None	None	None	Cool 4C	Cool 4C	None			
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	G/P			
No. of Container(s)	1	1	1	1	1	1	1			
Volume	1500g	100g	100g	10g	250g	120g	10g			
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Tritium - H3	See item (2) in Special Instructions	See item (3) in Special Instructions	Pesticides - 8081	Technetium-99			

Sample No.	Matrix *	Sample Date	Sample Time										
J18KF1	OTHER SOLID	04/16/09	1900					X	X				

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Josh McGough	04/16/09 1900	EAS Locked Storage	04/16/09 1905
EAS Locked Storage	04/20/09 1300	Jeremy [illegible] / SHANNAN JOHNSON	04/20/09 1300
SHANNAN JOHNSON	04/20/09 1[illegible]	FED EX	
FedEx	4-21-09 0910		4-21-09 0910

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List [Americium-241, Antimony-125, Beryllium-7, Cerium-144, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238])
(2) Strontium-89,90 -- Total Sr; Isotopic Thorium (Thorium-232); Isotopic Uranium [Uranium-233/234, Uranium-235, Uranium-238]; Isotopic Plutonium.
(3) ICP Metals - 6010 (Full List) [Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc]; Mercury - 7471 - (CV)

Sampler unavailable to relinquish samples from EAS Refrigerator. EAS Custodian removed samples for shipping on 4/20/09

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION — Received By | Title | Date/Time

FINAL SAMPLE DISPOSITION — Disposal Method | Disposed By | Date/Time

WCH-EE-011

Washington Closure Hanford	**CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST**	RC-118-116	Page 1 of 1
Collector Josh McGough	Company Contact JOAN KESSNER	Telephone No. 375 4688	Project Coordinator KESSNER, JH
Project Designation Columbia River Component of the RCBRA - Tissue	Sampling Location LWSA-WFL FILLET		SAF No. RC-118
Ice Chest No. SRP 06004	Field Logbook No. 1633	COA BFSCRC6520	Method of Shipment FED EX
Shipped To EBERLINE SERVICES (LIONVILLE)	Offsite Property No. N/A		Bill of Lading/Air Bill No. 7975 2317 6488

Price Code 9K

Data Turnaround 45 Days

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage
COOL 4C MATRIX COMPOSITE OF FISH

020000

		Preservation	None	None	None	None	Cool 4C	Cool 4C	None
		Type of Container	G/P	G/P	G/P	G/P	G/P	aG	G/P
		No. of Container(s)	1	1	1	1	1	1	1
		Volume	1500g	100g	100g	10g	250g	120g	10g
SAMPLE ANALYSIS			See item (1) in Special Instructions	Carbon-14	Tritium - H3	See item (2) in Special Instructions	See item (3) in Special Instructions	Pesticides - 8081	Technetium-99
Sample No.	**Matrix ***	**Sample Date**	**Sample Time**						
J16K78	OTHER SOLID	* 4/13/09	* 1155				X	X	

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From Jeremy Doran	Date/Time 4/13/09 1155	Received By/Stored In EM Refrigerator	Date/Time 4/13/09 1200
Relinquished By/Removed From EM Refrigerator	Date/Time 4/20/09 1300	Received By/Stored In SHANNAN JOHNSON	Date/Time 4/20/09 1300
Relinquished By/Removed From SHANNAN JOHNSON	Date/Time 4-20-09 1300	Received By/Stored In FED EX	Date/Time
Relinquished By/Removed From FED EX	Date/Time 4-21-09 0910	Received By/Stored In	Date/Time 4-21-09 0910
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) {Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238}
(2) Strontium-89,90 - Total Sr, Isotopic Thorium {Thorium-232}, Isotopic Uranium {Uranium-233/234, Uranium-235, Uranium-238}, Isotopic Plutonium
(3) ICP Metals - 6010 (Full List) {Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Titanium, Vanadium, Zinc}, Mercury - 7471 - (CV)

Sampler unavailable to relinquish samples from EAS Refrigerator. EAS custodian removed samples for shipping on 4/20/09

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-FE 011

Washington Closure Hanford	**CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST**	RC-118-117	Page 1 of 1
Collector Jack McGrogh	Company Contact JOAN KESSNER Telephone No. 373-4488	Project Coordinator KESSNER, JH	Price Code 9K Data Turnaround 45 Days
Project Designation Columbia River Component of the RCBRA - Tissues	Sampling Location LWSA WF2, FILLET	SAF No. RC-118	
Ice Chest No. GRP06004	Field Logbook No. 1633 COA RESCRC6520	Method of Shipment FED EX	
Shipped To GENERAL ENGINEERING LABORATORIES / CONVILLE (?)	Offsite Property No. N/A	Bill of Lading/Air Bill No. 7975 2317 6688	

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage
COOL 4C "MATRIX COMPOSED OF FISH"

Preservation	None	None	None	None	Cool 4C	Cool 4C	None			
Type of Container	G/P	G/P	G/P	G/P	G/P	P	G/P			
No. of Container(s)	1	1	1	1	~~1~~ 2	1	1			
Volume	1500g	100g	100g	10g	250g	120g	10g			
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Tritium (H)	See item (2) in Special Instructions	See item (3) in Special Instructions	Pesticides - 8081	Technetium-99			

Sample No.	Matrix *	Sample Date	Sample Time										
J18K70	OTHER SOLID	04/14/09	1025					X	X				

CHAIN OF POSSESSION	Date/Time	Sign/Print Names	Date/Time
Relinquished By/Removed From Jack McGrogh	04/14/09 10:25	Received By/Stored In EAS Locked Storage	04/14/09 10:30
Relinquished By/Removed From EAS Locked Storage	04/20/09 1300	Received By/Stored In Jason Bent SHARRAN JOHNSON	04/20/09 1300
Relinquished By/Removed From SHARRAN JOHNSON	4/20/09 1300	Received By/Stored In Fed EX	
Relinquished By/Removed From Fed Ex	4-21-09 0910	Received By/Stored In	4-21-09 0910
Relinquished By/Removed From		Received By/Stored In	
Relinquished By/Removed From		Received By/Stored In	

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) {Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238}
(2) Strontium-89,90 -- Total Sr, Isotopic Thorium {Thorium-232}, Isotopic Uranium {Uranium-233/234, Uranium-235, Uranium-238}, Isotopic Plutonium
(3) ICP Metals - 6010 (Full List) {Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Titanium, Vanadium, Zinc}, Mercury - 7471 - (CV)

Samples unavailable to relinquish samples from EAS Refrigerator. EAS Custodian removed samples for shipping on 4/20/09

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Washington Closure Hanford	**CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST**	RC-118-118	Page 1 of 1
Collector Joel McGough	Company Contact JOAN KESSNER Telephone No. 375-4688	Project Coordinator KESSNER, JH	Price Code 9K Data Turnaround 45 Days
Project Designation Columbia River Component of the RCBRA - Tissues	Sampling Location LWSA-WF3, FILLET	SAF No. RC-118	
Ice Chest No. GRP 06004	Field Logbook No. 1611 COA BESCRC6520	Method of Shipment FED EX	
Shipped To EBERLINE SERVICES (LIONVILLE)	Offsite Property No. N/A	Bill of Lading/Air Bill No. 7975 7317 6688	

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage
CARE WITHOUT COMPOSITE OR FINE

Preservation	None	None	None	None	Cool 4C	Cool 4C	None			
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	G/P			
No. of Container(s)	1	1	1	1	~~1~~ 2	1	1			
Volume	1500g	100g	100g	10g	250g	120g	10g			
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Tritium - H3	See item (2) in Special Instructions	See item (3) in Special Instructions	Percent water - 8001	Technetium-99			

Sample No.	Matrix *	Sample Date	Sample Time										
J18KEG	OTHER SOLID	04/14/09	1300					X	X				

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Joel McGough	04/14/09 1300	EAS Locked Storage	04/14/09 1505
EAS Locked Storage	4/14/09 1300	SHANNAN JOHNSON	4-20-09 1300
SHANNAN JOHNSON	4/20/09 1300	FED EX	
FED EX	4-21-09 0910		4-21-09 0910

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) (Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238)
(2) Strontium-89,90 -- Total Sr, Isotopic Thorium (Thorium-232), Isotopic Uranium (Uranium-233/234, Uranium-235, Uranium-238), Isotopic Plutonium
(3) ICP Metals - 6010 (Full List) (Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc); Mercury - 7471 - (CV)

Sampler unavailable to relinquish samples from EAS Refrigerator. EAS Custodian removed samples for shipping on 4/20/09

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

000072

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-118-119

Page 1 of 1

Collector: Josh McGough

Company Contact: JOAN KESSNER

Telephone No.: 375-4688

Project Coordinator: KESSNER, JH

Price Code: 9K

Data Turnaround: 45 Days

Project Designation: Columbia River Component of the RCBRA - Tissues

Sampling Location: LWSA-WF4, FILLET

SAF No.: RC-118

Ice Chest No.: GRP 06004

Field Logbook No.: 1633

COA: BESCRC6570

Method of Shipment: FED EX

Shipped To: FIBERLINE SERVICES / LIONVILLE

Offsite Property No.: N/A

Bill of Lading/Air Bill No.: 7975 2317 6688

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

COOL 4C *MATRIX COMPOSED OF FISH

000023

Preservation	None	None	None	None	Cool 4C	Cool 4C	None			
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	G/P			
No. of Container(s)	1	1	1	1	1	1	1			
Volume	1500g	100g	100g	10g	250g	120g	10g			
SAMPLE ANALYSIS	See item (2) in Special Instructions	Carbon-14	Tritium - H3	See item (1) in Special Instructions	See item (3) in Special Instructions	Pesticides 8081	Technetium-99			

Sample No.	Matrix *	Sample Date	Sample Time										
J18K81	OTHER SOLID	04/15/09	1045					X	X				

CHAIN OF POSSESSION

Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Josh McGough	04/15/09 10:45	EAS Locked Storage	04/15/09 10:50
EAS Locked Storage	04/20/09 1300	James Davis SHANNON JOHNSON	04/20/09 1300
SHANNON JOHNSON Freezer Davis	04/20/09 1330	FED EX	
FedEx	4-21-09 0910		4-21-09 0910

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) (Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238)
(2) Strontium-89,90 -- Total Sr; Isotopic Thorium (Thorium-232); Isotopic Uranium (Uranium-233/234, Uranium-235, Uranium-238); Isotopic Plutonium
(3) ICP Metals - 6010 (Full List) (Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc); Mercury - 7471 - (CV)

Sampler unavailable to relinquish samples from EAS Refrigerator. EAS Custodian removed samples for shipping on 4.20.09

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Washington Closure Hanford	**CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST**	RC-118-120	Page 1 of 1
Collector Josh McGrogh	Company Contact JOAN KESSNER · Telephone No. 375-4688	Project Coordinator KESSNER, JH	Price Code 9K · Data Turnaround 45 Days
Project Designation Columbia River Component of the RCBRA - Tissues	Sampling Location LWSA-WPS, FILLET	SAF No. RC-118	
Ice Chest No. CRP 06004	Field Logbook No. 1633 · COA DESCRC6520	Method of Shipment FED EX	
Shipped To EBERLINE SERVICES [✓ LIONVILLE]	Offsite Property No. N/A	Bill of Lading/Air Bill No. 7975 2317 6688	

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage
COOL 4C MATRIX COMPOSED OF FINES

000274

Preservation	None	None	None	None	Cool 4C	Cool 4C	None
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	G/P
No. of Container(s)	1	1	1	1	1	1	1
Volume	1500g	100g	100g	10g	250g	120g	10g
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Tritium - H3	See item (2) in Special Instructions	See item (3) in Special Instructions	Pesticides - 8081	Technetium-99

Sample No.	Matrix *	Sample Date	Sample Time							
J18K82	OTHER SOLID	04/15/09	1300					X	X	

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Josh McGrogh	04/15/09 1300	EAS Locked Storage	04/15/09 1305
EAS Locked Storage	4/16/09 1300	SHANNAN JOHNSON	4/16/09 1300
SHANNAN JOHNSON	4/16/09	FED EX	
Fed Ex	4-21-09 0910		4-21-09 0910

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) {Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238}
(2) Strontium-89,90 -- Total Sr; Isotopic Thorium {Thorium 232}; Isotopic Uranium {Uranium-233/234, Uranium-235, Uranium-238}; Isotopic Plutonium
(3) ICP Metals - 6010 (Full List) {Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc}, Mercury - 7471 - (CV)

Sampler unavailable to relinquish
samples from EAS Refrigerator. EAS
Custodian removed samples for
shipping on 4/16/09

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Appendix 5

Data Validation Supporting Documentation

PCB DATA VALIDATION CHECKLIST

VALIDATION LEVEL:	A	B	[✓ C]	D	E
PROJECT:	RC/YRA		DATA PACKAGE:	K1609	
VALIDATOR:	ELR	LAB: LLI		DATE:	10/5/09
			SDG:	K1608	
ANALYSES PERFORMED					
[✓ SW-846 8081]	SW-846 8081 (TCLP)	SW-846 8082	SW-846 8081 (TCLP)		
SAMPLES/MATRIX					
J18KD8	J18KD7	J18KF0	J18KF1	J18K78	J18K77
J18K80	J18K81	J18K82	J18KF2	J18K21	J18K22
J18K23	J18K24	J18K25	J18K37	J18K38	J18K39
J18K40	J18K63	J18K64	J18K65	J18K66	J18K67
J18K94	J18K95	J18K96	J18K97		

1. DATA PACKAGE COMPLETENESS AND CASE NARRATIVE

Technical verification documentation present? .... Yes [✓ No] N/A

Comments:

2. INSTRUMENT PERFORMANCE AND CALIBRATIONS (Levels D and E)

Initial calibrations acceptable? .... Yes No [✓ N/A]

Continuing calibrations acceptable? .... Yes No [✓ N/A]

Standards traceable? .... Yes No [✓ N/A]

Standards expired? .... Yes No [✓ N/A]

Calculation check acceptable? .... Yes No [✓ N/A]

DDT and endrin breakdowns acceptable? .... Yes No [✓ N/A]

Comments:

PCB DATA VALIDATION CHECKLIST

3. BLANKS (Levels B, C, D, and E)

Calibration blanks analyzed? (Levels D, E) .... Yes No [✓ N/A]
Calibration blank results acceptable? (Levels D, E) .... Yes No [✓ N/A]
Laboratory blanks analyzed? .... [✓ Yes] No N/A
Laboratory blank results acceptable? .... [✓ Yes] No N/A
Field/trip blanks analyzed? (Levels C, D, E) .... Yes [✓ No] N/A
Field/trip blank results acceptable? (Levels C, D, E) .... Yes No [✓ N/A]
Transcription/calculation errors? (Levels D, E) .... Yes No [✓ N/A]

Comments: NO FB

4. ACCURACY (Levels C, D, and E)

Surrogates analyzed? .... [✓ Yes] No N/A
Surrogate recoveries acceptable? .... Yes [✓ No] N/A
Surrogates traceable? (Levels D, E) .... Yes No [✓ N/A]
Surrogates expired? (Levels D, E) .... Yes No [✓ N/A]
MS/MSD samples analyzed? .... [✓ Yes] No N/A
MS/MSD results acceptable? .... Yes [✓ No] N/A
MS/MSD standards NIST traceable? (Levels D, E) .... Yes No [✓ N/A]
MS/MSD standards expired? (Levels D, E) .... Yes No [✓ N/A]
LCS/BSS samples analyzed? .... [✓ Yes] No N/A
LCS/BSS results acceptable? .... [✓ Yes] No N/A
Standards traceable? (Levels D, E) .... Yes No [✓ N/A]
Standards expired? (Levels D, E) .... Yes No [✓ N/A]
Transcription/calculation errors? (Levels D, E) .... Yes No [✓ N/A]
Performance audit sample(s) analyzed? .... Yes [✓ No] N/A
Performance audit sample results acceptable? .... Yes No [✓ N/A]

Comments: MS – delta BHC (442)(332) – J all NO PAS
MSD – delta BHC (442)(432) – J all
MSD – 44DDT (332) Endrin Aldehyde (442) – D8-92 – J all
toxaphene – No MS, MSD or LCS – J all
Surr – 67, 66, 65, 64, 63, 74, 76, F1, F4, – J all

PCB DATA VALIDATION CHECKLIST

5. PRECISION (Levels C, D, and E)

Duplicate RPD values acceptable? .... Yes [✓ No] N/A

Duplicate results acceptable? .... Yes [✓ No] N/A

MS/MSD standards NIST traceable? (Levels D, E) .... Yes No [✓ N/A]

MS/MSD standards expired? (Levels D, E) .... Yes No [✓ N/A]

Field duplicate RPD values acceptable? .... Yes No [✓ N/A]

Field split RPD values acceptable? .... Yes No [✓ N/A]

Transcription/calculation errors? (Levels D, E) .... Yes No [✓ N/A]

Comments: 4,4-DDT-(67%) - J D8-82
methoxychlor (51%) - J D8-82

6. SYSTEM PERFORMANCE (Levels D and E)

Chromatographic performance acceptable? .... Yes No [✓ N/A]

Positive results resolved acceptably? .... Yes No [✓ N/A]

Comments:

7. HOLDING TIMES (all levels)

Samples properly preserved? .... [✓ Yes] No N/A

Sample holding times acceptable? .... [✓ Yes] No N/A

Comments:

PCB DATA VALIDATION CHECKLIST

8. COMPOUND IDENTIFICATION, QUANTITATION, AND DETECTION LIMITS (all levels)

Compound identification acceptable? (Levels D, E) .... Yes No [✓ N/A]

Compound quantitation acceptable? (Levels D, E) .... Yes No [✓ N/A]

Results reported for all requested analyses? .... [✓ Yes] No N/A

Results supported in the raw data? (Levels D, E) .... Yes No [✓ N/A]

Samples properly prepared? (Levels D, E) .... Yes No [✓ N/A]

Detection limits meet RDL? .... Yes [✓ No] N/A

Transcription/calculation errors? (Levels D, E) .... Yes No [✓ N/A]

Comments: Cell water RQL met - except toxaphene (methoxychlor, heptachlor, heptachlor epoxide, + gamma chlordane)

9. SAMPLE CLEANUP (Levels D and E)

Fluorisil ® (or other absorbent) cleanup performed? .... Yes No [✓ N/A]

Lot check performed? .... Yes No [✓ N/A]

Check recoveries acceptable? .... Yes No [✓ N/A]

GPC cleanup performed? .... Yes No [✓ N/A]

GPC check performed? .... Yes No [✓ N/A]

GPC check recoveries acceptable? .... Yes No [✓ N/A]

GPC calibration performed? .... Yes No [✓ N/A]

GPC calibration check performed? .... Yes No [✓ N/A]

GPC calibration check retention times acceptable? .... Yes No [✓ N/A]

Check/calibration materials traceable? .... Yes No [✓ N/A]

Check/calibration materials Expired? .... Yes No [✓ N/A]

Analytical batch QC given similar cleanup? .... Yes No [✓ N/A]

Transcription/Calculation Errors? .... Yes No [✓ N/A]

Comments:

Appendix 6

Additional Documentation Requested by Client

WC Hanford, Inc 2620 Fermi Avenue Richland WA, 99354	Project: RC-118 Project Number: X1608 Project Manager: Joan Kessner	Reported: 06/11/2009 13:24

Organochlorine Pesticides by SW846 8081A - Quality Control

Lionville Laboratory

Analyte	Result and Qualifier	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch L904188 - SW 3540C									
			Prepared: 04/29/2009 Analyzed: 04/30/2009						
Blank (L904188-BLK1)									
alpha-BHC	0.333 U	0.333	ug/kg wet						
gamma-BHC	0.333 U	0.333	ug/kg wet						
beta-BHC	0.333 U	0.333	ug/kg wet						
delta-BHC	0.333 U	0.333	ug/kg wet						
Heptachlor	0.333 U	0.333	ug/kg wet						
Aldrin	0.333 U	0.333	ug/kg wet						
Heptachlor epoxide	0.333 U	0.333	ug/kg wet						
gamma-Chlordane	0.333 U	0.333	ug/kg wet						
alpha-Chlordane	0.333 U	0.333	ug/kg wet						
Endosulfan I	0.333 U	0.333	ug/kg wet						
4,4'-DDE	0.333 U	0.333	ug/kg wet						
Dieldrin	0.333 U	0.333	ug/kg wet						
Endrin	0.333 U	0.333	ug/kg wet						
4,4'-DDD	0.333 U	0.333	ug/kg wet						
Endosulfan II	0.333 U	0.333	ug/kg wet						
4,4'-DDT	0.333 U	0.333	ug/kg wet						
Endrin aldehyde	0.333 U	0.333	ug/kg wet						
Endosulfan sulfate	0.333 U	0.333	ug/kg wet						
Methoxychlor	0.333 U	0.333	ug/kg wet						
Endrin ketone	0.333 U	0.333	ug/kg wet						
Toxaphene	5.00 U	5.00	ug/kg wet						
Surrogate: Tetrachloro-meta-xylene	*31.4*		*ug/kg wet*	*33.333*		*94.2*	*29-166*		
Surrogate: Decachlorobiphenyl	*33.6*		*ug/kg wet*	*33.333*		*101*	*47-135*		
			Prepared: 04/29/2009 Analyzed: 04/30/2009						
LCS (L904188-BS1)									
alpha-BHC	32.6	0.333	ug/kg wet	33.333		97.7	61-142		
gamma-BHC	33.8	0.333	ug/kg wet	33.333		102	65-147		
beta-BHC	34.3	0.333	ug/kg wet	33.333		103	71-134		
delta-BHC	20.0	0.333	ug/kg wet	33.333		60.1	53-144		
Heptachlor	34.5	0.333	ug/kg wet	33.333		103	70-138		
Aldrin	34.7	0.333	ug/kg wet	33.333		104	70-143		
Heptachlor epoxide	34.8	0.333	ug/kg wet	33.333		104	72-140		
gamma-Chlordane	35.5	0.333	ug/kg wet	33.333		106	74-140		
alpha-Chlordane	34.8	0.333	ug/kg wet	33.333		104	74-138		
Endosulfan I	35.4	0.333	ug/kg wet	33.333		106	81-141		
4,4'-DDE	36.7	0.333	ug/kg wet	33.333		110	82-145		
Dieldrin	35.4	0.333	ug/kg wet	33.333		106	79-144		
Endrin	35.5	0.333	ug/kg wet	33.333		106	73-147		
4,4'-DDD	33.8	0.333	ug/kg wet	33.333		101	77-148		
Endosulfan II	35.2	0.333	ug/kg wet	33.333		106	80-140		
4,4'-DDT	34.4	0.333	ug/kg wet	33.333		103	82-142		
Endrin aldehyde	32.7	0.333	ug/kg wet	33.333		98.2	59-131		
Endosulfan sulfate	29.8	0.333	ug/kg wet	33.333		89.4	77-135		

WC-Hanford, Inc 2620 Fermi Avenue Richland WA, 99354	Project: RC-118 Project Number: K1608 Project Manager: Joan Kessner	Reported: 06/11/2009 13:24

Organochlorine Pesticides by SW846 8081A - Quality Control

Lionville Laboratory

Analyte	Result and Qualifier	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch L904188 - SW 3540C									
LCS (L904188-BS1)				Prepared: 04/29/2009 Analyzed: 04/30/2009					
Methoxychlor	31.7	0.333	ug/kg wet	33.333		95.2	77-136		
Endrin ketone	33.0	0.333	ug/kg wet	33.333		99.0	85-134		
Surrogate: Tetrachloro-meta-xylene	*31.7*		*ug/kg wet*	*33.333*		*95.1*	*28-166*		
Surrogate: Decachlorobiphenyl	*30.3*		*ug/kg wet*	*33.333*		*91.0*	*37-151*		
Matrix Spike (L904188-MS1)		Source: I904069-01		Prepared: 04/29/2009 Analyzed: 04/30/2009					
alpha-BHC	826	8.69	ug/kg wet	869.57	8.69	95.0	61-142		
gamma-BHC	830	8.69	ug/kg wet	869.57	8.69	95.4	65-142		
beta-BHC	840	8.69	ug/kg wet	869.57	8.69	96.6	71-134		
delta-BHC	353	8.69	ug/kg wet	869.57	10.7	39.4*	55-144		
Heptachlor	568	8.69	ug/kg wet	869.57	8.69	65.3*	70-138		
Aldrin	743	8.69	ug/kg wet	869.57	8.69	85.4	70-143		
Heptachlor epoxide	619	8.69	ug/kg wet	869.57	8.69	71.2	72-140		
gamma-Chlordane	757	8.69	ug/kg wet	869.57	8.69	87.0	74-140		
alpha-Chlordane	750	8.69	ug/kg wet	869.57	8.69	86.3	74-138		
Endosulfan I	784	8.69	ug/kg wet	869.57	8.69	90.2	81-141		
4,4'-DDE	1190	8.69	ug/kg wet	869.57	415	89.0	82-145		
Dieldrin	863	8.69	ug/kg wet	869.57	30.1	95.7	72-146		
Endrin	854	8.69	ug/kg wet	869.57	8.69	98.2	73-147		
4,4'-DDD	941	8.69	ug/kg wet	869.57	104	96.3	77-148		
Endosulfan II	846	8.69	ug/kg wet	869.57	8.69	97.3	80-140		
4,4'-DDT	691	8.69	ug/kg wet	869.57	22.1	76.9*	82-142		
Endrin aldehyde	559	8.69	ug/kg wet	869.57	16.5	62.4	59-133		
Endosulfan sulfate	751	8.69	ug/kg wet	869.57	8.69	86.4	77-135		
Methoxychlor	679	8.69	ug/kg wet	869.57	8.69	78.1	77-136		
Endrin ketone	776	8.69	ug/kg wet	869.57	8.69	89.2	85-134		
Surrogate: Tetrachloro-meta-xylene	*642*		*ug/kg wet*	*869.65*		*73.8*	*28-166*		
Surrogate: Decachlorobiphenyl	*563*		*ug/kg wet*	*869.57*		*64.7*	*37-153*		

Organochlorine Pesticides by SW846 8081A - Quality Control

Lionville Laboratory

Analyte	Result and Qualifier	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch L904188 - SW 3540C									
Matrix Spike Dup (L904188-MSD1)	**Source: 0904069-01**		Prepared: 04/29/2009 Analyzed: 04/30/2009						
alpha-BHC	800	8.06	ug/kg wet	806.45	8.06	99.2	61-142	3.21	40
gamma-BHC	806	8.06	ug/kg wet	806.45	8.06	99.9	65-142	2.91	40
beta-BHC	783	8.06	ug/kg wet	806.45	8.06	97.1	71-134	7.02	40
delta-BHC	360	8.06	ug/kg wet	806.45	10.7	43.3*	53-144	1.86	40
Heptachlor	583	8.06	ug/kg wet	806.45	8.06	72.3	70-138	2.65	40
Aldrin	723	8.06	ug/kg wet	806.45	8.06	89.7	70-143	2.62	40
Heptachlor epoxide	615	8.06	ug/kg wet	806.45	8.06	76.3	72-140	1.19	40
gamma-Chlordane	703	8.06	ug/kg wet	806.45	8.06	87.2	74-140	2.10	40
alpha-Chlordane	714	8.06	ug/kg wet	806.45	8.06	88.5	74-138	4.02	40
Endosulfan I	751	8.06	ug/kg wet	806.45	8.06	93.1	81-141	4.57	40
4,4'-DDE	1180	8.06	ug/kg wet	806.45	413	95.1	82-145	0.601	40
Dieldrin	844	8.06	ug/kg wet	806.45	30.1	101	79-144	2.14	40
Endrin	825	8.06	ug/kg wet	806.45	8.06	102	73-147	1.44	40
4,4'-DDD	916	8.06	ug/kg wet	806.45	104	101	77-148	2.66	40
Endosulfan II	808	8.06	ug/kg wet	806.45	8.06	100	80-140	4.60	40
4,4'-DDT	675	8.06	ug/kg wet	806.45	22.3	80.9*	82-142	2.19	40
Endrin aldehyde	552	8.06	ug/kg wet	806.45	16.5	66.5	59-133	1.21	40
Endosulfan sulfate	698	8.06	ug/kg wet	806.45	8.06	86.6	72-135	7.10	40
Methoxychlor	641	8.06	ug/kg wet	806.45	8.06	79.5	77-136	3.76	40
Endrin ketone	730	8.06	ug/kg wet	806.45	8.06	90.5	85-134	6.09	40
Surrogate: Tetrachloro-meta-xylene	*640*		*ug/kg wet*	*806.45*		*79.4*	*29-160*		
Surrogate: Decachlorobiphenyl	*544*		*ug/kg wet*	*806.45*		*67.5*	*57-133*		

Organochlorine Pesticides by SW846 8081A - Quality Control

Lionville Laboratory

Analyte	Result and Qualifier	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch L904116 - SW 3540C									
Blank (L904116-BLK1)				Prepared: 04/21/2009 Analyzed: 04/22/2009					
alpha-BHC	0.333 U	0.333	ug/kg wet						
gamma-BHC	0.333 U	0.333	ug/kg wet						
beta-BHC	0.333 U	0.333	ug/kg wet						
delta-BHC	0.333 U	0.333	ug/kg wet						
Heptachlor	0.333 U	0.333	ug/kg wet						
Aldrin	0.333 U	0.333	ug/kg wet						
Heptachlor epoxide	0.333 U	0.333	ug/kg wet						
gamma-Chlordane	0.333 U	0.333	ug/kg wet						
alpha-Chlordane	0.333 U	0.333	ug/kg wet						
Endosulfan I	0.333 U	0.333	ug/kg wet						
4,4'-DDE	0.333 U	0.333	ug/kg wet						
Dieldrin	0.333 U	0.333	ug/kg wet						
Endrin	0.333 U	0.333	ug/kg wet						
4,4'-DDD	0.333 U	0.333	ug/kg wet						
Endosulfan II	0.333 U	0.333	ug/kg wet						
4,4'-DDT	0.333 U	0.333	ug/kg wet						
Endrin aldehyde	0.333 U	0.333	ug/kg wet						
Endosulfan sulfate	0.333 U	0.333	ug/kg wet						
Methoxychlor	0.333 U	0.333	ug/kg wet						
Endrin ketone	0.333 U	0.333	ug/kg wet						
Toxaphene	5.00 U	5.00	ug/kg wet						
Surrogate: Tetrachloro-meta-xylene	*37.9*		*ug/kg wet*	*33.333*		*114*	*25-166*		
Surrogate: Decachlorobiphenyl	*36.[illegible]*		*ug/kg wet*	*33.333*		*110*	*37-153*		
LCS (L904116-BS1)				Prepared: 04/21/2009 Analyzed: 04/22/2009					
alpha-BHC	34.5	0.333	ug/kg wet	33.333		103	61-147		
gamma-BHC	35.3	0.333	ug/kg wet	33.333		106	65-142		
beta-BHC	34.3	0.333	ug/kg wet	33.333		103	71-134		
delta-BHC	22.4	0.333	ug/kg wet	33.333		67.3	53-144		
Heptachlor	35.2	0.333	ug/kg wet	33.333		106	70-138		
Aldrin	35.8	0.333	ug/kg wet	33.333		108	70-143		
Heptachlor epoxide	35.4	0.333	ug/kg wet	33.333		106	72-140		
gamma-Chlordane	35.3	0.333	ug/kg wet	33.333		106	74-140		
alpha-Chlordane	35.9	0.333	ug/kg wet	33.333		108	74-138		
Endosulfan I	35.9	0.333	ug/kg wet	33.333		108	81-141		
4,4'-DDE	36.4	0.333	ug/kg wet	33.333		109	82-145		
Dieldrin	36.6	0.333	ug/kg wet	33.333		110	79-144		
Endrin	36.0	0.333	ug/kg wet	33.333		108	73-147		
4,4'-DDD	36.2	0.333	ug/kg wet	33.333		109	77-148		
Endosulfan II	36.3	0.333	ug/kg wet	33.333		109	80-140		
4,4'-DDT	38.5	0.333	ug/kg wet	33.333		116	82-142		
Endrin aldehyde	34.5	0.333	ug/kg wet	33.333		104	59-133		
Endosulfan sulfate	31.9	0.333	ug/kg wet	33.333		95.7	77-133		

Organochlorine Pesticides by SW846 8081A - Quality Control

Lionville Laboratory

Analyte	Result and Qualifier	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch L904116 - SW 3540C									
LCS (L904116-BS1)				Prepared: 04/21/2009 Analyzed: 04/22/2009					
Methoxychlor	37.8	0.333	ug/kg wet	33.333		113	77-136		
Endrin ketone	36.7	0.333	ug/kg wet	33.333		110	85-134		
Surrogate: Tetrachloro-meta-xylene	*41.8*		*ug/kg wet*	*33.333*		*125*	*28-166*		
Surrogate: Decachlorobiphenyl	*42.1*		*ug/kg wet*	*33.333*		*126*	*37-153*		
Matrix Spike (L904116-MS1)		Source: 0904044-01		Prepared: 04/21/2009 Analyzed: 04/22/2009					
alpha-BHC	396	5.00	ug/kg wet	500.00	5.00	79.3	61-142		
gamma-BHC	399	5.00	ug/kg wet	500.00	5.00	79.8	65-142		
beta-BHC	333	5.00	ug/kg wet	500.00	5.00	66.6*	71-134		
delta-BHC	246	5.00	ug/kg wet	500.00	5.00	49.1*	53-144		
Heptachlor	445	5.00	ug/kg wet	500.00	5.00	89.0	70-138		
Aldrin	538	5.00	ug/kg wet	500.00	5.00	108	70-143		
Heptachlor epoxide	406	5.00	ug/kg wet	500.00	5.00	81.3	72-140		
gamma-Chlordane	419	5.00	ug/kg wet	500.00	5.00	83.8	74-140		
alpha-Chlordane	506	5.00	ug/kg wet	500.00	5.00	101	74-138		
Endosulfan I	440	5.00	ug/kg wet	500.00	5.00	88.3	81-141		
4,4'-DDE	628	5.00	ug/kg wet	500.00	246	76.1*	82-145		
Dieldrin	456	5.00	ug/kg wet	500.00	7.39	89.8	79-144		
Endrin	458	5.00	ug/kg wet	500.00	5.00	91.7	73-147		
4,4'-DDD	651	5.00	ug/kg wet	500.00	64.0	117	77-148		
Endosulfan II	470	5.00	ug/kg wet	500.00	5.00	93.9	80-140		
4,4'-DDT	391	5.00	ug/kg wet	500.00	5.00	78.2*	82-142		
Endrin aldehyde	278	5.00	ug/kg wet	500.00	4.93	54.6*	59-133		
Endosulfan sulfate	368	5.00	ug/kg wet	500.00	5.00	73.7*	77-135		
Methoxychlor	534	5.00	ug/kg wet	500.00	5.00	107	77-136		
Endrin ketone	416	5.00	ug/kg wet	500.00	5.00	83.2*	85-134		
Surrogate: Tetrachloro-meta-xylene	*489*		*ug/kg wet*	*500.00*		*97.7*	*28-166*		
Surrogate: Decachlorobiphenyl	*294*		*ug/kg wet*	*500.00*		*58.7*	*37-153*		

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

WC Hanford, Inc	Project: RC 118	
2620 Fermi Avenue	Project Number: K1608	Reported:
Richland WA, 99354	Project Manager: Joan Kessner	06/02/2009 11:32

Organochlorine Pesticides by SW846 8081A - Quality Control

Lionville Laboratory

Analyte	Result and Qualifier	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch L904116 - SW 3540C									
Matrix Spike Dup (L904116-MSD1)		**Source: 0904044-01**		Prepared: 04/21/2009 Analyzed: 04/22/2009					
alpha-BHC	379	4.97	ug/kg wet	497.51	4.97	76.2	61-142	4.49	40
gamma-BHC	386	4.97	ug/kg wet	497.51	4.97	77.6	65-142	3.29	40
beta-BHC	470	4.97	ug/kg wet	497.51	4.97	94.5	71-134	34.7	40
delta-BHC	219	4.97	ug/kg wet	497.51	4.97	44.0*	53-144	11.5	40
Heptachlor	383	4.97	ug/kg wet	497.51	4.97	77.0	70-138	15.0	40
Aldrin	482	4.97	ug/kg wet	497.51	4.97	96.9	70-143	10.9	40
Heptachlor epoxide	359	4.97	ug/kg wet	497.51	4.97	72.2	72-140	17.4	40
gamma-Chlordane	376	4.97	ug/kg wet	497.51	4.97	75.5	74-140	10.9	40
alpha-Chlordane	446	4.97	ug/kg wet	497.51	4.97	89.7	74-138	17.3	40
Endosulfan I	396	4.97	ug/kg wet	497.51	4.97	79.5*	81-141	10.8	40
4,4'-DDE	557	4.97	ug/kg wet	497.51	246	62.5*	82-145	11.9	40
Dieldrin	413	4.97	ug/kg wet	497.51	7.39	81.5	79-144	10.0	40
Endrin	408	4.97	ug/kg wet	497.51	4.97	82.0	71-147	11.7	40
4,4'-DDD	613	4.97	ug/kg wet	497.51	64.0	110	77-148	5.94	40
Endosulfan II	414	4.97	ug/kg wet	497.51	4.97	83.2	80-140	17.6	40
4,4'-DDT	195	4.97	ug/kg wet	497.51	4.97	39.2*	82-142	66.9*	40
Endrin aldehyde	228	4.97	ug/kg wet	497.51	4.97	44.9*	59-115	19.6	40
Endosulfan sulfate	320	4.97	ug/kg wet	497.51	4.97	64.4*	77-135	14.0	40
Methoxychlor	317	4.97	ug/kg wet	497.51	4.97	63.8*	77-136	50.9*	40
Endrin ketone	328	4.97	ug/kg wet	497.51	4.97	66.0*	85-134	23.5	40
Surrogate: Tetrachloro-meta-xylene	*487*		*ug/kg wet*	*497.36*		*97.9*	*58-166*		
Surrogate: Decachlorobiphenyl	*149*		*ug/kg wet*	*497.51*		*30.0*	*37-153*		

Date. 12 October 2009
To: Washington Closure Hanford (technical representative)
From: ELR Consulting
Project: Columbia River Component of the RCBRA - Tissue
Subject: Inorganic - Data Package No. K1608-LLI

INTRODUCTION

This memo presents the results of data validation on Data Package No. K1608 prepared by Lionville Laboratory Inc. (LLI). A list of samples validated along with the analyses reported and the method of analysis is provided in the following table.

Sample ID	Sample Date	Media	Validation	Date
J18J84	4/27/09	Solid	C	See note 1
J18J85	4/27/09	Solid	C	See note 1
J18J86	4/27/09	Solid	C	See note 1
J18J87	4/27/09	Solid	C	See note 1
J18K21	4/23/09	Solid	C	See note 1
J18K22	4/23/09	Solid	C	See note 1
J18K23	4/23/09	Solid	C	See note 1
J18K24	4/23/09	Solid	C	See note 1
J18K37	4/22/09	Solid	C	See note 1
J18K38	4/22/09	Solid	C	See note 1
J18K39	4/22/09	Solid	C	See note 1
J18K40	4/22/09	Solid	C	See note 1
J18K36	4/21/09	Solid	C	See note 1
J18K63	4/20/09	Solid	C	See note 1
J18K64	4/20/09	Solid	C	See note 1
J18K65	4/21/09	Solid	C	See note 1
J18K66	4/21/09	Solid	C	See note 1
J18K67	4/21/09	Solid	C	See note 1
J18K78	4/13/09	Solid	C	See note 1
J18K79	4/14/09	Solid	C	See note 1
J18K80	4/14/09	Solid	C	See note 1
J18K81	4/15/09	Solid	C	See note 1
J18K82	4/15/09	Solid	C	See note 1
J18KD8	4/16/09	Solid	C	See note 1
J18KD9	4/16/09	Solid	C	See note 1
J18KF0	4/16/09	Solid	C	See note 1
J18KF1	4/16/09	Solid	C	See note 1
J18KF2	4/20/09	Solid	C	See note 1

1 - ICP metals (6010B) & mercury by 7471A

Data validation was conducted in accordance with the Washington Closure Hanford (WCH) validation statement of work and the Remedial Investigation Work Plan for Hanford Site Releases to the Columbia River (DOE/RL-2008, Rev 0, September 2006). Appendices 1 through 6 provide the following information as indicated below:

Appendix 1. Glossary of Data Reporting Qualifiers
Appendix 2. Summary of Data Qualification
Appendix 3. Qualified Data Summary and Annotated Laboratory Reports
Appendix 4. Laboratory Narrative and Chain-of-Custody Documentation
Appendix 5. Data Validation Supporting Documentation
Appendix 6. Additional Documentation Requested by Client

DATA QUALITY PARAMETERS

- **Holding Times**

Analytical holding times for metals are assessed to ascertain whether the holding time requirements were met by the laboratory. The holding time requirements are as follows: Soil samples must be analyzed within 6 months for ICP metals and 28 days for mercury.

All holding times were acceptable.

- **Preparation (Method) Blanks**

Preparation Blanks

At least one preparation blank, consisting of deionized distilled water processed through each sample preparation and analysis procedure, must be prepared and analyzed with every sample delivery group. In the case of positive blank results, samples with digestate concentrations less than five times the preparation blank value have had their associated values qualified as non-detected and flagged "UJ". Samples with concentrations of greater than five times the highest blank concentration do not require qualification.

In the case of negative blank results, if the absolute value exceeds the contract required detection limit (CRDL), all nondetects are rejected and flagged "UR" and all detects that are less than ten times the absolute value of the associated preparation blank result are qualified as estimates and flagged "J". If the absolute value of the negative preparation blank is greater than the instrument detection limit (IDL) and less than or equal to the CRDL, all nondetects are qualified as estimates and flagged "UJ" and all detects less than ten times the absolute value of the blank are qualified as estimates and flagged "J". If the sample results are greater than ten times the absolute value of the preparation blank, no qualification is necessary

Due to method blank contamination, all detected lead results (except J18K38) were qualified as undetected and flagged "UJ".

Due to method blank contamination, the tin result in sample J18KF0 was qualified as an estimate and flagged "UJ".

All other preparation blank results were acceptable.

Field (Equipment) Blank

No field blanks were submitted for analysis.

- **Accuracy**

Matrix Spike and Laboratory Control Sample

Matrix spike (MS) and laboratory control sample (LCS) analyses are used to assess the analytical accuracy of the reported data. The matrix spike is used to assess the effect of the matrix on the ability to accurately quantify sample concentrations. Recoveries must fall within the range of 70% to 130%. Samples with a recovery of less than 30% and a sample result below the IDL are rejected and flagged "UR". Samples with a recovery of 30% to 69% and a sample result less than the IDL are qualified "UJ". Samples with a recovery of greater than 130% or less than 70% and a sample result greater than the IDL are qualified as estimates and flagged "J". Finally, for samples with a recovery greater than 130% and a sample result less than the IDL, no qualification is required.

Due to a matrix spike recovery outside QC limits (326%), the calcium result in samples J18KD8, J18KD9, J18KF0, J18KF1, J18K78, J18K79, J18K80, J18K81 and J18K82 were qualified as estimates and flagged "J".

Due to LCS recoveries outside QC limits, all lead (49% & 61%) and thallium (0% & 0%) results were qualified as estimates and flagged "J".

Due to an LCS recovery outside QC limits (0%), the nickel results in samples J18KF2, J18K21, J18K22, J18K23, J18K24, J18K36, J18K37, J18K38, J18K39, J18K40, J18K63, J18K64, J18K65, J18K66, J18K67, J18K84, J18K85, J18K86 and J18K87 were qualified as estimates and flagged "J".

Due to LCS recoveries outside QC limits, all detected antimony (179% & 195%) and arsenic (221% & 185%) results were qualified as estimates and flagged "J".

Due to LCS recoveries outside QC limits, all detected copper (167%), tin (137%) and zinc (1550%) results in samples J18KF2, J18K21, J18K22, J18K23, J18K24, J18K36, J18K37, J18K38, J18K39, J18K40, J18K63, J18K64, J18K65, J18K66, J18K67, J18K84, J18K85, J18K86 and J18K87 were qualified as estimates and flagged "J".

Due to an LCS recovery outside QC limits (137%), all detected vanadium results in samples J18KD8, J18KD9, J18KF0, J18KF1, J18K78, J18K79, J18K80, J18K81 and J18K82 were qualified as estimates and flagged "J".

All other accuracy results were acceptable.

Precision

Laboratory Duplicate Samples

Analytical precision is expressed by the relative percent differences (RPD) between the recoveries of matrix spike duplicate (MSD) analyses performed on a sample in the analytical batch. Precision may alternatively be assessed using unspiked duplicate analyses performed on a sample in the analytical batch. If both sample and replicate activities (concentrations) are greater than five times the CRDL and the RPD is less than 30%, no qualification is required. If either activity (concentration) is less than five times the CRDL, the RPD control limit is less than or equal to two times the CRDL. If the RPD is outside the applicable control limit, associated results are qualified as estimated detects or estimated non-detects.

Due to RPDs outside QC limits, the tin (79%) and zinc (37%) results in samples J18KD8, J18KD9, J18KF0, J18KF1, J18K78, J18K79, J18K80, J18K81 and J18K82 were qualified as estimates and flagged "J".

Due to RPDs outside QC limits, all calcium (64% % 92%), magnesium (50% & 35%), phosphorous (71% & 61%) and strontium (91% 63%) results were qualified as estimates and flagged "J".

All other laboratory duplicate results were acceptable.

Field Duplicate

No field duplicates were submitted for analysis.

Analytical Detection Levels

Reported analytical detection levels are compared against the 100 and 300 Area RQLs to ensure that laboratory detection levels meet the required criteria. All undetected beryllium and ten lithium results exceeded the RQL. Under the WCH statement of work, no qualification is required. All other results met the RQL.

Completeness

Data package No. K1608 was submitted for validation and verified for completeness. Completeness is based on the percentage of data determined to be valid (i.e., not rejected). The completion percentage was 100%.

MAJOR DEFICIENCIES

None found.

MINOR DEFICIENCIES

The following minor deficiencies were noted:

- Due to method blank contamination, all detected lead results (except J18K38) were qualified as undetected and flagged "UJ".

- Due to method blank contamination, the tin result in sample J18KF0 was qualified as an estimate and flagged "UJ".

- Due to a matrix spike recovery outside QC limits (326%), the calcium result in samples J18KD8, J18KD9, J18KF0, J18KF1, J18K78, J18K79, J18K80, J18K81 and J18K82 were qualified as estimates and flagged "J".

- Due to LCS recoveries outside QC limits, all lead (49% & 61%) and thallium (0% & 0%) results were qualified as estimates and flagged "J"

- Due to an LCS recovery outside QC limits (0%), the nickel results in samples J18KF2, J18K21, J18K22, J18K23, J18K24, J18K36, J18K37, J18K38, J18K39, J18K40, J18K63, J18K64, J18K65, J18K66, J18K67, J18K84, J18K85, J18K86 and J18K87 were qualified as estimates and flagged "J".

- Due to LCS recoveries outside QC limits, all detected antimony (179% & 195%) and arsenic (221% & 185%) results were qualified as estimates and flagged "J".

- Due to LCS recoveries outside QC limits, all detected copper (167%), tin (137%) and zinc (1550%) results in samples J18KF2, J18K21, J18K22, J18K23, J18K24, J18K36, J18K37, J18K38, J18K39, J18K40, J18K63, J18K64, J18K65, J18K66, J18K67, J18K84, J18K85, J18K86 and J18K87 were qualified as estimates and flagged "J".

- Due to an LCS recovery outside QC limits (137%), all detected vanadium results in samples J18KD8, J18KD9, J18KF0, J18KF1, J18K78, J18K79, J18K80, J18K81 and J18K82 were qualified as estimates and flagged "J".

- Due to RPDs outside QC limits, the tin (79%) and zinc (37%) results in samples J18KD8, J18KD9, J18KF0, J18KF1, J18K78, J18K79, J18K80, J18K81 and J18K82 were qualified as estimates and flagged "J"

- Due to RPDs outside QC limits, all calcium (64% % 92%), magnesium (50% & 35%), phosphorous (71% & 61%) and strontium (91% 63%) results were qualified as estimates and flagged "J".

Data flagged "J" indicates that the associated concentration is an estimate, but under the WCH statement of work, the data may be usable for decision-making purposes. All other validated results are considered accurate within the standard error associated with the methods.

All undetected beryllium and ten lithium results exceeded the RQL. Under the WCH statement of work, no qualification is required.

REFERENCES

Fluor Hanford Data Validation Contract #29776 (June 2006), *Validation Statement of Work*, through Washington Closure Hanford Work Order #WB6081.

DOE/RL-2008-11, Rev. 0, September 2008, *Remedial Investigation Work Plan for Hanford Site Releases to the Columbia River*.

Appendix 1

Glossary of Data Reporting Qualifiers

Qualifiers which may be applied by data validators in compliance with WCH validation SOW are as follows:

U - Indicates the compound or analyte was analyzed for and not detected in the sample. The value reported is the sample quantitation limit corrected for sample dilution and moisture content by the laboratory.

UJ - Indicates the compound or analyte was analyzed for and not detected in the sample. Due to a minor QC deficiency identified during the data validation, the associated quantitation limit is an estimate.

J - Indicates the compound or analyte was analyzed for and detected. Due to a minor QC deficiency identified during the data validation, the associated concentration is an estimate, but the data are usable for decision-making purposes.

BJ - Applied to inorganic analyses only. Indicates the analyte concentration was greater than the IDL but less than the CRDL and is considered an estimated value.

R - Indicates the compound or analyte was analyzed for, detected, and due to an identified major QC deficiency, the data are unusable.

UR - Indicates the compound or analyte was analyzed for and not detected in the sample. Additionally, the data is unusable due to an identified major QC deficiency.

NJ - Indicates presumptive evidence of a compound at an estimated value. The data may not be valid for some specific applications (i.e., usable for decision-making purposes).

N - Indicates presumptive evidence of a compound. The data may not be valid for some specific applications (i.e., usable for decision-making purposes).

Appendix 2

Summary of Data Qualification

METALS DATA QUALIFICATION SUMMARY*

SDG: K1608	**REVIEWER: ELR**	**Project: RCBRA**	**PAGE 1 OF 1**
COMPOUND	QUALIFIER	SAMPLES AFFECTED	REASON
Lead	UJ	All detected analytes (except J18K38)	Method blank contamination
Tin	UJ	J18KF0	Method blank contamination
Calcium	J	J18KD8, J18KD9 J18KF0, J18KF1 J18K78, J18K79 J18K80, J18K81 J18K82	Matrix spike recovery
Lead Thallium	J	All	LCS recovery
Nickel	J	J18KF2, J18K21 J18K22, J18K23 J18K24, J18K36 J18K37, J18K38 J18K39, J18K40 J18K63, J18K64 J18K65, J18K66 J18K67, J18K84 J18K85,J18K86 J18K87	LCS recovery
Antimony Arsenic	J	All detected analytes	LCS recovery
Copper Tin Zinc	J	All detected analytes in samples: J18KF2, J18K21 J18K22, J18K23 J18K24, J18K36 J18K37, J18K38 J18K39, J18K40 J18K63, J18K64 J18K65, J18K66 J18K67, J18K84 J18K85, J18K86 J18K87	LCS recovery
Vanadium	J	J18KD8, J18KD9, J18KF0, J18KF1, J18K78, J18K79, J18K80, J18K81 J18K82	LCS recovery

METALS DATA QUALIFICATION SUMMARY*

SDG: K1608	**REVIEWER: ELR**	**Project: RCBRA**	**PAGE 1 OF 1**
Tin Zinc	J	J18KD8, J18KD9, J18KF0, J18KF1, J18K78, J18K79, J18K80, J18K8 J18K82	RPD
Calcium Magnesium Phosphorous Strontium	J	All	RPD

* - The Qualified Data Summary Table includes laboratory applied "U" qualifiers not specifically identified here. The laboratory applied "U" qualifiers are included to minimize misinterpretation of results contained in the table.

Appendix 3

Qualified Data Summary and Annotated Laboratory Reports

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

WC-Hanford, Inc. 2620 Fermi Avenue Richland WA, 99354	Project: RC-118 Project Number: K1608 Project Manager: Joan Kessner	**Reported:** 06/02/2009 12:59

J18KD8

0904044-01 (Solid)

Lionville Laboratory

Metals by SW846 6000/7000 series

Analyte	Result and Qualifier	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Aluminum	3.37	3.21	mg/kg	1	1905189	05/20/2009	05/24/2009	6010B
Antimony	0.385 U	0.385	mg/kg	1	1905189	05/20/2009	05/24/2009	6010B
Arsenic	0.204 ~~B~~ J	0.641	mg/kg	1	1905189	05/20/2009	05/24/2009	6010B
Barium	0.551	0.321	mg/kg	1	1905189	05/20/2009	05/24/2009	6010B
Beryllium	0.128 U	0.128	mg/kg	1	1905189	05/20/2009	05/24/2009	6010B
Bismuth	6.41 U	6.41	mg/kg	1	1905189	05/20/2009	05/24/2009	6010B
Boron	1.28 U	1.28	mg/kg	1	1905189	05/20/2009	05/24/2009	6010B
Cadmium	0.0568 B	0.128	mg/kg	1	1905189	05/20/2009	05/24/2009	6010B
Calcium	6390 J	64.1	mg/kg	1	1905189	05/20/2009	05/24/2009	6010B
Chromium	0.637	0.192	mg/kg	1	1905189	05/20/2009	05/24/2009	6010B
Cobalt	1.28 U	1.28	mg/kg	1	1905189	05/20/2009	05/24/2009	6010B
Copper	0.423 B	0.641	mg/kg	1	1905189	05/20/2009	05/24/2009	6010B
Iron	22.3	12.8	mg/kg	1	1905189	05/20/2009	05/24/2009	6010B
Lead	0.375 UJ	0.321	mg/kg	1	1905189	05/20/2009	05/24/2009	6010B
Lithium	1.60 U	1.60	mg/kg	1	1905189	05/20/2009	05/24/2009	6010B
Magnesium	278 J	48.1	mg/kg	1	1905189	05/20/2009	05/24/2009	6010B
Manganese	1.17 B	3.21	mg/kg	1	1905189	05/20/2009	05/24/2009	6010B
Molybdenum	1.28 U	1.28	mg/kg	1	1905189	05/20/2009	05/24/2009	6010B
Nickel	2.56 U	2.56	mg/kg	1	1905189	05/20/2009	05/24/2009	6010B
Phosphorus	5130 J	385	mg/kg	12	1905189	05/20/2009	05/24/2009	6010B
Potassium	3,390	256	mg/kg	1	1905189	05/20/2009	05/24/2009	6010B
Selenium	1.17	0.641	mg/kg	1	1905189	05/20/2009	05/24/2009	6010B
Silicon	2.76	1.28	mg/kg	1	1905189	05/20/2009	05/24/2009	6010B
Silver	0.128 U	0.128	mg/kg	1	1905189	05/20/2009	05/24/2009	6010B
Sodium	1,370	32.1	mg/kg	1	1905189	05/20/2009	05/24/2009	6010B
Strontium	5.69 J	0.641	mg/kg	1	1905189	05/20/2009	05/24/2009	6010B
Thallium	0.321 U J	0.321	mg/kg	1	1905189	05/20/2009	05/24/2009	6010B
Tin	25.1 J	6.41	mg/kg	1	1905189	05/20/2009	05/24/2009	6010B
Uranium	12.8 U	12.8	mg/kg	1	1905189	05/20/2009	05/24/2009	6010B
Vanadium	0.189 ~~B~~ J	1.60	mg/kg	1	1905189	05/20/2009	05/24/2009	6010B
Zinc	15.5 J	6.41	mg/kg	1	1905189	05/20/2009	05/24/2009	6010B
Mercury	0.0380	0.0500	mg/kg wet	1	1904175	04/28/2009	04/29/2009	7471A

10/10/09

264 Welsh Pool Road
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WC-Hanford, Inc 2620 Fermi Avenue Richland WA, 99354	Project: RC-118 Project Number: K1608 Project Manager: Joan Kessner	Reported: 06/02/2009 12:59

J18KD9

0904044-02 (Solid)

Analyte	Result and Qualifier	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Lionville Laboratory								
Metals by SW846 6000/7000 series								
Aluminum	3.70	3.57	mg/kg	1	L905189	05/20/2009	05/24/2009	6010B
Antimony	0.429 U	0.429	mg/kg	1	L905189	05/20/2009	05/24/2009	6010B
Arsenic	0.313 B J	0.714	mg/kg	1	L905189	05/20/2009	05/24/2009	6010B
Barium	0.715	0.357	mg/kg	1	L905189	05/20/2009	05/24/2009	6010B
Beryllium	0.143 U	0.143	mg/kg	1	L905189	05/20/2009	05/24/2009	6010B
Bismuth	7.14 U	7.14	mg/kg	1	L905189	05/20/2009	05/24/2009	6010B
Boron	1.43 U	1.43	mg/kg	1	L905189	05/20/2009	05/24/2009	6010B
Cadmium	0.0538 B	0.143	mg/kg	1	L905189	05/20/2009	05/24/2009	6010B
Calcium	11800 J	71.4	mg/kg	1	L905189	05/20/2009	05/24/2009	6010B
Chromium	0.406	0.714	mg/kg	1	L905189	05/20/2009	05/24/2009	6010B
Cobalt	1.43 U	1.43	mg/kg	1	L905189	05/20/2009	05/24/2009	6010B
Copper	0.624 B	0.714	mg/kg	1	L905189	05/20/2009	05/24/2009	6010B
Iron	58.1	14.3	mg/kg	1	L905189	05/20/2009	05/24/2009	6010B
Lead	0.475 UJ	0.357	mg/kg	1	L905189	05/20/2009	05/24/2009	6010B
Lithium	0.374 B	1.79	mg/kg	1	L905189	05/20/2009	05/24/2009	6010B
Magnesium	342 J	53.6	mg/kg	1	L905189	05/20/2009	05/24/2009	6010B
Manganese	1.52 B	3.57	mg/kg	1	L905189	05/20/2009	05/24/2009	6010B
Molybdenum	1.43 U	1.43	mg/kg	1	L905189	05/20/2009	05/24/2009	6010B
Nickel	2.86 U	2.86	mg/kg	1	L905189	05/20/2009	05/24/2009	6010B
Phosphorus	7080 J	429	mg/kg	12	L905189	05/20/2009	05/29/2009	6010B
Potassium	2750	286	mg/kg	1	L905189	05/20/2009	05/24/2009	6010B
Selenium	1.48	0.714	mg/kg	1	L905189	05/20/2009	05/24/2009	6010B
Silicon	5.37	1.43	mg/kg	1	L905189	05/20/2009	05/24/2009	6010B
Silver	0.143 U	0.143	mg/kg	1	L905189	05/20/2009	05/24/2009	6010B
Sodium	1340	35.7	mg/kg	1	L905189	05/20/2009	05/24/2009	6010B
Strontium	9.21 J	0.714	mg/kg	1	L905189	05/20/2009	05/24/2009	6010B
Thallium	0.357 UJ	0.357	mg/kg	1	L905189	05/20/2009	05/24/2009	6010B
Tin	38.4 J	7.14	mg/kg	1	L905189	05/20/2009	05/24/2009	6010B
Uranium	14.3 U	14.3	mg/kg	1	L905189	05/20/2009	05/24/2009	6010B
Vanadium	0.232 B J	1.79	mg/kg	1	L905189	05/20/2009	05/24/2009	6010B
Zinc	23.9 J	7.14	mg/kg	1	L905189	05/20/2009	05/24/2009	6010B
Mercury	0.0426	0.0273	mg/kg wet	1	L904175	04/28/2009	04/29/2009	7471A

10/10/09

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
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WC-Hanford, Inc	Project: RC-118	
2620 Fermi Avenue	Project Number: K1608	**Reported:**
Richland WA 99354	Project Manager: Joan Kessner	06/02/2009 12:59

J18KF0

0904044-03 (Solid)

Lionville Laboratory

Metals by SW846 6000/7000 series

Analyte	Result and Qualifier	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Aluminum	4.22 B	4.63	mg/kg	1	L905189	05/20/2009	05/24/2009	6010B
Antimony	0.556 U	0.556	mg/kg	1	L905189	05/20/2009	05/24/2009	6010B
Arsenic	0.319 ~~B~~ J	0.926	mg/kg	1	L905189	05/20/2009	05/24/2009	6010B
Barium	1.08	0.463	mg/kg	1	L905189	05/20/2009	05/24/2009	6010B
Beryllium	0.185 U	0.185	mg/kg	1	L905189	05/20/2009	05/24/2009	6010B
Bismuth	9.26 U	9.26	mg/kg	1	L905189	05/20/2009	05/24/2009	6010B
Boron	1.85 U	1.85	mg/kg	1	L905189	05/20/2009	05/24/2009	6010B
Cadmium	0.185 U	0.185	mg/kg	1	L905189	05/20/2009	05/24/2009	6010B
Calcium	13900 J	92.6	mg/kg	1	L905189	05/20/2009	05/24/2009	6010B
Chromium	0.427	0.278	mg/kg	1	L905189	05/20/2009	05/24/2009	6010B
Cobalt	1.85 U	1.85	mg/kg	1	L905189	05/20/2009	05/24/2009	6010B
Copper	0.926 U	0.926	mg/kg	1	L905189	05/20/2009	05/24/2009	6010B
Iron	23.0	18.5	mg/kg	1	L905189	05/20/2009	05/24/2009	6010B
Lead	0.463 U J	0.463	mg/kg	1	L905189	05/20/2009	05/24/2009	6010B
Lithium	2.31 U	2.31	mg/kg	1	L905189	05/20/2009	05/24/2009	6010B
Magnesium	451 J	69.4	mg/kg	1	L905189	05/20/2009	05/24/2009	6010B
Manganese	5.59	4.63	mg/kg	1	L905189	05/20/2009	05/24/2009	6010B
Molybdenum	1.85 U	1.85	mg/kg	1	L905189	05/20/2009	05/24/2009	6010B
Nickel	3.70 U	3.70	mg/kg	1	L905189	05/20/2009	05/24/2009	6010B
Phosphorus	8510 J	556	mg/kg	12	L905189	05/20/2009	05/24/2009	6010B
Potassium	2780	370	mg/kg	1	L905189	05/20/2009	05/24/2009	6010B
Selenium	1.37	0.926	mg/kg	1	L905189	05/20/2009	05/24/2009	6010B
Silicon	3.01	1.85	mg/kg	1	L905189	05/20/2009	05/24/2009	6010B
Silver	0.185 U	0.185	mg/kg	1	L905189	05/20/2009	05/24/2009	6010B
Sodium	1190	46.3	mg/kg	1	L905189	05/20/2009	05/24/2009	6010B
Strontium	12.2 J	0.926	mg/kg	1	L905189	05/20/2009	05/24/2009	6010B
Thallium	0.463 U J	0.463	mg/kg	1	L905189	05/20/2009	05/24/2009	6010B
Tin	3.98 ~~B~~ U J	9.26	mg/kg	1	L905189	05/20/2009	05/24/2009	6010B
Uranium	18.5 U	18.5	mg/kg	1	L905189	05/20/2009	05/24/2009	6010B
Vanadium	0.402 ~~B~~ J	2.31	mg/kg	1	L905189	05/20/2009	05/24/2009	6010B
Zinc	22.2 J	9.26	mg/kg	1	L905189	05/20/2009	05/24/2009	6010B
Mercury	0.0484	0.0281	mg/kg wet	1	L904175	04/28/2009	04/29/2009	7471A

10/10/09

LVL
LIONVILLE LABORATORY

264 Welsh Pool Road
Exton, PA 19341
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Fax: 610-280-3041

WC-Hanford, Inc. 2620 Fermi Avenue Richland WA, 99354	Project: RC 118 Project Number: K160R Project Manager: Joan Kessner	Reported: 06/02/2009 12:59

J18KF1
0904044-04 (Solid)

Lionville Laboratory

Metals by SW846 6000/7000 series

Analyte	Result and Qualifier	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Aluminum	4.72 U	4.72	mg/kg	1	L905189	05/20/2009	05/24/2009	6010B
Antimony	0.566 U	0.566	mg/kg	1	L905189	05/20/2009	05/24/2009	6010B
Arsenic	0.943 U	0.943	mg/kg	1	L905189	05/20/2009	05/24/2009	6010B
Barium	1.20	0.472	mg/kg	1	L905189	05/20/2009	05/24/2009	6010B
Beryllium	0.189 U	0.189	mg/kg	1	L905189	05/20/2009	05/24/2009	6010B
Bismuth	9.43 U	9.43	mg/kg	1	L905189	05/20/2009	05/24/2009	6010B
Boron	1.89 U	1.89	mg/kg	1	L905189	05/20/2009	05/24/2009	6010B
Cadmium	0.0899 B	0.189	mg/kg	1	L905189	05/20/2009	05/24/2009	6010B
Calcium	16500 J	94.3	mg/kg	1	L905189	05/20/2009	05/24/2009	6010B
Chromium	0.948	0.283	mg/kg	1	L905189	05/20/2009	05/24/2009	6010B
Cobalt	1.89 U	1.89	mg/kg	1	L905189	05/20/2009	05/24/2009	6010B
Copper	0.943 U	0.943	mg/kg	1	L905189	05/20/2009	05/24/2009	6010B
Iron	20.6	18.9	mg/kg	1	L905189	05/20/2009	05/24/2009	6010B
Lead	0.382 ~~J~~ (U)	0.472	mg/kg	1	L905189	05/20/2009	05/24/2009	6010B
Lithium	2.36 U	2.36	mg/kg	1	L905189	05/20/2009	05/24/2009	6010B
Magnesium	444 J	70.8	mg/kg	1	L905189	05/20/2009	05/24/2009	6010B
Manganese	2.22 B	4.72	mg/kg	1	L905189	05/20/2009	05/24/2009	6010B
Molybdenum	1.89 U	1.89	mg/kg	1	L905189	05/20/2009	05/24/2009	6010B
Nickel	3.77 U	3.77	mg/kg	1	L905189	05/20/2009	05/24/2009	6010B
Phosphorus	10000 J	566	mg/kg	12	L905189	05/20/2009	05/29/2009	6010B
Potassium	2760	377	mg/kg	1	L905189	05/20/2009	05/24/2009	6010B
Selenium	1.46	0.943	mg/kg	1	L905189	05/20/2009	05/24/2009	6010B
Silicon	3.28	1.89	mg/kg	1	L905189	05/20/2009	05/24/2009	6010B
Silver	0.189 U	0.189	mg/kg	1	L905189	05/20/2009	05/24/2009	6010B
Sodium	1490	47.2	mg/kg	1	L905189	05/20/2009	05/24/2009	6010B
Strontium	53.9 J	0.943	mg/kg	1	L905189	05/20/2009	05/24/2009	6010B
Thallium	0.472 U J	0.472	mg/kg	1	L905189	05/20/2009	05/24/2009	6010B
Tin	20.0 J	9.43	mg/kg	1	L905189	05/20/2009	05/24/2009	6010B
Uranium	18.9 U	18.9	mg/kg	1	L905189	05/20/2009	05/24/2009	6010B
Vanadium	0.289 ~~B~~ J	2.36	mg/kg	1	L905189	05/20/2009	05/24/2009	6010B
Zinc	26.5 J	9.43	mg/kg	1	L905189	05/20/2009	05/24/2009	6010B
Mercury	0.0446	0.0243	mg/kg wet	1	L904175	04/28/2009	04/29/2009	7471A

10/10/05

WC-Hanford, Inc 2620 Fermi Avenue Richland WA 99354	Project: RC-118 Project Number: K1608 Project Manager: Joan Kessner	Reported: 06/02/2009 12:59

J18K78
0904044-05 (Solid)

Analyte	Result and Qualifier	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
	Lionville Laboratory							
Metals by SW846 6000/7000 series								
Aluminum	3.57 U	3.57	mg/kg	1	1905189	05/20/2009	05/24/2009	6010B
Antimony	0.429 U	0.429	mg/kg	1	1905189	05/20/2009	05/24/2009	6010B
Arsenic	0.359 ~~B~~ J	0.714	mg/kg	1	1905189	05/20/2009	05/24/2009	6010B
Barium	0.0820 B	0.357	mg/kg	1	1905189	05/20/2009	05/24/2009	6010B
Beryllium	0.143 U	0.143	mg/kg	1	1905189	05/20/2009	05/24/2009	6010B
Bismuth	7.14 U	7.14	mg/kg	1	1905189	05/20/2009	05/24/2009	6010B
Boron	1.43 U	1.43	mg/kg	1	1905189	05/20/2009	05/24/2009	6010B
Cadmium	0.0375 B	0.143	mg/kg	1	1905189	05/20/2009	05/24/2009	6010B
Calcium	415 J	71.4	mg/kg	1	1905189	05/20/2009	05/24/2009	6010B
Chromium	0.273	0.214	mg/kg	1	1905189	05/20/2009	05/24/2009	6010B
Cobalt	1.43 U	1.43	mg/kg	1	1905189	05/20/2009	05/24/2009	6010B
Copper	0.648 B	0.714	mg/kg	1	1905189	05/20/2009	05/24/2009	6010B
Iron	8.14 B	14.3	mg/kg	1	1905189	05/20/2009	05/24/2009	6010B
Lead	0.493 UJ	0.357	mg/kg	1	1905189	05/20/2009	05/24/2009	6010B
Lithium	1.79 U	1.79	mg/kg	1	1905189	05/20/2009	05/24/2009	6010B
Magnesium	340 J	53.6	mg/kg	1	1905189	05/20/2009	05/24/2009	6010B
Manganese	0.258 B	3.57	mg/kg	1	1905189	05/20/2009	05/24/2009	6010B
Molybdenum	1.43 U	1.43	mg/kg	1	1905189	05/20/2009	05/24/2009	6010B
Nickel	2.86 U	2.86	mg/kg	1	1905189	05/20/2009	05/24/2009	6010B
Phosphorus	2340 J	35.7	mg/kg	1	1905189	05/20/2009	05/24/2009	6010B
Potassium	3880	286	mg/kg	1	1905189	05/20/2009	05/24/2009	6010B
Selenium	0.935	0.714	mg/kg	1	1905189	05/20/2009	05/24/2009	6010B
Silicon	2.44	1.43	mg/kg	1	1905189	05/20/2009	05/24/2009	6010B
Silver	0.143 U	0.143	mg/kg	1	1905189	05/20/2009	05/24/2009	6010B
Sodium	589	35.7	mg/kg	1	1905189	05/20/2009	05/24/2009	6010B
Strontium	0.353 ~~B~~ J	0.714	mg/kg	1	1905189	05/20/2009	05/24/2009	6010B
Thallium	0.357 U J	0.357	mg/kg	1	1905189	05/20/2009	05/24/2009	6010B
Tin	21.4 J	7.14	mg/kg	1	1905189	05/20/2009	05/24/2009	6010B
Uranium	14.3 U	14.3	mg/kg	1	1905189	05/20/2009	05/24/2009	6010B
Vanadium	1.79 U J	1.79	mg/kg	1	1905189	05/20/2009	05/24/2009	6010B
Zinc	6.44 ~~B~~ UJ	7.14	mg/kg	1	1905189	05/20/2009	05/24/2009	6010B
Mercury	0.0395	0.0290	mg/kg wet	1	1904175	04/28/2009	04/29/2009	7471A

10/10/05

WC-Hanford, Inc. 2620 Fermi Avenue Richland WA, 99354	Project: RC 118 Project Number: K1608 Project Manager: Joan Kessner	Reported: 06/02/2009 12:59

J18K79

0904044-06 (Solid)

Lionville Laboratory

Metals by SW846 6000/7000 series

Analyte	Result and Qualifier	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Aluminum	3.38 U	3.38	mg/kg	1	L905189	05/20/2009	05/24/2009	6010B
Antimony	0.208 ~~B~~ J	0.405	mg/kg	1	L905189	05/20/2009	05/24/2009	6010B
Arsenic	0.297 ~~B~~ J	0.676	mg/kg	1	L905189	05/20/2009	05/24/2009	6010B
Barium	0.228 B	0.338	mg/kg	1	L905189	05/20/2009	05/24/2009	6010B
Beryllium	0.135 U	0.135	mg/kg	1	L905189	05/20/2009	05/24/2009	6010B
Bismuth	6.76 U	6.76	mg/kg	1	L905189	05/20/2009	05/24/2009	6010B
Boron	1.35 U	1.35	mg/kg	1	L905189	05/20/2009	05/24/2009	6010B
Cadmium	0.135 U	0.135	mg/kg	1	L905189	05/20/2009	05/24/2009	6010B
Calcium	2740 J	67.6	mg/kg	1	L905189	05/20/2009	05/24/2009	6010B
Chromium	0.529	0.203	mg/kg	1	L905189	05/20/2009	05/24/2009	6010B
Cobalt	1.35 U	1.35	mg/kg	1	L905189	05/20/2009	05/24/2009	6010B
Copper	0.637 B	0.676	mg/kg	1	L905189	05/20/2009	05/24/2009	6010B
Iron	5.94 B	13.5	mg/kg	1	L905189	05/20/2009	05/24/2009	6010B
Lead	0.729 UJ	0.338	mg/kg	1	L905189	05/20/2009	05/24/2009	6010B
Lithium	1.69 U	1.69	mg/kg	1	L905189	05/20/2009	05/24/2009	6010B
Magnesium	292 J	50.7	mg/kg	1	L905189	05/20/2009	05/24/2009	6010B
Manganese	0.312 B	3.38	mg/kg	1	L905189	05/20/2009	05/24/2009	6010B
Molybdenum	1.35 U	1.35	mg/kg	1	L905189	05/20/2009	05/24/2009	6010B
Nickel	2.70 U	2.70	mg/kg	1	L905189	05/20/2009	05/24/2009	6010B
Phosphorus	5790 J	405	mg/kg	12	L905189	05/20/2009	05/29/2009	6010B
Potassium	3760	270	mg/kg	1	L905189	05/20/2009	05/24/2009	6010B
Selenium	1.17	0.676	mg/kg	1	L905189	05/20/2009	05/24/2009	6010B
Silicon	2.36	1.35	mg/kg	1	L905189	05/20/2009	05/24/2009	6010B
Silver	0.135 U	0.135	mg/kg	1	L905189	05/20/2009	05/24/2009	6010B
Sodium	476	33.8	mg/kg	1	L905189	05/20/2009	05/24/2009	6010B
Strontium	2.50 J	0.676	mg/kg	1	L905189	05/20/2009	05/24/2009	6010B
Thallium	0.338 U J	0.338	mg/kg	1	L905189	05/20/2009	05/24/2009	6010B
Tin	46.4 J	6.76	mg/kg	1	L905189	05/20/2009	05/24/2009	6010B
Uranium	13.5 U	13.5	mg/kg	1	L905189	05/20/2009	05/24/2009	6010B
Vanadium	0.155 ~~B~~ J	1.69	mg/kg	1	L905189	05/20/2009	05/24/2009	6010B
Zinc	11.7 J	6.76	mg/kg	1	L905189	05/20/2009	05/24/2009	6010B
Mercury	0.0436	0.0281	mg/kg wet	1	L904175	04/28/2009	04/29/2009	7471A

10/10/09

LVL

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WC-Hanford, Inc.
2620 Fermi Avenue
Richland WA 99354

Project: KC-118
Project Number: K1608
Project Manager: Joan Kessner

Reported:
06/03/2009 12:59

J18K80

0904044-07 (Solid)

Lionville Laboratory

Metals by SW846 6000/7000 series

Analyte	Result and Qualifier	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Aluminum	3.85 U	3.85	mg/kg	1	L905189	05/20/2009	05/24/2009	6010B
Antimony	0.462 U	0.462	mg/kg	1	L905189	05/20/2009	05/24/2009	6010B
Arsenic	0.331 ~~B~~ J	0.769	mg/kg	1	L905189	05/20/2009	05/24/2009	6010B
Barium	0.576	0.385	mg/kg	1	L905189	05/20/2009	05/24/2009	6010B
Beryllium	0.154 U	0.154	mg/kg	1	L905189	05/20/2009	05/24/2009	6010B
Bismuth	7.69 U	7.69	mg/kg	1	L905189	05/20/2009	05/24/2009	6010B
Boron	1.54 U	1.54	mg/kg	1	L905189	05/20/2009	05/24/2009	6010B
Cadmium	0.0552 B	0.154	mg/kg	1	L905189	05/20/2009	05/24/2009	6010B
Calcium	4530 J	76.9	mg/kg	1	L905189	05/20/2009	05/24/2009	6010B
Chromium	0.797	0.231	mg/kg	1	L905189	05/20/2009	05/24/2009	6010B
Cobalt	1.54 U	1.54	mg/kg	1	L905189	05/20/2009	05/24/2009	6010B
Copper	0.932	0.769	mg/kg	1	L905189	05/20/2009	05/24/2009	6010B
Iron	11.9 B	15.4	mg/kg	1	L905189	05/20/2009	05/24/2009	6010B
Lead	1.02 ~~U~~ J	0.385	mg/kg	1	L905189	05/20/2009	05/24/2009	6010B
Lithium	1.92 U	1.92	mg/kg	1	L905189	05/20/2009	05/24/2009	6010B
Magnesium	347 J	57.7	mg/kg	1	L905189	05/20/2009	05/24/2009	6010B
Manganese	1.30 B	1.85	mg/kg	1	L905189	05/20/2009	05/24/2009	6010B
Molybdenum	1.54 U	1.54	mg/kg	1	L905189	05/20/2009	05/24/2009	6010B
Nickel	3.55 B	3.08	mg/kg	1	L905189	05/20/2009	05/24/2009	6010B
Phosphorus	4980 J	462	mg/kg	1	L905189	05/20/2009	05/24/2009	6010B
Potassium	4050	308	mg/kg	12	L905189	05/20/2009	05/29/2009	6010B
Selenium	1.12	0.769	mg/kg	1	L905189	05/20/2009	05/24/2009	6010B
Silicon	2.31	1.54	mg/kg	1	L905189	05/20/2009	05/24/2009	6010B
Silver	0.154 U	0.154	mg/kg	1	L905189	05/20/2009	05/24/2009	6010B
Sodium	516	38.5	mg/kg	1	L905189	05/20/2009	05/24/2009	6010B
Strontium	4.24 J	0.769	mg/kg	1	L905189	05/20/2009	05/24/2009	6010B
Thallium	0.385 U J	0.385	mg/kg	1	L905189	05/20/2009	05/24/2009	6010B
Tin	79.8 J	7.69	mg/kg	1	L905189	05/20/2009	05/24/2009	6010B
Uranium	15.4 U	15.4	mg/kg	1	L905189	05/20/2009	05/24/2009	6010B
Vanadium	0.203 ~~B~~ J	1.92	mg/kg	1	L905189	05/20/2009	05/24/2009	6010B
Zinc	12.1 J	7.69	mg/kg	1	L905189	05/20/2009	05/24/2009	6010B
Mercury	0.0618	0.0273	mg/kg wet	1	L904173	04/28/2009	04/29/2009	7471A

10/14/09

264 Welsh Pool Road
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WC-Hanford, Inc 2620 Fermi Avenue Richland WA, 99354	Project: RC-118 Project Number: K1608 Project Manager: Joan Kessner	Reported: 06/02/2009 12:59

J18K81

0904044-08 (Solid)

Analyte	Result and Qualifier	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Lionville Laboratory								
Metals by SW846 6000/7000 series								
Aluminum	4.63 U	4.63	mg/kg	1	1905189	05/20/2009	05/24/2009	6010B
Antimony	0.556 U	0.556	mg/kg	1	1905189	05/20/2009	05/24/2009	6010B
Arsenic	**0.289** J	0.926	mg/kg	1	1905189	05/20/2009	05/24/2009	6010B
Barium	**0.370** B	0.463	mg/kg	1	1905189	05/20/2009	05/24/2009	6010B
Beryllium	0.185 U	0.185	mg/kg	1	1905189	05/20/2009	05/24/2009	6010B
Bismuth	9.26 U	9.26	mg/kg	1	1905189	05/20/2009	05/24/2009	6010B
Boron	1.85 U	1.85	mg/kg	1	1905189	05/20/2009	05/24/2009	6010B
Cadmium	0.185 U	0.185	mg/kg	1	1905189	05/20/2009	05/24/2009	6010B
Calcium	**4330** J	92.6	mg/kg	1	1905189	05/20/2009	05/24/2009	6010B
Chromium	**0.339**	0.278	mg/kg	1	1905189	05/20/2009	05/24/2009	6010B
Cobalt	1.85 U	1.85	mg/kg	1	1905189	05/20/2009	05/24/2009	6010B
Copper	**0.522** B	0.926	mg/kg	1	1905189	05/20/2009	05/24/2009	6010B
Iron	**7.75** B	18.5	mg/kg	1	1905189	05/20/2009	05/24/2009	6010B
Lead	**0.694** U J	0.463	mg/kg	1	1905189	05/20/2009	05/24/2009	6010B
Lithium	2.31 U	2.31	mg/kg	1	1905189	05/20/2009	05/24/2009	6010B
Magnesium	**332** J	69.4	mg/kg	1	1905189	05/20/2009	05/24/2009	6010B
Manganese	**0.558** B	4.63	mg/kg	1	1905189	05/20/2009	05/24/2009	6010B
Molybdenum	1.85 U	1.85	mg/kg	1	1905189	05/20/2009	05/24/2009	6010B
Nickel	3.70 U J	3.70	mg/kg	1	1905189	05/20/2009	05/24/2009	6010B
Phosphorus	**4460** J	16.3	mg/kg	1	1905189	05/20/2009	05/24/2009	6010B
Potassium	**3870**	370	mg/kg	1	1905189	05/20/2009	05/24/2009	6010B
Selenium	**1.28**	0.926	mg/kg	1	1905189	05/20/2009	05/24/2009	6010B
Silicon	**2.35**	1.85	mg/kg	1	1905189	05/20/2009	05/24/2009	6010B
Silver	0.185 U	0.185	mg/kg	1	1905189	05/20/2009	05/24/2009	6010B
Sodium	**614**	46.3	mg/kg	1	1905189	05/20/2009	05/24/2009	6010B
Strontium	**3.89** J	0.926	mg/kg	1	1905189	05/20/2009	05/24/2009	6010B
Thallium	0.463 U J	0.463	mg/kg	1	1905189	05/20/2009	05/24/2009	6010B
Tin	**60.2** J	9.26	mg/kg	1	1905189	05/20/2009	05/24/2009	6010B
Uranium	18.5 U	18.5	mg/kg	1	1905189	05/20/2009	05/24/2009	6010B
Vanadium	2.31 U J	2.31	mg/kg	1	1905189	05/20/2009	05/24/2009	6010B
Zinc	**11.2** J	9.26	mg/kg	1	1905189	05/20/2009	05/24/2009	6010B
Mercury	**0.0573**	0.0300	mg/kg wet	1	1904175	04/28/2009	04/29/2009	7471A

10/10/09

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WC-Hanford, Inc 2620 Fermi Avenue Richland WA, 99354	Project: RC-118 Project Number: K1608 Project Manager: Joan Kessner	Reported: 06/02/2009 12:59

J18K82
0904044-09 (Solid)

Lionville Laboratory

Metals by SW846 6000/7000 series

Analyte	Result and Qualifier	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Aluminum	3.42 U	3.42	mg/kg	1	L905189	05/20/2009	05/24/2009	6010B
Antimony	0.411 U	0.411	mg/kg	1	L905189	05/20/2009	05/24/2009	6010B
Arsenic	**0.269** ~~B~~ J	0.685	mg/kg	1	L905189	05/20/2009	05/24/2009	6010B
Barium	**0.653**	0.342	mg/kg	1	L905189	05/20/2009	05/24/2009	6010B
Beryllium	0.137 U	0.137	mg/kg	1	L905189	05/20/2009	05/24/2009	6010B
Bismuth	6.85 U	6.85	mg/kg	1	L905189	05/20/2009	05/24/2009	6010B
Boron	1.37 U	1.37	mg/kg	1	L905189	05/20/2009	05/24/2009	6010B
Cadmium	**0.0375** B	0.137	mg/kg	1	L905189	05/20/2009	05/24/2009	6010B
Calcium	**4080** J	68.5	mg/kg	1	L905189	05/20/2009	05/24/2009	6010B
Chromium	**0.409**	0.205	mg/kg	1	L905189	05/20/2009	05/24/2009	6010B
Cobalt	1.37 U	1.37	mg/kg	1	L905189	05/20/2009	05/24/2009	6010B
Copper	**0.674** B	0.685	mg/kg	1	L905189	05/20/2009	05/24/2009	6010B
Iron	**8.00** B	13.7	mg/kg	1	L905189	05/20/2009	05/24/2009	6010B
Lead	**0.670** U J	0.342	mg/kg	1	L905189	05/20/2009	05/24/2009	6010B
Lithium	1.71 U	1.71	mg/kg	1	L905189	05/20/2009	05/24/2009	6010B
Magnesium	**329** J	51.4	mg/kg	1	L905189	05/20/2009	05/24/2009	6010B
Manganese	**0.800** B	3.42	mg/kg	1	L905189	05/20/2009	05/24/2009	6010B
Molybdenum	1.37 U	1.37	mg/kg	1	L905189	05/20/2009	05/24/2009	6010B
Nickel	2.74 U J	2.74	mg/kg	1	L905189	05/20/2009	05/24/2009	6010B
Phosphorus	**4560** J	411	mg/kg	12	L905189	05/20/2009	05/29/2009	6010B
Potassium	**3910**	274	mg/kg	1	L905189	05/20/2009	05/24/2009	6010B
Selenium	**0.966**	0.685	mg/kg	1	L905189	05/20/2009	05/24/2009	6010B
Silicon	**2.30**	1.37	mg/kg	1	L905189	05/20/2009	05/24/2009	6010B
Silver	0.137 U	0.137	mg/kg	1	L905189	05/20/2009	05/24/2009	6010B
Sodium	**589**	34.2	mg/kg	1	L905189	05/20/2009	05/24/2009	6010B
Strontium	**4.12** J	0.685	mg/kg	1	L905189	05/20/2009	05/24/2009	6010B
Thallium	0.342 U J	0.342	mg/kg	1	L905189	05/20/2009	05/24/2009	6010B
Tin	**51.0** J	6.85	mg/kg	1	L905189	05/20/2009	05/24/2009	6010B
Uranium	13.7 U	13.7	mg/kg	1	L905189	05/20/2009	05/24/2009	6010B
Vanadium	**0.168** ~~B~~ J	1.71	mg/kg	1	L905189	05/20/2009	05/24/2009	6010B
Zinc	**12.7** J	6.85	mg/kg	1	L905189	05/20/2009	05/24/2009	6010B
Mercury	**0.0800**	0.0273	mg/kg wet	1	L904175	04/28/2009	04/29/2009	7471A

10/10/07

WC-Hanford, Inc. 2620 Fermi Avenue Richland WA, 99354	Project: RC-118 Project Number: K1M08 Project Manager: Joan Kessner	Reported: 06/02/2009 14:40

J18KF2
0904069-01 (Solid)

Lionville Laboratory

Metals by SW846 6000/7000 series

Analyte	Result and Qualifier	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Aluminum	7.73	3.85	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Antimony	0.462 U	0.462	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Arsenic	0.324 ~~B~~ J	0.769	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Barium	2.52	0.385	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Beryllium	0.154 U	0.154	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Bismuth	7.69 U	7.69	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Boron	1.54 U	1.54	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Cadmium	0.0686 B	0.154	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Calcium	21400 J	76.9	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Chromium	0.626	0.231	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Cobalt	1.54 U	1.54	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Copper	0.769 U	0.769	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Iron	16.4	15.4	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Lead	1.17 U J	0.385	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Lithium	1.92 U	1.92	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Magnesium	541 J	57.7	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Manganese	4.21	3.85	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Molybdenum	1.54 U	1.54	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Nickel	3.08 U J	3.08	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Phosphorus	13600 J	462	mg/kg	12	L905190	05/20/2009	05/29/2009	6010B
Potassium	2910	308	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Selenium	1.15	0.769	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Silicon	8.15	1.54	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Silver	0.154 U	0.154	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Sodium	1440	38.5	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Strontium	20.0 J	0.769	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Thallium	0.385 U J	0.385	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Tin	14.6 J	7.69	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Uranium	15.4 U	15.4	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Vanadium	0.466 B	1.92	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Zinc	26.8 J	7.69	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Mercury	0.0712	0.0250	mg/kg wet	1	L904197	05/01/2009	05/04/2009	7471A

10/20/05

WC-Hanford, Inc.
2620 Fermi Avenue
Richland WA, 99354

Project: RC-118
Project Number: K1608
Project Manager: Joan Kessner

Reported:
06/02/2009 14:40

J18K21

0904069-02 (Solid)

Lionville Laboratory

Metals by SW846 6000/7000 series

Analyte	Result and Qualifier	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Aluminum	7.46	4.39	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Antimony	0.526 U	0.526	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Arsenic	0.300 ~~B~~ J	0.877	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Barium	1.75	0.439	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Beryllium	0.175 U	0.175	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Bismuth	8.77 U	8.77	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Boron	1.75 U	1.75	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Cadmium	0.0554 B	0.175	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Calcium	25100 J	87.7	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Chromium	0.781	0.263	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Cobalt	1.75 U	1.75	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Copper	0.877 U	0.877	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Iron	16.3 B	17.5	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Lead	0.403 ~~B~~ UJ	0.419	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Lithium	2.19 U	2.19	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Magnesium	584 J	65.8	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Manganese	5.25	4.39	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Molybdenum	1.75 U	1.75	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Nickel	3.51 U J	3.51	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Phosphorus	14100 J	526	mg/kg	12	L905190	05/20/2009	05/29/2009	6010B
Potassium	2820	351	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Selenium	1.24	0.877	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Silicon	2.42	1.75	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Silver	0.175 U	0.175	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Sodium	1490	43.9	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Strontium	10.9 J	0.877	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Thallium	0.439 U J	0.439	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Tin	7.95 ~~B~~ J	8.77	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Uranium	17.5 U	17.5	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Vanadium	0.375 B	2.19	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Zinc	23.5 J	8.77	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Mercury	0.0513	0.0265	mg/kg wet	1	L904197	05/01/2009	05/04/2009	7471A

10/10/09

204 Welsh Pool Road
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WC-Hanford, Inc. 2620 Fermi Avenue Richland WA, 99354	Project: RC-118 Project Number: K1608 Project Manager: Joan Kessner	Reported: 06/02/2009 14:40

J18K22
0904069-03 (Solid)

Analyte	Result and Qualifier	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
			Lionville Laboratory					
Metals by SW846 6000/7000 series								
Aluminum	3.95	1.29	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Antimony	0.395 U	0.395	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Arsenic	0.248 B J	0.658	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Barium	1.05	0.329	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Beryllium	0.132 U	0.132	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Bismuth	6.58 U	6.58	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Boron	1.32 U	1.32	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Cadmium	0.0362 B	0.132	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Calcium	18400 J	65.8	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Chromium	0.629	0.197	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Cobalt	1.32 U	1.32	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Copper	0.658 U	0.658	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Iron	17.6	13.2	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Lead	0.329 U J	0.329	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Lithium	1.64 U	1.64	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Magnesium	455 J	49.3	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Manganese	2.34 B	1.29	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Molybdenum	1.32 U	1.32	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Nickel	2.63 U J	2.63	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Phosphorus	10900 J	393	mg/kg	12	L905190	05/20/2009	05/30/2009	6010B
Potassium	2860	261	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Selenium	1.18	0.658	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Silicon	3.04	1.32	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Silver	0.132 U	0.132	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Sodium	1550	32.9	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Strontium	15.3 J	0.658	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Thallium	0.329 U J	0.329	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Tin	9.22 J	6.58	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Titanium	13.2 U	13.2	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Vanadium	0.250 B	1.64	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Zinc	23.7 J	6.58	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Mercury	0.0757	0.0243	mg/kg wet	1	L904193	05/01/2009	05/04/2009	7471A

10/10/09

WC-Hanford, Inc	Project: RC-118	
2620 Fermi Avenue	Project Number: K1608	**Reported:**
Richland WA, 99354	Project Manager: Joan Kessner	06/02/2009 14:40

J18K23

0904069-04 (Solid)

Lionville Laboratory

Metals by SW846 6000/7000 series

Analyte	Result and Qualifier		Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Aluminum	4.31	U	4.31	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Antimony	0.517	U	0.517	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Arsenic	**0.267**	~~B~~ J	0.862	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Barium	**0.519**		0.431	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Beryllium	0.172	U	0.172	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Bismuth	8.62	U	8.62	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Boron	1.72	U	1.72	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Cadmium	0.172	U	0.172	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Calcium	**5780**	J	86.2	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Chromium	**0.348**		0.259	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Cobalt	1.72	U	1.72	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Copper	0.862	U	0.862	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Iron	**13.1**	B	17.2	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Lead	**0.260**	~~B~~ UJ	0.431	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Lithium	2.16	U	2.16	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Magnesium	**271**	J	64.7	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Manganese	**1.59**	B	4.31	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Molybdenum	1.72	U	1.72	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Nickel	3.45	UJ	3.45	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Phosphorus	**4670**	J	517	mg/kg	12	L905190	05/20/2009	05/30/2009	6010B
Potassium	**3050**		345	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Selenium	**1.20**		0.862	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Silicon	**2.93**		1.72	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Silver	0.172	U	0.172	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Sodium	**1080**		43.1	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Strontium	**4.69**	J	0.862	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Thallium	0.431	UJ	0.431	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Tin	**14.0**	J	8.62	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Uranium	17.2	U	17.2	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Vanadium	2.16	U	2.16	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Zinc	**15.3**	J	8.62	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Mercury	**0.0398**		0.0225	mg/kg wet	1	L904197	05/01/2009	05/04/2009	7471A

yr 10/10/09

LVL

204 Welsh Pool Road
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WC-Hanford, Inc. 2620 Fermi Avenue Richland WA, 99354	Project: RC-118 Project Number: K1608 Project Manager: Joan Kessner	Reported: 06/02/2009 11:40

J18K24

0904069-05 (Solid)

Lionville Laboratory

Metals by SW846 6000/7000 series

Analyte	Result and Qualifier	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Aluminum	**5.53**	3.68	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Antimony	0.441 U	0.441	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Arsenic	**0.239** ~~B~~ J	0.735	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Barium	**3.27**	0.368	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Beryllium	0.147 U	0.147	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Bismuth	7.35 U	7.35	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Boron	1.47 U	1.47	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Cadmium	**0.0453** B	0.147	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Calcium	**50900** J	882	mg/kg	12	L905190	05/20/2009	05/30/2009	6010B
Chromium	**0.829**	0.221	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Cobalt	1.47 U	1.47	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Copper	0.735 U	0.735	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Iron	**13.6** B	14.7	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Lead	**0.265** ~~B~~ UJ	0.368	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Lithium	**0.481** B	1.84	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Magnesium	**747** J	55.1	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Manganese	**7.38**	3.68	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Molybdenum	1.47 U	1.47	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Nickel	2.94 U J	2.94	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Phosphorus	**25600** J	441	mg/kg	12	L905190	05/20/2009	05/30/2009	6010B
Potassium	**3070**	294	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Selenium	**1.37**	0.735	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Silicon	**1.69**	1.47	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Silver	0.147 U	0.147	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Sodium	**1930**	36.8	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Strontium	**40.1** J	0.735	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Thallium	0.368 U J	0.368	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Tin	**6.63** ~~B~~ J	7.35	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Uranium	14.7 U	14.7	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Vanadium	**0.625** B	1.84	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Zinc	**39.6** J	7.35	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Mercury	0.0727	0.0300	mg/kg wet	1	L904197	05/01/2009	05/04/2009	7471A

10/6/09

LVL
LIONVILLE LABORATORY

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WC-Hanford, Inc.	Project: RC-118	
2620 Fermi Avenue	Project Number: K1608	Reported:
Richland WA, 99354	Project Manager: Joan Kessner	06/02/2009 14:40

J18K36
0904069-06 (Solid)

Analyte	Result and Qualifier	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method

Lionville Laboratory

Metals by SW846 6000/7000 series

Analyte	Result and Qualifier	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Aluminum	3.47 B	4.31	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Antimony	0.517 U	0.517	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Arsenic	0.289 ~~B~~ J	0.862	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Barium	0.750	0.431	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Beryllium	0.172 U	0.172	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Bismuth	8.62 U	8.62	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Boron	1.72 U	1.72	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Cadmium	0.172 U	0.172	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Calcium	7200 J	86.2	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Chromium	0.402	0.259	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Cobalt	1.72 U	1.72	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Copper	0.824 ~~B~~ J	0.862	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Iron	7.50 B	17.2	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Lead	0.994 U J	0.431	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Lithium	2.16 U	2.16	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Magnesium	370 J	64.7	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Manganese	0.950 B	4.31	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Molybdenum	1.72 U	1.72	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Nickel	3.45 U J	3.45	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Phosphorus	6380 J	517	mg/kg	12	L905190	05/20/2009	05/30/2009	6010B
Potassium	3550	345	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Selenium	1.17	0.862	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Silicon	2.01	1.72	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Silver	0.172 U	0.172	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Sodium	581	43.1	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Strontium	7.07 J	0.862	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Thallium	0.111 U J	0.431	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Tin	85.5 J	8.62	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Uranium	17.2 U	17.2	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Vanadium	0.180 B	2.16	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Zinc	14.6 J	8.62	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Mercury	0.0993	0.0250	mg/kg wet	1	L904197	05/01/2009	05/04/2009	7471A

10/10/09

WC-Hanford, Inc 2620 Fermi Avenue Richland WA, 99354	Project: RC-118 Project Number: K1608 Project Manager: Joan Kessner	Reported: 06/02/2009 14 40

J18K37
0904069-07 (Solid)

Lionville Laboratory

Metals by SW846 6000/7000 series

Analyte	Result and Qualifier	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Aluminum	4.10 U	4.10	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Antimony	0.492 U	0.492	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Arsenic	**0.284** ~~B~~ J	0.820	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Barium	**0.216** B	0.410	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Beryllium	0.164 U	0.164	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Bismuth	8.20 U	8.20	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Boron	1.64 U	1.64	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Cadmium	0.164 U	0.164	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Calcium	**3210** J	82.0	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Chromium	**0.297**	0.246	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Cobalt	1.64 U	1.64	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Copper	**0.578** ~~B~~ J	0.820	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Iron	**6.73** B	16.4	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Lead	0.410 U J	0.410	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Lithium	2.05 U	2.05	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Magnesium	**299** J	61.5	mg/kg	1	L904190	05/20/2009	05/24/2009	6010B
Manganese	**0.532** B	4.10	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Molybdenum	1.64 U	1.64	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Nickel	3.28 U J	3.28	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Phosphorus	**3760** J	41.0	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Potassium	**4050**	128	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Selenium	**0.964**	0.820	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Silicon	**2.90**	1.64	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Silver	0.164 U	0.164	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Sodium	**546**	41.0	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Strontium	**2.74** J	0.820	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Thallium	0.410 U J	0.410	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Tin	**21.4** J	8.20	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Uranium	16.4 U	16.4	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Vanadium	2.05 U	2.05	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Zinc	**12.6** J	8.20	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Mercury	**0.0494**	0.0225	mg/kg wet	1	L904197	05/01/2009	05/04/2009	7471A

10/10/09

LVL Lionville Laboratory

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WC-Hanford, Inc 2620 Fermi Avenue Richland WA, 99354	Project: RC-118 Project Number: K1608 Project Manager: Joan Kessner	Reported: 06/02/2009 14:40

J18K38

0904069-08 (Solid)

Lionville Laboratory

Metals by SW846 6000/7000 series

Analyte	Result and Qualifier		Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Aluminum	4.90	U	4.90	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Antimony	0.588	U	0.588	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Arsenic	**0.349**	~~B~~ J	0.980	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Barium	**0.877**		0.490	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Beryllium	0.196	U	0.196	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Bismuth	9.80	U	9.80	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Boron	1.96	U	1.96	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Cadmium	0.196	U	0.196	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Calcium	**9640**	J	98.0	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Chromium	**0.607**		0.294	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Cobalt	1.96	U	1.96	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Copper	**0.905**	~~B~~ J	0.980	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Iron	**8.25**	B	19.6	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Lead	**1.59**	J	0.490	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Lithium	2.45	U	2.45	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Magnesium	**452**	J	73.5	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Manganese	**1.25**	B	4.90	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Molybdenum	1.96	U	1.96	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Nickel	3.92	U J	3.92	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Phosphorus	**7960**	J	588	mg/kg	12	L905190	05/20/2009	05/30/2009	6010B
Potassium	**3950**		392	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Selenium	**1.25**		0.980	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Silicon	**2.71**		1.96	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Silver	0.196	U	0.196	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Sodium	**540**		49.0	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Strontium	**8.91**	J	0.980	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Thallium	0.490	U J	0.490	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Tin	**161**	J	9.80	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Uranium	19.6	U	19.6	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Vanadium	**0.222**	B	2.45	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Zinc	**17.7**	J	9.80	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Mercury	**0.0454**		0.0250	mg/kg wet	1	L904197	05/01/2009	05/04/2009	7471A

10/10/09

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WC Hanford, Inc. 2620 Fermi Avenue Richland WA, 99354	Project: RC-118 Project Number: K1608 Project Manager: John Kessner	**Reported:** 06/02/2009 14:40

J18K39
0904069-09 (Solid)

Lionville Laboratory

Metals by SW846 6000/7000 series

Analyte	Result and Qualifier		Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Aluminum	3.97	U	3.97	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Antimony	0.476	U	0.476	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Arsenic	0.794	U	0.794	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Barium	**0.130**	B	0.397	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Beryllium	0.159	U	0.159	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Bismuth	7.94	U	7.94	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Boron	1.59	U	1.59	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Cadmium	0.159	U	0.159	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Calcium	**1490**	J	79.4	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Chromium	**0.649**		0.238	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Cobalt	1.59	U	1.59	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Copper	**0.514**	~~B~~ J	0.794	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Iron	**10.6**	B	15.9	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Lead	**0.242**	~~B~~ UJ	0.397	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Lithium	1.98	U	1.98	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Magnesium	**284**	J	39.5	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Manganese	**0.321**	B	3.97	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Molybdenum	1.59	U	1.59	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Nickel	3.17	UJ	3.17	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Phosphorus	**3110**	J	39.7	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Potassium	**3970**		317	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Selenium	**1.06**		0.794	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Silicon	**2.20**		1.59	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Silver	0.159	U	0.159	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Sodium	**508**		39.7	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Strontium	**1.33**	J	0.794	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Thallium	0.397	UJ	0.397	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Tin	**15.4**	J	7.94	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Uranium	15.9	U	15.9	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Vanadium	1.98	U	1.98	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Zinc	**11.2**	J	7.94	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Mercury	**0.0566**		0.0265	mg/kg wet	1	L904192	05/01/2009	05/04/2009	7471A

10/16/09

WC-Hanford, Inc 2620 Fermi Avenue Richland WA 99354	Project: RC-118 Project Number: K1608 Project Manager: Joan Kessner	**Reported:** 06/02/2009 14:40

J18K40
0904069-10 (Solid)

Analyte	Result and Qualifier	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method

Lionville Laboratory

Metals by SW846 6000/7000 series

Analyte	Result and Qualifier	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Aluminum	3.47 U	3.47	mg/kg	1	1905190	05/20/2009	05/24/2009	6010B
Antimony	0.417 U	0.417	mg/kg	1	1905190	05/20/2009	05/24/2009	6010B
Arsenic	0.255 ~~B~~ J	0.694	mg/kg	1	1905190	05/20/2009	05/24/2009	6010B
Barium	0.285 B	0.347	mg/kg	1	1905190	05/20/2009	05/24/2009	6010B
Beryllium	0.139 U	0.139	mg/kg	1	1905190	05/20/2009	05/24/2009	6010B
Bismuth	6.94 U	6.94	mg/kg	1	1905190	05/20/2009	05/24/2009	6010B
Boron	1.39 U	1.39	mg/kg	1	1905190	05/20/2009	05/24/2009	6010B
Cadmium	0.139 U	0.139	mg/kg	1	1905190	05/20/2009	05/24/2009	6010B
Calcium	3540 J	69.4	mg/kg	1	1905190	05/20/2009	05/24/2009	6010B
Chromium	0.318	0.208	mg/kg	1	1905190	05/20/2009	05/24/2009	6010B
Cobalt	1.39 U	1.39	mg/kg	1	1905190	05/20/2009	05/24/2009	6010B
Copper	0.637 ~~B~~ J	0.694	mg/kg	1	1905190	05/20/2009	05/24/2009	6010B
Iron	6.30 B	13.9	mg/kg	1	1905190	05/20/2009	05/24/2009	6010B
Lead	0.424 U J	0.347	mg/kg	1	1905190	05/20/2009	05/24/2009	6010B
Lithium	1.74 U	1.74	mg/kg	1	1905190	05/20/2009	05/24/2009	6010B
Magnesium	320 J	52.1	mg/kg	1	1905190	05/20/2009	05/24/2009	6010B
Manganese	0.639 B	3.47	mg/kg	1	1905190	05/20/2009	05/24/2009	6010B
Molybdenum	1.39 U	1.39	mg/kg	1	1905190	05/20/2009	05/24/2009	6010B
Nickel	2.78 U J	2.78	mg/kg	1	1905190	05/20/2009	05/24/2009	6010B
Phosphorus	4660 J	417	mg/kg	12	1905190	05/20/2009	05/30/2009	6010B
Potassium	3970	278	mg/kg	1	1905190	05/20/2009	05/24/2009	6010B
Selenium	0.985	0.694	mg/kg	1	1905190	05/20/2009	05/24/2009	6010B
Silicon	1.54	1.39	mg/kg	1	1905190	05/20/2009	05/24/2009	6010B
Silver	0.139 U	0.139	mg/kg	1	1905190	05/20/2009	05/24/2009	6010B
Sodium	464	34.7	mg/kg	1	1905190	05/20/2009	05/24/2009	6010B
Strontium	3.28 J	0.694	mg/kg	1	1905190	05/20/2009	05/24/2009	6010B
Thallium	0.347 U J	0.347	mg/kg	1	1905190	05/20/2009	05/24/2009	6010B
Tin	39.4 J	6.94	mg/kg	1	1905190	05/20/2009	05/24/2009	6010B
Uranium	13.9 U	13.9	mg/kg	1	1905190	05/20/2009	05/24/2009	6010B
Vanadium	1.74 U	1.74	mg/kg	1	1905190	05/20/2009	05/24/2009	6010B
Zinc	14.0 J	6.94	mg/kg	1	1905190	05/20/2009	05/24/2009	6010B
Mercury	0.0261	0.0743	mg/kg wet	1	1904197	05/01/2009	05/04/2009	7471A

11/10/09

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WC-Hanford, Inc 2620 Fermi Avenue Richland WA, 99354	Project: RC-118 Project Number: K1608 Project Manager: Joan Kessner	**Reported:** 06/02/2009 14:40

J18K63
0904069-11 (Solid)

Lionville Laboratory

Metals by SW846 6000/7000 series

Analyte	Result and Qualifier		Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Aluminum	4.23	B	5.00	mg/kg	1	1905190	05/20/2009	05/24/2009	6010B
Antimony	0.600	U	0.600	mg/kg	1	1905190	05/20/2009	05/24/2009	6010B
Arsenic	1.00	U	1.00	mg/kg	1	1905190	05/20/2009	05/24/2009	6010B
Barium	1.97		0.500	mg/kg	1	1905190	05/20/2009	05/24/2009	6010B
Beryllium	0.200	U	0.200	mg/kg	1	1905190	05/20/2009	05/24/2009	6010B
Bismuth	10.0	U	10.0	mg/kg	1	1905190	05/20/2009	05/24/2009	6010B
Boron	2.00	U	2.00	mg/kg	1	1905190	05/20/2009	05/24/2009	6010B
Cadmium	0.0828	B	0.200	mg/kg	1	1905190	05/20/2009	05/24/2009	6010B
Calcium	22800	J	100	mg/kg	1	1905190	05/20/2009	05/24/2009	6010B
Chromium	0.676		0.300	mg/kg	1	1905190	05/20/2009	05/24/2009	6010B
Cobalt	2.00	U	2.00	mg/kg	1	1905190	05/20/2009	05/24/2009	6010B
Copper	1.00	U	1.00	mg/kg	1	1905190	05/20/2009	05/24/2009	6010B
Iron	20.1		20.0	mg/kg	1	1905190	05/20/2009	05/24/2009	6010B
Lead	0.317	~~B~~ U J	0.300	mg/kg	1	1905190	05/20/2009	05/24/2009	6010B
Lithium	2.50	U	2.50	mg/kg	1	1905190	05/20/2009	05/24/2009	6010B
Magnesium	556	J	75.0	mg/kg	1	1905190	05/20/2009	05/24/2009	6010B
Manganese	3.06	B	5.00	mg/kg	1	1905190	05/20/2009	05/24/2009	6010B
Molybdenum	2.00	U	2.00	mg/kg	1	1905190	05/20/2009	05/24/2009	6010B
Nickel	4.00	U J	4.00	mg/kg	1	1905190	05/20/2009	05/24/2009	6010B
Phosphorus	13300	J	600	mg/kg	12	1905190	05/20/2009	05/30/2009	6010B
Potassium	2940		400	mg/kg	1	1905190	05/20/2009	05/24/2009	6010B
Selenium	1.31		1.00	mg/kg	1	1905190	05/20/2009	05/24/2009	6010B
Silicon	2.84		2.00	mg/kg	1	1905190	05/20/2009	05/24/2009	6010B
Silver	0.200	U	0.200	mg/kg	1	1905190	05/20/2009	05/24/2009	6010B
Sodium	1870		50.0	mg/kg	1	1905190	05/20/2009	05/24/2009	6010B
Strontium	22.5	J	1.00	mg/kg	1	1905190	05/20/2009	05/24/2009	6010B
Thallium	0.500	U J	0.500	mg/kg	1	1905190	05/20/2009	05/24/2009	6010B
Tin	17.9	J	10.0	mg/kg	1	1905190	05/20/2009	05/24/2009	6010B
Uranium	20.0	U	20.0	mg/kg	1	1905190	05/20/2009	05/24/2009	6010B
Vanadium	0.361	B	2.50	mg/kg	1	1905190	05/20/2009	05/24/2009	6010B
Zinc	31.0	J	10.0	mg/kg	1	1905190	05/20/2009	05/24/2009	6010B
Mercury	0.0332		0.0237	mg/kg wet	1	1904197	05/01/2009	05/04/2009	7471A

10/10/09

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264 Welsh Pool Road
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WC-Hanford, Inc. 2620 Fermi Avenue Richland WA, 99354	Project: RC-118 Project Number: K1608 Project Manager: Joan Kessner	Reported: 06/02/2009 14:40

J18K64
0904069-12 (Solid)

Lionville Laboratory

Metals by SW846 6000/7000 series

Analyte	Result and Qualifier		Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Aluminum	5.49		3.68	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Antimony	0.441	U	0.441	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Arsenic	0.229	~~B~~ J	0.735	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Barium	0.774		0.368	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Beryllium	0.147	U	0.147	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Bismuth	7.35	U	7.35	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Boron	1.47	U	1.47	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Cadmium	0.0484	B	0.147	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Calcium	15800	J	7.35	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Chromium	0.632		0.221	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Cobalt	1.47	U	1.47	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Copper	0.735	U	0.735	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Iron	18.2		14.7	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Lead	0.322	~~B~~ U J	0.368	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Lithium	1.84	U	1.84	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Magnesium	300	J	55.1	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Manganese	1.59	B	3.68	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Molybdenum	1.47	U	1.47	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Nickel	2.94	U J	2.94	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Phosphorus	6590	J	441	mg/kg	17	L905190	05/20/2009	05/30/2009	6010B
Potassium	2790		294	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Selenium	1.33		0.735	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Silicon	3.13		1.47	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Silver	0.147	U	0.147	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Sodium	1380		36.8	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Strontium	15.4	J	0.735	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Thallium	0.368	U J	0.368	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Tin	20.8	J	7.35	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Uranium	14.7	U	14.7	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Vanadium	0.211	B	1.84	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Zinc	20.4	J	7.35	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Mercury	0.0260	B, J	0.0265	mg/kg wet	1	L904177	05/01/2009	05/04/2009	7471A

10/10/09

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WC-Hanford, Inc. 2620 Fermi Avenue Richland WA, 99354	Project: RC-118 Project Number: K1608 Project Manager: Joan Kessner	Reported: 06/02/2009 14:40

J18K65

0904069-13 (Solid)

Lionville Laboratory

Metals by SW846 6000/7000 series

Analyte	Result and Qualifier		Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Aluminum	3.41		3.38	mg/kg	1	1905190	05/20/2009	05/24/2009	6010B
Antimony	0.405	U	0.405	mg/kg	1	1905190	05/20/2009	05/24/2009	6010B
Arsenic	0.298	BJ	0.676	mg/kg	1	1905190	05/20/2009	05/24/2009	6010B
Barium	0.805		0.338	mg/kg	1	1905190	05/20/2009	05/24/2009	6010B
Beryllium	0.135	U	0.135	mg/kg	1	1905190	05/20/2009	05/24/2009	6010B
Bismuth	6.76	U	6.76	mg/kg	1	1905190	05/20/2009	05/24/2009	6010B
Boron	1.35	U	1.35	mg/kg	1	1905190	05/20/2009	05/24/2009	6010B
Cadmium	0.0595	B	0.135	mg/kg	1	1905190	05/20/2009	05/24/2009	6010B
Calcium	10100	J	67.6	mg/kg	1	1905190	05/20/2009	05/24/2009	6010B
Chromium	0.327		0.203	mg/kg	1	1905190	05/20/2009	05/24/2009	6010B
Cobalt	1.35	U	1.35	mg/kg	1	1905190	05/20/2009	05/24/2009	6010B
Copper	0.676	U	0.676	mg/kg	1	1905190	05/20/2009	05/24/2009	6010B
Iron	17.5		13.5	mg/kg	1	1905190	05/20/2009	05/24/2009	6010B
Lead	0.368	UJ	0.338	mg/kg	1	1905190	05/20/2009	05/24/2009	6010B
Lithium	1.69	U	1.69	mg/kg	1	1905190	05/20/2009	05/24/2009	6010B
Magnesium	340	J	50.7	mg/kg	1	1905190	05/20/2009	05/24/2009	6010B
Manganese	2.34	B	3.38	mg/kg	1	1905190	05/20/2009	05/24/2009	6010B
Molybdenum	1.35	U	1.35	mg/kg	1	1905190	05/20/2009	05/24/2009	6010B
Nickel	2.70	UJ	2.70	mg/kg	1	1905190	05/20/2009	05/24/2009	6010B
Phosphorus	6770	J	405	mg/kg	12	1905190	05/20/2009	05/30/2009	6010B
Potassium	2740		270	mg/kg	1	1905190	05/20/2009	05/24/2009	6010B
Selenium	1.34		0.676	mg/kg	1	1905190	05/20/2009	05/24/2009	6010B
Silicon	5.03		1.35	mg/kg	1	1905190	05/20/2009	05/24/2009	6010B
Silver	0.135	U	0.135	mg/kg	1	1905190	05/20/2009	05/24/2009	6010B
Sodium	1240		33.8	mg/kg	1	1905190	05/20/2009	05/24/2009	6010B
Strontium	8.14	J	0.676	mg/kg	1	1905190	05/20/2009	05/24/2009	6010B
Thallium	0.338	UJ	0.338	mg/kg	1	1905190	05/20/2009	05/24/2009	6010B
Tin	24.5	J	6.76	mg/kg	1	1905190	05/20/2009	05/24/2009	6010B
Uranium	13.5	U	13.5	mg/kg	1	1905190	05/20/2009	05/24/2009	6010B
Vanadium	0.184	B	1.69	mg/kg	1	1905190	05/20/2009	05/24/2009	6010B
Zinc	18.9	J	6.76	mg/kg	1	1905190	05/20/2009	05/24/2009	6010B
Mercury	0.0287		0.0265	mg/kg wet	1	1904197	05/01/2009	05/04/2009	7471A

10/10/09

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264 Welsh Pool Road
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WC-Hanford, Inc 2620 Fermi Avenue Richland WA, 99354	Project: RC-118 Project Number: K1608 Project Manager: John Kessner	Reported: 06/02/2009 14 40

J18K66
0904069-14 (Solid)

Analyte	Result and Qualifier	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Lionville Laboratory								
Metals by SW846 6000/7000 series								
Aluminum	5.52	3.38	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Antimony	0.405 U	0.405	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Arsenic	0.325 ~~B~~ J	0.676	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Barium	1.46	0.338	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Beryllium	0.135 U	0.135	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Bismuth	6.76 U	6.76	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Boron	1.35 U	1.35	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Cadmium	0.0558 B	0.135	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Calcium	20100 J	67.6	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Chromium	0.766	0.203	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Cobalt	1.35 U	1.35	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Copper	0.676 U	0.676	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Iron	19.5	13.5	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Lead	0.338 U J	0.338	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Lithium	1.69 U	1.69	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Magnesium	534 J	50.7	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Manganese	5.88	3.38	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Molybdenum	1.35 U	1.35	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Nickel	2.70 U J	2.70	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Phosphorus	12500 J	405	mg/kg	12	L905190	05/20/2009	05/30/2009	6010B
Potassium	2910	270	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Selenium	1.27	0.676	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Silicon	2.19	1.35	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Silver	0.135 U	0.135	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Sodium	1380	33.8	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Strontium	16.9 J	0.676	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Thallium	0.338 U J	0.338	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Tin	9.06 J	6.76	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Uranium	13.5 U	13.5	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Vanadium	0.362 B	1.69	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Zinc	33.9 J	6.76	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Mercury	0.0358	0.0243	mg/kg wet	1	L904197	05/01/2009	05/04/2009	7471A

10/10/09

LVL
Lionville Laboratory

264 Welsh Pool Road
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WC-Hanford, Inc.	Project: RC-118	
2620 Fermi Avenue	Project Number: K1608	Reported:
Richland WA, 99354	Project Manager: Joan Kessner	06/02/2009 14:40

J18K67

0904069-15 (Solid)

Lionville Laboratory

Analyte	Result and Qualifier	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Metals by SW846 6000/7000 series								
Aluminum	3.14 B	3.16	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Antimony	0.380 U	0.380	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Arsenic	0.193 ~~B~~ J	0.633	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Barium	1.49	0.316	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Beryllium	0.127 U	0.127	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Bismuth	6.33 U	6.33	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Boron	1.27 U	1.27	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Cadmium	0.0516 B	0.127	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Calcium	30100 J	63.3	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Chromium	0.687	0.190	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Cobalt	1.27 U	1.27	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Copper	0.320 ~~B~~ J	0.633	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Iron	14.6	12.7	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Lead	0.217 ~~B~~ U J	0.316	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Lithium	1.58 U	1.58	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Magnesium	643 J	47.5	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Manganese	4.85	3.16	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Molybdenum	1.27 U	1.27	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Nickel	2.53 U J	2.53	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Phosphorus	17100 J	380	mg/kg	12	L905190	05/20/2009	05/30/2009	6010B
Potassium	3220	253	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Selenium	1.55	0.633	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Silicon	7.87	1.27	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Silver	0.127 U	0.127	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Sodium	1640	31.6	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Strontium	24.9 J	0.633	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Thallium	0.316 U J	0.316	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Tin	13.4 J	6.33	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Uranium	12.7 U	12.7	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Vanadium	0.298 B	1.58	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Zinc	30.2 J	6.33	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Mercury	0.0184 B, J	0.0257	mg/kg wet	1	L904197	05/01/2009	05/04/2009	7471A

10/10/09

264 Welsh Pool Road
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WCH Hanford, Inc
2620 Fermi Avenue
Richland WA, 99354

Project: RC 118
Project Number: K1608
Project Manager: Joan Kessner

Reported
06/02/2009 14:40

J18J84
0904069-16 (Solid)

Lionville Laboratory

Metals by SW846 6000/7000 series

Analyte	Result and Qualifier		Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Aluminum	3.85	U	3.85	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Antimony	0.462	U	0.462	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Arsenic	0.308	~~B~~ J	0.769	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Barium	0.196	B	0.385	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Beryllium	0.154	U	0.154	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Bismuth	7.69	U	7.69	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Boron	1.54	U	1.54	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Cadmium	0.154	U	0.154	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Calcium	1850	J	76.9	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Chromium	0.397		0.231	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Cobalt	1.54	U	1.54	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Copper	0.622	~~B~~ J	0.769	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Iron	7.46	B	15.4	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Lead	0.431	C J	0.385	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Lithium	1.92	U	1.92	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Magnesium	241	J	57.7	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Manganese	0.765	B	3.85	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Molybdenum	1.54	U	1.54	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Nickel	3.08	U J	3.08	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Phosphorus	3020	J	38.5	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Potassium	3840		308	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Selenium	0.950		0.769	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Silicon	1.55		1.54	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Silver	0.154	U	0.154	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Sodium	400		38.5	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Strontium	1.64	J	0.769	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Thallium	0.385	U J	0.385	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Tin	31.2	J	7.69	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Uranium	15.4	U	15.4	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Vanadium	1.92	U	1.92	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Zinc	7.49	~~B~~ J	7.69	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Mercury	0.0766		0.0265	mg/kg wet	1	L904197	05/01/2009	05/04/2009	7471A

10/1/09

LVL
LIONVILLE LABORATORY

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

WC-Hanford, Inc 2620 Fermi Avenue Richland WA, 99354	Project: RC-118 Project Number: K1608 Project Manager: Joan Kessner	Reported: 06/02/2009 14:40

J18JR5
0904069-17 (Solid)

Analyte	Result and Qualifier	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
			Lionville Laboratory					
Metals by SW846 6000/7000 series								
Aluminum	4.24 U	4.24	mg/kg	1	1905190	05/20/2009	05/24/2009	6010B
Antimony	0.508 U	0.508	mg/kg	1	1905190	05/20/2009	05/24/2009	6010B
Arsenic	0.847 U	0.847	mg/kg	1	1905190	05/20/2009	05/24/2009	6010B
Barium	0.214 B	0.424	mg/kg	1	1905190	05/20/2009	05/24/2009	6010B
Beryllium	0.169 U	0.169	mg/kg	1	1905190	05/20/2009	05/24/2009	6010B
Bismuth	8.47 U	8.47	mg/kg	1	1905190	05/20/2009	05/24/2009	6010B
Boron	1.69 U	1.69	mg/kg	1	1905190	05/20/2009	05/24/2009	6010B
Cadmium	0.169 U	0.169	mg/kg	1	1905190	05/20/2009	05/24/2009	6010B
Calcium	1620 J	84.7	mg/kg	1	1905190	05/20/2009	05/24/2009	6010B
Chromium	0.579	0.254	mg/kg	1	1905190	05/20/2009	05/24/2009	6010B
Cobalt	1.69 U	1.69	mg/kg	1	1905190	05/20/2009	05/24/2009	6010B
Copper	0.546 ~~B~~ J	0.847	mg/kg	1	1905190	05/20/2009	05/24/2009	6010B
Iron	8.58 B	16.9	mg/kg	1	1905190	05/20/2009	05/24/2009	6010B
Lead	0.464 UJ	0.424	mg/kg	1	1905190	05/20/2009	05/24/2009	6010B
Lithium	2.12 U	2.12	mg/kg	1	1905190	05/20/2009	05/24/2009	6010B
Magnesium	260 J	63.6	mg/kg	1	1905190	05/20/2009	05/24/2009	6010B
Manganese	0.358 B	4.24	mg/kg	1	1905190	05/20/2009	05/24/2009	6010B
Molybdenum	1.69 U	1.69	mg/kg	1	1905190	05/20/2009	05/24/2009	6010B
Nickel	3.39 U J	3.39	mg/kg	1	1905190	05/20/2009	05/24/2009	6010B
Phosphorus	3040 J	42.4	mg/kg	1	1905190	05/20/2009	05/24/2009	6010B
Potassium	4360	339	mg/kg	1	1905190	05/20/2009	05/24/2009	6010B
Selenium	0.919	0.847	mg/kg	1	1905190	05/20/2009	05/24/2009	6010B
Silicon	2.13	1.69	mg/kg	1	1905190	05/20/2009	05/24/2009	6010B
Silver	0.169 U	0.169	mg/kg	1	1905190	05/20/2009	05/24/2009	6010B
Sodium	503	42.4	mg/kg	1	1905190	05/20/2009	05/24/2009	6010B
Strontium	1.64 J	0.847	mg/kg	1	1905190	05/20/2009	05/24/2009	6010B
Thallium	0.424 U J	0.424	mg/kg	1	1905190	05/20/2009	05/24/2009	6010B
Tin	33.9 J	8.47	mg/kg	1	1905190	05/20/2009	05/24/2009	6010B
Uranium	16.9 U	16.9	mg/kg	1	1905190	05/20/2009	05/24/2009	6010B
Vanadium	2.12 U	2.12	mg/kg	1	1905190	05/20/2009	05/24/2009	6010B
Zinc	8.97 J	8.47	mg/kg	1	1905190	05/20/2009	05/24/2009	6010B
Mercury	0.0862	0.0281	mg/kg wet	1	1904197	05/01/2009	05/04/2009	7471A

10/10/09

WCH-Hanford, Inc 2620 Fermi Avenue Richland WA, 99354	Project: RC 118 Project Number: K1608 Project Manager: Joan Kessner	Reported: 06/02/2009 14:40

J18J86
0904069-18 (Solid)

Analyte	Result and Qualifier	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
		Lionville Laboratory						
Metals by SW846 6000/7000 series								
Aluminum	3.42	3.29	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Antimony	0.395 U	0.395	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Arsenic	0.211 ~~B~~ J	0.658	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Barium	0.149 B	0.329	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Beryllium	0.132 U	0.132	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Bismuth	6.58 U	6.58	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Boron	1.32 U	1.32	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Cadmium	0.132 U	0.132	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Calcium	1300 J	65.8	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Chromium	0.390	0.197	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Cobalt	1.32 U	1.32	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Copper	0.439 ~~B~~	0.658	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Iron	5.93 B	13.2	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Lead	0.329 U J	0.329	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Lithium	1.64 U	1.64	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Magnesium	257 J	49.3	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Manganese	0.275 B	3.29	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Molybdenum	1.32 U	1.32	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Nickel	2.63 U J	2.63	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Phosphorus	2890 J	32.9	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Potassium	4330	263	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Selenium	0.941	0.658	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Silicon	2.36	1.32	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Silver	0.132 U	0.132	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Sodium	615	32.9	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Strontium	1.13 J	0.658	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Thallium	0.329 U J	0.329	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Tin	9.44 J	6.58	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Uranium	13.2 U	13.2	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Vanadium	1.64 U	1.64	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Zinc	7.31 J	6.58	mg/kg	1	L905190	05/20/2009	05/24/2009	6010B
Mercury	0.0401	0.0243	mg/kg wet	1	L904197	05/01/2009	05/04/2009	7471A

10/16/09

LVL
204 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

WC-Hanford, Inc. 2620 Fermi Avenue Richland WA, 99354	Project: RC-118 Project Number: K1608 Project Manager: Joan Kessner	Reported: 06/02/2009 14:40

J18J87
0904069-19 (Solid)

Lionville Laboratory

Metals by SW846 6000/7000 series

Analyte	Result and Qualifier	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Aluminum	3.38 U	3.38	mg/kg	1	1905190	05/20/2009	05/24/2009	6010B
Antimony	0.405 U	0.405	mg/kg	1	1905190	05/20/2009	05/24/2009	6010B
Arsenic	0.676 U	0.676	mg/kg	1	1905190	05/20/2009	05/24/2009	6010B
Barium	0.216 B	0.338	mg/kg	1	1905190	05/20/2009	05/24/2009	6010B
Beryllium	0.135 U	0.135	mg/kg	1	1905190	05/20/2009	05/24/2009	6010B
Bismuth	6.76 U	6.76	mg/kg	1	1905190	05/20/2009	05/24/2009	6010B
Boron	1.35 U	1.35	mg/kg	1	1905190	05/20/2009	05/24/2009	6010B
Cadmium	0.135 U	0.135	mg/kg	1	1905190	05/20/2009	05/24/2009	6010B
Calcium	1860 J	67.6	mg/kg	1	1905190	05/20/2009	05/24/2009	6010B
Chromium	0.334	0.203	mg/kg	1	1905190	05/20/2009	05/24/2009	6010B
Cobalt	1.35 U	1.35	mg/kg	1	1905190	05/20/2009	05/24/2009	6010B
Copper	0.573 ~~B~~ J	0.676	mg/kg	1	1905190	05/20/2009	05/24/2009	6010B
Iron	6.90 B	13.5	mg/kg	1	1905190	05/20/2009	05/24/2009	6010B
Lead	0.424 UJ	0.338	mg/kg	1	1905190	05/20/2009	05/24/2009	6010B
Lithium	1.69 U	1.69	mg/kg	1	1905190	05/20/2009	05/24/2009	6010B
Magnesium	282 J	50.7	mg/kg	1	1905190	05/20/2009	05/24/2009	6010B
Manganese	0.655 B	3.38	mg/kg	1	1905190	05/20/2009	05/24/2009	6010B
Molybdenum	1.35 U	1.35	mg/kg	1	1905190	05/20/2009	05/24/2009	6010B
Nickel	2.70 UJ	2.70	mg/kg	1	1905190	05/20/2009	05/24/2009	6010B
Phosphorus	3140 J	33.8	mg/kg	1	1905190	05/20/2009	05/24/2009	6010B
Potassium	4230	270	mg/kg	1	1905190	05/20/2009	05/24/2009	6010B
Selenium	0.978	0.676	mg/kg	1	1905190	05/20/2009	05/24/2009	6010B
Silicon	1.77	1.35	mg/kg	1	1905190	05/20/2009	05/24/2009	6010B
Silver	0.135 U	0.135	mg/kg	1	1905190	05/20/2009	05/24/2009	6010B
Sodium	545	33.8	mg/kg	1	1905190	05/20/2009	05/24/2009	6010B
Strontium	1.72 J	0.676	mg/kg	1	1905190	05/20/2009	05/24/2009	6010B
Thallium	0.338 UJ	0.338	mg/kg	1	1905190	05/20/2009	05/24/2009	6010B
Tin	33.1 J	6.76	mg/kg	1	1905190	05/20/2009	05/24/2009	6010B
Uranium	13.5 U	13.5	mg/kg	1	1905190	05/20/2009	05/24/2009	6010B
Vanadium	1.69 U	1.69	mg/kg	1	1905190	05/20/2009	05/24/2009	6010B
Zinc	8.74 J	6.76	mg/kg	1	1905190	05/20/2009	05/24/2009	6010B
Mercury	0.0929	0.0257	mg/kg wet	1	1904197	05/01/2009	05/04/2009	7471A

10/10/09

Appendix 4

Laboratory Narrative and Chain-of-Custody Documentation

LIONVILLE LABORATORY

264 Welsh Pool Road
Exton, Pennsylvania 19341
Phone (610) 280-3000
Fax (610) 280-3041

Case Narrative

Client: WC-HANFORD RC-118
LVL#: 0904044
SDG/SAF#: K1608 /RC-118

W.O.#: 60049-001-001-0001-00
Date Received: 04-21-09

METALS

The following is a summary of the QC results accompanying the sample results. Lionville Laboratory (LvL) certifies that all test results meet the requirements of NELAC except as noted below.

All soil samples are reported on a dry weight basis unless requested by the client, required by the method, or noted otherwise.

1. This narrative covers the analyses of 9 solid samples. The samples are reported on a wet weight, "as-received" basis.

2. The samples were prepared and analyzed in accordance with methods checked on the attached glossary.

   All samples, with the exception of samples J18K78 and J18K81, were rerun with 12-fold dilutions for Phosphorus due to high concentrations.

3. All analyses were performed within the required holding times.

4. All Initial and Continuing Calibration Verifications (ICV/CCVs) were within the 90-110% control limits (80-120% for Mercury) with the exception of the ending CCV for Potassium at 111.4% in file ICP0524B. The SRM may be biased slightly high for Potassium.

5. All Initial and Continuing Calibration Blanks (ICB/CCBs) were within control limits (less than the LOQ).

6. All preparation/method blanks (MB) were within method criteria (less than the Limit of Quantitation (3-10X the LOD), or samples greater than 20X MB value).

7. All ICP Interference Check Standards were within control limits.

8. All Standard Reference Material (SRM) results were within the Prediction Intervals provided by the manufacturer.

9. The matrix spike (MS) recoveries for 2 analytes were outside the 75-125% control limits.

10. For analytes where the ICP MS is out-of-control, a post-digestion MS (PDS) and serial dilution are performed. A PDS was prepared at meaningful concentration level for the following analytes:

Sample ID	Element	PDS Concentration (ppb)	PDS % Recovery
J18KD8	Calcium	10,000	69.3
	Phosphorous	24,000	96.5

11. The duplicate analyses for 11 analytes were outside the 20% Relative Percent Difference (RPD) control limits.

12. For the purposes of this report, the data has been reported to the Limit of Detection (LOD). Values between the LOD and the Limit of Quantitation (LOQ) are acquired in a region of less-certain quantification.

13. LvL is NELAP accredited by the State of Pennsylvania. For a complete listing of accrediting authorities and the corresponding analytes/methods, please contact your Project Manager.

14. I certify that this sample data package is in compliance with SOW requirements, both technically and for completeness, other than the conditions detailed above. Release of the data contained in this hard-copy data package has been authorized by the Laboratory Manager or a designee, as verified by the following signature.

Iain Daniels
Laboratory Manager
Lionville Laboratory

gw/m04-044

6-3-7
Date

0104044

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-118-136 | Page 1 of 1

Collector Josh McGough	Company Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator KESSNER, JM
Project Designation Columbia River Component of the RCBRA - Tissues	Sampling Location LWSA-WFL CARCASS		SAF No. RC-118
Ice Chest No. GRP 06004	Field Logbook No. 1633	COA BESCRC6520	Method of Shipment FED EX
Shipped To ENERLINE SERVICES (GOSVILLE)	Offsite Property No. N/A		Bill of Lading/Air Bill No. 7975 2317 6688

Price Code 9K

Data Turnaround 45 Days

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

COOL 4C "MATRIX COMPOSED OF FISH"

000044

Preservation	None	None	None	None	Cool 4C	Cool 4C	None
Type of Container	G/P	G/P	G/P	G/P	aG/P	aG	G/P
No. of Container(s)	1	1	1	1	1	1	1
Volume	1500g	100g	100g	10g	150g	120g	10g
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Tritium - H3	See item (2) in Special Instructions	See item (3) in Special Instructions	Pesticides - 8081	[illegible]

Sample No.	Matrix *	Sample Date	Sample Time							
J18XD8	OTHER SOLID	04/16/09	0832					X	X	

CHAIN OF POSSESSION	Date/Time	Sign/Print Names Received By/Stored In	Date/Time
Relinquished By/Removed From Josh McGough	04/16/09 8:30	EAS Lock10 Storage	04/16/09 8:35
Relinquished By/Removed From EAS locked storage	04/16/09 1300	Received By/Stored In SHANNAN JOHNSON	4-20-09 1300
Relinquished By/Removed From Storage SHANNAN JOHNSON	4/20/09 1300	Received By/Stored In FED EX	
Relinquished By/Removed From Fed Ex	4-21-09 0910	Received By/Stored In	4-21-09 0910
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time

SPECIAL INSTRUCTIONS

(1) Gamma Spec - {Full List} [Americium-241, Antimony-125, Beryllium-7, Cerium-144, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238]
(2) Strontium-89,90 -- Total Sr; Isotopic Thorium {Thorium-232}; Isotopic Uranium {Uranium-233/234, Uranium-235, Uranium-238}; Isotopic Plutonium
(3) ICP Metals - 6010 (Full List) [Aluminum, Antimony, Arsenic, Barium, Beryllium, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc]; Mercury - 7471 - (CV)

Sampler unavailable to relinquish samples from EAS Refrigerator. EAS Custodian removed samples for shipping on 4/20/09

Matrix *

S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-118-137

Page 1 of 1

Collector Josh McGough	Company Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator KESSNER, JH
Project Designation Columbia River Component of the RCBRA - Tissues	Sampling Location LWSA-WF2, CARCASS		SAF No. RC-118
Ice Chest No. GRP 06004	Field Logbook No. 1633	COA BESCRC6520	Method of Shipment FEDEX
Shipped To EBERLINE SERVICES/[✓ LIONVILLE]	Offsite Property No. N/A		Bill of Lading/Air Bill No. 7975 2317 6688

Price Code 9K

Data Turnaround 45 Days

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

COOL 4C MATRIX COMPOSED OF FISH

Preservation	None	None	None	None	Cool 4C	Cool 4C	None			
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	G/P			
No. of Container(s)	1	1	1	1	1	1	1			
Volume	1500g	100g	400g	10g	250g	120g	60g			
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Tritium - H3	See item (2) in Special Instructions	See item (3) in Special Instructions	Percent Lipid	Technetium-99			

Sample No.	Matrix *	Sample Date	Sample Time										
J18KD9	OTHER SOLID	04/16/09	1030					X	X				

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From Josh McGough	Date/Time 04/16/09 10:30	Received By/Stored In EAS Locked Storage	Date/Time 04/16/09 1035
Relinquished By/Removed From EAS Locked Storage	Date/Time 4/21/09 1300	Received By/Stored In SHANNON JOHNSON	Date/Time 4/21/09 1300
Relinquished By/Removed From SHANNON JOHNSON	Date/Time 4/21/09 1700	Received By/Stored In FED EX	Date/Time
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (GEA) List [Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238]

(2) Strontium-89,90 -- Total Sr; Isotopic Thorium [Thorium-232]; Isotopic Uranium [Uranium-233/234, Uranium-235, Uranium-238]; Isotopic Plutonium

(3) ICP Metals - 6010 (Full List) [Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc]; Mercury - 7471 (CV)

Samples unavailable to relinquish samples from EAS Refrigerator. EAS Custodian removed samples for shipping on 21 Apr 09

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-118-138 | Page 1 of 1

Collector: Josh McGough	Company Contact: JOAN KESSNER	Telephone No.: 375-4688	Project Coordinator: KESSNER, JH
Project Designation: Columbia River Component of the RCBRA - Tissues	Sampling Location: LWSA-WEJ, CARCASS		SAF No.: RC-118
Ice Chest No.: SRP 06004	Field Logbook No.: 1633	COA: 1F5CRC6520	Method of Shipment: FED EX
Shipped To: EBERLINE SERVICES (LIONVILLE)	Offsite Property No.: N/A		Bill of Lading/Air Bill No.: 7975 2317 6688

Price Code: 9K

Data Turnaround: 45 Days

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

COOL 4C MATRIX COMPOSED OF FISH

0000046

Preservation	None	None	None	None	Cool 4C	Cool 4C	None
Type of Container	G/P	G/P	G/P	G/P	G/P	G/P	G/P
No. of Container(s)	1	1	1	1	1	1	1
Volume	1500g	100g	100g	10g	250g	120g	10g
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Tritium - (H3)	See item (2) in Special Instructions	See item (3) in Special Instructions	[illegible]	Technetium-99

Sample No.	Matrix *	Sample Date	Sample Time							
J18KF0	OTHER SOLID	04/16/09	1230					X	X	

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From: Josh McGough	Date/Time: 04/16/09 12 30	Received By/Stored In: EAS Locked Storage	Date/Time: 04/16/09 12:35
Relinquished By/Removed From: EAS Locked Storage	Date/Time: 04/16/09 1300	Received By/Stored In: SHANNAN JOHNSON	Date/Time: 04/16/09 1300
Relinquished By/Removed From: SHANNAN JOHNSON	Date/Time: 04/16/09 1300	Received By/Stored In: FED EX	Date/Time:
Relinquished By/Removed From: FED EX	Date/Time: 4-21-09 0910	Received By/Stored In:	Date/Time: 4-21-09 0910
Relinquished By/Removed From:	Date/Time:	Received By/Stored In:	Date/Time:
Relinquished By/Removed From:	Date/Time:	Received By/Stored In:	Date/Time:

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) (Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238)

(2) Strontium-89,90 - Total Sr, Isotopic Thorium (Thorium-232), Isotopic Uranium (Uranium-233/234, Uranium-235, Uranium-238), Isotopic Plutonium

(3) ICP Metals - 6010 (Full List) (Aluminum, Antimony, Arsenic, Barium, Beryllium, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc); Mercury - 7471 - (CVI)

Sampler unavailable to relinquish samples from EAS Refrigerator. EAS Custodian removed samples for shipping on 4-20-09

Matrix *

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Washington Closure Hanford	**CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST**	RC-118-139	Page 1 of 1
Collector Josh McGough	**Company Contact** JOAN KESSNER	**Telephone No.** 375-4688	**Project Coordinator** KESSNER, JH
Project Designation Columbia River Component of the RC/IRA - Tissues	**Sampling Location** LWSA-WF4, CARCASS	**SAF No.** RC-118	**Price Code** 9K **Data Turnaround** 45 Days
Ice Chest No. GRP 06004	**Field Logbook No.** 1633	**COA** BESCRC6520	**Method of Shipment** FED EX
Shipped To EBERLINE SERVICES (LIONVILLE)	**Offsite Property No.** N/A		**Bill of Lading/Air Bill No.** 7975 2317 0644

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

COOL 4C - MATRIX COMPOSED OF FISH

Preservation	None	None	None	None	Cool 4C	Cool 4C	None			
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	G/P			
No. of Container(s)	1	1	1	1	1	1	1			
Volume	1500g	100g	100g	10g	250g	120g	10g			
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Tritium - H3	See item (2) in Special Instructions	See item (3) in Special Instructions	Percent Moisture	Technetium-99			

Sample No.	Matrix *	Sample Date	Sample Time										
J18KF1	OTHER SOLID	04/16/09	1900					X	X				

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Josh McGough	04/16/09 1900	CAS Locked Storage	04/16/09 1905
CAS locked storage	04/20/09 1300	HANNAH JOHNSON	04/20/09 1300
HANNAH JOHNSON	04/20/09 1400	FED EX	
Fed Ex	4-21-09 0910		4-21-09 0910

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) [Americium-241, Antimony-125, Beryllium-7, Cerium-144, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238]

(2) Strontium-89,90 -- Total Sr, Isotopic Thorium [Thorium-232], Isotopic Uranium [Uranium-233/234, Uranium-235, Uranium-238], Isotopic Plutonium

(3) ICP Metals - 6010 (Full List) [Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc]; Mercury - 7471 - (CV)

Sampler unavailable to relinquish samples from EAS Refrigerator. EAS Custodian removed samples for shipping on 4/20/09

Matrix *

S = Soil
SE = Sediment
SO = Solid
SL = Sludge
W = Water
O = Oil
A = Air
DS = Drum Solids
DL = Drum Liquids
T = Tissue
WI = Wipe
L = Liquid
V = Vegetation
X = Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-118-116 | Page 1 of 1

Collector JAW 4/13/09
Jeremy Doane Josh McGough

Company Contact JOAN KESSNER | **Telephone No.** 375-4688

Project Coordinator KESSNER, JH

Price Code 9K | **Data Turnaround** 45 Days

Project Designation Columbia River Component of the RCBRA - Tissues

Sampling Location UWSA-WEI, FILLET

SAF No. RC-118

Ice Chest No. SRP 06004

Field Logbook No. 1633

COA [illegible]SCRC6320

Method of Shipment FED EX

Shipped To GENERAL ENGINEERING LABS / [✓ EDWARDSVILLE]

Offsite Property No. N/A

Bill of Lading/Air Bill No. 7475 2317 6498

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage
TISSUE MATRIX COMPOSED OF FISH

Preservation	None	None	None	None	Cool 4C	Cool 4C	None			
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	G/P			
No. of Container(s)	1	1	1	1	1	1	1			
Volume	1500g	100g	[illegible]	15g	250g	320g	10g			
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Tritium - H3	See item (2) in Special Instructions	See item (3) in Special Instructions	Pesticides - 8081	Technetium-99			

Sample No.	Matrix *	Sample Date	Sample Time										
J18K78	OTHER SOLID	4/13/09	1155					X	X				

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Jeremy Doane	4/13/09 1155	Erik Lekenberger	4/13/09 1200
Erik Lekenberger	4/16/09 1300	Jeremy Doane / SHANNAN JOHNSON	4/16/09 1300
SHANNAN JOHNSON	4-20-09 1300	FED EX	
FED EX	4-21-09 0910		4-21-09 0910

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) [Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238]
(2) Strontium-89,90 -- Total Sr; Isotopic Thorium (Thorium-232); Isotopic Uranium (Uranium-233/234, Uranium-235, Uranium-238); Isotopic Plutonium
(3) ICP Metals - 6010 (Full List) [Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc]; Mercury - 7471 - (CV)

Shipper unavailable to relinquish samples from EAS Refrigerator. EAS custodian removed samples for shipping on 4/20/09

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Washington Closure Hanford	**CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST**	RC-118-117	Page 1 of 1
Collector Josh McGough	Company Contact JOAN KESSNER Telephone No. 371-4688	Project Coordinator KESSNER, JH	Price Code 9K Data Turnaround 45 Days
Project Designation Columbia River Component of the RCBRA - Tissues	Sampling Location CWSA-WF2, FILLET	SAF No. RC-118	
Ice Chest No. GRP06004	Field Logbook No. 1633 COA BESCRC6520	Method of Shipment FED EX	
Shipped To FIBERLINE SERVICES, [✓ KNOXVILLE]	Offsite Property No. N/A	Bill of Lading/Air Bill No. 7975 2317 6688	

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

CAROL 4C "MATRIX COMPOSED OF FISH"

000049

Preservation	None	None	None	None	Cool 4C	Cool 4C	[illegible]
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	G/P
No. of Container(s)	1	1	1	1	~~1~~ 2	1	1
Volume	1500g	100g	100g	10g	250g	125g	10g
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Tritium - H3	See item (2) in Special Instructions	See item (3) in Special Instructions	[illegible]	Technetium-99

Sample No.	Matrix *	Sample Date	Sample Time							
J18R70	OTHER SOLID	04/14/09	1025					X	X	

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Josh McGough [illegible]	04/14/09 1025	EAS Locked Storage	04/14/09 1030 am
EAS locked storage	04/20/09 1300	~~SHARRAN JOHNSON~~ Sean Dance	04/20/09 1300
SHARRAN JOHNSON	4/20/09 1300	FED EX	
Fed Ex	4-21-09 0910		4-21-09 0910

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) (Americium-241, Antimony-125, Beryllium-7, Cerium-144, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238)
(2) Strontium-89,90 - Total Sr; Isotopic Thorium (Thorium-232); Isotopic Uranium (Uranium-233/234, Uranium-235, Uranium-238); Isotopic Plutonium
(3) ICP Metals - 6010 (Full List) (Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc); Mercury - 7471 (CV)

Samples unavailable to relinquish samples from EAS Refrigerator. EAS Custodian removed samples for shipping on 4/20/09

Matrix *
S = Soil
SE = Sediment
SO = Solid
SL = Sludge
W = Water
O = Oil
A = Air
DS = Drum Solids
DL = Drum Liquids
T = Tissue
WI = Wipe
L = Liquid
V = Vegetation
X = Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST		RC-118-138	Page 1 of 1
Collector Jack McGough	Company Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator KESSNER, JH	Price Code 9K / Data Turnaround 45 Days
Project Designation Columbia River Component of the RCBRA - Tissues	Sampling Location LWSA-WFD, FILLET		SAF No. RC-118	
Ice Chest No. GRP 06004	Field Logbook No. 1611	COA GESCRC6520	Method of Shipment FED EX	
Shipped To EBERLINE SERVICES/TRONVILLE	Offsite Property No. N/A		Bill of Lading/Air Bill No. 7975 7317 6688	

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage
COOL 4C MATRIX COMPOSED OF FISH

050000

Preservation	None	None	None	None	Cool 4C	Cool 4C	None
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	G/P
No. of Container(s)	1	1	1	1	~~1~~ 2	1	1
Volume	1500g	100g	100g	10g	250g	<25g	10g
SAMPLE ANALYSIS	Gamma Spec (1) - See Special Instructions	Carbon-14	Tritium - 3H	Strontium (2) - See Special Instructions	ICP Metals (4) - See Special Instructions	Percent Lipids	Technetium-99

Sample No.	Matrix *	Sample Date	Sample Time							
J18K80	OTHER SOLID	04/14/09	1300					X	X	

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Jack McGough / J McGough	04/14/09 1300	EAS Locked Storage	04/14/09 1305
EAS Locked Storage	4/20/09 1300	Shannan Johnson / JD SHANNAN JOHNSON	4-20-09 1300
JD SHANNAN JOHNSON	4/20/09 1300	FED EX	
Fed Ex	4-21-09 0910		4-21-09 0910

SPECIAL INSTRUCTIONS

(1) Gamma Spec - {Full List (Americium-241, Antimony-125, Beryllium-7, Cerium-144, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238)}

(2) Strontium-89,90 -- Total Sr; Isotopic Thorium {Thorium-232}; Isotopic Uranium {Uranium-233/234, Uranium-235, Uranium-238}; Isotopic Plutonium

(4) ICP Metals - 6010 (Full List) {Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Titanium, Vanadium, Zinc}; Mercury - 7471 - (CV)

Sample unavailable to relinquish
samples from EAS Relinquish: EAS
Custodian removed samples for
shipping on 4/20/09

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

Washington Closure Hanford	**CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST**	RC-118-139	Page 1 of 1
Collector Josh McGough	Company Contact JOAN KESSNER Telephone No. 375-4688	Project Coordinator KESSNER, JH	Price Code 9K Data Turnaround 45 Days
Project Designation Columbia River Component of the RCBRA - Tissues	Sampling Location LWSA-WF4, FILLET	SAF No. RC-118	
Ice Chest No. GRP 06004	Field Logbook No. 1033 COA BESCRC6320	Method of Shipment FED EX	
Shipped To EBERLINE SERVICES (LIONVILLE)	Offsite Property No. N/A	Bill of Lading/Air Bill No. 7975 2317 6698	

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage
COOL 4C "MATRIX COMPOSED OF FISH"

1500001

Preservation	None	None	None	None	Cool 4C	Cool 4C	None			
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	G/P			
No. of Container(s)	1	1	1	1	1	1	1			
Volume	1500g	100g	500g	10g	250g	120g	10g			
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Tritium - H3	See item (2) in Special Instructions	See item (3) in Special Instructions	Pesticides 8081	Technetium-99			

Sample No.	Matrix *	Sample Date	Sample Time										
J18K01	OTHER SOLID	04/15/09	1045					X	X				

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From Josh McGough	Date/Time 04/15/09 10 45	Received By/Stored In EAS Locked Storage	Date/Time 04/15/09 10 50
Relinquished By/Removed From EAS locked Storage	Date/Time 04/20/09 1300	Received By/Stored In SHANNAN JOHNSON	Date/Time 04/20/09 1300
Relinquished By/Removed From SHANNAN JOHNSON	Date/Time 04/20/09 1500	Received By/Stored In FED EX	Date/Time
Relinquished By/Removed From Fed Ex	Date/Time 4-21-09 0910	Received By/Stored In	Date/Time 4-21-09 0910
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) (Americium-241, Antimony-125, Beryllium-7, Cerium-144, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238)
(2) Strontium-89,90 - Total Sr, Isotopic Thorium (Thorium-232), Isotopic Uranium (Uranium-233/234, Uranium-235, Uranium-238), Isotopic Plutonium
(3) ICP Metals - 6010 (Full List) (Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Titanium, Vanadium, Zinc), Mercury - 7471 - (CV)

Sampler unavailable to relinquish samples from EAS Refrigerator. EAS Custodian removed samples for shipping on 4/20/09

Matrix *
S = Soil
SE = Sediment
SO = Solid
SL = Sludge
W = Water
O = Oil
A = Air
DS = Drum Solids
DL = Drum Liquids
T = Tissue
WI = Wipe
L = Liquid
V = Vegetation
X = Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

JAN000025

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-118-120 Page 1 of 5

Collector: Josh McGough	Company Contact: JOAN KESSNER	Telephone No.: 375-4688	Project Coordinator: KESSNER, JH
			Price Code: 9K
			Data Turnaround: 45 Days
Project Designation: Columbia River Component of the RCBRA - Tissues	Sampling Location: LWSA-WFS, FILLET		SAF No.: RC-118
Ice Chest No.: GRP 06004	Field Logbook No.: 1633	COA: HESCRC6520	Method of Shipment: FED EX
Shipped To: EBERLINE SERVICES [✓ LIONVILLE]	Offsite Property No.: N/A		Bill of Lading/Air Bill No.: 7975 2317 6688

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

COOL 4C "MATRIX COMPOSED OF FISH"

00058

Preservation			[illegible]	[illegible]	[illegible]	[illegible]	Cool 4C	Cool 4C	None
Type of Container			G/P	G/P	G/P	G/P	G/P	aG	G/P
No. of Container(s)			1	1	1	1	1	1	1
Volume			1500g	100g	100g	10g	250g	120g	10g
SAMPLE ANALYSIS			See item (1) in Special Instructions	Carbon-14	Tritium - H3	See item (2) in Special Instructions	See item (3) in Special Instructions	Pesticides - 8081	Technetium-99
Sample No.	**Matrix ***	**Sample Date**	**Sample Time**						
J18K82	OTHER SOLID	04/15/09	1300				X	X	

CHAIN OF POSSESSION	Date/Time	Sign/Print Names	Date/Time
Relinquished By/Removed From: Josh McGough	04/15/09 1300	Received By/Stored In: EAS Locked Storage	04/15/09 1305
Relinquished By/Removed From: EAS Locked Storage	04/20/09 1300	Received By/Stored In: SHALINDA JOHNSON	4/20/09 1300
Relinquished By/Removed From: SHALINDA JOHNSON	4/20/09 1400	Received By/Stored In: FED EX	
Relinquished By/Removed From: FED EX	4-21-09 0910	Received By/Stored In:	4-21-09 0910
Relinquished By/Removed From:		Received By/Stored In:	
Relinquished By/Removed From:		Received By/Stored In:	

SPECIAL INSTRUCTIONS

(1) Gamma Spec - [illegible] {Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238}

(2) Strontium-89,90 -- Total Sr, Isotopic Thorium {Thorium-232}, Isotopic Uranium {Uranium-233/234, Uranium-235, Uranium-238}, Isotopic Plutonium

(3) ICP Metals - 6010 (Full List) {Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc}, Mercury - 7471 - (CV)

Sampler unavailable to relinquish samples from EAS Refrigerator. EAS Custodian removed samples for shipping on 4/20/09

Matrix *

[illegible]

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

LIONVILLE LABORATORY

294 Welsh Pool Road
Exton, Pennsylvania 19341
Phone (610) 280-3000
Fax (610) 280-3041

Case Narrative

Client: WC-HANFORD RC-118
LVL#: 0904069
SDG/SAF#: K1608 /RC-118

W.O.#: 60049-001-001-0001-00
Date Received: 04-29-09

METALS

The following is a summary of the QC results accompanying the sample results. Lionville Laboratory (LvL) certifies that all test results meet the requirements of NELAC except as noted below.

All soil samples are reported on a dry weight basis unless requested by the client, required by the method, or noted otherwise.

1. This narrative covers the analyses of 19 solid samples. The samples are reported on a wet weight, 'as-received' basis.

2. The samples were prepared and analyzed in accordance with methods checked on the attached glossary.

   All samples, with the exception of samples J18K37, J18K39, and J18J84 through J18J87, were rerun with 12-fold dilutions for Phosphorous due to high concentrations. Sample J18K24 was also reported with a 12-fold dilution for Calcium due to high concentration.

3. All analyses were performed within the required holding times.

4. All Initial and Continuing Calibration Verifications (ICV/CCVs) were within the 90-110% control limits (80-120% for Mercury) with the exception of the ending CCV for Potassium at 111.4% in file ICP0524B. The SRM may be biased slightly high for Potassium.

5. All Initial and Continuing Calibration Blanks (ICB/CCBs) were within control limits (less than the LOQ).

6. All preparation/method blanks (MB) were within method criteria (less than the Limit of Quantitation (3-10X the LOD), or samples greater than 20X MB value).

7. All ICP Interference Check Standards were within control limits.

8. All Standard Reference Material (SRM) results were within the Prediction Intervals provided by the manufacturer with the exception of Arsenic, Copper, Nickel, and Zinc.

9. The matrix spike (MS) recoveries for 2 analytes were outside the 75-125% control limits.

10. For analytes where the ICP MS is out-of-control, a post-digestion MS (PDS) and serial dilution are performed. A PDS was prepared at meaningful concentration level for the following analytes.

Sample ID	Element	PDS Concentration (ppb)	PDS % Recovery
J18KF2	Calcium	10,000	44.0
	Phosphorous	60,000	91.2

11. The duplicate analyses for 12 analytes were outside the 20% Relative Percent Difference (RPD) control limits.

12. For the purposes of this report, the data has been reported to the Limit of Detection (LOD). Values between the LOD and the Limit of Quantitation (LOQ) are acquired in a region of less-certain quantification.

13. LvL is NELAP accredited by the State of Pennsylvania. For a complete listing of accrediting authorities and the corresponding analytes/methods, please contact your Project Manager.

14. I certify that this sample data package is in compliance with SOW requirements, both technically and for completeness, other than the conditions detailed above. Release of the data contained in this hard-copy data package has been authorized by the Laboratory Manager or a designee, as verified by the following signature.

Iain Daniels
Laboratory Manager
Lionville Laboratory
jw/m04.0WJ

6-3-9
Date

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST		RC-118-140	Page 1 of 1
Collector Josh McGough	Company Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator KESSNER, JH	Price Code 9K Data Turnaround 45 Days
Project Designation Columbia River Component of the RCBRA - Tissues	Sampling Location LWSA-WFS, CARCASS		SAF No. RC-118	
Ice Chest No. GWSC-050	Field Logbook No. 1655	COA BESCRCAS20	Method of Shipment FED EX	
Shipped To EBERLINE SERVICES (LIONVILLE)	Offsite Property No. N/A		Bill of Lading/Air Bill No. Fdx# 796557072663	

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

COOL 4C MATRIX COMPOSED OF FISH

SS0000

Preservation	None	None	None	None	Cool 4C	Cool 4C	None			
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	G/P			
No. of Container(s)	1	1	1	1	1	1	1			
Volume	1500g	120g	100g	10g	250g	120g	10g			
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Tritium - H3	See item (2) in Special Instructions	See item (3) in Special Instructions	Pesticides - 8081	Technetium-99			

Sample No.	Matrix *	Sample Date	Sample Time										
J18XF2	OTHER SOLID	04/20/09	1000					X	X				

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Josh McGough	04/20/09 1000	EAS Locked Storage #2	04/20/09 1005
EAS LOCKED STORAGE #2	04/28/09 1015	SHANNAN JOHNSON	04/28/09 1015
SHANNAN JOHNSON	04/28/09 1015	FDX# 796557072663	
	4-29-09 0920	D. Dowdy	4-29-09 0920

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) {Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238}

(2) Strontium-89,90 – Total Sr, Isotopic Thorium {Thorium-232}, Isotopic Uranium {Uranium-233/234, Uranium-235, Uranium-238}, Isotopic Plutonium

(3) ICP Metals - 6010 (Full List) {Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Titanium, Vanadium, Zinc}, Mercury - 7471 - (CV)

sampler unavailable to relinquish samples from EAS Refrigerator. EAS Custodian removed samples for shipping on 04-28-09

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Washington Closure Hanford	**CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST**	RC-118-66	Page 1 of 1

Collector Josh McGough	**Company Contact** JOAN KESSNER **Telephone No.** 375-4688	**Project Coordinator** KESSNER, JH	**Price Code** 9K **Data Turnaround** 45 Days
Project Designation Columbia River Component of the RCBRA - Tissues	**Sampling Location** 100SA-WFI, CARCASS	**SAF No.** RC-118	
Ice Chest No. GWSC-050	**Field Logbook No.** 1633 **COA** HESCRC0120	**Method of Shipment** FED EX	
Shipped To EBERLINE SERVICES/ [✓ LIONVILLE]	**Offsite Property No.** N/A	**Bill of Lading/Air Bill No.** Fdx# 796557872683	

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage
COOL 4C "MATRIX COMPOSED OF FISH"

Preservation	None	None	None	None	Cool 4C	Cool 4C	None
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	G/P
No. of Container(s)	1	1	1	1	1	1	1
Volume	1500g	100g	100g	10g	250g	120g	10g
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Tritium - H3	See item (2) in Special Instructions	See item (3) in Special Instructions	Percent [illegible]	Technetium-99

Sample No.	Matrix *	Sample Date	Sample Time										
J18K21	OTHER SOLID	4/23/09	0800					X	X				

CHAIN OF POSSESSION		Sign/Print Names	
Relinquished By/Removed From	**Date/Time**	**Received By/Stored In**	**Date/Time**
Josh McGough	4/23/09 0800	CAS Locked Storage	4/23/09 0805
EAS LOCKED STORAGE	4-28-09 1015	SHANNAN JOHNSON	04/28/09 1015
SHANNAN JOHNSON	04/28/09 1015	Fdx# 796557872683	
	4-29-09 0930		4-29-09 0930

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) {Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Thorium-228, Uranium-238}
(2) Strontium-89,90 -- Total Sr, Isotopic Thorium {Thorium-232}, Isotopic Uranium {Uranium-233/234, Uranium-235, Uranium-238}, Isotopic Plutonium
(3) ICP Metals - 6010 (Full List) {Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Titanium, Vanadium, Zinc}, Mercury - 7471 - (CVAA)

Sampler unavailable to relinquish samples from EAS Refrigerator. EAS Custodian removed samples for shipping on 04/28/09

Matrix *
S = Soil
SE = Sediment
SO = Solid
SL = Sludge
W = Water
O = Oil
A = Air
DS = Drum Solids
DL = Drum Liquids
T = Tissue
WI = Wipe
L = Liquid
V = Vegetation
X = Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EF-011

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-118-67

Page 1 of 1

Collector Josh McGough	Company Contact JOAN KESSNER	Telephone No. 373-4684	Project Coordinator KESSNER, JH
Project Designation Columbia River Component of the RCBRA - Tissues	Sampling Location 100SA-WF2, CARCASS		SAF No. RC-118
Ice Chest No. GWSC-050	Field Logbook No. 1633	COA BESCRC6530	Method of Shipment FED EX
Shipped To EBERLINE SERVICES [✓ LIONVILLE]	Offsite Property No. N/A		Bill of Lading/Air Bill No. Fdx# 796557872663

Price Code 9K

Data Turnaround 45 Days

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage
COOL 4C **MATRIX COMPOSED OF FISH**

450000

Preservation	[illegible]	[illegible]	[illegible]	[illegible]	Cool 4C	Cool 4C	[illegible]
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	G/P
No. of Container(s)	1	1	1	1	1	2	-
Volume	1500g	100g	100g	10g	250g	125g	10g
SAMPLE ANALYSIS	Gamma Spec (1) - See Special Instructions	Carbon-14	Tritium - H3	Strontium (2) - See Special Instructions	Metals (3) - See Special Instructions	Pesticides - [illegible]	Technetium-99

Sample No.	Matrix *	Sample Date	Sample Time							
J18K22	OTHER SOLID	4/23/09	10:00					X	X	

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Josh McGough	4/23/09 10:00	EAS Locked Storage	4/23/09 10:05
SJ EAS LOCKED STORAGE	04/28/09 1015	SHANNAN JOHNSON	04/28/09 1015
SHANNAN JOHNSON	04/28/09 1015	Fdx# 796557872689	
	4-29-09 1030		4-29-09 1030

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) {Americium-241, Antimony-125, Beryllium-7, Cerium-144, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238}
(2) Strontium-89,90 - Total Sr, Isotopic Thorium {Thorium-232}, Isotopic Uranium {Uranium-233/234, Uranium-235, Uranium-238}, Isotopic Plutonium
(3) ICP Metals - 6010 (Full List) {Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Titanium, Vanadium, Zinc}; Mercury - 7471 - CVAA

Samples transferred to refrigerated
samples from EAS Refrigerator EAS
Custodian removed samples for
shipping on 04/28/09

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST		RC-118-69	Page 1 of 1
Collector Josh McGough	Company Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator KESSNER, JH	Price Code 9K
Project Designation Columbia River Component of the RCRA - Tissues	Sampling Location 100SA-WE3, CARCASS		SAF No. RC-118	Data Turnaround 45 Days
Ice Chest No. GLOSC-050	Field Logbook No. 1635	COA DESCRC6520	Method of Shipment FED EX	
Shipped To EBERLINE SERVICES / LIONVILLE	Offsite Property No. N/A		Bill of Lading/Air Bill No. Fdx# 796557072683	

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage
COOL 4C, MATRIX COMPOSED OF TISSUE

Preservation	None	None	None	None	Cool 4C	Cool 4C	None
Type of Container	G/P	G/P	G/P	G/P	G/T	aG	G/P
No. of Container(s)	1	1	1	1	1	1	1
Volume	1500g	100g	100g	10g	250g	120g	10g
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Tritium - H3	See item (2) in Special Instructions	See item (3) in Special Instructions	Pesticides - 8081	Technetium-99

Sample No.	Matrix *	Sample Date	Sample Time							
J18K21	OTHER SOLID	9/23/05	12:00					X	X	

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Josh McGough	9/23/07 12:00	CASC-EASO Storage	9/23/07 12:05
EAS LOCKED STORAGE #2	04/28/09 1015	SHANNAN JOHNSON	04/28/09 1015
SHANNAN JOHNSON	04/28/09 1015	Fdx# 796557072683	
	4-29-09 1030		4-29-09 1030

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) {Americium-241, Antimony-125, Beryllium-7, Cerium-144, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238}
(2) Strontium-89,90 - Total Sr; Isotopic Thorium {Thorium-232}; Isotopic Uranium {Uranium-233/234, Uranium-235, Uranium-238}; Isotopic Plutonium
(3) ICP Metals - 6010 (Full List) {Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc}; Mercury - 7471 - (CV)

sample unavailable to relinquish
samples from EAS Refrigerator. EAS
Custodian removed samples for
shipping on 04/28/09

Matrix *
S = Soil
SE = Sediment
SO = Solid
SL = Sludge
W = Water
O = Oil
A = Air
DS = Drum Solids
DL = Drum Liquids
T = Tissue
WI = Wipe
L = Liquid
V = Vegetation
X = Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-118-69

Page 1 of 1

Collector	Josh McGough
Company Contact	JOAN KESSNER
Telephone No.	375-4688
Project Coordinator	KESSNER, JH
Price Code	9K
Data Turnaround	45 Days
Project Designation	Columbia River Component of the RCBRA - Tissues
Sampling Location	100SA-WF4, CARCASS
SAF No.	RC-118
Ice Chest No.	GWSC-050
Field Logbook No.	1633
COA	HESCRC6520
Method of Shipment	FED EX
Shipped To	EBERLINE SERVICES [✓ LIONVILLE]
Offsite Property No.	N/A
Bill of Lading/Air Bill No.	Fdx# 796557072683

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage
COOL 4C *MATRIX COMPOSED OF FISH*

0000659

Preservation	None	None	None	None	Cool 4C	Cool 4C	None
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	G/P
No. of Container(s)	1	1	1	1	1	1	5
Volume	1500g	100g	100g	10g	250g	100g	10g
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Tritium - H3	See item (2) in Special Instructions	See item (3) in Special Instructions	Pesticides - 8081	Technetium-99

Sample No.	Matrix *	Sample Date	Sample Time							
J18K24	OTHER SOLID	4/23/09	1400					X	X	

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Josh McGough	4/23/09 1400	EAS Locked Storage #2	4/23/09 1405
EAS LOCKED STORAGE #2	04/28/09 1015	SHANNAN JOHNSON	04/28/09 1015
SHANNAN JOHNSON	04/28/09 1015	Fdx# 796557072683	
	4 29 09 0900		4 29 09 10:20

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) [Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238]
(2) Strontium-89,90 -- Total Sr, Isotopic Thorium [Thorium-232], Isotopic Uranium [Uranium-233/234, Uranium-235, Uranium-238]; Isotopic Plutonium
(3) ICP Metals - 6010 (Full List) [Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc]; Mercury - 7471 - (CV)

Sampler unavailable to relinquish samples from EAS Refrigerator. EAS Custodian removed samples for shipping on 04/28/09

Matrix *
S = Soil
SE = Sediment
SO = Solid
SL = Sludge
W = Water
O = Oil
A = Air
DS = Drum Solids
DL = Drum Liquids
T = Tissue
WI = Wipe
L = Liquid
V = Vegetation
X = Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

3098657

WCH-EE-011

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-118-01

Page 1 of 1

Collector: Josh McGough

Company Contact: JOAN KESSNER

Telephone No.: 375-4688

Project Coordinator: KESSNER, JH

Price Code: 9K

Data Turnaround: 45 Days

Project Designation: Columbia River Component of the RCBRA - Tissues

Sampling Location: 300SA-WFL FILLET

SAF No.: RC-118

Ice Chest No.: GWSC-050

Field Logbook No.: [illegible]

COA: BESCRC6520

Method of Shipment: FED EX

Shipped To: EBERLINE SERVICES (LIONVILLE)

Offsite Property No.: N/A

Bill of Lading/Air Bill No.: Fdx# 796557872683

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage: COOL 4C MATRIX COMPOSED OF [illegible]

090000

Preservation	None	None	None	None	Cool 4C	Cool 4C	None			
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	G/P			
No. of Container(s)	1	1	1	1	1	1	1			
Volume	1500g	100g	100g	10g	250g	120g	10g			
SAMPLE ANALYSIS	See Item (1) in Special Instructions	Carbon-14	Tritium - H3	See Item (2) in Special Instructions	See Item (3) in Special Instructions	Percent Moisture	Technetium-99			

Sample No.	Matrix *	Sample Date	Sample Time										
J1HC36	OTHER SOLID	4/21/09	1400					X	X				

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Josh McGough	4/21/09 1900	EAS Locked Storage	4/21/09 1905
EAS LOCKED STORAGE #2	04/24/09 1015	SHANNAN JOHNSON	04/24/09 1015
SHANNAN JOHNSON	04/24/09 1015	Fedex 796557872683	
	4-24-09 [illegible]		4-24-09 [illegible]

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) {Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238}

(2) Strontium-89,90 -- Total Sr; Isotopic Thorium {Thorium 232}; Isotopic Uranium {Uranium-233/234, Uranium-235, Uranium-238}; Isotopic Plutonium

(3) ICP Metals - 6010 (Full List) {Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc}, Mercury - 7471 - (CV)

Sampler unavailable to relinquish samples from EAS Refrigerator. EAS Custodian removed samples for shipping on 4/24/09

Matrix *
[illegible]

LABORATORY SECTION — Received By: — Title: — Date/Time:

FINAL SAMPLE DISPOSITION — Disposal Method: — Disposed By: — Date/Time:

WCH-EE-011

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-118-82

Page 1 of 1

Collector: Josh McGough

Company Contact: JOAN KESSNER

Telephone No.: 375-4688

Project Coordinator: KESSNER, JH

Price Code: 9K

Data Turnaround: 45 Days

Project Designation: Columbia River Component of the RCBRA - Tissues

Sampling Location: 300SA-WF2, FILL01

SAF No.: RC-118

Ice Chest No.: GWSC-050

Field Logbook No.: 1633

COA: BESCRC6520

Method of Shipment: FED EX

Shipped To: EBERLINE SERVICES (RICHMOND)

Offsite Property No.: N/A

Bill of Lading/Air Bill No.: Fdx# 796557872603

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage: COOL 4C "MATRIX COMPOSED OF FISH"

000061

	Preservation	None	None	None	Cool	Cool 4C	Cool 4C	None				
	Type of Container	G/P	G/P	G/P	G/P	G/P	aG	G/P				
	No. of Container(s)	1	1	1	1	1	1	1				
	Volume	1500g	100g	100g	10g	250g	15g	10g				
	SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Tritium - H3	See item (2) in Special Instructions	See item (3) in Special Instructions	Moisture - [illegible]	Technetium-99				

Sample No.	Matrix *	Sample Date	Sample Time										
J18X37	OTHER SOLID	4/22/09	0800					X	X				

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Josh McGough	4/22/09 0805	EAS Locked Storage	4/22/09 0805
EAS LOCKED STORAGE	04/28/09 1015	SHANNAN JOHNSON	04/28/09 1015
SHANNAN JOHNSON	04/28/09 1015	Fdx# 796557872603	
	4/29/09 1020		4/29/09 1020

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) [Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238]

(2) Strontium-89,90 - Total Sr; Isotopic Thorium [Thorium-232]; Isotopic Uranium [Uranium-233/234, Uranium-235, Uranium-238]; Isotopic Plutonium

(3) ICP Metals - 6010 (Full List) [Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc]; Mercury - 7471 - (CV)

Samples unavailable to relinquish samples from EAS Refrigerator. EAS Custodian removed samples for shipping on 04/28/09

Matrix *

[illegible]

LABORATORY SECTION	Received By		Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method		Disposed By	Date/Time

WCH-EE-041

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-118-83	Page 1 of 1

Collector Josh McGough	Company Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator KESSNER JH	Price Code 9K
Project Designation Columbia River Component of the RCBRA - Tissues	Sampling Location 300SA-WP3, FILLET		SAF No. RC-118	Data Turnaround 45 Days
Ice Chest No. GWSC-050	Field Logbook No. 1633	COA BESCRC6520	Method of Shipment FED EX	
Shipped To FIBERLINC SERVICES (LIONVILLE)	Offsite Property No. N/A		Bill of Lading/Air Bill No. Fdx# 796557872683	

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage
COOL 4C MATRIX COMPOSED OF FISH

Preservative	None	None	None	None	Cool 4C	Cool 4C	None			
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	G/P			
No. of Container(s)	1	1	1	1	1	1	1			
Volume	1500g	100g	100g	10g	250g	120g	10g			
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Tritium - H3	See item (2) in Special Instructions	See item (3) in Special Instructions	Pesticides 8081	Lipid [illegible] %			

Sample No.	Matrix *	Sample Date	Sample Time										
J18K38	OTHER SOLID	4/22/09	1000					X	X				

CHAIN OF POSSESSION		Sign/Print Names	
Relinquished By/Removed From Josh McGough	Date/Time 4/23/09 1000	Received By/Stored In EAS Locked Storage	Date/Time 4/23/09 1005
Relinquished By/Removed From EAS LOCKED STORAGE #2	Date/Time 04/28/09 1015	Received By/Stored In SHANNAN JOHNSON	Date/Time 04/28/09 1015
Relinquished By/Removed From SHANNAN JOHNSON	Date/Time 04/28/09 1015	Received By/Stored In Fdx# 796557872683	Date/Time
Relinquished By/Removed From	Date/Time 4-29-09/0930	Received By/Stored In	Date/Time 4-29-09/0930
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) {Americium-241, Antimony-125, Beryllium-7, Cerium-144, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238}
(2) Strontium-89,90 -- Total Sr; Isotopic Thorium {Thorium-232}; Isotopic Uranium {Uranium-233/234, Uranium-235, Uranium-238}; Isotopic Plutonium
(3) ICP Metals - 6010 (Full List) {Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Titanium, Vanadium, Zinc}; Mercury - 7471 - (CV)

samples unavailable to relinquish
samples from EAS Refrigerator. EAS
Custodian removed samples for
shipping on 04/28/09

Matrix *
S = Soil
SE = Sediment
SO = Solid
SL = Sludge
W = Water
O = Oil
A = Air
DS = Drum Solids
DL = Drum Liquids
T = Tissue
WI = Wipe
L = Liquid
V = Vegetation
X = Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST		RC-118-04	Page 1 of 1
Collector Josh McGough	Company Contact JOAN KESSNER	Telephone No. 375-4680	Project Coordinator KESSNER, JH	Price Code 9K	Data Turnaround 45 Days
Project Designation Columbia River Component of the RCBRA - Tissues	Sampling Location 300SA-WF4, FILLET		SAF No. RC-118		
Ice Chest No. GWSC-050	Field Logbook No. 1633	COA DESCRC6520	Method of Shipment FED EX		
Shipped To EBERLINE SERVICES (LIONVILLE)	Offsite Property No. N/A		Bill of Lading/Air Bill No. Fdx# 796557872683		

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage
COOL 4C "MATRIX COMPOSED OF FISH"

000063

Preservation	None	None	None	None	Cool 4C	Cool 4C	None		
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	G/P		
No. of Container(s)	1	1	1	1	1	1	1		
Volume	1500g	100g	10g	10g	250g	120g	10g		
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Tritium - H3	See item (2) in Special Instructions	See item (3) in Special Instructions	Pesticides - 8081	Technetium-99		

Sample No.	Matrix *	Sample Date	Sample Time										
J18K39	OTHER SOLID	4/22/09	1200					X	X				

CHAIN OF POSSESSION		Sign/Print Names	
Relinquished By/Removed From Josh McGough	Date/Time 4/22/09 1200	Received By/Stored In EAS Locked Storage	Date/Time 4/22/09 12:45
Relinquished By/Removed From EAS LOCKED STORAGE #2	Date/Time 04/28/09 1015	Received By/Stored In SHANNAN JOHNSON	Date/Time 04/28/09 1015
Relinquished By/Removed From SHANNAN JOHNSON	Date/Time 04/28/09 1815	Received By/Stored In Fdx# 796557872683	Date/Time
Relinquished By/Removed From FedEx	Date/Time 4.29.09 0920	Received By/Stored In	Date/Time 4.29.09 1500
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) [Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238]
(2) Strontium-89,90 -- Total Sr, Isotopic Thorium (Thorium-232), Isotopic Uranium (Uranium-233/234, Uranium-235, Uranium-238), Isotopic Plutonium
(3) ICP Metals - 6010 (Full List) (Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc); Mercury - 7471 - (CV)

samples unavailable to relinquish samples from EAS Refrigerator. EAS Custodian removed samples for shipping on 04/28/09

Matrix *
S = Soil
SE = Sediment
SO = Solid
SL = Sludge
W = Water
O = Oil
A = Air
DS = Drum Solids
DL = Drum Liquids
T = Tissue
WI = Wipe
L = Liquid
V = Vegetation
X = Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Washington Closure Hanford	**CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST**	RC-118-85	Page 1 of 1
Collector Josh McGough	Company Contact JOAN KESSNER; Telephone No. 375-4683	Project Coordinator KESSNER, JH	Price Code 9K; Data Turnaround 45 Days
Project Designation Columbia River Component of the RCBRA - Tissues	Sampling Location 300SA-WES, FILL/F1	SAF No. RC-118	
Ice Chest No. GWSC-DSO	Field Logbook No. 1633; COA BESCRU6520	Method of Shipment FED EX	
Shipped To EBERLINE SERVICES [✓ LIONVILLE]	Offsite Property No. N/A	Bill of Lading/Air Bill No. Fdx# 796557872683	

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage
COOL 4C *MATRIX COMPOSED OF FINE*

000064

Preservation	None	None	None	None	Cool 4C	Cool 4C	None
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	G/P
No. of Container(s)	1	1	1	1	1	1	1
Volume	1500g	100g	100g	10g	250g	120g	10g
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Tritium - H3	See item (2) in Special Instructions	See item (3) in Special Instructions	Percent solids (%)	Technetium-99

Sample No.	Matrix *	Sample Date	Sample Time							
J18K40	OTHER SOLID	4/22/09	14:00					X	X	

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Josh McGough	4/22/09 1400	EAS Locked Storage	4/22/09 1405
EAS LOCKED STORAGE #2	04/28/09 1015	SHANNAN JOHNSON	04/28/09 1015
SHANNAN JOHNSON	04/28/09 1015	FDX# 796557872683	
	4-29-09 1020		4-29-09 1020

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) {Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238}
(2) Strontium-89,90 -- Total Sr; Isotopic Thorium {Thorium-232}; Isotopic Uranium {Uranium-233/234, Uranium-235, Uranium-238}; Isotopic Plutonium
(3) ICP Metals - 6010 (Full List) {Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc}; Mercury - 7471 - (CV)

samples unavailable to relinquish samples from EAS Refrigerator. EAS Custodian removed samples for shipping on 04/28/09

Matrix *
S = Soil
SE = Sediment
SO = Solid
SL = Sludge
W = Water
O = Oil
A = Air
DS = Drum Solids
DL = Drum Liquids
T = Tissue
WI = Wipe
L = Liquid
V = Vegetation
X = Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-118-101 | Page 1 of 1

Collector: Josh McGough	Company Contact: JOAN KESSNER	Telephone No.: 375-4688	Project Coordinator: KESSNER, JH
Project Designation: Columbia River Component of the RCBRA - Tissues	Sampling Location: 300SA-WEL CARCASS		SAF No.: RC-118
Ice Chest No.: GWSC-050	Field Logbook No.: 1633	COA: HESCRC6520	Method of Shipment: FED EX
Shipped To: EBERLINE SERVICES (LIONVILLE)	Offsite Property No.: N/A		Bill of Lading/Air Bill No.: FdX# 796557072683

Price Code: 9K

Data Turnaround: 45 Days

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

TISSUE MATRIX COMPOSED OF FISH

Preservation	None	None	None	None	Cool 4C	Cool 4C	None
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	G/P
No. of Container(s)	1	1	1	1	1	1	1
Volume	1500g	100g	100g	10g	250g	120g	10g
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Tritium - H3	See item (2) in Special Instructions	See item (3) in Special Instructions	Percent Moisture	Technetium-99

Sample No.	Matrix *	Sample Date	Sample Time							
J18K03	OTHER SOLID	4/20/09	1800					X	X	

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Joshua McGough	4/21/09 0800	EAS Locked Storage	0805
EAS LOCKED STORAGE #1	4/24/09 1015	SHANNAN JOHNSON	04/24/09 1015
SHANNAN JOHNSON	04/24/09 1015	FdX# 796557072683	
[illegible]	4-28-09 1022	[illegible]	4-28-09 1022

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) {Americium-241, Antimony-125, Beryllium-7, Cerium-144, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Thorium-228, Uranium-235, Uranium-238}

(2) Strontium-89,90 - Total Sr, Isotopic Thorium {Thorium-232, ...}, Isotopic Uranium {Uranium-233/234, Uranium-235, Uranium-238}, Isotopic Plutonium

(3) ICP Metals - 6010 (Full List) {Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium (EAS LIM), Tin, Uranium, Vanadium, Zinc}, Mercury - 7471 - (CV)

Samples unavailable to relinquish samples from EAS Refrigerator. EAS Custodian removed samples for shipping on 04/24/09

Matrix *

S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-118-102

Page 1 of 1

Collector: Josh McGough

Company Contact: JOAN KESSNER

Telephone No.: 375-4688

Project Coordinator: KESSNER, JH

Price Code: 9K

Data Turnaround: 45 Days

Project Designation: Columbia River Component of the RCBRA - Tissues

Sampling Location: 100SA-WF2, CARCASS

SAF No.: RC-118

Ice Chest No.: GWSC-050

Field Logbook No.: 1633

COA: BESCRC6520

Method of Shipment: FED EX

Shipped To: EBERLINE SERVICES (LIONVILLE)

Offsite Property No.: N/A

Bill of Lading/Air Bill No.: Fdx# 796557872683

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage: COOL 4C *MATRIX COMPOSED OF FISH*

000066

Preservation	None	None	None	None	Cool 4C	Cool 4C	None			
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	G/P			
No. of Container(s)	1	1	1	1	1	1	1			
Volume	1500g	100g	100g	10g	250g	120g	10g			
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Tritium - H3	See item (2) in Special Instructions	See item (3) in Special Instructions	Pesticides - 8081	Technetium-99			

Sample No.	Matrix *	Sample Date	Sample Time										
J18K84	OTHER SOLID	04/20/2009	1400					X	X				

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Joshua McGough	04/20/09 1400	EAS Locked Storage #2	04/20/09 1405
EAS LOCKED STORAGE #2	04/28/09 1015	SHANNAN JOHNSON	04/28/09 1015
SHANNAN JOHNSON	04/28/09 1015	Fdx# 796557872683	
	4-29-09 1030		4-29-09 1030

SPECIAL INSTRUCTIONS

(1) Gamma Spec - {Full List} (Americium-241, Antimony-125, Beryllium-7, Cerium-144, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238);

(2) Strontium-89,90 -- Total Sr, Isotopic Thorium {Thorium-232}, Isotopic Uranium {Uranium-233/234, Uranium-235, Uranium-238}, Isotopic Plutonium

(3) ICP Metals - 6010 (Full List) {Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc}, Mercury - 7471 - (CV)

Sampler unavailable to relinquish samples from EAS Refrigerator. EAS Custodian removed samples for shipping on 04/28/09

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION — Received By: — Title: — Date/Time:

FINAL SAMPLE DISPOSITION — Disposal Method: — Disposed By: — Date/Time:

WCH-EE-011

Washington Closure Hanford	**CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST**	RC-118-103 · Page 1 of 1

Collector Jack McGonigle	Company Contact JOAN KESSNER · Telephone No. 373-4688	Project Coordinator KESSNER, JH	Price Code 9K · Data Turnaround 45 Days
Project Designation Columbia River Component of the RCBRA - Tissues	Sampling Location 300SA-WFJ, CARCASS	SAF No. RC-118	
Ice Chest No. GWSC-050	Field Logbook No. 1633 · COA DESCRC6520	Method of Shipment FED EX	
Shipped To EBERLINE SERVICES (LIONVILLE)	Offsite Property No. N/A	Bill of Lading/Air Bill No. Fdx# 796557872683	

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

COOL 4C "MATRIX COMPOSED OF FISH"

000067

Preservation	None	None	None	None	Cool 4C	Cool 4C	None		
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	G/P		
No. of Container(s)	1	1	1	1	1	1	1		
Volume	1500g	100g	100g	10g	250g	120g	10g		
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Tritium - H3	See item (2) in Special Instructions	See item (3) in Special Instructions	Pesticides 8081	Technetium-99		

Sample No.	Matrix *	Sample Date	Sample Time										
J18K65	OTHER SOLID	04/21/09	0800					X	X				

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Jack McGonigle	04/21/09 0800	EAS Locked Storage #2	4/21/09 0805
EAS LOCKED STORAGE	04/28/09 1015	SHANNAN JOHNSON	04/28/09 1015
SHANNAN JOHNSON	04/28/09 1015	FdX# 796557872683	
	4-29-09 0930		4-29-09 0930

SPECIAL INSTRUCTIONS

(1) Gamma Spec - {Full List} {Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238}

(2) Strontium-89,90 -- Total Sr, Isotopic Thorium (Thorium-232), Isotopic Uranium (Uranium-233/234, Uranium-235, Uranium-238), Isotopic Plutonium

(3) ICP Metals - 6010 {Full List} {Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc}, Mercury - 7471 - (CV)

sampler unavailable to relinquish samples from EAS Refrigerator. EAS custodian relinquished samples for shipping on 04/28/09

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-118-104 Page 1 of 1

Collector: Josh McGough	Company Contact: JOAN KESSNER	Telephone No.: 375-4688	Project Coordinator: KESSNER, JH
Project Designation: Columbia River Component of the RCBRA - Tissues	Sampling Location: 300SA-WF4, CARCASS		SAF No.: RC-118
Ice Chest No.: 6WSC-050	Field Logbook No.: 1633	COA: RBSCRC6520	Method of Shipment: FED EX
Shipped To: EBERLINE SERVICES (LIONVILLE)	Offsite Property No.: N/A		Bill of Lading/Air Bill No.: Fdx# 796557872683

Price Code: 9K

Data Turnaround: 45 Days

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

COOL 4C, MATRIX COMPOSED OF FISH

Preservation	None	None	None	None	Cool 4C	Cool 4C	None			
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	G/P			
No. of Container(s)	1	1	1	1	1	1	1			
Volume	1500g	100g	10g	50g	230g	120g	10g			
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Tritium - H3	See item (2) in Special Instructions	See item (3) in Special Instructions	Pesticides - 8081	Technetium-99			

Sample No.	Matrix *	Sample Date	Sample Time										
J18X66	OTHER SOLID	04/21/09	1000					X	X				

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Josh McGough	4/21/09 1000	EAS Locked Storage	4/21/09 1000
EAS LOCKED STORAGE	4/22/09 1015	SHANNAN JOHNSON	04/22/09 1015
SHANNAN JOHNSON	04/22/09 1645	FDX# 796557872683	
	4.24.09 1030		4.24.08 1030

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) {Americium-241, Antimony-125, Beryllium-7, Cerium-144, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238}

(2) Strontium-89,90 - Total Sr; Isotopic Thorium {Thorium-232}; Isotopic Uranium {Uranium-233/234, Uranium-235, Uranium-238}; Isotopic Plutonium

(3) ICP Metals - 6010 (Full List) {Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Titanium, Vanadium, Zinc}; Mercury - 7471 - (CV)

Samples unavailable to relinquish.
Samples from EAS Refrigerator. EAS
Custodian removed samples for
shipping on 4/22/09

Matrix *
S = Soil
SE = Sediment
SO = Solid
SL = Sludge
W = Water
O = Oil
A = Air
DS = Drum Solids
DL = Drum Liquids
T = Tissue
WI = Wipe
L = Liquid
V = Vegetation
X = Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-118-305 Page 1 of 1

Collector Jack McGough	Company Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator KESSNER, JJ
Project Designation Columbia River Component of the RCBRA - Tissues	Sampling Location 100SA-WFS CARCASS		SAF No. RC-118
Ice Chest No. GWSC-050	Field Logbook No. 1633	COA BESCRC6520	Method of Shipment FED EX
Shipped To EBERLINE SERVICES/OAK RIDGE ~~LIONVILLE~~	Offsite Property No. N/A		Bill of Lading/Air Bill No. Fdx# 796557072683

Price Code 9K

Data Turnaround 45 Days

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage
COOL 4C: MATRIX COMPOSED OF FISH

690000

Preservation	None	None	None	None	Cool 4C	Cool 4C	None			
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	G/P			
No. of Container(s)	1	1	1	1	1	1	1			
Volume	1500g	100g	100g	10g	150g	120g	10g			
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Tritium - H3	See item (2) in Special Instructions	See item (3) in Special Instructions	Pesticides 8081	Technetium-99			

Sample No.	Matrix *	Sample Date	Sample Time										
J18K67	OTHER SOLID	4/21/09	1200					X	X				

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Jack McGough	4/21/09 1200	EAS Locked Storage	4/21/09 1205
EAS LOCKED STORAGE	04/28/09 1015	SHANNAN JOHNSON	04/28/09 1015
SHANNAN JOHNSON	04/28/09 1015	Fdx# 796557072683	
Fed Ex	4-29-09 1035	[illegible]	4-29-09 1035

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) [Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238]
(2) Strontium-89,90 - Total Sr, Isotopic Thorium (Thorium-232), Isotopic Uranium (Uranium-233/234, Uranium-235, Uranium-238), Isotopic Plutonium
(3) ICP Metals - 6010 (Full List) (Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Titanium, Vanadium, Zinc), Mercury - 7471 - (CV)

Sampler unavailable to relinquish samples from EAS Refrigerator. EAS Custodian relinquished samples for shipping on [illegible]

Matrix *
S = Soil
SE = Sediment
SO = Solid
SL = Sludge
W = Water
O = Oil
A = Air
DS = Drum Solids
DL = Drum Liquids
T = Tissue
WI = Wipe
L = Liquid
V = Vegetation
X = Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST		RC-118-41	Page 1 of 1
Collector Josh McGough	Company Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator KESSNER, JH	Price Code 9K
Project Designation Columbia River Component of the RCBRA - Tissues	Sampling Location 100SA-WEL FILLET		SAF No. RC-118	Data Turnaround 45 Days
Ice Chest No. GWSC-050	Field Logbook No. 1633	COA RESCRL 6520	Method of Shipment FED EX	
Shipped To ERCELINE SERVICES (GRANVILLE)	Offsite Property No. N/A		Bill of Lading/Air Fdx# 796557072603	

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage
COOL 4C MATRIX COMPOSED OF FISH

000070

			Preservation	None	None	None	None	Cool 4C	Cool 4C	None			
			Type of Container	G/P	G/P	G/P	G/P	G/P	G/P	G/P			
			No. of Container(s)	1	1	1	1	1	1	1			
			Volume	1500g	100g	100g	10g	250g	150g	10g			
SAMPLE ANALYSIS				See item (1) in Special Instructions	Carbon-14	Tritium - H3	See item (2) in Special Instructions	See item (3) in Special Instructions	[illegible]	Technetium-99			
Sample No.	Matrix *	Sample Date	Sample Time										
J18J34	OTHER SOLID	4/27/09	0800					X	X				

CHAIN OF POSSESSION	Date/Time	Sign/Print Names	Date/Time
Relinquished By/Removed From Josh McGough	4/27/09 0800	Received By/Stored In EAS Locked Storage	4/27/09 0845
Relinquished By/Removed From EAS LOCKED STORAGE	04/28/09 1015	Received By/Stored In SHANNAN JOHNSON	04/28/09 1015
Relinquished By/Removed From SHANNAN JOHNSON	04/28/09 1017	Received By/Stored In FDX# 796557072603	
Relinquished By/Removed From FedEx	4-29-09 1030	Received By/Stored In	4-29-09 1030
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time

SPECIAL INSTRUCTIONS

(1) Gamma Spec - {Lo'd List} [Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238]
(2) Strontium-89,90 - Total Sr; Isotopic Thorium [Thorium-232]; Isotopic Uranium [Uranium-233/234, Uranium-235, Uranium-238]; Isotopic Plutonium
(3) ICP Metals - 6010 (Full List) [Aluminum, Antimony, Arsenic, Barium, Beryllium, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Titanium, Vanadium, Zinc]; Mercury - 7471 - (CVAA)

Shipper unavailable to relinquish samples from EAS Refrigerator. EAS Custodian removed samples for shipping on 04-28-09

Matrix *
[illegible]

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-118-42

Page 1 of 1

Collector: Josh McGough

Company Contact: JOAN KESSNER

Telephone No.: 375-4688

Project Coordinator: KESSNER, JH

Price Code: 9K

Data Turnaround: 45 Days

Project Designation: Columbia River Component of the RCBRA - Tissues

Sampling Location: 100SA-WE?, FILLET

SAF No.: RC-118

Ice Chest No.: GWSC-050

Field Logbook No.: 1611

COA: DESURC6520

Method of Shipment: FED EX

Shipped To: EBERLINE SERVICES ~~OAK RIDGE~~ RICHMOND

Offsite Property No.: N/A

Bill of Lading/Air Bill No.: Fdx# 796557072603

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage: COOL 4C *MATRIX COMPOSED OF FISH*

000071

Preservation	None	None	None	None	Cool 4C	Cool 4C	None			
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	G/P			
No. of Container(s)	1	1	1	1	1	1	1			
Volume	1500g	100g	100g	10g	250g	120g	10g			
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Tritium - 3H	See item (2) in Special Instructions	See item (3) in Special Instructions	Pesticides - 8081	Technetium-99			

Sample No.	Matrix *	Sample Date	Sample Time										
J18JB5	OTHER SOLID	4/27/09	10:30					X	X				

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Josh McGough	4/27/09 1030	EAS Locked Storage	4/27/09 1035
EAS LOCKED STORAGE	4/28/09 1015	SHANNAN JOHNSON	04/28/09 1015
SHANNAN JOHNSON	4/28/09 1015	FDX# 796557072603	
	4-29-09/0920		4-29-09/0920

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) {Americium-241, Antimony-125, Beryllium-7, Cerium-144, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238};
(2) Strontium-89,90 -- Total Sr; Isotopic Thorium {Thorium-232}; Isotopic Uranium {Uranium-233/234, Uranium-235, Uranium-238}; Isotopic Plutonium;
(3) ICP Metals - 6010 (Full List) {Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc}; Mercury - 7471 - (CV)

samples unavailable to relinquish samples from EAS Refrigerator. EAS Custodian removed samples for shipping on 04/28/09

Matrix *
S = Soil
SE = Sediment
SO = Solid
SL = Sludge
W = Water
O = Oil
A = Air
DS = Drum Solids
DL = Drum Liquids
T = Tissue
WI = Wipe
L = Liquid
V = Vegetation
X = Other

LABORATORY SECTION — Received By: Title: Date/Time:

FINAL SAMPLE DISPOSITION — Disposal Method: Disposed By: Date/Time:

WCH-FE-011

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-118-43	Page 1 of 1

Collector Josh McGough	Company Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator KESSNER, JE
Project Designation Columbia River Component of the RCBRA - Tissues	Sampling Location 100SA-WFX, FILLET		SAF No. RC-118
Ice Chest No. EWSC-050	Field Logbook No. 1633	COA RLSCRC6520	Method of Shipment FEDEX
Shipped To EBERLINE SERVICES - LIONVILLE	Offsite Property No. N/A		Bill of Lading/Air Bill No. Fdx# 796557872603

Price Code 9K

Data Turnaround 45 Days

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

[illegible]

000072

Preservation	None	None	None	[illegible]	Cool 4°C	Cool 4C	None			
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	G/P			
No. of Container(s)	1	1	1	1	1	1	1			
Volume	1100g	100g	100g	10g	250g	120g	10g			
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Tritium - H3	See item (2) in Special Instructions	See item (3) in Special Instructions	Percent Moisture	Technetium-99			

Sample No.	Matrix *	Sample Date	Sample Time										
J18J86	OTHER SOLID	4/27/09	1345					X	X				

CHAIN OF POSSESSION Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Josh McGough	4/27/09 1345	EAS Locked Storage #2	4/27/09 1345
EAS LOCKED STORAGE #2	4/28/09 1015	SHANNAN JOHNSON	04/28/09 1015
SHANNAN JOHNSON	04/28/09 1015	Fdx# 796557872603	
	4-29-09/0830		4-29-09/0830

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) (Americium-241, Antimony-125, Beryllium-7, Cerium-144, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238);
(2) Strontium-89,90 -- Total Sr; Isotopic Thorium (Thorium-232); Isotopic Uranium (Uranium-233/234, Uranium-235, Uranium-238); Isotopic Plutonium
(3) ICP Metals - 6010 (Full List) (Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc); Mercury - 7471 - (CV)

Samples [illegible] available to [illegible]
samples from EAS Refrigerator EAS
Custodian [illegible]
shipping on 4/28/09

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-118-44 | Page 1 of 1

Collector Josh McGough	Company Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator KESSNER, JH
Project Designation Columbia River Component of the RCBRA - Tissues	Sampling Location HOSA-WF4, FILLET		SAF No. RC-155
Ice Chest No. GWSC-050	Field Logbook No. 1633	COA RESCRC6520	Method of Shipment FED EX
Shipped To PRORLINE SERVICES (LOUISVILLE)	Offsite Property No. N/A		Bill of Lading/Air Bill No. Fdx# 796557072603

Price Code 9K

Data Turnaround 45 Days

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

COOL 4C MATRIX COMPOSITE AT LAB

Preservation	None	None	None	None	Cool 4C	Cool 4C	None			
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	G/P			
No. of Container(s)	1	1	1	1	1	1	1			
Volume	1500g	100g	100g	10g	250g	100g	10g			
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Tritium - H3	See item (2) in Special Instructions	See item (3) in Special Instructions	Percent Lipids	Technetium-99			

Sample No.	Matrix *	Sample Date	Sample Time										
J18J67	OTHER SOLID	4/27/09	1430					X	X				

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Josh McGough	4/27/09 1430	EAS LOCKED STORAGE #2	4/27/09 1430
EAS LOCKED STORAGE #2	04/28/09 1015	SHANNAN JOHNSON	04/28/09 1015
SHANNAN JOHNSON	04/28/09 1015	FDX# 796557072603	
	4-29-09 0930		4-29-09 0930

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) {Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238}

(2) Strontium-89,90 - Total Sr; Isotopic Thorium {Thorium-232}; Isotopic Uranium {Uranium-233/234, Uranium-235, Uranium-238}; Isotopic Plutonium

(3) ICP Metals - 6010 (Full List) {Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc}; Mercury - 7471 - (CV)

** TEAM unavailable to relinquish samples from EAS Refrigerator. EAS Custodian released samples for shipping on 04-28-09

Matrix *
S = Soil
SE = Sediment
SO = Solid
SL = Sludge
W = Water
O = Oil
A = Air
DS = Drum Solids
DL = Drum Liquids
T = Tissue
WI = Wipe
L = Liquid
V = Vegetation
X = Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Appendix 5

Data Validation Supporting Documentation

INORGANIC ANALYSIS DATA VALIDATION CHECKLIST

VALIDATION LEVEL:	A	B	[✓ C]	D	E

PROJECT:	RCBRA	DATA PACKAGE:	K1608
VALIDATOR:	FLR	LAB: LLI	DATE: 10/10/09
		SDG:	K1608

ANALYSES PERFORMED					
[✓ SW-846/ICP]	SW-846/GFAA	[✓ SW-846/Hg]	SW-846 Cyanide		

SAMPLES/MATRIX					
J18KD8	J18KD9	J18KF0	J18KF1	J18K78	J18K79
J18K80	J18K81	J18K82	J18KF2	J18K21	J18K22
J18K23	J18K24	J18K36	J18K37	J18K38	J18K39
J18K40	J18K63	J18K64	J18K65	J18K66	J18K67
J18K84	J18K85	J18K86	J18K87		soil

1. DATA PACKAGE COMPLETENESS AND CASE NARRATIVE

Technical verification documentation present? .... Yes [✓ No] N/A

Comments: ____________

2. INSTRUMENT PERFORMANCE AND CALIBRATIONS (Levels D and E)

Initial calibrations performed on all instruments? .... Yes No [✓ N/A]

Initial calibrations acceptable? .... Yes No [✓ N/A]

ICP interference checks acceptable? .... Yes No [✓ N/A]

ICV and CCV checks performed on all instruments? .... Yes No [✓ N/A]

ICV and CCV checks acceptable? .... Yes No [✓ N/A]

Standards traceable? .... Yes No [✓ N/A]

Standards expired? .... Yes No [✓ N/A]

Calculation check acceptable? .... Yes No [✓ N/A]

Comments: ____________

INORGANIC ANALYSIS DATA VALIDATION CHECKLIST

3. BLANKS (Levels B, C, D, and E)

ICB and CCB checks performed for all applicable analyses? (Levels D, E) .... Yes No [✓ N/A]

ICB and CCB results acceptable? (Levels D, E) .... ~~Yes~~ No [✓ N/A]

Laboratory blanks analyzed? .... [✓ Yes] No N/A

Laboratory blank results acceptable? .... Yes [✓ No] N/A

Field blanks analyzed? (Levels C, D, E) .... Yes [✓ No] N/A

Field blank results acceptable? (Levels C, D, E) .... Yes No [✓ N/A]

Transcription/calculation errors? (Levels D, E) .... Yes No [✓ N/A]

Comments: Pb – ~~21, 23, 29, 35, 37~~ all but 38 – UJ (detects)

tin – FO – UJ

no FB

4. ACCURACY (Levels C, D, and E)

MS/MSD samples analyzed? .... [✓ Yes] No N/A

MS/MSD results acceptable? .... [✓ Yes] No N/A

MS/MSD standards NIST traceable? (Levels D, E) .... Yes No [✓ N/A]

MS/MSD standards expired? (Levels D, E) .... Yes No [✓ N/A]

LCS/BSS samples analyzed? .... [✓ Yes] No N/A

LCS/BSS results acceptable? .... Yes [✓ No] N/A

Standards traceable? (Levels D, E) .... Yes No [✓ N/A]

Standards expired? (Levels D, E) .... Yes No [✓ N/A]

Transcription/calculation errors? (Levels D, E) .... Yes No [✓ N/A]

Performance audit sample(s) analyzed? .... Yes [✓ No] N/A

Performance audit sample results acceptable? .... Yes No [✓ N/A]

Comments: ~~MS – calcium (434%) – J (F2-87)~~ no PAS

MS – calcium (326%) – J all in D8/F2

LCS – antimony (171% + 155%) – J detects lead (41% + 61%) – J all

arsenic (221% + 185%) – J detects

copper (167%) – J detects (F2-87)

nickel (0%) – J (F2-87)

thallium (0%) – J ~~(F2)~~ all

tin (137%) – J (F2-87)

vanadium (153%) – J (D8-82)

zinc (155%) – J (F2-87)

INORGANIC ANALYSIS DATA VALIDATION CHECKLIST

5. PRECISION (Levels C, D, and E)

Duplicate RPD values acceptable? .... Yes [✓ No] N/A

Duplicate results acceptable? .... Yes [✓ No] N/A

MS/MSD standards NIST traceable? (Levels D, E) .... Yes No [✓ N/A]

MS/MSD standards expired? (Levels D, E) .... Yes No [✓ N/A]

Field duplicate RPD values acceptable? .... Yes No [✓ N/A]

Field split RPD values acceptable? .... Yes No [✓ N/A]

Transcription/calculation errors? (Levels D, E) .... Yes No [✓ N/A]

Comments: Calcium (64% & 92%) - J all Zinc (37%) J D8-82
magnesium (35% & 90%) - J all
phosphorus (61% & 71%) J all
Strontium (63% & 91%) - J all
tin (77%) - J (D8-82)

6. ICP QUALITY CONTROL (Levels D and E)

ICP serial dilution samples analyzed? .... Yes No [✓ N/A]

ICP serial dilution %D values acceptable? .... Yes No [✓ N/A]

ICP post digestion spike required? .... Yes No [✓ N/A]

ICP post digestion spike values acceptable? .... Yes No [✓ N/A]

Standards traceable? .... Yes No [✓ N/A]

Standards expired? .... Yes No [✓ N/A]

Transcription/calculation errors? .... Yes No [✓ N/A]

Comments:

INORGANIC ANALYSIS DATA VALIDATION CHECKLIST

7. FURNACE AA QUALITY CONTROL (Levels D and E)

Duplicate injections performed as required? Yes No [✓ N/A]
Duplicate injection %RSD values acceptable? Yes No [✓ N/A]
Analytical spikes performed as required? Yes No [✓ N/A]
Analytical spike recoveries acceptable? Yes No [✓ N/A]
Standards traceable? Yes No [✓ N/A]
Standards expired? Yes No [✓ N/A]
MSA performed as required? Yes No [✓ N/A]
MSA results acceptable? Yes No [✓ N/A]
Transcription/calculation errors? Yes No [✓ N/A]
Comments:

8. HOLDING TIMES (all levels)

Samples properly preserved? [✓ Yes] No N/A
Sample holding times acceptable? [✓ Yes] No N/A
Comments:

INORGANIC ANALYSIS DATA VALIDATION CHECKLIST

9. RESULT QUANTITATION AND DETECTION LIMITS (all levels)

Results reported for all requested analyses? .... [✓ Yes] No N/A

Results supported in the raw data? (Levels D, E).......... Yes No [✓ N/A]

Samples properly prepared? (Levels D, E).......... Yes No [✓ N/A]

Detection limits meet RDL? .... Yes [✓ No] N/A

Transcription/calculation errors? (Levels D, E).......... Yes No [✓ N/A]

Comments: Lithium - 𝍸 𝍸
beryllium - all

Appendix 6

Additional Documentation Requested by Client

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

WC-Hanford, Inc 2620 Fermi Avenue Richland WA, 99354	Project: RC-118 Project Number: K1608 Project Manager: Joan Kessner	Reported: 06/02/2009 12:59

Metals by SW846 6000/7000 series - Quality Control

Lionville Laboratory

Analyte	Result and Qualifier	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch L904175 - SW 7471A Prep									
Blank (L904175-BLK1)				Prepared: 04/28/2009 Analyzed: 04/29/2009					
Mercury	0.0100 U	0.0100	mg/kg wet						
Duplicate (L904175-DUP1)		Source: 0904044-01		Prepared: 04/28/2009 Analyzed: 04/29/2009					
Mercury	0.0410	0.0257	mg/kg wet		0.0380			7.59	20
Matrix Spike (L904175-MS1)		Source: 0904044-01		Prepared: 04/28/2009 Analyzed: 04/29/2009					
Mercury	0.192	0.0100	mg/kg wet	0.16667	0.0380	92.2	75-125		
Reference (L904175-SRM1)				Prepared: 04/28/2009 Analyzed: 04/29/2009					
Mercury	5.14	0.180	mg/kg wet	4.7000		109	80-120		
Batch L905189 - SW 3050B									
Blank (L905189-BLK1)				Prepared: 05/20/2009 Analyzed: 05/24/2009					
Aluminum	3.47 U	3.47	mg/kg						
Antimony	0.417 U	0.417	mg/kg						
Arsenic	0.694 U	0.694	mg/kg						
Barium	0.347 U	0.347	mg/kg						
Beryllium	0.139 U	0.139	mg/kg						
Bismuth	6.94 U	6.94	mg/kg						
Boron	1.39 U	1.39	mg/kg						
Cadmium	0.139 U	0.139	mg/kg						
Calcium	69.4 U	69.4	mg/kg						
Chromium	0.208 U	0.208	mg/kg						
Cobalt	1.39 U	1.39	mg/kg						
Copper	0.694 U	0.694	mg/kg						
Iron	13.9 U	13.9	mg/kg						
Lead	0.282 B	0.347	mg/kg						
Lithium	1.74 U	1.74	mg/kg						
Magnesium	1.04 B	52.1	mg/kg						
Manganese	3.47 U	3.47	mg/kg						
Molybdenum	1.39 U	1.39	mg/kg						
Nickel	2.78 U	2.78	mg/kg						
Phosphorus	34.7 U	34.7	mg/kg						
Potassium	278 U	278	mg/kg						
Selenium	0.694 U	0.694	mg/kg						
Silicon	1.39 U	1.39	mg/kg						
Silver	0.139 U	0.139	mg/kg						
Sodium	34.7 U	34.7	mg/kg						
Strontium	0.694 U	0.694	mg/kg						
Thallium	0.347 U	0.347	mg/kg						
Tin	0.855 B	6.94	mg/kg						
Uranium	13.9 U	13.9	mg/kg						
Vanadium	1.74 U	1.74	mg/kg						
Zinc	6.94 U	6.94	mg/kg						

000081

Metals by SW846 6000/7000 series - Quality Control

Lionville Laboratory

Analyte	Result and Qualifier		Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch L905189 - SW 3050B										
Duplicate (L905189-DUP1)			**Source: 0904044-01**	Prepared: 05/20/2009 Analyzed: 05/24/2009						
Aluminum	3.48	B	3.97	mg/kg		3.37			3	20
Antimony	0.476	U	0.476	mg/kg		0.476				20
Arsenic	0.243	B	0.794	mg/kg		0.204				20
Barium	1.24		0.397	mg/kg		0.551			77*	20
Beryllium	0.159	U	0.159	mg/kg		0.159				20
Bismuth	7.94	U	7.94	mg/kg		7.94				20
Boron	1.59	U	1.59	mg/kg		1.59				20
Cadmium	0.0547	U	0.159	mg/kg		0.0568			4	20
Calcium	17100		79.4	mg/kg		6350			92*	20
Chromium	0.495		0.238	mg/kg		0.637			25*	20
Cobalt	1.59	U	1.59	mg/kg		1.59				20
Copper	0.794	U	0.794	mg/kg		0.423				20
Iron	19.1		15.9	mg/kg		22.3			15	20
Lead	0.248	B	0.397	mg/kg		0.375			41*	20
Lithium	1.98	U	1.98	mg/kg		1.98				20
Magnesium	467		39.5	mg/kg		278			50*	20
Manganese	4.58		3.97	mg/kg		3.17			118*	20
Molybdenum	1.59	U	1.59	mg/kg		1.59				20
Nickel	3.17	U	3.17	mg/kg		3.17				20
Phosphorus	10800		476	mg/kg		5130			71*	20
Potassium	2960		317	mg/kg		3390			13	20
Selenium	1.33		0.794	mg/kg		1.17			13	20
Silicon	2.80		1.59	mg/kg		2.76			1	20
Silver	0.159	U	0.159	mg/kg		0.159				20
Sodium	1360		39.7	mg/kg		1370			1	20
Strontium	15.1		0.794	mg/kg		5.69			91*	20
Thallium	0.397	U	0.397	mg/kg		0.397				20
Tin	10.8		7.94	mg/kg		25.1			79*	20
Uranium	15.9	U	15.9	mg/kg		15.9				20
Vanadium	0.404	B	1.98	mg/kg		0.189			73*	20
Zinc	22.4		7.94	mg/kg		15.5			37*	20

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

WC-Hanford, Inc. 2620 Fermi Avenue Richland WA, 99354	Project: RC-118 Project Number: K1608 Project Manager: Joan Kessner	Reported: 06/02/2009 12:39

Metals by SW846 6000/7000 series - Quality Control

Lionville Laboratory

Analyte	Result and Qualifier	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch L905189 - SW 3050B									
Matrix Spike (L905189-MS1)		Source: 0904044-01		Prepared: 05/20/2009 Analyzed: 05/24/2009					
Aluminum	149	1.47	mg/kg	138.89	3.37	105	75-125		
Antimony	32.7	0.417	mg/kg	34.722	0.417	94	75-125		
Arsenic	135	0.694	mg/kg	138.89	0.204	97	75-125		
Barium	143	0.347	mg/kg	138.89	0.551	103	75-125		
Beryllium	1.44	0.139	mg/kg	1.4722	0.139	98	75-125		
Bismuth	356	6.94	mg/kg	347.22	6.94	102	75-125		
Boron	64.3	1.39	mg/kg	69.444	1.39	93	75-125		
Cadmium	1.31	0.139	mg/kg	1.4722	0.0568	94	75-125		
Calcium	12000	69.4	mg/kg	1736.1	6350	326*	75-125		
Chromium	14.1	0.208	mg/kg	13.889	0.637	97	75-125		
Cobalt	34.5	1.39	mg/kg	34.722	1.39	99	75-125		
Copper	17.3	0.694	mg/kg	17.361	0.423	97	75-125		
Iron	90.6	13.9	mg/kg	69.444	22.3	98	75-125		
Lead	33.6	0.347	mg/kg	34.722	0.375	96	75-125		
Lithium	69.2	1.74	mg/kg	69.444	1.74	100	75-125		
Magnesium	1970	52.1	mg/kg	1736.1	278	97	75-125		
Manganese	36.8	3.47	mg/kg	34.722	1.17	102	75-125		
Molybdenum	70.1	1.39	mg/kg	69.444	1.39	101	75-125		
Nickel	34.5	2.78	mg/kg	34.722	2.78	99	75-125		
Phosphorus	7480	417	mg/kg	347.22	5130	677*	75-125		
Potassium	4900	278	mg/kg	1736.1	3390	87	75-125		
Selenium	134	0.694	mg/kg	138.89	1.17	96	75-125		
Silicon	72.8	1.39	mg/kg	69.444	2.76	101	75-125		
Silver	1.38	0.139	mg/kg	1.4722	0.139	94	75-125		
Sodium	3090	34.7	mg/kg	1736.1	1370	99	75-125		
Strontium	77.5	0.694	mg/kg	69.444	5.69	103	75-125		
Thallium	133	0.347	mg/kg	138.89	0.347	96	75-125		
Tin	85.3	6.94	mg/kg	69.444	25.1	87	75-125		
Uranium	355	13.9	mg/kg	347.22	11.9	102	75-125		
Vanadium	35.5	1.74	mg/kg	34.722	0.189	102	75-125		
Zinc	53.0	6.94	mg/kg	34.722	15.5	108	75-125		

Metals by SW846 6000/7000 series - Quality Control

Lionville Laboratory

Analyte	Result and Qualifier	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch L905189 - SW 3050B									
Reference (L905189-SRM1)				Prepared: 05/20/2009 Analyzed: 05/24/2009					
Aluminum	2450	4.17	mg/kg	2725.2		90	30.8-169.1		
Antimony	9660	24.0	mg/kg	4954.8		195	0-264.8		
Arsenic	45.8	0.833	mg/kg	24.800		185	0-205.6		
Barium	608	0.417	mg/kg	586.40		104	83.9-116.1		
Cadmium	1.23	0.167	mg/kg	1.2000		102	100.0-181.1		
Calcium	6430	83.3	mg/kg	5426.5		119	70.1-139.9		
Chromium	9.60	0.250	mg/kg	10.700		90	0-205.6		
Cobalt	2.90	1.67	mg/kg	2.7000		107	0-1000		
Copper	4670	40.0	mg/kg	4792.4		97	52.2-147.8		
Iron	7410	16.7	mg/kg	6481.4		114	35.8-184.5		
Lead	88100	20.0	mg/kg	144740		61	0-1000		
Magnesium	2820	62.5	mg/kg	2367.4		119	0-1000		
Manganese	165	4.17	mg/kg	174.20		95	63.1-136.6		
Nickel	10.3	3.33	mg/kg	12.600		82	63.8-136.2		
Potassium	1060	333	mg/kg	1005.8		106	62.1-137.8		
Silver	6.83	0.167	mg/kg	6.5000		105	16.9-169.2		
Sodium	318	41.7	mg/kg	380.00		84	25-175		
Thallium	0.417 U	0.417	mg/kg	0.60000			0-1000		
Tin	374	8.33	mg/kg	304.10		123	0-1000		
Vanadium	13.3	2.08	mg/kg	8.7000		153	0-1000		
Zinc	508	8.33	mg/kg	546.40		93	64.6-135.4		

WC-Hanford, Inc.
2620 Fermi Avenue
Richland WA, 99354

Project: RC-118
Project Number: K1608
Project Manager: Joan Kessner

Reported:
05/07/2009 14:40

Metals by SW846 6000/7000 series - Quality Control

Lionville Laboratory

Batch L904197 - SW 7471A Prep

Blank (L904197-BLK1) Prepared: 05/01/2009 Analyzed: 05/04/2009

Analyte	Result and Qualifier	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Mercury	0.0100 U	0.0100	mg/kg wet						

Duplicate (L904197-DUP1) Source: 0904069-01 Prepared: 05/01/2009 Analyzed: 05/04/2009

Analyte	Result and Qualifier	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Mercury	0.0639	0.0250	mg/kg wet		0.0712			10.9	20

Matrix Spike (L904197-MS1) Source: 0904069-01 Prepared: 05/01/2009 Analyzed: 05/04/2009

Analyte	Result and Qualifier	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Mercury	0.185	0.0250	mg/kg wet	0.13890	0.0712	81.7	75-125		

Reference (L904197-SRM1) Prepared: 05/01/2009 Analyzed: 05/04/2009

Analyte	Result and Qualifier	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Mercury	4.84	0.100	mg/kg wet	4.7000		103	80-120		

Batch L905190 - SW 3050B

Blank (L905190-BLK1) Prepared: 05/20/2009 Analyzed: 05/24/2009

Analyte	Result and Qualifier	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Aluminum	3.85 U	3.85	mg/kg						
Antimony	0.462 U	0.462	mg/kg						
Arsenic	0.769 U	0.769	mg/kg						
Barium	0.385 U	0.385	mg/kg						
Beryllium	0.154 U	0.154	mg/kg						
Bismuth	7.69 U	7.69	mg/kg						
Boron	1.54 U	1.54	mg/kg						
Cadmium	0.154 U	0.154	mg/kg						
Calcium	76.9 U	76.9	mg/kg						
Chromium	0.231 U	0.231	mg/kg						
Cobalt	1.54 U	1.54	mg/kg						
Copper	0.769 U	0.769	mg/kg						
Iron	15.4 U	15.4	mg/kg						
Lead	0.306 B	0.385	mg/kg						
Lithium	1.92 U	1.92	mg/kg						
Magnesium	57.7 U	57.7	mg/kg						
Manganese	3.85 U	3.85	mg/kg						
Molybdenum	1.54 U	1.54	mg/kg						
Nickel	3.08 U	3.08	mg/kg						
Phosphorus	38.5 U	38.5	mg/kg						
Potassium	308 U	308	mg/kg						
Selenium	0.769 U	0.769	mg/kg						
Silicon	1.54 U	1.54	mg/kg						
Silver	0.154 U	0.154	mg/kg						
Sodium	38.5 U	38.5	mg/kg						
Strontium	0.769 U	0.769	mg/kg						
Thallium	0.385 U	0.385	mg/kg						
Tin	0.986 B	7.69	mg/kg						
Uranium	15.4 U	15.4	mg/kg						
Vanadium	1.92 U	1.92	mg/kg						
Zinc	7.69 U	7.69	mg/kg						

WC-Hanford, Inc 2620 Fermi Avenue Richland WA, 99354	Project: RC-118 Project Number: K1608 Project Manager: Joan Kessner	Reported: 06/02/2009 14:40

Metals by SW846 6000/7000 series - Quality Control

Lionville Laboratory

Analyte	Result and Qualifier		Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch L905190 - SW 3050B										
Duplicate (L905190-DUP1)			**Source: 0904069-01**	Prepared: 05/20/2009 Analyzed: 05/24/2009						
Aluminum	5.26		4.46	mg/kg		7.73			38*	20
Antimony	0.536	U	0.536	mg/kg		0.536				20
Arsenic	0.367	B	0.893	mg/kg		0.324			12	20
Barium	1.42		0.446	mg/kg		2.52			56*	20
Beryllium	0.179	U	0.179	mg/kg		0.179				20
Bismuth	8.93	U	8.93	mg/kg		8.93				20
Boron	1.79	U	1.79	mg/kg		1.79				20
Cadmium	0.0983	B	0.179	mg/kg		0.0846			16*	20
Calcium	11000		89.1	mg/kg		21400			66*	20
Chromium	0.497		0.268	mg/kg		0.626			23*	20
Cobalt	1.79	U	1.79	mg/kg		1.79				20
Copper	0.468	B	0.893	mg/kg		0.803				20
Iron	15.4	B	17.9	mg/kg		16.4			6	20
Lead	1.24		0.446	mg/kg		1.17			5	20
Lithium	2.23	U	2.23	mg/kg		2.23				20
Magnesium	379		67.0	mg/kg		541			35*	20
Manganese	2.06	B	4.46	mg/kg		4.21			69*	20
Molybdenum	1.79	U	1.79	mg/kg		1.79				20
Nickel	1.57	U	1.57	mg/kg		1.57				20
Phosphorus	7220		536	mg/kg		13600			61*	20
Potassium	2920		157	mg/kg		2910			0.3	20
Selenium	1.37		0.893	mg/kg		1.15			17	20
Silicon	6.64		1.79	mg/kg		8.15			20	20
Silver	0.179	U	0.179	mg/kg		0.179				20
Sodium	1340		44.6	mg/kg		1440			7	20
Strontium	10.4		0.893	mg/kg		20.6			63*	20
Thallium	0.446	U	0.446	mg/kg		0.446				20
Tin	19.9		8.93	mg/kg		14.6			30*	20
Uranium	17.9	U	17.9	mg/kg		17.9				20
Vanadium	0.311	B	2.23	mg/kg		0.466			40*	20
Zinc	20.9		8.93	mg/kg		26.8			25*	20

WC-Hanford, Inc	Project: RC-118	
2620 Fermi Avenue	Project Number: K1608	Reported:
Richland WA, 99354	Project Manager: Joan Kessner	06/02/2009 14:40

Metals by SW846 6000/7000 series - Quality Control

Lionville Laboratory

Analyte	Result and Qualifier	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch L905190 - SW 3050B									
Matrix Spike (L905190-MS1)		**Source: 0904069-01**		**Prepared: 05/20/2009 Analyzed: 05/24/2009**					
Aluminum	168	1.95	mg/kg	156.25	7.73	102	75-125		
Antimony	37.0	0.469	mg/kg	39.062	0.469	95	75-125		
Arsenic	152	0.781	mg/kg	156.25	0.324	97	75-125		
Barium	162	0.391	mg/kg	156.25	2.52	102	75-125		
Beryllium	3.90	0.156	mg/kg	3.9062	0.156	100	75-125		
Bismuth	399	7.81	mg/kg	390.62	7.81	102	75-125		
Boron	71.9	1.56	mg/kg	78.125	1.56	92	75-125		
Cadmium	3.72	0.156	mg/kg	3.9062	0.0686	93	75-125		
Calcium	12900	78.1	mg/kg	1953.1	21400	-414*	75-125		
Chromium	15.6	0.234	mg/kg	15.625	0.626	96	75-125		
Cobalt	38.6	1.56	mg/kg	39.062	1.56	99	75-125		
Copper	19.4	0.781	mg/kg	19.531	0.781	100	75-125		
Iron	87.2	15.6	mg/kg	78.125	16.4	91	75-125		
Lead	37.7	0.391	mg/kg	39.062	1.17	94	75-125		
Lithium	79.1	1.95	mg/kg	78.125	1.95	101	75-125		
Magnesium	2180	58.6	mg/kg	1953.1	541	84	75-125		
Manganese	40.5	3.91	mg/kg	39.062	4.21	93	75-125		
Molybdenum	79.4	1.56	mg/kg	78.125	1.56	102	75-125		
Nickel	41.9	3.12	mg/kg	39.062	3.12	99	75-125		
Phosphorus	7750	469	mg/kg	390.62	13600	-1510*	75-125		
Potassium	5010	312	mg/kg	1953.1	2910	107	75-125		
Selenium	150	0.781	mg/kg	156.25	1.15	95	75-125		
Silicon	84.2	1.56	mg/kg	78.125	8.15	97	75-125		
Silver	3.78	0.156	mg/kg	3.9062	0.156	97	75-125		
Sodium	3350	39.1	mg/kg	1953.1	1440	98	75-125		
Strontium	87.2	0.781	mg/kg	78.125	20.0	86	75-125		
Thallium	150	0.391	mg/kg	156.25	0.391	96	75-125		
Tin	84.7	7.81	mg/kg	78.125	14.6	90	75-125		
Uranium	399	15.6	mg/kg	390.62	15.6	102	75-125		
Vanadium	40.0	1.95	mg/kg	39.062	0.466	101	75-125		
Zinc	62.8	7.81	mg/kg	39.062	26.8	92	75-125		

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WC-Hanford, Inc
2620 Fermi Avenue
Richland WA, 99354

Project: RC-118
Project Number: K1608
Project Manager: Joan Kessner

Reported:
06/02/2009 14:40

Metals by SW846 6000/7000 series - Quality Control

Lionville Laboratory

Batch 1.905190 - SW 3050B

Reference (1.905190-SRM1) Prepared: 05/20/2009 Analyzed: 05/24/2009

Analyte	Result and Qualifier	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Aluminum	2110	3.38	mg/kg	2725.2		77	30.8-169.3		
Antimony	8850	19.5	mg/kg	4954.8		170	0-264.8		
Arsenic	54.7	0.676	mg/kg	24.300		221*	0-205.6		
Barium	541	0.338	mg/kg	586.40		92	83.9-116.1		
Cadmium	1.02	0.135	mg/kg	1.3000		85	1083-181		
Calcium	4200	67.6	mg/kg	5426.5		77	70.1-129.9		
Chromium	7.86	0.203	mg/kg	10.700		74	0-205.6		
Cobalt	3.35	1.35	mg/kg	2.7000		174	0-1000		
Copper	79800	12.4	mg/kg	4792.4		1670*	52.2-147.8		
Iron	6160	11.5	mg/kg	6481.4		95	15.8-184.9		
Lead	70200	16.7	mg/kg	144740		49	0-1000		
Magnesium	1830	50.7	mg/kg	2167.4		77	0-1000		
Manganese	137	1.18	mg/kg	174.20		79	63.1-136.6		
Nickel	2.70 U	2.70	mg/kg	12.600		*	63.8-136.2		
Potassium	910	270	mg/kg	1005.8		93	62.1-137.8		
Silver	6.36	0.135	mg/kg	6.5000		98	36.9-169.2		
Sodium	270	11.8	mg/kg	380.00		71	25-175		
Thallium	0.338 U	0.338	mg/kg	0.60000			0-1000		
Tin	416	6.76	mg/kg	304.10		137	0-1000		
Vanadium	10.7	1.69	mg/kg	8.7000		123	0-1000		
Zinc	8470	324	mg/kg	546.40		1550*	64.6-135.4		

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F.3.1.2 SDG K1735

SAF-RC-118
Columbia River Component of the RCBRA – Tissues
FINAL VALIDATION PACKAGE

COMPLETE COPY OF VALIDATION PACKAGE TO:

Kathy Wendt H4-21

COMMENTS:

SDG K1735 **SAF-RC-118**

Date: 11 January 2009
To: Washington Closure Hanford (technical representative)
From: ELR Consulting
Project: Columbia River Component of the RCBRA - Tissue
Subject: Inorganic - Data Package No. K1735-LLI

INTRODUCTION

This memo presents the results of data validation on Data Package No. K1735 prepared by Lionville Laboratory Inc. (LLI). A list of samples validated along with the analyses reported and the method of analysis is provided in the following table

Sample ID	Sample Date	Media	Validation	Date
J19029	8/25/09	Solid	C	See note 1
J19030	8/25/09	Solid	C	See note 1
J19031	8/25/09	Solid	C	See note 1
J19032	8/25/09	Solid	C	See note 1
J19033	8/25/09	Solid	C	See note 1
J19052	8/25/09	Solid	C	See note 1
J19053	8/25/09	Solid	C	See note 1
J19054	8/25/09	Solid	C	See note 1
J19055	8/25/09	Solid	C	See note 1
J19056	8/25/09	Solid	C	See note 1
J190L6	8/25/09	Solid	C	See note 1
J190L7	8/25/09	Solid	C	See note 1
J190L8	8/25/09	Solid	C	See note 1
J190L9	8/25/09	Solid	C	See note 1
J190M0	8/25/09	Solid	C	See note 1
J190N6	8/25/09	Solid	C	See note 1
J190N7	8/25/09	Solid	C	See note 1
J190N8	8/25/09	Solid	C	See note 1
J190N9	8/25/09	Solid	C	See note 1
J190P0	8/25/09	Solid	C	See note 1
J19458	8/17/09	Solid	C	See note 1
J19459	8/17/09	Solid	C	See note 1
J19460	8/17/09	Solid	C	See note 1
J19461	8/17/09	Solid	C	See note 1

1 - ICP metals (6010B) & mercury by 7471A.

Data validation was conducted in accordance with the Washington Closure Hanford (WCH) validation statement of work and the Remedial Investigation Work Plan for Hanford Site Releases to the Columbia River (DOE/RL-2008, Rev. 0, September 2008). Appendices 1 through 6 provide the following information as indicated below:

Appendix 1. Glossary of Data Reporting Qualifiers
Appendix 2. Summary of Data Qualification
Appendix 3. Qualified Data Summary and Annotated Laboratory Reports
Appendix 4. Laboratory Narrative and Chain-of-Custody Documentation
Appendix 5. Data Validation Supporting Documentation
Appendix 6. Additional Documentation Requested by Client

DATA QUALITY PARAMETERS

- **Holding Times**

Analytical holding times for metals are assessed to ascertain whether the holding time requirements were met by the laboratory. The holding time requirements are as follows: Soil samples must be analyzed within 6 months for ICP metals and 28 days for mercury.

Due to the holding time being exceeded by less than twice the limit, all mercury results (except samples J19458 & J19459) were qualified as estimates and flagged "J"

All other holding times were acceptable.

- **Preparation (Method) Blanks**

Preparation Blanks

At least one preparation blank, consisting of deionized distilled water processed through each sample preparation and analysis procedure, must be prepared and analyzed with every sample delivery group. In the case of positive blank results, samples with digestate concentrations less than five times the preparation blank value have had their associated values qualified as non-detected and flagged "UJ". Samples with concentrations of greater than five times the highest blank concentration do not require qualification.

In the case of negative blank results, if the absolute value exceeds the contract required detection limit (CRDL), all nondetects are rejected and flagged "UR" and all detects that are less than ten times the absolute value of the associated preparation blank result are qualified as estimates and flagged "J". If the absolute value of the negative preparation blank is greater than the instrument detection limit (IDL) and less than or equal to the CRDL, all nondetects are qualified as estimates and flagged "UJ" and all detects less than ten times the absolute value of the blank are qualified as estimates and flagged "J". If the sample results are greater than ten times the absolute value of the preparation blank, no qualification is necessary.

Due to method blank contamination, the tin result in samples J19030, J19054, J190N6, J19460, J19461, J19458 and J19459 were qualified as undetected and flagged "UJ".

Due to method blank contamination,, all detected lithium results were qualified as undetected and flagged "UJ".

All other preparation blank results were acceptable.

Field (Equipment) Blank

No field blanks were submitted for analysis.

- **Accuracy**

Matrix Spike and Laboratory Control Sample

Matrix spike (MS) and laboratory control sample (LCS) analyses are used to assess the analytical accuracy of the reported data. The matrix spike is used to assess the effect of the matrix on the ability to accurately quantify sample concentrations. Recoveries must fall within the range of 70% to 130%. Samples with a recovery of less than 30% and a sample result below the IDL are rejected and flagged "UR". Samples with a recovery of 30% to 69% and a sample result less than the IDL are qualified "UJ" Samples with a recovery of greater than 130% or less than 70% and a sample result greater than the IDL are qualified as estimates and flagged "J". Finally, for samples with a recovery greater than 130% and a sample result less than the IDL, no qualification is required.

Due to matrix spike recoveries outside QC limits, all calcium (188% & 153%) and potassium (41% & 47%) results (except J19458 & J19459) were qualified as estimates and flagged "J".

Due to a matrix spike recovery outside QC limits, the iron (314%) result in samples J19029, J19030, J19031, J19032, J19033, J19052, J19053, J19054, J19055, J19056 and J190L6 were qualified as estimates and flagged "J".

Due to an LCS recovery outside QC limits (59%), the silicon result in samples J19029, J19030, J19031, J19032, J19033, J19052, J19053, J19054, J19055, J19056 and J190L6 were qualified as estimates and flagged "J".

All other accuracy results were acceptable.

- **Precision**

Laboratory Duplicate Samples

Analytical precision is expressed by the relative percent differences (RPD) between the recoveries of matrix spike duplicate (MSD) analyses performed on a sample in the analytical batch. Precision may alternatively be assessed using unspiked duplicate analyses performed on a sample in the analytical batch. If both sample and replicate activities (concentrations) are greater than five times the CRDL and the RPD is less than 30%, no qualification is required. If either activity (concentration) is less than five times the CRDL, the RPD control limit is less than or equal to two times the CRDL. If the RPD is outside the applicable control limit, associated results are qualified as estimated detects or estimated non-detects.

Due to RPDs outside QC limits, the chromium (79%), calcium (49%) and strontium (52%) results in samples J19029, J19030, J19031, J19032, J19033, J19052, J19053, J19054, J19055, J19056 and J190L6 were qualified as estimates and flagged "J".

Due to RPDs outside QC limits, all magnesium (37%) and zinc (39%) results in samples J190L7, J190L8, J190L9, J190M0, J190N6, J190N7, J190N8, J190N9, J190P0, J19460 and J19461 were qualified as estimates and flagged "J".

All other laboratory duplicate results were acceptable.

Field Duplicate

No field duplicates were submitted for analysis.

- **Analytical Detection Levels**

Reported analytical detection levels are compared against the 100 and 300 Area RQLs to ensure that laboratory detection levels meet the required criteria. All undetected beryllium results exceeded the RQL. Under the WCH statement of work, no qualification is required. All other results met the RQL.

- **Completeness**

Data package No. K1735 was submitted for validation and verified for completeness. Completeness is based on the percentage of data determined to be valid (i.e., not rejected). The completion percentage was 100%.

MAJOR DEFICIENCIES

None found.

MINOR DEFICIENCIES

The following minor deficiencies were noted:

- Due to the holding time being exceeded by less than twice the limit, all mercury results (except samples J19458 & J19459) were qualified as estimates and flagged "J".

- Due to method blank contamination, the tin result in samples J19030, J19054, J190N6, J19460, J19461, J19458 and J19459 were qualified as undetected and flagged "UJ".

- Due to method blank contamination, all detected lithium results were qualified as undetected and flagged "UJ".

- Due to matrix spike recoveries outside QC limits, all calcium (188% & 153%) and potassium (41% & 47%) results (except J19458 & J19459) were qualified as estimates and flagged "J".

- Due to a matrix spike recovery outside QC limits, the iron (314%) result in samples J19029, J19030, J19031, J19032, J19033, J19052, J19053, J19054, J19055, J19056 and J190L6 were qualified as estimates and flagged "J".

- Due to an LCS recovery outside QC limits (59%), the silicon result in samples J19029, J19030, J19031, J19032, J19033, J19052, J19053, J19054, J19055, J19056 and J190L6 were qualified as estimates and flagged "J".

- Due to RPDs outside QC limits, the chromium (79%), calcium (49%) and strontium (52%) results in samples J19029, J19030, J19031, J19032, J19033, J19052, J19053, J19054, J19055, J19056 and J190L6 were qualified as estimates and flagged "J"

- Due to RPDs outside QC limits, all magnesium (37%) and zinc (39%) results in samples J190L7, J190L8, J190L9, J190M0, J190N6, J190N7, J190N8, J190N9, J190P0, J19460 and J19461 were qualified as estimates and flagged "J".

Data flagged "J" indicates that the associated concentration is an estimate, but under the WCH statement of work, the data may be usable for decision-making purposes. All other validated results are considered accurate within the standard error associated with the methods.

All undetected beryllium results exceeded the RQL. Under the WCH statement of work, no qualification is required.

REFERENCES

Washington Closure Hanford Contract #S00W307A00 (March 2008), *Data Validation Services*.

DOE/RL-2008-11, Rev. 0, September 2008, *Remedial Investigation Work Plan for Hanford Site Releases to the Columbia River*.

Appendix 1

Glossary of Data Reporting Qualifiers

Qualifiers which may be applied by data validators in compliance with WCH validation SOW are as follows:

U - Indicates the compound or analyte was analyzed for and not detected in the sample. The value reported is the sample quantitation limit corrected for sample dilution and moisture content by the laboratory.

UJ - Indicates the compound or analyte was analyzed for and not detected in the sample. Due to a minor QC deficiency identified during the data validation, the associated quantitation limit is an estimate.

J - Indicates the compound or analyte was analyzed for and detected. Due to a minor QC deficiency identified during the data validation, the associated concentration is an estimate, but the data are usable for decision-making purposes.

BJ - Applied to inorganic analyses only. Indicates the analyte concentration was greater than the IDL but less than the CRDL and is considered an estimated value.

R - Indicates the compound or analyte was analyzed for, detected, and due to an identified major QC deficiency, the data are unusable.

UR - Indicates the compound or analyte was analyzed for and not detected in the sample. Additionally, the data is unusable due to an identified major QC deficiency.

NJ - Indicates presumptive evidence of a compound at an estimated value. The data may not be valid for some specific applications (i.e., usable for decision-making purposes).

N - Indicates presumptive evidence of a compound. The data may not be valid for some specific applications (i.e., usable for decision-making purposes).

Appendix 2

Summary of Data Qualification

METALS DATA QUALIFICATION SUMMARY*

SDG: K1735	**REVIEWER: ELR**	**Project: RCBRA**	**PAGE 1 OF 1**
COMPOUND	QUALIFIER	SAMPLES AFFECTED	REASON
Mercury	J	All (except J19458 & J19459)	Hold time
Tin	UJ	J19030, J19054 J190N6, J19460 J19461, J19458 J19459	Blank contamination
Lithium	UJ	All	Blank contamination
Calcium Potassium	J	All (except J19458 & J19459)	MS recovery
Iron	J	J19029, J19030 J19031, J19032 J19033, J19052 J19053, J19054 J19055, J19056 J190L6	MS recovery
Silicon	J	J19029, J19030 J19031, J19032 J19033, J19052 J19053, J19054 J19055, J19056 J190L6	LCS recovery
Calcium Strontium Chromium	J	J19029, J19030 J19031, J19032 J19033, J19052 J19053, J19054 J19055, J19056 J190L6	RPD
Magnesium Zinc	J	J190L7, J190L8 J190L9, J190M0 J190N6, J190N7 J190N8, J190N9 J190P0, J19460 J19461	RPD

* - The Qualified Data Summary Table includes laboratory applied "U" qualifiers not specifically identified here. The laboratory applied "U" qualifiers are included to minimize misinterpretation of results contained in the table.

Appendix 3

Qualified Data Summary and Annotated Laboratory Reports

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

WC Hanford, Inc. 2620 Fermi Avenue Richland WA, 99354	Project: RC-110 Project Number: K1735 Project Manager: Joan Kessner	Reported: 10/20/2009 17:41

J19029
0910007-01 (Fish)

✓ 1/21/10

Lionville Laboratory

Metals by SW846 6000/7000 series

Analyte	Result and Qualifier		Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Aluminum	3.91	U	3.91	mg/kg	1	L910102	10/12/2009	10/15/2009	6010B
Antimony	0.469	U	0.469	mg/kg	1	L910102	10/12/2009	10/15/2009	6010B
Arsenic	0.781	U	0.781	mg/kg	1	L910102	10/12/2009	10/15/2009	6010B
Barium	0.445		0.391	mg/kg	1	L910102	10/12/2009	10/15/2009	6010B
Beryllium	0.156	U	0.156	mg/kg	1	L910102	10/12/2009	10/15/2009	6010B
Bismuth	7.81	U	7.81	mg/kg	1	L910102	10/12/2009	10/15/2009	6010B
Boron	1.56	U	1.56	mg/kg	1	L910102	10/12/2009	10/15/2009	6010B
Cadmium	0.156	U	0.156	mg/kg	1	L910102	10/12/2009	10/15/2009	6010B
Calcium	6110	J	78.1	mg/kg	1	L910102	10/12/2009	10/15/2009	6010B
Chromium	0.615	J	0.156	mg/kg	1	L910102	10/12/2009	10/15/2009	6010B
Cobalt	1.56	U	1.56	mg/kg	1	L910102	10/12/2009	10/15/2009	6010B
Copper	0.457	U	0.781	mg/kg	1	L910102	10/12/2009	10/15/2009	6010B
Iron	5.79	B J	15.6	mg/kg	1	L910102	10/12/2009	10/15/2009	6010B
Lead	0.391	U	0.391	mg/kg	1	L910102	10/12/2009	10/15/2009	6010B
Lithium	0.487	B UJ	1.95	mg/kg	1	L910102	10/12/2009	10/15/2009	6010B
Magnesium	571		39.6	mg/kg	1	L910102	10/12/2009	10/15/2009	6010B
Manganese	0.802	B	3.91	mg/kg	1	L910102	10/12/2009	10/15/2009	6010B
Molybdenum	1.56	U	1.56	mg/kg	1	L910102	10/12/2009	10/15/2009	6010B
Nickel	3.12	U	3.12	mg/kg	1	L910102	10/12/2009	10/15/2009	6010B
Phosphorus	6000		469	mg/kg	12	L910102	10/12/2009	10/19/2009	6010B
Potassium	5360	J	312	mg/kg	1	L910102	10/12/2009	10/15/2009	6010B
Selenium	1.07		0.781	mg/kg	1	L910102	10/12/2009	10/15/2009	6010B
Silicon	2.79	J	1.56	mg/kg	1	L910102	10/12/2009	10/15/2009	6010B
Silver	0.156	U	0.156	mg/kg	1	L910102	10/12/2009	10/15/2009	6010B
Sodium	912		39.1	mg/kg	1	L910102	10/12/2009	10/15/2009	6010B
Strontium	7.80	J	0.781	mg/kg	1	L910102	10/12/2009	10/15/2009	6010B
Thallium	0.391	U	0.391	mg/kg	1	L910102	10/12/2009	10/15/2009	6010B
Tin	9.01		7.81	mg/kg	1	L910102	10/12/2009	10/15/2009	6010B
Uranium	15.6	U	15.6	mg/kg	1	L910102	10/12/2009	10/15/2009	6010B
Vanadium	0.250	B	1.95	mg/kg	1	L910102	10/12/2009	10/15/2009	6010B
Zinc	13.1		7.81	mg/kg	1	L910102	10/12/2009	10/15/2009	6010B
Mercury	0.0647	J	0.0250	mg/kg	1	L910055	10/06/2009	10/07/2009	7471A

WC Hanford, Inc. 2620 Fermi Avenue Richland WA, 99354	Project: RC-110 Project Number: K1733 Project Manager: Joan Kessner	Reported: 10/20/2009 17:48

J19030
0910007-02 (Fish)

✓ 1/27/10

Analyte	Result and Qualifier		Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method

Lionville Laboratory

Metals by SW846 6000/7000 series

Analyte	Result	Qualifier	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Aluminum	3.29	U	3.29	mg/kg	1	L910102	10/12/2009	10/15/2009	6010B
Antimony	0.395	U	0.395	mg/kg	1	L910102	10/12/2009	10/15/2009	6010B
Arsenic	0.658	U	0.658	mg/kg	1	L910102	10/12/2009	10/15/2009	6010B
Barium	0.264	B	0.329	mg/kg	1	L910102	10/12/2009	10/15/2009	6010B
Beryllium	0.132	U	0.132	mg/kg	1	L910102	10/12/2009	10/15/2009	6010B
Bismuth	6.58	U	6.58	mg/kg	1	L910102	10/12/2009	10/15/2009	6010B
Boron	1.32	U	1.32	mg/kg	1	L910102	10/12/2009	10/15/2009	6010B
Cadmium	0.132	U	0.132	mg/kg	1	L910102	10/12/2009	10/15/2009	6010B
Calcium	2240	J	65.8	mg/kg	1	L910102	10/12/2009	10/15/2009	6010B
Chromium	0.224	J	0.132	mg/kg	1	L910102	10/12/2009	10/15/2009	6010B
Cobalt	1.32	U	1.32	mg/kg	1	L910102	10/12/2009	10/15/2009	6010B
Copper	0.658	U	0.658	mg/kg	1	L910102	10/12/2009	10/15/2009	6010B
Iron	3.92	B J	13.2	mg/kg	1	L910102	10/12/2009	10/15/2009	6010B
Lead	0.329	U	0.329	mg/kg	1	L910102	10/12/2009	10/15/2009	6010B
Lithium	0.649	B	1.64	mg/kg	1	L910102	10/12/2009	10/15/2009	6010B
Magnesium	242		49.3	mg/kg	1	L910102	10/12/2009	10/15/2009	6010B
Manganese	0.945	B	1.29	mg/kg	1	L910102	10/12/2009	10/15/2009	6010B
Molybdenum	1.32	U	1.32	mg/kg	1	L910102	10/12/2009	10/15/2009	6010B
Nickel	2.63	U	2.63	mg/kg	1	L910102	10/12/2009	10/15/2009	6010B
Phosphorus	2670		32.9	mg/kg	1	L910102	10/12/2009	10/15/2009	6010B
Potassium	3760	J	263	mg/kg	1	L910102	10/12/2009	10/15/2009	6010B
Selenium	0.884		0.658	mg/kg	1	L910102	10/12/2009	10/15/2009	6010B
Silicon	2.22	J	1.32	mg/kg	1	L910102	10/12/2009	10/15/2009	6010B
Silver	0.132	U	0.132	mg/kg	1	L910102	10/12/2009	10/15/2009	6010B
Sodium	604		32.9	mg/kg	1	L910102	10/12/2009	10/15/2009	6010B
Strontium	1.38	J	0.658	mg/kg	1	L910102	10/12/2009	10/15/2009	6010B
Thallium	0.329	U	0.329	mg/kg	1	L910102	10/12/2009	10/15/2009	6010B
Tin	4.84	B UJ	6.58	mg/kg	1	L910102	10/12/2009	10/15/2009	6010B
Uranium	13.2	U	13.2	mg/kg	1	L910102	10/12/2009	10/15/2009	6010B
Vanadium	1.64	U	1.64	mg/kg	1	L910102	10/12/2009	10/15/2009	6010B
Zinc	7.95		6.58	mg/kg	1	L910102	10/12/2009	10/15/2009	6010B
Mercury	0.122	J	0.0281	mg/kg	1	L910055	10/06/2009	10/07/2009	7471A

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WC-Hanford, Inc.
2620 Fermi Avenue
Richland WA, 99354

Project: RC-118
Project Number: K1735
Project Manager: Joan Kessner

Reported:
10/20/2009 17:48

J19031
0910007-03 (Fish)

1/27/10

Analyte	Result and Qualifier			Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Lionville Laboratory										
Metals by SW846 6000/7000 series										
Aluminum	4.81	U		4.81	mg/kg	1	L910102	10/12/2009	10/15/2009	6010B
Antimony	0.577	U		0.577	mg/kg	1	L910102	10/12/2009	10/15/2009	6010B
Arsenic	0.962	U		0.962	mg/kg	1	L910102	10/12/2009	10/15/2009	6010B
Barium	**0.623**			0.481	mg/kg	1	L910102	10/12/2009	10/15/2009	6010B
Beryllium	0.192	U		0.192	mg/kg	1	L910102	10/12/2009	10/15/2009	6010B
Bismuth	9.62	U		9.62	mg/kg	1	L910102	10/12/2009	10/15/2009	6010B
Boron	1.92	U		1.92	mg/kg	1	L910102	10/12/2009	10/15/2009	6010B
Cadmium	0.192	U		0.192	mg/kg	1	L910102	10/12/2009	10/15/2009	6010B
Calcium	**9110**		J	96.2	mg/kg	1	L910102	10/12/2009	10/15/2009	6010B
Chromium	**0.803**		J	0.192	mg/kg	1	L910102	10/12/2009	10/15/2009	6010B
Cobalt	1.92	U		1.92	mg/kg	1	L910102	10/12/2009	10/15/2009	6010B
Copper	0.962	U		0.962	mg/kg	1	L910102	10/12/2009	10/15/2009	6010B
Iron	**5.13**	B	J	19.2	mg/kg	1	L910102	10/12/2009	10/15/2009	6010B
Lead	0.481	U		0.481	mg/kg	1	L910102	10/12/2009	10/15/2009	6010B
Lithium	**1.19**	B	UJ	2.40	mg/kg	1	L910102	10/12/2009	10/15/2009	6010B
Magnesium	**618**			72.1	mg/kg	1	L910102	10/12/2009	10/15/2009	6010B
Manganese	**1.77**	B		4.81	mg/kg	1	L910102	10/12/2009	10/15/2009	6010B
Molybdenum	1.92	U		1.92	mg/kg	1	L910102	10/12/2009	10/15/2009	6010B
Nickel	3.85	U		3.85	mg/kg	1	L910102	10/12/2009	10/15/2009	6010B
Phosphorus	**7400**			577	mg/kg	12	L910102	10/12/2009	10/19/2009	6010B
Potassium	**5100**		J	385	mg/kg	1	L910102	10/12/2009	10/15/2009	6010B
Selenium	**1.14**			0.962	mg/kg	1	L910102	10/12/2009	10/15/2009	6010B
Silicon	**3.33**		J	1.92	mg/kg	1	L910102	10/12/2009	10/15/2009	6010B
Silver	0.192	U		0.192	mg/kg	1	L910102	10/12/2009	10/15/2009	6010B
Sodium	**899**			48.1	mg/kg	1	L910102	10/12/2009	10/15/2009	6010B
Strontium	**11.5**		J	0.962	mg/kg	1	L910102	10/12/2009	10/15/2009	6010B
Thallium	0.481	U		0.481	mg/kg	1	L910102	10/12/2009	10/15/2009	6010B
Tin	**11.1**			9.61	mg/kg	1	L910102	10/12/2009	10/15/2009	6010B
Uranium	19.2	U		19.2	mg/kg	1	L910102	10/12/2009	10/15/2009	6010B
Vanadium	**0.264**	B		2.40	mg/kg	1	L910102	10/12/2009	10/15/2009	6010B
Zinc	**15.2**			9.62	mg/kg	1	L910102	10/12/2009	10/15/2009	6010B
Mercury	**0.0720**		J	0.0300	mg/kg	1	L910055	10/06/2009	10/07/2009	7471A

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WC-Hanford, Inc 2620 Fermi Avenue Richland WA, 99354	Project: RC-118 Project Number: K1735 Project Manager: Joan Kessner	Reported: 10/20/2009 17:41

J19032
0910007-04 (Fish)

✓ 1/27/10

Analyte	Result and Qualifier		Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
			Lionville Laboratory						
Metals by SW846 6000/7000 series									
Aluminum	4.24	U	4.24	mg/kg	1	L910102	10/12/2009	10/15/2009	6010B
Antimony	0.508	U	0.508	mg/kg	1	L910102	10/12/2009	10/15/2009	6010B
Arsenic	0.847	U	0.847	mg/kg	1	L910102	10/12/2009	10/15/2009	6010B
Barium	0.263	B	0.424	mg/kg	1	L910102	10/12/2009	10/15/2009	6010B
Beryllium	0.169	U	0.169	mg/kg	1	L910102	10/12/2009	10/15/2009	6010B
Bismuth	8.47	U	8.47	mg/kg	1	L910102	10/12/2009	10/15/2009	6010B
Boron	1.69	U	1.69	mg/kg	1	L910102	10/12/2009	10/15/2009	6010B
Cadmium	0.169	U	0.169	mg/kg	1	L910102	10/12/2009	10/15/2009	6010B
Calcium	2610	J	84.7	mg/kg	1	L910102	10/12/2009	10/15/2009	6010B
Chromium	0.469	J	0.169	mg/kg	1	L910102	10/12/2009	10/15/2009	6010B
Cobalt	1.69	U	1.69	mg/kg	1	L910102	10/12/2009	10/15/2009	6010B
Copper	0.847	U	0.847	mg/kg	1	L910102	10/12/2009	10/15/2009	6010B
Iron	4.76	B J	16.9	mg/kg	1	L910102	10/12/2009	10/15/2009	6010B
Lead	0.424	U	0.424	mg/kg	1	L910102	10/12/2009	10/15/2009	6010B
Lithium	0.799	B UJ	2.12	mg/kg	1	L910102	10/12/2009	10/15/2009	6010B
Magnesium	279		63.6	mg/kg	1	L910102	10/12/2009	10/15/2009	6010B
Manganese	0.639	B	4.24	mg/kg	1	L910102	10/12/2009	10/15/2009	6010B
Molybdenum	1.69	U	1.69	mg/kg	1	L910102	10/12/2009	10/15/2009	6010B
Nickel	3.39	U	3.39	mg/kg	1	L910102	10/12/2009	10/15/2009	6010B
Phosphorus	3100		42.4	mg/kg	1	L910102	10/12/2009	10/15/2009	6010B
Potassium	4480	J	339	mg/kg	1	L910102	10/12/2009	10/15/2009	6010B
Selenium	0.932		0.847	mg/kg	1	L910102	10/12/2009	10/15/2009	6010B
Silicon	2.39	J	1.69	mg/kg	1	L910102	10/12/2009	10/15/2009	6010B
Silver	0.169	U	0.169	mg/kg	1	L910102	10/12/2009	10/15/2009	6010B
Sodium	676		42.4	mg/kg	1	L910102	10/12/2009	10/15/2009	6010B
Strontium	3.57	J	0.847	mg/kg	1	L910102	10/12/2009	10/15/2009	6010B
Thallium	0.424	U	0.424	mg/kg	1	L910102	10/12/2009	10/15/2009	6010B
Tin	7.79	B	8.47	mg/kg	1	L910102	10/12/2009	10/15/2009	6010B
Uranium	16.9	U	16.9	mg/kg	1	L910102	10/12/2009	10/15/2009	6010B
Vanadium	2.12	U	2.12	mg/kg	1	L910102	10/12/2009	10/15/2009	6010B
Zinc	8.75		8.47	mg/kg	1	L910102	10/12/2009	10/15/2009	6010B
Mercury	0.0910	J	0.0263	mg/kg	1	L910055	10/06/2009	10/07/2009	7471A

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WC-Hanford, Inc. 2620 Fermi Avenue Richland WA, 99354	Project: RC-118 Project Number: K1735 Project Manager: Joan Kessner	Reported: 10/20/2009 17:48

J19033
0910007-05 (Fish)

1/21/10

Analyte	Result and Qualifier		Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
			Lionville Laboratory						
Metals by SW846 6000/7000 series									
Aluminum	3.85	U	3.85	mg/kg	1	L910102	10/12/2009	10/15/2009	6010B
Antimony	0.462	U	0.462	mg/kg	1	L910102	10/12/2009	10/15/2009	6010B
Arsenic	0.769	U	0.769	mg/kg	1	L910102	10/12/2009	10/15/2009	6010B
Barium	**0.277**	B	0.385	mg/kg	1	L910102	10/12/2009	10/15/2009	6010B
Beryllium	0.154	U	0.154	mg/kg	1	L910102	10/12/2009	10/15/2009	6010B
Bismuth	7.69	U	7.69	mg/kg	1	L910102	10/12/2009	10/15/2009	6010B
Boron	1.54	U	1.54	mg/kg	1	L910102	10/12/2009	10/15/2009	6010B
Cadmium	0.154	U	0.154	mg/kg	1	L910102	10/12/2009	10/15/2009	6010B
Calcium	**3050**	J	76.9	mg/kg	1	L910102	10/12/2009	10/15/2009	6010B
Chromium	**0.430**	J	0.154	mg/kg	1	L910102	10/12/2009	10/15/2009	6010B
Cobalt	1.54	U	1.54	mg/kg	1	L910102	10/12/2009	10/15/2009	6010B
Copper	0.769	U	0.769	mg/kg	1	L910102	10/12/2009	10/15/2009	6010B
Iron	**4.55**	B J	15.4	mg/kg	1	L910102	10/12/2009	10/15/2009	6010B
Lead	0.385	U	0.385	mg/kg	1	L910102	10/12/2009	10/15/2009	6010B
Lithium	**0.670**	B UJ	1.92	mg/kg	1	L910102	10/12/2009	10/15/2009	6010B
Magnesium	**524**		57.7	mg/kg	1	L910102	10/12/2009	10/15/2009	6010B
Manganese	**0.586**	B	3.85	mg/kg	1	L910102	10/12/2009	10/15/2009	6010B
Molybdenum	1.54	U	1.54	mg/kg	1	L910102	10/12/2009	10/15/2009	6010B
Nickel	3.08	U	3.08	mg/kg	1	L910102	10/12/2009	10/15/2009	6010B
Phosphorus	**3710**		38.5	mg/kg	1	L910102	10/12/2009	10/15/2009	6010B
Potassium	**5010**	J	308	mg/kg	1	L910102	10/12/2009	10/15/2009	6010B
Selenium	**1.07**		0.769	mg/kg	1	L910102	10/12/2009	10/15/2009	6010B
Silicon	**2.59**	J	1.54	mg/kg	1	L910102	10/12/2009	10/15/2009	6010B
Silver	0.154	U	0.154	mg/kg	1	L910102	10/12/2009	10/15/2009	6010B
Sodium	**730**		38.5	mg/kg	1	L910102	10/12/2009	10/15/2009	6010B
Strontium	**4.09**	J	0.769	mg/kg	1	L910102	10/12/2009	10/15/2009	6010B
Thallium	0.385	U	0.385	mg/kg	1	L910102	10/12/2009	10/15/2009	6010B
Tin	**6.17**	B	7.69	mg/kg	1	L910102	10/12/2009	10/15/2009	6010B
Uranium	15.4	U	15.4	mg/kg	1	L910102	10/12/2009	10/15/2009	6010B
Vanadium	**0.175**	B	1.92	mg/kg	1	L910102	10/12/2009	10/15/2009	6010B
Zinc	**10.0**		7.69	mg/kg	1	L910102	10/12/2009	10/15/2009	6010B
Mercury	**0.0302**	J	0.0237	mg/kg	1	L910055	10/06/2009	10/07/2009	7471A

SVL

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WC-Hanford, Inc 2620 Fermi Avenue Richland WA, 99354	Project: RC-118 Project Number: K1735 Project Manager: Joan Kessner	Reported: 10/20/2009 17:18

J19052
0910007-06 (Fish)

✓ 1/27/10

Analyte	Result and Qualifier	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method

Lionville Laboratory

Metals by SW846 6000/7000 series

Analyte	Result and Qualifier	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Aluminum	3.52 U	3.52	mg/kg	1	L910102	10/12/2009	10/15/2009	6010B
Antimony	0.423 U	0.423	mg/kg	1	L910102	10/12/2009	10/15/2009	6010B
Arsenic	0.704 U	0.704	mg/kg	1	L910102	10/12/2009	10/15/2009	6010B
Barium	0.241 B	0.352	mg/kg	1	L910102	10/12/2009	10/15/2009	6010B
Beryllium	0.141 U	0.141	mg/kg	1	L910102	10/12/2009	10/15/2009	6010B
Bismuth	7.04 U	7.04	mg/kg	1	L910102	10/12/2009	10/15/2009	6010B
Boron	1.41 U	1.41	mg/kg	1	L910102	10/12/2009	10/15/2009	6010B
Cadmium	0.141 U	0.141	mg/kg	1	L910102	10/12/2009	10/15/2009	6010B
Calcium	2670 J	70.4	mg/kg	1	L910102	10/12/2009	10/15/2009	6010B
Chromium	0.632 J	0.141	mg/kg	1	L910102	10/12/2009	10/15/2009	6010B
Cobalt	0.790 B	1.41	mg/kg	1	L910102	10/12/2009	10/15/2009	6010B
Copper	0.704 U	0.704	mg/kg	1	L910102	10/12/2009	10/15/2009	6010B
Iron	30.4 J	14.1	mg/kg	1	L910102	10/12/2009	10/15/2009	6010B
Lead	0.239 B	0.352	mg/kg	1	L910102	10/12/2009	10/15/2009	6010B
Lithium	0.692 B U J	1.76	mg/kg	1	L910102	10/12/2009	10/15/2009	6010B
Magnesium	407	52.8	mg/kg	1	L910102	10/12/2009	10/15/2009	6010B
Manganese	0.558 B	3.52	mg/kg	1	L910102	10/12/2009	10/15/2009	6010B
Molybdenum	1.41 U	1.41	mg/kg	1	L910102	10/12/2009	10/15/2009	6010B
Nickel	2.82 U	2.82	mg/kg	1	L910102	10/12/2009	10/15/2009	6010B
Phosphorus	2510	35.2	mg/kg	1	L910102	10/12/2009	10/15/2009	6010B
Potassium	2930 J	282	mg/kg	1	L910102	10/12/2009	10/15/2009	6010B
Selenium	1.05	0.704	mg/kg	1	L910102	10/12/2009	10/15/2009	6010B
Silicon	2.41 J	1.41	mg/kg	1	L910102	10/12/2009	10/15/2009	6010B
Silver	0.141 U	0.141	mg/kg	1	L910102	10/12/2009	10/15/2009	6010B
Sodium	1190	35.2	mg/kg	1	L910102	10/12/2009	10/15/2009	6010B
Strontium	3.45 J	0.704	mg/kg	1	L910102	10/12/2009	10/15/2009	6010B
Thallium	0.352 U	0.352	mg/kg	1	L910102	10/12/2009	10/15/2009	6010B
Tin	8.79	7.04	mg/kg	1	L910102	10/12/2009	10/15/2009	6010B
Uranium	14.1 U	14.1	mg/kg	1	L910102	10/12/2009	10/15/2009	6010B
Vanadium	1.76 U	1.76	mg/kg	1	L910102	10/12/2009	10/15/2009	6010B
Zinc	11.8	7.04	mg/kg	1	L910102	10/12/2009	10/15/2009	6010B
Mercury	0.0673 J	0.0243	mg/kg	1	L910056	10/06/2009	10/07/2009	7471A

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WC Hanford, Inc	Project: RC-118	
2620 Fermi Avenue	Project Number: K1735	Reported:
Richland WA, 99354	Project Manager: Joan Kessner	10/20/2009 17:48

J19053
0910007-07 (Fish)

1/27/10

Analyte	Result and Qualifier		Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method

Lionville Laboratory

Metals by SW846 6000/7000 series

Analyte	Result	Qualifier	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Aluminum	3.12	U	3.12	mg/kg	1	L910102	10/12/2009	10/15/2009	6010B
Antimony	0.375	U	0.375	mg/kg	1	L910102	10/12/2009	10/15/2009	6010B
Arsenic	0.625	U	0.625	mg/kg	1	L910102	10/12/2009	10/15/2009	6010B
Barium	1.56		0.312	mg/kg	1	L910102	10/12/2009	10/15/2009	6010B
Beryllium	0.125	U	0.125	mg/kg	1	L910102	10/12/2009	10/15/2009	6010B
Bismuth	6.25	U	6.25	mg/kg	1	L910102	10/12/2009	10/15/2009	6010B
Boron	1.25	U	1.25	mg/kg	1	L910102	10/12/2009	10/15/2009	6010B
Cadmium	0.125	U	0.125	mg/kg	1	L910102	10/12/2009	10/15/2009	6010B
Calcium	17800	J	62.5	mg/kg	1	L910102	10/12/2009	10/15/2009	6010B
Chromium	0.678	J	0.125	mg/kg	1	L910102	10/12/2009	10/15/2009	6010B
Cobalt	1.25	U	1.25	mg/kg	1	L910102	10/12/2009	10/15/2009	6010B
Copper	0.318	B	0.625	mg/kg	1	L910102	10/12/2009	10/15/2009	6010B
Iron	12.7	J	12.5	mg/kg	1	L910102	10/12/2009	10/15/2009	6010B
Lead	0.312	U	0.312	mg/kg	1	L910102	10/12/2009	10/15/2009	6010B
Lithium	1.08	B UJ	1.56	mg/kg	1	L910102	10/12/2009	10/15/2009	6010B
Magnesium	507		46.9	mg/kg	1	L910102	10/12/2009	10/15/2009	6010B
Manganese	6.38		1.12	mg/kg	1	L910102	10/12/2009	10/15/2009	6010B
Molybdenum	1.25	U	1.25	mg/kg	1	L910102	10/12/2009	10/15/2009	6010B
Nickel	2.50	U	2.50	mg/kg	1	L910102	10/12/2009	10/15/2009	6010B
Phosphorus	11200		375	mg/kg	12	L910102	10/12/2009	10/19/2009	6010B
Potassium	2850	J	250	mg/kg	1	L910102	10/12/2009	10/15/2009	6010B
Selenium	0.906		0.625	mg/kg	1	L910102	10/12/2009	10/15/2009	6010B
Silicon	2.14	J	1.25	mg/kg	1	L910102	10/12/2009	10/15/2009	6010B
Silver	0.125	U	0.125	mg/kg	1	L910102	10/12/2009	10/15/2009	6010B
Sodium	1120		31.2	mg/kg	1	L910102	10/12/2009	10/15/2009	6010B
Strontium	23.0	J	0.625	mg/kg	1	L910102	10/12/2009	10/15/2009	6010B
Thallium	0.312	U	0.312	mg/kg	1	L910102	10/12/2009	10/15/2009	6010B
Tin	5.97	B	6.25	mg/kg	1	L910102	10/12/2009	10/15/2009	6010B
Uranium	12.5	U	12.5	mg/kg	1	L910102	10/12/2009	10/15/2009	6010B
Vanadium	0.207	B	1.56	mg/kg	1	L910102	10/12/2009	10/15/2009	6010B
Zinc	18.1		6.25	mg/kg	1	L910102	10/12/2009	10/15/2009	6010B
Mercury	0.0352	J	0.0225	mg/kg	1	L910056	10/06/2009	10/07/2009	7471A

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WC-Hanford, Inc 2620 Fermi Avenue Richland WA, 99354	Project: RC-118 Project Number: K1735 Project Manager: Joan Kessner	Reported: 10/20/2009 17:48

J19054
0910007-08 (Fish)

1/22/10

Analyte	Result and Qualifier		Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Lionville Laboratory									
Metals by SW846 6000/7000 series									
Aluminum	3.97	U	3.97	mg/kg	1	L910102	10/12/2009	10/15/2009	6010B
Antimony	0.476	U	0.476	mg/kg	1	L910102	10/12/2009	10/15/2009	6010B
Arsenic	0.794	U	0.794	mg/kg	1	L910102	10/12/2009	10/15/2009	6010B
Barium	0.340	B	0.397	mg/kg	1	L910102	10/12/2009	10/15/2009	6010B
Beryllium	0.159	U	0.159	mg/kg	1	L910102	10/12/2009	10/15/2009	6010B
Bismuth	7.94	U	7.94	mg/kg	1	L910102	10/12/2009	10/15/2009	6010B
Boron	1.59	U	1.59	mg/kg	1	L910102	10/12/2009	10/15/2009	6010B
Cadmium	0.159	U	0.159	mg/kg	1	L910102	10/12/2009	10/15/2009	6010B
Calcium	4600	J	79.4	mg/kg	1	L910102	10/12/2009	10/15/2009	6010B
Chromium	0.530	J	0.159	mg/kg	1	L910102	10/12/2009	10/15/2009	6010B
Cobalt	1.59	U	1.59	mg/kg	1	L910102	10/12/2009	10/15/2009	6010B
Copper	0.794	U	0.794	mg/kg	1	L910102	10/12/2009	10/15/2009	6010B
Iron	10.3	B J	15.9	mg/kg	1	L910102	10/12/2009	10/15/2009	6010B
Lead	0.253	B	0.397	mg/kg	1	L910102	10/12/2009	10/15/2009	6010B
Lithium	0.659	B UJ	1.98	mg/kg	1	L910102	10/12/2009	10/15/2009	6010B
Magnesium	277		59.5	mg/kg	1	L910102	10/12/2009	10/15/2009	6010B
Manganese	0.732	B	3.97	mg/kg	1	L910102	10/12/2009	10/15/2009	6010B
Molybdenum	1.59	U	1.59	mg/kg	1	L910102	10/12/2009	10/15/2009	6010B
Nickel	3.17	U	3.17	mg/kg	1	L910102	10/12/2009	10/15/2009	6010B
Phosphorus	3120		39.7	mg/kg	1	L910102	10/12/2009	10/15/2009	6010B
Potassium	1950	J	317	mg/kg	1	L910102	10/12/2009	10/15/2009	6010B
Selenium	0.904		0.794	mg/kg	1	L910102	10/12/2009	10/15/2009	6010B
Silicon	3.71	J	1.59	mg/kg	1	L910102	10/12/2009	10/15/2009	6010B
Silver	0.159	U	0.159	mg/kg	1	L910102	10/12/2009	10/15/2009	6010B
Sodium	929		39.7	mg/kg	1	L910102	10/12/2009	10/15/2009	6010B
Strontium	5.32	J	0.794	mg/kg	1	L910102	10/12/2009	10/15/2009	6010B
Thallium	0.397	U	0.397	mg/kg	1	L910102	10/12/2009	10/15/2009	6010B
Tin	5.54	B UJ	7.94	mg/kg	1	L910102	10/12/2009	10/15/2009	6010B
Uranium	15.9	U	15.9	mg/kg	1	L910102	10/12/2009	10/15/2009	6010B
Vanadium	1.98	U	1.98	mg/kg	1	L910102	10/12/2009	10/15/2009	6010B
Zinc	13.3		7.94	mg/kg	1	L910102	10/12/2009	10/15/2009	6010B
Mercury	0.0465	J	0.0290	mg/kg	1	L910056	10/06/2009	10/07/2009	7471A

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WC-Hanford, Inc 2620 Fermi Avenue Richland WA, 99354	Project: RG-118 Project Number: K1715 Project Manager: Joan Kessner	Reported: 10/20/2009 17:48

J19055
0910007-09 (Fish)

✓ 1/22/10

Analyte	Result and Qualifier	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method

Lionville Laboratory

Metals by SW846 6000/7000 series

Analyte	Result and Qualifier	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Aluminum	4.55 U	4.55	mg/kg	1	L910102	10/12/2009	10/15/2009	6010B
Antimony	0.545 U	0.545	mg/kg	1	L910102	10/12/2009	10/15/2009	6010B
Arsenic	0.909 U	0.909	mg/kg	1	L910102	10/12/2009	10/15/2009	6010B
Barium	1.13	0.455	mg/kg	1	L910102	10/12/2009	10/15/2009	6010B
Beryllium	0.182 U	0.182	mg/kg	1	L910102	10/12/2009	10/15/2009	6010B
Bismuth	9.09 U	9.09	mg/kg	1	L910102	10/12/2009	10/15/2009	6010B
Boron	1.82 U	1.82	mg/kg	1	L910102	10/12/2009	10/15/2009	6010B
Cadmium	0.182 U	0.182	mg/kg	1	L910102	10/12/2009	10/15/2009	6010B
Calcium	13800 J	90.9	mg/kg	1	L910102	10/12/2009	10/15/2009	6010B
Chromium	0.764 J	0.182	mg/kg	1	L910102	10/12/2009	10/15/2009	6010B
Cobalt	1.82 U	1.82	mg/kg	1	L910102	10/12/2009	10/15/2009	6010B
Copper	0.468 B	0.909	mg/kg	1	L910102	10/12/2009	10/15/2009	6010B
Iron	16.2 B J	18.2	mg/kg	1	L910102	10/12/2009	10/15/2009	6010B
Lead	0.296 B	0.455	mg/kg	1	L910102	10/12/2009	10/15/2009	6010B
Lithium	2.12 B UJ	2.27	mg/kg	1	L910102	10/12/2009	10/15/2009	6010B
Magnesium	493	68.2	mg/kg	1	L910102	10/12/2009	10/15/2009	6010B
Manganese	3.80 B	4.55	mg/kg	1	L910102	10/12/2009	10/15/2009	6010B
Molybdenum	1.82 U	1.82	mg/kg	1	L910102	10/12/2009	10/15/2009	6010B
Nickel	3.64 U	3.64	mg/kg	1	L910102	10/12/2009	10/15/2009	6010B
Phosphorus	8940	545	mg/kg	12	L910102	10/12/2009	10/19/2009	6010B
Potassium	2520 J	364	mg/kg	1	L910102	10/12/2009	10/15/2009	6010B
Selenium	1.37	0.909	mg/kg	1	L910102	10/12/2009	10/15/2009	6010B
Silicon	2.75 J	1.82	mg/kg	1	L910102	10/12/2009	10/15/2009	6010B
Silver	0.182 U	0.182	mg/kg	1	L910102	10/12/2009	10/15/2009	6010B
Sodium	1130	45.5	mg/kg	1	L910102	10/12/2009	10/15/2009	6010B
Strontium	17.3 J	0.909	mg/kg	1	L910102	10/12/2009	10/15/2009	6010B
Thallium	0.455 U	0.455	mg/kg	1	L910102	10/12/2009	10/15/2009	6010B
Tin	12.0	9.09	mg/kg	1	L910102	10/12/2009	10/15/2009	6010B
Uranium	18.2 U	18.2	mg/kg	1	L910102	10/12/2009	10/15/2009	6010B
Vanadium	0.188 B	2.27	mg/kg	1	L910102	10/12/2009	10/15/2009	6010B
Zinc	23.6	9.09	mg/kg	1	L910102	10/12/2009	10/15/2009	6010B
Mercury	0.103 J	0.0290	mg/kg	1	L910056	10/06/2009	10/07/2009	7471A

LVL

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WC-Hanford, Inc.	Project: RC-118	
2620 Fermi Avenue	Project Number: K1735	Reported:
Richland WA, 99354	Project Manager: Joan Kessner	10/20/2009 17:48

J19056
0910007-10 (Fish)

1/27/10

Analyte	Result and Qualifier	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method

Lionville Laboratory

Metals by SW846 6000/7000 series

Analyte	Result and Qualifier	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Aluminum	3.47 U	3.47	mg/kg	1	L910102	10/12/2009	10/15/2009	6010B
Antimony	0.417 U	0.417	mg/kg	1	L910102	10/12/2009	10/15/2009	6010B
Arsenic	0.694 U	0.694	mg/kg	1	L910102	10/12/2009	10/15/2009	6010B
Barium	3.58	0.347	mg/kg	1	L910102	10/12/2009	10/15/2009	6010B
Beryllium	0.139 U	0.139	mg/kg	1	L910102	10/12/2009	10/15/2009	6010B
Bismuth	6.94 U	6.94	mg/kg	1	L910102	10/12/2009	10/15/2009	6010B
Boron	1.39 U	1.39	mg/kg	1	L910102	10/12/2009	10/15/2009	6010B
Cadmium	0.0387 B	0.139	mg/kg	1	L910102	10/12/2009	10/15/2009	6010B
Calcium	61400 J	833	mg/kg	12	L910102	10/12/2009	10/19/2009	6010B
Chromium	1.20 J	0.139	mg/kg	1	L910102	10/12/2009	10/15/2009	6010B
Cobalt	1.39 U	1.39	mg/kg	1	L910102	10/12/2009	10/15/2009	6010B
Copper	0.694 U	0.694	mg/kg	1	L910102	10/12/2009	10/15/2009	6010B
Iron	12.5 B J	13.9	mg/kg	1	L910102	10/12/2009	10/15/2009	6010B
Lead	0.347 U	0.347	mg/kg	1	L910102	10/12/2009	10/15/2009	6010B
Lithium	2.21 U J	1.74	mg/kg	1	L910102	10/12/2009	10/15/2009	6010B
Magnesium	1190	52.1	mg/kg	1	L910102	10/12/2009	10/15/2009	6010B
Manganese	10.9	3.47	mg/kg	1	L910102	10/12/2009	10/15/2009	6010B
Molybdenum	1.39 U	1.39	mg/kg	1	L910102	10/12/2009	10/15/2009	6010B
Nickel	2.78 U	2.78	mg/kg	1	L910102	10/12/2009	10/15/2009	6010B
Phosphorus	31900	417	mg/kg	12	L910102	10/12/2009	10/19/2009	6010B
Potassium	3590 J	278	mg/kg	1	L910102	10/12/2009	10/15/2009	6010B
Selenium	1.16	0.694	mg/kg	1	L910102	10/12/2009	10/15/2009	6010B
Silicon	2.41 J	1.39	mg/kg	1	L910102	10/12/2009	10/15/2009	6010B
Silver	0.139 U	0.139	mg/kg	1	L910102	10/12/2009	10/15/2009	6010B
Sodium	2080	34.7	mg/kg	1	L910102	10/12/2009	10/15/2009	6010B
Strontium	69.7 J	0.694	mg/kg	1	L910102	10/12/2009	10/15/2009	6010B
Thallium	0.347 U	0.347	mg/kg	1	L910102	10/12/2009	10/15/2009	6010B
Tin	16.4	6.94	mg/kg	1	L910102	10/12/2009	10/15/2009	6010B
Uranium	2.35 B	13.9	mg/kg	1	L910102	10/12/2009	10/15/2009	6010B
Vanadium	0.535 B	1.74	mg/kg	1	L910102	10/12/2009	10/15/2009	6010B
Zinc	35.6	6.94	mg/kg	1	L910102	10/12/2009	10/15/2009	6010B
Mercury	0.0693 J	0.0400	mg/kg	1	L910056	10/06/2009	10/07/2009	7471A

LVL

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WC Hanford, Inc. 2620 Fermi Avenue Richland WA, 99354	Project: RC-118 Project Number: K1775 Project Manager: Joan Kessner	Reported: 10/20/2009 17:48

J190L6

0910007-11 (Fish)

K 1/27/10

Analyte	Result and Qualifier	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method

Lionville Laboratory

Metals by SW846 6000/7000 series

Analyte	Result and Qualifier	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Aluminum	4.03 U	4.03	mg/kg	1	L910102	10/12/2009	10/15/2009	6010B
Antimony	0.484 U	0.484	mg/kg	1	L910102	10/12/2009	10/15/2009	6010B
Arsenic	0.806 U	0.806	mg/kg	1	L910102	10/12/2009	10/15/2009	6010B
Barium	0.384 B	0.403	mg/kg	1	L910102	10/12/2009	10/15/2009	6010B
Beryllium	0.161 U	0.161	mg/kg	1	L910102	10/12/2009	10/15/2009	6010B
Bismuth	8.06 U	8.06	mg/kg	1	L910102	10/12/2009	10/15/2009	6010B
Boron	1.61 U	1.61	mg/kg	1	L910102	10/12/2009	10/15/2009	6010B
Cadmium	0.161 U	0.161	mg/kg	1	L910102	10/12/2009	10/15/2009	6010B
Calcium	3430 J	80.6	mg/kg	1	L910102	10/12/2009	10/15/2009	6010B
Chromium	0.562 J	0.161	mg/kg	1	L910102	10/12/2009	10/15/2009	6010B
Cobalt	1.61 U	1.61	mg/kg	1	L910102	10/12/2009	10/15/2009	6010B
Copper	0.806 U	0.806	mg/kg	1	L910102	10/12/2009	10/15/2009	6010B
Iron	6.54 B J	16.1	mg/kg	1	L910102	10/12/2009	10/15/2009	6010B
Lead	0.403 U	0.403	mg/kg	1	L910102	10/12/2009	10/15/2009	6010B
Lithium	0.631 B UJ	2.02	mg/kg	1	L910102	10/12/2009	10/15/2009	6010B
Magnesium	545	60.5	mg/kg	1	L910102	10/12/2009	10/15/2009	6010B
Manganese	0.493 B	4.03	mg/kg	1	L910102	10/12/2009	10/15/2009	6010B
Molybdenum	1.61 U	1.61	mg/kg	1	L910102	10/12/2009	10/15/2009	6010B
Nickel	3.23 U	3.23	mg/kg	1	L910102	10/12/2009	10/15/2009	6010B
Phosphorus	4470	484	mg/kg	12	L910102	10/12/2009	10/19/2009	6010B
Potassium	5310 J	323	mg/kg	1	L910102	10/12/2009	10/15/2009	6010B
Selenium	0.991	0.806	mg/kg	1	L910102	10/12/2009	10/15/2009	6010B
Silicon	3.79 J	1.61	mg/kg	1	L910102	10/12/2009	10/15/2009	6010B
Silver	0.161 U	0.161	mg/kg	1	L910102	10/12/2009	10/15/2009	6010B
Sodium	787	40.3	mg/kg	1	L910102	10/12/2009	10/15/2009	6010B
Strontium	5.18 J	0.806	mg/kg	1	L910102	10/12/2009	10/15/2009	6010B
Thallium	0.403 U	0.403	mg/kg	1	L910102	10/12/2009	10/15/2009	6010B
Tin	13.1	8.06	mg/kg	1	L910102	10/12/2009	10/15/2009	6010B
Uranium	16.1 U	16.1	mg/kg	1	L910102	10/12/2009	10/15/2009	6010B
Vanadium	0.166 B	2.02	mg/kg	1	L910102	10/12/2009	10/15/2009	6010B
Zinc	9.07	8.06	mg/kg	1	L910102	10/12/2009	10/15/2009	6010B
Mercury	0.102 J	0.0281	mg/kg	1	L910056	10/06/2009	10/07/2009	7471A

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WC Hanford, Inc. 2620 Fermi Avenue Richland WA, 99354	Project: RC 118 Project Number: K1735 Project Manager: Joan Kessner	Reported: 10/20/2009 17:48

J190L7

0910007-12 (Fish)

1/19/10

Lionville Laboratory

Metals by SW846 6000/7000 series

Analyte	Result and Qualifier		Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Aluminum	4.39	U	4.39	mg/kg	1	L910127	10/14/2009	10/15/2009	6010B
Antimony	0.526	U	0.526	mg/kg	1	L910127	10/14/2009	10/15/2009	6010B
Arsenic	0.877	U	0.877	mg/kg	1	L910127	10/14/2009	10/15/2009	6010B
Barium	0.299	B	0.439	mg/kg	1	L910127	10/14/2009	10/15/2009	6010B
Beryllium	0.175	U	0.175	mg/kg	1	L910127	10/14/2009	10/15/2009	6010B
Bismuth	8.77	U	8.77	mg/kg	1	L910127	10/14/2009	10/15/2009	6010B
Boron	1.75	U	1.75	mg/kg	1	L910127	10/14/2009	10/15/2009	6010B
Cadmium	0.0514	B	0.175	mg/kg	1	L910127	10/14/2009	10/15/2009	6010B
Calcium	3770	J	87.7	mg/kg	1	L910127	10/14/2009	10/15/2009	6010B
Chromium	2.01		0.175	mg/kg	1	L910127	10/14/2009	10/15/2009	6010B
Cobalt	1.90		1.75	mg/kg	1	L910127	10/14/2009	10/15/2009	6010B
Copper	0.877	U	0.877	mg/kg	1	L910127	10/14/2009	10/15/2009	6010B
Iron	15.2	B	17.5	mg/kg	1	L910127	10/14/2009	10/15/2009	6010B
Lead	0.439	U	0.439	mg/kg	1	L910127	10/14/2009	10/15/2009	6010B
Lithium	0.806	B UJ	2.19	mg/kg	1	L910127	10/14/2009	10/15/2009	6010B
Magnesium	757	J	65.8	mg/kg	1	L910127	10/14/2009	10/15/2009	6010B
Manganese	1.34	B	4.39	mg/kg	1	L910127	10/14/2009	10/15/2009	6010B
Molybdenum	1.75	U	1.75	mg/kg	1	L910127	10/14/2009	10/15/2009	6010B
Nickel	3.51	U	3.51	mg/kg	1	L910127	10/14/2009	10/15/2009	6010B
Phosphorus	4820		526	mg/kg	12	L910127	10/14/2009	10/19/2009	6010B
Potassium	5600	J	351	mg/kg	1	L910127	10/14/2009	10/15/2009	6010B
Selenium	1.13		0.877	mg/kg	1	L910127	10/14/2009	10/15/2009	6010B
Silicon	2.91		1.75	mg/kg	1	L910127	10/14/2009	10/15/2009	6010B
Silver	0.175	U	0.175	mg/kg	1	L910127	10/14/2009	10/15/2009	6010B
Sodium	910		43.9	mg/kg	1	L910127	10/14/2009	10/15/2009	6010B
Strontium	5.13		0.877	mg/kg	1	L910127	10/14/2009	10/15/2009	6010B
Thallium	0.439	U	0.439	mg/kg	1	L910127	10/14/2009	10/15/2009	6010B
Tin	10.8		8.77	mg/kg	1	L910127	10/14/2009	10/15/2009	6010B
Uranium	17.5	U	17.5	mg/kg	1	L910127	10/14/2009	10/15/2009	6010B
Vanadium	0.401	B	2.19	mg/kg	1	L910127	10/14/2009	10/15/2009	6010B
Zinc	19.6	J	8.77	mg/kg	1	L910127	10/14/2009	10/15/2009	6010B
Mercury	0.0699	J	0.0225	mg/kg	1	L910056	10/06/2009	10/07/2009	7471A

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WC-Hanford, Inc. 2620 Fermi Avenue Richland WA, 99354	Project: RC-118 Project Number: K1735 Project Manager: Joan Kessner	Reported: 10/20/2009 17:48

J1901.8
0910007-13 (Fish)   1/10/13

Analyte	Result and Qualifier	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Lionville Laboratory								
Metals by SW846 6000/7000 series								
Aluminum	4.03 U	4.03	mg/kg	1	L910127	10/14/2009	10/15/2009	6010B
Antimony	0.484 U	0.484	mg/kg	1	L910127	10/14/2009	10/15/2009	6010B
Arsenic	0.806 U	0.806	mg/kg	1	L910127	10/14/2009	10/15/2009	6010B
Barium	0.738	0.403	mg/kg	1	L910127	10/14/2009	10/15/2009	6010B
Beryllium	0.161 U	0.161	mg/kg	1	L910127	10/14/2009	10/15/2009	6010B
Bismuth	8.06 U	8.06	mg/kg	1	L910127	10/14/2009	10/15/2009	6010B
Boron	1.61 U	1.61	mg/kg	1	L910127	10/14/2009	10/15/2009	6010B
Cadmium	0.161 U	0.161	mg/kg	1	L910127	10/14/2009	10/15/2009	6010B
Calcium	8940 J	80.6	mg/kg	1	L910127	10/14/2009	10/15/2009	6010B
Chromium	0.567	0.161	mg/kg	1	L910127	10/14/2009	10/15/2009	6010B
Cobalt	1.61 U	1.61	mg/kg	1	L910127	10/14/2009	10/15/2009	6010B
Copper	0.806 U	0.806	mg/kg	1	L910127	10/14/2009	10/15/2009	6010B
Iron	8.84 B	16.1	mg/kg	1	L910127	10/14/2009	10/15/2009	6010B
Lead	0.403 U	0.403	mg/kg	1	L910127	10/14/2009	10/15/2009	6010B
Lithium	1.17 B UJ	2.02	mg/kg	1	L910127	10/14/2009	10/15/2009	6010B
Magnesium	663 J	60.5	mg/kg	1	L910127	10/14/2009	10/15/2009	6010B
Manganese	3.56 B	4.03	mg/kg	1	L910127	10/14/2009	10/15/2009	6010B
Molybdenum	1.61 U	1.61	mg/kg	1	L910127	10/14/2009	10/15/2009	6010B
Nickel	3.23 U	3.23	mg/kg	1	L910127	10/14/2009	10/15/2009	6010B
Phosphorus	7100	484	mg/kg	12	L910127	10/14/2009	10/19/2009	6010B
Potassium	4680 J	323	mg/kg	1	L910127	10/14/2009	10/15/2009	6010B
Selenium	0.963	0.806	mg/kg	1	L910127	10/14/2009	10/15/2009	6010B
Silicon	2.46	1.61	mg/kg	1	L910127	10/14/2009	10/15/2009	6010B
Silver	0.161 U	0.161	mg/kg	1	L910127	10/14/2009	10/15/2009	6010B
Sodium	866	40.3	mg/kg	1	L910127	10/14/2009	10/15/2009	6010B
Strontium	11.5	0.806	mg/kg	1	L910127	10/14/2009	10/15/2009	6010B
Thallium	0.403 U	0.403	mg/kg	1	L910127	10/14/2009	10/15/2009	6010B
Tin	14.7	8.06	mg/kg	1	L910127	10/14/2009	10/15/2009	6010B
Uranium	16.1 U	16.1	mg/kg	1	L910127	10/14/2009	10/15/2009	6010B
Vanadium	0.319 B	2.02	mg/kg	1	L910127	10/14/2009	10/15/2009	6010B
Zinc	13.4 J	8.06	mg/kg	1	L910127	10/14/2009	10/15/2009	6010B
Mercury	0.0465 J	0.0273	mg/kg	1	L910056	10/06/2009	10/07/2009	7471A

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WC-Hanford, Inc 2620 Fermi Avenue Richland WA, 99354	Project: RC-118 Project Number: K1735 Project Manager: Joan Kessner	Reported: 10/20/2009 17:48

J19019
0910007-14 (Fish)

K 1/10/10

Lionville Laboratory

Metals by SW846 6000/7000 series

Analyte	Result and Qualifier		Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Aluminum	4.10	U	4.10	mg/kg	1	L910127	10/14/2009	10/15/2009	6010B
Antimony	0.492	U	0.492	mg/kg	1	L910127	10/14/2009	10/15/2009	6010B
Arsenic	0.820	U	0.820	mg/kg	1	L910127	10/14/2009	10/15/2009	6010B
Barium	1.39		0.410	mg/kg	1	L910127	10/14/2009	10/15/2009	6010B
Beryllium	0.164	U	0.164	mg/kg	1	L910127	10/14/2009	10/15/2009	6010B
Bismuth	8.20	U	8.20	mg/kg	1	L910127	10/14/2009	10/15/2009	6010B
Boron	1.64	U	1.64	mg/kg	1	L910127	10/14/2009	10/15/2009	6010B
Cadmium	0.164	U	0.164	mg/kg	1	L910127	10/14/2009	10/15/2009	6010B
Calcium	16500	J	82.0	mg/kg	1	L910127	10/14/2009	10/15/2009	6010B
Chromium	1.53		0.164	mg/kg	1	L910127	10/14/2009	10/15/2009	6010B
Cobalt	1.64	U	1.64	mg/kg	1	L910127	10/14/2009	10/15/2009	6010B
Copper	0.820	U	0.820	mg/kg	1	L910127	10/14/2009	10/15/2009	6010B
Iron	12.4	B	16.4	mg/kg	1	L910127	10/14/2009	10/15/2009	6010B
Lead	0.410	U	0.410	mg/kg	1	L910127	10/14/2009	10/15/2009	6010B
Lithium	1.34	B UJ	2.05	mg/kg	1	L910127	10/14/2009	10/15/2009	6010B
Magnesium	1030	J	61.5	mg/kg	1	L910127	10/14/2009	10/15/2009	6010B
Manganese	5.85		4.10	mg/kg	1	L910127	10/14/2009	10/15/2009	6010B
Molybdenum	1.64	U	1.64	mg/kg	1	L910127	10/14/2009	10/15/2009	6010B
Nickel	3.28	U	3.28	mg/kg	1	L910127	10/14/2009	10/15/2009	6010B
Phosphorus	12600		492	mg/kg	12	L910127	10/14/2009	10/19/2009	6010B
Potassium	5220	J	128	mg/kg	1	L910127	10/14/2009	10/15/2009	6010B
Selenium	1.13		0.820	mg/kg	1	L910127	10/14/2009	10/15/2009	6010B
Silicon	2.45		1.64	mg/kg	1	L910127	10/14/2009	10/15/2009	6010B
Silver	0.164	U	0.164	mg/kg	1	L910127	10/14/2009	10/15/2009	6010B
Sodium	915		41.0	mg/kg	1	L910127	10/14/2009	10/15/2009	6010B
Strontium	22.0		0.820	mg/kg	1	L910127	10/14/2009	10/15/2009	6010B
Thallium	0.410	U	0.410	mg/kg	1	L910127	10/14/2009	10/15/2009	6010B
Tin	9.91		8.20	mg/kg	1	L910127	10/14/2009	10/15/2009	6010B
Uranium	16.4	U	16.4	mg/kg	1	L910127	10/14/2009	10/15/2009	6010B
Vanadium	0.475	B	2.05	mg/kg	1	L910127	10/14/2009	10/15/2009	6010B
Zinc	30.1	J	8.20	mg/kg	1	L910127	10/14/2009	10/15/2009	6010B
Mercury	0.0351	J	0.0257	mg/kg	1	L910056	10/06/2009	10/07/2009	7471A

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WC-Hanford, Inc. 2620 Fermi Avenue Richland WA, 99354	Project: RC-118 Project Number: K1735 Project Manager: Joan Kessner	Reported: 10/20/2009 17:48

J190M0
0910007-13 (Flab)

1/19/10

Lionville Laboratory

Metals by SW846 6000/7000 series

Analyte	Result and Qualifier		Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Aluminum	3.73	U	3.73	mg/kg	1	L910127	10/14/2009	10/15/2009	6010B
Antimony	0.448	U	0.448	mg/kg	1	L910127	10/14/2009	10/15/2009	6010B
Arsenic	0.746	U	0.746	mg/kg	1	L910127	10/14/2009	10/15/2009	6010B
Barium	0.199	B	0.373	mg/kg	1	L910127	10/14/2009	10/15/2009	6010B
Beryllium	0.149	U	0.149	mg/kg	1	L910127	10/14/2009	10/15/2009	6010B
Bismuth	7.46	U	7.46	mg/kg	1	L910127	10/14/2009	10/15/2009	6010B
Boron	1.49	U	1.49	mg/kg	1	L910127	10/14/2009	10/15/2009	6010B
Cadmium	0.149	U	0.149	mg/kg	1	L910127	10/14/2009	10/15/2009	6010B
Calcium	1440	J	74.6	mg/kg	1	L910127	10/14/2009	10/15/2009	6010B
Chromium	1.25		0.149	mg/kg	1	L910127	10/14/2009	10/15/2009	6010B
Cobalt	0.943	B	1.49	mg/kg	1	L910127	10/14/2009	10/15/2009	6010B
Copper	0.746	U	0.746	mg/kg	1	L910127	10/14/2009	10/15/2009	6010B
Iron	9.99	B	14.9	mg/kg	1	L910127	10/14/2009	10/15/2009	6010B
Lead	0.373	U	0.373	mg/kg	1	L910127	10/14/2009	10/15/2009	6010B
Lithium	0.736	B UJ	1.87	mg/kg	1	L910127	10/14/2009	10/15/2009	6010B
Magnesium	449	J	56.0	mg/kg	1	L910127	10/14/2009	10/15/2009	6010B
Manganese	0.857	B	3.73	mg/kg	1	L910127	10/14/2009	10/15/2009	6010B
Molybdenum	1.49	U	1.49	mg/kg	1	L910127	10/14/2009	10/15/2009	6010B
Nickel	2.99	U	2.99	mg/kg	1	L910127	10/14/2009	10/15/2009	6010B
Phosphorus	2640		37.3	mg/kg	1	L910127	10/14/2009	10/15/2009	6010B
Potassium	4470	J	299	mg/kg	1	L910127	10/14/2009	10/15/2009	6010B
Selenium	0.760		0.746	mg/kg	1	L910127	10/14/2009	10/15/2009	6010B
Silicon	2.13		1.49	mg/kg	1	L910127	10/14/2009	10/15/2009	6010B
Silver	0.149	U	0.149	mg/kg	1	L910127	10/14/2009	10/15/2009	6010B
Sodium	692		37.3	mg/kg	1	L910127	10/14/2009	10/15/2009	6010B
Strontium	1.99		0.746	mg/kg	1	L910127	10/14/2009	10/15/2009	6010B
Thallium	0.373	U	0.373	mg/kg	1	L910127	10/14/2009	10/15/2009	6010B
Tin	14.3		7.46	mg/kg	1	L910127	10/14/2009	10/15/2009	6010B
Uranium	14.9	U	14.9	mg/kg	1	L910127	10/14/2009	10/15/2009	6010B
Vanadium	0.250	B	1.87	mg/kg	1	L910127	10/14/2009	10/15/2009	6010B
Zinc	9.25	J	7.46	mg/kg	1	L910127	10/14/2009	10/15/2009	6010B
Mercury	0.0367	J	0.0273	mg/kg	1	L910056	10/06/2009	10/07/2009	7471A

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WC Hanford, Inc. 2620 Fermi Avenue Richland WA, 99354	Project: RC-118 Project Number: K1735 Project Manager: Joan Kessner	Reported: 10/20/2009 17:48

J190N6

0910007-16 (Fish)

K 1/10/10

Lionville Laboratory

Metals by SW846 6000/7000 series

Analyte	Result and Qualifier	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Aluminum	4.10 U	4.10	mg/kg	1	L910127	10/14/2009	10/15/2009	6010B
Antimony	0.492 U	0.492	mg/kg	1	L910127	10/14/2009	10/15/2009	6010B
Arsenic	0.820 U	0.820	mg/kg	1	L910127	10/14/2009	10/15/2009	6010B
Barium	**0.484**	0.410	mg/kg	1	L910127	10/14/2009	10/15/2009	6010B
Beryllium	0.164 U	0.164	mg/kg	1	L910127	10/14/2009	10/15/2009	6010B
Bismuth	8.20 U	8.20	mg/kg	1	L910127	10/14/2009	10/15/2009	6010B
Boron	1.64 U	1.64	mg/kg	1	L910127	10/14/2009	10/15/2009	6010B
Cadmium	0.164 U	0.164	mg/kg	1	L910127	10/14/2009	10/15/2009	6010B
Calcium	**5350** J	82.0	mg/kg	1	L910127	10/14/2009	10/15/2009	6010B
Chromium	**0.475**	0.164	mg/kg	1	L910127	10/14/2009	10/15/2009	6010B
Cobalt	1.64 U	1.64	mg/kg	1	L910127	10/14/2009	10/15/2009	6010B
Copper	0.820 U	0.820	mg/kg	1	L910127	10/14/2009	10/15/2009	6010B
Iron	**15.7** B	16.4	mg/kg	1	L910127	10/14/2009	10/15/2009	6010B
Lead	0.410 U	0.410	mg/kg	1	L910127	10/14/2009	10/15/2009	6010B
Lithium	**0.676** B UJ	2.05	mg/kg	1	L910127	10/14/2009	10/15/2009	6010B
Magnesium	**501** J	61.5	mg/kg	1	L910127	10/14/2009	10/15/2009	6010B
Manganese	**1.53** B	4.10	mg/kg	1	L910127	10/14/2009	10/15/2009	6010B
Molybdenum	1.64 U	1.64	mg/kg	1	L910127	10/14/2009	10/15/2009	6010B
Nickel	3.28 U	3.28	mg/kg	1	L910127	10/14/2009	10/15/2009	6010B
Phosphorus	**4280**	492	mg/kg	12	L910127	10/14/2009	10/19/2009	6010B
Potassium	**4150** J	328	mg/kg	1	L910127	10/14/2009	10/15/2009	6010B
Selenium	**1.60**	0.820	mg/kg	1	L910127	10/14/2009	10/15/2009	6010B
Silicon	**3.02**	1.64	mg/kg	1	L910127	10/14/2009	10/15/2009	6010B
Silver	0.164 U	0.164	mg/kg	1	L910127	10/14/2009	10/15/2009	6010B
Sodium	**1810**	41.0	mg/kg	1	L910127	10/14/2009	10/15/2009	6010B
Strontium	**7.79**	0.820	mg/kg	1	L910127	10/14/2009	10/15/2009	6010B
Thallium	0.410 U	0.410	mg/kg	1	L910127	10/14/2009	10/15/2009	6010B
Tin	**6.02** B UJ	8.20	mg/kg	1	L910127	10/14/2009	10/15/2009	6010B
Uranium	16.4 U	16.4	mg/kg	1	L910127	10/14/2009	10/15/2009	6010B
Vanadium	**0.254** B	2.05	mg/kg	1	L910127	10/14/2009	10/15/2009	6010B
Zinc	**17.8** J	8.20	mg/kg	1	L910127	10/14/2009	10/15/2009	6010B
Mercury	**0.0711** J	0.0275	mg/kg	1	L910036	10/06/2009	10/07/2009	7471A

WC-Hanford, Inc 2620 Fermi Avenue Richland WA, 99354	Project: RC-118 Project Number: K1735 Project Manager: Joan Kessner	Reported: 10/20/2009 17:48

J190N7
0910007-17 (Fish)

K 1/10/10

Analyte	Result and Qualifier		Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method

Lionville Laboratory

Metals by SW846 6000/7000 series

Analyte	Result	Qualifier	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Aluminum	2.99	B	3.12	mg/kg	1	L910127	10/14/2009	10/15/2009	6010B
Antimony	0.375	U	0.375	mg/kg	1	L910127	10/14/2009	10/15/2009	6010B
Arsenic	0.625	U	0.625	mg/kg	1	L910127	10/14/2009	10/15/2009	6010B
Barium	1.22		0.312	mg/kg	1	L910127	10/14/2009	10/15/2009	6010B
Beryllium	0.125	U	0.125	mg/kg	1	L910127	10/14/2009	10/15/2009	6010B
Bismuth	6.25	U	6.25	mg/kg	1	L910127	10/14/2009	10/15/2009	6010B
Boron	1.25	U	1.25	mg/kg	1	L910127	10/14/2009	10/15/2009	6010B
Cadmium	0.0367	B	0.125	mg/kg	1	L910127	10/14/2009	10/15/2009	6010B
Calcium	15500	J	62.5	mg/kg	1	L910127	10/14/2009	10/15/2009	6010B
Chromium	1.45		0.125	mg/kg	1	L910127	10/14/2009	10/15/2009	6010B
Cobalt	1.29		1.25	mg/kg	1	L910127	10/14/2009	10/15/2009	6010B
Copper	0.389	B	0.625	mg/kg	1	L910127	10/14/2009	10/15/2009	6010B
Iron	19.9		12.5	mg/kg	1	L910127	10/14/2009	10/15/2009	6010B
Lead	0.352		0.312	mg/kg	1	L910127	10/14/2009	10/15/2009	6010B
Lithium	1.01	B UJ	1.56	mg/kg	1	L910127	10/14/2009	10/15/2009	6010B
Magnesium	559	J	46.9	mg/kg	1	L910127	10/14/2009	10/15/2009	6010B
Manganese	5.72		3.12	mg/kg	1	L910127	10/14/2009	10/15/2009	6010B
Molybdenum	1.25	U	1.25	mg/kg	1	L910127	10/14/2009	10/15/2009	6010B
Nickel	0.450	B	2.50	mg/kg	1	L910127	10/14/2009	10/15/2009	6010B
Phosphorus	9380		375	mg/kg	12	L910127	10/14/2009	10/19/2009	6010B
Potassium	3630	J	250	mg/kg	1	L910127	10/14/2009	10/15/2009	6010B
Selenium	1.36		0.625	mg/kg	1	L910127	10/14/2009	10/15/2009	6010B
Silicon	3.08		1.25	mg/kg	1	L910127	10/14/2009	10/15/2009	6010B
Silver	0.125	U	0.125	mg/kg	1	L910127	10/14/2009	10/15/2009	6010B
Sodium	1680		31.2	mg/kg	1	L910127	10/14/2009	10/15/2009	6010B
Strontium	20.3		0.625	mg/kg	1	L910127	10/14/2009	10/15/2009	6010B
Thallium	0.312	U	0.312	mg/kg	1	L910127	10/14/2009	10/15/2009	6010B
Tin	31.4		6.25	mg/kg	1	L910127	10/14/2009	10/15/2009	6010B
Uranium	2.10	B	12.5	mg/kg	1	L910127	10/14/2009	10/15/2009	6010B
Vanadium	0.290	B	1.56	mg/kg	1	L910127	10/14/2009	10/15/2009	6010B
Zinc	27.9	J	6.25	mg/kg	1	L910127	10/14/2009	10/15/2009	6010B
Mercury	0.0460	J	0.0290	mg/kg	1	L910056	10/06/2009	10/07/2009	7471A

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WC-Hanford, Inc 2620 Fermi Avenue Richland WA, 99354	Project: RC-118 Project Number: K1735 Project Manager: Joan Kessner	Reported: 10/20/2009 17:48

J190N8
0910007-18 (Fish)

1/10/10

Analyte	Result and Qualifier		Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method

Lionville Laboratory

Metals by SW846 6000/7000 series

Analyte	Result	Qualifier	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Aluminum	3.52	U	3.52	mg/kg	1	L910127	10/14/2009	10/15/2009	6010B
Antimony	0.423	U	0.423	mg/kg	1	L910127	10/14/2009	10/15/2009	6010B
Arsenic	0.704	U	0.704	mg/kg	1	L910127	10/14/2009	10/15/2009	6010B
Barium	1.19		0.352	mg/kg	1	L910127	10/14/2009	10/15/2009	6010B
Beryllium	0.141	U	0.141	mg/kg	1	L910127	10/14/2009	10/15/2009	6010B
Bismuth	7.04	U	7.04	mg/kg	1	L910127	10/14/2009	10/15/2009	6010B
Boron	1.41	U	1.41	mg/kg	1	L910127	10/14/2009	10/15/2009	6010B
Cadmium	0.141	U	0.141	mg/kg	1	L910127	10/14/2009	10/15/2009	6010B
Calcium	12600	J	70.4	mg/kg	1	L910127	10/14/2009	10/15/2009	6010B
Chromium	0.739		0.141	mg/kg	1	L910127	10/14/2009	10/15/2009	6010B
Cobalt	1.41	U	1.41	mg/kg	1	L910127	10/14/2009	10/15/2009	6010B
Copper	0.363	B	0.704	mg/kg	1	L910127	10/14/2009	10/15/2009	6010B
Iron	15.8		14.1	mg/kg	1	L910127	10/14/2009	10/15/2009	6010B
Lead	0.275	B	0.352	mg/kg	1	L910127	10/14/2009	10/15/2009	6010B
Lithium	1.04	B UJ	1.76	mg/kg	1	L910127	10/14/2009	10/15/2009	6010B
Magnesium	441	J	52.8	mg/kg	1	L910127	10/14/2009	10/15/2009	6010B
Manganese	9.32		3.52	mg/kg	1	L910127	10/14/2009	10/15/2009	6010B
Molybdenum	1.41	U	1.41	mg/kg	1	L910127	10/14/2009	10/15/2009	6010B
Nickel	2.82	U	2.82	mg/kg	1	L910127	10/14/2009	10/15/2009	6010B
Phosphorus	7650		423	mg/kg	12	L910127	10/14/2009	10/19/2009	6010B
Potassium	3550	J	282	mg/kg	1	L910127	10/14/2009	10/15/2009	6010B
Selenium	1.15		0.704	mg/kg	1	L910127	10/14/2009	10/15/2009	6010B
Silicon	2.64		1.41	mg/kg	1	L910127	10/14/2009	10/15/2009	6010B
Silver	0.141	U	0.141	mg/kg	1	L910127	10/14/2009	10/15/2009	6010B
Sodium	1030		35.2	mg/kg	1	L910127	10/14/2009	10/15/2009	6010B
Strontium	15.9		0.704	mg/kg	1	L910127	10/14/2009	10/15/2009	6010B
Thallium	0.352	U	0.352	mg/kg	1	L910127	10/14/2009	10/15/2009	6010B
Tin	17.2		7.04	mg/kg	1	L910127	10/14/2009	10/15/2009	6010B
Uranium	1.57	B	14.1	mg/kg	1	L910127	10/14/2009	10/15/2009	6010B
Vanadium	0.240	B	1.76	mg/kg	1	L910127	10/14/2009	10/15/2009	6010B
Zinc	19.4	J	7.04	mg/kg	1	L910127	10/14/2009	10/15/2009	6010B
Mercury	0.0492	J	0.0231	mg/kg	1	L910056	10/06/2009	10/07/2009	7471A

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WC Hanford, Inc. 2620 Fermi Avenue Richland WA, 99354	Project: RC-118 Project Number: K1735 Project Manager: Joan Kessner	Reported: 10/20/2009 17:48

J190N9
0910007-19 (Fish)

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Analyte	Result and Qualifier		Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method

Lionville Laboratory

Metals by SW846 6000/7000 series

Analyte	Result	Qualifier	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Aluminum	3.38	U	3.38	mg/kg	1	L910127	10/14/2009	10/15/2009	6010B
Antimony	0.405	U	0.405	mg/kg	1	L910127	10/14/2009	10/15/2009	6010B
Arsenic	0.676	U	0.676	mg/kg	1	L910127	10/14/2009	10/15/2009	6010B
Barium	0.479		0.338	mg/kg	1	L910127	10/14/2009	10/15/2009	6010B
Beryllium	0.135	U	0.135	mg/kg	1	L910127	10/14/2009	10/15/2009	6010B
Bismuth	6.76	U	6.76	mg/kg	1	L910127	10/14/2009	10/15/2009	6010B
Boron	1.35	U	1.35	mg/kg	1	L910127	10/14/2009	10/15/2009	6010B
Cadmium	0.135	U	0.135	mg/kg	1	L910127	10/14/2009	10/15/2009	6010B
Calcium	5700	J	67.6	mg/kg	1	L910127	10/14/2009	10/15/2009	6010B
Chromium	0.914		0.135	mg/kg	1	L910127	10/14/2009	10/15/2009	6010B
Cobalt	0.786	B	1.35	mg/kg	1	L910127	10/14/2009	10/15/2009	6010B
Copper	0.676	U	0.676	mg/kg	1	L910127	10/14/2009	10/15/2009	6010B
Iron	13.8		13.5	mg/kg	1	L910127	10/14/2009	10/15/2009	6010B
Lead	0.338	U	0.338	mg/kg	1	L910127	10/14/2009	10/15/2009	6010B
Lithium	0.845	B UJ	1.69	mg/kg	1	L910127	10/14/2009	10/15/2009	6010B
Magnesium	275	J	50.7	mg/kg	1	L910127	10/14/2009	10/15/2009	6010B
Manganese	2.17	B	3.38	mg/kg	1	L910127	10/14/2009	10/15/2009	6010B
Molybdenum	1.35	U	1.35	mg/kg	1	L910127	10/14/2009	10/15/2009	6010B
Nickel	2.70	U	2.70	mg/kg	1	L910127	10/14/2009	10/15/2009	6010B
Phosphorus	3920		405	mg/kg	12	L910127	10/14/2009	10/19/2009	6010B
Potassium	1820	J	270	mg/kg	1	L910127	10/14/2009	10/15/2009	6010B
Selenium	0.921		0.676	mg/kg	1	L910127	10/14/2009	10/15/2009	6010B
Silicon	1.86		1.35	mg/kg	1	L910127	10/14/2009	10/15/2009	6010B
Silver	0.135	U	0.135	mg/kg	1	L910127	10/14/2009	10/15/2009	6010B
Sodium	747		33.8	mg/kg	1	L910127	10/14/2009	10/15/2009	6010B
Strontium	7.47		0.676	mg/kg	1	L910127	10/14/2009	10/15/2009	6010B
Thallium	0.338	U	0.338	mg/kg	1	L910127	10/14/2009	10/15/2009	6010B
Tin	10.9		6.76	mg/kg	1	L910127	10/14/2009	10/15/2009	6010B
Uranium	1.40	B	13.5	mg/kg	1	L910127	10/14/2009	10/15/2009	6010B
Vanadium	1.69	U	1.69	mg/kg	1	L910127	10/14/2009	10/15/2009	6010B
Zinc	12.9	J	6.76	mg/kg	1	L910127	10/14/2009	10/15/2009	6010B
Mercury	0.0614	J	0.0273	mg/kg	1	L910056	10/06/2009	10/07/2009	7471A

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WC-Hanford, Inc. 2620 Fermi Avenue Richland WA, 99354	Project: RC-118 Project Number: K1735 Project Manager: Joan Kessner	Reported: 10/20/2009 17:48

J190P0
0910007-20 (Fish)

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Analyte	Result and Qualifier	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method

Lionville Laboratory

Metals by SW846 6000/7000 series

Analyte	Result and Qualifier	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Aluminum	3.52 U	3.52	mg/kg	1	L910127	10/14/2009	10/15/2009	6010B
Antimony	0.423 U	0.423	mg/kg	1	L910127	10/14/2009	10/15/2009	6010B
Arsenic	0.704 U	0.704	mg/kg	1	L910127	10/14/2009	10/15/2009	6010B
Barium	1.06	0.352	mg/kg	1	L910127	10/14/2009	10/15/2009	6010B
Beryllium	0.141 U	0.141	mg/kg	1	L910127	10/14/2009	10/15/2009	6010B
Bismuth	7.04 U	7.04	mg/kg	1	L910127	10/14/2009	10/15/2009	6010B
Boron	1.41 U	1.41	mg/kg	1	L910127	10/14/2009	10/15/2009	6010B
Cadmium	0.141 U	0.141	mg/kg	1	L910127	10/14/2009	10/15/2009	6010B
Calcium	11600 J	70.4	mg/kg	1	L910127	10/14/2009	10/15/2009	6010B
Chromium	1.32	0.141	mg/kg	1	L910127	10/14/2009	10/15/2009	6010B
Cobalt	0.966 B	1.41	mg/kg	1	L910127	10/14/2009	10/15/2009	6010B
Copper	0.704 U	0.704	mg/kg	1	L910127	10/14/2009	10/15/2009	6010B
Iron	21.8	14.1	mg/kg	1	L910127	10/14/2009	10/15/2009	6010B
Lead	0.352 U	0.352	mg/kg	1	L910127	10/14/2009	10/15/2009	6010B
Lithium	0.920 B UJ	1.76	mg/kg	1	L910127	10/14/2009	10/15/2009	6010B
Magnesium	514 J	52.8	mg/kg	1	L910127	10/14/2009	10/15/2009	6010B
Manganese	2.35 B	3.52	mg/kg	1	L910127	10/14/2009	10/15/2009	6010B
Molybdenum	1.41 U	1.41	mg/kg	1	L910127	10/14/2009	10/15/2009	6010B
Nickel	2.82 U	2.82	mg/kg	1	L910127	10/14/2009	10/15/2009	6010B
Phosphorus	7570	423	mg/kg	12	L910127	10/14/2009	10/19/2009	6010B
Potassium	3490 J	282	mg/kg	1	L910127	10/14/2009	10/15/2009	6010B
Selenium	1.10	0.704	mg/kg	1	L910127	10/14/2009	10/15/2009	6010B
Silicon	3.75	1.41	mg/kg	1	L910127	10/14/2009	10/15/2009	6010B
Silver	0.141 U	0.141	mg/kg	1	L910127	10/14/2009	10/15/2009	6010B
Sodium	1570	35.2	mg/kg	1	L910127	10/14/2009	10/15/2009	6010B
Strontium	14.4	0.704	mg/kg	1	L910127	10/14/2009	10/15/2009	6010B
Thallium	0.352 U	0.352	mg/kg	1	L910127	10/14/2009	10/15/2009	6010B
Tin	13.1	7.04	mg/kg	1	L910127	10/14/2009	10/15/2009	6010B
Uranium	14.1 U	14.1	mg/kg	1	L910127	10/14/2009	10/15/2009	6010B
Vanadium	0.238 B	1.76	mg/kg	1	L910127	10/14/2009	10/15/2009	6010B
Zinc	20.0 J	7.04	mg/kg	1	L910127	10/14/2009	10/15/2009	6010B
Mercury	0.0645 J	0.0281	mg/kg	1	L910056	10/06/2009	10/07/2009	7471A

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WC-Hanford, Inc. 2620 Fermi Avenue Richland WA, 99354	Project: RC-118 Project Number: K1735 Project Manager: Joan Kessner	Reported: 10/20/2009 17:48

J19460
0910007-21 (Fish)

1/10/10

Analyte	Result and Qualifier	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method

Lionville Laboratory

Metals by SW846 6000/7000 series

Analyte	Result and Qualifier	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Aluminum	3.98	3.79	mg/kg	1	L910127	10/14/2009	10/15/2009	6010B
Antimony	0.455 U	0.455	mg/kg	1	L910127	10/14/2009	10/15/2009	6010B
Arsenic	0.312 B	0.758	mg/kg	1	L910127	10/14/2009	10/15/2009	6010B
Barium	6.07	0.379	mg/kg	1	L910127	10/14/2009	10/15/2009	6010B
Beryllium	0.152 U	0.152	mg/kg	1	L910127	10/14/2009	10/15/2009	6010B
Bismuth	7.58 U	7.58	mg/kg	1	L910127	10/14/2009	10/15/2009	6010B
Boron	1.52 U	1.52	mg/kg	1	L910127	10/14/2009	10/15/2009	6010B
Cadmium	1.63	0.152	mg/kg	1	L910127	10/14/2009	10/15/2009	6010B
Calcium	81.8 J	75.8	mg/kg	1	L910127	10/14/2009	10/15/2009	6010B
Chromium	0.166	0.152	mg/kg	1	L910127	10/14/2009	10/15/2009	6010B
Cobalt	1.52 U	1.52	mg/kg	1	L910127	10/14/2009	10/15/2009	6010B
Copper	36.7	0.758	mg/kg	1	L910127	10/14/2009	10/15/2009	6010B
Iron	55.3	15.2	mg/kg	1	L910127	10/14/2009	10/15/2009	6010B
Lead	0.379 U	0.379	mg/kg	1	L910127	10/14/2009	10/15/2009	6010B
Lithium	0.664 B UJ	1.89	mg/kg	1	L910127	10/14/2009	10/15/2009	6010B
Magnesium	209 J	56.8	mg/kg	1	L910127	10/14/2009	10/15/2009	6010B
Manganese	1.22 B	3.79	mg/kg	1	L910127	10/14/2009	10/15/2009	6010B
Molybdenum	1.52 U	1.52	mg/kg	1	L910127	10/14/2009	10/15/2009	6010B
Nickel	0.495 B	3.03	mg/kg	1	L910127	10/14/2009	10/15/2009	6010B
Phosphorus	2850	37.9	mg/kg	1	L910127	10/14/2009	10/15/2009	6010B
Potassium	3040 J	303	mg/kg	1	L910127	10/14/2009	10/15/2009	6010B
Selenium	2.40	0.758	mg/kg	1	L910127	10/14/2009	10/15/2009	6010B
Silicon	2.31	1.52	mg/kg	1	L910127	10/14/2009	10/15/2009	6010B
Silver	0.159	0.152	mg/kg	1	L910127	10/14/2009	10/15/2009	6010B
Sodium	1080	37.9	mg/kg	1	L910127	10/14/2009	10/15/2009	6010B
Strontium	0.129 B	0.758	mg/kg	1	L910127	10/14/2009	10/15/2009	6010B
Thallium	0.379 U	0.379	mg/kg	1	L910127	10/14/2009	10/15/2009	6010B
Tin	1.29 B UJ	7.58	mg/kg	1	L910127	10/14/2009	10/15/2009	6010B
Uranium	15.2 U	15.2	mg/kg	1	L910127	10/14/2009	10/15/2009	6010B
Vanadium	0.590 B J	1.89	mg/kg	1	L910127	10/14/2009	10/15/2009	6010B
Zinc	49.5 J	7.58	mg/kg	1	L910127	10/14/2009	10/15/2009	6010B
Mercury	0.466 J	0.0231	mg/kg	1	L910036	10/06/2009	10/07/2009	7471A

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

WC-Hanford, Inc.	Project: RC-118	
2620 Fermi Avenue	Project Number: K1735	Reported:
Richland WA, 99354	Project Manager: Joan Kessner	10/20/2009 17:48

J19461
0910007-22 (Fish)

K 11/10/10

Lionville Laboratory

Metals by SW846 6000/7000 series

Analyte	Result and Qualifier	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Aluminum	3.47 U	3.47	mg/kg	1	L910127	10/14/2009	10/15/2009	6010B
Antimony	0.417 U	0.417	mg/kg	1	L910127	10/14/2009	10/15/2009	6010B
Arsenic	0.694 U	0.694	mg/kg	1	L910127	10/14/2009	10/15/2009	6010B
Barium	**2.74**	0.347	mg/kg	1	L910127	10/14/2009	10/15/2009	6010B
Beryllium	0.139 U	0.139	mg/kg	1	L910127	10/14/2009	10/15/2009	6010B
Bismuth	6.94 U	6.94	mg/kg	1	L910127	10/14/2009	10/15/2009	6010B
Boron	1.39 U	1.39	mg/kg	1	L910127	10/14/2009	10/15/2009	6010B
Cadmium	**0.999**	0.139	mg/kg	1	L910127	10/14/2009	10/15/2009	6010B
Calcium	**73.8** J	69.4	mg/kg	1	L910127	10/14/2009	10/15/2009	6010B
Chromium	0.139 U	0.139	mg/kg	1	L910127	10/14/2009	10/15/2009	6010B
Cobalt	1.39 U	1.39	mg/kg	1	L910127	10/14/2009	10/15/2009	6010B
Copper	**1.06**	0.694	mg/kg	1	L910127	10/14/2009	10/15/2009	6010B
Iron	**143**	13.9	mg/kg	1	L910127	10/14/2009	10/15/2009	6010B
Lead	0.347 U	0.347	mg/kg	1	L910127	10/14/2009	10/15/2009	6010B
Lithium	**0.637** B UJ	1.74	mg/kg	1	L910127	10/14/2009	10/15/2009	6010B
Magnesium	**251** J	52.1	mg/kg	1	L910127	10/14/2009	10/15/2009	6010B
Manganese	**1.55** B	3.47	mg/kg	1	L910127	10/14/2009	10/15/2009	6010B
Molybdenum	1.39 U	1.39	mg/kg	1	L910127	10/14/2009	10/15/2009	6010B
Nickel	2.78 U	2.78	mg/kg	1	L910127	10/14/2009	10/15/2009	6010B
Phosphorus	**2630**	34.7	mg/kg	1	L910127	10/14/2009	10/15/2009	6010B
Potassium	**2970** J	278	mg/kg	1	L910127	10/14/2009	10/15/2009	6010B
Selenium	**2.51**	0.694	mg/kg	1	L910127	10/14/2009	10/15/2009	6010B
Silicon	**1.59**	1.39	mg/kg	1	L910127	10/14/2009	10/15/2009	6010B
Silver	0.139 U	0.139	mg/kg	1	L910127	10/14/2009	10/15/2009	6010B
Sodium	**1870**	34.7	mg/kg	1	L910127	10/14/2009	10/15/2009	6010B
Strontium	**0.119** B	0.694	mg/kg	1	L910127	10/14/2009	10/15/2009	6010B
Thallium	0.347 U	0.347	mg/kg	1	L910127	10/14/2009	10/15/2009	6010B
Tin	**1.10** B UJ	6.94	mg/kg	1	L910127	10/14/2009	10/15/2009	6010B
Uranium	13.9 U	13.9	mg/kg	1	L910127	10/14/2009	10/15/2009	6010B
Vanadium	**0.237** B	1.74	mg/kg	1	L910127	10/14/2009	10/15/2009	6010B
Zinc	**26.2** J	6.94	mg/kg	1	L910127	10/14/2009	10/15/2009	6010B
Mercury	**0.123** J	0.0273	mg/kg	1	L910056	10/06/2009	10/07/2009	7471A

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
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WC-Hanford, Inc.	Project: RC-118	
2620 Fermi Avenue	Project Number: K1735	Reported:
Richland WA, 99354	Project Manager: Joan Kessner	09/15/2009 13:07

J19458
0908110-01 (Other Solid)

K 1/10/10

Lionville Laboratory

Metals by SW846 6000/7000 series

Analyte	Result and Qualifier		Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Aluminum	3.13	B	3.85	mg/kg	1	1909088	09/09/2009	09/12/2009	6010B
Antimony	0.462	U	0.462	mg/kg	1	1909088	09/09/2009	09/12/2009	6010B
Arsenic	0.509	B	0.769	mg/kg	1	1909088	09/09/2009	09/12/2009	6010B
Barium	0.191	B	0.385	mg/kg	1	1909088	09/09/2009	09/12/2009	6010B
Beryllium	0.154	U	0.154	mg/kg	1	1909088	09/09/2009	09/12/2009	6010B
Bismuth	7.69	U	7.69	mg/kg	1	1909088	09/09/2009	09/12/2009	6010B
Boron	1.54	U	1.54	mg/kg	1	1909088	09/09/2009	09/12/2009	6010B
Cadmium	0.154	U	0.154	mg/kg	1	1909088	09/09/2009	09/12/2009	6010B
Calcium	75.1	B	76.9	mg/kg	1	1909088	09/09/2009	09/12/2009	6010B
Chromium	0.154	U	0.154	mg/kg	1	1909088	09/09/2009	09/12/2009	6010B
Cobalt	1.54	U	1.54	mg/kg	1	1909088	09/09/2009	09/12/2009	6010B
Copper	0.769	U	0.769	mg/kg	1	1909088	09/09/2009	09/12/2009	6010B
Iron	4.03	B	15.4	mg/kg	1	1909088	09/09/2009	09/12/2009	6010B
Lead	0.385	U	0.385	mg/kg	1	1909088	09/09/2009	09/12/2009	6010B
Lithium	1.92	U	1.92	mg/kg	1	1909088	09/09/2009	09/12/2009	6010B
Magnesium	262		57.7	mg/kg	1	1909088	09/09/2009	09/12/2009	6010B
Manganese	0.378	B	3.85	mg/kg	1	1909088	09/09/2009	09/12/2009	6010B
Molybdenum	1.54	U	1.54	mg/kg	1	1909088	09/09/2009	09/12/2009	6010B
Nickel	3.08	U	3.08	mg/kg	1	1909088	09/09/2009	09/12/2009	6010B
Phosphorus	2120		38.5	mg/kg	1	1909088	09/09/2009	09/12/2009	6010B
Potassium	3700		308	mg/kg	1	1909088	09/09/2009	09/12/2009	6010B
Selenium	1.62		0.769	mg/kg	1	1909088	09/09/2009	09/12/2009	6010B
Silicon	2.73		1.54	mg/kg	1	1909088	09/09/2009	09/12/2009	6010B
Silver	0.154	U	0.154	mg/kg	1	1909088	09/09/2009	09/12/2009	6010B
Sodium	525		38.5	mg/kg	1	1909088	09/09/2009	09/12/2009	6010B
Strontium	0.0908	B	0.769	mg/kg	1	1909088	09/09/2009	09/12/2009	6010B
Thallium	0.385	U	0.385	mg/kg	1	1909088	09/09/2009	09/12/2009	6010B
Tin	1.02	B UT	7.69	mg/kg	1	1909088	09/09/2009	09/12/2009	6010B
Uranium	15.4	U	15.4	mg/kg	1	1909088	09/09/2009	09/12/2009	6010B
Vanadium	0.263	B	1.92	mg/kg	1	1909088	09/09/2009	09/12/2009	6010B
Zinc	3.82	B	7.69	mg/kg	1	1909088	09/09/2009	09/12/2009	6010B
Mercury	0.259		0.0273	mg/kg	1	1909025	09/02/2009	09/02/2009	7471A

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
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WC-Hanford, Inc. 2620 Fermi Avenue Richland WA, 99354	Project: RC-118 Project Number: K1735 Project Manager: Joan Kessner	Reported: 09/15/2009 13:07

J19459

0908110-02 (Other Solid)

lc 1/10/10

Lionville Laboratory

Metals by SW846 6000/7000 series

Analyte	Result and Qualifier			Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Aluminum	3.21	B		3.91	mg/kg	1	L909088	09/09/2009	09/12/2009	6010B
Antimony	0.469	U		0.469	mg/kg	1	L909088	09/09/2009	09/12/2009	6010B
Arsenic	0.492	B		0.781	mg/kg	1	L909088	09/09/2009	09/12/2009	6010B
Barium	2.41			0.391	mg/kg	1	L909088	09/09/2009	09/12/2009	6010B
Beryllium	0.156	U		0.156	mg/kg	1	L909088	09/09/2009	09/12/2009	6010B
Bismuth	7.81	U		7.81	mg/kg	1	L909088	09/09/2009	09/12/2009	6010B
Boron	1.56	U		1.56	mg/kg	1	L909088	09/09/2009	09/12/2009	6010B
Cadmium	0.156	U		0.156	mg/kg	1	L909088	09/09/2009	09/12/2009	6010B
Calcium	15900			78.1	mg/kg	1	L909088	09/09/2009	09/12/2009	6010B
Chromium	0.552			0.156	mg/kg	1	L909088	09/09/2009	09/12/2009	6010B
Cobalt	1.56	U		1.56	mg/kg	1	L909088	09/09/2009	09/12/2009	6010B
Copper	0.781	U		0.781	mg/kg	1	L909088	09/09/2009	09/12/2009	6010B
Iron	15.6	U		15.6	mg/kg	1	L909088	09/09/2009	09/12/2009	6010B
Lead	0.256	B		0.391	mg/kg	1	L909088	09/09/2009	09/12/2009	6010B
Lithium	0.763	B	UJ	1.95	mg/kg	1	L909088	09/09/2009	09/12/2009	6010B
Magnesium	340			38.6	mg/kg	1	L909088	09/09/2009	09/12/2009	6010B
Manganese	3.19	B		3.91	mg/kg	1	L909088	09/09/2009	09/12/2009	6010B
Molybdenum	1.56	U		1.56	mg/kg	1	L909088	09/09/2009	09/12/2009	6010B
Nickel	3.12	U		3.12	mg/kg	1	L909088	09/09/2009	09/12/2009	6010B
Phosphorus	8900			234	mg/kg	6	L909088	09/09/2009	09/12/2009	6010B
Potassium	2270			312	mg/kg	1	L909088	09/09/2009	09/12/2009	6010B
Selenium	1.13			0.781	mg/kg	1	L909088	09/09/2009	09/12/2009	6010B
Silicon	1.56	U		1.56	mg/kg	1	L909088	09/09/2009	09/12/2009	6010B
Silver	0.156	U		0.156	mg/kg	1	L909088	09/09/2009	09/12/2009	6010B
Sodium	2670			39.1	mg/kg	1	L909088	09/09/2009	09/12/2009	6010B
Strontium	14.9			0.781	mg/kg	1	L909088	09/09/2009	09/12/2009	6010B
Thallium	0.391	U		0.391	mg/kg	1	L909088	09/09/2009	09/12/2009	6010B
Tin	3.22	B	UJ	7.81	mg/kg	1	L909088	09/09/2009	09/12/2009	6010B
Uranium	15.6	U		15.6	mg/kg	1	L909088	09/09/2009	09/12/2009	6010B
Vanadium	0.393	B		1.95	mg/kg	1	L909088	09/09/2009	09/12/2009	6010B
Zinc	15.4			7.81	mg/kg	1	L909088	09/09/2009	09/12/2009	6010B
Mercury	0.0764			0.0257	mg/kg	1	L909025	09/02/2009	09/02/2009	7471A

Appendix 4

Laboratory Narrative and Chain-of-Custody Documentation

LVL
LIONVILLE LABORATORY
A Division of [illegible] Analytical Corporation

[illegible]
Exton [illegible] 341
[illegible] 280-3000
[illegible] 280-3041

Case Narrative

Client: WC-HANFORD RC-118
LVL#: 0910007
SDG/SAF#: K1735/RC-118

W.O.#: 60049-001-001-0001-00
Date Received: 10-01-09

METALS

The following is a summary of the QC results accompanying the sample results. Lionville Laboratory (LvL) certifies that all test results meet the requirements of NELAC except as noted below.

All soil samples are reported on a dry weight basis unless requested by the client, required by the method, or noted otherwise.

1. This narrative covers the analyses of 22 fish samples.

2. The samples were prepared and analyzed in accordance with methods listed on the data report forms. The samples were reported on a wet weight, 'as-received' basis.

   Samples J19029, J19031, J19053, J19055, J19056, J190L6, J190L7, J190L8, J190L9, and samples J190N6 through J19P0, were rerun and reported with 12-fold dilutions for Phosphorous due to high concentration. Calcium was also reported for sample J19056 from the 12-fold dilution for Phosphorous.

3. All analyses were performed within the required holding times.

4. All Initial and Continuing Calibration Verifications (ICV/CCVs) were within the 90-110% control limits (80-120% for Mercury).

5. All Initial and Continuing Calibration Blanks (ICB/CCBs) were within control limits (less than the LOQ).

6. All preparation/method blanks (MB) were within method criteria (less than the Limit of Quantitation (3-10X the LOD), or samples greater than 20X MB value).

7. All ICP Interference Check Standards were within control limits.

8. All Standard Reference Material (SRM) analytes were within the Prediction Interval control limits supplied by the manufacturer.

9. The matrix spike (MS) recoveries for 6 analytes were outside the 75-125% control limits.

10. For analytes where the ICP MS is out-of-control, a post-digestion MS (PDS) and serial dilution are performed. A PDS was prepared at meaningful concentration level for the following analytes:

Sample ID	Element	PDS Concentration (ppb)	PDS % Recovery
J19029	Calcium	20,800	93.3
	Iron	2,000	99.7
	Potassium	22,000	95.9
	Phosphorous	30,000	95.6
J190L7	Calcium	20,800	98.5
	Potassium	2,000	60.0

11. The duplicate analyses for 17 analytes were outside the 20% Relative Percent Difference (RPD) control limits.

12. For the purposes of this report, the data have been reported to the Limit of Detection (LOD). Values between the LOD and the Limit of Quantitation (LOQ) are acquired in a region of less-certain quantification.

13. LvL is NELAP accredited by the State of Pennsylvania. For a complete listing of accrediting authorities and the corresponding analytes/methods, please contact your Project Manager.

14. I certify that this sample data package is in compliance with SOW requirements, both technically and for completeness, other than the conditions detailed above. Release of the data contained in this hard-copy data package has been authorized by the Laboratory Manager or a designee, as verified by the following signature.

Iain Daniels
Laboratory Manager
Lionville Laboratory

10/31/02
Date

gw/m10-007

[illegible]

Case Narrative

Client: WC-HANFORD RC-118
LVL#: 0908110
SDG/SAF#: K1735 /RC-118

W.O.#: 60049-001-001-0001-00
Date Received: 08-28-09

METALS

The following is a summary of the QC results accompanying the sample results. Lionville Laboratory (LvL) certifies that all test results meet the requirements of NELAC except as noted below.

All soil samples are reported on a dry weight basis unless requested by the client, required by the method, or noted otherwise.

1. This narrative covers the analyses of 2 solid samples.

2. The samples were prepared and analyzed in accordance with methods listed on the data report forms. The samples were reported on a wet weight, 'as-received' basis.

   Sample J19459 was rerun and reported with a 6-fold dilution for Phosphorous due to high concentration.

3. All analyses were performed within the required holding times.

4. All Initial and Continuing Calibration Verifications (ICV/CCVs) were within the 90-110% control limits (80-120% for Mercury).

5. All Initial and Continuing Calibration Blanks (ICB/CCBs) were within control limits (less than the LOQ).

6. All preparation/method blanks (MB) were within method criteria (less than the Limit of Quantitation (3-10X the LOD), or samples greater than 20X MB value).

7. All ICP Interference Check Standards were within control limits.

8. All Standard Reference Material (SRM) analytes were within the Prediction Interval control limits supplied by the manufacturer.

9. The matrix spike (MS) recovery for Mercury was outside the 75-125% control limits.

10. A serial dilution is performed for Mercury when the MS is out of control.

11. The duplicate analyses for 5 analytes were outside the 20% Relative Percent Difference (RPD) control limits.

12. For the purposes of this report, the data have been reported to the Limit of Detection (LOD). Values between the LOD and the Limit of Quantitation (LOQ) are acquired in a region of less-certain quantification.

13. LvL is NELAP accredited by the State of Pennsylvania. For a complete listing of accrediting authorities and the corresponding analytes/methods, please contact your Project Manager.

14. I certify that this sample data package is in compliance with SOW requirements, both technically and for completeness, other than the conditions detailed above. Release of the data contained in this hard-copy data package has been authorized by the Laboratory Manager or a designee, as verified by the following signature.

Iain Daniels
Laboratory Manager
Lionville Laboratory

9/15/09
Date

Jmy/m08.010

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-118-308

Page 1 of 1

Collector Wendy West	Company Contact JOAN KESSNER	Telephone No. 373-4688	Project Coordinator KESSNER, JH
Project Designation Columbia River Component of the RCBRA - Tissues	Sampling Location URSA-BASS1-FILLET K1735 (7/4/96)		SAF No. RC-118
Ice Chest No. AFS-04-014	Field Logbook No. EL-1638	COA BESCRCAS20	Method of Shipment FED EX
Shipped To EBERLINE SERVICES LIONVILLE	Offsite Property No. N/A		Bill of Lading/Air Bill No. FDX#797884937190

Price Code 9[illegible] N NA 6/1/09

Data Turnaround 45 Days

POSSIBLE SAMPLE HAZARDS/REMARKS

N/A

Special Handling and/or Storage

FREEZE "MATRIX COMPOSED OF FISH"

Preservation	None	None	None	None	Cool 4C	Cool 4C	None
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	G/P
No. of Container(s)	1	1 [illegible]	1 [illegible]	1 [illegible]	1 [illegible]	1 [illegible]	1 [illegible]
Volume	1500g	100g	100g	10g	250g	120g	10g
SAMPLE ANALYSIS SDG# K1735	See item (1) in Special Instructions	Carbon-14	Tritium - H3	See item (2) in Special Instructions	See item (3) in Special Instructions	Pesticides - 8081	Technetium-99

Sample No.	Matrix *	Sample Date	Sample Time							
J18029	OTHER SOLID	8/25/09	815	X	X	X	X	X	X	X

CHAIN OF POSSESSION Sign/Print Names

Relinquished By/Removed From Wendy West	Date/Time 815 8/25/09	Received By/Stored In EAS LOCKED STORAGE# Wendy West	Date/Time 815 8/25/09
Relinquished By/Removed From EAS LOCKED STORAGE#	Date/Time 8/27/09 1000	Received By/Stored In SHANNAN JOHNSON	Date/Time 8/27/09 1000
Relinquished By/Removed From SHANNAN JOHNSON	Date/Time 8/27/09 1000	Received By/Stored In FDX	Date/Time
Relinquished By/Removed From FED EX	Date/Time	Received By/Stored In R.F. MATAMBANAN	Date/Time 08/28/09 0930
Relinquished By/Removed From [illegible] Receiving	Date/Time 9/30/09	Received By/Stored In FED EX	Date/Time
Relinquished By/Removed From FedEx	Date/Time 10-1-09 0907	Received By/Stored In [illegible] Hernandez	Date/Time 10-1-09 1057

SPECIAL INSTRUCTIONS Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody. [illegible]

(1) Gamma Spec - (Full List) (Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238)
(2) Strontium-89,90 – Total Sr; Isotopic Thorium (Thorium-232); Isotopic Uranium (Uranium-233/234, Uranium-235, Uranium-238), Isotopic Plutonium
(3) ICP Metals - 6010 (Full List) (Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc); Mercury - 7471 - (CV)

Note: Transshipping required. Contact Joan Kessner for further instructions maintain freeze.

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Washington Closure Hanford	**CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST**	RC-118-309	Page 1 of 1
Collector M.F.dino	Company Contact JOAN KESSNER Telephone No. 373-4688	Project Coordinator KESSNER, JH	Price Code ~~9M~~ 9N 11/16/09 Data Turnaround 45 Days
Project Designation Columbia River Component of the RCBRA - Tissues	Sampling Location URSA-BASS2-FILLET K1735 (7446)	SAP No. RC-118	
Ice Chest No. AFS-64-014	Field Logbook No. EL-1638 COA BESCRC6320	Method of Shipment FED EX	
Shipped To EBERLINE SERVICES LIONVILLE	Offsite Property No. N/A	Bill of Lading/Air Bill No. FDX# 797884937140	

POSSIBLE SAMPLE HAZARDS/REMARKS
N/A

Special Handling and/or Storage
FREEZE "MATRIX COMPOSED OF FISH"

000041

Preservation	None	None	None	None	Cool 4C	Cool 4C	None			
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	G/P			
No. of Container(s)	1	[illegible]		[illegible]		[illegible]				
Volume	1500g	100g	100g	10g	250g	120g	10g			
SAMPLE ANALYSIS SDG# K1735	See item (1) in Special Instructions	Carbon-14	Tritium - H3	See item (2) in Special Instructions	See item (3) in Special Instructions	Pesticides - 8081	Technetium-99			

Sample No.	Matrix *	Sample Date	Sample Time	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
J18030	OTHER SOLID	8/25/09	1230	X	X	X	X	X	X	X			

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From M.F.dino	Date/Time 8/25/09 1230	Received By/Stored In EAS LOCKED STORAGE 8/25/09	Date/Time 8/25/09 1230
Relinquished By/Removed From EAS LOCKED STORAGE	Date/Time 8/27/09 1020	Received By/Stored In SHANNAN JOHNSON	Date/Time 8/27/09 1020
Relinquished By/Removed From SHANNAN JOHNSON	Date/Time 8/27/09 1045	Received By/Stored In FDX	Date/Time
Relinquished By/Removed From FED EX	Date/Time	Received By/Stored In	Date/Time 08/28/09 0920
Relinquished By/Removed From KEIENSON	Date/Time 9/15/09	Received By/Stored In FEDEX	Date/Time
Relinquished By/Removed From FedEx	Date/Time 9/16/09 0957	Received By/Stored In	Date/Time 9/16/09 0957

SPECIAL INSTRUCTIONS
(1) Gamma Spec - (Full List) (Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238)
(2) Strontium-89,90 – Total Sr; Isotopic Thorium (Thorium-232); Isotopic Uranium (Uranium-233/234, Uranium-235, Uranium-238); Isotopic Plutonium
(3) ICP Metals - 6010 (Full List) (Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc); Mercury - 7471 - (CV)
Note: Transshipping required. Contact Joan Kessner for further instructions. Maintain freeze.

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-118-310

Page 1 of 1

Collector Wendy Wert	Company Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator KESSNER, JH
Project Designation Columbia River Component of the RCBRA - Tissues	Sampling Location URSA-BASS3-FILLET	K1735 (7444)	SAF No. RC-118
Ice Chest No. AFS-04-014	Field Logbook No. EL-1638	COA BESCRC6520	Method of Shipment FED EX
Shipped To LIBERLINE SERVICES LIONVILLE	Offsite Property No. N/A		Bill of Lading/Air Bill No. FDX# 797884937190

Price Code 9K N 10/6/09

Data Turnaround 45 Days

POSSIBLE SAMPLE HAZARDS/REMARKS

N/A

Special Handling and/or Storage

FREEZE "MATRIX COMPOSED OF FISH"

0000442

Preservation	None	None	None	None	Cool 4C	Cool 4C	None	
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	G/P	
No. of Container(s)	1	1/0	1/0	1/0	1/0	1/0	1/0	
Volume	1500g	100g	100g	10g	250g	120g	10g	
SAMPLE ANALYSIS SDG # K1735	See item (1) in Special Instructions	Carbon-14	Tritium - H3	See item (2) in Special Instructions	See item (3) in Special Instructions	Pesticides 8081	Technetium-99	

Sample No.	Matrix *	Sample Date	Sample Time										
J19031	OTHER SOLID	8/25/09	1445	X	X	X	X	X	X	X			

Sampler unavailable to remove samples from controlled storage. Shipper removing samples from storage location taking custody of samples for shipment to lab.

CHAIN OF POSSESSION Sign/Print Names

Relinquished By/Removed From Wendy Wert	Date/Time 1445 8/25/09	Received By/Stored In EAS LOCKED STORAGE Wendy Wert	Date/Time 1445 8/25/09
Relinquished By/Removed From EAS LOCKED STORAGE	Date/Time 8/27/09 1000	Received By/Stored In SHANNAN JOHNSON	Date/Time 8/27/09 1000
Relinquished By/Removed From SHANNAN JOHNSON	Date/Time 8/27/09 1000	Received By/Stored In FDX	Date/Time
Relinquished By/Removed From FED EX	Date/Time	Received By/Stored In R.E. MAITHANAN	Date/Time
Relinquished By/Removed From KEENWOOD	Date/Time 9/10/09	Received By/Stored In FEDEX	Date/Time
Relinquished By/Removed From FedEx	Date/Time 10-1-09 0957	Received By/Stored In KEENWOOD	Date/Time 10-1-09 0957

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) (Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238)

(2) Strontium-89,90 - Total Sr; Isotopic Thorium (Thorium-232); Isotopic Uranium (Uranium-233/234, Uranium-235, Uranium-238); Isotopic Plutonium

(3) ICP Metals - 6010 (Full List) (Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc); Mercury - 7471 - (CV)

Note: Reshipping required. Contact Joan Kessner for further instructions. Maintain freeze.

Matrix *

[illegible]

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST		RC-138-311	Page 1 of 1
Collector M.Fidino	Company Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator KESSNER, JH	Price Code ~~9K~~ 4/24/09
Project Designation Columbia River Component of the RCBRA Tissues	Sampling Location URSA-BASS4-FILLET KIT35 (7446)		SAF No. RC-118	Data Turnaround 45 Days
Ice Chest No. AFS-04-014	Field Logbook No. EL-1630	COA BESCRC6530	Method of Shipment FED EX	
Shipped To EBERLINE SERVICES - LIONVILLE	Offsite Property No. N/A		Bill of Lading/Air Bill No. FD 797884937190	

POSSIBLE SAMPLE HAZARDS/REMARKS
N/A

Special Handling and/or Storage
FREEZE "MATRIX COMPOSED OF FISH"

000043

Preservation	None	None	None	None	Cool 4C	Cool 4C	None
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	G/P
No. of Container(s)	1	~~1~~ 0		~~1~~ 0		~~1~~ 0	
Volume	1500g	100g	100g	10g	250g	120g	10g
SAMPLE ANALYSIS .5DG4 K1735	See item (1) in Special Instructions	Carbon-14	Tritium - H3	See item (2) in Special Instructions	See item (3) in Special Instructions	Pesticides - 8081	Extractions **

Sample No.	Matrix *	Sample Date	Sample Time										
J18032	OTHER SOLID	8/25/09	1330	X	X	X	X	X	X	X			

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab

CHAIN OF POSSESSION		Sign/Print Names	
Relinquished By/Removed From M.Fidino	Date/Time 8/25/09 1330	Received By/Stored In EAS LOCKED STORAGE	Date/Time 8/25/09 1330
Relinquished By/Removed From EAS LOCKED STORAGE	Date/Time 9/27/09 1000	Received By/Stored In SHANNAN JOHNSON	Date/Time 9/27/09 1000
Relinquished By/Removed From SHANNAN JOHNSON	Date/Time 9/27/09 1000	Received By/Stored In FDX	Date/Time
Relinquished By/Removed From Fed EX	Date/Time	Received By/Stored In [illegible]	Date/Time [illegible] 0920
Relinquished By/Removed From Alex Kelenson KELENSON	Date/Time 9/15/09 16:00	Received By/Stored In FEDEX	Date/Time
Relinquished By/Removed From FedEx	Date/Time [illegible] 0957	Received By/Stored In [illegible] HERNANDEZ	Date/Time [illegible] 0957

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) (Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238)
(2) Strontium-89,90 – Total Sr; Isotopic Thorium (Thorium-232), Isotopic Uranium (Uranium-233/234, Uranium-235, Uranium-238), Isotopic Plutonium
(3) ICP Metals - 6010 (Full List) (Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc), Mercury - 7471 - (CV)

Note: Trans shipping required. Contact Joan Kessner for further instructions. Maintain freeze.

Matrix *
[illegible]

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCHEE-011

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-318-312 | Page 1 of 1

Collector: Wendy West	Company Contact: JOAN KESSNER	Telephone No.: 375-4688	Project Coordinator: KESSNER, JH
Project Designation: Columbia River Component of the RCBRA - Tissues	Sampling Location: URSA-BASS5-FILLET K1735 (7446)		SAF No.: RC-118
Ice Chest No.: APS-04-014	Field Logbook No.: EL-1638	COA: RESCRC6520	Method of Shipment: FED EX
Shipped To: EBERLINE SERVICES/LIONVILLE	Offsite Property No.: N/A		Bill of Lading/Air Bill No.: FDX # 797884937190

Price Code: ~~9K~~ N 6/16/09

Data Turnaround: 45 Days

POSSIBLE SAMPLE HAZARDS/REMARKS
N/A

Special Handling and/or Storage
FREEZE "MATRIX COMPOSED OF FISH"

000044

Preservation	None	None	None	None	Cool 4C	Cool 4C	None
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	G/P
No. of Container(s)	1	1/0		1/0		1/0	1/0
Volume	1500g	100g	100g	10g	250g	120g	10g
SAMPLE ANALYSIS SDG# K1735	See item (1) in Special Instructions	Carbon-14	Tritium - H3	See item (2) in Special Instructions	See item (3) in Special Instructions	Pesticides - 8081	Technetium-99

Sample No.	Matrix *	Sample Date	Sample Time							
J19033	OTHER SOLID	8/25/09	1415	X	X	X	X	X	X	X

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Wendy West	1415 8/25/09	EAS LOCKED STORAGE Wendy West	1415 8/25/09
EAS LOCKED STORAGE	8/27/09 1020	SHANNAN JOHNSON	8/27/09 1020
SHANNAN JOHNSON	8/27/09 1020	FDX	
FED EX		M. [illegible]	08/28/09 0920
[illegible] KELEHAN	9/30/09	FEDEX	
FedEx	10-1-09 0957	[illegible]	0957

SPECIAL INSTRUCTIONS

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab.

(1) Gamma Spec - (Full List) [Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238]
(2) Strontium-89,90 – Total Sr, Isotopic Thorium [Thorium-232], Isotopic Uranium [Uranium-233/234, Uranium-235, Uranium-238]; Isotopic Plutonium
(3) ICP Metals - 6010 (Full List) [Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc]; Mercury - 7471 - (CV)

Note: Transshipping refused. Contact Joan Kessner for further instructions. Maintain freeze.

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH EE-011

Washington Closure Hanford | **CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST** | RC-118-328 | Page 1 of 1

Collector Windy West	Company Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator KESSNER, JH
Project Designation Columbia River Component of the RCBRA - Tissues	Sampling Location URSA-BASS1-CARCASS	K1735 (7446)	SAF No. RC-118
Ice Chest No. AFS-04-014	Field Logbook No. EL-1638	COA RBSCRC6520	Method of Shipment FED EX
Shipped To EBERLINE SERVICES / LIONVILLE	Offsite Property No. N/A		Bill of Lading/Air Bill No. FDX# 797884937190

Price Code 9K N HD 6/409

Data Turnaround 45 Days

POSSIBLE SAMPLE HAZARDS/REMARKS

NA

Special Handling and/or Storage

FREEZE "MATRIX COMPOSED OF FISH"

	Preservation	None	None	None	None	Cool 4C	Cool 4C	None
	Type of Container	G/P	G/P	G/P	G/P	G/P	aG	G/P
	No. of Container(s)	1	1 0	[illegible] 1 0	1 0	[illegible] 1 0	1 0	[illegible] 1 0
	Volume	1500g	100g	100g	10g	250g	120g	10g
SAMPLE ANALYSIS	9964 K1735	See item (1) in Special Instructions	Carbon-14	Tritium - H3	See item (2) in Special Instructions	See item (3) in Special Instructions	Pesticides 8081	Technetium-99

Sample No.	Matrix *	Sample Date	Sample Time	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
J19052	OTHER SOLID	8/25/09	1130	X	X	X	X	X	X	X			

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Wendy West	1130 8/25/09	EAS LOCKED STORAGE # Wendy West	1130 8/25/09
EAS LOCKED STORAGE #	8/27/09 1000	SHANNAN JOHNSON	8/27/09 1000
SHANNAN JOHNSON	8/27/09 1020	FDX	
FED EX		R.E. MATAGHAM	08/28/09 0920
Eric Kelemson KELEMSON	9/10/09	FED EX	
FedEx	10/09 0957	Victor Hernandez	10/09 0957

SPECIAL INSTRUCTIONS Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location [illegible] samples for shipment to lab

(1) Gamma Spec - (Full List) (Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238)

(2) Strontium-89,90 – Total Sr; Isotopic Thorium (Thorium-232); Isotopic Uranium (Uranium-233/234, Uranium-235, Uranium-238); Isotopic Plutonium

(3) ICP Metals - 6010 (Full List) (Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc); Mercury - 7471 - (CV)

note: Transhipping required. Contact Joan Kessner for further instructions. Maintain Freeze.

Matrix *

[illegible]

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH EE-011

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-118-329

Page 1 of 1

Collector M. Ei.ino	Company Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator KESSNER, JH
Project Designation Columbia River Component of the RCBRA - Tissues	Sampling Location URSA-BASS7-CARCASS	K1735 (7446)	SAF No. RC-118
Ice Chest No. AFS-04-014	Field Logbook No. EL-1638	COA BESCRC6520	Method of Shipment FED EX
Shipped To EBERLINE SERVICES LIONVILLE	Offsite Property No. N/A		Bill of Lading/Air Bill No. FDX# 797884937 1.00

Price Code 9K N 4/16/09

Data Turnaround 45 Days

POSSIBLE SAMPLE HAZARDS/REMARKS

N/A

Special Handling and/or Storage

FREEZE "MATRIX COMPOSED OF FISH"

Preservation	None	None	None	None	Cool 4C	Cool 4C	None
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	G/P
No. of Container(s)	1	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Volume	1500g	100g	100g	10g	220g	120g	10g
SAMPLE ANALYSIS SDG# K1735	See item (1) in Special Instructions	Carbon-14	Tritium - H3	See item (2) in Special Instructions	See item (3) in Special Instructions	Pesticides - 8081	Technetium-99

Sample No.	Matrix *	Sample Date	Sample Time										
J19053	OTHER SOLID	8/25/09	1245	X	X	X	X	X	X	X			

CHAIN OF POSSESSION	Date/Time	Sign/Print Names	Date/Time
Relinquished By/Removed From M. Ei.ino	8/25/09 1245	Received By/Stored In EAS LOCKED STORAGE 8/25/09	8/25/09 1245
Relinquished By/Removed From EAS LOCKED STORAGE	8/27/09 1000	Received By/Stored In SHANNAN JOHNSON	8/27/09 1000
Relinquished By/Removed From SHANNAN JOHNSON	8/27/09 1000	Received By/Stored In FDX	
Relinquished By/Removed From Fed EX		Received By/Stored In M WATKINS	08/28/09 0930
Relinquished By/Removed From KELENSON	9/1/09 16:00	Received By/Stored In FED EX	
Relinquished By/Removed From Fed Ex	10-1-09 0957	Received By/Stored In V HERNANDEZ	10-1-09 0957

Sampler unavailable to retrieve samples from controlled storage. Shipper removes samples from storage location taking custody & packages for shipment to lab

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) {Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238}
(2) Strontium-89,90 – Total Sr; Isotopic Thorium {Thorium-232}; Isotopic Uranium {Uranium-233/234, Uranium-235, Uranium-238}; Isotopic Plutonium
(3) ICP Metals - 6010 (Full List) {Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc}; Mercury - 7471 - (CV)

Note: Transshipping required. Contact Joan Kessner for further instructions. Maintain freeze.

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-118-330

Page 1 of 1

Collector: Wendy West	Company Contact: JOAN KESSNER Telephone No.: 373-4688	Project Coordinator: KESSNER, JH	Price Code: 9~~5~~ N AB 6/1/09 Data Turnaround: 45 Days
Project Designation: Columbia River Component of the RCBRA - Tissues	Sampling Location: URSA-BASS3-CARCASS K1735 (7446)	SAF No.: RC-118	
Ice Chest No. AFS-04-014	Field Logbook No.: EL-1634 COA: BBSCRC6520	Method of Shipment: FED EX	
Shipped To: (EBERLINE SERVICES) LIONVILLE	Offsite Property No.: N/A	Bill of Lading/Air Bill No.: FDX# 797884937190	

POSSIBLE SAMPLE HAZARDS/REMARKS

N/A

Special Handling and/or Storage

FREEZE "MATRIX COMPOSED OF FISH"

0000047

Preservation	None	None	None	None	Cool 4C	Cool 4C	None
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	G/P
No. of Container(s)	1	~~1~~ 0	~~1~~ 0	~~1~~ 0	~~1~~ 0	~~1~~ 0	~~1~~ 0
Volume	1500g	100g	100g	10g	250g	120g	10g
SAMPLE ANALYSIS SDG# K1735	See item (1) in Special Instructions	Carbon-14	Tritium - H3	See item (2) in Special Instructions	See item (3) in Special Instructions	Pesticides - 8081	Technetium-99

Sample No.	Matrix *	Sample Date	Sample Time							
J19054	OTHER SOLID	8/25/09	1500	X	X	X	X	X	X	X

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Wendy West	8/25/09 1500	EAS LOCKED STORAGE Wendy West	8/25/09 1500
EAS LOCKED STORAGE	8/27/09 1022	SHANNAN JOHNSON	8/27/09 1022
SHANNAN JOHNSON	8/27/09 1020	FDX	
FED EX		M. F. LaChapelle	8/28/09 0920
Rex Kelenson KELENSON	9/30/09 1500	FEDEX	
FedEx	10/1/09 0957	Victor Hernandez	10/1/09 0957

SPECIAL INSTRUCTIONS

Sampler is unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab

(1) Gamma Spec - (Full List) [Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238]
(2) Strontium-89,90 -- Total Sr, Isotopic Thorium [Thorium-232], Isotopic Uranium [Uranium-233/234, Uranium-235, Uranium-238], Isotopic Plutonium
(3) ICP Metals - 6010 (Full List) [Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc], Mercury - 7471 - (CV)

Note: Transhipping required. Contact Joan Kessner for further instructions. Maintain freeze.

Matrix *

[illegible]

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH EE-011

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-118-331

Page 1 of 1

Collector: M. Edino

Company Contact: JOAN KESSNER

Telephone No.: 373-4684

Project Coordinator: KESSNER, JH

Price Code: ~~9K~~ N 9/24/09

Data Turnaround: 45 Days

Project Designation: Columbia River Component of the RCBRA - Tissue

Sampling Location: URSA-BASS4-CARCASS K1735 (7446)

SAF No.: RC-118

Ice Chest No.: AFS-04-014

Field Logbook No.: EL-1638

COA: BESCRC6520

Method of Shipment: FED EX

Shipped To: EBERLINE SERVICES / LIONVILLE

Offsite Property No.: N/A

Bill of Lading/Air Bill No.: FDX# 797884937190

POSSIBLE SAMPLE HAZARDS/REMARKS

N/A

Special Handling and/or Storage

FREEZE MATRIX COMPOSED OF FISH

Preservation	None	None	None	None	Cool 4C	Cool 4C	Frozen
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	G/P
No. of Container(s)	1	~~1~~ 0	~~1~~ 0	~~1~~ 0	~~1~~ 0	~~1~~ 0	~~1~~ 0
Volume	1500g	100g	100g	10g	250g	120g	10g
SAMPLE ANALYSIS 30G4 K1735	See item (1) in Special Instructions	Carbon-14	Tritium - H3	See item (2) in Special Instructions	See item (3) in Special Instructions	Pesticides - 8081	Technetium-99

R40000

Sample No.	Matrix *	Sample Date	Sample Time										
J19055	OTHER SOLID	8/25/09	1345	X	X	X	X	X	X	X			

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab.

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
M. Fidino	8/25/09 1345	EAS LOCKED STORAGE	8/25/09 1345
EAS LOCKED STORAGE	8/27/09 1000	SHANNAN JOHNSON	8/27/09 1000
SHANNAN JOHNSON	8/27/09 1000	FDX	
FED EX		R.E. WACANT	8/28/09 0930
R.E. Kecenson	9/30/09 16:00	FEDEX	
FedEx	10-1-09 0957	VICTOR HERNANDEZ	10-1-09 0957

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) {Americium-241, Antimony-125, Beryllium-7, Cerium-144, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238}

(2) Strontium-89,90 - Total Sr; Isotopic Thorium {Thorium-232}; Isotopic Uranium {Uranium-233/234, Uranium-235, Uranium-238}; Isotopic Thorium

(3) ICP Metals - 6010 (Full List) {Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc}; Mercury - 7471 - (CV)

Note: transshipping request. Contact Joan Kessner for further instructions. Maintain freeze

Matrix *

S = Soil
SE = Sediment
SO = Solid
SL = Sludge
W = Water
O = Oil
A = Air
DS = Drum Solids
DL = Drum Liquids
T = Tissue
WI = Wipe
L = Liquid
V = Vegetation
X = Other

LABORATORY SECTION — Received By — Title — Date/Time

FINAL SAMPLE DISPOSITION — Disposal Method — Disposed By — Date/Time

WCH-EE-011

Washington Closure Hanford	**CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST**	RC-118-332	Page 1 of 1

Collector Wendy West	Company Contact JOAN KESSNER	Telephone No. 375-4644	Project Coordinator KESSNER, JH
Project Designation Columbia River Component of the RCBRA - Tissues	Sampling Location URSA-BASS-CARCASS K1735 (7446)		SAF No. RC-118
Ice Chest No. AFS-04-014	Field Logbook No. EL-1638	COA BESCRC6520	Method of Shipment FED EX
Shipped To EBERLINE SERVICES, LIONVILLE	Offsite Property No. N/A		Bill of Lading/Air Bill No. FDX# 79788493/19U

Price Code 9JC N 4D6X09

Data Turnaround 45 Days

POSSIBLE SAMPLE HAZARDS/REMARKS

NA

Special Handling and/or Storage

FREEZE "MATRIX COMPOSED OF FISH"

Preservation	None	None	None	None	Cool 4C	Cool 4C	None
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	G/P
No. of Container(s)	1	[illegible]		[illegible]		[illegible]	
Volume	1500g	100g	100g	10g	250g	120g	10g

SAMPLE ANALYSIS .SD GA K1735

Sample No.	Matrix *	Sample Date	Sample Time	See item (1) in Special Instructions	Carbon-14	Tritium - H3	See item (2) in Special Instructions	See item (3) in Special Instructions	Pesticides - 8081	Technetium-99
J18056	OTHER SOLID	8/25/09	1430	X	X	X	X	X	X	X

CHAIN OF POSSESSION	Date/Time	Sign/Print Names	Date/Time
Relinquished By/Removed From Wendy West	1430 8/25/09	Received By/Stored In EAS LOCKED STORAGE, Wendy West	1430 8/25/09
Relinquished By/Removed From EAS LOCKED STORAGE	8/27/09 1000	Received By/Stored In SHANNAN JOHNSON	8/27/09 1000
Relinquished By/Removed From SHANNAN JOHNSON	8/27/09 1000	Received By/Stored In FDX	
Relinquished By/Removed From FED EX		Received By/Stored In [illegible]	8/28/09 0930
Relinquished By/Removed From Alec Kelenhrast ALEGRANON	9/10/09	Received By/Stored In FED EX	
Relinquished By/Removed From FEDEX	10-1-09 0957	Received By/Stored In VICTOR HERNANDEZ	10-1-09 0957

SPECIAL INSTRUCTIONS

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab.

(1) Gamma Spec - (Full List) (Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238)
(2) Strontium-89,90 – Total Sr, Isotopic Thorium (Thorium-232), Isotopic Uranium (Uranium-233/234, Uranium-235, Uranium-238); Isotopic Plutonium
(3) ICP Metals - 6010 (Full List) (Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc), Mercury - 7471 - (CV)

Note: Transshipping required. Contact Joan Kessner for further instructions. Maintain freeze

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-118-411

Page 1 of 1

Collector	Wendy Watt
Company Contact	JOAN KESSNER
Telephone No.	375-4688
Project Coordinator	KESSNER, JH
Price Code	~~9K~~ N
Data Turnaround	45 Days
Project Designation	Columbia River Component of the RCBRA - Tissues
Sampling Location	LWSA-BASS1-FILLET K1735 (7446)
SAF No.	RC-118
Ice Chest No.	AFS-04-014
Field Logbook No.	EL-1638
COA	BESCRC6530
Method of Shipment	FED EX
Shipped To	EBERLINE SERVICES LIONVILLE
Offsite Property No.	N/A
Bill of Lading/Air Bill No.	FDX#797884937190

POSSIBLE SAMPLE HAZARDS/REMARKS

N/A

Special Handling and/or Storage

FREEZE *MATRIX COMPOSED OF FISH*

0500050

Preservation	None	None	None	None	Cool 4C	Cool 4C	None
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	G/P
No. of Container(s)	1	1/0	[illegible]	1/0	1/0	[illegible]	1/0
Volume	1500g	100g	100g	10g	330g	120g	10g
SAMPLE ANALYSIS SDG# K1735	See item (1) in Special Instructions	Carbon-14	Tritium - H3	See item (2) in Special Instructions	See item (3) in Special Instructions	Pesticides 8081	Technetium-99

Sample No.	Matrix *	Sample Date	Sample Time							
J190L8	OTHER SOLID	8/25/09	1200	X	X	X	X	X	X	X

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Wendy Watt	8/25/09 1330	EAS LOCKED STORAGE 1 Wendy Watt	8/25/09 1330
EAS LOCKED STORAGE 1	8/27/09 1000	SHANNAN JOHNSON	8/27/09 1000
SHANNAN JOHNSON	8/27/09 1000	FDX	
FED EX		[illegible]	8/28/09 [illegible]
[illegible] KELLERSON	9/15/09 1600	FED EX	
FedEx	10-1-09 0957	Victor [illegible]	10-1-09 0957

SPECIAL INSTRUCTIONS

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location using custody & samples for shipment to lab.

(1) Gamma Spec - (Full List) (Americium-241, Antimony-125, Beryllium-7, Cerium-144, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238)

(2) Strontium-89,90 - Total Sr, Isotopic Thorium (Thorium-232), Isotopic Uranium (Uranium-233/234, Uranium-235, Uranium-238), Isotopic Plutonium

(3) ICP Metals - 6010 (Full list) (Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Uranium, Vanadium, Zinc), Mercury - 7471 - (CV)

Note: Transshipping required. Contact Joan Kessner for further instructions. Maintain freeze.

Matrix *

S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By / Title / Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method / Disposed By / Date/Time

WCH-EE-011

Washington Closure Hanford	**CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST**	RC-118-414	Page 1 of 1
Collector Windy West	Company Contact JOAN KESSNER Telephone No. 375-4688	Project Coordinator KESSNER, JJ	Price Code 9K N [illegible] Data Turnaround **45 Days**
Project Designation Columbia River Component of the RCBRA - Tissues	Sampling Location LWSA-BASS1-FILLET K1735 (7446)	SAF No. RC-118	
Ice Chest No. AFS-04-014	Field Logbook No. EL-1638 COA BESCRC6520	Method of Shipment FED EX	
Shipped To EBERLINE SERVICES [illegible]ONVILLE	Offsite Property No. N/A	Bill of Lading FDX# 797884937190	

POSSIBLE SAMPLE HAZARDS/REMARKS
N/A

Special Handling and/or Storage
FREEZE MATRIX COMPOSED OF FISH

E500000

Preservation	None	None	None	None	Cool 4C	Cool 4C	None
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	G/P
No. of Container(s)	1	1/0 [illegible] 1/0		1/0 [illegible] 1/0		1/0 [illegible] 1/0	
Volume	1500g	100g	100g	10g	250g	120g	10g
SAMPLE ANALYSIS SDG# K1735	See item (1) in Special Instructions	Carbon-14	Tritium - H3	See item (2) in Special Instructions	See item (3) in Special Instructions	Pesticides - 8081	Technetium-99

Sample No	Matrix *	Sample Date	Sample Time							
J190L7	OTHER SOLID	8/25/09	0950	X	X	X	X	X	X	X

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Windy West	8/25/09 0950	WAS LOCKED STORAGE #1 Windy West	8/25/09 0950
WAS LOCKED STORAGE #1	8/27/09 1000	SHANNAN JOHNSON	8/27/09 1000
SHANNAN JOHNSON	8/27/09 1000	FDX	
Fed Ex		KF [illegible]	8/28/09 0924
[illegible] KC LENSON	9/25/09 [illegible]	FEDEX	
FedEx	10-1-09 0957	Victor [illegible]	10-1-09 0958

SPECIAL INSTRUCTIONS

Sample unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab

(1) Gamma Spec - (Full List) (Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238)
(2) Strontium-89,90 -- Total Sr, Isotopic Thorium (Thorium-232); Isotopic Uranium (Uranium-233/234, Uranium-235, Uranium-238), Isotopic Plutonium
(3) ICP Metals - 6010 (Full List) (Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc); Mercury - 7471 - (CV)

Note: Transshipping required Contact Joan Kessner for further instructions. Maintain freeze.

Matrix *
[illegible]

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-118-415
Page 1 of 1

Collector: Wendy West
Company Contact: JOAN KESSNER
Telephone No.: 375-4688
Project Coordinator: KESSNER, JH
Price Code: 9K
Data Turnaround: 45 Days
Project Designation: Columbia River Component of the RCBRA - Tissue
Sampling Location: LWSA-BASS3-FILLET K1735 (746)
SAF No.: RC-118 AB 61709
Ice Chest No.: AR-04-014
Field Logbook No.: EL-1638
COA: RESCRC6520
Method of Shipment: FED EX
Shipped To: EBERLINE SERVICES LIONVILLE
Offsite Property No.: N/A
Bill of Lading/Air Bill No.: FDX# 797884937190

POSSIBLE SAMPLE HAZARDS/REMARKS
N/A

Special Handling and/or Storage
FREEZE "MATRIX COMPOSED OF FISH"

0000052

Preservation	None	None	None	None	Cool 4C	Cool 4C	None				
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	G/P				
No. of Container(s)	1	1/0 split/0		1/0 split/0		1/0 split/0					
Volume	1500g	100g	100g	10g	250g	120g	10g				
SAMPLE ANALYSIS SDG4 K1735	See item (1) in Special Instructions	Carbon-14	Tritium - H3	See item (2) in Special Instructions	See item (3) in Special Instructions	Pesticides 8081	Technetium-99				

Sample No.	Matrix *	Sample Date	Sample Time	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]			
J190L8	OTHER SOLID	8/25/09	1030	X	X	X	X	X	X	X			

Sample unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab

CHAIN OF POSSESSION

Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Wendy West	8/25/09 1150	EAS LOCKED STORAGE Wendy West	8/25/09 1150
EAS LOCKED STORAGE	8/27/09 1000	SHANNAN JOHNSON	8/27/09 1000
SHANNAN JOHNSON	8/27/09 1000	FDX	
FED EX		RF Washington	08/28/09 0930
Eberline	9/4/09 1600	FED EX	
	10-1-09 0957	Victor Hernandez	10-1-09 0957

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) {Americium-241, Antimony-125, Beryllium-7, Cerium-144, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238}
(2) Strontium-89,90 – Total Sr; Isotopic Thorium {Thorium-232}, Isotopic Uranium {Uranium-233/234, Uranium-235, Uranium-238}; Isotopic Plutonium
(3) ICP Metals - 6010 (Full List) {Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc}; Mercury - 7471 - (CV)

Note: Transshipping required. Contact Joan Kessner for further instructions. Maintain Freeze.

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-110-416	Page 1 of 1

Collector: Wendy Wait

Company Contact: JOAN KESSNER

Telephone No.: 375-4688

Project Coordinator: KESSNER, JH

Price Code: ~~9K~~ U 4/06/7/09

Data Turnaround: 45 Days

Project Designation: Columbia River Component of the RCBRA - Tissues

Sampling Location: LWSA-BASS4-FILLET K1735 (7446)

SAF No.: RC-118

Ice Chest No.: AFS-04-014

Field Logbook No.: EL-1638

COA: HBSCRC6520

Method of Shipment: FED EX

Shipped To: EBERLINE SERVICES LIONVILLE

Offsite Property No.: N/A

Bill of Lading/Air Bill No.: FDX#797884937190

POSSIBLE SAMPLE HAZARDS/REMARKS

N/A

Special Handling and/or Storage

FREEZE "MATRIX COMPOSED OF FISH"

000053

SAMPLE ANALYSIS

SDG 4

K1735

Preservation	None	None	None	None	Cool 4C	Cool 4C	None
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	G/P
No. of Container(s)	1	~~1~~ 0	~~1~~ 0	~~1~~ 0	~~1~~ 0	~~1~~ 0	~~1~~ 0
Volume	1500g	100g	100g	10g	250g	120g	10g
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Tritium - H3	See item (2) in Special Instructions	See item (3) in Special Instructions	Pesticides - 8081	Technetium-99

Sample No.	Matrix *	Sample Date	Sample Time	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
J190L9	OTHER SOLID	8/24/09	1530	X	X	X	X	X	X	X

[illegible]

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Wendy Wait	1530 8/24/09	EAS LOCKED STORAGE4 Wendy Wait	1530 8/24/09
EAS LOCKED STORAGE4	8/27/09 1000	SHANNAN JOHNSON	8/27/09 1000
SHANNAN JOHNSON	8/27/09 1000	FDX	
FED EX			8/26/09 1920
KELEMSON	9/30/09 1100	FED EX	
FedEx	10-1-09 0957	Victor Hernandez	10-1-09 0957

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) [Americium-241, Antimony-125, Beryllium-7, Cerium-144, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238]

(2) Strontium-89,90 -- Total Sr; Isotopic Thorium {Thorium-232}, Isotopic Uranium {Uranium-233/234, Uranium-235, Uranium-238}; Isotopic Plutonium

(3) ICP Metals - 6010 (Full List) [Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc], Mercury - 7471 - (CV)

NOTE: TRANSHIPPING REQUIRED. CONTACT JOAN KESSNER FOR FURTHER INSTRUCTIONS. MAINTAIN FREEZE.

Matrix *

S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-118-417	Page 1 of 1

Collector Wendy West	Company Contact JOAN KESSNER Telephone No. 375-4688	Project Coordinator KESSNER, JH	Price Code 9K-N Data Turnaround 45 Days
Project Designation Columbia River Component of the RCBRA - Tissues	Sampling Location LWSA-BASS3-FILLET K1735 (7440)	SAF No. RC-118	
Ice Chest No. AFS-04-014	Field Logbook No. EL-1638 COA BESCRCA320	Method of Shipment FED EX	
Shipped To EBERLINE SERVICES/LIONVILLE	Offsite Property No. N/A	Bill of Lading/Air Bill No. FDX# 797884937190	

POSSIBLE SAMPLE HAZARDS/REMARKS
N/A

Special Handling and/or Storage
FREEZE "MATRIX COMPOSED OF FISH"

SAMPLE ANALYSIS

SDG#
K1735

Preservation	None	None	None	None	Cool 4C	Cool 4C	None
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	G/P
No. of Container(s)	1	~~1~~ 0	other	~~1~~ 0	~~1~~ other ~~1~~ 0	~~1~~ other	~~1~~ 0
Volume	1500g	100g	100g	10g	250g	120g	10g
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Tritium - H3	See item (2) in Special Instructions	See item (3) in Special Instructions	Pesticides - 8081	Technetium-99

Sample No.	Matrix *	Sample Date	Sample Time										
J190M0	OTHER SOLID	8/24/09	1615	X	X	X	X	X	X	X			

Sampler unavailable to remove samples for controlled storage. Shipper removed samples from storage location using custody [illegible]

CHAIN OF POSSESSION	Date/Time	Sign/Print Names	Date/Time
Relinquished By/Removed From Wendy West	1615 8/24/09	Received By/Stored In EAS LOCKED STORAGE Wendy West	1615 8/24/09
Relinquished By/Removed From EAS LOCKED STORAGE SJ	9/27/09 1000	Received By/Stored In SHANNAN JOHNSON	9/27/09 1000
Relinquished By/Removed From SHANNAN JOHNSON	9/27/09 1000	Received By/Stored In FDX	
Relinquished By/Removed From FED EX		Received By/Stored In M.F. Watchungmai	09/28/09 0929
Relinquished By/Removed From KELENSON	9/28/09 16:00	Received By/Stored In FED EX	
Relinquished By/Removed From Fed Ex	10-1-09 0957	Received By/Stored In WALTER ALEXANDER	10-1-09 0957

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) (Americium-241, Antimony-125, Beryllium-7, Cerium-144, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238)
(2) Strontium-89,90 - Total Sr; Isotopic Thorium (Thorium-232); Isotopic Uranium (Uranium-233/234, Uranium-235, Uranium-238); Isotopic Plutonium
(3) ICP Metals - 6010 (Full List) (Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc); Mercury - 7471 - (CV)

Note: Transshipping required. Contact Joan Kessner for further instructions. Maintain Freeze.

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-118-433	Page 1 of 1

Collector Wendy West	Company Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator KESSNER, JH
Project Designation Columbia River Component of the RCBRA - Toxics	Sampling Location LWSA-BASS1-CARCASS K1735 (7446)		SAF No. RC-118
Ice Chest No. AES-04-014	Field Logbook No. EL-1618	COA BESCRC6520	Method of Shipment FED EX
Shipped To (LIBERTY SERVICES) / LIONVILLE	Offsite Property No. N/A		Bill of Lading/Air Bill No. FDX# 797884937190

Price Code 9K
1/2 10/1/09

Data Turnaround
45 Days

POSSIBLE SAMPLE HAZARDS/REMARKS
N/A

Special Handling and/or Storage
FREEZE. MATRIX COMPOSED OF FISH

SS0000

Preservation	None	None	None	None	Cool 4C	Cool 4C	None
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	G/P
No. of Container(s)	1	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Volume	1300g	100g	100g	10g	230g	120g	10g
SAMPLE ANALYSIS 9064 K1735	See item (1) in Special Instructions	Carbon-14	Tritium - H3	See item (2) in Special Instructions	See item (3) in Special Instructions	Pesticides - 8081	Technetium-99

Sample No.	Matrix *	Sample Date	Sample Time							
J190N8	OTHER SOLID	8/25/09	1315	X	X	X	X	X	✓	X

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Wendy West	8/25/09 1315	EAS LOCKED STORAGE Wendy West	8/25/09 1315
EAS LOCKED STORAGE	8/27/09 1000	SHANNAN JOHNSON	8/27/09 1000
SHANNAN JOHNSON	8/27/09 1000	FDX	
FED EX		[illegible]	8/28/09 0925
[illegible] KELENSON	9/30/09 1600	FED EX	
FED EX	10-1-09 0957	VICTOR [illegible]	0957

SPECIAL INSTRUCTIONS

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location using custody of samples for shipment to lab.

(1) Gamma Spec - (Full List) (Americium-241, Antimony-125, Beryllium-7, Cerium-144, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238)
(2) Strontium-89,90 - Total Sr; Isotopic Thorium (Thorium-232); Isotopic Uranium (Uranium-233/234, Uranium-235, Uranium-238); Isotopic Plutonium
(3) ICP Metals - 6010 (Full List) (Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc), Mercury - 7471 - (CV)

Note: Transshipping required. Contact Joan Kessner for further instructions. Maintain freeze.

Matrix *
[illegible]

LABORATORY SECTION	Received By — Title — Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method — Disposed By — Date/Time

WCH-EE-011

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-110-434 | Page 1 of 1

Collector Wendy West	Company Contact JOAN KESSNER	Telephone No. 373-4688	Project Coordinator KESSNER, JH
Project Designation Columbia River Component of the RCBRA - Tissues	Sampling Location LWSA-BASS2-CARCASS K1735 (7444)		SAF No. RC-114
Ice Chest No. AFS-04-014	Field Logbook No. EL-1638	COA BESCRC6520	Method of Shipment FED EX
Shipped To EBERLINE SERVICES [illegible]	Offsite Property No. N/A		Bill of Lading/Airbill No. FDX# 797884937190

Price Code 9K N 11/04/09

Data Turnaround 45 Days

POSSIBLE SAMPLE HAZARDS/REMARKS
NA

Special Handling and/or Storage
FREEZE "MATRIX COMPOSED OF FISH"

Preservation	None	None	None	None	Cool 4C	Cool 4C	None
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	G/P
No. of Container(s)	1	1/0	1/0	1/0	1/0	1/0	1/0
Volume	1500g	100g	100g	10g	250g	120g	10g
SAMPLE ANALYSIS SDG# K1735	See item (1) in Special Instructions	Carbon-14	Tritium - H3	See item (2) in Special Instructions	See item (3) in Special Instructions	Pesticides - 8081	[illegible]

Sample No.	Matrix *	Sample Date	Sample Time							
J190N7	OTHER SOLID	8/25/09	1500	X	X	X	X	X	X	X

CHAIN OF POSSESSION	Date/Time	Sign/Print Names Received By/Stored In	Date/Time
Relinquished By/Removed From Wendy West	1500 8/25/09	Wendy West EAS LOCKED STORAGE	1500 8/25/09
Relinquished By/Removed From EAS LOCKED STORAGE	9/21/09 1000	SHANNAN JOHNSON	9/21/09 1000
Relinquished By/Removed From SHANNAN JOHNSON	9/21/09 1000	FDX	
Relinquished By/Removed From Fed Ex		R F [illegible]	9/28/09 0924
Relinquished By/Removed From K. Eleason KELEASON 9/30/09	16:00	FED EX	
Relinquished By/Removed From FedEx	10-1-09 0957	Vilma Hernandez	10-1-09 0957

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) [Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238]
(2) Strontium-89,90 – Total Sr; Isotopic Thorium [Thorium-232]; Isotopic Uranium [Uranium-233/234, Uranium-235, Uranium-238]; Isotopic Plutonium
(3) ICP Metals - 6010 (Full List) [Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc]; Mercury - 7471 - (CV)

Note: Transhipping required. Contact Joan Kessner for further instructions
Maintain Freeze

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH EE-011

Washington Closure Hanford	**CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST**	RC-118-435	Page 1 of 1
Collector Wendy West	Company Contact JOAN KESSNER Telephone No. 373-4633	Project Coordinator KESSNER, JH	Price Code ~~9K~~ N
Project Designation Columbia River Component of the RCBRA - Tissues	Sampling Location LWSA-BASS3-CARCASS K1735 (7446)	SAF No. RC-118	JD 061709 Data Turnaround 45 Days
Ice Chest No. AFS-04-014	Field Logbook No. EL-1638 COA 8ESCRCA520	Method of Shipment FED EX	
Shipped To EBERLINE SERVICES LIONVILLE	Offsite Property No. N/A	Bill of Lading/Air Bill No. FDX#797884937190	

POSSIBLE SAMPLE HAZARDS/REMARKS

N/A

Special Handling and/or Storage

FREEZE "MATRIX COMPOSED OF FISH"

SAMPLE ANALYSIS

SDG 8

K1735

000057

Preservation	None	None	None	None	Cool 4C	Cool 4C	None
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	G/P
No. of Container(s)	1	1/0	1/0	1/0	1/0	1/0	1/0
Volume	1500g	100g	100g	10g	250g	120g	10g
Sample Analysis	See item (1) in Special Instructions	Carbon-14	Tritium - H3	See item (2) in Special Instructions	See item (3) in Special Instructions	Pesticides - 8081	Technetium-99

Sample No.	Matrix *	Sample Date	Sample Time							
J190N8	OTHER SOLID	8/25/09	1045	X	X	X	X	X	X	X

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Wendy West	8/25/09 1045	EAS LOCKED STORAGE	8/25/09 1045
EAS LOCKED STORAGE	8/27/09 1000	SHANNAN JOHNSON	8/27/09 1000
SHANNAN JOHNSON	8/27/09 1000	FDX	
FED EX		M. F. WATANABE	08/28/09 1120
WEEKENDER	9/30/09 16:00	FED EX	
Fed Ex	10-1-09 0957	VICKIE HERNANDEZ	10-1-09 0957

SPECIAL INSTRUCTIONS

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab.

(1) Gamma Spec - (Full List) {Americium-241, Antimony-125, Beryllium-7, Cerium-144, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238}

(2) Strontium-89,90 - Total Sr, Isotopic Thorium {Thorium-232}, Isotopic Uranium {Uranium-233/234, Uranium-235, Uranium-238}, Isotopic Plutonium

(3) ICP Metals - 6010 (Full List) {Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc}, Mercury - 7471 - (CV)

Note: Transshipping required. Contact Joan Kessner for further instructions. Maintain freeze.

Matrix *

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Washington Closure Hanford	**CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST**	RC-118-436	Page 1 of 1
Collector Wendy West	Company Contact JOAN KESSNER	Telephone No. 375-4689	Project Coordinator KESSNER, JH
Project Designation Columbia River Component of the RCBRA - Tissues	Sampling Location LWSA-BASS4-CARCASS K1735 (7/46)	SAF No. RC-118	Price Code ~~9K~~ U AUG 17 09 — Data Turnaround 45 Days
Ice Chest No. AFS-04-014	Field Logbook No. EL-1638	COA BESCRC6520	Method of Shipment FED EX
Shipped To PIERLINE SERVICES LIONVILLE	Offsite Property No. N/A		Bill of Lading/Air Bill No. FDX# 797884937190

POSSIBLE SAMPLE HAZARDS/REMARKS
N/A

Special Handling and/or Storage
FREEZE "MATRIX COMPOSED OF FISH"

850000

SAMPLE ANALYSIS
9564
K1735

Preservation				None	None	None	None	Cool 4C	Cool 4C	None
Type of Container				G/P	G/P	G/P	G/P	G/P	aG	G/P
No. of Container(s)				1	1	~~1~~ 0	~~1~~ 0	~~1~~ 0	~~1~~ 0	~~1~~ 0
Volume				1500g	100g	100g	10g	250g	120g	10g
SAMPLE ANALYSIS				See item (1) in Special Instructions	Carbon-14	Tritium - H3	See item (2) in Special Instructions	See item (3) in Special Instructions	Pesticides - 8081	Technetium-99
Sample No.	Matrix *	Sample Date	Sample Time							
J190N9	OTHER SOLID	8/24/09	1600	X	X	X	X	X	X	X

CHAIN OF POSSESSION	Date/Time	Sign/Print Names	Date/Time
Relinquished By/Removed From Wendy West	8/24/09 1600	Received By/Stored In FAS LOCKED STORAGE 4 Wendy West	8/24/09 1600
Relinquished By/Removed From FAS LOCKED STORAGE 4	8/27/09 1000	Received By/Stored In SHANNAN JOHNSON	8/27/09 1000
Relinquished By/Removed From SHANNAN JOHNSON	8/27/09 1000	Received By/Stored In FDX	
Relinquished By/Removed From FED EX		Received By/Stored In F.E. MATAW	08/28/09 0930
Relinquished By/Removed From [illegible] KELLENSON	9/30/09 1630	Received By/Stored In FEDEX	
Relinquished By/Removed From FEDEX	10-1-09 0957	Received By/Stored In Victor Hernandez	10-1-09 0957

SPECIAL INSTRUCTIONS

Samples unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody [illegible]

(1) Gamma Spec - (Full List) {Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238}
(2) Strontium-89,90 - Total Sr; Isotopic Thorium (Thorium-232); Isotopic Uranium (Uranium-233/234, Uranium-235, Uranium-238); Isotopic Plutonium
(3) ICP Metals - 6010 (Full List) {Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc}; Mercury - 7471 - (CV)

Note: Transshipping required. Contact Joan Kessner for further instructions. Maintain freeze

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-118-437 | Page 1 of 1

Collector: Wendy West

Company Contact: JOAN KESSNER | Telephone No.: 375-4648

Project Coordinator: KESSNER, JH

Price Code: 9K N AH 9/17/09

Data Turnaround: 45 Days

Project Designation: Columbia River Component of the RCBRA - Tissues

Sampling Location: LWSA-BASSS-CARCASS K1735 (7446)

SAF No.: RC-118

Ice Chest No.: AFS-04-014

Field Logbook No.: EL-1618

COA: BESCRC6530

Method of Shipment: FED EX

Shipped To: (EBERLINE SERVICES) LIONVILLE

Offsite Property No.: N/A

Bill of Lading/Air Bill No.: FDX# 797884937190

POSSIBLE SAMPLE HAZARDS/REMARKS
N/A

Special Handling and/or Storage
FREEZE "MATRIX COMPOSED OF FISH"

650000

Preservation	None	None	None	None	Cool 4C	Cool 4C	None
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	G/P
No. of Container(s)	1	1	1	1	1	1	1
Volume	1300g	100g	100g	10g	250g	120g	10g
SAMPLE ANALYSIS SDG 4 K1735	See item (1) in Special Instructions	Carbon-14	Tritium - H3	See item (2) in Special Instructions	See item (3) in Special Instructions	Pesticides - 8081	Technetium-99

Sample No.	Matrix *	Sample Date	Sample Time							
J190P0	OTHER SOLID	8/24/09	1630	X	X	X	X	X	X	X

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Wendy West	1630 8/24/09	EAS LOCKED STORAGE 4 Wendy West	1630 8/24/09
EAS LOCKED STORAGE 4	8/27/09 1020	SHANNAN JOHNSON	8/27/09 1020
SHANNAN JOHNSON	8/27/09 1200	FDX	
FED EX		R.F. [illegible]	08/28/09 0920
[illegible]	9/30/09 1600	FED EX	
Fed Ex	10/1/09 0857	[illegible] Hernandez	10/1/09 0857

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody. [illegible] to shipment to lab.

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) [Americium-241, Antimony-125, Beryllium-7, Cerium-144, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238];
(2) Strontium-89,90 - Total Sr; Isotopic Thorium (Thorium-232); Isotopic Uranium (Uranium-233/234, Uranium-235, Uranium-238); Isotopic Plutonium
(3) ICP Metals - 6010 (Full List) [Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc]; Mercury - 7471 - (CV)

Note: Transshipping required. Contact Joan Kessner for further instructions. Maintain freeze.

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION | Received By | Title | Date/Time

FINAL SAMPLE DISPOSITION | Disposal Method | Disposed By | Date/Time

WCH-EE-011

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-118-762

Page 1 of 1

Collector
M. F. Aino

Company Contact
JOAN KESSNER

Telephone No.
375-4688

Project Coordinator
KESSNER, JH

Price Code 9K
N

Data Turnaround
45 Days

Project Designation
Columbia River Component of the RCBRA - Tissues

Sampling Location
STURGEON 16 LIVER
K1735
(7448)

SAF No.
RC-118

NA 3/1009

Ice Chest No. AFS-04-014

Field Logbook No.
EL-1638

COA
BESCRC6510

Method of Shipment
FED EX

Bill of Lading FDX# 797884937190

Shipped To
(EBERLINE SERVICES) LIONVILLE

Offsite Property No.
N/A

POSSIBLE SAMPLE HAZARDS/REMARKS
N/A

69.69 g

Special Handling and/or Storage
FREEZE "MATRIX COMPOSED OF FISH"

K90000

Preservation	None	None	None	None	None	Cool 4C	Cool 4C				
Type of Container	G/P	G/P	G	G/P	G/P	G/P	aG				
No. of Container(s)	1	0	0	0	0	0	0				
Volume	750g	5g	25g	5g	5g	15g	50g				
SAMPLE ANALYSIS SMGE K1735	See item (1) in Special Instructions	Carbon-14	Tritium - H3	See item (2) in Special Instructions	Technetium-99	See item (3) in Special Instructions	[illegible]				

Sample No.	Matrix *	Sample Date	Sample Time										
J19400	OTHER SOLID	8-17-09	1300	X	X	X	X	X	X	X			

CHAIN OF POSSESSION

Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
M. F. Aino	8-17-09 1500	EAS LOCKED STORAGE 8-17-09	8-17-09 1500
EAS LOCKED STORAGE	8-21-09 1000	SHANNAN JOHNSON	8-21-09 1000
SHANNAN JOHNSON	8-27-09 1000	FDX	
FED EX		R F MATTAN	08/28/09 0920
KELEHON	9/3/09 1630	FED EX	
FedEx	10/1/09 0957	VICTOR MANUEL	10/1/09 0957

SPECIAL INSTRUCTIONS
TRANSSHIPPING REQUIRED. Perform gamma spec then contact Joan Kessner for additional analyses. Maintain FREEZE cooling as practical.

(1) Gamma Spec - (Full List) (Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238)
(2) Strontium-89,90 - Total Sr, Isotopic Thorium, Isotopic Uranium, Isotopic Plutonium
(3) ICP Metals - 6010 (Full List) (Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc), Mercury - 7471 - (CV)

[illegible]
Sample unavailable to remove samples from controlled storage. Sample removed samples from storage location (chain of custody)

Matrix *
S = Soil
SE = Sediment
SO = Solid
SL = Sludge
W = Water
O = Oil
A = Air
DS = Drum Solids
DL = Drum Liquids
T = Tissue
WI = Wipe
L = Liquid
V = Vegetation
X = Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE 011

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-118-763 | Page 1 of 1

Collector M.F. dino	Company Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator KESSNER, JK
Project Designation Columbia River Component of the RCBRA - Tissues	Sampling Location STURGEON 16 KIDNEY	K1735 (7448)	SAF No. RC-118
Ice Chest No. AFS-04-014	Field Logbook No. EL-1638	COA BBSCRC6520	Method of Shipment FED EX
	Offsite Property No. N/A		Bill of Lading/Air Bill No. FDX# 797884937190

Price Code 9N

[illegible] 31009

Data Turnaround 45 Days

Shipped To
EBERLINE SERVICES LIONVILLE

POSSIBLE SAMPLE HAZARDS/REMARKS
N/A

39.31g

Special Handling and/or Storage
FREEZE "MATRIX COMPOSED OF FISH"

000061

Preservation	None	None	None	None	None	Cool 4C	Cool 4C
Type of Container	G/P	G/P	G	G/P	G/P	G/P	aG
No. of Container(s)	1	0	0	0	0	0	0
Volume	750g	2g	25g	5g	5g	15g	50g
SAMPLE ANALYSIS SDG # K1735	See item (1) in Special Instructions	Carbon-14	Tritium - H3	See item (2) in Special Instructions	Technetium-99	See item (3) in Special Instructions	Pesticides - 8081

Sample No.	Matrix *	Sample Date	Sample Time							
J19401	OTHER SOLID	8-17-09	1415	X	X	X	X	X	X	X

CHAIN OF POSSESSION

Sign/Print Names

Relinquished By/Removed From M.F. dino	Date/Time 8-17-09 1415	Received By/Stored In EAS LOCKED STORAGE #4 8-17-09	Date/Time 8-17-09 1415
Relinquished By/Removed From EAS LOCKED STORAGE #4	Date/Time 8/27/09 1000	Received By/Stored In SHANNAN JOHNSON	Date/Time 8-27-09 1000
Relinquished By/Removed From SHANNAN JOHNSON	Date/Time 8-31-09 1000	Received By/Stored In FDX	Date/Time
Relinquished By/Removed From FED EX	Date/Time	Received By/Stored In R F UATAW	Date/Time 09/18/09 0920
Relinquished By/Removed From KCT-C-1804	Date/Time 9/30/09 1600	Received By/Stored In FED EX	Date/Time
Relinquished By/Removed From	Date/Time 10/1/09 0957	Received By/Stored In VICTOR HERNANDEZ	Date/Time 10-1-09 0957

SPECIAL INSTRUCTIONS
TRANSSHIPPING REQUIRED. Perform gamma spec then contact Joan Kessner for additional analyses. Maintain FREEZE cooling as practical.

(1) Gamma Spec - (Full List) {Americium-241, Antimony-125, Beryllium-7, Cerium-144, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238}
(2) Strontium-89,90 - Total Sr; Isotopic Thorium, Isotopic Uranium, Isotopic Plutonium
(3) ICP Metals - 6010 (Full List) {Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc}. Mercury - 7471 - {CV}

[illegible]
Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location using SAS-[illegible]

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

Title

Date/Time

LABORATORY SECTION	Received By	Title Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By Date/Time

WCH-EE-011

Washington Closure Hanford	**CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST**		RC-118-760	Page 1 of 1
Collector M. F. Aine	Company Contact JOAN KESSNER	Telephone No. [illegible]	Project Coordinator KESSNER, JH	Price Code 9K N
Project Designation Columbia River Component of the RCBRA - Tissues	Sampling Location STURGEON 16 FILLET		SAF No. RC-118	Data Turnaround 45 Days
Ice Chest No. CCA-003	Field Logbook No. EL-1638	COA BESCKC6550	Method of Shipment FED EX 7972 8495	
Shipped To EBERLINE SERVICES (LIONVILLE)	Offsite Property No. N/A		Bill of Lading/Air Bill No. 7972 8495 0808	

POSSIBLE SAMPLE HAZARDS/REMARKS

N/A

Special Handling and/or Storage

FREEZE MATRIX COMPOSED OF FISH

0000062

Preservation	[illegible]	[illegible]	[illegible]	[illegible]	Cool 4C	Cool 4C	[illegible]		
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	G/P		
No. of Container(s)	1	1	1	1	1	1	1		
Volume	1500g	100g	300g	10g	250g	120g	10g		
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Tritium - H3	See item (2) in Special Instructions	See item (3) in Special Instructions	[illegible] - 8082	Technetium-99		

Sample No.	Matrix *	Sample Date	Sample Time									
J19453	OTHER SOLID	8-17-09	1435					X	X			

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
M. F. Aine	8-17-09 1435	EAS LOCKED STORAGE 8-17-09	8-17-09 1435
EAS LOCKED STORAGE	8/21/09 950	SHANNAN JOHNSON	8/21/09 950
SHANNAN JOHNSON	8/21/09 950	FDX	
FedEx	8-28-09 0954		8-28-09 0954

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) [Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238]
(2) Strontium-89/90 - Total Sr; Isotopic Thorium (Thorium-232); Isotopic Uranium (Uranium-233/234, Uranium-235, Uranium-238); Isotopic Plutonium
(3) ICP Metals - 6010 (Full List) [Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Titanium, Vanadium, Zinc]; Mercury - 7471 - (CV)

Sampler unavailable to retrieve samples from controlled storage. Shipper removed samples from storage location using [illegible]

Matrix *

[illegible]

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-051

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-118-761

Page 1 of 1

Collector M F.dine	Company Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator KESSNER, JH
Project Designation Columbia River Component of the RCBRA - Tissues	Sampling Location STURGEON 16 CARCASS		SAF No. RC-LEE
Ice Chest No. 09-003	Field Logbook No. EL-1638	COA BESCRC6520	Method of Shipment FED EX ~~7978 8495~~
Shipped To EBERLINE SERVICES (LIONSVILLE)	Offsite Property No. N/A		Bill of Lading/Air Bill No. 7978 8495 0808

Price Code 9K N ~~9~~ 8/2009

Data Turnaround
45 Days

POSSIBLE SAMPLE HAZARDS/REMARKS
N/A

Special Handling and/or Storage
FREEZE. MATRIX COMPOSED OF FISH

E900063

Preservation	None	None	None	None	Cool 4C	Cool 4C	None			
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	G/P			
No. of Container(s)	1	1	1	1	1	1	1			
Volume	1500g	150g	100g	10g	250g	100g	10g			
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Tritium - H3	See item (2) in Special Instructions	See item (3) in Special Instructions	[illegible] - 6041	Technetium-99			

Sample No.	Matrix *	Sample Date	Sample Time										
J19150	OTHER SOLID	8-17-09	1500					X	X				

CHAIN OF POSSESSION Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
M. F. Dine	8-17-09 1500	EAS LOCKED STORAGE	8-17-09 1500
EAS LOCKED STORAGE	8/27/09 952	SHANNAN JOHNSON	8/27/09 952
SHANNAN JOHNSON	8/27/09 955	FDX	
FDX	8/28/09 0954	[illegible]	8-28-09 0954

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) (Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238)
(2) Strontium-89,90 -- Total Sr, Isotopic Thorium (Thorium-232), Isotopic Uranium (Uranium-233/234, Uranium-235, Uranium-238), Isotopic Plutonium
(3) ICP Metals - 6010 (Full List) (Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc); Mercury - 7471 - (CV)

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody, [illegible] to be shipped to lab.

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-031

Appendix 5

Data Validation Supporting Documentation

INORGANIC ANALYSIS DATA VALIDATION CHECKLIST

VALIDATION LEVEL	A	B	[✓ C]	D	E

PROJECT:	KCBRA	DATA PACKAGE	K1735
VALIDATOR: ECR	LAB: LLI		DATE: 1/10/09
		SDG:	K1735

ANALYSES PERFORMED

[✓ SW-846/ICP]	SW-846/GFAA	[✓ SW-846/Hg]	SW 846 Cyanide		

SAMPLES/MATRIX

J19458 J19459 J19029 J19030 J19031 J19032 J19035

J19052 J19053 J19054 J19055 J19056 J19066 J19067

J19068 J19069 J19045 J19046 J19047 J19048 J19049

J19080 J19460 J19461

Solid

1. DATA PACKAGE COMPLETENESS AND CASE NARRATIVE

Technical verification documentation present? .... Yes [✓ No] N/A

Comments: ____________________

2. INSTRUMENT PERFORMANCE AND CALIBRATIONS (Levels D and E)

Initial calibrations performed on all instruments? .... Yes No [✓ N/A]

Initial calibrations acceptable? .... Yes No [✓ N/A]

ICP interference checks acceptable? .... Yes No [✓ N/A]

ICV and CCV checks performed on all instruments? .... Yes No [✓ N/A]

ICV and CCV checks acceptable? .... Yes No [✓ N/A]

Standards traceable? .... Yes No [✓ N/A]

Standards expired? .... Yes No [✓ N/A]

Calculation check acceptable? .... Yes No [✓ N/A]

Comments: ____________________

INORGANIC ANALYSIS DATA VALIDATION CHECKLIST

3. BLANKS (Levels B, C, D, and E)

ICB and CCB checks performed for all applicable analyses? (Levels D, E)........ Yes No [✓ N/A]

ICB and CCB results acceptable? (Levels D, E)........ Yes No [✓ N/A]

Laboratory blanks analyzed?........ [✓ Yes] No N/A

Laboratory blank results acceptable?........ Yes [✓ No] N/A

Field blanks analyzed? (Levels C, D, E)........ Yes [✓ No] N/A

Field blank results acceptable? (Levels C, D, E)........ Yes No [✓ N/A]

Transcription/calculation errors? (Levels D, E)........ Yes No [✓ N/A]

Comments: Lithium - ~~EB~~ - UJ all

tin 54 30, 46, 60 UG - UT no FB

59 + 54

4. ACCURACY (Levels C, D, and E)

MS/MSD samples analyzed?........ [✓ Yes] No N/A

MS/MSD results acceptable?........ Yes [✓ No] N/A

MS/MSD standards NIST traceable? (Levels D, E)........ Yes No [✓ N/A]

MS/MSD standards expired? (Levels D, E)........ Yes No [✓ N/A]

LCS/BSS samples analyzed?........ [✓ Yes] No N/A

LCS/BSS results acceptable?........ Yes [✓ No] N/A

Standards traceable? (Levels D, E)........ Yes No [✓ N/A]

Standards expired? (Levels D, E)........ Yes No [✓ N/A]

Transcription/calculation errors? (Levels D, E)........ Yes No [✓ N/A]

Performance audit sample(s) analyzed?........ Yes [✓ No] N/A

Performance audit sample results acceptable?........ Yes No [✓ N/A]

Comments: Calcium - 02 + 27 - J all no PAS

MS < Iron - 02 - J detects, potassium - 27 - J detects

~~Potass~~ - 02 + 27 - J all 1/25

LCS - Antimony 27 - J detects (non)

Silicon - 02 - J all

INORGANIC ANALYSIS DATA VALIDATION CHECKLIST

5. PRECISION (Levels C, D, and E)

Duplicate RPD values acceptable? .... Yes [✓ No] N/A

Duplicate results acceptable? .... Yes [✓ No] N/A

MS/MSD standards NIST traceable? (Levels D, E) .... Yes No [✓ N/A]

MS/MSD standards expired? (Levels D, E) .... Yes No [✓ N/A]

Field duplicate RPD values acceptable? .... Yes No [✓ N/A]

Field split RPD values acceptable? .... Yes No [✓ N/A]

Transcription/calculation errors? (Levels D, E) .... Yes No [✓ N/A]

Comments: dup [illegible]
Calcium - 02
Strontium - 02
Magnesium - 27
Zinc - 97
Chromium 92
J all

6. ICP QUALITY CONTROL (Levels D and E)

ICP serial dilution samples analyzed? .... Yes No [✓ N/A]

ICP serial dilution %D values acceptable? .... Yes No [✓ N/A]

ICP post digestion spike required? .... Yes No [✓ N/A]

ICP post digestion spike values acceptable? .... Yes No [✓ N/A]

Standards traceable? .... Yes No [✓ N/A]

Standards expired? .... Yes No [✓ N/A]

Transcription/calculation errors? .... Yes No [✓ N/A]

Comments:

INORGANIC ANALYSIS DATA VALIDATION CHECKLIST

7. FURNACE AA QUALITY CONTROL (Levels D and E)

Duplicate injections performed as required? .... Yes No [✓ N/A]

Duplicate injection %RSD values acceptable? .... Yes No [✓ N/A]

Analytical spikes performed as required? .... Yes No [✓ N/A]

Analytical spike recoveries acceptable? .... Yes No [✓ N/A]

Standards traceable? .... Yes No [✓ N/A]

Standards expired? .... Yes No [✓ N/A]

MSA performed as required? .... Yes No [✓ N/A]

MSA results acceptable? .... Yes No [✓ N/A]

Transcription/calculation errors? .... Yes No [✓ N/A]

Comments:

8. HOLDING TIMES (all levels)

Samples properly preserved? .... [✓ Yes] No N/A

Sample holding times acceptable? .... ~~Yes~~ [✓ No] N/A

Comments:

Hg ~ <2x J all (except 458 + 459)

INORGANIC ANALYSIS DATA VALIDATION CHECKLIST

9. RESULT QUANTITATION AND DETECTION LIMITS (all levels)

Results reported for all requested analyses? .... [✓ Yes] No N/A

Results supported in the raw data? (Levels D, E) .... Yes No [✓ N/A]

Samples properly prepared? (Levels D, E) .... Yes No [✓ N/A]

Detection limits meet RDL? .... Yes [✓ No] N/A

Transcription/calculation errors? (Levels D, E) .... Yes No [✓ N/A]

Comments: all beryllium detects over

Appendix 6

Additional Documentation Requested by Client

Metals by SW846 6000/7000 series - Quality Control

Lionville Laboratory

Analyte	Result and Qualifiers		Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch L910055 - SW 7471A Prep										
Blank (L910055-BLK1)				Prepared: 10/06/2009 Analyzed: 10/07/2009						
Mercury	0.0300	U	0.0300	mg/kg						
Duplicate (L910055-DUP1)		Source: 0910007-01		Prepared: 10/06/2009 Analyzed: 10/07/2009						
Mercury	0.0823		0.0275	mg/kg		0.0647			23.9*	20
Matrix Spike (L910055-MS2)		Source: 0910007-01		Prepared: 10/06/2009 Analyzed: 10/07/2009						
Mercury	0.218		0.0250	mg/kg	0.13987	0.0647	110	75-125		
Reference (L910055-SRM1)				Prepared: 10/06/2009 Analyzed: 10/07/2009						
Mercury	1.35		0.0290	mg/kg	1.2600		107	65.9-133.3		
Batch L910056 - SW 7471A Prep										
Blank (L910056-BLK1)				Prepared: 10/06/2009 Analyzed: 10/07/2009						
Mercury	0.0300	U	0.0300	mg/kg						
Duplicate (L910056-DUP1)		Source: 0910007-06		Prepared: 10/06/2009 Analyzed: 10/07/2009						
Mercury	0.0865		0.0235	mg/kg		0.0673			25.0*	20
Matrix Spike (L910056-MS1)		Source: 0910007-06		Prepared: 10/06/2009 Analyzed: 10/07/2009						
Mercury	0.199		0.0243	mg/kg	0.13514	0.0673	97.5	75-125		
Reference (L910056-SRM1)				Prepared: 10/06/2009 Analyzed: 10/07/2009						
Mercury	1.30		0.0296	mg/kg	1.2600		103	65.9-133.3		
Batch L910102 - SW 3050B										
Blank (L910102-BLK1)				Prepared: 10/12/2009 Analyzed: 10/15/2009						
Aluminum	3.73	U	3.73	mg/kg						
Antimony	0.448	U	0.448	mg/kg						
Arsenic	0.746	U	0.746	mg/kg						
Barium	0.373	U	0.373	mg/kg						
Beryllium	0.149	U	0.149	mg/kg						
Bismuth	7.46	U	7.46	mg/kg						
Boron	1.49	U	1.49	mg/kg						
Cadmium	0.149	U	0.149	mg/kg						
Calcium	74.6	U	74.6	mg/kg						
Chromium	0.149	U	0.149	mg/kg						
Cobalt	1.49	U	1.49	mg/kg						
Copper	0.746	U	0.746	mg/kg						
Iron	14.9	U	14.9	mg/kg						
Lead	0.373	U	0.373	mg/kg						

WC-Hanford, Inc.	Project: RC-110	
2620 Fermi Avenue	Project Number: K1735	Reported:
Richland WA, 99354	Project Manager: Joan Kessner	10/20/2009 17:48

Metals by SW846 6000/7000 series - Quality Control
Lionville Laboratory

Analyte	Result and Qualifiers	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch L910102 - SW 3050B									
Blank (L910102-BLK1)			Prepared: 10/12/2009 Analyzed: 10/15/2009						
Lithium	0.689 B	1.87	mg/kg						
Magnesium	56.0 U	56.0	mg/kg						
Manganese	3.73 U	3.73	mg/kg						
Molybdenum	1.49 U	1.49	mg/kg						
Nickel	2.99 U	2.99	mg/kg						
Phosphorus	37.3 U	37.3	mg/kg						
Potassium	299 U	299	mg/kg						
Selenium	0.746 U	0.746	mg/kg						
Silicon	1.49 U	1.49	mg/kg						
Silver	0.149 U	0.149	mg/kg						
Sodium	37.3 U	37.3	mg/kg						
Strontium	0.746 U	0.746	mg/kg						
Thallium	0.373 U	0.373	mg/kg						
Tin	1.13 B	7.46	mg/kg						
Uranium	14.9 U	14.9	mg/kg						
Vanadium	1.87 U	1.87	mg/kg						
Zinc	7.46 U	7.46	mg/kg						
Duplicate (L910102-DUP1)	Source: 0910007-01		Prepared: 10/12/2009 Analyzed: 10/15/2009						
Aluminum	4.31 U	4.31	mg/kg		3.91 U				20
Antimony	0.517 U	0.517	mg/kg		0.469 U				20
Arsenic	0.862 U	0.862	mg/kg		0.781 U				20
Barium	0.779	0.431	mg/kg		0.445			55*	20
Beryllium	0.172 U	0.172	mg/kg		0.156 U				20
Bismuth	8.62 U	8.62	mg/kg		7.81 U				20
Boron	1.72 U	1.72	mg/kg		1.56 U				20
Cadmium	0.172 U	0.172	mg/kg		0.156 U				20
Calcium	10000	86.2	mg/kg		6110			48*	20
Chromium	1.42	0.172	mg/kg		0.613			79*	20
Cobalt	1.04 B	1.72	mg/kg		1.56 U				20
Copper	0.862 U	0.862	mg/kg		0.457				20
Iron	8.33 B	17.2	mg/kg		5.79			36*	20
Lead	0.431 U	0.431	mg/kg		0.391 U				20
Lithium	1.08 B	2.16	mg/kg		0.687			44*	20
Magnesium	536	64.7	mg/kg		571			6	20
Manganese	1.31 B	4.31	mg/kg		0.802			48*	20
Molybdenum	1.72 U	1.72	mg/kg		1.56 U				20

WC-Hanford, Inc. 2620 Fermi Avenue Richland WA, 99354	Project: RC-118 Project Number: K1735 Project Manager: Joan Kessner	Reported: 10/20/2009 17:48

Metals by SW846 6000/7000 series - Quality Control

Lionville Laboratory

Analyte	Result and Qualifiers	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch L910102 - SW 3050B									
Duplicate (L910102-DUP1)	Source: 0910007-01	Prepared: 10/12/2009 Analyzed: 10/15/2009							
Nickel	3.45 U	3.45	mg/kg		3.12 U				20
Phosphorus	8000	517	mg/kg		6000			29*	20
Potassium	4570	345	mg/kg		5360			16	20
Selenium	0.985	0.862	mg/kg		1.07			8	20
Silicon	2.83	1.72	mg/kg		2.79			1	20
Silver	0.172 U	0.172	mg/kg		0.156 U				20
Sodium	821	43.1	mg/kg		912			11	20
Strontium	13.3	0.862	mg/kg		7.80			52*	20
Thallium	0.431 U	0.431	mg/kg		0.391 U				20
Tin	9.59	8.62	mg/kg		9.01			6	20
Uranium	17.2 U	17.2	mg/kg		15.6 U				20
Vanadium	0.200 B	2.16	mg/kg		0.230			14	20
Zinc	16.0	8.62	mg/kg		13.1			20	20
Matrix Spike (L910102-MS1)	Source: 0910007-01	Prepared: 10/12/2009 Analyzed: 10/15/2009							
Aluminum	129	3.47	mg/kg	138.89	3.91 U	93	75-125		
Antimony	32.9	0.417	mg/kg	34.722	0.469 U	95	75-125		
Arsenic	133	0.694	mg/kg	138.89	0.781 U	96	75-125		
Barium	136	0.347	mg/kg	138.89	0.445	97	75-125		
Beryllium	3.25	0.139	mg/kg	3.4722	0.156 U	94	75-125		
Bismuth	324	6.94	mg/kg	347.22	7.81 U	93	75-125		
Boron	64.5	1.39	mg/kg	69.444	1.56 U	93	75-125		
Cadmium	3.22	0.139	mg/kg	3.4722	0.156 U	93	75-125		
Calcium	9380	69.4	mg/kg	1736.1	6110	188*	75-125		
Chromium	14.2	0.139	mg/kg	13.889	0.615	98	75-125		
Cobalt	33.8	1.39	mg/kg	34.722	1.36 U	97	75-125		
Copper	16.3	0.694	mg/kg	17.361	0.437	91	75-125		
Iron	224	13.9	mg/kg	69.444	5.79	314*	75-125		
Lead	31.7	0.347	mg/kg	34.722	0.391 U	91	75-125		
Lithium	69.9	1.74	mg/kg	69.444	0.687	100	75-125		
Magnesium	2140	52.1	mg/kg	1736.1	321	99	75-125		
Manganese	35.0	3.47	mg/kg	34.722	0.802	98	75-125		
Molybdenum	67.2	1.39	mg/kg	69.444	1.56 U	97	75-125		
Nickel	36.1	2.78	mg/kg	34.722	3.12 U	104	75-125		
Phosphorus	7310	117	mg/kg	347.22	6000	377*	75-125		
Potassium	6070	278	mg/kg	1736.1	5360	41*	75-125		
Selenium	132	0.694	mg/kg	138.89	1.07	94	75-125		

Metals by SW846 6000/7000 series - Quality Control

Lionville Laboratory

Analyte	Result and Qualifiers	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch L910102 - SW 3050B									
Matrix Spike (L910102-MS1)	**Source: 0910007-01**		**Prepared: 10/12/2009 Analyzed: 10/15/2009**						
Silicon	68.7	1.39	mg/kg	69.444	2.79	95	75-125		
Silver	3.23	0.139	mg/kg	3.4722	0.156 U	93	75-125		
Sodium	2440	34.7	mg/kg	1736.1	912	88	75-125		
Strontium	78.1	0.694	mg/kg	69.444	7.80	101	75-125		
Thallium	127	0.347	mg/kg	138.89	0.391 U	92	75-125		
Tin	74.2	6.94	mg/kg	69.444	9.01	94	75-125		
Uranium	331	13.9	mg/kg	347.22	15.6 U	95	75-125		
Vanadium	33.8	1.74	mg/kg	34.722	0.230	97	75-125		
Zinc	47.1	6.94	mg/kg	34.722	13.1	98	75-125		
Reference (L910102-SRM1)			**Prepared: 10/12/2009 Analyzed: 10/15/2009**						
Aluminum	5910	11.2	mg/kg	6766.6		87	0-225.5		
Antimony	47.5	1.34	mg/kg	56.630		84	0-223.6		
Arsenic	116	2.24	mg/kg	113.88		102	85-115		
Barium	293	1.12	mg/kg	298.35		98	75.7-124.3		
Beryllium	110	0.448	mg/kg	108.32		102	85.2-114.8		
Boron	86.4	4.48	mg/kg	86.580		100	68.5-131.6		
Cadmium	231	0.448	mg/kg	224.09		103	84.9-115.1		
Calcium	3300	224	mg/kg	3305.9		100	82.8-117.2		
Chromium	77.7	0.448	mg/kg	77.590		100	76.8-123.2		
Cobalt	166	4.48	mg/kg	163.19		102	79.4-120.6		
Copper	270	2.24	mg/kg	263.65		102	82.4-117.6		
Iron	8200	44.8	mg/kg	8202.4		100	78.9-121.1		
Lead	183	1.12	mg/kg	187.62		98	81.5-118.5		
Lithium	118	5.60	mg/kg	113.01		105	33.8-166.2		
Magnesium	8520	168	mg/kg	8352.3		102	84.2-115.8		
Manganese	958	11.2	mg/kg	951.35		101	69-131		
Molybdenum	244	4.48	mg/kg	234.78		104	80.1-119.9		
Nickel	224	8.96	mg/kg	220.85		101	81.4-118.6		
Potassium	14700	896	mg/kg	14177		103	85.7-114.3		
Selenium	190	2.24	mg/kg	187.99		101	78.8-121.2		
Silicon	557	4.48	mg/kg	939.78		59	0-272.3		
Silver	83.0	0.448	mg/kg	83.960		99	81.9-118.1		
Sodium	9300	112	mg/kg	9587.1		97	83.3-116.4		
Strontium	174	2.24	mg/kg	171.65		101	67.5-132.5		
Thallium	87.0	1.12	mg/kg	85.410		102	77.1-122.9		
Tin	101	22.4	mg/kg	101.60		99	86.7-113.2		

WC-Hanford, Inc	Project: RC 118	
2620 Fermi Avenue	Project Number: K1735	Reported:
Richland WA, 99354	Project Manager: Joan Kratura	10/20/2009 17:48

Metals by SW846 6000/7000 series - Quality Control

Lionville Laboratory

Analyte	Result and Qualifiers		Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch L910102 - SW 3050B										
Reference (L910102-SRM1)				Prepared: 10/12/2009 Analyzed: 10/15/2009						
Vanadium	102		5.60	mg/kg	97.430		104	73.8-124.2		
Zinc	200		22.4	mg/kg	196.52		102	78.9-121.1		
Batch L910127 - SW 3050B										
Blank (L910127-BLK1)				Prepared: 10/14/2009 Analyzed: 10/15/2009						
Aluminum	4.90	U	4.90	mg/kg						
Antimony	0.588	U	0.588	mg/kg						
Arsenic	0.980	U	0.980	mg/kg						
Barium	0.490	U	0.490	mg/kg						
Beryllium	0.196	U	0.196	mg/kg						
Bismuth	9.80	U	9.80	mg/kg						
Boron	1.96	U	1.96	mg/kg						
Cadmium	0.196	U	0.196	mg/kg						
Calcium	98.0	U	98.0	mg/kg						
Chromium	0.196	U	0.196	mg/kg						
Cobalt	1.96	U	1.96	mg/kg						
Copper	0.980	U	0.980	mg/kg						
Iron	19.6	U	19.6	mg/kg						
Lead	0.490	U	0.490	mg/kg						
Lithium	0.979	B	2.45	mg/kg						
Magnesium	1.11	B	73.5	mg/kg						
Manganese	4.90	U	4.90	mg/kg						
Molybdenum	1.96	U	1.96	mg/kg						
Nickel	3.92	U	3.92	mg/kg						
Phosphorus	49.0	U	49.0	mg/kg						
Potassium	392	U	392	mg/kg						
Selenium	0.980	U	0.980	mg/kg						
Silicon	1.96	U	1.96	mg/kg						
Silver	0.196	U	0.196	mg/kg						
Sodium	49.0	U	49.0	mg/kg						
Strontium	0.980	U	0.980	mg/kg						
Thallium	0.490	U	0.490	mg/kg						
Tin	1.63	B	9.80	mg/kg						
Uranium	19.6	U	19.6	mg/kg						
Vanadium	2.45	U	2.45	mg/kg						
Zinc	9.80	U	9.80	mg/kg						

WC-Hanford, Inc. 2620 Fermi Avenue Richland WA, 99354	Project: RC-118 Project Number: K1735 Project Manager: Joan Kessner	Reported: 10/20/2009 17:48

Metals by SW846 6000/7000 series - Quality Control

Lionville Laboratory

Analyte	Result and Qualifiers		Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch L910127 - SW 3050B										
Duplicate (L910127-DUP1)			**Source: 0910007-12**		**Prepared: 10/14/2009 Analyzed: 10/15/2009**					
Aluminum	4.55	U	4.55	mg/kg		4.39 U				20
Antimony	0.545	U	0.545	mg/kg		0.526 U				20
Arsenic	0.909	U	0.909	mg/kg		0.877 U				20
Barium	0.426	B	0.455	mg/kg		0.299			35*	20
Beryllium	0.182	U	0.182	mg/kg		0.175 U				20
Bismuth	9.09	U	9.09	mg/kg		8.77 U				20
Boron	1.82	U	1.82	mg/kg		1.75 U				20
Cadmium	0.0505	B	0.182	mg/kg		0.0514			2	20
Calcium	4670		90.9	mg/kg		3770			21*	20
Chromium	2.13		0.182	mg/kg		2.01			6	20
Cobalt	2.02		1.82	mg/kg		1.90			6	20
Copper	0.909	U	0.909	mg/kg		0.877 U				20
Iron	19.1		18.2	mg/kg		15.2			23*	20
Lead	0.455	U	0.455	mg/kg		0.439 U				20
Lithium	0.770	B	2.27	mg/kg		0.806			5	20
Magnesium	1100		68.2	mg/kg		757			37*	20
Manganese	1.00	B	4.55	mg/kg		1.14			76*	20
Molybdenum	1.82	U	1.82	mg/kg		1.75 U				20
Nickel	3.64	U	3.64	mg/kg		3.51 U				20
Phosphorus	5610		545	mg/kg		4820			15	20
Potassium	6050		364	mg/kg		5600			8	20
Selenium	1.35		0.909	mg/kg		1.13			17	20
Silicon	2.95		1.82	mg/kg		2.91			2	20
Silver	0.182	U	0.182	mg/kg		0.175 U				20
Sodium	989		45.5	mg/kg		910			8	20
Strontium	6.46		0.909	mg/kg		5.13			23*	20
Thallium	0.455	U	0.455	mg/kg		0.439 U				20
Tin	10.9		9.09	mg/kg		10.8			0.9	20
Uranium	18.2	U	18.2	mg/kg		17.5 U				20
Vanadium	0.481	B	2.27	mg/kg		0.401			18	20
Zinc	15.7		9.09	mg/kg		10.6			39*	20

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WC-Hanford, Inc	Project: RC-118	
2620 Fermi Avenue	Project Number: K1735	Reported:
Richland WA, 99354	Project Manager: Joan Kessner	10/20/2009 17:48

Metals by SW846 6000/7000 series - Quality Control

Lionville Laboratory

Analyte	Result and Qualifiers	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch L910127 - SW 3050B									
Matrix Spike (L910127-MS1)	Source: 0910007-12		Prepared: 10/14/2009 Analyzed: 10/15/2009						
Aluminum	138	3.33	mg/kg	133.33	4.39 U	104	75-125		
Antimony	32.0	0.400	mg/kg	33.333	0.526 U	96	75-125		
Arsenic	135	0.667	mg/kg	133.33	0.877 U	101	75-125		
Barium	142	0.333	mg/kg	133.33	0.299	106	75-125		
Beryllium	3.38	0.133	mg/kg	3.3333	0.175 U	101	75-125		
Bismuth	313	6.67	mg/kg	333.33	8.77 U	94	75-125		
Boron	63.7	1.33	mg/kg	66.667	1.75 U	95	75-125		
Cadmium	3.18	0.133	mg/kg	3.3333	0.0514	94	75-125		
Calcium	6330	66.7	mg/kg	1666.7	3770	153*	75-125		
Chromium	35.5	0.133	mg/kg	33.333	2.01	101	75-125		
Cobalt	34.8	1.33	mg/kg	33.333	1.90	99	75-125		
Copper	16.5	0.667	mg/kg	16.667	0.877 U	99	75-125		
Iron	84.9	13.3	mg/kg	66.667	15.2	105	75-125		
Lead	32.1	0.333	mg/kg	33.333	0.439 U	96	75-125		
Lithium	71.9	1.67	mg/kg	66.667	0.806	107	75-125		
Magnesium	2460	40.0	mg/kg	1666.7	757	102	75-125		
Manganese	37.4	3.33	mg/kg	33.333	1.34	108	75-125		
Molybdenum	67.3	1.33	mg/kg	66.667	1.75 U	101	75-125		
Nickel	33.9	2.67	mg/kg	33.333	1.51 U	102	75-125		
Phosphorus	5160	400	mg/kg	333.33	4820	103	75-125		
Potassium	6390	267	mg/kg	1666.7	5600	47*	75-125		
Selenium	132	0.667	mg/kg	133.33	1.13	98	75-125		
Silicon	65.3	3.33	mg/kg	66.667	2.91	94	75-125		
Silver	3.28	0.133	mg/kg	3.3333	0.175 U	98	75-125		
Sodium	2560	33.3	mg/kg	1666.7	910	99	75-125		
Strontium	78.4	0.667	mg/kg	66.667	5.14	110	75-125		
Thallium	129	0.333	mg/kg	133.33	0.439 U	97	75-125		
Tin	70.6	6.67	mg/kg	66.667	10.8	90	75-125		
Uranium	343	13.3	mg/kg	333.33	17.5 U	103	75-125		
Vanadium	35.4	1.67	mg/kg	33.333	0.401	105	75-125		
Zinc	44.2	6.67	mg/kg	33.333	10.6	101	75-125		

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WC-Hanford, Inc 2620 Fermi Avenue Richland WA, 99354	Project: RC-118 Project Number: K1735 Project Manager: Joan Kessner	Reported: 10/20/2009 17:48

Metals by SW846 6000/7000 series - Quality Control

Lionville Laboratory

Analyte	Result and Qualifiers	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch L910127 - SW 3050B									
Reference (L910127-SRM1)			Prepared: 10/14/2009 Analyzed: 10/15/2009						
Aluminum	6120	12.5	mg/kg	6766.8		91	0-225.5		
Antimony	84.9	1.50	mg/kg	56.630		150	0-225.6		
Arsenic	117	2.50	mg/kg	113.85		103	85-115		
Barium	290	1.25	mg/kg	298.35		97	75.7-124.3		
Beryllium	111	0.500	mg/kg	108.32		103	85.2-114.8		
Boron	86.8	5.00	mg/kg	86.380		100	68.3-131.6		
Cadmium	226	0.300	mg/kg	224.09		101	84.9-115.1		
Calcium	3340	250	mg/kg	3305.9		101	82.8-117.2		
Chromium	79.7	0.300	mg/kg	77.590		103	76.8-123.2		
Cobalt	165	5.00	mg/kg	163.19		101	79.4-120.6		
Copper	271	2.50	mg/kg	265.65		102	82.4-117.6		
Iron	8640	50.0	mg/kg	8202.8		105	78.9-121.1		
Lead	180	1.25	mg/kg	187.62		96	81.5-118.5		
Lithium	121	6.25	mg/kg	113.01		107	33.8-166.2		
Magnesium	8410	188	mg/kg	8332.3		101	84.2-115.8		
Manganese	888	12.5	mg/kg	951.35		93	69-131		
Molybdenum	250	5.00	mg/kg	234.78		107	80.1-119.9		
Nickel	227	10.0	mg/kg	220.85		103	81.4-118.6		
Potassium	14400	1000	mg/kg	14177		102	85.7-114.3		
Selenium	188	2.50	mg/kg	187.99		100	78.8-121.2		
Silicon	702	5.00	mg/kg	939.78		75	0-272.3		
Silver	85.4	0.500	mg/kg	83.960		102	81.9-118.1		
Sodium	10100	125	mg/kg	9587.1		106	83.5-116.4		
Strontium	186	2.50	mg/kg	171.65		108	67.5-132.5		
Thallium	87.8	1.25	mg/kg	85.410		103	77.1-122.9		
Tin	100	25.0	mg/kg	101.60		99	86.7-113.3		
Vanadium	105	6.25	mg/kg	97.430		108	75.8-124.2		
Zinc	198	25.0	mg/kg	196.52		101	78.9-121.1		

WC-Hanford, Inc.	Project: RC-118	
2620 Fermi Avenue	Project Number: K1735	Reported:
Richland WA, 99354	Project Manager: Joan Kessner	09/15/2009 13:07

Metals by SW846 6000/7000 series - Quality Control

Lionville Laboratory

Analyte	Result and Qualifiers	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch L909025 - SW 7471A Prep									
Blank (L909025-BLK1)			Prepared & Analyzed: 09/02/2009						
Mercury	0.0300 U	0.0300	mg/kg						
Duplicate (L909025-DUP3)	Source: 0908110-01		Prepared & Analyzed: 09/02/2009						
Mercury	0.271	0.0257	mg/kg		0.259			4.65	20
Matrix Spike (L909025-MS3)	Source: 0908110-01		Prepared & Analyzed: 09/02/2009						
Mercury	0.371	0.0273	mg/kg	0.15152	0.259	74.0*	75-125		
Reference (L909025-SRM1)			Prepared & Analyzed: 09/02/2009						
Mercury	1.23	0.0290	mg/kg	1.2600		97.3	65.9-133.1		
Batch L909088 - SW 3050B									
Blank (L909088-BLK1)			Prepared: 09/09/2009 Analyzed: 09/12/2009						
Aluminum	4.17 U	4.17	mg/kg						
Antimony	0.500 U	0.500	mg/kg						
Arsenic	0.833 U	0.833	mg/kg						
Barium	0.417 U	0.417	mg/kg						
Beryllium	0.167 U	0.167	mg/kg						
Bismuth	8.33 U	8.33	mg/kg						
Boron	1.67 U	1.67	mg/kg						
Cadmium	0.167 U	0.167	mg/kg						
Calcium	83.3 U	83.3	mg/kg						
Chromium	0.167 U	0.167	mg/kg						
Cobalt	1.67 U	1.67	mg/kg						
Copper	0.833 U	0.833	mg/kg						
Iron	16.7 U	16.7	mg/kg						
Lead	0.417 U	0.417	mg/kg						
Lithium	0.616 B	2.08	mg/kg						
Magnesium	62.5 U	62.5	mg/kg						
Manganese	4.17 U	4.17	mg/kg						
Molybdenum	1.67 U	1.67	mg/kg						
Nickel	3.33 U	3.33	mg/kg						
Phosphorus	41.7 U	41.7	mg/kg						
Potassium	333 U	333	mg/kg						
Selenium	0.833 U	0.833	mg/kg						
Silicon	1.67 U	1.67	mg/kg						
Silver	0.167 U	0.167	mg/kg						
Sodium	41.7 U	41.7	mg/kg						

WC-Hanford, Inc.	Project: RC-118	
2620 Fermi Avenue	Project Number: K1135	Reported:
Richland WA, 99354	Project Manager: Joan Kessner	09/15/2009 11:07

Metals by SW846 6000/7000 series - Quality Control

Lionville Laboratory

Analyte	Result and Qualifiers		Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch L909088 - SW 3050B										
Blank (L909088-BLK1)				Prepared: 09/09/2009 Analyzed: 09/12/2009						
Strontium	0.833	U	0.833	mg/kg						
Thallium	0.417	U	0.417	mg/kg						
Tin	1.00	B	8.33	mg/kg						
Uranium	16.7	U	16.7	mg/kg						
Vanadium	2.08	U	2.08	mg/kg						
Zinc	8.33	U	8.33	mg/kg						
Duplicate (L909088-DUP1)		Source: 0908110-01		Prepared: 09/09/2009 Analyzed: 09/12/2009						
Aluminum	4.31	U	4.31	mg/kg		3.13				20
Antimony	0.517	U	0.517	mg/kg		0.462 U				20
Arsenic	0.541	B	0.862	mg/kg		0.509			6	20
Barium	0.105	B	0.431	mg/kg		0.191			58*	20
Beryllium	0.172	U	0.172	mg/kg		0.154 U				20
Bismuth	8.62	U	8.62	mg/kg		7.69 U				20
Boron	1.72	U	1.72	mg/kg		1.54 U				20
Cadmium	0.172	U	0.172	mg/kg		0.154 U				20
Calcium	67.9	B	86.2	mg/kg		73.1			7	20
Chromium	0.179		0.172	mg/kg		0.154 U				20
Cobalt	1.72	U	1.72	mg/kg		1.54 U				20
Copper	0.862	U	0.862	mg/kg		0.769 U				20
Iron	4.20	B	17.2	mg/kg		4.03			4	20
Lead	0.294	B	0.431	mg/kg		0.385 U				20
Lithium	2.16	U	2.16	mg/kg		1.93 U				20
Magnesium	241		64.7	mg/kg		262			8	20
Manganese	0.313	B	4.31	mg/kg		0.378			19	20
Molybdenum	1.72	U	1.72	mg/kg		1.54 U				20
Nickel	3.45	U	3.45	mg/kg		3.08 U				20
Phosphorus	1960		43.1	mg/kg		2120			8	20
Potassium	3400		345	mg/kg		3700			8	20
Selenium	1.02		0.862	mg/kg		1.62			46*	20
Silicon	2.08		1.72	mg/kg		2.73			27*	20
Silver	0.175		0.172	mg/kg		0.154 U				20
Sodium	502		43.1	mg/kg		525			4	20
Strontium	0.119	B	0.862	mg/kg		0.0908			27*	20
Thallium	0.431	U	0.431	mg/kg		0.385 U				20
Tin	1.83	B	8.62	mg/kg		1.02			57*	20
Uranium	17.2	U	17.2	mg/kg		15.4 U				20

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WC Hanford, Inc.
2620 Fermi Avenue
Richland WA, 99354

Project: RC 118
Project Number: K1735
Project Manager: Joan Kessner

Reported:
09/15/2009 13:07

Metals by SW846 6000/7000 series - Quality Control

Lionville Laboratory

Analyte	Result and Qualifiers		Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch L909088 - SW 3050B										
Duplicate (L909088-DUP1)			**Source: 0908110-01**	**Prepared: 09/09/2009 Analyzed: 09/12/2009**						
Vanadium	0.221	B	2.16	mg/kg		0.263			17	20
Zinc	3.66	B	8.62	mg/kg		3.83			4	20
Matrix Spike (L909088-MS1)			**Source: 0908110-01**	**Prepared: 09/09/2009 Analyzed: 09/12/2009**						
Aluminum	146		3.62	mg/kg	144.93	3.13	98	75-125		
Antimony	34.9		0.435	mg/kg	36.232	0.462 U	96	75-125		
Arsenic	140		0.725	mg/kg	144.93	0.509	96	75-125		
Barium	142		0.162	mg/kg	144.93	0.191	98	75-125		
Beryllium	3.51		0.145	mg/kg	3.6232	0.154 U	97	75-125		
Bismuth	366		7.25	mg/kg	362.32	7.69 U	101	75-125		
Boron	62.6		1.45	mg/kg	72.464	1.54 U	86	75-125		
Cadmium	3.57		0.145	mg/kg	3.6232	0.154 U	98	75-125		
Calcium	1700		72.5	mg/kg	1811.6	73.1	90	75-125		
Chromium	14.0		0.145	mg/kg	14.493	0.154 U	97	75-125		
Cobalt	35.3		1.45	mg/kg	36.232	1.54 U	98	75-125		
Copper	17.4		0.725	mg/kg	18.116	0.769 U	96	75-125		
Iron	74.6		14.5	mg/kg	72.464	4.03	97	75-125		
Lead	35.5		0.362	mg/kg	36.232	0.385 U	98	75-125		
Lithium	68.5		1.81	mg/kg	72.464	1.92 U	95	75-125		
Magnesium	1880		54.3	mg/kg	1811.6	262	89	75-125		
Manganese	35.8		3.62	mg/kg	36.232	0.378	98	75-125		
Molybdenum	73.0		1.45	mg/kg	72.464	1.54 U	101	75-125		
Nickel	35.5		2.90	mg/kg	36.232	3.08 U	98	75-125		
Phosphorus	2540		36.2	mg/kg	362.32	2120	115	75-125		
Potassium	3340		290	mg/kg	1811.6	1700	91	75-125		
Selenium	141		0.725	mg/kg	144.93	1.62	96	75-125		
Silicon	73.1		1.45	mg/kg	72.464	2.73	97	75-125		
Silver	3.46		0.145	mg/kg	3.6232	0.154 U	95	75-125		
Sodium	2230		36.2	mg/kg	1811.6	525	94	75-125		
Strontium	65.9		0.725	mg/kg	72.464	0.0908	91	75-125		
Thallium	141		0.362	mg/kg	144.93	0.385 U	97	75-125		
Tin	68.6		7.25	mg/kg	72.464	1.02	93	75-125		
Uranium	371		14.5	mg/kg	362.32	15.4 U	102	75-125		
Vanadium	37.6		1.81	mg/kg	36.232	0.263	103	75-125		
Zinc	38.6		7.25	mg/kg	36.232	3.83	96	75-125		

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WC-Hanford, Inc. 2620 Fermi Avenue Richland WA, 99354	Project: RC-118 Project Number: K1735 Project Manager: Joan Kessner	Reported: 09/15/2009 13:07

Metals by SW846 6000/7000 series - Quality Control

Lionville Laboratory

Analyte	Result and Qualifiers	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch L909088 - SW 3050B									
Reference (L909088-SRM1)			Prepared: 09/09/2009 Analyzed: 09/12/2009						
Aluminum	8120	9.74	mg/kg	6766.6		120	0-225.5		
Antimony	54.4	1.17	mg/kg	56.630		96	0-225.6		
Arsenic	115	1.95	mg/kg	113.85		101	85-115		
Barium	291	0.974	mg/kg	298.35		97	75.7-124.3		
Beryllium	110	0.390	mg/kg	108.32		101	85.2-114.8		
Boron	84.0	3.90	mg/kg	86.580		97	68.5-131.6		
Cadmium	227	0.390	mg/kg	224.09		101	84.9-115.1		
Calcium	3380	195	mg/kg	3305.9		102	82.8-117.2		
Chromium	81.3	0.390	mg/kg	77.390		105	76.8-123.2		
Cobalt	165	3.90	mg/kg	163.19		101	79.4-120.6		
Copper	264	1.95	mg/kg	265.65		99	82.4-117.6		
Iron	8440	39.0	mg/kg	8202.8		103	78.9-121.1		
Lead	187	0.974	mg/kg	187.62		100	81.5-118.5		
Lithium	123	4.87	mg/kg	113.01		109	33.8-166.2		
Magnesium	8660	146	mg/kg	8332.3		104	84.2-115.8		
Manganese	783	9.74	mg/kg	951.35		82	69-131		
Molybdenum	247	3.90	mg/kg	234.78		105	80.1-119.9		
Nickel	227	7.79	mg/kg	220.85		103	81.4-118.6		
Potassium	15000	779	mg/kg	14177		106	85.7-114.3		
Selenium	192	1.95	mg/kg	187.99		102	78.8-121.2		
Silicon	707	3.90	mg/kg	939.78		75	0-272.3		
Silver	85.1	0.390	mg/kg	83.960		101	81.9-118.1		
Sodium	9510	97.4	mg/kg	9587.1		99	83.5-116.4		
Strontium	180	1.95	mg/kg	171.65		105	67.5-132.5		
Thallium	89.9	0.974	mg/kg	85.410		105	77.1-122.9		
Tin	102	19.5	mg/kg	101.60		100	86.7-113.2		
Vanadium	109	4.87	mg/kg	97.430		112	75.8-124.2		
Zinc	202	19.5	mg/kg	196.52		103	78.9-121.1		

Date: 11 January 2009
To: Washington Closure Hanford Inc (technical representative)
From: ELR Consulting
Project: Columbia River Component of the RCBRA - Tissue
Subject: Radiochemistry - Data Package No. K1735-EB

INTRODUCTION

This memo presents the results of data validation on Data Package No. K1735 prepared by Eberline Services (EB). A list of samples validated along with the analyses reported and the method of analysis is provided in the following table.

Sample ID	Sample Date	Media	Validation	Date
J19029	8/25/09	Solid	C	See note 1
J19030	8/25/09	Solid	C	See note 1
J19031	8/25/09	Solid	C	See note 1
J19032	8/25/09	Solid	C	See note 1
J19033	8/25/09	Solid	C	See note 1
J19052	8/25/09	Solid	C	See note 1
J19053	8/25/09	Solid	C	See note 1
J19054	8/25/09	Solid	C	See note 1
J19055	8/25/09	Solid	C	See note 1
J19056	8/25/09	Solid	C	See note 1
J190L6	8/25/09	Solid	C	See note 1
J190L7	8/25/09	Solid	C	See note 1
J190L8	8/25/09	Solid	C	See note 1
J190L9	8/25/09	Solid	C	See note 1
J190M0	8/25/09	Solid	C	See note 1
J190N6	8/25/09	Solid	C	See note 1
J190N7	8/25/09	Solid	C	See note 1
J190N8	8/25/09	Solid	C	See note 1
J190N9	8/25/09	Solid	C	See note 1
J190P0	8/25/09	Solid	C	See note 1
J19458	8/17/09	Solid	C	See note 1
J19459	8/17/09	Solid	C	See note 1
J19460	8/17/09	Solid	C	See note 1
J19461	8/17/09	Solid	C	See note 1

1 – Tritium, carbon-14, total strontium, technetium-99, alpha spectroscopy and gamma spectroscopy

Data validation was conducted in accordance with the Washington Closure Hanford (WCH) validation statement of work and the Remedial Investigation Work Plan for Hanford Site Releases to the Columbia River (DOE/RL-2008, Rev. 0, September 2008). Appendices 1 through 6 provide the following information as indicated below:

Appendix 1. Glossary of Data Reporting Qualifiers
Appendix 2. Summary of Data Qualification
Appendix 3. Qualified Data Summary and Annotated Laboratory Reports
Appendix 4. Laboratory Narrative and Chain-of-Custody Documentation
Appendix 5. Data Validation Supporting Documentation
Appendix 6. Additional Data Requested by Client

DATA QUALITY PARAMETERS

- **Holding Times**

Holding times are calculated from Chain-of-Custody forms to determine the validity of the results. The maximum holding time for radiochemical analysis is 6 months.

All holding times were acceptable.

- **Preparation (Method) Blanks**

Laboratory Blanks

Blank samples are analyzed to determine if positive results are due to laboratory reagent, sample container, or detector contamination. If blank analysis results indicate the presence of an analyte above the minimum detectable activity (MDA), the following qualifiers are applied: All positive sample results less than five times the highest blank concentration are qualified as estimates and flagged "J"; sample results below the MDA are qualified as undetected and flagged "U"; sample results above the MDA and greater than five times the highest blank concentration are not qualified.

All blank results were acceptable.

Field (Equipment) Blank

No field blanks were submitted for analysis.

- **Accuracy**

Accuracy is evaluated from laboratory control sample (LCS) or blank spike sample (BSS) batch samples and spiked samples from the analytical batch. Measured activities are compared to the known added amounts. The acceptable LCS or BSS and matrix spike (MS) recovery range is 70-130%. In addition, samples may be spiked with a radiochemical tracer to assist in isolating the radioisotope of interest with the yield of 8/25/09the tracer being used in calculating sample activity. The acceptable range for tracer recovery is 20% to 105%. Spike sample results outside the above ranges result in associated sample results being qualified as estimates, or not qualified, depending on the activity of the individual sample. Results are rejected for LCS/BSS recoveries of less than 30% and tracer recoveries of less than 20%, and tracer recoveries of greater than 115% for detected results.

Due to the lack of an LCS analysis, all thorium-228 (aspec) and thorium-232 (aspec) results were qualified as estimates and flagged "J"

Due to the lack of a matrix spike analysis, all tritium and carbon-14 results were qualified as estimates and flagged "J"

All other accuracy results were acceptable.

- **Laboratory Duplicates**

Analytical precision is expressed by the relative percent differences (RPD) between the recoveries of duplicate matrix spike analyses performed on a sample in the analytical batch. Precision may alternatively be assessed using unspiked duplicate analyses performed on a sample in the analytical batch. If both sample and replicate activities (concentrations) are greater than five times the contract required detection limit (CRDL) and the RPD is less than 30%, no qualification is required. If either activity (concentration) is less than five times the CRDL, the RPD control limit is less than or equal to two times the CRDL. If the RPD is outside the applicable control limit, associated results are qualified as estimated detects or estimated non-detects.

All duplicate results were acceptable.

Field Duplicates

No field duplicates were submitted for analysis.

- **Detection Levels**

Reported analytical detection levels for undetected analytes are compared against the RCBRA tissue RQLs to ensure that laboratory detection levels meet the required criteria. Forty analytes exceeded the RQL. Under the WCH statement of work, no qualification is required. All other analytes met the RQL.

- **Completeness**

Data package No. K1735 was submitted for validation and verified for completeness. Completeness is based on the percentage of data determined to be valid (i.e., not rejected). The completion percentage was 100%.

MAJOR DEFICIENCIES

None found.

MINOR DEFICIENCIES

The following minor deficiencies were noted:

- Due to the lack of an LCS analysis, all thorium-228 (aspec) and thorium-232 (aspec) results were qualified as estimates and flagged "J".
- Due to the lack of a matrix spike analysis, all tritium and carbon-14 results were qualified as estimates and flagged "J".

Data flagged "J" indicates that the associated concentration is an estimate, but under the WCH statement of work, the data may be usable for decision-making purposes. All other validated results are considered accurate within the standard error associated with the methods.

Forty analytes exceeded the RQL. Under the WCH statement of work, no qualification is required.

REFERENCES

Washington Closure Hanford Contract #S00W307A00 (March 2008). *Data Validation Services.*

DOE/RL-2008-11, Rev. 0, September 2008, *Remedial Investigation Work Plan for Hanford Site Releases to the Columbia River.*

Appendix 1

Glossary of Data Reporting Qualifiers

Qualifiers which may be applied by data validators in compliance with the WCH statement of work are as follows:

U - Indicates the compound or analyte was analyzed for and not detected above the minimum detectable activity (MDA) in the sample. The value reported is the sample result corrected for sample dilution and moisture content by the laboratory. The data is usable for decision making purposes.

UJ - Indicates the compound or analyte was analyzed for and not detected at concentrations above the minimum detectable activity (MDA) in the sample. Due to a minor QC deficiency identified during the data validation, the associated quantitation limit is an estimate, but is usable for decision making purposes.

J - Indicates the compound or analyte was analyzed for and detected. Due to a minor QC deficiency identified during the data validation, the associated concentration is an estimate, but the data are usable for decision-making purposes.

R - Indicates the compound or analyte was analyzed for, detected, and due to an identified major QC deficiency, the data are unusable.

UR - Indicates the compound or analyte was analyzed for and not detected in the sample. Additionally, the data is unusable due to an identified major QC deficiency.

Appendix 2

Summary of Data Qualification

RADIOCHEMISTRY DATA QUALIFICATION SUMMARY*

SDG: K1735	**REVIEWER: ELR**	**Project: RCBRA**	**PAGE 1 OF 1**
COMPOUND	QUALIFIER	SAMPLES AFFECTED	REASON
Thorium-228 (aspec) Thorium-232 (aspec)	J	All	No LCS analysis
Tritium Carbon-14	J	All	No MS analysis

* - The Qualified Data Summary Table includes laboratory applied "U" qualifiers not specifically identified here. The laboratory applied "U" qualifiers are included to minimize misinterpretation of results contained in the table.

Appendix 3

Qualified Data Summary and Annotated Laboratory Reports

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1735

7446-001

J19029

DATA SHEET

SDG	7446	Client/Case no	Hanford
		SDG	K1735
Contact	N. Joseph Verville	Contract	No. 00082445A00
Lab sample id	E908121-01	Client sample id	J19029
Dept sample id	7446-001	Location/Matrix	URSA-BASSI-FILLET SOLID
Received	08/28/09	Collected/Weight	08/25/09 11:15 419 g
% solids	100.0	Custody/SAP No	RC-118-108 RC-118

1/6/10

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Tritium	10028-17-8	0.424	3.5	5.96	400	U J	H
Carbon 14	14762-75-5	1.18	3.6	5.90	50.0	U J	C
Total Strontium	SR RAD	0.043	0.22	0.258	1.00	U	SR
Technetium 99	14133-76-7	0.029	0.23	0.410	15.0	U	TC
Thorium 228	14274-82-9	0.017	0.22	0.414	1.00	U J	TH
Thorium 230	14269-63-7	0	0.37	0.688	1.00	U	TH
Thorium 232	TH-232	0.037	0.075	0.286	1.00	U J	TH
Uranium 233/234	U-233/234	-0.021	0.042	0.159	1.00	U	U
Uranium 235	15117-96-1	0	0.050	0.192	1.00	U	U
Uranium 238	U-238	0.021	0.042	0.159	1.00	U	U
Plutonium 238	13981-16-3	0.018	0.071	0.169	1.00	U	PU
Plutonium 239/240	PU-239/240	0.018	0.035	0.135	1.00	U	PU
Potassium 40	13966-00-2	1.88	0.56	0.275			GAM
Cobalt 60	10198-40-0	U		0.025	0.050	U	GAM
Cesium 137	10045-97-3	U		0.025	0.100	U	GAM
Radium 226	13982-63-3	U		0.061	0.100	U	GAM
Radium 228	15262-20-1	U		0.126	0.200	U	GAM
Europium 152	14683-23-9	U		0.087	0.100	U	GAM
Europium 154	15585-10-1	U		0.074	0.100	U	GAM
Europium 155	14391-16-3	U		0.074	0.100	U	GAM
Thorium 228	14274-82-9	U		0.056		U	GAM
Thorium 232	TH-232	U		0.126		U	GAM
Uranium 235	15117-96-1	U		0.165		U	GAM
Uranium 238	U-238	U		3.04		U	GAM
Americium 241	14596-10-2	U		0.068		U	GAM
Beryllium 7	13966-02-4	U		0.256		U	GAM
Ruthenium 106	13967-48-1	U		0.224		U	GAM
Antimony 125	14234-35-6	U		0.070		U	GAM

Lab id	EBRLNE
Protocol	Hanford1
Version	Ver 1.0
Form	DVD-DS
Version	1.0
Report date	10/08/09

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1735

7446-001 J19029

DATA SHEET, cont

SDN	7446	Client/Case no	Hanford	SDG K1735
Contact	M. Joseph Verville	Contract	NO. 500W215A00	
Lab sample id	8908121-01	Client sample id	J19029	
Dept sample id	7446-001	Location/Matrix	URSA-BASS1-FILLET	SOLID
Received	08/28/09	Collected/Weight	08/25/09 11:15	332 g
% solids	100.0	Custody/SAF No	RC-110-108	RC-110

1/10/10

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Cesium 134	13967-70-9	U		0.033		U	GAM

Columbia River Component of the RCBRA - Tissues

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Lab id	EBRLNE
Protocol	Hanford1
Version	Ver 1.0
Form	DVD-DS
Version	3.06
Report date	10/08/09

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1735

7446-002 J19030

DATA SHEET

SDG 7446
Contact N. Joseph Verville
Client/Case no Hanford SDG K1735
Contract No. 500W235A00

Lab sample id E908131-02
Dept sample id 7446-002
Received 08/28/09
% solids 100.0
Client sample id J19030
Location/Matrix URSA BASS2 FILLET SOLID
Collected/Weight 08/25/09 12:30 366 g
Custody/SAF No RC 118,302 RC-118

1/10/10

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALIFIERS	TEST
Tritium	10028-17-8	1.24	7.5	5.70	400	U J	H
Carbon 14	14762-75-5	1.78	1.4	5.58	50.0	U J	C
Total Strontium	SR-RAD	0.043	0.13	0.252	1.00	U	SR
Technetium 99	14133-76-7	-0.001	0.20	0.451	15.0	U	TC
Thorium 228	14274-82-9	0.032	0.11	0.309	1.00	U J	TH
Thorium 230	14269-63-7	0.514	0.45	0.635	1.00	U	TH
Thorium 232	TH-232	0	0.064	0.346	1.00	U J	TH
Uranium 233/234	U-233/234	0.057	0.057	0.216	1.00	U	U
Uranium 235	15117-96-1	0	0.068	0.262	1.00	U	U
Uranium 238	U-238	0	0.057	0.216	1.00	U	U
Plutonium 238	13981-16-3	-0.043	0.043	0.204	1.00	U	PU
Plutonium 239/240	PU 239/240	0	0.043	0.163	1.00	U	PU
Potassium 40	13966-00-2	1.50	0.57	0.149			GAM
Cobalt 60	10198-40-0	U		0.027	0.050	U	GAM
Cesium 137	10045-97-3	U		0.027	0.100	U	GAM
Radium 226	13982-63-3	U		0.062	0.100	U	GAM
Radium 228	15262-20-1	U		0.125	0.200	U	GAM
Europium 152	14683-23-9	U		0.077	0.100	U	GAM
Europium 154	15585-10-1	U		0.089	0.100	U	GAM
Europium 155	14391-16-3	U		0.082	0.100	U	GAM
Thorium 228	14274-82-9	U		0.099		U	GAM
Thorium 232	TH-232	U		0.125		U	GAM
Uranium 235	15117-96-1	U		0.172		U	GAM
Uranium 238	U-238	U		1.13		U	GAM
Americium 241	14596-10-2	U		0.069		U	GAM
Beryllium 7	13966-02-4	U		0.270		U	GAM
Ruthenium 106	13967-48-1	U		0.249		U	GAM
Antimony 125	14234-35-6	U		0.072		U	GAM

Lab id EBRLNE
Protocol Hanford1
Version Ver 1.0
Form DVD-DS
Version 1.06
Report date 10/08/09

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1735

7446-002 J19630

DATA SHEET, cont

SDG	7446	Client/Case no	Hanford	SDG K1735
Contact	N. Joseph Verville	Contract	No. 600W235A00	
Lab sample id	S908121-02	Client sample id	J19630	
Dept sample id	7446-002	Location/Matrix	URSA-BASS2-FILLET	SOLID
Received	08/28/09	Collected/Weight	08/25/09 12:30	366 g
% solids	100.0	Custody/SAF No	RC-118 30A	RC-118

V 1/16/10

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Cesium 134	13967-70-9	U		0.033		U	GAM

Columbia River Component of the RCBRA Tissues

Lab id EBRLNE
Protocol Hanford01
Version Ver 1.0
Form DVD DS
Version 3.06
Report date 10/08/09

7446-003

J19031

DATA SHEET

SDG	7446	Client/Case no	Hanford SDG K1735
Contact	N. Joseph Verville	Contract	No. 500W235A00
Lab sample id	R908121-01	Client sample id	J19031
Dept sample id	7446-003	Location/Matrix	URSA-BASS3 FILLET SOLID
Received	08/28/09	Collected/Weight	08/25/09 14:45 598 g
% solids	100.0	Custody/SAF No	RC-118-310 RC 118

11/10/10

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Tritium	10028-17-8	1.04	3.4	5.85	400	U J	H
Carbon 14	14762-75-5	1.32	3.4	5.77	50.0	U J	C
Total Strontium	SR-RAD	0.009	0.12	0.245	1.00	U	SR
Technetium 99	14133-76-7	0.213	0.30	0.432	15.0	U	TC
Thorium 228	14274-82-9	0.042	0.17	0.404	1.00	U J	TH
Thorium 230	14269-63-7	0.630	0.51	0.744	1.00	U	TH
Thorium 232	TH-232	0.042	0.084	0.322	1.00	U J	TH
Uranium 233/234	U-233/234	0	0.071	0.170	1.00	U	U
Uranium 235	15117-96-1	0	0.043	0.164	1.00	U	U
Uranium 238	U-238	0.018	0.036	0.116	1.00	U	U
Plutonium 238	13981-16-3	0.088	0.18	0.360	1.00	U	PU
Plutonium 239/240	PU-239/240	0.029	0.12	0.224	1.00	U	PU
Potassium 40	13966-00-2	2.92	0.63	0.367			GAM
Cobalt 60	10198-40-0	U		0.036	0.050	U	GAM
Cesium 137	10045-97-3	U		0.037	0.100	U	GAM
Radium 226	13982-63-3	U		0.078	0.100	U	GAM
Radium 228	15262-20-1	U		0.197	0.200	U	GAM
Europium 152	14683-23-9	U		0.102	0.100	U	GAM
Europium 154	15585-10-1	U		0.111	0.100	U	GAM
Europium 155	14391-16-3	U		0.096	0.100	U	GAM
Thorium 228	14274-82-9	U		0.071		U	GAM
Thorium 232	TH-232	U		0.197		U	GAM
Uranium 235	15117-96-1	U		0.221		U	GAM
Uranium 238	U-238	U		4.35		U	GAM
Americium 241	14596-10-2	U		0.095		U	GAM
Beryllium 7	13966-02-4	U		0.336		U	GAM
Ruthenium 106	13967-48-1	U		0.341		U	GAM
Antimony 125	14234-35-6	U		0.086		U	GAM

Lab id	EBRLNE
Protocol	Hanford1
Version	Ver 1.0
Form	DVD-DS
Version	1.06
Report date	10/08/09

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1735

7446-003

J19031

DATA SHEET, cont

SDG 7446
Contact N. Joseph Verville

Client/Case no Hanford SDG K1735
Contract No. 5009135A00

Lab sample id R908121-03
Dept sample id 7446-003
Received 08/28/09
% solids 100.0

Client sample id J19031
Location/Matrix URSA BASS1 FILLET SOLID
Collected/Weight 08/25/09 14:45 578 g
Custody/SAF No RC-118-310 RC-118

1/10/10

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Cesium 134	13967-70-9	U		0.041		U	GAM

Columbia River Component of the RCBRA Tissues

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Lab id EBRLNE
Protocol Hanford1
Version Ver 1.0
Form DVD-DS
Version 3.06
Report date 10/08/09

7446-004

J19032

DATA SHEET

SDG 7446
Contact N. Joseph Verville
Client/Case no Hanford SDG K1735
Contract No. 00W335A00

Lab sample id R908121-04
Dept sample id 7446-004
Received 08/28/09
% solids 100.0

Client sample id J19032
Location/Matrix URBA BASS-FILLET SOLID
Collected/Weight 08/25/09 13:30 918 g
Custody/SAF No RC 110-111 RC 110

1/10/10

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALIFIERS	TEST
Tritium	10028-17-8	0.575	3.8	6.46	400	U	H
Carbon 14	14762-75-5	2.03	3.8	6.37	50.0	U	C
Total Strontium	SR-RAD	-0.015	0.13	0.271	1.00	U	SR
Technetium 99	14133-76-7	0.047	0.42	0.439	15.0	U	TC
Thorium 228	14274-82-9	-0.037	0.22	0.500	1.00	U	TH
Thorium 230	14269-63-7	0.335	0.37	0.659	1.00	U	TH
Thorium 232	TH-232	0	0.074	0.285	1.00	U	TH
Uranium 233/234	U-233/234	0.020	0.040	0.155	1.00	U	U
Uranium 235	15117-96-1	0	0.049	0.187	1.00	U	U
Uranium 238	U-238	0	0.040	0.155	1.00	U	U
Plutonium 238	13981-16-3	0.022	0.089	0.245	1.00	U	PU
Plutonium 239/240	PU-239/240	0.066	0.089	0.169	1.00	U	PU
Potassium 40	13966-00-2	3.24	0.61	0.315			GAM
Cobalt 60	10198-40-0	U		0.032	0.050	U	GAM
Cesium 137	10045-97-3	U		0.036	0.100	U	GAM
Radium 226	13982-63-3	U		0.061	0.100	U	GAM
Radium 228	15262-20-1	U		0.152	0.200	U	GAM
Europium 152	14683-23-9	U		0.073	0.100	U	GAM
Europium 154	15585-10-1	U		0.101	0.100	U	GAM
Europium 155	14391-16-3	U		0.072	0.100	U	GAM
Thorium 228	14274-82-9	U		0.048		U	GAM
Thorium 232	TH-232	U		0.352		U	GAM
Uranium 235	15117-96-1	U		0.162		U	GAM
Uranium 238	U-238	U		4.09		U	GAM
Americium 241	14596-10-2	U		0.119		U	GAM
Beryllium 7	13966-02-4	U		0.305		U	GAM
Ruthenium 106	13967-48-1	U		0.310		U	GAM
Antimony 125	14234-35-6	U		0.072		U	GAM

Lab id EBRLNE
Protocol Hanford1
Version Ver 1.0
Form DVD-DS
Version 3.06
Report date 10/08/09

DATA SHEET, cont

SDG	7446	Client/Case no	Hanford SDG K1735
Contact	N. Joseph Verville	Contract	No. 500WZ15A00
Lab sample id	E908121-04	Client sample id	J19032
Dept sample id	7446-004	Location/Matrix	URWA-BAC34 FILLET SOLID
Received	08/28/09	Collected/Weight	08/25/09 13:30 010 g
% solids	100.0	Custody/SAP No	RC-118 311 RC-118

M 1/10/10

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALIFIERS	TEST
Cesium 134	13967-70-9	U		0.035		U	GAM

Columbia River Component of the RCBRA Tissues

Lab id	EBRLNE
Protocol	Hanford1
Version	Ver 1.0
Form	DVD-DS
Version	3.06
Report date	10/08/09

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1735

7446-005

J19033

DATA SHEET

SDG	7446	Client/Case no	Hanford SDG K1735
Contact	N. Joseph Verville	Contract No.	300W235A09
Lab sample id	E908121 05	Client sample id	J19033
Dept sample id	7446-005	Location/Matrix	URSA-BASS-FILLET SOLID
Received	08/28/09	Collected/Weight	08/25/09 14:15 512 g
% solids	100.0	Custody/SAF No	RC-118 312 RC-118

JL 1/10/10

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALIFIERS	TEST
Tritium	10028-17-8	2.55	1.7	6.23	400	U J	H
Carbon 14	14762-75-5	0.674	3.6	6.14	50.0	U J	C
Total Strontium	SR-RAD	-0.014	0.11	0.241	1.00	U	SR
Technetium 99	14133-76-7	0.006	0.29	0.419	15.0	U	TC
Thorium 228	14274-82-9	0.035	0.14	0.270	1.00	U J	TH
Thorium 230	14269-63-7	-0.117	0.28	0.671	1.00	U	TH
Thorium 232	TH 232	0	0.070	0.269	1.00	U J	TH
Uranium 233/234	U-233/234	0	0.040	0.151	1.00	U	U
Uranium 235	15117-96-1	U	0.048	0.103	1.00	U	U
Uranium 238	U-238	0	0.040	0.151	1.00	U	U
Plutonium 238	13981-16-3	0.022	0.045	0.171	1.00	U	PU
Plutonium 239/240	PU-239/240	0	0.045	0.171	1.00	U	PU
Potassium 40	13966-00-2	2.12	0.59	0.434			GAM
Cobalt 60	10198-40-0	U		0.043	0.050	U	GAM
Cesium 137	10045-97-3	U		0.045	0.100	U	GAM
Radium 226	13982-63-3	U		0.091	0.100	U	GAM
Radium 228	15262-20-1	U		0.267	0.200	U	GAM
Europium 152	14683-23-9	U		0.098	0.100	U	GAM
Europium 154	15585-10-1	U		0.117	0.100	U	GAM
Europium 155	14391-16-3	U		0.077	0.100	U	GAM
Thorium 228	14274-82-9	U		0.134		U	GAM
Thorium 232	TH-232	U		0.267		U	GAM
Uranium 235	15117-96-1	U		0.192		U	GAM
Uranium 238	U-238	U		5.11		U	GAM
Americium 241	14596-10-2	U		0.040		U	GAM
Beryllium 7	13966-02-4	U		0.354		U	GAM
Ruthenium 106	13967-48-1	U		0.359		U	GAM
Antimony 125	14234-35-6	U		0.102		U	GAM

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EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1735

7446-005 J19033

DATA SHEET, cont

SDG	7446	Client/Case no	Hanford SDG_K1735
Contact	N. Joseph Verville	Contract	No. 300W235A00
Lab sample id	R908121-05	Client sample id	J19033
Dept sample id	7446-005	Location/Matrix	URSA-BASS5-FILLET SOLID
Received	08/28/09	Collected/Weight	08/25/09 14:15 512 g
% solids	100.0	Custody/SAF No	RC-118-317 RC-118

1/10/10

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Cesium 134	13967-70-9	U		0.053		U	GAM

Columbia River Component of the RCBRA - Tissues

Lab id EBRLNE
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EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1735

7446-006 J19052

DATA SHEET

SDG	7446	Client/Case no	Hanford SDG K1735
Contact	N. Joseph Verville	Contract	No. 500W235A00
Lab sample id	R908121-06	Client sample id	J19052
Dept sample id	7446-006	Location/Matrix	URSA-RABBIT-CARCASS SOLID
Received	08/28/09	Collected/Weight	08/25/09 11:30 520 g
% solids	100.0	Custody/SAF No	RC-118-328 RC-118

1/10/10

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Tritium	10028-17-8	1.22	3.4	5.70	400	U J	H
Carbon 14	14762-75-5	1.51	3.4	5.60	50.0	U J	C
Total Strontium	SR-RAD	0.052	0.12	0.241	1.00	U	SR
Technetium 99	14133-76-7	0.105	0.27	0.472	15.0	U	TC
Thorium 228	14274-82-9	0.072	0.14	0.275	1.00	U J	TH
Thorium 230	14269-63-7	0.287	0.36	0.660	1.00	U	TH
Thorium 232	TH-232	0.036	0.072	0.274	1.00	U J	TH
Uranium 233/234	U-233/234	-0.018	0.036	0.136	1.00	U	U
Uranium 235	15117-96-1	0	0.041	0.164	1.00	U	U
Uranium 238	U-238	0	0.036	0.136	1.00	U	U
Plutonium 238	13981-16-3	-0.059	0.059	0.780	1.00	U	PU
Plutonium 239/240	PU-239/240	0.049	0.059	0.224	1.00	U	PU
Potassium 40	13966-00-2	2.32	0.50	0.378			GAM
Cobalt 60	10198-40-0	U		0.029	0.050	U	GAM
Cesium 137	10045-97-3	U		0.026	0.100	U	GAM
Radium 226	13982-63-3	U		0.051	0.100	U	GAM
Radium 228	15262-20-1	U		0.104	0.200	U	GAM
Europium 152	14683-23-9	U		0.064	0.100	U	GAM
Europium 154	15585-10-1	U		0.074	0.100	U	GAM
Europium 155	14391-16-3	U		0.050	0.100	U	GAM
Thorium 228	14274-82-9	U		0.069		U	GAM
Thorium 232	TH-232	U		0.104		U	GAM
Uranium 235	15117-96-1	U		0.117		U	GAM
Uranium 238	U-238	U		3.40		U	GAM
Americium 241	14596-10-2	U		0.029		U	GAM
Beryllium 7	13966-02-4	U		0.226		U	GAM
Ruthenium 106	13967-48-1	U		0.238		U	GAM
Antimony 125	14234-35-6	U		0.059		U	GAM

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EBERLINE SERVICES/RICHMOND
SAMPLE DELIVERY GROUP K1735

7446-006

J19052

DATA SHEET, cont

SDG	7446	Client/Case no	Hanford	SDG K1735
Contact	N. Joseph Verville	Contract	No. 900W335A00	
Lab sample id	R908121-06	Client sample id	J19052	
Dept sample id	7446-006	Location/Matrix	URSA-BASSI-CARCASS	SOLID
Received	08/28/09	Collected/Weight	08/25/09 11:30	523 g
% solids	100.0	Custody/SAF No	RC-118-128	RC 118

1/10/10

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Cesium 134	13967-70-9	U		0.032		U	GAM

Columbia River Component of the RCBRA - Tissues

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E B E R L I N E   S E R V I C E S / R I C H M O N D

SAMPLE DELIVERY GROUP K1735

7446-007

J19053

D A T A   S H E E T

SDG	7446	Client/Case no	Hanford	SDG K1735
Contact	N. Joseph Verville	Contract	No. 500W235A00	
Lab sample id	K908121-07	Client sample id	J19053	
Dept sample id	7446 007	Location/Matrix	URSA-BASS2-CARCASS	SOLID
Received	08/28/09	Collected/Weight	08/25/09 12:45	541 g
% solids	100.0	Custody/SAF No	RC-118-329	RC 118

1/10/10

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Tritium	10028-17-8	1.31	3.9	6.44	400	U J	H
Carbon 14	14762-75-5	3.10	3.8	6.34	50.0	U J	C
Total Strontium	SR-RAD	-0.041	0.12	0.262	1.00	U	SR
Technetium 99	14133-76-7	0.175	0.31	0.806	15.0	U	TC
Thorium 228	14274-82-9	-0.101	0.13	0.414	1.00	U J	TH
Thorium 230	14269-63-7	0.772	0.47	0.619	1.00		TH
Thorium 232	TH-232	0	0.067	0.257	1.00	U J	TH
Uranium 233/234	U-233/234	-0.017	0.034	0.140	1.00	U	U
Uranium 235	15117-96-1	0	0.041	0.158	1.00	U	U
Uranium 238	U-238	0.034	0.034	0.130	1.00	U	U
Plutonium 238	13981-16-3	0.032	0.13	0.305	1.00	U	PU
Plutonium 239/240	PU-239/240	0.032	0.064	0.244	1.00	U	PU
Potassium 40	13966-00-2	2.25	0.71	0.505			GAM
Cobalt 60	10198-40-0	U		0.050	0.050	U	GAM
Cesium 137	10045-97-3	U		0.043	0.100	U	GAM
Radium 226	13982-63-3	U		0.081	0.100	U	GAM
Radium 228	15262-20-1	U		0.161	0.200	U	GAM
Europium 152	14683-23-9	U		0.091	0.100	U	GAM
Europium 154	15585-10-1	U		0.125	0.100	U	GAM
Europium 155	14391-16-3	U		0.078	0.100	U	GAM
Thorium 228	14274-82-9	U		0.062		U	GAM
Thorium 232	TH-232	U		0.161		U	GAM
Uranium 235	15117-96-1	U		0.101		U	GAM
Uranium 238	U-238	U		4.68		U	GAM
Americium 241	14596-10-2	U		0.045		U	GAM
Beryllium 7	13966-02-4	U		0.374		U	GAM
Ruthenium 106	13967-48-1	U		0.319		U	GAM
Antimony 125	14234-35-6	U		0.087		U	GAM

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DATA SHEET, cont

SDG 7446
Contact N. Joseph Verville
Client/Case no Hanford SDG K1735
Contract No. 300W235A00

Lab sample id R908121-07
Dept sample id 7446-007
Received 08/28/09
% solids 100.0
Client sample id J19053
Location/Matrix VRSA-BASS2-CARCASS SOLID
Collected/Weight 08/25/09 12:45 541 g
Custody/SAP No RC-118-329 RC-118

1/10/10

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Cesium 134	13967-70-9	U		0.048		U	GAM

Columbia River Component of the RCBRA Tissues

Lab id EBERLINE
Protocol Hanford1
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EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1735

7446-008

J19054

DATA SHEET

SDG	7446	Client/Case no	Hanford SDG K1735
Contact	N. Joseph Verville	Contract	No. 500W235A00
Lab sample id	E908121-08	Client sample id	J19054
Dept sample id	7446-008	Location/Matrix	URSA-BASE1-CARCASS SOLID
Received	08/28/09	Collected/Weight	08/25/09 15:00 534 g
% solids	100.0	Custody/SAF No	RC-118-330 RC-118

1/10/10

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Tritium	10028-17-8	2.35	3.3	5.50	400	U J	H
Carbon 14	14762-75-5	3.46	3.4	5.42	50.0	U	C
Total Strontium	SR-RAD	-0.070	0.14	0.309	1.00	U	SR
Technetium 99	14133-76-7	0.142	0.31	0.433	15.0	U	TC
Thorium 228	14274-82-9	0.111	0.22	0.409	1.00	U J	TH
Thorium 230	14269-63-7	-0.111	0.30	0.653	1.00	U	TH
Thorium 232	TH-232	0.037	0.074	0.282	1.00	U J	TH
Uranium 233/234	U-233/234	-0.016	0.032	0.122	1.00	U	U
Uranium 235	15117-96-1	0	0.049	0.148	1.00	U	U
Uranium 238	U-238	0.016	0.032	0.122	1.00	U	U
Plutonium 238	13981-16-3	0.027	0.11	0.258	1.00	U	PU
Plutonium 239/240	PU-239/240	0.027	0.054	0.206	1.00	U	PU
Potassium 40	13966-00-2	2.27	0.64	0.469			GAM
Cobalt 60	10198-40-0	U		0.040	0.050	U	GAM
Cesium 137	10045-97-3	U		0.048	0.100	U	GAM
Radium 226	13982-63-3	U		0.084	0.100	U	GAM
Radium 228	15262-20-1	U		0.215	0.200	U	GAM
Europium 152	14683-23-9	U		0.108	0.100	U	GAM
Europium 154	15585-10-1	U		0.102	0.100	U	GAM
Europium 155	14391-16-3	U		0.113	0.100	U	GAM
Thorium 228	14274-82-9	U		0.074		U	GAM
Thorium 232	TH-232	U		0.235		U	GAM
Uranium 235	15117-96-1	U		0.234		U	GAM
Uranium 238	U-238	U		4.31		U	GAM
Americium 241	14596-10-2	U		0.094		U	GAM
Beryllium 7	13966-02-4	U		0.370		U	GAM
Ruthenium 106	13967-48-1	U		0.316		U	GAM
Antimony 125	14234-35-6	U		0.098		U	GAM

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SAMPLE DELIVERY GROUP E1735

7446-008

J19054

DATA SHEET, cont

SDG	7446	Client/Case no	Hanford SDG E1735
Contact	N. Joseph Verville	Contract	No. 300W235A00
Lab sample id	8908121-08	Client sample id	J19054
Dept sample id	7446-008	Location/Matrix	URGA-BASS1 CARCASS SOLID
Received	08/28/09	Collected/Weight	08/25/09 15:00 534 g
% solids	100.0	Custody/SAF No	RC-118-330 RC-118

11/6/10

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Cesium 134	13967-70-9	U		0.046		U	GAM

Columbia River Component of the RCBRA - Tissues

Lab id EBERLINE
Protocol Hanford1
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EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1735

7446-009

J19055

DATA SHEET

SDG	7446	Client/Case no	Hanford SDG K1735
Contact	N. Joseph Verville	Contract	No. 200W235A00
Lab sample id	R908121-09	Client sample id	J19055
Dept sample id	7446-009	Location/Matrix	URBA-BASS4-CARCASS SOLID
Received	08/28/09	Collected/Weight	08/25/09 13:45 820 g
% solids	100.0	Custody/SAF No	RC-110 331 RC-110

1/10/10

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Tritium	10028-17-8	1.56	3.3	5.40	400	U J	H
Carbon 14	14762-75-5	2.26	4.4	5.39	50.0	U J	C
Total Strontium	SR-RAD	-0.016	0.13	0.260	1.00	U	SR
Technetium 99	14133-76-7	0.252	0.38	0.513	15.0	U	TC
Thorium 228	14274-82-9	0.056	0.17	0.344	1.00	U J	TH
Thorium 230	14269-63-7	0.410	0.19	0.585	1.00	U	TH
Thorium 232	TH-232	0.056	0.056	0.213	1.00	U J	TH
Uranium 233/234	U-233/234	0.017	0.034	0.131	1.00	U	U
Uranium 235	15117-96-1	0	0.041	0.159	1.00	U	U
Uranium 238	U-238	0	0.044	0.131	1.00	U	U
Plutonium 238	13981-16-3	0	0.090	0.215	1.00	U	PU
Plutonium 239/240	PU-239/240	0	0.045	0.172	1.00	U	PU
Potassium 40	13966-00-2	2.32	0.41	0.260			GAM
Cobalt 60	10198-40-0	U		0.026	0.050	U	GAM
Cesium 137	10045-97-3	U		0.028	0.100	U	GAM
Radium 226	13982-63-3	U		0.062	0.100	U	GAM
Radium 228	15262-20-1	U		0.195	0.200	U	GAM
Europium 152	14683-23-9	U		0.081	0.100	U	GAM
Europium 154	15585-10-1	U		0.080	0.100	U	GAM
Europium 155	14391-16-3	U		0.082	0.100	U	GAM
Thorium 228	14274-82-9	U		0.054		U	GAM
Thorium 232	TH-232	U		0.195		U	GAM
Uranium 235	15117-96-1	U		0.170		U	GAM
Uranium 238	U-238	U		1.34		U	GAM
Americium 241	14596-10-2	U		0.069		U	GAM
Beryllium 7	13966-02-4	U		0.288		U	GAM
Ruthenium 106	13967-48-1	U		0.257		U	GAM
Antimony 125	14234-35-6	U		0.075		U	GAM

Lab id	EBRLNE
Protocol	Hanford1
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EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1735

7446-009

J19055

DATA SHEET, cont

SDG	7446	Client/Case no	Hanford SDG K1735
Contact	N. Joseph Verville	Contract	No. 000W115A00
Lab sample id	8908121-09	Client sample id	J19055
Dept sample id	7446-009	Location/Matrix	URSA:BASC4-CARCASS SOLID
Received	08/28/09	Collected/Weight	08/25/09 13:45 828 g
% solids	100.0	Custody/SAP No	RC 118-331 RC-118

1/10/10

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Cesium 134	13967-70-9	U		0.032		U	GAM

Columbia River Component of the RCBRA - Tissues

Lab id	EBRLNE
Protocol	Hanford1
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SAMPLE DELIVERY GROUP K1735

7446-010

J19056

DATA SHEET

SDG	7446	Client/Case no	Hanford SDG_K1735
Contact	N. Joseph Verville	Contract	No. S00W235A00
Lab sample id	R908121-10	Client sample id	J19056
Dept sample id	7446-010	Location/Matrix	URSA-BASSS CARCASS SOLID
Received	08/28/09	Collected/Weight	08/25/09 14:30 500 g
% solids	100.0	Custody/SAF No	RC 118-132 RC 118

1/10/10

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Tritium	10028-17-8	0.880	3.2	5.50	400	U J	H
Carbon 14	14762-75-5	0.487	4.2	5.42	50.0	U J	C
Total Strontium	SR-RAD	0.049	0.13	0.262	1.00	U	SR
Technetium 99	14133-76-7	0.108	0.29	0.562	15.0	U	TC
Thorium 228	14274-82-9	0	0.13	0.308	1.00	U J	TH
Thorium 230	14269-63-7	0.034	0.45	0.613	1.00		TH
Thorium 232	TH-232	0	0.064	0.246	1.00	U J	TH
Uranium 233/234	U-233/234	0	0.069	0.165	1.00	U	U
Uranium 235	15117-96-1	0.042	0.047	0.159	1.00	U	U
Uranium 238	U-238	0.017	0.034	0.132	1.00	U	U
Plutonium 238	13981-16-3	-0.023	0.052	0.220	1.00	U	PU
Plutonium 239/240	PU-239/240	0	0.046	0.175	1.00	U	PU
Potassium 40	13966-00-2	2.09	0.51	0.429			GAM
Cobalt 60	10198-40-0	U		0.047	0.050	U	GAM
Cesium 137	10045-97-3	U		0.050	0.100	U	GAM
Radium 226	13982-63-3	U		0.057	0.100	U	GAM
Radium 228	15262-20-1	U		0.108	0.200	U	GAM
Europium 152	14683-23-9	U		0.123	0.100	U	GAM
Europium 154	15585-10-1	U		0.139	0.100	U	GAM
Europium 155	14391-16-3	U		0.085	0.100	U	GAM
Thorium 228	14274-82-9	U		0.070		U	GAM
Thorium 232	TH-232	U		0.188		U	GAM
Uranium 235	15117-96-1	U		0.274		U	GAM
Uranium 238	U-238	U		5.42		U	GAM
Americium 241	14596-10-2	U		0.046		U	GAM
Beryllium 7	13966-02-4	U		0.394		U	GAM
Ruthenium 106	13967-48-1	U		0.413		U	GAM
Antimony 125	14234-35-6	U		0.111		U	GAM

Lab id	EBRLNE
Protocol	Hanford1
Version	Ver 1.0
Form	DVD_DS
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SAMPLE DELIVERY GROUP K1735

7446-010 J19056

DATA SHEET, cont

SDG	7446	Client/Case no	Hanford SDG K1735
Contact	M. Joseph Verville	Contract	No. 500W215A00
Lab sample id	R908121-10	Client sample id	J19056
Dept sample id	7446-010	Location/Matrix	UKSA-RA005-CARCASS SOLID
Received	09/28/09	Collected/Weight	08/25/09 14:30 500 g
% solids	100.0	Custody/SAF No	RC-118-332 RC 118

1/10/10

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	ADL pCi/g	QUALI-FIERS	TEST
Cesium 134	13967-70-9	U		0.050		U	GAM

Columbia River Component of the RCBRA - Tissues

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Lab id EBERLNE
Protocol Hanford
Version Ver 1.0
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EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1735

7446-011

J190L6

DATA SHEET

SDG	7446	Client/Case no	Hanford SDG K1735
Contact	N. Joseph Verville	Contract	No. 200W215A00
Lab sample id	R908121-11	Client sample id	J190L6
Dept sample id	7446-011	Location/Matrix	LWSA BASS1-FILLET SOLID
Received	08/28/09	Collected/Weight	08/25/09 11:00 451 g
% solids	100.0	Custody/SAF No	RC-118-413 RC-118

1/10/10

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Tritium	10028-17-8	1.44	3.4	5.53	400	U J	H
Carbon 14	14762-75-5	0.162	1.3	5.42	50.0	U J	C
Total Strontium	SR-RAD	-0.013	0.12	0.242	1.00	U	SR
Technetium 99	14133-76-7	-0.033	0.41	0.667	15.0	U	TC
Thorium 228	14274-82-9	-0.088	0.12	0.322	1.00	U J	TH
Thorium 230	14269-63-7	0.174	0.15	0.575	1.00	U	TH
Thorium 232	TH-232	0	0.058	0.222	1.00	U J	TH
Uranium 233/234	U 233/234	0	0.011	0.126	1.00	U	U
Uranium 235	15117-96-1	0	0.040	0.153	1.00	U	U
Uranium 238	U-238	0	0.031	0.126	1.00	U	U
Plutonium 238	13981-16-3	0	0.10	0.240	1.00	U	PU
Plutonium 239/240	PU-239/240	0.075	0.10	0.190	1.00	U	PU
Potassium 40	13966-00-2	7.58	0.68	0.401			GAM
Cobalt 60	10198-40-0	U		0.037	0.050	U	GAM
Cesium 137	10045-97-3	U		0.053	0.100	U	GAM
Radium 226	13982-63-3	U		0.082	0.100	U	GAM
Radium 228	15262-20-1	U		0.175	0.200	U	GAM
Europium 152	14683-23-9	U		0.111	0.100	U	GAM
Europium 154	15585-10-1	U		0.120	0.100	U	GAM
Europium 155	14391-16-3	U		0.101	0.100	U	GAM
Thorium 228	14274-82-9	U		0.073		U	GAM
Thorium 232	TH-232	U		0.175		U	GAM
Uranium 235	15117-96-1	U		0.239		U	GAM
Uranium 238	U 238	U		4.82		U	GAM
Americium 241	14596-10-2	U		0.097		U	GAM
Beryllium 7	13966-02-4	U		0.371		U	GAM
Ruthenium 106	13967-48-1	U		0.341		U	GAM
Antimony 125	14234-35-6	U		0.084		U	GAM

Lab id	EBERLINE
Protocol	Hanford1
Version	Ver 1.0
Form	DVD DS
Version	3.06
Report date	10/08/09

EBERLINE SERVICES/RICHMOND
SAMPLE DELIVERY GROUP K1735

7446-011

J190L6

DATA SHEET, cont

SDG 7446
Contact N. Joseph Verville

Client/Case no Hanford SDG K1735
Contract No. 200W215A00

Lab sample id E908121-11
Dept sample id 7446-011
Received 08/28/09
% solids 100.0

Client sample id J190L6
Location/Matrix LWSA-BASS1-FILLET SOLID
Collected/Weight 08/25/09 11:00 451 g
Custody/SAF No RC-118 #11 RC-118

1/10/10

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Cesium 134	13967-70-9	U		0.047		U	GAM

Columbia River Component of the RCBRA - Tissues

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Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-DC
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EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1735

7446-012

J190L7

DATA SHEET

SDG	7446	Client/Case no	Hanford SDG_K1735
Contact	M. Joseph Verville	Contract	No. 00W215A00
Lab sample id	R908121-12	Client sample id	J190L7
Dept sample id	7446-012	Location/Matrix	LWSA BASS2 FILLET SOLID
Received	08/28/09	Collected/Weight	08/25/09 09:50 371 g
% solids	100.0	Custody/SAF No	RC-118-414 RC-118

V— 1/10/10

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Tritium	10028-17-8	3.04	3.7	6.10	400	U J	H
Carbon 14	14762-75-5	0.716	3.6	5.98	50.0	U J	C
Total Strontium	SR RAD	0.007	0.13	0.253	1.00	U	SR
Technetium 99	14133-76-7	0.022	0.24	0.455	15.0	U	TC
Thorium 228	14274-82-9	-0.083	0.17	0.372	1.00	U J	TH
Thorium 230	14269-63-7	0.608	0.39	0.564	1.00		TH
Thorium 232	TH-232	0	0.055	0.212	1.00	U J	TH
Uranium 233/234	U-233/234	0	0.069	0.264	1.00	U	U
Uranium 235	15117-96-1	0	0.083	0.319	1.00	U	U
Uranium 238	U-238	0.034	0.069	0.264	1.00	U	U
Plutonium 238	13981-16-3	0.026	0.10	0.196	1.00	U	PU
Plutonium 239/240	PU-239/240	0.020	0.051	0.196	1.00	U	PU
Potassium 40	13966-00-2	3.24	0.68	0.451			GAM
Cobalt 60	10198-40-0	U		0.052	0.050	U	GAM
Cesium 137	10045-97-3	U		0.049	0.100	U	GAM
Radium 226	13982-63-3	U		0.105	0.100	U	GAM
Radium 228	15262-20-1	U		0.195	0.200	U	GAM
Europium 152	14683-23-9	U		0.111	0.100	U	GAM
Europium 154	15585-10-1	U		0.105	0.100	U	GAM
Europium 155	14391-16-3	U		0.079	0.100	U	GAM
Thorium 228	14274-82-9	U		0.060		U	GAM
Thorium 232	TH-232	U		0.195		U	GAM
Uranium 235	15117-96-1	U		0.197		U	GAM
Uranium 238	U-238	U		4.67		U	GAM
Americium 241	14596-10-2	U		0.049		U	GAM
Beryllium 7	13966-02-4	U		0.379		U	GAM
Ruthenium 106	13967-48-1	U		0.401		U	GAM
Antimony 125	14234-35-6	U		0.099		U	GAM

Lab id	EBRLNE
Protocol	Hanford1
Version	Ver 1.0
Form	DVD-DS
Version	3.06
Report date	10/08/09

EBERLINE SERVICES/RICHMOND
SAMPLE DELIVERY GROUP K1735

7446-012

J190L7

DATA SHEET, cont

SDG	7446	Client/Case no	Hanford SDG K1735
Contact	N. Joseph Verville	Contract	No. 500W235A00
Lab sample id	8908121-12	Client sample id	J190L7
Dept sample id	7446-012	Location/Matrix	LWSA-BASS2 FILLET SOLID
Received	08/28/09	Collected/Weight	08/25/09 09:50 371 g
% solids	100.0	Custody/SAF No	RC-118-414 RC-118

1/6/10

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALIFIERS	TEST
Cesium 134	13967-70-9	0		0.047		U	GAM

Columbia River Component of the RCBRA - Tissues

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Lab id	EBRLNE
Protocol	Hanford
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EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1735

7446-013

J19DL8

DATA SHEET

SDG 7446
Contact N. Joseph Verville
Lab sample id 8908121-13
Dept sample id 7446_013
Received 08/28/09
% solids 100.0

Client/Case no Hanford
SDG K1735
Contract No. 500W235A00
Client sample id J19DL8
Location/Matrix LWSA-BASS3-FILLET SOLID
Collected/Weight 08/25/09 10:30 477 g
Custody/SAP No RC 110-415 RC 110

1/10/10

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Tritium	10028-17-8	4.04	4.2	6.88	400	U J	H
Carbon 14	14762-75-5	2.08	3.7	6.11	50.0	U J	C
Total Strontium	SR-RAD	0.050	0.13	0.392	1.00	U	SR
Technetium 99	14133-76-7	0.086	0.25	0.564	15.0	U	TC
Thorium 228	14274-82-9	0.010	0.12	0.232	1.00	U J	TH
Thorium 230	14269-63-7	0.211	0.36	0.597	1.00	U	TH
Thorium 232	TH-232	0.010	0.060	0.231	1.00	U J	TH
Uranium 233/234	U-233/234	0	0.067	0.257	1.00	U	U
Uranium 235	15117-96-1	0.041	0.082	0.312	1.00	U	U
Uranium 238	U-238	0.034	0.067	0.257	1.00	U	U
Plutonium 238	13981-16-3	0	0.089	0.212	1.00	U	PU
Plutonium 239/240	PU-239/240	0.044	0.044	0.170	1.00	U	PU
Potassium 40	13966-00-2	3.35	0.60	0.156			GAM
Cobalt 60	10198-40-0	U		0.031	0.050	U	GAM
Cesium 137	10045-97-3	U		0.032	0.100	U	GAM
Radium 226	13982-63-3	U		0.056	0.100	U	GAM
Radium 228	15262-20-1	U		0.134	0.200	U	GAM
Europium 152	14683-23-9	U		0.084	0.100	U	GAM
Europium 154	15585-10-1	U		0.104	0.100	U	GAM
Europium 155	14391-16-3	U		0.068	0.100	U	GAM
Thorium 228	14274-82-9	U		0.098		U	GAM
Thorium 232	TH-232	U		0.144		U	GAM
Uranium 235	15117-96-1	U		0.250		U	GAM
Uranium 238	U-238	U		3.91		U	GAM
Americium 241	14596-10-2	U		0.113		U	GAM
Beryllium 7	13966-02-4	U		0.381		U	GAM
Ruthenium 106	13967-48-1	U		0.288		U	GAM
Antimony 125	14234-35-6	U		0.071		U	GAM

Lab id EBERLINE
Protocol Hanford1
Version Ver.1.0
Form DVD-DS
Version 1.06
Report date 10/08/09

DATA SHEET, cont

SDG	7446	Client/Case no	Hanford SDG E1735
Contact	N. Joseph Verville	Contract	No. 800W235A00
Lab sample id	E908121-13	Client sample id	J190L8
Dept sample id	7446-013	Location/Matrix	LWSA-BASS1-FILLET SOLID
Received	08/28/09	Collected/Weight	08/25/09 10:30 477 g
% solids	100.0	Custody/SAF No	RC-118-435 RC-118

1/10/10

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Cesium 134	13967-70-9	U		0.036		U	GAM

Columbia River Component of the RCBRA - Tissues

Lab id EBRLNE
Protocol Hanford1
Version Ver 1.0
Form DVD-DS
Version 3.06
Report date 10/08/09

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1735

7446-014 J190L9

DATA SHEET

SDG	7446	Client/Case no	Hanford SDG K1735
Contact	N. Joseph Vervalle	Contract	No. 000W215A00
Lab sample id	K908121-14	Client sample id	J190L9
Dept sample id	7446-014	Location/Matrix	LWSA-BASS4-FILLET SOLID
Received	08/28/09	Collected/Weight	08/24/09 15:30 374 g
% solids	100.0	Custody/SAF No	RC-118-416 RC-118

1/10/10

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Tritium	10028-17-8	6.25	3.5	5.49	400	J	H
Carbon 14	14762-75-5	2.27	3.3	5.42	50.0	U J	C
Total Strontium	SR-RAD	-0.012	0.12	0.247	1.00	U	SR
Technetium 99	14133-76-7	0.019	0.20	0.436	15.0	U	TC
Thorium 228	14274-82-9	-0.005	0.11	0.348	1.00	U J	TH
Thorium 230	14269-63-7	0.423	0.40	0.575	1.00	U	TH
Thorium 232	TH-232	0	0.056	0.216	1.00	U J	TH
Uranium 233/234	U-233/234	0.033	0.067	0.255	1.00	U	U
Uranium 235	15117-96-1	0	0.081	0.308	1.00	U	U
Uranium 238	U-238	0	0.067	0.255	1.00	U	U
Plutonium 238	13981-16-3	0	0.062	0.236	1.00	U	PU
Plutonium 239/240	PU-239/240	0.031	0.062	0.236	1.00	U	PU
Potassium 40	13966-00-2	3.10	0.62	0.451			GAM
Cobalt 60	10198-40-0	U		0.043	0.050	U	GAM
Cesium 137	10045-97-3	U		0.047	0.100	U	GAM
Radium 226	13982-63-3	U		0.102	0.100	U	GAM
Radium 228	15262-20-1	U		0.176	0.200	U	GAM
Europium 152	14683-23-9	U		0.116	0.100	U	GAM
Europium 154	15585-10-1	U		0.137	0.100	U	GAM
Europium 155	14391-16-3	U		0.082	0.100	U	GAM
Thorium 228	14274-82-9	U		0.067		U	GAM
Thorium 232	TH-232	U		0.176		U	GAM
Uranium 235	15117-96-1	U		0.216		U	GAM
Uranium 238	U-238	U		5.22		U	GAM
Americium 241	14596-10-2	U		0.038		U	GAM
Beryllium 7	13966-02-4	U		0.382		U	GAM
Ruthenium 106	13967-48-1	U		0.391		U	GAM
Antimony 125	14234-35-6	U		0.106		U	GAM

Lab id	EBRLNE
Protocol	Hanford
Version	Ver 1.0
Form	DVD-DS
Version	3.06
Report date	10/08/09

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1735

7446-014

J190L9

DATA SHEET, cont

SDG 7446

Contact R. Joseph Verville

Client/Case no Hanford SDG K1735

Contract No. 500W235A00

Lab sample id K908121-14

Dept sample id 7446.014

Received 08/28/09

% solids 100.0

Client sample id J190L9

Location/Matrix LWSA:BASS4:FILLET SOLID

Collected/Weight 08/24/09 15:30 374 g

Custody/SAF No RC-118-416 RC-118

11/10/10

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Cesium 134	13967-70-9	U		0.055		U	GAM

Columbia River Component of the RCBRA - Tissues

Lab id EBRLNE

Protocol Hanford1

Version Ver 1.0

Form DVD-DS

Version 3.06

Report date 10/08/09

7446-015

J190M0

DATA SHEET

SDG	7446	Client/Case no	Hanford SDG_K1735
Contact	N. Joseph Verville	Contract	No. 500W235A00
Lab sample id	E908121-15	Client sample id	J190M0
Dept sample id	7446-015	Location/Matrix	LWSA-BASS5 FILLET SOLID
Received	08/28/09	Collected/Weight	08/24/09 16:15 100 g
% solids	100.0	Custody/SAF No	RC-118:412 RC-118

1/6/10

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Tritium	10028-17-8	2.44	3.4	5.71	400	U J	H
Carbon 14	14762-75-5	4.98	3.5	5.61	50.0	U J	C
Total Strontium	SR RAD	-0.020	0.12	0.244	1.00	U	SR
Technecium 99	14133-76-7	0.062	0.24	0.513	15.0	U	TC
Thorium 228	14274-82-9	-0.035	0.14	0.383	1.00	U J	TH
Thorium 230	14269-63-7	0.656	0.42	0.636	1.00		TH
Thorium 232	TH-232	0	0.069	0.264	1.00	U J	TH
Uranium 233/234	U-233/234	0	0.079	0.104	1.00	U	U
Uranium 235	15117-96-1	0.048	0.096	0.367	1.00	U	U
Uranium 238	U-238	0.079	0.080	0.304	1.00	U	U
Plutonium 238	13981-16-3	-0.033	0.067	0.255	1.00	U	PU
Plutonium 239/240	PU-239/240	-0.033	0.067	0.255	1.00	U	PU
Potassium 40	13966-00-2	5.36	0.70	0.524			GAM
Cobalt 60	10198-40-0	U		0.049	0.050	U	GAM
Cesium 137	10045-97-3	U		0.103	0.100	U	GAM
Radium 226	13982-63-3	U		0.164	0.100	U	GAM
Radium 228	15262-20-1	U		0.187	0.200	U	GAM
Europium 152	14683-23-9	U		0.123	0.100	U	GAM
Europium 154	15585-10-1	U		0.123	0.100	U	GAM
Europium 155	14391-16-3	U		0.079	0.100	U	GAM
Thorium 228	14274-82-9	U		0.064		U	GAM
Thorium 232	TH-232	U		0.187		U	GAM
Uranium 235	15117-96-1	U		0.197		U	GAM
Uranium 238	U-238	U		5.32		U	GAM
Americium 241	14596-10-2	U		0.049		U	GAM
Beryllium 7	13966-02-4	U		0.408		U	GAM
Ruthenium 106	13967-48-1	U		0.354		U	GAM
Antimony 125	14234-35-6	U		0.095		U	GAM

Lab id	EBRLNE
Protocol	Hanford
Version	Ver 1.0
Form	DVD-DS
Version	3.06
Report date	10/08/09

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1735

7446-015

J190M0

DATA SHEET, cont

SDG	7446	Client/Case no	Hanford SDG K1735
Contact	N. Joseph Verville	Contract	No. 000W215A00
Lab sample id	R908121-15	Client sample id	J190M0
Dept sample id	7446-015	Location/Matrix	LWSA-BASS6-FILLET SOLID
Received	08/28/09	Collected/Weight	08/24/09 16:15 388 g
% solids	100.0	Custody/SAF No	RC-118-417 RC-110

1/10/10

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Cesium 134	13967-70-9	U		0.049		U	GAM

Columbia River Component of the RCBRA - Tissues

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Lab id EBRLNE
Protocol Hanford1
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EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1735

7446-016

J190N6

DATA SHEET

SDG	7446	Client/Case no	Hanford SDG_K1735
Contact	N. Joseph Verville	Contract	No. 500W235A00
Lab sample id	R908121-16	Client sample id	J190N6
Dept sample id	7446-016	Location/Matrix	LWSA BAS01-CARCASS SOLID
Received	08/28/09	Collected/Weight	08/25/09 13:15 547 g
% solids	100.0	Custody/SAF No	RC-110-433 RC 118

1/6/10

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	ADL pCi/g	QUALIFIERS	TEST
Tritium	10028-17-8	2.57	3.4	5.56	400	U J	H
Carbon 14	14762-75-5	-0.054	1.2	5.46	50.0	U J	C
Total Strontium	SR RAD	-0.053	0.12	0.276	1.00	U	SR
Technetium 99	14133-76-7	0.018	0.22	0.406	15.0	U	TC
Thorium 228	14274-82-9	0.083	0.17	0.318	1.00	U J	TH
Thorium 230	14269-63-7	0.374	0.42	0.733	1.00	U	TH
Thorium 232	TH-232	0.043	0.083	0.417	1.00	U J	TH
Uranium 233/234	U-233/234	U	0.076	0.291	1.00	U	U
Uranium 235	15117-96-1	U	0.092	0.352	1.00	U	U
Uranium 238	U-238	U	0.076	0.291	1.00	U	U
Plutonium 238	13981-16-3	U	0.066	0.253	1.00	U	PU
Plutonium 239/240	PU-239/240	U	0.066	0.253	1.00	U	PU
Potassium 40	13966-00-2	2.12	0.19	0.333			GAM
Cobalt 60	10198-40-0	U		0.026	0.050	U	GAM
Cesium 137	10045-97-3	U		0.027	0.100	U	GAM
Radium 226	13982-63-3	U		0.062	0.100	U	GAM
Radium 228	15262-20-1	U		0.106	0.200	U	GAM
Europium 152	14683-23-9	U		0.069	0.100	U	GAM
Europium 154	15585-10-1	U		0.082	0.100	U	GAM
Europium 155	14391-16-3	U		0.050	0.100	U	GAM
Thorium 228	14274-82-9	U		0.042		U	GAM
Thorium 232	TH-232	U		0.106		U	GAM
Uranium 235	15117-96-1	U		0.124		U	GAM
Uranium 238	U-238	U		3.27		U	GAM
Americium 241	14596-10-2	U		0.024		U	GAM
Beryllium 7	13966-02-4	U		0.241		U	GAM
Ruthenium 106	13967-48-1	U		0.231		U	GAM
Antimony 125	14234-35-6	U		0.064		U	GAM

Lab id	EBRLNE
Protocol	Hanford
Version	Ver 1.0
Form	DVD-DS
Version	1.00
Report date	10/08/09

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1735

7446-016

J190N6

DATA SHEET, cont

SDG	7446	Client/Case no	Hanford SDG K1735
Contact	N. Joseph Verville	Contract	No. 00W215A00
Lab sample id	R908121-16	Client sample id	J190N6
Dept sample id	7446-016	Location/Matrix	LWGA-BASS1 CARCASS SOLID
Received	08/28/09	Collected/Weight	08/25/09 13:15 547 g
% solids	100.0	Custody/SAF No	EC 110 431 EC-118

1/10/10

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALIFIERS	TEST
Cesium 134	13967-70-9	U		0.011		U	GAM

Columbia River Component of the RCBRA - Tissues

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Lab id EBRLNB
Protocol Hanford1
Version Ver 1.0
Form DVD-DS
Version 3.06
Report date 10/08/09

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1735

DATA SHEET

SDG	7446	Client/Case no	Hanford SDG K1735
Contact	N. Joseph Verville	Contract	No. 800W235A00
Lab sample id	R200121-17	Client sample id	J190N7
Dept sample id	7446-017	Location/Matrix	LWSA-HASSE-CARCASS SOLID
Received	08/28/09	Collected/Weight	08/25/09 10:00 403 g
% solids	100.0	Custody/SAF No	RC-118-434 RC-118

✓ 1/10/10

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Tritium	10028-17-8	2.16	3.3	5.51	400	U J	H
Carbon 14	14762-75-5	1.72	3.2	5.40	50.0	U J	C
Total Strontium	SR-RAD	-0.024	0.11	0.235	1.00	U	SR
Technetium 99	14133-76-7	0.036	0.75	0.406	15.0	U	TC
Thorium 228	14274-82-9	-0.038	0.15	0.418	1.00	U J	TH
Thorium 230	14269-63-7	1.06	0.53	0.695	1.00		TH
Thorium 232	TH-232	-0.018	0.075	0.288	1.00	U J	TH
Uranium 233/234	U-233/234	0.033	0.066	0.254	1.00	U	U
Uranium 235	15117-96-1	0.040	0.080	0.107	1.00	U	U
Uranium 238	U-238	0	0.066	0.254	1.00	U	U
Plutonium 238	13981-16-3	0.016	0.073	0.278	1.00	U	PU
Plutonium 239/240	PU-239/240	0.036	0.073	0.277	1.00	U	PU
Potassium 40	13966-00-2	2.60	0.48	0.243			GAM
Cobalt 60	10198-40-0	U		0.023	0.050	U	GAM
Cesium 137	10045-97-3	U		0.026	0.100	U	GAM
Radium 226	13982-63-3	U		0.049	0.100	U	GAM
Radium 228	15262-20-1	U		0.107	0.200	U	GAM
Europium 152	14683-23-9	U		0.068	0.100	U	GAM
Europium 154	15585-10-1	U		0.067	0.100	U	GAM
Europium 155	14391-16-3	U		0.064	0.100	U	GAM
Thorium 228	14274-82-9	U		0.045		U	GAM
Thorium 232	TH-232	U		0.107		U	GAM
Uranium 235	15117-96-1	U		0.145		U	GAM
Uranium 238	U-238	U		2.76		U	GAM
Americium 241	14596-10-2	U		0.058		U	GAM
Beryllium 7	13966-02-4	U		0.211		U	GAM
Ruthenium 106	13967-48-1	U		0.216		U	GAM
Antimony 125	14234-35-6	U		0.057		U	GAM

Lab id EBRLNE
Protocol Hanford
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EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1735

7446-017

J190N7

DATA SHEET, cont

SDG	7446	Client/Case no	Hanford SDG K1735
Contact	N. Joseph Verville	Contract	No. 500W215A00
Lab sample id	R908121-17	Client sample id	J190N7
Dept sample id	7446-017	Location/Matrix	LWGA-BASS2 CARCASS SOLID
Received	08/20/09	Collected/Weight	08/25/09 10:00 401 g
% solids	100.0	Custody/SAF No	RC-118-434 RC-118

1/10/10

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALIFIERS	TEST
Cesium 134	13967-70-9	U		0.027		U	GAM

Columbia River Component of the RCBRA - Tissues

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Lab id EBRLNE
Protocol Hanford
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Report date 10/08/09

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1735

7446-018

J190N8

DATA SHEET

SDG 7446
Contact N. Joseph Verville

Client/Case no Hanford SDG K1735
Contract No. 500K215A00

Lab sample id K908121-18
Dept sample id 7446-018
Received 08/28/09
% solids 100.0

Client sample id J190N8
Location/Matrix LWSA-BASSI-CARCASS SOLID
Collected/Weight 08/25/09 10:45 533 g
Custody/SAF No RC-118-435 RC-118

1/10/10

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Tritium	10028-17-8	1.68	3.1	5.56	400	U J	H
Carbon 14	14762 75 5	1.58	3.3	5.47	50.0	U J	C
Total Strontium	SR-RAD	-0.029	0.11	0.206	1.00	U	SR
Technetium 99	14133-76-7	0.047	0.25	0.421	15.0	U	TC
Thorium 228	14274-82-9	0.034	0.14	0.326	1.00	U J	TH
Thorium 230	14269 63 7	0.474	0.41	0.648	1.00	U	TH
Thorium 232	TH-232	0	0.068	0.259	1.00	U J	TH
Uranium 233/234	U-233/234	0.135	0.18	0.345	1.00	U	U
Uranium 235	15117-96-1	0	0.11	0.418	1.00	U	U
Uranium 238	U 238	0	0.090	0.345	1.00	U	U
Plutonium 238	13981-16-3	0.036	0.22	0.399	1.00	U	PU
Plutonium 239/240	PU-239/240	0	0.077	0.276	1.00	U	PU
Potassium 40	13966-00 2	2.65	0.49	0.284			GAM
Cobalt 60	10198-40-0	U		0.035	0.050	U	GAM
Cesium 137	10045-97-3	U		0.031	0.100	U	GAM
Radium 226	13982 63-3	U		0.054	0.100	U	GAM
Radium 228	15262-20-1	U		0.120	0.200	U	GAM
Europium 152	14683-23 9	U		0.072	0.100	U	GAM
Europium 154	15585-10-1	U		0.080	0.100	U	GAM
Europium 155	14391 16-3	U		0.053	0.100	U	GAM
Thorium 228	14274-82-9	U		0.041		U	GAM
Thorium 232	TH-232	U		0.120		U	GAM
Uranium 235	15117-96-1	U		0.124		U	GAM
Uranium 238	U-238	U		3.40		U	GAM
Americium 241	14596-10-2	U		0.032		U	GAM
Beryllium 7	13966-02-4	U		0.256		U	GAM
Ruthenium 106	13967-48-1	U		0.324		U	GAM
Antimony 125	14234-35-6	U		0.062		U	GAM

Lab id EBERLINE
Protocol Hanford1
Version Ver 1.0
Form DVD-DS
Version 3.06
Report date 10/08/09

EBERLINE SERVICES/RICHMOND
SAMPLE DELIVERY GROUP K1735

7446-018

J190N8

DATA SHEET, cont

SDG	7446	Client/Case no	Hanford
			SDG K1735
Contact	N. Joseph Verville	Contract	No. 600H235A00
Lab sample id	R900131-18	Client sample id	J190N8
Dept sample id	7446-018	Location/Matrix	LWSA HASS3 CARCASS SOLID
Received	08/28/09	Collected/Weight	08/25/09 10:45 533 g
% solids	100.0	Custody/SAF No	RC-118-435 RC-118

1/10/10

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALIFIERS	TEST
Cesium 134	13967-70-9	0		0.033		U	GAM

Columbia River Component of the RCBRA - Tissues

Lab id EBRLNE
Protocol Hanford1
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EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1735

7446-019

J190N9

DATA SHEET

SDG	7446	Client/Case no	Hanford SDG K1735
Contact	N. Joseph Verville	Contract	No. 000W235A00
Lab sample id	8908121-19	Client sample id	J190N9
Dept sample id	7446-019	Location/Matrix	LWSA BAG04-CARCASS SOLID
Received	08/28/09	Collected/Weight	08/24/09 16:00 357 g
% solids	100.0	Custody/SAF No	RC-110-436 RC 110

1/10/10

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Tritium	10028-17-8	1.37	3.8	6.42	400	U J	H
Carbon 14	14762-75-5	2.47	3.7	6.34	50.0	U J	C
Total Strontium	SR RAD	-0.007	0.12	0.247	1.00	U	SR
Technetium 99	14133-76-7	0.096	0.17	0.427	15.0	U	TC
Thorium 228	14274-82-9	-0.047	0.17	0.403	1.00	U J	TH
Thorium 230	14269-63-7	0.461	0.50	0.743	1.00	U	TH
Thorium 232	TH-232	0.042	0.084	0.321	1.00	U J	TH
Uranium 233/234	U 233/234	0	0.081	0.308	1.00	U	U
Uranium 235	15117-96-1	0	0.098	0.373	1.00	U	U
Uranium 238	U 238	0.040	0.081	0.308	1.00	U	U
Plutonium 238	13981-16-3	0.029	0.12	0.281	1.00	U	PU
Plutonium 239/240	PU-239/240	0	0.059	0.225	1.00	U	PU
Potassium 40	13966-00-2	2.34	0.56	0.331			GAM
Cobalt 60	10198-40-0	U		0.034	0.050	U	GAM
Cesium 137	10045-97-3	U		0.033	0.100	U	GAM
Radium 226	13982-63-3	U		0.059	0.100	U	GAM
Radium 228	15262-20-1	U		0.147	0.200	U	GAM
Europium 152	14683-23-9	U		0.087	0.100	U	GAM
Europium 154	15585-10-1	U		0.108	0.100	U	GAM
Europium 155	14391-16-3	U		0.072	0.100	U	GAM
Thorium 228	14274-82-9	U		0.047		U	GAM
Thorium 232	TH-232	U		0.147		U	GAM
Uranium 235	15117-96-1	U		0.166		U	GAM
Uranium 238	U 238	U		4.04		U	GAM
Americium 241	14596-10-2	U		0.127		U	GAM
Beryllium 7	13966-02-4	U		0.321		U	GAM
Ruthenium 106	13967-48-1	U		0.294		U	GAM
Antimony 125	14234-35-6	U		0.077		U	GAM

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Lab id	EBERLINE
Protocol	Hanford1
Version	Ver 1.0
Form	DVD DS
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EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1735

7446-019

J190N9

DATA SHEET, cont

SDG	7446	Client/Case no	Hanford SDG K1735
Contact	N. Joseph Verville	Contract	No. 000W235A00
Lab sample id	R908121 09	Client sample id	J190N9
Dept. sample id	7446-019	Location/Matrix	LWSA-BAGG4-CARCASS SOLID
Received	08/28/09	Collected/Weight	08/24/09 16:00 357 g
% solids	100.0	Custody/SAF No	RC 118-436 RC-118

1/10/10

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Cesium 134	13967-70-9	U		0.039		U	GAM

Columbia River Component of the RCBRA - Tissues

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Lab id	EBRLNE
Protocol	Hanford1
Version	Ver 1.0
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Report date	10/08/09

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1735

7446-020

J190P0

DATA SHEET

SDG	7446	Client/Case no	Hanford SDG K1735
Contact	N. Joseph Verville	Contract	No. 500W235A00
Lab sample id	8900121-20	Client sample id	J190P0
Dept sample id	7446-020	Location/Matrix	LWSA-BAGSS-CARCASS SOLID
Received	08/28/09	Collected/Weight	08/24/09 16:30 429 g
% solids	100.0	Custody/SAF No	RC-119-437 RC-119

1/10/10

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Tritium	10028-17-8	4.41	4.0	6.53	400	U J	H
Carbon 14	14762-75-5	0.257	3.8	6.41	50.0	U J	C
Total Strontium	SR RAD	-0.013	0.14	0.273	1.00	U	SR
Technetium 99	14133-76-7	0.027	0.25	0.449	15.0	U	TC
Thorium 228	14274-82-9	-0.110	0.15	0.407	1.00	U J	TH
Thorium 230	14269-63-7	0.514	0.44	0.650	1.00	U	TH
Thorium 232	TH-232	0	0.073	0.281	1.00	U J	TH
Uranium 233/234	U-233/234	0.010	0.019	0.053	1.00	U	U
Uranium 235	15117-96-1	-0.012	0.012	0.056	1.00	U	U
Uranium 238	U-238	0.005	0.010	0.037	1.00	U	U
Plutonium 238	13981-16-3	0.029	0.058	0.221	1.00	U	PU
Plutonium 239/240	PU-239/240	0	0.058	0.221	1.00	U	PU
Potassium 40	13966-00-2	2.11	0.58	0.450			GAM
Cobalt 60	10198-40-0	U		0.048	0.050	U	GAM
Cesium 137	10045-97-3	U		0.049	0.100	U	GAM
Radium 226	13982-63-3	U		0.101	0.100	U	GAM
Radium 228	15262-20-1	U		0.190	0.200	U	GAM
Europium 152	14683-23-9	U		0.109	0.100	U	GAM
Europium 154	15585-10-1	U		0.118	0.100	U	GAM
Europium 155	14391-16-3	U		0.083	0.100	U	GAM
Thorium 228	14274-82-9	U		0.367		U	GAM
Thorium 232	TH-232	U		0.190		U	GAM
Uranium 235	15117-96-1	U		0.194		U	GAM
Uranium 238	U-238	U		5.16		U	GAM
Americium 241	14596-10-2	U		0.041		U	GAM
Beryllium 7	13966-02-4	U		0.407		U	GAM
Ruthenium 106	13967-48-1	U		0.403		U	GAM
Antimony 125	14234-35-6	U		0.114		U	GAM

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Lab id	EBRLNE
Protocol	Hanford1
Version	Ver 1.0
Form	DVD-DS
Version	3.06
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EBERLINE SERVICES/RICHMOND
SAMPLE DELIVERY GROUP K1735

7446-020 J190P0

DATA SHEET, cont

SDG	7446	Client/Case no	Hanford SDG K1735
Contact	N. Joseph Verville	Contract	No. 500W215A00
Lab sample id	R908121-20	Client sample id	J190P0
Dept sample id	7446-020	Location/Matrix	LWBA-BASS6/CARCASS SOLID
Received	08/28/09	Collected/Weight	08/24/09 16:30 429 g
% solids	100.0	Custody/SAF No	RC-118 417 RC-118

1/10/10

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Cesium 134	13967-70-9	0		0.055		U	GAM

Columbia River Component of the RCBRA - Tissues

Lab id	EBRLNR
Protocol	Hanford1
Version	Ver 1.0
Form	DVD-DS
Version	3.06
Report date	10/08/09

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1735

7448-001

J19458

DATA SHEET

SDG	7448	Client/Case no	Hanford SDG K1735
Contact	N. Joseph Verville	Contract	No. 500M235A00
Lab sample id	R908124-01	Client sample id	J19458
Dept sample id	7448 001	Location/Matrix	STURGEON 16 LIVER SOLID
Received	08/28/09	Collected/Weight	08/17/09 14:35 1543 g
% solids	100.0	Custody/SAF No	RC-118-760 RC-118

1/10/10

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Tritium	10028-17-8	3.18	4.2	6.98	400	U J	H
Carbon 14	14762-75-5	2.88	3.7	6.12	50.0	U J	C
Total Strontium	SR-RAD	-0.095	0.14	0.300	1.00	U	SR
Technetium 99	14133-76-7	0.075	0.26	0.167	15.0	U	TC
Thorium 228	14274-82-9	0.088	0.13	0.270	1.00	U J	TH
Thorium 230	14269-63-7	0.022	0.11	0.499	1.00	U	TH
Thorium 232	TH-232	0.044	0.044	0.168	1.00	U J	TH
Uranium 233/234	U 233/234	0	0.073	0.270	1.00	U	U
Uranium 235	15117-96-1	0	0.086	0.127	1.00	U	U
Uranium 238	U-238	0	0.071	0.270	1.00	U	U
Plutonium 238	13981-16-3	0	0.068	0.259	1.00	U	PU
Plutonium 239/240	PU-239/240	0	0.068	0.259	1.00	U	PU
Potassium 40	13966-00-2	2.96	0.50	0.379			GAM
Cobalt 60	10198-40-0	U		0.032	0.050	U	GAM
Cesium 137	10045-97-3	U		0.053	0.100	U	GAM
Radium 226	13982-63-3	U		0.064	0.100	U	GAM
Radium 228	15262-20-1	U		0.126	0.200	U	GAM
Europium 152	14683-23-9	U		0.083	0.100	U	GAM
Europium 154	15585-10-1	U		0.092	0.100	U	GAM
Europium 155	14391-16-3	U		0.060	0.100	U	GAM
Thorium 228	14274-82-9	U		0.051		U	GAM
Thorium 232	TH 232	U		0.126		U	GAM
Uranium 235	15117-96-1	U		0.147		U	GAM
Uranium 238	U-238	U		4.04		U	GAM
Americium 241	14596-10-2	U		0.029		U	GAM
Beryllium 7	13966-02-4	U		0.290		U	GAM
Ruthenium 106	13967-48-1	U		0.271		U	GAM
Antimony 125	14234-35-6	U		0.074		U	GAM

ColumbiaRiverComponentRCBRA-Tissues

Lab id	EBRLNE
Protocol	Hanford1
Version	Ver 1.0
Form	DVD-DS
Version	3.06
Report date	09/29/09

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1735

7440-001

J19458

DATA SHEET, cont

SDG	7440	Client/Case no	Hanford SDG K1735
Contact	N. Joseph Verville	Contract	No. 800W215A00
Lab sample id	E908124-01	Client sample id	J19458
Dept sample id	7440-001	Location/Matrix	STURGEON 16 LIVER SOLID
Received	08/28/09	Collected/Weight	08/17/09 14:15 1543.0 g
% solids	100.0	Custody/SAF No	RC-118-760 RC-118

K 11/0/10

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Cesium 134	13967-70-9	0		0.039		U	GAM

ColumbiaRiverComponentRCBRA Tissues

Lab id EBERLINE
Protocol Hanford1
Version Ver 1.0
Form DVD DS
Version 1.06
Report date 09/29/09

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1735

7448-002 J19459

DATA SHEET

SDG	7448	Client/Case no	Hanford SDG K1735
Contact	N. Joseph Verville	Contract	No. 500W235A00
Lab sample id	E908124-02	Client sample id	J19459
Dept sample id	7448-002	Location/Matrix	STURGEON LV KIDNEY SOLID
Received	08/20/09	Collected/Weight	08/17/09 15:00 1402 g
% solids	100.0	Custody/SAF No	RC 110-761 RC-110

1/10/10

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALIFIERS	TEST
Tritium	10028-17-8	0.887	3.6	6.06	400	U J	H
Carbon 14	14762-75-5	0.999	3.1	5.30	50.0	U J	C
Total Strontium	SR-RAD	-0.076	0.13	0.293	1.00	U	SR
Technetium 99	14133-76-7	0.055	0.20	0.371	15.0	U	TC
Thorium 228	14274-82-9	-0.061	0.082	0.251	1.00	U J	TH
Thorium 230	14269-63-7	0.082	0.33	0.475	1.00	U	TH
Thorium 232	TH-232	0	0.041	0.156	1.00	U J	TH
Uranium 233/234	U 233/234	0.033	0.067	0.256	1.00	U	U
Uranium 235	15117-96-1	0	0.081	0.310	1.00	U	U
Uranium 238	U 238	0.033	0.067	0.256	1.00	U	U
Plutonium 238	13981-16-3	0	0.057	0.219	1.00	U	PU
Plutonium 239/240	PU 239/240	0	0.057	0.219	1.00	U	PU
Potassium 40	13966-00-2	1.50	0.51	0.288			GAM
Cobalt 60	10198-40-0	U		0.026	0.050	U	GAM
Cesium 137	10045-97-3	U		0.029	0.100	U	GAM
Radium 226	13982-63-3	U		0.062	0.100	U	GAM
Radium 228	15262-20-1	U		0.179	0.200	U	GAM
Europium 152	14683-23-9	U		0.080	0.100	U	GAM
Europium 154	15585-10-1	U		0.077	0.100	U	GAM
Europium 155	14391-16-3	U		0.076	0.100	U	GAM
Thorium 228	14274-82-9	U		0.054		U	GAM
Thorium 232	TH-232	U		0.129		U	GAM
Uranium 235	15117-96-1	U		0.169		U	GAM
Uranium 238	U-238	U		3.34		U	GAM
Americium 241	14596-10-2	U		0.068		U	GAM
Beryllium 7	13966-02-4	U		0.292		U	GAM
Ruthenium 106	13967-48-1	U		0.258		U	GAM
Antimony 125	14234-35-6	U		0.070		U	GAM

ColumbiaRiverComponentRCBRA-Tissues

Lab id	EBERLINE
Protocol	Hanford1
Version	Ver 1.0
Form	DVD-DS
Version	3.06
Report date	09/29/09

J19459

DATA SHEET, cont

SDG	7448	Client/Case no	Hanford SDG K1735
Contact	N. Joseph Verville	Contract	No. 200WZ15A09
Lab sample id	R908124-02	Client sample id	J19459
Dept sample id	7448 002	Location/Matrix	STURGEON 16 KIDNEY SOLID
Received	08/28/09	Collected/Weight	08/17/09 15:00 1467 g
% solids	100.0	Custody/SAF No	RC-118-761 RC-110

Vr 1/10/10

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Cesium 134	13967-70-9	U		0.052		U	GAM

ColumbiaRiverComponentRCBRA-Tissues

Lab id	EBRLNE
Protocol	Hanford
Version	Ver 1.0
Form	DVD DS
Version	1.06
Report date	09/29/09

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1735

7448-003

J19460

DATA SHEET

SDG	7448	Client/Case no	Hanford SDG K1735
Contact	N. Joseph Verville	Contract	No. 300M235A00
Lab sample id	E308174-03	Client sample id	J19460
Dept sample id	7448-003	Location/Matrix	STURGEON 16 FILLET SOLID
Received	08/28/09	Collected/Weight	08/17/09 13:00 60 g
% solids	100.0	Custody/SAF No	RC-118-762 RC-118

11/10/10

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Tritium	10028-17-8	1.47	3.2	5.64	400	U J	H
Carbon 14	14762-75-5	-0.051	2.9	4.88	50.0	U J	C
Total Strontium	SR-RAD	0.022	0.18	0.349	1.00	U	SR
Technetium 99	14133-76-7	0.074	0.22	0.374	15.0	U	TC
Thorium 228	14274-82-9	0.160	0.19	0.354	1.00	U J	TH
Thorium 230	14269-63-7	0.274	0.38	0.611	1.00	U	TH
Thorium 232	TH-232	0	0.064	0.245	1.00	U J	TH
Uranium 233/234	U-233/234	0.020	0.056	0.215	1.00	U	U
Uranium 235	15117-96-1	0.034	0.068	0.261	1.00	U	U
Uranium 238	U-238	0	0.056	0.215	1.00	U	U
Plutonium 238	13981-16-3	0	0.058	0.220	1.00	U	PU
Plutonium 239/240	PU-239/240	0	0.057	0.220	1.00	U	PU
Potassium 40	13966-00-2	3.04	1.2	0.970			GAM
Cobalt 60	10198-40-0	U		0.071	0.050	U	GAM
Cesium 137	10045-97-3	U		0.066	0.100	U	GAM
Radium 226	13982-63-3	U		0.130	0.100	U	GAM
Radium 228	15262-20-1	U		0.311	0.200	U	GAM
Europium 152	14683-23-9	U		0.171	0.100	U	GAM
Europium 154	15585-10-1	U		0.207	0.100	U	GAM
Europium 155	14391-16-3	U		0.138	0.100	U	GAM
Thorium 228	14274-82-9	U		0.090		U	GAM
Thorium 232	TH-232	U		0.311		U	GAM
Uranium 235	15117-96-1	U		0.319		U	GAM
Uranium 238	U-238	U		8.94		U	GAM
Americium 241	14596-10-2	U		0.267		U	GAM
Beryllium 7	13966-02-4	U		0.610		U	GAM
Ruthenium 106	13967-48-1	U		0.631		U	GAM
Antimony 125	14234-35-6	U		0.147		U	GAM

ColumbiaRiverComponent:RCBRA-Tissues

DATA SHEETS
Page 5
SUMMARY DATA SECTION
Page 10

Lab id	EBERLINE
Protocol	Hanford1
Version	Ver 1.0
Form	DVD-DS
Version	3.06
Report date	09/29/09

DATA SHEET, cont

SDG 7448 Client/Case no Hanford SDG K1735
Contact N. Joseph Verville Contract No. 500W215A00

Lab sample id E908124-03 Client sample id J19460
Dept sample id 7448-003 Location/Matrix STURGEON 16 FILLET SOLID
Received 08/28/09 Collected/Weight 08/17/09 11:00 68 g
% solids 100.0 Custody/SAF No RC-118-762 RC-118

1/10/10

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Cesium 134	13967-70-9	U		0.081		U	GAM

ColumbiaRiverComponentRCBRA Tissues

Lab id EBRLNI
Protocol Hanford1
Version Ver 1.0
Form DVD-LC
Version 3.06
Report date 09/29/09

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1735

J19461

DATA SHEET

SDG 7448

Contact N. Joseph Verville

Client/Case no Hanford SDG K1735

Contract No. 300W215A00

Lab sample id K908124-04

Dept sample id 7448-004

Received 08/28/09

% solids 100.0

Client sample id J19461

Location/Matrix STURGEON 16 CARCASS SOLID

Collected/Weight 08/12/09 14:15 39 g

Custody/SAP No RC-118 /63 RC-118

JL 1/10/10

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Tritium	10028-17-8	1.22	3.8	6.49	400	U J	H
Carbon 14	14762-75-5	1.45	3.1	5.76	50.0	U J	C
Total Strontium	SR-RAD	0.021	0.16	0.336	1.00	U	SR
Technetium 99	14133-76-7	0.122	0.21	0.388	15.0	U	TC
Thorium 228	14274-82-9	0.400	0.40	0.766	1.00	U J	TH
Thorium 230	14269-63-7	0.896	0.81	1.33	1.00	U	TH
Thorium 232	TH-232	0.199	0.20	0.762	1.00	U J	TH
Uranium 233/234	U 233/234	0	0.067	0.255	1.00	U	U
Uranium 235	15117-96-1	0	0.081	0.309	1.00	U	U
Uranium 238	U-238	0	0.067	0.255	1.00	U	U
Plutonium 238	13981-16-3	0	0.089	0.214	1.00	U	PU
Plutonium 239/240	PU 239/240	0	0.045	0.171	1.00	U	PU
Potassium 40	13966-00-2	2.56	0.97	0.695			GAM
Cobalt 60	10198-40-0	U		0.065	0.050	U	GAM
Cesium 137	10045-97-3	U		0.050	0.100	U	GAM
Radium 226	13982-63-3	U		0.106	0.100	U	GAM
Radium 228	15262-20-1	U		0.239	0.200	U	GAM
Europium 152	14683-23-9	U		0.144	0.100	U	GAM
Europium 154	15585-10-1	U		0.186	0.100	U	GAM
Europium 155	14391-16-3	U		0.103	0.100	U	GAM
Thorium 228	14274-82-9	U		0.089		U	GAM
Thorium 232	TH-232	U		0.239		U	GAM
Uranium 235	15117-96-1	U		0.247		U	GAM
Uranium 238	U-238	U		7.28		U	GAM
Americium 241	14596-10-2	U		0.054		U	GAM
Beryllium 7	13966-02-4	U		0.541		U	GAM
Ruthenium 106	13967-48-1	U		0.505		U	GAM
Antimony 125	14234-35-6	U		0.136		U	GAM

ColumbiaRiverComponentRCBRA Tissues

Lab id EBELNE

Protocol Hanford

Version Ver 1.0

Form DVD-DS

Version 3.06

Report date 09/29/09

DATA SHEET, cont

SDG	7448	Client/Case no	Hanford SDG K1735
Contact	N. Joseph Verville	Contract	No. 800W235A00
Lab sample id	E908124-04	Client sample id	J19461
Dept sample id	7448-004	Location/Matrix	STURGEON 16 CARCASS SOLID
Received	08/28/09	Collected/Weight	08/17/09 14:15 37.0
% Solids	100.0	Custody/SAF No	RC-118-763 RC 118

1/10/10

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Cesium 134	13967-70-9	U		0.074		U	GAM

ColumbiaRiverComponentRCBRA Tissues

Lab id EBRLNE
Protocol Hanford1
Version Ver 1.0
Form DVD DS
Version 1.06
Report date 09/29/09

Appendix 4

Laboratory Narrative and Chain-of-Custody Documentation

Case Narrative

1.0 GENERAL

Washington Closure Hanford (WCH) Sample Delivery Group K1735 was composed of twenty solid (other solid) samples designated under SAF No. RC-118 with a Project Designation of. Columbia River Component of the RCBRA – Tissues.

The samples were received as stated on the Chain-of-Custody documents. Any discrepancies are noted on the Eberline Analytical Sample Receipt Checklist. The results were sent to WCH via e-mail October 8, 2009.

2.0 ANALYSIS NOTES

2.1 Carbon-14 Analysis

No problems were encountered during the course of the analyses.

2.2 Tritium Analysis

No problems were encountered during the course of the analyses.

2.3 Strontium-90 Analysis

No problems were encountered during the course of the analyses

2.4 Technetium-99 Analysis

No problems were encountered during the course of the analyses

2.5 Isotopic Thorium Analysis

No problems were encountered during the course of the analyses.

2.6 Isotopic Uranium Analysis

No problems were encountered during the course of the analyses

2.7 Isotopic Plutonium Analysis

No problems were encountered during the course of the analyses.

2.8 Gamma Spectroscopy

No problems were encountered during the course of the analyses.

3.0 Case Narrative Certification Statement

"I certify that this data package is in compliance with the SOW, both technically and for completeness, for other than the conditions detailed above. Release of the data obtained in this hard copy data package has been authorized by the Laboratory Manager or a designee, as verified by the following signature."

N. Joseph Verville
Client Services Manager

Date 10/8/09

Eberline Analytical
W.O. No. R9-08-124-7448

Washington Closure Hanford
SDG K1735

Case Narrative

1.0 GENERAL

Washington Closure Hanford (WCH) Sample Delivery Group K1735 was composed of four solid (other solid) samples designated under SAF No. RC-118 with a Project Designation of, Columbia River Component of the RCBRA - Tissues.

The samples were received as stated on the Chain-of-Custody documents. Any discrepancies are noted on the Eberline Analytical Sample Receipt Checklist. The results were sent to WCH via e-mail September 29, 2009

2.0 ANALYSIS NOTES

2.1 Carbon-14 Analysis

No problems were encountered during the course of the analyses.

2.2 Tritium Analysis

No problems were encountered during the course of the analyses.

2.3 Strontium-90 Analysis

No problems were encountered during the course of the analyses.

2.4 Technetium-99 Analysis

No problems were encountered during the course of the analyses.

2.5 Isotopic Thorium Analysis

The initial Th-229 tracer yield to sample J19461 was less than 8%. The sample was replated from the original plating solution and recounted. The recount result was acceptable with a 38% yield, however due to that relatively low yield the sample MDA was 1.33 pCi/g, slightly greater than the required 1.0 pCi/g. No other problems were encountered during the course of the analyses.

2.6 Isotopic Uranium Analysis

No problems were encountered during the course of the analyses.

2.7 Isotopic Plutonium Analysis

No problems were encountered during the course of the analyses.

2.8 Gamma Spectroscopy

No problems were encountered during the course of the analyses.

3.0 Case Narrative Certification Statement

"I certify that this data package is in compliance with the SOW, both technically and for completeness, for other than the conditions detailed above. Release of the data obtained in this hard copy data package has been authorized by the Laboratory Manager or a designee, as verified by the following signature."

N. Joseph Verville
Client Services Manager

4/24/09
Date

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-118-308

Page 1 of 1

Collector: Wendy West

Company Contact: JOAN KESSNER

Telephone No.: 375-4688

Project Coordinator: KESSNER, JH

Price Code: ~~9K~~ 9N

Data Turnaround: 45 Days

Project Designation: Columbia River Component of the RCBRA - Tissues

Sampling Location: URSA-BASSI-FILLET K1735(7446)

SAF No.: RC-118

NA 6/1/09

Ice Chest No.: AFS-04-014

Field Logbook No.: EL-1638

COA: BESCRC8520

Method of Shipment: FED EX

Offsite Property No.: N/A

Bill of Lading/Air Bill No.: FDX# 797884937190

Shipped To: EBERLINE SERVICES LIONVILLE

POSSIBLE SAMPLE HAZARDS/REMARKS

NA

Special Handling and/or Storage

FREEZE "MATRIX COMPOSED OF FISH"

Preservation	None	None	None	None	Cool 4C	Cool 4C	None
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	G/P
No. of Container(s)	1	1 o	[illegible] 1 o	1 o	[illegible] 1 o	1 o	[illegible] 1 o
Volume	1500g	100g	100g	10g	250g	120g	10g
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Tritium - H3	See item (2) in Special Instructions	See item (3) in Special Instructions	Pesticides - 8081	Technetium-99

Sample No	Matrix *	Sample Date	Sample Time							
J19029	OTHER SOLID	8/25/09	815	X	X	X	X	X	X	X

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From: Wendy West — Date/Time: 815 8/25/09
Received By/Stored In: EAS LOCKED STORAGE Wendy West — Date/Time: 815 8/25/09

Relinquished By/Removed From: EAS LOCKED STORAGE — Date/Time: 8/27/09 1000
Received By/Stored In: SHANNAN JOHNSON — Date/Time: 8/27/09 1000

Relinquished By/Removed From: SHANNAN JOHNSON — Date/Time: 8/27/09 1000
Received By/Stored In: FDX — Date/Time:

Relinquished By/Removed From: FED EX — Date/Time:
Received By/Stored In: R.F. MATANAWTHAN — Date/Time: 08/28/09 0930

Relinquished By/Removed From: — Date/Time:
Received By/Stored In: — Date/Time:

Relinquished By/Removed From: — Date/Time:
Received By/Stored In: — Date/Time:

SPECIAL INSTRUCTIONS

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody & preparing for shipment to lab.

(1) Gamma Spec - (Full List) [Americium-241, Antimony-125, Beryllium-7, Cerium-144, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238]

(2) Strontium-89,90 - Total Sr, Isotopic Thorium [Thorium-232]; Isotopic Uranium [Uranium-233/234, Uranium-235, Uranium-238]; Isotopic Plutonium

(3) ICP Metals - 6010 (Full List) [Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc], Mercury - 7471 - (CV)

Note: Transshipping required. Contact Joan Kessner for further instructions maintain freeze.

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION — Received By: — Title: — Date/Time:

FINAL SAMPLE DISPOSITION — Disposal Method: — Disposed By: — Date/Time:

WCH-EE-011

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-118-309

Page 1 of 1

Collector M.Fidino	Company Contact JOAN KESSNER	Telephone No. 375-4688
Project Designation Columbia River Component of the RCBRA - Tissues	Sampling Location URSA-BASS2-FILLET K1735(7446)	Project Coordinator KESSNER, JH
Ice Chest No. AF5-64-014	Field Logbook No. EL-1638	COA BESCRC6320
Shipped To EBERLINE SERVICES LIONVILLE	Offsite Property No. N/A	SAF No. RC-118

Price Code ~~8H~~ 9N 11/6/09

Data Turnaround 45 Days

Method of Shipment FED EX

Bill of Lading/Air Bill No. FDX# 797884937190

POSSIBLE SAMPLE HAZARDS/REMARKS

N/A

Special Handling and/or Storage

FREEZE "MATRIX COMPOSED OF FISH"

0900065

Preservation	None	None	None	None	Cool 4C	Cool 4C	None
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	G/P
No. of Container(s)	1	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Volume	1500g	100g	100g	10g	250g	120g	10g
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Tritium - H3	See item (2) in Special Instructions	See item (3) in Special Instructions	Pesticides - 8081	Technetium-99

Sample No.	Matrix *	Sample Date	Sample Time							
				[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
J19030	OTHER SOLID	8/25/09	1230	X	X	X	X	X	X	X

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
M.Fidino	8/25/09 1230	EAS LOCKED STORAGE 8/25/09	8/25/09 1230
EAS LOCKED STORAGE	8/27/09 1020	SHANNAN JOHNSON	8/27/09 1020
SHANNAN JOHNSON	8/27/09 1020	FDX	
FED EX		R. Lara	08/28/09 0930

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location, taking custody of samples for shipment to lab

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) (Americium-241, Antimony-125, Beryllium-7, Cerium-144, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238)

(2) Strontium-89,90 – Total Sr, Isotopic Thorium (Thorium-232), Isotopic Uranium (Uranium-233/234, Uranium-235, Uranium-238), Isotopic Plutonium

(3) ICP Metals - 6010 (Full List) (Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc), Mercury - 7471 - (CV)

Note: Transhipping required. Contact Joan Kessner for further instructions. Maintain freeze.

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Washington Closure Hanford	**CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST**	RC-118-318	Page 1 of 1

Collector Wendy West	**Company Contact** JOAN KESSNER	**Telephone No.** 375-4688	**Project Coordinator** KESSNER, JH	**Price Code** 9K N [illegible]
Project Designation Columbia River Component of the RCBRA - Tissues	**Sampling Location** URSA-BASS3-FILLET K1735(7446)		**SAF No.** RC-118	**Data Turnaround** 45 Days
Ice Chest No. AFS-04-014	**Field Logbook No.** EL-1638	**COA** BESCRC6520	**Method of Shipment** FED EX	
Shipped To EBERLINE SERVICES LIONVILLE	**Offsite Property No.** N/A		**Bill of Lading/Air Bill No.** FDX# 797884937190	

POSSIBLE SAMPLE HAZARDS/REMARKS

N/A

Special Handling and/or Storage

FREEZE "MATRIX COMPOSED OF FISH"

4:50000

Preservation	None	None	None	None	Cool 4C	Cool 4C	None
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	G/P
No. of Container(s)	1	1/0	1/0	1/0	1/0	1/0	1/0
Volume	1500g	100g	100g	10g	250g	120g	10g
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Tritium - H3	See item (2) in Special Instructions	See item (3) in Special Instructions	Pesticides - 8081	Technetium-99

Sample No.	Matrix *	Sample Date	Sample Time							
J19031	OTHER SOLID	8/25/09	1445	X	X	X	X	X	X	X

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Wendy West	1445 8/25/09	EAS LOCKED STORAGE Wendy West	1445 8/25/09
EAS LOCKED STORAGE	8/27/09 1000	SHANNAN JOHNSON	8/27/09 1000
SHANNAN JOHNSON	8/27/09 1000	FDX	
FED EX		RE. MATAHWATAN	[illegible]

SPECIAL INSTRUCTIONS

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab.

(1) Gamma Spec - (Full List) {Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238}

(2) Strontium-89,90 – Total Sr; Isotopic Thorium {Thorium-232}; Isotopic Uranium {Uranium-233/234, Uranium-235, Uranium-238}; Isotopic Plutonium

(3) ICP Metals - 6010 (Full List) {Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc}; Mercury - 7471 - (CV)

Note: Transshipping required. Contact Joan Kessner for further instructions. Maintain freeze.

Matrix *

S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-118-311 | Page 1 of 1

Collector M.Fidino	**Company Contact** JOAN KESSNER	**Telephone No.** 375-4688	**Project Coordinator** KESSNER, JH
Project Designation Columbia River Component of the RCBRA - Tissues	**Sampling Location** URSA-BASS4-FILLET K1735(7446)		**SAF No.** RC-118
Ice Chest No. AFS-04-014	**Field Logbook No.** EL-1638	**COA** HESCRC6520	**Method of Shipment** FED EX
Shipped To EBERLINE SERVICES - LIONVILLE	**Offsite Property No.** N/A		**Bill of Lading/Air Bill No.** FDX 797884937190

Price Code ~~9K~~ N AJD 8/6/09

Data Turnaround 45 Days

POSSIBLE SAMPLE HAZARDS/REMARKS
N/A

Special Handling and/or Storage
FREEZE "MATRIX COMPOSED OF FISH"

Preservation	None	None	None	None	Cool 4C	Cool 4C	None
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	G/P
No. of Container(s)	1	1	1	1	1	1	1
Volume	1100g	100g	100g	10g	210g	120g	10g
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Tritium - H3	See item (2) in Special Instructions	See item (3) in Special Instructions	Pesticides - 8081	Technetium-99

Sample No	Matrix *	Sample Date	Sample Time							
J19032	OTHER SOLID	8/25/09	1330	X	X	X	X	X	X	X

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
M.Fidino	8/25/09 1330	EAS LOCKED STORAGE	8/25/09 1330
EAS LOCKED STORAGE	8/27/09 1000	SHANNAN JOHNSON	8/27/09 1000
SHANNAN JOHNSON	8/27/09 1000	FDX	
FED EX		K F [illegible]	08/28/09 0920

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody & samples for shipment to lab.

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) {Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238}
(2) Strontium-89,90 - Total Sr; Isotopic Thorium {Thorium-232}; Isotopic Uranium {Uranium-233/234, Uranium-235, Uranium-238}; Isotopic Plutonium
(3) ICP Metals - 6010 (Full List) {Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc}; Mercury - 7471 - (CV)

Note: Trans shipping required. Contact Joan Kessner for further instructions. Maintain freeze.

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-118-312

Page 1 of 1

Collector Wendy West	Company Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator KESSNER, JH
Project Designation Columbia River Component of the RCBRA - Tissues	Sampling Location URSA-BASS3-FILLET K1735(7446)		SAF No. RC-118
Ice Chest No. AFS-04-014	Field Logbook No. EL-1638	COA BESCRC6520	Method of Shipment FED EX
Shipped To EBERLINE SERVICES/ LIONVILLE	Offsite Property No. N/A		Bill of Lading/Air Bill No. FDX# 797884937190

Price Code ~~9K~~ N 8/26/09

Data Turnaround
45 Days

POSSIBLE SAMPLE HAZARDS/REMARKS
N/A

Special Handling and/or Storage
FREEZE "MATRIX COMPOSED OF FISH"

000066

Preservation	None	None	None	None	Cool 4C	Cool 4C	None			
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	G/P			
No. of Container(s)	1	1/0 SBP	1/0	1/0 SBP	1/0	1/0 SBP	1/0			
Volume	1500g	100g	100g	10g	250g	120g	10g			
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Tritium - 3H	See item (2) in Special Instructions	See item (3) in Special Instructions	Mercury - 7471	Technetium-99			

Sample No.	Matrix *	Sample Date	Sample Time										
J19033	OTHER SOLID	8/25/09	1415	X	X	X	X	X	X	X			

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Wendy West	8/25/09 1415	FAS LOCKED STORAGE# Wendy West	8/25/09 1415
FAS LOCKED STORAGE#	8/27/09 1020	SHANNAN JOHNSON	8/27/09 1020
SHANNAN JOHNSON	8/27/09 1020	FDX	
FED EX		M. Mathu	08/28/09 0920

Sample unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab.

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) {Americium-241, Antimony-125, Beryllium-7, Cerium-144, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238}
(2) Strontium-89,90 – Total Sr; Isotopic Thorium {Thorium-232}; Isotopic Uranium {Uranium-233/234, Uranium-235, Uranium-238}; Isotopic Plutonium
(3) ICP Metals - 6010 (Full List) {Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc}; Mercury - 7471 - (CV)

Note: Transshipping required. Contact Joan Kessner for further instructions. Maintain freeze.

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-118-328 | Page 1 of 1

Collector Wendy West	Company Contact JOAN KESSNER	Telephone No. 373-4688	Project Coordinator KESSNER, JH
Project Designation Columbia River Component of the RCBRA - Tissues	Sampling Location URSA-BASSI-CARCASS K1735(7446)		SAF No. RC-118
Ice Chest No. AFS-04-014	Field Logbook No. EL-1638	COA BESCRC6520	Method of Shipment FED EX
Shipped To EBERLINE SERVICES / LIONVILLE	Offsite Property No. N/A		Bill of Lading PDX# 797884937190

Price Code 9K N ND 6/109

Data Turnaround 45 Days

POSSIBLE SAMPLE HAZARDS/REMARKS

N/A

Special Handling and/or Storage

FREEZE "MATRIX COMPOSED OF FISH"

000067

Preservation	None	None	None	None	Cool 4C	Cool 4C	None			
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	G/P			
No. of Container(s)	1	1 0	0	1 0	0	1 0	0			
Volume	1500g	100g	100g	10g	250g	120g	10g			
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Tritium - H3	See item (2) in Special Instructions	See item (3) in Special Instructions	Pesticides - 8081	Technetium-99			

Sample No.	Matrix *	Sample Date	Sample Time										
J19052	OTHER SOLID	8/25/09	1130	X	X	X	X	X	X	X			

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Wendy West	1130 8/25/09	EAS LOCKED STORAGE # 4	1130 8/25/09
EAS LOCKED STORAGE 4	8/27/09 1000	SHANNAN JOHNSON	8/27/09 1000
SHANNAN JOHNSON	8/27/09 1000	FDX	
FED EX		M.E. MATANATAN	08/28/09 0910

Sampler unavailable to remove samples from controlled storage. Sampler removed samples from storage location using custody & procedures for shipment to lab.

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) {Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238}

(2) Strontium-89,90 – Total Sr; Isotopic Thorium {Thorium-232}; Isotopic Uranium {Uranium-233/234, Uranium-235, Uranium-238}; Isotopic Plutonium

(3) ICP Metals - 6010 (Full List) {Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc}; Mercury - 7471 - (CV)

Note: Transshipping required. Contact Joan Kessner for further instruction. Maintain Freeze.

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-118-329 Page 1 of 1

Collector M. Edino	Company Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator KESSNER, JH
Project Designation Columbia River Component of the RCBRA - Tissues	Sampling Location URSA-BASS2-CARCASS K1735(7416)		SAF No. RC-118
Ice Chest No. AFS-04-014	Field Logbook No. EL-1638	COA BESCRC6320	Method of Shipment FED EX
Shipped To EBERLINE SERVICES / LIONVILLE	Offsite Property No. N/A		Bill of Lading/Air Bill No. FDX# 797884937190

Price Code 9K N 1/26/09

Data Turnaround 45 Days

POSSIBLE SAMPLE HAZARDS/REMARKS

None

Special Handling and/or Storage

FREEZE "MATRIX COMPOSED OF FISH"

Preservation	None	None	None	None	Cool 4C	Cool 4C	None
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	G/P
No. of Container(s)	1	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Volume	1500g	100g	100g	10g	250g	130g	10g
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Tritium - H3	See item (2) in Special Instructions	See item (3) in Special Instructions	Pesticides - 8081	Technetium-99

Sample No.	Matrix *	Sample Date	Sample Time							
J19053	OTHER SOLID	8/25/09	1245	X	X	X	X	X	X	X

CHAIN OF POSSESSION Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
M. Edino	8/25/09 1245	EAS LOCKED STORAGE 8/25/09	8/25/09 1245
EAS LOCKED STORAGE	8/27/09 1000	SHANNAN JOHNSON	8/27/09 1000
SHANNAN JOHNSON	8/27/09 1000	FDX	
FED EX		HATHAWAY	08/28/09 0930

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab.

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) {Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238}

(2) Strontium-89,90 - Total Sr, Isotopic Thorium {Thorium-232}, Isotopic Uranium {Uranium-233/234, Uranium-235, Uranium-238}; Isotopic Plutonium

(3) ICP Metals - 6010 (Full List) {Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc}; Mercury - 7471 - (CV)

Note: Transshipping required. Contact Joan Kessner for further instructions. Maintain freeze.

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-118-330

Page 1 of 1

Collector: Wendy West

Company Contact: JOAN KESSNER

Telephone No.: 375-4688

Project Coordinator: KESSNER, JH

Price Code: 95 N 8/26/09

Data Turnaround: 45 Days

Project Designation: Columbia River Component of the RCBRA - Tissues

Sampling Location: URSA-BASS3-CARCASS K1735(7446)

SAF No.: RC-118

Ice Chest No. AFS-04-014

Field Logbook No.: EL-1638

COA: BESCRC6520

Method of Shipment: FED EX

Shipped To: EBERLINE SERVICES LIONVILLE

Offsite Property No.: N/A

Bill of Lading/Air Bill No.: FDX#797884937190

POSSIBLE SAMPLE HAZARDS/REMARKS

N/A

Special Handling and/or Storage

FREEZE "MATRIX COMPOSED OF FISH"

Preservation	None	None	None	None	Cool 4C	Cool 4C	None
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	G/P
No. of Container(s)	1	~~1~~ 0	~~1~~ 0	~~1~~ 0	~~1~~ 0	~~1~~ 0	~~1~~ 0
Volume	1500g	100g	100g	10g	250g	120g	10g
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Tritium - H3	See item (2) in Special Instructions	See item (3) in Special Instructions	Pesticides - 8081	Technetium-99

Sample No.	Matrix *	Sample Date	Sample Time							
J19054	OTHER SOLID	8/25/09	1500	X	X	X	X	X	X	X

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Wendy West	1500 8/25/09	EAS LOCKED STORAGE Wendy West	1500 8/25/09
EAS LOCKED STORAGE	8/27/09 1020	SHANNAN JOHNSON	8/27/09 1020
SHANNAN JOHNSON	8/27/09 1020	FDX	
FDX		M.F. Watanabe	8/28/09 0920

SPECIAL INSTRUCTIONS

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab.

(1) Gamma Spec - (Full List) {Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238}

(2) Strontium-89,90 – Total Sr; Isotopic Thorium {Thorium-232}; Isotopic Uranium {Uranium-233/234, Uranium-235, Uranium-238}, Isotopic Plutonium

(3) ICP Metals - 6010 (Full List) {Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc}; Mercury - 7471 - (CV)

Note: Transhipping required. Contact Joan Kessner for further instructions. Maintain freeze.

Matrix *

S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-118-331

Page 1 of 1

Collector M. Fidino	Company Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator KESSNER, JH
Project Designation Columbia River Component of the RCBRA - Tissues	Sampling Location URSA-BASS4-CARCASS K1735(7446)		SAF No. RC-118
Ice Chest No. AFS-04-014	Field Logbook No. EL-1638	COA BESCRC6520	Method of Shipment FED EX
Shipped To EBERLINE SERVICES / LIONVILLE	Offsite Property No. N/A		Bill of Lading/Air Bill No. FDX# 297884937190

Price Code 9K N 4/2 6/1/09

Data Turnaround 45 Days

POSSIBLE SAMPLE HAZARDS/REMARKS

N/A

Special Handling and/or Storage

FREEZE "MATRIX COMPOSED OF FISH"

0200110

		Preservation	None	None	None	None	Cool 4C	Cool 4C	None		
		Type of Container	G/P	G/P	G/P	G/P	G/P	aG	G/P		
		No. of Container(s)	1	1 0	~~[illegible]~~ 1 0	1 0	~~[illegible]~~ 0	1 0	~~[illegible]~~ 0		
		Volume	1500g	100g	100g	10g	250g	120g	10g		
SAMPLE ANALYSIS			See item (1) in Special Instructions	Carbon-14	Tritium - H3	See item (2) in Special Instructions	See item (3) in Special Instructions	Pesticides - 8081	Technetium-99		
Sample No.	Matrix *	Sample Date	Sample Time								
J19055	OTHER SOLID	8/25/09	1345	X	X	X	X	X	X	X

CHAIN OF POSSESSION	Date/Time	Sign/Print Names	Date/Time
Relinquished By/Removed From M. Fidino	8/25/09 1345	Received By/Stored In EAS LOCKED STORAGE	8/25/09 1345
Relinquished By/Removed From EAS LOCKED STORAGE	8/27/09 1000	Received By/Stored In SHANNAN JOHNSON	8/27/09 1000
Relinquished By/Removed From SHANNAN JOHNSON	8/27/09 1000	Received By/Stored In FDX	
Relinquished By/Removed From FED EX		Received By/Stored In [illegible]	8/28/09 0930
Relinquished By/Removed From		Received By/Stored In	
Relinquished By/Removed From		Received By/Stored In	

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location using custody [illegible] samples for shipment to lab.

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) (Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238)
(2) Strontium-89,90 – Total Sr; Isotopic Thorium (Thorium-232); Isotopic Uranium (Uranium-233/234, Uranium-235, Uranium-238); Isotopic Plutonium
(3) ICP Metals - 6010 (Full List) (Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc); Mercury - 7471 - (CV)

Note: Transshipping refused. Contact Joan Kessner for further instructions. Maintain freeze

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-118-332 | Page 1 of 1

Collector Wendy West	Company Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator KESSNER, JH
Project Designation Columbia River Component of the RCBRA - Tissues	Sampling Location URSA-BASS5-CARCASS K1735 (7446)		SAF No. RC-118
Ice Chest No. AFS-04-014	Field Logbook No. EL-1638	COA BESCRC6520	Method of Shipment FED EX
Shipped To EBERLINE SERVICES LIONVILLE	Offsite Property No. N/A		Bill of Lading/ FDX# 79788493/19U

Price Code ~~9K~~ N 8/26/09

Data Turnaround 45 Days

POSSIBLE SAMPLE HAZARDS/REMARKS

N/A

Special Handling and/or Storage

FREEZE "MATRIX COMPOSED OF FISH"

Preservation	None	None	None	None	Cool 4C	Cool 4C	None
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	G/P
No. of Container(s)	1	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Volume	1500g	100g	100g	10g	250g	120g	10g
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Tritium - H3	See item (2) in Special Instructions	See item (3) in Special Instructions	Pesticides - 8081	Technetium-99

Sample No.	Matrix *	Sample Date	Sample Time							
J19058	OTHER SOLID	8/25/09	1430	X	X	X	X	X	X	X

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From Wendy West	Date/Time 1430 8/25/09	Received By/Stored In EAS LOCKED STORAGE / Wendy West	Date/Time 1430 8/25/09
Relinquished By/Removed From EAS LOCKED STORAGE	Date/Time 8/27/09 1000	Received By/Stored In SHANNAN JOHNSON	Date/Time 8/27/09 1000
Relinquished By/Removed From SHANNAN JOHNSON	Date/Time 8/27/09 1020	Received By/Stored In FDX	Date/Time
Relinquished By/Removed From Fed Ex	Date/Time	Received By/Stored In [illegible]	Date/Time 8/28/09 0920
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab.

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) (Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238)

(2) Strontium-89,90 -- Total Sr; Isotopic Thorium (Thorium-232); Isotopic Uranium (Uranium-233/234, Uranium-235, Uranium-238); Isotopic Plutonium

(3) ICP Metals - 6010 (Full List) (Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc); Mercury - 7471 - (CV)

Note: Transshipping required. Contact Joan Kessner for further instructions. Maintain freeze.

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W = Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-118-413

Page 1 of 1

Collector: Wendy West

Company Contact: JOAN KESSNER

Telephone No.: 375-4688

Project Coordinator: KESSNER, JH

Price Code: ~~9K~~ N

Data Turnaround: 45 Days

Project Designation: Columbia River Component of the RCBRA - Tissues

Sampling Location: LWSA-BASS1-FILLET K1735 (7446)

SAF No.: RC-118

Ice Chest No.: AFS-04-014

Field Logbook No.: EL-1638

COA: BESCRC6520

Method of Shipment: FED EX

Shipped To: EBERLINE SERVICES OAK RIDGE/JONVILLE

Offsite Property No.: N/A

Bill of Lading/Air Bill No.: FDX# 797884937190

POSSIBLE SAMPLE HAZARDS/REMARKS

N/A

Special Handling and/or Storage

FREEZE "MATRIX COMPOSED OF FISH"

0010722

Preservation	None	None	None	None	Cool 4C	Cool 4C	None			
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	G/P			
No. of Container(s)	1	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]			
Volume	1500g	100g	100g	10g	250g	120g	10g			
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Tritium - H3	See item (2) in Special Instructions	See item (3) in Special Instructions	Pesticides - 8081	Technetium-99			

Sample No.	Matrix *	Sample Date	Sample Time										
J190L8	OTHER SOLID	8/25/09	1300	X	X	X	X	X	X	X			

CHAIN OF POSSESSION Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Wendy West	1300 8/25/09	EAS LOCKED STORAGE Wendy West	1300 8/25/09
EAS LOCKED STORAGE	8/27/09 1000	SHANNAN JOHNSON	8/27/09 1000
SHANNAN JOHNSON	8/27/09 1000	FDX	
Fed Ex		M. [illegible]	8/28/09 [illegible]

SPECIAL INSTRUCTIONS

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab.

(1) Gamma Spec - (Full List) (Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238)
(2) Strontium-89,90 -- Total Sr; Isotopic Thorium (Thorium-232); Isotopic Uranium (Uranium-233/234, Uranium-235, Uranium-238); Isotopic Plutonium
(3) ICP Metals - 6010 (Full List) (Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc); Mercury - 7471 - (CV)

Note: Transshipping required. Contact Joan Kessner for further instructions. Maintain freeze.

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION — Received By: Title: Date/Time:

FINAL SAMPLE DISPOSITION — Disposal Method: Disposed By: Date/Time:

WCH-EE-011

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-118-414

Page 1 of 1

Collector: Windy West

Company Contact: JOAN KESSNER

Telephone No.: 375-4688

Project Coordinator: KESSNER, JH

Price Code: ~~9K~~ N JH 6/17/09

Data Turnaround: 45 Days

Project Designation: Columbia River Component of the RCBRA - Tissues

Sampling Location: LWSA-BASS2-FILLET K1735 (7446)

SAF No.: RC-118

Ice Chest No.: AFS-04-014

Field Logbook No.: EL-1638

COA: BESCRC6520

Method of Shipment: FED EX

Shipped To: EBERLINE SERVICES / LIONVILLE

Offsite Property No.: N/A

Bill of Lading/Air Bill No.: FDX# 797884937190

POSSIBLE SAMPLE HAZARDS/REMARKS

N/A

Special Handling and/or Storage

FREEZE "MATRIX COMPOSED OF FISH"

Preservation	None	None	None	None	Cool 4C	Cool 4C	None
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	G/P
No. of Container(s)	1	[illegible]		[illegible]		[illegible]	
Volume	1500g	100g	100g	10g	250g	120g	10g
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Tritium - H3	See item (2) in Special Instructions	See item (3) in Special Instructions	Pesticides - 8081	Technetium-99

Sample No.	Matrix *	Sample Date	Sample Time							
J190L7	OTHER SOLID	8/25/09	0950	X	X	X	X	X	X	X

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Windy West	8/25/09 0950	EAS LOCKED STORAGE Windy West	8/25/09 0950
EAS LOCKED STORAGE	8/27/09 1000	SHANNAN JOHNSON	8/27/09 1000
SHANNAN JOHNSON	8/27/09 1000	FDX	
FED EX		AF HATHEWAY	8/28/09 0920

SPECIAL INSTRUCTIONS

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab.

(1) Gamma Spec - (Full List) {Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238}

(2) Strontium-89,90 – Total Sr; Isotopic Thorium {Thorium-232}; Isotopic Uranium {Uranium-233/234, Uranium-235, Uranium-238}; Isotopic Plutonium

(3) ICP Metals - 6010 (Full List) {Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc}; Mercury - 7471 - (CV)

Note: Transshipping required. Contact Joan Kessner for further instructions. Maintain freeze.

Matrix *

S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-118-415 Page 1 of 1

Collector Wendy West	Company Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator KESSNER, JI
Project Designation Columbia River Component of the RCBRA - Tissues	Sampling Location LWSA-BASS3-FILLET K1735(7446)		SAF No. RC-118
Ice Chest No. AFS-04-014	Field Logbook No. EL-1638	COA BESCRC6520	Method of Shipment FED EX
Shipped To EBERLINE SERVICES / LIONVILLE	Offsite Property No. N/A		Bill of Lading FDX# 797884937190

Price Code 9K AW 61709

Data Turnaround 45 Days

POSSIBLE SAMPLE HAZARDS/REMARKS

N/A

Special Handling and/or Storage

FREEZE "MATRIX COMPOSED OF FISH"

4200072

Preservation	None	None	None	None	Cool 4C	Cool 4C	None
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	G/P
No. of Container(s)	1	1 of 1		1 of 1		1 of 1	
Volume	1500g	100g	100g	10g	250g	120g	10g
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Tritium - H3	See item (2) in Special Instructions	See item (3) in Special Instructions	Pesticides - 8081	Technetium-99

Sample No.	Matrix *	Sample Date	Sample Time							
J190LB	OTHER SOLID	8/25/07	1030	X	X	X	X	X	X	X

CHAIN OF POSSESSION		Sign/Print Names	
Relinquished By/Removed From Wendy West	Date/Time 1130 8/25/07	Received By/Stored In EAS LOCKED STORAGE Wendy West	Date/Time 1035 8/25/07
Relinquished By/Removed From EAS LOCKED STORAGE	Date/Time 8/27/07 1000	Received By/Stored In SHANNAN JOHNSON	Date/Time 8/27/07 1000
Relinquished By/Removed From SHANNAN JOHNSON	Date/Time 8/27/07 1000	Received By/Stored In FDX	Date/Time
Relinquished By/Removed From FED EX	Date/Time	Received By/Stored In RF WATCHURST	Date/Time 08/28/07 0930
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time

SPECIAL INSTRUCTIONS

Samples unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab

(1) Gamma Spec - (Full List) [Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238]

(2) Strontium-89,90 – Total Sr; Isotopic Thorium [Thorium-232]; Isotopic Uranium [Uranium-233/234, Uranium-235, Uranium-238]; Isotopic Plutonium

(3) ICP Metals - 6010 (Full List) [Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc]; Mercury - 7471 - (CV)

Note: Transshipping required. Contact Joan Kessner for further instructions. Maintain Freeze

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-118-416 Page 1 of 1

Collector Wendy West	Company Contact JOAN KESSNER Telephone No. 375-4688	Project Coordinator KESSNER, JH	Price Code ~~9C~~ U 8/26/09 Data Turnaround 45 Days
Project Designation Columbia River Component of the RCBRA - Tissues	Sampling Location LWSA-BASS4-FILLET K1735(7446)	SAF No. RC-118	
Ice Chest No. AFS-04-014	Field Logbook No. EL-1638 COA BESCRC6530	Method of Shipment FED EX	
Shipped To EBERLINE SERVICES LIONVILLE	Offsite Property No. N/A	Bill of Lading/Air Bill No. FDX#797884937190	

POSSIBLE SAMPLE HAZARDS/REMARKS

N/A

Special Handling and/or Storage

FREEZE "MATRIX COMPOSED OF FISH"

S20[illegible]

Preservation	None	None	None	None	Cool 4C	Cool 4C	None
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	G/P
No. of Container(s)	1	~~1~~ 0	~~1~~ 0	~~1~~ 0	~~1~~ 0	~~1~~ 0	~~1~~ 0
Volume	1500g	100g	100g	10g	250g	120g	10g
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Tritium - H3	See item (2) in Special Instructions	See item (3) in Special Instructions	Pesticides - 8081	Technetium-99

Sample No	Matrix *	Sample Date	Sample Time							
J190L9	OTHER SOLID	8/24/09	1530	X	X	X	X	X	X	X

CHAIN OF POSSESSION Sign/Print Names

Relinquished By/Removed From Wendy West	Date/Time 1530 8/24/09	Received By/Stored In EAS LOCKED STORAGE 4 Wendy West	Date/Time 1530 8/24/09
Relinquished By/Removed From EAS LOCKED STORAGE 4	Date/Time 8/27/09 1000	Received By/Stored In SHANNAN JOHNSON	Date/Time 8/27/09 1000
Relinquished By/Removed From SHANNAN JOHNSON	Date/Time 8/27/09 1000	Received By/Stored In FDX	Date/Time
Relinquished By/Removed From FED EX	Date/Time	Received By/Stored In [illegible]	Date/Time 8/28/09 1920
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time

[illegible]

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) [Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238]
(2) Strontium-89,90 – Total Sr; Isotopic Thorium (Thorium-232); Isotopic Uranium (Uranium-233/234, Uranium-235, Uranium-238); Isotopic Plutonium
(3) ICP Metals - 6010 (Full List) [Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc]; Mercury - 7471 - (CV)

NOTE: TRANSSHIPPING REQUIRED. CONTACT JOAN KESSNER FOR FURTHER INSTRUCTIONS. MAINTAIN FREEZE.

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-118-417

Page 1 of 1

Collector Wendy West	Company Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator KESSNER, JH
Project Designation Columbia River Component of the RCBRA - Tissues	Sampling Location LWSA-BASS3-FILLET K1735 (7446)		SAF No. RC-118
Ice Chest No. AFS-04-014	Field Logbook No. EL-1638	COA BESCRC6530	Method of Shipment FED EX
Shipped To EBERLINE SERVICES LIONVILLE	Offsite Property No. N/A		Bill of Lading/Air Bill No. FDX# 797884937190

Price Code 9K N [illegible]

Data Turnaround 45 Days

POSSIBLE SAMPLE HAZARDS/REMARKS

N/A

Special Handling and/or Storage

FREEZE "MATRIX COMPOSED OF FISH"

Preservation	None	None	None	None	Cool 4C	Cool 4C	None
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	G/P
No. of Container(s)	1	~~1~~ 0	~~1~~ 0	~~1~~ 0	~~1~~ 0	~~1~~ 0	~~1~~ 0
Volume	1300g	100g	100g	10g	250g	120g	10g
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Tritium - H3	See item (2) in Special Instructions	See item (3) in Special Instructions	Pesticides - 8081	Technetium-99

Sample No.	Matrix *	Sample Date	Sample Time							
J190M0	OTHER SOLID	8/24/09	1015	X	X	X	X	X	X	X

CHAIN OF POSSESSION

Sign/Print Names

Relinquished By/Removed From Wendy West	Date/Time 1015 8/24/09	Received By/Stored In EAS LOCKED STORAGE Wendy West	Date/Time 1015 8/24/09
Relinquished By/Removed From EAS LOCKED STORAGE	Date/Time 8/27/09 1000	Received By/Stored In SHANNAN JOHNSON	Date/Time 8/27/09 1000
Relinquished By/Removed From SHANNAN JOHNSON	Date/Time 8/27/09 1000	Received By/Stored In FDX	Date/Time
Relinquished By/Removed From FED EX	Date/Time	Received By/Stored In M. F. Watkins	Date/Time 08/28/09 0920
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time

SPECIAL INSTRUCTIONS

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location using custody [illegible]

(1) Gamma Spec - (Full List) (Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238)
(2) Strontium-89,90 – Total Sr; Isotopic Thorium (Thorium-232); Isotopic Uranium (Uranium-233/234, Uranium-235, Uranium-238); Isotopic Plutonium
(3) ICP Metals - 6010 (Full List) (Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc); Mercury - 7471 - (CV)

Note: Transshipping required. Contact Joan Kessner for further instructions. Maintain Freeze.

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Washington Closure Hanford	**CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST**	RC-116-433	Page 1 of 1
Collector Wendy West	**Company Contact** JOAN KESSNER **Telephone No.** 375-4688	**Project Coordinator** KESSNER, JH	**Price Code** ~~9K~~ N 10/6/09 **Data Turnaround** 45 Days
Project Designation Columbia River Component of the RCBRA - Tissues	**Sampling Location** LWSA-BASS1-CARCASS K1735(7446)	**SAF No.** RC-116	
Ice Chest No. AFS-04-014	**Field Logbook No.** EL-1638 **COA** BESCRC6520	**Method of Shipment** FED EX	
Shipped To ~~EBERLINE SERVICES~~ LIONVILLE	**Offsite Property No.** N/A	**Bill of Lading** FDX# 797884937190	

POSSIBLE SAMPLE HAZARDS/REMARKS
N/A

Special Handling and/or Storage
FREEZE "MATRIX COMPOSED OF FISH"

000772

Preservation	None	None	None	None	Cool 4C	Cool 4C	None			
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	G/P			
No. of Container(s)	1	~~1~~ 0	~~1~~ 0	~~1~~ 0	~~1~~ 0	~~1~~ 0	~~1~~ 0			
Volume	1500g	100g	100g	10g	250g	120g	10g			
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Tritium - H3	See item (2) in Special Instructions	See item (3) in Special Instructions	Pesticides - 8081	Technetium-99			

Sample No.	Matrix *	Sample Date	Sample Time										
J190N8	OTHER SOLID	8/25/09	1315	X	X	X	X	X	✓	X			

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Wendy West	1315 8/25/09	EAS LOCKED STORAGE Wendy West	1315 8/25/09
EAS LOCKED STORAGE	8/27/09 1000	SHANNAN JOHNSON	8/27/09 1000
SHANNAN JOHNSON	8/27/09 1000	FDX	
FED EX		[illegible]	8/28/09 09[illegible]

SPECIAL INSTRUCTIONS

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab.

(1) Gamma Spec - (Full List) (Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238)
(2) Strontium-89,90 -- Total Sr; Isotopic Thorium (Thorium-232); Isotopic Uranium (Uranium-233/234, Uranium-235, Uranium-238); Isotopic Plutonium
(3) ICP Metals - 6010 (Full List) (Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc); Mercury - 7471 - (CV)

Note: Transshipping required. Contact Joan Kessner for further instructions. Maintain freeze.

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

Washington Closure Hanford	**CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST**	RC-118-434	Page 1 of 1

Collector Wendy West	Company Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator KESSNER, JH	Price Code 9K N HDG1709 Data Turnaround 45 Days
Project Designation Columbia River Component of the RCBRA - Tissues	Sampling Location LWSA-BASS2-CARCASS K1735(7446)		SAF No. RC-118	
Ice Chest No. AFS-04-014	Field Logbook No. EL-1638	COA BESCRCA520	Method of Shipment FED EX	
Shipped To EBERLINE SERVICES / LIONVILLE	Offsite Property No. N/A		Bill of Lading/Air Bill No. FDX# 797884937190	

POSSIBLE SAMPLE HAZARDS/REMARKS
N/A

Special Handling and/or Storage
FREEZE "MATRIX COMPOSED OF FISH"

8400000

Preservation	None	None	None	None	Cool 4C	Cool 4C	None			
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	G/P			
No. of Container(s)	1	/0	/0	/0	/0	/0	/0			
Volume	1500g	100g	100g	10g	250g	120g	10g			
SAMPLE ANALYSIS	See item (1) in Special Instructions.	Carbon-14	Tritium - H3	See item (2) in Special Instructions.	See item (3) in Special Instructions.	Promethium - 147	Technetium-99			

Sample No.	Matrix *	Sample Date	Sample Time										
J190N7	OTHER SOLID	8/25/09	1000	X	X	X	X	X	X	X			

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody √ samples for shipment to lab.

CHAIN OF POSSESSION		Sign/Print Names	
Relinquished By/Removed From Wendy West	Date/Time 1000 8/25/09	Received By/Stored In Wendy EAS LOCKED STORAGE	Date/Time 1000 8/25/09
Relinquished By/Removed From EAS LOCKED STORAGE	Date/Time 8/27/09 1000	Received By/Stored In SHANNAN JOHNSON	Date/Time 8/27/09 1000
Relinquished By/Removed From SHANNAN JOHNSON	Date/Time 8/27/09 1000	Received By/Stored In FDX	Date/Time
Relinquished By/Removed From FED EX	Date/Time	Received By/Stored In R F WATAWHAN	Date/Time 8/28/09 0934
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) (Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238)
(2) Strontium-89,90 -- Total Sr; Isotopic Thorium (Thorium-232); Isotopic Uranium (Uranium-233/234, Uranium-235, Uranium-238); Isotopic Plutonium
(3) ICP Metals - 6010 (Full List) (Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc); Mercury - 7471 - (CV)

Note: Transshipping required. Contact Joan Kessner for further instructions. Maintain Freeze

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W = Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-118-435

Page 1 of 1

Collector: Wendy West

Company Contact: JOAN KESSNER

Telephone No.: 375-4688

Project Coordinator: KESSNER, JH

Price Code: ~~9K~~ N

Data Turnaround: 45 Days

Project Designation: Columbia River Component of the RCBRA - Tissues

Sampling Location: LWSA-BASS3-CARCASS K1735 (7446)

SAF No.: RC-118

ND 61709

Ice Chest No.: AFS-04-014

Field Logbook No.: EL-1638

COA: BESCRC6520

Method of Shipment: FED EX

Shipped To: [✓ EBERLINE SERVICES] LIONVILLE

Offsite Property No.: N/A

Bill of Lading/Air Bill No.: FDX# 797884937190

POSSIBLE SAMPLE HAZARDS/REMARKS

N/A

Special Handling and/or Storage

FREEZE "MATRIX COMPOSED OF FISH"

0000029

Preservation	None	None	None	None	Cool 4C	Cool 4C	None			
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	G/P			
No. of Container(s)	1	1/0	1/0	1/0	1/0	1/0	1/0			
Volume	1200g	100g	100g	10g	250g	120g	10g			
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Tritium - H3	See item (2) in Special Instructions	See item (3) in Special Instructions	Pesticides - 8081	Technetium-99			

Sample No.	Matrix *	Sample Date	Sample Time										
J190W8	OTHER SOLID	8/25/09	1045	X	X	X	X	X	X	X			

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From: Wendy West	Date/Time: 8/25/09 1045	Received By/Stored In: Wendy West EAS LOCKED STORAGE #4	Date/Time: 8/25/09 1045
Relinquished By/Removed From: EAS LOCKED STORAGE #4	Date/Time: 8/27/09 1000	Received By/Stored In: SHANNAN JOHNSON	Date/Time: 8/27/09 1000
Relinquished By/Removed From: SHANNAN JOHNSON	Date/Time: 8/27/09 1000	Received By/Stored In: FDX	Date/Time:
Relinquished By/Removed From: FDX	Date/Time:	Received By/Stored In: P. Whitehead	Date/Time: 08Sep09 1720
Relinquished By/Removed From:	Date/Time:	Received By/Stored In:	Date/Time:
Relinquished By/Removed From:	Date/Time:	Received By/Stored In:	Date/Time:

SPECIAL INSTRUCTIONS

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab

(1) Gamma Spec - (Full List) (Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238)
(2) Strontium-89,90 -- Total Sr; Isotopic Thorium (Thorium-232); Isotopic Uranium (Uranium-233/234, Uranium-235, Uranium-238); Isotopic Plutonium
(3) ICP Metals - 6010 (Full List) (Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc); Mercury - 7471 - (CV)

Note: Transshipping required. Contact Joan Kessner for further instructions. Maintain freeze.

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-118-436

Page 1 of 1

Collector Wendy West	Company Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator KESSNER, JH
Project Designation Columbia River Component of the RCBRA - Tissues	Sampling Location LWSA-BASS4-CARCASS K1735 (7446)		SAF No. RC-118
Ice Chest No. AFS-04-014	Field Logbook No. EL-1638	COA BESCRC6520	Method of Shipment FED EX
Shipped To EBERLINE SERVICES OAK RIDGE/ LIONVILLE	Offsite Property No. N/A		Bill of Lading/Airbill No. FDX# 797884937190

Price Code ~~8K~~ N [illegible] 081709

Data Turnaround 45 Days

POSSIBLE SAMPLE HAZARDS/REMARKS

N/A

Special Handling and/or Storage

FREEZE "MATRIX COMPOSED OF FISH"

Preservation	None	None	None	None	Cool 4C	Cool 4C	None
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	G/P
No. of Container(s)	1	~~1~~ 0 [illegible]	~~1~~ 0	~~1~~ 0 [illegible]	~~1~~ 0	~~1~~ 0 [illegible]	~~1~~ 0
Volume	1500g	100g	100g	10g	250g	120g	10g
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Tritium - H3	See item (2) in Special Instructions	See item (3) in Special Instructions	Pesticides - 8081	Technetium-99

Sample No.	Matrix *	Sample Date	Sample Time							
J190K9	OTHER SOLID	8/24/09	1600	X	X	X	X	X	X	X

CHAIN OF POSSESSION	Date/Time	Sign/Print Names	Date/Time
Relinquished By/Removed From Wendy West	1600 8/24/09	Received By/Stored In FAS LOCKED STORAGE 4 Wendy West	1600 8/24/09
Relinquished By/Removed From FAS LOCKED STORAGE 4	8/27/09 1100	Received By/Stored In SHANNAN JOHNSON	8/27/09 1100
Relinquished By/Removed From SHANNAN JOHNSON	8/27/09 1100	Received By/Stored In FDX	Date/Time
Relinquished By/Removed From FED EX	Date/Time	Received By/Stored In F.E. MATAU	08/28/09 0930
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time

SPECIAL INSTRUCTIONS

Samples unavailable to perform analyses from controlled storage. Shipper removed samples from storage location using custody [illegible]

(1) Gamma Spec - (Full List) (Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238)
(2) Strontium-89,90 - Total Sr; Isotopic Thorium (Thorium-232); Isotopic Uranium (Uranium-233/234, Uranium-235, Uranium-238); Isotopic Plutonium
(3) ICP Metals - 6010 (Full List) (Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc); Mercury - 7471 - (CV)

Note: Transshipping required. Contact Joan Kessner for further instructions. Maintain freeze

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

050000[illegible]

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-110-437

Page 1 of 1

Collector
Wendy West

Company Contact
JOAN KESSNER

Telephone No.
375-4688

Project Coordinator
KESSNER, JH

Price Code 9K N [illegible] 9/1/09

Data Turnaround
45 Days

Project Designation
Columbia River Component of the RCBRA - Tissues

Sampling Location
LWSA-BASS-CARCASS K1735 (7446)

SAF No.
RC-110

Ice Chest No. AFS-04-014

Field Logbook No.
EL-1630

COA
BESCRC6520

Method of Shipment
FED EX

Shipped To
EBERLINE SERVICES LIONVILLE

Offsite Property No.
N/A

Bill of Lading/Air Bill No. FDX# 797884937190

POSSIBLE SAMPLE HAZARDS/REMARKS
N/A

Special Handling and/or Storage
FREEZE "MATRIX COMPOSED OF FISH"

I401100

Preservation	None	None	None	None	Cool 4C	Cool 4C	None			
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	G/P			
No. of Container(s)	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]			
Volume	1500g	100g	100g	10g	250g	120g	10g			
SAMPLE ANALYSIS	See item (1) in Special Instructions.	Carbon-14	Tritium - H3	See item (2) in Special Instructions.	See item (3) in Special Instructions.	Pesticides - 8081	Technetium-99			

Sample No.	Matrix *	Sample Date	Sample Time										
J190P0	OTHER SOLID	8/24/09	1630	X	X	X	X	X	X	X			

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab.

CHAIN OF POSSESSION	Date/Time	Sign/Print Names	Date/Time
Relinquished By/Removed From Wendy West	1630 8/24/09	Received By/Stored In 3AS LOCKED STORAGE 7 Wendy West	1630 8/24/09
Relinquished By/Removed From 3AS LOCKED STORAGE 7	8/27/09 1000	Received By/Stored In SHANNAN JOHNSON	8/27/09 1000
Relinquished By/Removed From SHANNAN JOHNSON	8/27/09 1200	Received By/Stored In FDX	
Relinquished By/Removed From FED EX		Received By/Stored In [illegible]	8/28/09 0920
Relinquished By/Removed From		Received By/Stored In	
Relinquished By/Removed From		Received By/Stored In	

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) {Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238}
(2) Strontium-89,90 – Total Sr; Isotopic Thorium {Thorium-232}; Isotopic Uranium {Uranium-233/234, Uranium-235, Uranium-238}; Isotopic Plutonium
(3) ICP Metals - 6010 (Full List) {Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc}, Mercury - 7471 - {CV}

Note: Transshipping required. Contact Joan Kessner for further instructions.
Maintain freeze.

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION | Received By | Title | Date/Time

FINAL SAMPLE DISPOSITION | Disposal Method | Disposed By | Date/Time

WCH-EE-011

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-118-762

Page 1 of 1

Collector: M. Fdino

Company Contact: JOAN KESSNER

Telephone No.: 375-4688

Project Coordinator: KESSNER, JH

Price Code: 9S

Data Turnaround: 45 Days

AfA 8/1809

Project Designation: Columbia River Component of the RCBRA - Tissues

Sampling Location: STURGEON 16 LIVER K1735 (7448)

SAF No.: RC-118

Ice Chest No.: AFS-04-014

Field Logbook No.: EL-1638

COA: BESCRC6320

Method of Shipment: FED EX

Shipped To: [✓ EBERLINE SERVICES] LIONVILLE

Offsite Property No.: N/A

Bill of Lading/Air Bill No.: FDX# 797884937190

POSSIBLE SAMPLE HAZARDS/REMARKS
N/A

69.69 >

Special Handling and/or Storage
FREEZE "MATRIX COMPOSED OF FISH"

80001

Preservation	None	None	None	None	None	Cool 4C	Cool 4C			
Type of Container	G/P	G/P	G	G/P	G/P	G/P	aG			
No. of Container(s)	1	0	0	0	0	0	0			
Volume	750g	2g	25g	5g	5g	15g	50g			
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Tritium - H3	See item (2) in Special Instructions	Technetium-99	See item (3) in Special Instructions	Pesticides - 8081			

Sample No.	Matrix *	Sample Date	Sample Time										
J19460	OTHER SOLID	8-17-09	1300	X	X	X	X	X	X	X			

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From M. Fdino	Date/Time 8-17-09 1300	Received By/Stored In EAS LOCKED STORAGE 8-17-09	Date/Time 8-17-09 1300
Relinquished By/Removed From EAS LOCKED STORAGE	Date/Time 8-21-09 1000	Received By/Stored In SHANNAN JOHNSON	Date/Time 8-21-09 1000
Relinquished By/Removed From SHANNAN JOHNSON	Date/Time 8-21-09 1000	Received By/Stored In FDX	Date/Time
Relinquished By/Removed From FED EX	Date/Time	Received By/Stored In R F MATTAN	Date/Time 08/28/09 0920
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time

SPECIAL INSTRUCTIONS

TRANSSHIPPING REQUIRED. Perform gamma spec then contact Joan Kessner for additional analysis. Maintain FREEZE cooling as practical.

(1) Gamma Spec - (Full List) (Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238)

(2) Strontium-89,90 -- Total Sr, Isotopic Thorium, Isotopic Uranium, Isotopic Plutonium

(3) ICP Metals - 6010 (Full List) (Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc); Mercury - 7471 - (CV)

[illegible]

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION — Received By / Title / Date/Time

FINAL SAMPLE DISPOSITION — Disposal Method / Disposed By / Date/Time

WCH-EE-011

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-118-763	Page 1 of 1

Collector M.Fidino

Company Contact JOAN KESSNER **Telephone No.** 375-4688

Project Coordinator KESSNER, JH

Price Code 9N

Data Turnaround 45 Days

AS 8/10/09

Project Designation Columbia River Component of the RCBRA - Tissues

Sampling Location STURGEON 16 KIDNEY K1735(7448)

SAF No. RC-118

Ice Chest No. AFS-04-014

Field Logbook No. EL-1638

COA BESCRC6520

Method of Shipment FED EX

Shipped To EBERLINE SERVICES LIONVILLE

Offsite Property No. N/A

Bill of Lading/Air Bill No. FDX# 797884937190

POSSIBLE SAMPLE HAZARDS/REMARKS
N/A

Special Handling and/or Storage 39.32g
FREEZE "MATRIX COMPOSED OF FISH"

0000083

Preservation	None	None	None	None	None	Cool 4C	Cool 4C			
Type of Container	G/P	G/P	G	G/P	G/P	G/P	aG			
No. of Container(s)	1	0	0	0	0	0	0			
Volume	750g	2g	25g	5g	5g	15g	50g			
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Tritium - H3	See item (2) in Special Instructions	Technetium-99	See item (3) in Special Instructions	Pesticides - 8081			

Sample No.	Matrix *	Sample Date	Sample Time										
J19401	OTHER SOLID	8-17-09	1415	X	X	X	X	X	X	X			

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From M.Fidino	Date/Time 8-17-09 1415	Received By/Stored In EAS LOCKED STORAGE 4 8-17-09	Date/Time 8-17-09 1415
Relinquished By/Removed From EAS LOCKED STORAGE 4	Date/Time 8/21/09 1000	Received By/Stored In SHANNAN JOHNSON	Date/Time 8/21/09 1000
Relinquished By/Removed From SHANNAN JOHNSON	Date/Time 8-21-09 1000	Received By/Stored In FDX	Date/Time
Relinquished By/Removed From FED EX	Date/Time	Received By/Stored In R.F. UATAO	Date/Time 08/26/09 0920
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time

SPECIAL INSTRUCTIONS
TRANSSHIPPING REQUIRED. Perform gamma spec then contact Joan Kessner for additional analysis. Maintain FREEZE cooling as practical.

(1) Gamma Spec - (Full List) (Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238)
(2) Strontium-89,90 -- Total Sr; Isotopic Thorium; Isotopic Uranium; Isotopic Plutonium
(3) ICP Metals - 6010 (Full List) (Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc); Mercury - 7471 - (CV)

[illegible]
Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST			RC-118-760	Page 1 of 1
Collector M.F.Aino	Company Contact JOAN KESSNER	Telephone No. 373-4688	Project Coordinator KESSNER, JH	Price Code 9K N 10 9/10/09	Data Turnaround 45 Days
Project Designation Columbia River Component of the RCBRA - Tissues	Sampling Location STURGEON 16 FILLET	K1735 (7448)	SAF No. RC-118		
Ice Chest No. AFS-04-014	Field Logbook No. EL-1638	COA BESCRC6520	Method of Shipment FED EX		
Shipped To EBERLINE SERVICES LIONVILLE	Offsite Property No. N/A		Bill of Lading/Air Bill No. FDX# 797884937190		

POSSIBLE SAMPLE HAZARDS/REMARKS
N/A

Special Handling and/or Storage
FREEZE "MATRIX COMPOSED OF FISH"

000039

		Preservation	None	None	None	None	Cool 4C	Cool 4C	None		
		Type of Container	G/P	G/P	G/P	G/P	G/P	aG	G/P		
		No. of Container(s)	1	1	1	1	1	1	1		
		Volume	1500g	100g	100g	10g	250g	120g	10g		
SAMPLE ANALYSIS			See item (1) in Special Instructions	Carbon-14	Tritium - H3	See item (2) in Special Instructions	See item (3) in Special Instructions	Pesticides - 8081	Technetium-99		
Sample No.	Matrix *	Sample Date	Sample Time								
J19458	OTHER SOLID	8-17-09	1435	X	X	X	X			X		

CHAIN OF POSSESSION		Sign/Print Names	
Relinquished By/Removed From M.F.Aino	Date/Time 8-17-09 1435	Received By/Stored In EAS LOCKED STORAGE	Date/Time 8-17-09 1435
Relinquished By/Removed From EAS LOCKED STORAGE	Date/Time 8/27/09 1000	Received By/Stored In SHANNAN JOHNSON	Date/Time 8-27-09 1000
Relinquished By/Removed From SHANNAN JOHNSON	Date/Time 8/27/09 1000	Received By/Stored In FDX	Date/Time
Relinquished By/Removed From FED EX	Date/Time	Received By/Stored In D.F. MATTHEWS	Date/Time 08/28/09 0920
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) [Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238]
(2) Strontium-89,90 – Total Sr; Isotopic Thorium (Thorium-232); Isotopic Uranium [Uranium-233/234, Uranium-235, Uranium-238]; Isotopic Plutonium
(3) ICP Metals - 6010 (Full List) [Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc], Mercury - 7471 - (CV)

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Washington Closure Hanford	**CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST**	RC-118-761	Page 1 of 1

Collector M.Fidino	**Company Contact** JOAN KESSNER	**Telephone No.** 375-4688	**Project Coordinator** KESSNER, JH	**Price Code** 9K N 40 Days **Data Turnaround** 45 Days
Project Designation Columbia River Component of the RCBRA - Tissues	**Sampling Location** STURGEON 16 CARCASS K1735 (7448)		**SAF No.** RC-118	
Ice Chest No. AFS-04-014	**Field Logbook No.** EL-1638	**COA** BESCRC6520	**Method of Shipment** FED EX	
Shipped To EBERLINE SERVICES LIONVILLE	**Offsite Property No.** N/A		**Bill of Lading/Air Bill No.** FDX 797884937190	

POSSIBLE SAMPLE HAZARDS/REMARKS
N/A

Special Handling and/or Storage
FREEZE "MATRIX COMPOSED OF FISH"

S80000

Preservation	None	None	None	None	Cool 4C	Cool 4C	None			
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	G/P			
No. of Container(s)	1	1	1	1	1	1	1			
Volume	1500g	100g	100g	10g	250g	120g	10g			
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Tritium - H3	See item (2) in Special Instructions	See item (3) in Special Instructions	Pesticides - 8081	Technetium-99			

Sample No.	Matrix *	Sample Date	Sample Time										
J18458	OTHER SOLID	8-17-09	1500	X	X	X	X			X			

CHAIN OF POSSESSION — **Sign/Print Names**

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
M.Fidino	8-17-09 1500	EAS LOCKED STORAGE 4 8-17-09	8-17-09 1500
EAS LOCKED STORAGE 4 SJ	8-27-09 1000	SHANNAN JOHNSON	8-27-09 1000
SHANNAN JOHNSON	8-27-09 1000	FDX	
FED EX		LF MARTHALER	8/28/09 0920

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) [Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238]
(2) Strontium-89,90 -- Total Sr; Isotopic Thorium (Thorium-232); Isotopic Uranium (Uranium-233/234, Uranium-235, Uranium-238); Isotopic Plutonium
(3) ICP Metals - 6010 (Full List) (Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc); Mercury - 7471 - (CV)

[illegible]
Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody.

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Appendix 5

Data Validation Supporting Documentation

APPENDIX A

RADIOCHEMICAL DATA VALIDATION CHECKLIST

VALIDATION LEVEL:	A	B	[✓ C]	D	E
PROJECT:	RCRA		DATA PACKAGE:	K1735	
VALIDATOR:	BLK	LAB: EB		DATE:	1/9/10
			SDG:	K1735	
ANALYSES PERFORMED					
Gross Alpha/Beta	☒ Strontium-90	☒ Technetium-99	☒ Alpha Spectroscopy	☒ Gamma Spectroscopy	
Total Uranium	Radium-226	☒ Tritium	☒ C-14		
SAMPLES/MATRIX					
J19029	J19030	J19031	J19032	J19033	J19052	J19053
J19054	J19055	J19056	J19066	J19067	J19068	J19069
J19045	J19046	J19047	J19048	J19049	J19050	J19458
J19459	J19460	J19461				
						Solid

1. Completeness .... ☐ N/A

Technical verification forms present? .... Yes [✓ No] N/A

Comments:

2. Initial Calibration (Levels D, E) .... ☒ N/A

Instruments/detectors calibrated? .... Yes No N/A

Initial calibration acceptable? .... Yes No N/A

Standards NIST traceable? .... Yes No N/A

Standards Expired? .... Yes No N/A

Calculation check acceptable? .... Yes No N/A

Comments:

3. Continuing Calibration (Levels D, E) ☒ N/A

Calibration checked within required frequency? .... Yes No N/A

Calibration check acceptable? .... Yes No N/A

Calibration check standards traceable? .... Yes No N/A

Calibration check standards expired? .... Yes No N/A

Calculation check acceptable? .... Yes No N/A

Comments:

4. Background Counts (Levels D, E) .... ☒ N/A

Background Counts checked within required frequency? .... Yes No N/A

Background Counts acceptable? .... Yes No N/A

Calculation check acceptable? .... Yes No N/A

Comments:

5. Blanks (Levels B, C, D, E) ☐ N/A

Method blank analyzed within required frequency? Yes No [✓ N/A]

Method blank results acceptable? [✓ Yes] No N/A

Analytes detected in method blank? ~~Yes~~ [✓ No] N/A

Field blank(s) analyzed? Yes [✓ No] N/A

Field blank results acceptable? Yes No [✓ N/A]

Analytes detected in field blank(s)? Yes No [✓ N/A]

Transcription/Calculation Errors? (Levels D, E) Yes No [✓ N/A]

Comments: no FB

6. Laboratory Control Samples or Blank Spike Samples (Levels C, D, E) ☐ N/A

LCS /BSS analyzed within required frequency? [✓ Yes] No N/A

LCS/BSS recoveries acceptable? [✓ Yes] No N/A

LCS/BSS traceable? (Levels D,E) Yes No [✓ N/A]

LCS/BSS expired? (Levels D,E) Yes No [✓ N/A]

LCS/BSS levels correct? (Levels D,E) Yes No [✓ N/A]

Transcription/Calculation Errors? (Levels D, E) Yes No [✓ N/A]

Comments: thorium -228 + 232 (αspec) no LCS – Jull

7. Chemical Carrier Recovery (Levels C, D, E) ☒ N/A

Chemical carrier added? Yes No N/A

Chemical recovery acceptable? Yes No N/A

Chemical carrier traceable? (Levels D, E) Yes No N/A

Chemical carrier expired? (Levels D, E) .... Yes No N/A

Transcription/Calculation errors? (Levels D, E) .... Yes No N/A

Comments:

8. Tracer Recovery (Levels C, D, E) .... ☐ N/A

Tracer added? .... [✓ Yes] No N/A

Tracer recovery acceptable? .... [✓ Yes] No N/A

Tracer traceable? (Levels D, E) .... Yes No [✓ N/A]

Tracer expired? (Levels D, E) .... Yes No [✓ N/A]

Transcription/Calculation errors? (Levels D, E) .... Yes No [✓ N/A]

Comments:

9. Matrix Spikes (Levels C, D, E) .... ☐ N/A

Matrix spike analyzed? .... Yes [✓ No] N/A

Spike recoveries acceptable? .... Yes No [✓ N/A]

Spike source traceable? (Levels D, E) .... Yes No [✓ N/A]

Spike source expired? Levels D, E) .... Yes No [✓ N/A]

Transcription/Calculation Errors? (Levels D, E) .... Yes No [✓ N/A]

Comments: no MS - J all 3H + C-14

10. Duplicates (Levels C, D, E) ☐ N/A

Duplicates Analyzed at required frequency? [✓ Yes] No N/A

RPD Values Acceptable? [✓ Yes] No N/A

Transcription/Calculation Errors? (Levels D, E) Yes No [✓ N/A]

Comments:

11. Field QC Samples (Levels C, D E) ☐ N/A

Field duplicate sample(s) analyzed? Yes [✓ No] N/A

Field duplicate RPD values acceptable? Yes No [✓ N/A]

Field split sample(s) analyzed? Yes [✓ No] N/A

Field split RPD values acceptable? Yes No [✓ N/A]

Performance audit sample(s) analyzed? Yes [✓ No] N/A

Performance audit sample results acceptable? Yes No [✓ N/A]

Comments:

12. Holding Times (All levels)

Are sample holding times acceptable? [✓ Yes] No N/A

Comments:

13. Results and Detection Limits (All Levels) .... ☐ N/A

Results reported for all required sample analyses? .... [✓ Yes] No N/A

Results supported in raw data?(Levels D, E) .... Yes No [✓ N/A]

Results Acceptable? (Levels D, E) .... Yes No [✓ N/A]

Transcription/Calculation errors? (Levels D, E) .... Yes No [✓ N/A]

MDA's meet required detection limits? .... Yes [✓ No] N/A

Transcription/calculation errors? (Levels D, E) .... Yes No [✓ N/A]

Comments: [illegible] – [illegible]

|||| +10+1 40 [illegible]

Appendix 6

Additional Documentation Requested by Client

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1735

7446-022 Method Blank

METHOD BLANK

SDG	7446	Client/Case no	Hanford SDG K1735
Contact	N. Joseph Verville	Contract	No. S00W235A00
Lab sample id	R008121-22	Client sample id	Method Blank
Dept sample id	7446-022	Material/Matrix	SOLID
		SAF No	RC 118

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Tritium	10028-17-8	3.56	4.5	7.41	400	U	H
Carbon 14	14762-75-5	-1.82	4.1	7.03	50.0	U	C
Total Strontium	SR RAD	0.001	0.099	0.142	1.00	U	SR
Technetium 99	14133-76-7	0.048	0.27	0.407	15.0	U	TC
Thorium 228	14274-82-9	0	0.14	0.311	1.00	U	TH
Thorium 230	14269-63-7	0.207	0.34	0.635	1.00	U	TH
Thorium 232	TH-232	0	0.069	0.264	1.00	U	TH
Uranium 233/234	U-233/234	-0.017	0.034	0.131	1.00	U	U
Uranium 235	15117-96-1	0	0.042	0.159	1.00	U	U
Uranium 238	U-238	0.017	0.034	0.131	1.00	U	U
Plutonium 238	13981-16-3	0	0.074	0.284	1.00	U	PU
Plutonium 239/240	PU 239/240	0	0.074	0.284	1.00	U	PU
Potassium 40	13966-00-2	U		0.071		U	GAM
Cobalt 60	10198-40-0	U		0.007	0.050	U	GAM
Cesium 137	10045-97-3	U		0.006	0.100	U	GAM
Radium 226	13982-63-3	U		0.011	0.100	U	GAM
Radium 228	15262-20-1	U		0.076	0.200	U	GAM
Europium 152	14683-23-9	U		0.017	0.100	U	GAM
Europium 154	15585-10-1	U		0.016	0.100	U	GAM
Europium 155	14391-16-3	U		0.011	0.100	U	GAM
Thorium 228	14274-82-9	U		0.008		U	GAM
Thorium 232	TH-232	U		0.026		U	GAM
Uranium 235	15117-96-1	U		0.027		U	GAM
Uranium 238	U-238	U		0.620		U	GAM
Americium 241	14596-10-2	U		0.006		U	GAM
Beryllium 7	13966-02-4	U		0.039		U	GAM
Ruthenium 106	13967-48-1	U		0.053		U	GAM
Antimony 125	14234-35-6	U		0.012		U	GAM
Cesium 134	13967-70-9	U		0.006		U	GAM

METHOD BLANKS
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Lab id	EBRLNE
Protocol	Hanford1
Version	Ver 1.0
Form	DVD-DS
Version	1.06
Report date	10/08/09

7446-022

Method Blank

BLANK, cont.

SDG	7446	Client/Case no	Hanford SDG K1735
Contact	N. Joseph Verville	Contract	No. S00W335A00
Lab sample id	R908121-22	Client sample id	Method Blank
Dept sample id	7446-022	Material/Matrix	SOLID
		SAF No	RC-110

QC-BLANK #70807

Lab id ERBLNK
Protocol Hanford1
Version Ver 1.0
Form DVD-DS
Version 3.06
Report date 10/08/09

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1735

7446-025

Method Blank

METHOD BLANK

SDO	7446	Client/Case no	Hanford SDG K1735
Contact	N. Joseph Verville	Contract	No. S00W235A00
Lab sample id	R908121-25	Client sample id	Method Blank
Dept sample id	7446-025	Material/Matrix	SOLID
		SAF No	RC-110

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALIFIERS	TEST
Technetium 99	14133-76-7	0.259	0.30	0.438	15.0	U	TC

QC BLANK #73078

METHOD BLANKS
Page 1
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Lab id EBRLNE
Protocol Hanford1
Version Ver 1.0
Form DVD DG
Version 1.06
Report date 10/08/09

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP [illegible]

7446 021

Lab Control Sample

LAB CONTROL SAMPLE

SDG 7446

Contact [illegible]

Lab sample id [illegible]

Dept sample id 7446 021

Client/Case no Hanford SDG [illegible]

Contract No. [illegible]

Client sample id Lab Control Sample

Material/Matrix SOLID

SAF No [illegible]

ANALYTE	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST	ADDED pCi/g	2σ ERR pCi/g	REC %	3σ LMTS (TOTAL)	PROTOCOL LIMITS
Tritium	1016	43	6.40	400		H	1140	46	89	85-115	80-120
Carbon 14	1170	29	6.60	50.0		C	1196	150	98	84-116	80-120
Total Strontium	8.46	0.51	0.249	1.00		SR	9.94	0.40	85	84-116	80-120
Technetium 99	138	3.7	0.905	15.0		TC	120	4.8	115	76-124	80-120
Thorium 230	19.9	1.1	0.649	1.00		TH	16.9	0.76	125	77-123	80-120
Uranium 233/234	4.66	0.31	0.170	1.00		U	4.46	0.18	104	81-117	80-120
Uranium 235	1.74	0.18	0.043	1.00		U	1.67	0.14	104	82-118	80-120
Uranium 238	4.50	0.31	0.168	1.00		U	4.84	0.19	94	84-116	80-120
Plutonium 238	2.19	0.50	0.245	1.00		PU	2.32	0.091	94	60-140	80-120
Plutonium 239/240	2.17	0.54	0.214	1.00		PU	2.04	0.11	90	74-126	80-120
Cobalt 60	0.280	0.014	0.006	0.050		GAM	0.256	0.011	109	85-115	80-120
Cesium 137	0.142	0.011	0.009	0.100		GAM	0.141	0.014	106	86-114	80-120

QC LCS #76006

LAB CONTROL SAMPLES

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SUMMARY DATA SECTION

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Lab id EBRLNE

Protocol Hanford

Version Ver 1.0

Form DVD LCS

Version 2.0

Report date [illegible]

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1V15

7446-024

Lab Control Sample

LAB CONTROL SAMPLE

SDG	7446	Client/Case no	Hanford SDG K1V15
Contact	N. Joseph Verville	Contract	No. [illegible]
Lab sample id	[illegible]	Client sample id	Lab Control Sample
Dept sample id	7446-024	Material/Matrix	SOLID
		SAF No	[illegible]

ANALYTE	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALIFIERS	TEST	ADDED pCi/g	2σ ERR pCi/g	REC %	2σ LMTS (TOTAL)	PROTOCOL LIMITS
Technetium-99	107	[illegible]	0.431	15.0		TC	100	4.8	108	76-122	80-120

QC LCS [illegible]

LAB CONTROL SAMPLES

Page 1

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Lab id	[illegible]
Protocol	Hanford
Version	Ver 1.0
Form	DVD LCS
Version	3.06
Report date	[illegible]

7446-021

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1735

J19024

DUPLICATE

SDG	7446			Client/Case no	Hanford [illegible]
Contact	M. Joseph Verville			Contract	No. [illegible]
	DUPLICATE		ORIGINAL		
Lab sample id	[illegible]-21	Lab sample id	[illegible]-01	Client sample id	J19[illegible]
Dept sample id	7446-021	Dept sample id	7446-001	Location/Matrix	[illegible]
		Received	08/28/09	Collected/Weight	08/25/09 11:15, 435 g
% solids	100.0	% solids	100.0	Custody/SAF No	[illegible]

ANALYTE	DUPLICATE pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI FIERS	TEST	ORIGINAL pCi/g	2σ ERR (COUNT)	MDA pCi/g	QUALI FIERS	RPD %	3σ TOT	DER σ
Tritium	1.90	[illegible]	[illegible]	400	U	H	0.424	[illegible]	[illegible]	U	-		1.[illegible]
Carbon 14	1.08	[illegible]	[illegible]	50.0	U	C	[illegible]	1.6	5.90	U	-		0.[illegible]
Total Strontium	0.310	[illegible]	0.192	1.00	U	SR	-0.041	[illegible]	0.259	U			0.4
Technetium 99	0.027	0.26	0.444	15.0	U	TC	0.029	0.21	0.418	U			0
Thorium 228	0.077	0.21	0.425	1.00	U	TH	[illegible]	0.22	0.414	U	-		0.[illegible]
Thorium 230	[illegible]	[illegible]	0.705	1.00	U	TH	0	[illegible]	0.650	U			[illegible]
Thorium 232	0.019	[illegible]	[illegible]	1.00	U	TH	[illegible]	0.075	[illegible]	U			0
Uranium 233/234	0.017	0.035	0.111	1.00	U	U	[illegible]	0.042	[illegible]	U			0.[illegible]
Uranium 235	0	0.042	[illegible]	1.00	U	U	0	0.050	0.192	U			0
Uranium 238	0	[illegible]	[illegible]	1.00	U	U	[illegible]	0.042	[illegible]	U			0.[illegible]
Plutonium 238	[illegible]	0.15	[illegible]	1.00	U	PU	[illegible]	[illegible]	[illegible]	U	-		0.[illegible]
Plutonium 239/240	[illegible]	[illegible]	[illegible]	1.00	U	PU	[illegible]	[illegible]	[illegible]	U			0.[illegible]
Potassium 40	[illegible]	[illegible]	[illegible]			GAM	[illegible]	[illegible]	[illegible]		14	46	[illegible]
Cobalt 60	0		0.059	0.050	U	GAM	0		[illegible]	U			1.1
Cesium 137	0		[illegible]	0.100	U	GAM	0		[illegible]	U			[illegible]
Radium 226	0		0.105	0.100	U	GAM	0		[illegible]	U	-		0.[illegible]
Radium 228	0		0.254	0.200	U	GAM	0		[illegible]	U			0.9
Europium 152	0		[illegible]	[illegible]	U	GAM	0		[illegible]	U	-		0.9
Europium 154	0		[illegible]	0.100	U	GAM	0		[illegible]	U			1.[illegible]
Europium 155	0		[illegible]	0.100	U	GAM	0		[illegible]	U	-		[illegible]
Thorium 228	0		[illegible]		U	GAM	0		0.056	U			[illegible]
Thorium 232	0		0.254		U	GAM	0		[illegible]	U	-		0.[illegible]
Uranium 235	0		0.275		U	GAM	0		[illegible]	U			0.[illegible]
Uranium 238	0		[illegible]		U	GAM	0		[illegible]	U	-		1.[illegible]
Americium 241	0		[illegible]		U	GAM	0		[illegible]	U			1.[illegible]
Beryllium 7	0		[illegible]		U	GAM	0		[illegible]	U			0.[illegible]
Ruthenium 106	0		[illegible]		U	GAM	0		[illegible]	U			[illegible]
Antimony 125	0		[illegible]		U	GAM	0		[illegible]	U			0.[illegible]

Lab id	[illegible]
Protocol	Hanford
Version	Ver 1.0
Form	DVD-DUP
Version	[illegible]
Report date	10/09/09

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1735

7446-023

J17029

DUPLICATE, cont.

SAF	7446			Client/Case no	Hanford	SDG K1735
Contact	N. Joseph Verville			Contract	[illegible]
DUPLICATE		ORIGINAL			
Lab sample id	[illegible]	Lab sample id	[illegible]	Client sample id	J17029
Dept sample id	7446-023	Dept sample id	7446-001	Location/Matrix	[illegible]	SOLID
		Received	08/28/09	Collected/Weight	08/25/09 11:15 [illegible]
% solids	100.0	% solids	[illegible]	Custody/SAF No	[illegible]

ANALYTE	DUPLICATE pCi/g	2σ ERR (COUNT)	MDA pCi/g	ROL pCi/g	QUALI FIERS	TEST	ORIGINAL pCi/g	2σ ERR (COUNT)	MDA pCi/g	QUALI FIERS	RPD %	3σ TOT	DER σ
Cesium-134	U		0.056		U	GAM	U		0.033	U			0.0

QC DUPE# 70906

Columbia River Component of the RCBRA - Tissues

DUPLICATES
Page 2
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Lab id [illegible]
Protocol HANFORD
Version Ver 1.0
Form DVD-DU
Version [illegible]
Report date 10/06/09

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP R1715

7446 DUP

J19030

DUPLICATE

RFW:	7446			Client/Case no	Hanford SDG R1715
Contact	N. Jordan Varville			Contract	No 1000W35A00
	DUPLICATE		ORIGINAL		
Lab sample id	S308121-26	Lab sample id	S308121-04	Client sample id	J19016
Dept sample id	7446-026	Dept sample id	7446-002	Location/Matrix	CARP BASS FILLET SOLID
		Received	08/29/03	Collected/Weight	08/25/03 11:10 [illegible] g
% solids	100.0	% solids	100.0	Custody/SAF no	HC 115 303 [illegible]

ANALYTE	DUPLICATE pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALIFIERS	TEST	ORIGINAL pCi/g	2σ ERR (COUNT)	MDA pCi/g	QUALIFIERS	RPD %	3σ TOT	DUP σ
Technetium 99	0.042	0.19	0.470	15.0	U	TC	0.001	0.20	0.451	U			0.1

SP DUPES TC457

Columbia River Component of the HGMA Tissues

DUPLICATE
Page 1
SUMMARY DATA SECTION
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000101

Lab id EBERLINE
Protocol HANFORD
Version Ver 1.0
Form DVD-DUP
Version 3.06
Report date 12/20/03

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1735

7448-006

Method Blank

METHOD BLANK

SDG 7448
Contact N. Joseph Verville
Client/Case no Hanford
SDG K1735
Contract No. 500W235A06

Lab sample id E908124-06
Dept sample id 7448-006
Client sample id Method Blank
Material/Matrix SOLID
SAP No EC-118

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Tritium	10028-17-8	2.88	4.4	7.38	400	U	H
Carbon 14	14762-75-5	0.704	3.9	6.72	50.0	U	C
Total Strontium	SR-RAD	-0.027	0.20	0.376	1.00	U	SR
Technetium 99	14133-76-7	0.238	0.43	0.727	15.0	U	TC
Thorium 228	14274-82-9	0.030	0.18	0.335	1.00	U	TH
Thorium 230	14269-63-7	0.151	0.36	0.598	1.00	U	TH
Thorium 232	TH-232	0	0.060	0.231	1.00	U	TH
Uranium 233/234	U-233/234	0.064	0.064	0.245	1.00	U	U
Uranium 235	15117-96-1	0	0.078	0.297	1.00	U	U
Uranium 238	U-238	0	0.064	0.245	1.00	U	U
Plutonium 238	13981-16-3	0.023	0.083	0.198	1.00	U	PU
Plutonium 239/240	PU-239/240	0	0.041	0.158	1.00	U	PU
Potassium 40	13966-00-2	U		2.75		U	GAM
Cobalt 60	10198-40-0	U		0.138	0.050	U	GAM
Cesium 137	10045-97-3	U		0.142	0.100	U	GAM
Radium 226	13982-63-3	U		0.271	0.100	U	GAM
Radium 228	15262-20-1	U		0.575	0.200	U	GAM
Europium 152	14683-23-9	U		0.375	0.100	U	GAM
Europium 154	15585-10-1	U		0.422	0.100	U	GAM
Europium 155	14391-16-3	U		0.298	0.100	U	GAM
Thorium 228	14274-82-9	U		0.102		U	GAM
Thorium 232	TH-232	U		0.575		U	GAM
Uranium 235	15117-96-1	U		0.676		U	GAM
Uranium 238	U-238	U		16.2		U	GAM
Americium 241	14596-10-2	U		0.544		U	GAM
Beryllium 7	13966-02-4	U		0.919		U	GAM
Ruthenium 106	13967-48-1	U		1.18		U	GAM
Antimony 125	14234-35-6	U		0.341		U	GAM
Cesium 134	13967-70-9	U		0.155		U	GAM

ColumbiaRiverComponent RCBRA - Tissues

Lab id EBRLNE
Protocol Hanford1
Version Ver 1.0
Form DVD-DS
Version 3.06
Report date 09/29/99

METHOD BLANKS
Page 1
SUMMARY DATA SECTION
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7448-006

Method Blank

BLANK, cont.

SDG 7448
Contact N. Joseph Verville

Client/Case no Hanford
Contract No. S00M235A00

SDG K1735

Lab sample id R900124-06
Dept sample id 7448-006

Client sample id Method Blank
Material/Matrix SOLID
SAF No RC-118

QC-BLANK #70811

Lab id EBRLNE
Protocol Hanford1
Version Ver 1.0
Form DVD-RS
Version 3.06
Report date 09/29/09

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP [illegible]

LAB CONTROL SAMPLE

SDG	2440	Client/Case no	Hanford [illegible]
Contact	N. Joseph Verville	Contract	No. [illegible]
Lab sample id	[illegible]	Client sample id	Lab Control Sample
Dept sample id	7444-005	Material/Matrix	SOLID
		SAF No.	RC 110

ANALYTE	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	PQL pCi/g	QUALI-FIERS	TEST	ADDED pCi/g	2σ ERR pCi/g	REC %	3σ LMTS (TOTAL)	PROTOCOL LIMITS
Tritium	1060	21	6.44	400		H	1140	46	93	85-113	80-120
Carbon 14	1660	50	15.7	50.0		C	1590	130	104	82-114	80-120
Total Strontium	9.95	0.56	0.240	1.00		SR	9.04	0.16	110	80-124	80-120
Technetium 99	216	4.0	1.05	15.0		TC	210	6.3	103	77-124	80-125
Thorium 230	24.8	1.5	0.41	1.00		TH	22.7	0.91	109	77-121	80-120
Uranium 233/234	4.61	0.64	0.520	1.00		U	5.20	0.21	89	72-127	80-120
Uranium 235	4.11	0.80	0.211	1.00		U	4.22	0.17	97	69-111	80-120
Uranium 238	4.58	0.64	0.511	1.00		U	5.09	0.21	82	[illegible]-125	80-120
Plutonium 238	2.36	0.54	0.246	1.00		PU	2.12	0.094	101	61-131	80-120
Plutonium 239/240	3.08	0.55	0.150	1.00		PU	2.64	0.11	115	67-117	80-120
Cobalt 60	6.39	0.39	0.157	0.050		GAM	6.10	0.24	104	86-114	80-120
Cesium 137	8.11	0.60	0.211	0.100		GAM	7.57	0.35	107	90-114	80-120

[illegible]

[illegible] LCS results

LAB CONTROL SUMMARY
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SUMMARY DATA SECTION
Page 11

Lab id EBERLINE
Protocol Hanford
Version Ver 1.0
Form DVD-LCS
Version 3.06
Report date [illegible]

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP [illegible]

7448-007

[illegible]

DUPLICATE

SDG	7448			Client/Case no	Hanford [illegible]
Contact	N. Joseph Verville			Contract	No. [illegible]
	DUPLICATE		ORIGINAL		
Lab sample id	[illegible]	Lab sample id	[illegible]	Client sample id	[illegible]
Dept sample id	7448-007	Dept sample id	7448-003	Location/Matrix	[illegible] SOLID
		Received	[illegible]	Collected/Weight	[illegible]
% solids	101.0	% solids	100.0	Custody/SAF No	[illegible]

ANALYTE	DUPLICATE pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST	ORIGINAL pCi/g	2σ ERR (COUNT)	MDA pCi/g	QUALI-FIERS	RPD %	3σ TOT	CHK σ
Tritium	[illegible]	[illegible]	[illegible]	400	U	[illegible]	[illegible]	1.2	[illegible]	U			[illegible]
Carbon 14	[illegible]	2.9	4.04	50.0	U	[illegible]	0.151	2.9	[illegible]	U			[illegible]
Total Strontium	0.052	[illegible]	[illegible]	1.00	U	SR	[illegible]	[illegible]	[illegible]	U			[illegible]
Technetium 99	[illegible]	[illegible]	[illegible]	15.0	U	TC	[illegible]	[illegible]	[illegible]	U			[illegible]
Thorium 228	[illegible]	[illegible]	[illegible]	[illegible]	U	TH	[illegible]	[illegible]	[illegible]	U			[illegible]
Thorium 230	[illegible]	[illegible]	[illegible]	[illegible]	U	TH	[illegible]	[illegible]	[illegible]	U			[illegible]
Thorium 232	[illegible]	[illegible]	[illegible]	[illegible]	U	TH	0	[illegible]	[illegible]	U			[illegible]
Uranium 233/234	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	U	[illegible]	[illegible]	[illegible]	U			[illegible]
Uranium 235	0	[illegible]	0.250	[illegible]	U	U	[illegible]	[illegible]	[illegible]	U			[illegible]
Uranium 238	0	[illegible]	[illegible]	[illegible]	U	U	0	[illegible]	[illegible]	U			[illegible]
Plutonium 238	[illegible]	[illegible]	0.140	[illegible]	U	PU	0	[illegible]	[illegible]	U			[illegible]
Plutonium 239/240	[illegible]	[illegible]	0.140	[illegible]	U	PU	0	[illegible]	[illegible]	U			[illegible]
Potassium 40	[illegible]	[illegible]	[illegible]			GAM	[illegible]	[illegible]	[illegible]		[illegible]	[illegible]	[illegible]
Cobalt 60	0		[illegible]	[illegible]	U	GAM	0		[illegible]	U			[illegible]
Cesium 137	0		[illegible]	0.100	U	GAM	0		[illegible]	U			[illegible]
Radium 226	0		[illegible]	0.100	U	GAM	0		0.130	U			[illegible]
Radium 228	0		[illegible]	[illegible]	U	GAM	0		[illegible]	U			[illegible]
Europium 152	0		[illegible]	[illegible]	U	GAM	0		[illegible]	U			[illegible]
Europium 154	0		[illegible]	0.100	U	GAM	0		[illegible]	U			[illegible]
Europium 155	0		[illegible]	[illegible]	U	GAM	0		[illegible]	U			[illegible]
Thorium 228	0		[illegible]		U	GAM	0		[illegible]	U			[illegible]
Thorium 232	0		[illegible]		U	GAM	0		[illegible]	U			[illegible]
Uranium 235	0		[illegible]		U	GAM	0		[illegible]	U			[illegible]
Uranium 238	0		[illegible]		U	GAM	0		[illegible]	U			[illegible]
Americium 241	0		[illegible]		U	GAM	0		[illegible]	U			[illegible]
Beryllium 7	0		[illegible]		U	GAM	0		[illegible]	U			[illegible]
Ruthenium 106	0		[illegible]		U	GAM	0		[illegible]	U			[illegible]
Antimony 125	0		[illegible]		U	GAM	0		[illegible]	U			[illegible]

[illegible] Figures

Lab id	[illegible]
Protocol	Hanford
Version	Ver [illegible]
Form	[illegible]
Version	[illegible]
Report date	[illegible]

DUPLICATES
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Page [illegible]

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1735

7449-007

J19460

DUPLICATE, cont.

SDG	7449			Client/Case no	Hanford SDG K1735
Contact	N. Joseph Verville			Contract	No. [illegible]
	DUPLICATE		ORIGINAL		
Lab sample id	R908124-03	Lab sample id	R908124-01	Client sample id	C19460
Dept sample id	7449-007	Dept sample id	7449-001	Location/Matrix	[illegible] SOLID
		Received	09/20/0?	Collected/Weight	09/17/0? 13:00 [illegible]
% solids	100.0	% solids	100.0	Custody/SAF No	[illegible]

ANALYTE	DUPLICATE pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI FIERS	TEST	ORIGINAL pCi/g	2σ ERR (COUNT)	MDA pCi/g	QUALI FIERS	RPD %	3σ TOT	DER σ
Cesium 137	0		0.050		U	GAM	0		0.081	U			0.6

[illegible]

QC DUP#1 [illegible]

DUPLICATE

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Page 3

000106

Lab id EBERLINE

Protocol Hanford

Version Ver 2.1

Form DVD-DUP

Version 1.06

Report date 0?/20/0?

F.3.1.3 SDG K1785

SAF-RC-118
Columbia River Component of the RCBRA – Tissues
FINAL VALIDATION PACKAGE

COMPLETE COPY OF VALIDATION PACKAGE TO:

Kathy Wendt H4-21

COMMENTS:

SDG K1785 **SAF-RC-118**

Date: 8 February 2010
To: Washington Closure Hanford (technical representative)
From: ELR Consulting
Project: Columbia River Component of the RCBRA - Tissue
Subject: Inorganic - Data Package No. K1785-LLI

INTRODUCTION

This memo presents the results of data validation on Data Package No. K1785 prepared by Lionville Laboratory Inc. (LLI). A list of samples validated along with the analyses reported and the method of analysis is provided in the following table.

Sample ID	Sample Date	Media	Validation	Date
J18X86	9/24/09	Solid	C	See note 1
J18X87	9/25/09	Solid	C	See note 1
J18X88	9/25/09	Solid	C	See note 1
J18X89	9/24/09	Solid	C	See note 1
J18X90	9/24/09	Solid	C	See note 1
J18XB6	9/24/09	Solid	C	See note 1
J18XB7	9/25/09	Solid	C	See note 1
J18XB8	9/25/09	Solid	C	See note 1
J18XB9	9/24/09	Solid	C	See note 1
J18XC0	9/24/09	Solid	C	See note 1
J18XD1	9/24/09	Solid	C	See note 1
J18XD2	9/24/09	Solid	C	See note 1
J18XD3	9/24/09	Solid	C	See note 1
J19XD4	9/25/09	Solid	C	See note 1
J18XD5	9/25/09	Solid	C	See note 1
J18XF6	9/24/09	Solid	C	See note 1
J18XF7	9/24/09	Solid	C	See note 1
J18XF8	9/24/09	Solid	C	See note 1
J19XF9	9/25/09	Solid	C	See note 1
J18XH0	9/25/09	Solid	C	See note 1
J18XH1	9/24/09	Solid	C	See note 1
J18XH2	9/24/09	Solid	C	See note 1
J18XH3	9/24/09	Solid	C	See note 1
J18XH4	9/25/09	Solid	C	See note 1
J18XH5	9/25/09	Solid	C	See note 1
J195V7	9/21/09	Solid	C	See note 1
J195V8	9/21/09	Solid	C	See note 1
J195V9	9/21/09	Solid	C	See note 1
J195W0	9/24/09	Solid	C	See note 1
J19661	9/24/09	Solid	C	See note 1
J19662	9/24/09	Solid	C	See note 1
J19746	9/24/09	Solid	C	See note 1
J19747	9/24/09	Solid	C	See note 1
J19748	9/24/09	Solid	C	See note 1
J18XB1	9/24/09	Solid	C	See note 1
J18XB2	9/25/09	Solid	C	See note 1
J18XB3	9/25/09	Solid	C	See note 1

J18XB4	9/24/09	Solid		C		See note 1
J18XB5	9/24/09	Solid		C		See note 1

1 - ICP metals (6010B) & mercury by 7471A

Data validation was conducted in accordance with the Washington Closure Hanford (WCH) validation statement of work and the Remedial Investigation Work Plan for Hanford Site Releases to the Columbia River (DOE/RL-2008, Rev 0, September 2006). Appendices 1 through 6 provide the following information as indicated below:

Appendix 1. Glossary of Data Reporting Qualifiers
Appendix 2. Summary of Data Qualification
Appendix 3 Qualified Data Summary and Annotated Laboratory Reports
Appendix 4 Laboratory Narrative and Chain-of-Custody Documentation
Appendix 5. Data Validation Supporting Documentation
Appendix 6. Additional Documentation Requested by Client

DATA QUALITY PARAMETERS

- **Holding Times**

Analytical holding times for metals are assessed to ascertain whether the holding time requirements were met by the laboratory. The holding time requirements are as follows: Soil samples must be analyzed within 6 months for ICP metals and 28 days for mercury.

Due to the holding time being exceeded by greater than twice the limit, the mercury results in samples J18XB1, J18XB2, J18XB3, J18XB4, J18XB5, J18XF6, J18XF7, J18XF8, J18XF9, J18XH0, J195V7, J195V8, J195V9, J195W0, J19661, J19662 and J19747 were qualified as estimates and flagged "J".

All other holding times were acceptable.

- **Preparation (Method) Blanks**

Preparation Blanks

At least one preparation blank, consisting of deionized distilled water processed through each sample preparation and analysis procedure, must be prepared and analyzed with every sample delivery group. In the case of positive blank results, samples with digestate concentrations less than five times the preparation blank value have had their associated values qualified as non-detected and flagged "UJ". Samples with concentrations of greater than five times the highest blank concentration do not require qualification.

In the case of negative blank results, if the absolute value exceeds the contract required detection limit (CRDL), all nondetects are rejected and flagged "UR" and all detects that are less than ten times the absolute value of the associated preparation blank result are qualified as estimates and flagged "J". If the absolute value of the negative preparation blank is greater than the instrument detection limit (IDL) and less than or equal to the CRDL, all nondetects are qualified as estimates and flagged "UJ" and all detects less than ten times the absolute value of the blank are qualified as estimates and flagged "J". If the sample results are greater than ten times the absolute value of the preparation blank, no qualification is necessary

Due to method blank contamination, the lithium results in samples J18XB6, J18XB7, J18XB8, J18XB9, J18XC0, J18XD1, J18XD2, J18XD3 and J18XH1 were qualified as estimates and flagged "UJ".

Due to method blank contamination, the tin result in sample J18XD2 was qualified as an estimate and flagged "UJ".

All other preparation blank results were acceptable.

Field (Equipment) Blank

No field blanks were submitted for analysis.

- **Accuracy**

Matrix Spike and Laboratory Control Sample

Matrix spike (MS) and laboratory control sample (LCS) analyses are used to assess the analytical accuracy of the reported data. The matrix spike is used to assess the effect of the matrix on the ability to accurately quantify sample concentrations. Recoveries must fall within the range of 70% to 130%. Samples with a recovery of less than 30% and a sample result below the IDL are rejected and flagged "UR". Samples with a recovery of 30% to 69% and a sample result less than the IDL are qualified "UJ". Samples with a recovery of greater than 130% or less than 70% and a sample result greater than the IDL are qualified as estimates and flagged "J". Finally, for samples with a recovery greater than 130% and a sample result less than the IDL, no qualification is required.

Due to LCS recoveries outside QC limits (148%, 43%, 53%), all silicon results were qualified as estimates and flagged "J".

Due to a matrix spike recovery outside QC limits (166%), the mercury results in samples J18XB6, J18XB7, J18XB8, J18XB9, J18XC0, J18XD1, J18XD2, J18XD3, J18XD4, J18XD5 and J18XH1 were qualified as estimates and flagged "J"

All other accuracy results were acceptable.

- **Precision**

Laboratory Duplicate Samples

Analytical precision is expressed by the relative percent differences (RPD) between the recoveries of matrix spike duplicate (MSD) analyses performed on a sample in the analytical batch. Precision may alternatively be assessed using unspiked duplicate analyses performed on a sample in the analytical batch. If both sample and replicate activities (concentrations) are greater than five times the CRDL and the RPD is less than 30%, no qualification is required. If either activity (concentration) is less than five times the CRDL, the RPD control limit is less than or equal to two times the CRDL. If the RPD is outside the applicable control limit, associated results are qualified as estimated detects or estimated non-detects.

Due to an RPD outside QC limits (32%), all strontium results in samples J18XB6, J18XB7, J18XB8, J18XB9, J18XC0, J18XD1, J18XD2, J18XD3, J18XD4, J18XD5 and J18XH1 were qualified as estimates and flagged "J"

All other laboratory duplicate results were acceptable.

Field Duplicate

No field duplicates were submitted for analysis.

- **Analytical Detection Levels**

Reported analytical detection levels are compared against the 100 and 300 Area RQLs to ensure that laboratory detection levels meet the required criteria. All undetected beryllium results exceeded the RQL. Under the WCH statement of work, no qualification is required. All other results met the RQL.

- **Completeness**

Data package No. K1785 was submitted for validation and verified for completeness. Completeness is based on the percentage of data determined to be valid (i.e., not rejected). The completion percentage was 100%.

MAJOR DEFICIENCIES

None found.

MINOR DEFICIENCIES

The following minor deficiencies were noted:

- Due to the holding time being exceeded by greater than twice the limit, the mercury results in samples J18XB1, J18XB2, J18XB3, J18XB4, J18XB5, J18XF6, J18XF7, J18XF8, J18XF9, J18XH0, J195V7, J195V8, J195V9, J195W0, J19661, J19662 and J19747 were qualified as estimates and flagged "J".
- Due to method blank contamination, the lithium results in samples J18XB6, J18XB7, J18XB8, J18XB9, J18XC0, J18XD1, J18XD2, J18XD3 and J18XH1 were qualified as estimates and flagged "UJ".
- Due to method blank contamination, the tin result in sample J18XD2 was qualified as an estimate and flagged "UJ".
- Due to LCS recoveries outside QC limits (148%, 43%, 53%), all silicon results were qualified as estimates and flagged "J".
- Due to a matrix spike recovery outside QC limits (166%), the mercury results in samples J18XB6, J18XB7, J18XB8, J18XB9, J18XC0, J18XD1, J18XD2, J18XD3, J18XD4, J18XD5 and J18XH1 were qualified as estimates and flagged "J".
- Due to an RPD outside QC limits (32%), all strontium results in samples J18XB6, J18XB7, J18XB8, J18XB9, J18XC0, J18XD1, J18XD2, J18XD3, J18XD4, J18XD5 and J18XH1 were qualified as estimates and flagged "J".

Data flagged "J" indicates that the associated concentration is an estimate, but under the WCH statement of work, the data may be usable for decision-making purposes. All other validated results are considered accurate within the standard error associated with the methods.

All undetected beryllium results exceeded the RQL. Under the WCH statement of work, no qualification is required.

REFERENCES

Washington Closure Hanford Contract #S00W307A00 (March 2008), *Data Validation Services*.

DOE/RL-2008-11, Rev. 0, September 2008, *Remedial Investigation Work Plan for Hanford Site Releases to the Columbia River*.

Appendix 1

Glossary of Data Reporting Qualifiers

Qualifiers which may be applied by data validators in compliance with WCH validation SOW are as follows:

U - Indicates the compound or analyte was analyzed for and not detected in the sample. The value reported is the sample quantitation limit corrected for sample dilution and moisture content by the laboratory.

UJ - Indicates the compound or analyte was analyzed for and not detected in the sample. Due to a minor QC deficiency identified during the data validation, the associated quantitation limit is an estimate.

J - Indicates the compound or analyte was analyzed for and detected. Due to a minor QC deficiency identified during the data validation, the associated concentration is an estimate, but the data are usable for decision-making purposes.

BJ - Applied to inorganic analyses only. Indicates the analyte concentration was greater than the IDL but less than the CRDL and is considered an estimated value.

R - Indicates the compound or analyte was analyzed for, detected, and due to an identified major QC deficiency, the data are unusable.

UR - Indicates the compound or analyte was analyzed for and not detected in the sample. Additionally, the data is unusable due to an identified major QC deficiency.

NJ - Indicates presumptive evidence of a compound at an estimated value. The data may not be valid for some specific applications (i.e., usable for decision-making purposes).

N - Indicates presumptive evidence of a compound. The data may not be valid for some specific applications (i.e., usable for decision-making purposes).

Appendix 2

Summary of Data Qualification

METALS DATA QUALIFICATION SUMMARY*

SDG: K1786	**REVIEWER: ELR**	**Project: RCBRA**	**PAGE 1 OF 1**
COMPOUND	QUALIFIER	SAMPLES AFFECTED	REASON
Mercury	J	J18XF6, J18XF7 J18XF8, J18XF9 J18XH0, J195V7 J195V8, J195V9 J195W0, J19661 J19682, J19747 J18XB1, J18XB2 J18XB3, J18XB4 J18XB5	Hold time
Lithium	UJ	J18XB6, J18XB7 J18XB8, J18XB9 J18XC0, J18XD1 J18XD2, J18XD3 J18XH1	Blank contamination
Tin	UJ	J18XD2	Blank contamination
Silicon	J	All	LCS recovery
Mercury	J	J18XB6, J18XB7 J18XB8, J18XB9 J18XC0, J18XD1 J18XD2, J18XD3 J18XD4, J18XD5 J18XH1	MS recovery
Strontium	J	J18XB6, J18XB7 J18XB8, J18XB9 J18XC0, J18XD1 J18XD2, J18XD3 J18XD4, J18XD5 J18XH1	RPD

* - The Qualified Data Summary Table includes laboratory applied "U" qualifiers not specifically identified here. The laboratory applied "U" qualifiers are included to minimize misinterpretation of results contained in the table.

Appendix 3

Qualified Data Summary and Annotated Laboratory Reports

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

WC-Hanford, Inc.
2620 Fermi Avenue
Richland WA, 99354

Project: RC-118
Project Number: K1765
Project Manager: Joan Kessner

Reported:
10/20/2009 11:05

J18XB6
0909124-01 (Fish)

✓ 2/7/10

Analyte	Result and Qualifier	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Lionville Laboratory								
Metals by SW846 6000/7000 series								
Aluminum	3.25 U	3.25	mg/kg	1	1910090	10/09/2009	10/14/2009	6010B
Antimony	0.390 U	0.390	mg/kg	1	1910090	10/09/2009	10/14/2009	6010B
Arsenic	0.649 U	0.649	mg/kg	1	1910090	10/09/2009	10/14/2009	6010B
Barium	1.14	0.325	mg/kg	1	1910090	10/09/2009	10/14/2009	6010B
Beryllium	0.130 U	0.130	mg/kg	1	1910090	10/09/2009	10/14/2009	6010B
Bismuth	6.49 U	6.49	mg/kg	1	1910090	10/09/2009	10/14/2009	6010B
Boron	1.30 U	1.30	mg/kg	1	1910090	10/09/2009	10/14/2009	6010B
Cadmium	0.130 U	0.130	mg/kg	1	1910090	10/09/2009	10/14/2009	6010B
Calcium	26200	64.9	mg/kg	1	1910090	10/09/2009	10/14/2009	6010B
Chromium	0.563	0.130	mg/kg	1	1910090	10/09/2009	10/14/2009	6010B
Cobalt	1.30 U	1.30	mg/kg	1	1910090	10/09/2009	10/14/2009	6010B
Copper	0.649 U	0.649	mg/kg	1	1910090	10/09/2009	10/14/2009	6010B
Iron	9.32 B	13.0	mg/kg	1	1910090	10/09/2009	10/14/2009	6010B
Lead	0.325 U	0.325	mg/kg	1	1910090	10/09/2009	10/14/2009	6010B
Lithium	1.43 ~~B~~ UJ	1.62	mg/kg	1	1910090	10/09/2009	10/14/2009	6010B
Magnesium	552	18.7	mg/kg	1	1910090	10/09/2009	10/14/2009	6010B
Manganese	1.95 B	3.25	mg/kg	1	1910090	10/09/2009	10/14/2009	6010B
Molybdenum	1.30 U	1.30	mg/kg	1	1910090	10/09/2009	10/14/2009	6010B
Nickel	2.60 U	2.60	mg/kg	1	1910090	10/09/2009	10/14/2009	6010B
Phosphorus	15500	390	mg/kg	1	1910090	10/09/2009	10/14/2009	6010B
Potassium	2830	260	mg/kg	12	1910090	10/09/2009	10/16/2009	6010B
Selenium	0.679	0.649	mg/kg	1	1910090	10/09/2009	10/14/2009	6010B
Silicon	2.67 J	1.30	mg/kg	1	1910090	10/09/2009	10/14/2009	6010B
Silver	0.130 U	0.130	mg/kg	1	1910090	10/09/2009	10/14/2009	6010B
Sodium	1520	32.5	mg/kg	1	1910090	10/09/2009	10/14/2009	6010B
Strontium	20.1 J	0.649	mg/kg	1	1910090	10/09/2009	10/14/2009	6010B
Thallium	0.325 U	0.325	mg/kg	1	1910090	10/09/2009	10/14/2009	6010B
Tin	18.3	6.49	mg/kg	1	1910090	10/09/2009	10/14/2009	6010B
Uranium	13.0 U	13.0	mg/kg	1	1910090	10/09/2009	10/14/2009	6010B
Vanadium	0.517 B	1.62	mg/kg	1	1910090	10/09/2009	10/14/2009	6010B
Zinc	17.3	6.49	mg/kg	1	1910090	10/09/2009	10/14/2009	6010B
Mercury	0.145 J	0.0281	mg/kg	1	1910094	10/12/2009	10/13/2009	7471A

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WC-Hanford, Inc. 2620 Fermi Avenue Richland WA, 99354	Project: RC-118 Project Number: K1785 Project Manager: Joan Kessner	Reported: 10/20/2009 11:05

J18XB7
0909124-02 (Fish)

2/7/10

Lionville Laboratory

Metals by SW846 6000/7000 series

Analyte	Result and Qualifier	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Aluminum	4.39 U	4.39	mg/kg	1	L910090	10/09/2009	10/14/2009	6010B
Antimony	0.526 U	0.526	mg/kg	1	L910090	10/09/2009	10/14/2009	6010B
Arsenic	0.877 U	0.877	mg/kg	1	L910090	10/09/2009	10/14/2009	6010B
Barium	**1.72**	0.439	mg/kg	1	L910090	10/09/2009	10/14/2009	6010B
Beryllium	0.175 U	0.175	mg/kg	1	L910090	10/09/2009	10/14/2009	6010B
Bismuth	8.77 U	8.77	mg/kg	1	L910090	10/09/2009	10/14/2009	6010B
Boron	1.75 U	1.75	mg/kg	1	L910090	10/09/2009	10/14/2009	6010B
Cadmium	0.175 U	0.175	mg/kg	1	L910090	10/09/2009	10/14/2009	6010B
Calcium	**22800**	87.7	mg/kg	1	L910090	10/09/2009	10/14/2009	6010B
Chromium	**0.680**	0.175	mg/kg	1	L910090	10/09/2009	10/14/2009	6010B
Cobalt	1.75 U	1.75	mg/kg	1	L910090	10/09/2009	10/14/2009	6010B
Copper	0.877 U	0.877	mg/kg	1	L910090	10/09/2009	10/14/2009	6010B
Iron	**8.14** B	17.5	mg/kg	1	L910090	10/09/2009	10/14/2009	6010B
Lead	0.439 U	0.439	mg/kg	1	L910090	10/09/2009	10/14/2009	6010B
Lithium	**2.43** B-UJ	2.19	mg/kg	1	L910090	10/09/2009	10/14/2009	6010B
Magnesium	**900**	65.8	mg/kg	1	L910090	10/09/2009	10/14/2009	6010B
Manganese	**2.58** B	4.39	mg/kg	1	L910090	10/09/2009	10/14/2009	6010B
Molybdenum	1.75 U	1.75	mg/kg	1	L910090	10/09/2009	10/14/2009	6010B
Nickel	3.51 U	3.51	mg/kg	1	L910090	10/09/2009	10/14/2009	6010B
Phosphorus	**13000**	526	mg/kg	1	L910090	10/09/2009	10/14/2009	6010B
Potassium	**2290**	351	mg/kg	12	L910090	10/09/2009	10/16/2009	6010B
Selenium	**0.587** B	0.877	mg/kg	1	L910090	10/09/2009	10/14/2009	6010B
Silicon	**2.80** J	1.75	mg/kg	1	L910090	10/09/2009	10/14/2009	6010B
Silver	0.175 U	0.175	mg/kg	1	L910090	10/09/2009	10/14/2009	6010B
Sodium	**1500**	43.9	mg/kg	1	L910090	10/09/2009	10/14/2009	6010B
Strontium	**47.4** J	0.877	mg/kg	1	L910090	10/09/2009	10/14/2009	6010B
Thallium	0.439 U	0.439	mg/kg	1	L910090	10/09/2009	10/14/2009	6010B
Tin	**11.1**	8.77	mg/kg	1	L910090	10/09/2009	10/14/2009	6010B
Uranium	17.5 U	17.5	mg/kg	1	L910090	10/09/2009	10/14/2009	6010B
Vanadium	**0.519** B	2.19	mg/kg	1	L910090	10/09/2009	10/14/2009	6010B
Zinc	**18.1**	8.77	mg/kg	1	L910090	10/09/2009	10/14/2009	6010B
Mercury	**0.450** J	0.0300	mg/kg	1	L910094	10/12/2009	10/13/2009	7471A

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WC-Hanford, Inc
2620 Fermi Avenue
Richland WA, 99354

Project: RC-118
Project Number: K1785
Project Manager: Joan Kessner

Reported:
10/20/2009 11:05

J18XB8
0909124-03 (Fish)

12/7/10

Lionville Laboratory

Analyte	Result and Qualifier		Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Metals by SW846 6000/7000 series									
Aluminum	4.63	U	4.63	mg/kg	1	L910090	10/09/2009	10/14/2009	6010B
Antimony	0.556	U	0.556	mg/kg	1	L910090	10/09/2009	10/14/2009	6010B
Arsenic	0.926	U	0.926	mg/kg	1	L910090	10/09/2009	10/14/2009	6010B
Barium	0.857		0.463	mg/kg	1	L910090	10/09/2009	10/14/2009	6010B
Beryllium	0.185	U	0.185	mg/kg	1	L910090	10/09/2009	10/14/2009	6010B
Bismuth	9.26	U	9.26	mg/kg	1	L910090	10/09/2009	10/14/2009	6010B
Boron	1.85	U	1.85	mg/kg	1	L910090	10/09/2009	10/14/2009	6010B
Cadmium	0.185	U	0.185	mg/kg	1	L910090	10/09/2009	10/14/2009	6010B
Calcium	21300		92.6	mg/kg	1	L910090	10/09/2009	10/14/2009	6010B
Chromium	0.561		0.185	mg/kg	1	L910090	10/09/2009	10/14/2009	6010B
Cobalt	1.85	U	1.85	mg/kg	1	L910090	10/09/2009	10/14/2009	6010B
Copper	0.926	U	0.926	mg/kg	1	L910090	10/09/2009	10/14/2009	6010B
Iron	10.6	B	18.5	mg/kg	1	L910090	10/09/2009	10/14/2009	6010B
Lead	0.463	U	0.463	mg/kg	1	L910090	10/09/2009	10/14/2009	6010B
Lithium	1.19	~~B~~ UJ	2.31	mg/kg	1	L910090	10/09/2009	10/14/2009	6010B
Magnesium	508		69.4	mg/kg	1	L910090	10/09/2009	10/14/2009	6010B
Manganese	1.90	B	4.63	mg/kg	1	L910090	10/09/2009	10/14/2009	6010B
Molybdenum	1.85	U	1.85	mg/kg	1	L910090	10/09/2009	10/14/2009	6010B
Nickel	3.70	U	3.70	mg/kg	1	L910090	10/09/2009	10/14/2009	6010B
Phosphorus	12900		556	mg/kg	12	L910090	10/09/2009	10/16/2009	6010B
Potassium	3330		370	mg/kg	1	L910090	10/09/2009	10/14/2009	6010B
Selenium	0.833	B	0.926	mg/kg	1	L910090	10/09/2009	10/14/2009	6010B
Silicon	3.49	J	1.85	mg/kg	1	L910090	10/09/2009	10/14/2009	6010B
Silver	0.185	U	0.185	mg/kg	1	L910090	10/09/2009	10/14/2009	6010B
Sodium	1620		46.3	mg/kg	1	L910090	10/09/2009	10/14/2009	6010B
Strontium	16.5	J	0.926	mg/kg	1	L910090	10/09/2009	10/14/2009	6010B
Thallium	0.463	U	0.463	mg/kg	1	L910090	10/09/2009	10/14/2009	6010B
Tin	10.9		9.26	mg/kg	1	L910090	10/09/2009	10/14/2009	6010B
Uranium	18.5	U	18.5	mg/kg	1	L910090	10/09/2009	10/14/2009	6010B
Vanadium	0.533	B	2.31	mg/kg	1	L910090	10/09/2009	10/14/2009	6010B
Zinc	21.1		9.26	mg/kg	1	L910090	10/09/2009	10/14/2009	6010B
Mercury	0.232	J	0.0300	mg/kg	1	L910094	10/12/2009	10/13/2009	7471A

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WC-Hanford, Inc. 2620 Fermi Avenue Richland WA, 99354	Project: RC-118 Project Number: K1785 Project Manager: Joan Kessner	Reported: 10/20/2009 11:05

J18XB9
0909124-04 (Fish)

2/7/10

Analyte	Result and Qualifier		Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method

Lionville Laboratory

Metals by SW846 6000/7000 series

Analyte	Result	Qualifier	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Aluminum	3.79	U	3.79	mg/kg	1	1910090	10/09/2009	10/14/2009	6010B
Antimony	0.455	U	0.455	mg/kg	1	1910090	10/09/2009	10/14/2009	6010B
Arsenic	0.758	U	0.758	mg/kg	1	1910090	10/09/2009	10/14/2009	6010B
Barium	**0.477**		0.379	mg/kg	1	1910090	10/09/2009	10/14/2009	6010B
Beryllium	0.152	U	0.152	mg/kg	1	1910090	10/09/2009	10/14/2009	6010B
Bismuth	7.58	U	7.58	mg/kg	1	1910090	10/09/2009	10/14/2009	6010B
Boron	1.52	U	1.52	mg/kg	1	1910090	10/09/2009	10/14/2009	6010B
Cadmium	0.152	U	0.152	mg/kg	1	1910090	10/09/2009	10/14/2009	6010B
Calcium	**8800**		75.8	mg/kg	1	1910090	10/09/2009	10/14/2009	6010B
Chromium	**0.295**		0.152	mg/kg	1	1910090	10/09/2009	10/14/2009	6010B
Cobalt	1.52	U	1.52	mg/kg	1	1910090	10/09/2009	10/14/2009	6010B
Copper	0.758	U	0.758	mg/kg	1	1910090	10/09/2009	10/14/2009	6010B
Iron	**5.68**	B	15.2	mg/kg	1	1910090	10/09/2009	10/14/2009	6010B
Lead	0.379	U	0.379	mg/kg	1	1910090	10/09/2009	10/14/2009	6010B
Lithium	**0.879**	~~B~~ UJ	1.89	mg/kg	1	1910090	10/09/2009	10/14/2009	6010B
Magnesium	**294**		56.8	mg/kg	1	1910090	10/09/2009	10/14/2009	6010B
Manganese	**0.650**	B	3.79	mg/kg	1	1910090	10/09/2009	10/14/2009	6010B
Molybdenum	1.52	U	1.52	mg/kg	1	1910090	10/09/2009	10/14/2009	6010B
Nickel	3.03	U	3.03	mg/kg	1	1910090	10/09/2009	10/14/2009	6010B
Phosphorus	**5930**		455	mg/kg	1	1910090	10/09/2009	10/14/2009	6010B
Potassium	**2380**		303	mg/kg	12	1910090	10/09/2009	10/16/2009	6010B
Selenium	**0.560**	B	0.758	mg/kg	1	1910090	10/09/2009	10/14/2009	6010B
Silicon	**2.25**	J	1.52	mg/kg	1	1910090	10/09/2009	10/14/2009	6010B
Silver	0.152	U	0.152	mg/kg	1	1910090	10/09/2009	10/14/2009	6010B
Sodium	**1100**		37.9	mg/kg	1	1910090	10/09/2009	10/14/2009	6010B
Strontium	**7.12**	J	0.758	mg/kg	1	1910090	10/09/2009	10/14/2009	6010B
Thallium	0.379	U	0.379	mg/kg	1	1910090	10/09/2009	10/14/2009	6010B
Tin	**6.34**	B	7.58	mg/kg	1	1910090	10/09/2009	10/14/2009	6010B
Uranium	15.2	U	15.2	mg/kg	1	1910090	10/09/2009	10/14/2009	6010B
Vanadium	**0.303**	B	1.89	mg/kg	1	1910090	10/09/2009	10/14/2009	6010B
Zinc	**15.3**		7.58	mg/kg	1	1910090	10/09/2009	10/14/2009	6010B
Mercury	**0.157**	J	0.0290	mg/kg	1	1910094	10/12/2009	10/13/2009	7471A

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WC Hanford, Inc.
2620 Fermi Avenue
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Project: RC-118
Project Number: K1785
Project Manager: Joan Kessner

Reported:
10/20/2009 11:05

J18XC0

0909124-05 (Fish)

✓ 2/7/10

Analyte	Result and Qualifier		Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Lionville Laboratory									
Metals by SW846 6000/7000 series									
Aluminum	3.91	U	3.91	mg/kg	1	1910090	10/09/2009	10/14/2009	6010B
Antimony	0.469	U	0.469	mg/kg	1	1910090	10/09/2009	10/14/2009	6010B
Arsenic	0.781	U	0.781	mg/kg	1	1910090	10/09/2009	10/14/2009	6010B
Barium	**0.498**		0.391	mg/kg	1	1910090	10/09/2009	10/14/2009	6010B
Beryllium	0.156	U	0.156	mg/kg	1	1910090	10/09/2009	10/14/2009	6010B
Bismuth	7.81	U	7.81	mg/kg	1	1910090	10/09/2009	10/14/2009	6010B
Boron	1.56	U	1.56	mg/kg	1	1910090	10/09/2009	10/14/2009	6010B
Cadmium	0.156	U	0.156	mg/kg	1	1910090	10/09/2009	10/14/2009	6010B
Calcium	**9,130**		78.1	mg/kg	1	1910090	10/09/2009	10/14/2009	6010B
Chromium	**0.570**		0.156	mg/kg	1	1910090	10/09/2009	10/14/2009	6010B
Cobalt	1.56	U	1.56	mg/kg	1	1910090	10/09/2009	10/14/2009	6010B
Copper	0.781	U	0.781	mg/kg	1	1910090	10/09/2009	10/14/2009	6010B
Iron	**6.92**	**B**	15.6	mg/kg	1	1910090	10/09/2009	10/14/2009	6010B
Lead	0.391	U	0.391	mg/kg	1	1910090	10/09/2009	10/14/2009	6010B
Lithium	**0.906**	~~B~~ UJ	1.95	mg/kg	1	1910090	10/09/2009	10/14/2009	6010B
Magnesium	**329**		58.6	mg/kg	1	1910090	10/09/2009	10/14/2009	6010B
Manganese	**0.783**	**B**	3.91	mg/kg	1	1910090	10/09/2009	10/14/2009	6010B
Molybdenum	1.56	U	1.56	mg/kg	1	1910090	10/09/2009	10/14/2009	6010B
Nickel	3.12	U	3.12	mg/kg	1	1910090	10/09/2009	10/14/2009	6010B
Phosphorus	**6320**		469	mg/kg	1	1910090	10/09/2009	10/14/2009	6010B
Potassium	**2630**		312	mg/kg	12	1910090	10/09/2009	10/16/2009	6010B
Selenium	**0.635**	**B**	0.781	mg/kg	1	1910090	10/09/2009	10/14/2009	6010B
Silicon	**2.85**	J	1.56	mg/kg	1	1910090	10/09/2009	10/14/2009	6010B
Silver	0.156	U	0.156	mg/kg	1	1910090	10/09/2009	10/14/2009	6010B
Sodium	**1130**		39.1	mg/kg	1	1910090	10/09/2009	10/14/2009	6010B
Strontium	**7.60**	J	0.781	mg/kg	1	1910090	10/09/2009	10/14/2009	6010B
Thallium	0.391	U	0.391	mg/kg	1	1910090	10/09/2009	10/14/2009	6010B
Tin	**7.97**		7.81	mg/kg	1	1910090	10/09/2009	10/14/2009	6010B
Uranium	15.6	U	15.6	mg/kg	1	1910090	10/09/2009	10/14/2009	6010B
Vanadium	**0.352**	**B**	1.95	mg/kg	1	1910090	10/09/2009	10/14/2009	6010B
Zinc	**13.3**		7.81	mg/kg	1	1910090	10/09/2009	10/14/2009	6010B
Mercury	**0.200**	J	0.0281	mg/kg	1	1910094	10/12/2009	10/13/2009	7471A

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WC-Hanford, Inc.
2620 Fermi Avenue
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Project: RC-118
Project Number: K1785
Project Manager: Joan Kessner

Reported:
10/20/2009 11:05

J18XD1
0909124-06 (Fish)

2/7/10

Analyte	Result and Qualifier	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
			Lionville Laboratory					
Metals by SW846 6000/7000 series								
Aluminum	3.25 U	3.25	mg/kg	1	L910090	10/09/2009	10/14/2009	6010B
Antimony	0.390 U	0.390	mg/kg	1	L910090	10/09/2009	10/14/2009	6010B
Arsenic	0.649 U	0.649	mg/kg	1	L910090	10/09/2009	10/14/2009	6010B
Barium	0.349	0.325	mg/kg	1	L910090	10/09/2009	10/14/2009	6010B
Beryllium	0.130 U	0.130	mg/kg	1	L910090	10/09/2009	10/14/2009	6010B
Bismuth	6.49 U	6.49	mg/kg	1	L910090	10/09/2009	10/14/2009	6010B
Boron	1.30 U	1.30	mg/kg	1	L910090	10/09/2009	10/14/2009	6010B
Cadmium	0.130 U	0.130	mg/kg	1	L910090	10/09/2009	10/14/2009	6010B
Calcium	5550	64.9	mg/kg	1	L910090	10/09/2009	10/14/2009	6010B
Chromium	0.313	0.130	mg/kg	1	L910090	10/09/2009	10/14/2009	6010B
Cobalt	1.30 U	1.30	mg/kg	1	L910090	10/09/2009	10/14/2009	6010B
Copper	0.649 U	0.649	mg/kg	1	L910090	10/09/2009	10/14/2009	6010B
Iron	4.10 B	13.0	mg/kg	1	L910090	10/09/2009	10/14/2009	6010B
Lead	0.325 U	0.325	mg/kg	1	L910090	10/09/2009	10/14/2009	6010B
Lithium	0.519 ~~B~~ UJ	1.62	mg/kg	1	L910090	10/09/2009	10/14/2009	6010B
Magnesium	341	48.7	mg/kg	1	L910090	10/09/2009	10/14/2009	6010B
Manganese	0.348 B	3.25	mg/kg	1	L910090	10/09/2009	10/14/2009	6010B
Molybdenum	1.30 U	1.30	mg/kg	1	L910090	10/09/2009	10/14/2009	6010B
Nickel	2.60 U	2.60	mg/kg	1	L910090	10/09/2009	10/14/2009	6010B
Phosphorus	4910	390	mg/kg	12	L910090	10/09/2009	10/16/2009	6010B
Potassium	3710	260	mg/kg	1	L910090	10/09/2009	10/14/2009	6010B
Selenium	0.570 B	0.649	mg/kg	1	L910090	10/09/2009	10/14/2009	6010B
Silicon	1.95 J	1.30	mg/kg	1	L910090	10/09/2009	10/14/2009	6010B
Silver	0.130 U	0.130	mg/kg	1	L910090	10/09/2009	10/14/2009	6010B
Sodium	556	32.5	mg/kg	1	L910090	10/09/2009	10/14/2009	6010B
Strontium	4.49 J	0.649	mg/kg	1	L910090	10/09/2009	10/14/2009	6010B
Thallium	0.325 U	0.325	mg/kg	1	L910090	10/09/2009	10/14/2009	6010B
Tin	10.0	6.49	mg/kg	1	L910090	10/09/2009	10/14/2009	6010B
Uranium	13.0 U	13.0	mg/kg	1	L910090	10/09/2009	10/14/2009	6010B
Vanadium	0.339 B	1.62	mg/kg	1	L910090	10/09/2009	10/14/2009	6010B
Zinc	9.10	6.49	mg/kg	1	L910090	10/09/2009	10/14/2009	6010B
Mercury	0.314 J	0.0243	mg/kg	1	L910094	10/12/2009	10/13/2009	7471A

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WCH Hanford, Inc
2620 Fermi Avenue
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Project: RC-11X
Project Number: K1785
Project Manager: Joan Kessner

Reported:
10/20/2009 11:05

J18XD2
0909124-07 (Fish)

V— 2/7/10

Lionville Laboratory

Metals by SW846 6000/7000 series

Analyte	Result and Qualifier	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Aluminum	3.85 U	3.85	mg/kg	1	L910090	10/09/2009	10/14/2009	6010B
Antimony	0.462 U	0.462	mg/kg	1	L910090	10/09/2009	10/14/2009	6010B
Arsenic	0.769 U	0.769	mg/kg	1	L910090	10/09/2009	10/14/2009	6010B
Barium	0.290 B	0.385	mg/kg	1	L910090	10/09/2009	10/14/2009	6010B
Beryllium	0.154 U	0.154	mg/kg	1	L910090	10/09/2009	10/14/2009	6010B
Bismuth	7.69 U	7.69	mg/kg	1	L910090	10/09/2009	10/14/2009	6010B
Boron	1.54 U	1.54	mg/kg	1	L910090	10/09/2009	10/14/2009	6010B
Cadmium	0.154 U	0.154	mg/kg	1	L910090	10/09/2009	10/14/2009	6010B
Calcium	3860	76.9	mg/kg	1	L910090	10/09/2009	10/14/2009	6010B
Chromium	0.210	0.154	mg/kg	1	L910090	10/09/2009	10/14/2009	6010B
Cobalt	1.54 U	1.54	mg/kg	1	L910090	10/09/2009	10/14/2009	6010B
Copper	0.769 U	0.769	mg/kg	1	L910090	10/09/2009	10/14/2009	6010B
Iron	15.4 U	15.4	mg/kg	1	L910090	10/09/2009	10/14/2009	6010B
Lead	0.385 U	0.385	mg/kg	1	L910090	10/09/2009	10/14/2009	6010B
Lithium	0.711 ~~B~~ UJ	1.92	mg/kg	1	L910090	10/09/2009	10/14/2009	6010B
Magnesium	349	57.7	mg/kg	1	L910090	10/09/2009	10/14/2009	6010B
Manganese	0.293 B	3.85	mg/kg	1	L910090	10/09/2009	10/14/2009	6010B
Molybdenum	1.54 U	1.54	mg/kg	1	L910090	10/09/2009	10/14/2009	6010B
Nickel	3.08 U	3.08	mg/kg	1	L910090	10/09/2009	10/14/2009	6010B
Phosphorus	4290	462	mg/kg	1	L910090	10/09/2009	10/14/2009	6010B
Potassium	4160	308	mg/kg	12	L910090	10/09/2009	10/16/2009	6010B
Selenium	0.723 B	0.769	mg/kg	1	L910090	10/09/2009	10/14/2009	6010B
Silicon	2.04 J	1.54	mg/kg	1	L910090	10/09/2009	10/14/2009	6010B
Silver	0.154 U	0.154	mg/kg	1	L910090	10/09/2009	10/14/2009	6010B
Sodium	536	38.5	mg/kg	1	L910090	10/09/2009	10/14/2009	6010B
Strontium	3.87 J	0.769	mg/kg	1	L910090	10/09/2009	10/14/2009	6010B
Thallium	0.385 U	0.385	mg/kg	1	L910090	10/09/2009	10/14/2009	6010B
Tin	3.39 ~~B~~ UJ	7.69	mg/kg	1	L910090	10/09/2009	10/14/2009	6010B
Uranium	15.4 U	15.4	mg/kg	1	L910090	10/09/2009	10/14/2009	6010B
Vanadium	0.544 B	1.92	mg/kg	1	L910090	10/09/2009	10/14/2009	6010B
Zinc	10.5	7.69	mg/kg	1	L910090	10/09/2009	10/14/2009	6010B
Mercury	0.149 J	0.0300	mg/kg	1	L910094	10/12/2009	10/13/2009	7471A

LVL Lionville Laboratory

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Project: RC-118
Project Number: K1785
Project Manager: Joan Kessner

Reported:
10/20/2009 11:05

J18XD3
0909124-08 (Fish)

2/7/10

Analyte	Result and Qualifier	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
		Lionville Laboratory						
Metals by SW846 6000/7000 series								
Aluminum	3.73 U	3.73	mg/kg	1	L910090	10/09/2009	10/14/2009	6010B
Antimony	0.448 U	0.448	mg/kg	1	L910090	10/09/2009	10/14/2009	6010B
Arsenic	0.746 U	0.746	mg/kg	1	L910090	10/09/2009	10/14/2009	6010B
Barium	0.131 B	0.373	mg/kg	1	L910090	10/09/2009	10/14/2009	6010B
Beryllium	0.149 U	0.149	mg/kg	1	L910090	10/09/2009	10/14/2009	6010B
Bismuth	7.46 U	7.46	mg/kg	1	L910090	10/09/2009	10/14/2009	6010B
Boron	1.49 U	1.49	mg/kg	1	L910090	10/09/2009	10/14/2009	6010B
Cadmium	0.149 U	0.149	mg/kg	1	L910090	10/09/2009	10/14/2009	6010B
Calcium	2420	74.6	mg/kg	1	L910090	10/09/2009	10/14/2009	6010B
Chromium	0.163	0.149	mg/kg	1	L910090	10/09/2009	10/14/2009	6010B
Cobalt	1.49 U	1.49	mg/kg	1	L910090	10/09/2009	10/14/2009	6010B
Copper	0.746 U	0.746	mg/kg	1	L910090	10/09/2009	10/14/2009	6010B
Iron	14.9 U	14.9	mg/kg	1	L910090	10/09/2009	10/14/2009	6010B
Lead	0.373 U	0.373	mg/kg	1	L910090	10/09/2009	10/14/2009	6010B
Lithium	0.411 JR UJ	1.87	mg/kg	1	L910090	10/09/2009	10/14/2009	6010B
Magnesium	318	56.0	mg/kg	1	L910090	10/09/2009	10/14/2009	6010B
Manganese	0.237 B	1.12	mg/kg	1	L910090	10/09/2009	10/14/2009	6010B
Molybdenum	1.49 U	1.49	mg/kg	1	L910090	10/09/2009	10/14/2009	6010B
Nickel	2.99 U	2.99	mg/kg	1	L910090	10/09/2009	10/14/2009	6010B
Phosphorus	3030	37.3	mg/kg	1	L910090	10/09/2009	10/14/2009	6010B
Potassium	3670	299	mg/kg	1	L910090	10/09/2009	10/14/2009	6010B
Selenium	0.710 B	0.746	mg/kg	1	L910090	10/09/2009	10/14/2009	6010B
Silicon	1.99 J	1.49	mg/kg	1	L910090	10/09/2009	10/14/2009	6010B
Silver	0.149 U	0.149	mg/kg	1	L910090	10/09/2009	10/14/2009	6010B
Sodium	471	37.3	mg/kg	1	L910090	10/09/2009	10/14/2009	6010B
Strontium	2.13 J	0.746	mg/kg	1	L910090	10/09/2009	10/14/2009	6010B
Thallium	0.373 U	0.373	mg/kg	1	L910090	10/09/2009	10/14/2009	6010B
Tin	4.96 B	7.46	mg/kg	1	L910090	10/09/2009	10/14/2009	6010B
Uranium	14.9 U	14.9	mg/kg	1	L910090	10/09/2009	10/14/2009	6010B
Vanadium	0.284 B	1.87	mg/kg	1	L910090	10/09/2009	10/14/2009	6010B
Zinc	6.79 B	7.46	mg/kg	1	L910090	10/09/2009	10/14/2009	6010B
Mercury	0.135 J	0.0273	mg/kg	1	L910094	10/12/2009	10/13/2009	7471A

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Project: RC-118
Project Number: K1785
Project Manager: Joan Kessner

Reported:
10/20/2009 11:05

J18XD4
0909124-09 (Fish)

2/7/10

Lionville Laboratory

Metals by SW846 6000/7000 series

Analyte	Result and Qualifier		Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Aluminum	5.00	U	5.00	mg/kg	1	L910090	10/09/2009	10/14/2009	6010B
Antimony	0.600	U	0.600	mg/kg	1	L910090	10/09/2009	10/14/2009	6010B
Arsenic	1.00	U	1.00	mg/kg	1	L910090	10/09/2009	10/14/2009	6010B
Barium	0.347	B	0.500	mg/kg	1	L910090	10/09/2009	10/14/2009	6010B
Beryllium	0.200	U	0.200	mg/kg	1	L910090	10/09/2009	10/14/2009	6010B
Bismuth	10.0	U	10.0	mg/kg	1	L910090	10/09/2009	10/14/2009	6010B
Boron	2.00	U	2.00	mg/kg	1	L910090	10/09/2009	10/14/2009	6010B
Cadmium	0.200	U	0.200	mg/kg	1	L910090	10/09/2009	10/14/2009	6010B
Calcium	**6730**		100	mg/kg	1	L910090	10/09/2009	10/14/2009	6010B
Chromium	**0.214**		0.200	mg/kg	1	L910090	10/09/2009	10/14/2009	6010B
Cobalt	2.00	U	2.00	mg/kg	1	L910090	10/09/2009	10/14/2009	6010B
Copper	1.00	U	1.00	mg/kg	1	L910090	10/09/2009	10/14/2009	6010B
Iron	20.0	U	20.0	mg/kg	1	L910090	10/09/2009	10/14/2009	6010B
Lead	0.500	U	0.500	mg/kg	1	L910090	10/09/2009	10/14/2009	6010B
Lithium	2.50	U	2.50	mg/kg	1	L910090	10/09/2009	10/14/2009	6010B
Magnesium	**330**		75.0	mg/kg	1	L910090	10/09/2009	10/14/2009	6010B
Manganese	**0.443**	B	5.00	mg/kg	1	L910090	10/09/2009	10/14/2009	6010B
Molybdenum	2.00	U	2.00	mg/kg	1	L910090	10/09/2009	10/14/2009	6010B
Nickel	4.00	U	4.00	mg/kg	1	L910090	10/09/2009	10/14/2009	6010B
Phosphorus	**4870**		50.0	mg/kg	1	L910090	10/09/2009	10/14/2009	6010B
Potassium	**3230**		400	mg/kg	1	L910090	10/09/2009	10/14/2009	6010B
Selenium	**0.602**	B	1.00	mg/kg	1	L910090	10/09/2009	10/14/2009	6010B
Silicon	**2.32**	J	2.00	mg/kg	1	L910090	10/09/2009	10/14/2009	6010B
Silver	0.200	U	0.200	mg/kg	1	L910090	10/09/2009	10/14/2009	6010B
Sodium	**538**		50.0	mg/kg	1	L910090	10/09/2009	10/14/2009	6010B
Strontium	**6.59**	J	1.00	mg/kg	1	L910090	10/09/2009	10/14/2009	6010B
Thallium	0.500	U	0.500	mg/kg	1	L910090	10/09/2009	10/14/2009	6010B
Tin	**7.58**	B	10.0	mg/kg	1	L910090	10/09/2009	10/14/2009	6010B
Uranium	20.0	U	20.0	mg/kg	1	L910090	10/09/2009	10/14/2009	6010B
Vanadium	**0.333**	B	2.50	mg/kg	1	L910090	10/09/2009	10/14/2009	6010B
Zinc	**7.04**	B	10.0	mg/kg	1	L910090	10/09/2009	10/14/2009	6010B
Mercury	**0.240**	J	0.0265	mg/kg	1	L910094	10/12/2009	10/13/2009	7471A

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Project: RC 118
Project Number: K1785
Project Manager: Joan Kessner

Reported:
10/20/2009 11:05

J18XD5
0909124-10 (Fish)

KZ 2/7/10

Lionville Laboratory

Metals by SW846 6000/7000 series

Analyte	Result and Qualifier		Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Aluminum	4.17	U	4.17	mg/kg	1	1910090	10/09/2009	10/14/2009	6010B
Antimony	0.500	U	0.500	mg/kg	1	1910090	10/09/2009	10/14/2009	6010B
Arsenic	0.833	U	0.833	mg/kg	1	1910090	10/09/2009	10/14/2009	6010B
Barium	**0.372**	B	0.417	mg/kg	1	1910090	10/09/2009	10/14/2009	6010B
Beryllium	0.167	U	0.167	mg/kg	1	1910090	10/09/2009	10/14/2009	6010B
Bismuth	8.33	U	8.33	mg/kg	1	1910090	10/09/2009	10/14/2009	6010B
Boron	1.67	U	1.67	mg/kg	1	1910090	10/09/2009	10/14/2009	6010B
Cadmium	0.167	U	0.167	mg/kg	1	1910090	10/09/2009	10/14/2009	6010B
Calcium	**4960**		83.3	mg/kg	1	1910090	10/09/2009	10/14/2009	6010B
Chromium	**0.227**		0.167	mg/kg	1	1910090	10/09/2009	10/14/2009	6010B
Cobalt	1.67	U	1.67	mg/kg	1	1910090	10/09/2009	10/14/2009	6010B
Copper	0.833	U	0.833	mg/kg	1	1910090	10/09/2009	10/14/2009	6010B
Iron	16.7	U	16.7	mg/kg	1	1910090	10/09/2009	10/14/2009	6010B
Lead	0.417	U	0.417	mg/kg	1	1910090	10/09/2009	10/14/2009	6010B
Lithium	2.08	U	2.08	mg/kg	1	1910090	10/09/2009	10/14/2009	6010B
Magnesium	**360**		62.5	mg/kg	1	1910090	10/09/2009	10/14/2009	6010B
Manganese	**0.386**	B	4.17	mg/kg	1	1910090	10/09/2009	10/14/2009	6010B
Molybdenum	1.67	U	1.67	mg/kg	1	1910090	10/09/2009	10/14/2009	6010B
Nickel	3.33	U	3.33	mg/kg	1	1910090	10/09/2009	10/14/2009	6010B
Phosphorus	**4720**		500	mg/kg	1	1910090	10/09/2009	10/14/2009	6010B
Potassium	**4140**		333	mg/kg	12	1910090	10/09/2009	10/16/2009	6010B
Selenium	**0.653**	B	0.833	mg/kg	1	1910090	10/09/2009	10/14/2009	6010B
Silicon	**2.42**	J	1.67	mg/kg	1	1910090	10/09/2009	10/14/2009	6010B
Silver	0.167	U	0.167	mg/kg	1	1910090	10/09/2009	10/14/2009	6010B
Sodium	**605**		41.7	mg/kg	1	1910090	10/09/2009	10/14/2009	6010B
Strontium	**4.42**	J	0.833	mg/kg	1	1910090	10/09/2009	10/14/2009	6010B
Thallium	0.417	U	0.417	mg/kg	1	1910090	10/09/2009	10/14/2009	6010B
Tin	**6.01**	B	8.33	mg/kg	1	1910090	10/09/2009	10/14/2009	6010B
Uranium	16.7	U	16.7	mg/kg	1	1910090	10/09/2009	10/14/2009	6010B
Vanadium	**0.393**	B	2.08	mg/kg	1	1910090	10/09/2009	10/14/2009	6010B
Zinc	**7.48**	B	8.33	mg/kg	1	1910090	10/09/2009	10/14/2009	6010B
Mercury	**0.227**	J	0.0257	mg/kg	1	1910094	10/12/2009	10/13/2009	7471A

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Project: RC-118
Project Number: K1785
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Reported:
10/20/2009 11:05

J18XH1
0909124-11 (Fish)

VZ 2/1/10

Lionville Laboratory

Metals by SW846 6000/7000 series

Analyte	Result and Qualifier	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Aluminum	4.46 U	4.46	mg/kg	1	L910090	10/09/2009	10/14/2009	6010B
Antimony	0.536 U	0.536	mg/kg	1	L910090	10/09/2009	10/14/2009	6010B
Arsenic	0.893 U	0.893	mg/kg	1	L910090	10/09/2009	10/14/2009	6010B
Barium	0.988	0.446	mg/kg	1	L910090	10/09/2009	10/14/2009	6010B
Beryllium	0.179 U	0.179	mg/kg	1	L910090	10/09/2009	10/14/2009	6010B
Bismuth	8.93 U	8.93	mg/kg	1	L910090	10/09/2009	10/14/2009	6010B
Boron	1.79 U	1.79	mg/kg	1	L910090	10/09/2009	10/14/2009	6010B
Cadmium	0.179 U	0.179	mg/kg	1	L910090	10/09/2009	10/14/2009	6010B
Calcium	16300	89.3	mg/kg	1	L910090	10/09/2009	10/14/2009	6010B
Chromium	0.541	0.179	mg/kg	1	L910090	10/09/2009	10/14/2009	6010B
Cobalt	1.79 U	1.79	mg/kg	1	L910090	10/09/2009	10/14/2009	6010B
Copper	0.893 U	0.893	mg/kg	1	L910090	10/09/2009	10/14/2009	6010B
Iron	7.88 B	17.9	mg/kg	1	L910090	10/09/2009	10/14/2009	6010B
Lead	0.446 U	0.446	mg/kg	1	L910090	10/09/2009	10/14/2009	6010B
Lithium	0.778 ~~B~~ UJ	2.23	mg/kg	1	L910090	10/09/2009	10/14/2009	6010B
Magnesium	457	67.0	mg/kg	1	L910090	10/09/2009	10/14/2009	6010B
Manganese	1.32 B	4.46	mg/kg	1	L910090	10/09/2009	10/14/2009	6010B
Molybdenum	1.79 U	1.79	mg/kg	1	L910090	10/09/2009	10/14/2009	6010B
Nickel	3.57 U	3.57	mg/kg	1	L910090	10/09/2009	10/14/2009	6010B
Phosphorus	9940	536	mg/kg	1	L910090	10/09/2009	10/14/2009	6010B
Potassium	3010	357	mg/kg	12	L910090	10/09/2009	10/16/2009	6010B
Selenium	0.660 U	0.893	mg/kg	1	L910090	10/09/2009	10/14/2009	6010B
Silicon	2.35 J	1.79	mg/kg	1	L910090	10/09/2009	10/14/2009	6010B
Silver	0.179 U	0.179	mg/kg	1	L910090	10/09/2009	10/14/2009	6010B
Sodium	1200	44.6	mg/kg	1	L910090	10/09/2009	10/14/2009	6010B
Strontium	13.4 J	0.893	mg/kg	1	L910090	10/09/2009	10/14/2009	6010B
Thallium	0.446 U	0.446	mg/kg	1	L910090	10/09/2009	10/14/2009	6010B
Tin	13.9	8.93	mg/kg	1	L910090	10/09/2009	10/14/2009	6010B
Uranium	17.9 U	17.9	mg/kg	1	L910090	10/09/2009	10/14/2009	6010B
Vanadium	0.492 B	2.23	mg/kg	1	L910090	10/09/2009	10/14/2009	6010B
Zinc	19.0	8.93	mg/kg	1	L910090	10/09/2009	10/14/2009	6010B
Mercury	0.215 J	0.0265	mg/kg	1	L910094	10/12/2009	10/13/2009	7471A

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Project Number: K1785
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Reported:
10/20/2009 11:05

J18XH2
0909124-12 (Fish)

2/7/10

Analyte	Result and Qualifier		Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method

Lionville Laboratory

Metals by SW846 6000/7000 series

Analyte	Result	Qualifier	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Aluminum	3.38	U	3.38	mg/kg	1	L910091	10/09/2009	10/14/2009	6010B
Antimony	0.405	U	0.405	mg/kg	1	L910091	10/09/2009	10/14/2009	6010B
Arsenic	0.676	U	0.676	mg/kg	1	L910091	10/09/2009	10/14/2009	6010B
Barium	**0.729**		0.338	mg/kg	1	L910091	10/09/2009	10/14/2009	6010B
Beryllium	0.135	U	0.135	mg/kg	1	L910091	10/09/2009	10/14/2009	6010B
Bismuth	6.76	U	6.76	mg/kg	1	L910091	10/09/2009	10/14/2009	6010B
Boron	1.35	U	1.35	mg/kg	1	L910091	10/09/2009	10/14/2009	6010B
Cadmium	0.135	U	0.135	mg/kg	1	L910091	10/09/2009	10/14/2009	6010B
Calcium	**14400**		67.6	mg/kg	1	L910091	10/09/2009	10/14/2009	6010B
Chromium	**0.645**		0.135	mg/kg	1	L910091	10/09/2009	10/14/2009	6010B
Cobalt	1.35	U	1.35	mg/kg	1	L910091	10/09/2009	10/14/2009	6010B
Copper	0.676	U	0.676	mg/kg	1	L910091	10/09/2009	10/14/2009	6010B
Iron	**7.75**	**B**	13.5	mg/kg	1	L910091	10/09/2009	10/14/2009	6010B
Lead	0.338	U	0.338	mg/kg	1	L910091	10/09/2009	10/14/2009	6010B
Lithium	**0.677**	**B**	1.69	mg/kg	1	L910091	10/09/2009	10/14/2009	6010B
Magnesium	**438**		50.7	mg/kg	1	L910091	10/09/2009	10/14/2009	6010B
Manganese	**0.931**	**B**	3.38	mg/kg	1	L910091	10/09/2009	10/14/2009	6010B
Molybdenum	1.35	U	1.35	mg/kg	1	L910091	10/09/2009	10/14/2009	6010B
Nickel	2.70	U	2.70	mg/kg	1	L910091	10/09/2009	10/14/2009	6010B
Phosphorus	**9630**		405	mg/kg	12	L910091	10/09/2009	10/19/2009	6010B
Potassium	**3180**		270	mg/kg	1	L910091	10/09/2009	10/14/2009	6010B
Selenium	**0.841**		0.676	mg/kg	1	L910091	10/09/2009	10/14/2009	6010B
Silicon	**2.31**	J	1.35	mg/kg	1	L910091	10/09/2009	10/14/2009	6010B
Silver	0.135	U	0.135	mg/kg	1	L910091	10/09/2009	10/14/2009	6010B
Sodium	**1250**		33.8	mg/kg	1	L910091	10/09/2009	10/14/2009	6010B
Strontium	**12.7**		0.676	mg/kg	1	L910091	10/09/2009	10/14/2009	6010B
Thallium	0.338	U	0.338	mg/kg	1	L910091	10/09/2009	10/14/2009	6010B
Tin	**8.06**		6.76	mg/kg	1	L910091	10/09/2009	10/14/2009	6010B
Uranium	13.5	U	13.5	mg/kg	1	L910091	10/09/2009	10/14/2009	6010B
Vanadium	**0.377**	**B**	1.69	mg/kg	1	L910091	10/09/2009	10/14/2009	6010B
Zinc	**21.1**		6.76	mg/kg	1	L910091	10/09/2009	10/14/2009	6010B
Mercury	0.0936		0.0281	mg/kg	1	L910095	10/12/2009	10/13/2009	7471A

204 Welsh Pool Road
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WC-Hanford, Inc
2620 Fermi Avenue
Richland WA, 99354

Project: RC118
Project Number: K1785
Project Manager: Joan Kessner

Reported:
10/20/2009 11:05

J18XH3
0909124-13 (Fish)

2/7/10

Analyte	Result and Qualifier		Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Lionville Laboratory									
Metals by SW846 6000/7000 series									
Aluminum	3.79	U	3.79	mg/kg	1	L910091	10/09/2009	10/14/2009	6010B
Antimony	0.455	U	0.455	mg/kg	1	L910091	10/09/2009	10/14/2009	6010B
Arsenic	0.758	U	0.758	mg/kg	1	L910091	10/09/2009	10/14/2009	6010B
Barium	**0.543**		0.379	mg/kg	1	L910091	10/09/2009	10/14/2009	6010B
Beryllium	0.152	U	0.152	mg/kg	1	L910091	10/09/2009	10/14/2009	6010B
Bismuth	7.58	U	7.58	mg/kg	1	L910091	10/09/2009	10/14/2009	6010B
Boron	1.52	U	1.52	mg/kg	1	L910091	10/09/2009	10/14/2009	6010B
Cadmium	0.152	U	0.152	mg/kg	1	L910091	10/09/2009	10/14/2009	6010B
Calcium	**13000**		75.8	mg/kg	1	L910091	10/09/2009	10/14/2009	6010B
Chromium	**0.444**		0.152	mg/kg	1	L910091	10/09/2009	10/14/2009	6010B
Cobalt	1.52	U	1.52	mg/kg	1	L910091	10/09/2009	10/14/2009	6010B
Copper	0.758	U	0.758	mg/kg	1	L910091	10/09/2009	10/14/2009	6010B
Iron	**6.41**	B	15.2	mg/kg	1	L910091	10/09/2009	10/14/2009	6010B
Lead	0.379	U	0.379	mg/kg	1	L910091	10/09/2009	10/14/2009	6010B
Lithium	**0.961**	B	1.89	mg/kg	1	L910091	10/09/2009	10/14/2009	6010B
Magnesium	**372**		56.8	mg/kg	1	L910091	10/09/2009	10/14/2009	6010B
Manganese	**0.895**	B	1.79	mg/kg	1	L910091	10/09/2009	10/14/2009	6010B
Molybdenum	1.52	U	1.52	mg/kg	1	L910091	10/09/2009	10/14/2009	6010B
Nickel	3.03	U	3.03	mg/kg	1	L910091	10/09/2009	10/14/2009	6010B
Phosphorus	**8920**		455	mg/kg	1	L910091	10/09/2009	10/14/2009	6010B
Potassium	**2640**		903	mg/kg	12	L910091	10/09/2009	10/19/2009	6010B
Selenium	**0.716**	B	0.758	mg/kg	1	L910091	10/09/2009	10/14/2009	6010B
Silicon	**2.69**	J	1.52	mg/kg	1	L910091	10/09/2009	10/14/2009	6010B
Silver	0.152	U	0.152	mg/kg	1	L910091	10/09/2009	10/14/2009	6010B
Sodium	**1140**		37.9	mg/kg	1	L910091	10/09/2009	10/14/2009	6010B
Strontium	**10.3**		0.758	mg/kg	1	L910091	10/09/2009	10/14/2009	6010B
Thallium	0.379	U	0.379	mg/kg	1	L910091	10/09/2009	10/14/2009	6010B
Tin	**9.86**		7.58	mg/kg	1	L910091	10/09/2009	10/14/2009	6010B
Uranium	15.2	U	15.2	mg/kg	1	L910091	10/09/2009	10/14/2009	6010B
Vanadium	**0.314**	B	1.89	mg/kg	1	L910091	10/09/2009	10/14/2009	6010B
Zinc	**15.6**		7.58	mg/kg	1	L910091	10/09/2009	10/14/2009	6010B
Mercury	**0.158**		0.0250	mg/kg	1	L910095	10/12/2009	10/13/2009	7471A

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WCH-Hanford, Inc.
2620 Fermi Avenue
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Project: RC-11X
Project Number: K1785
Project Manager: Joan Kessner

Reported:
10/20/2009 11:05

J18XH4
0909124-14 (Fish)

2/7/10

Lionville Laboratory

Analyte	Result and Qualifier		Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Metals by SW846 6000/7000 series									
Aluminum	4.46	U	4.46	mg/kg	1	L910091	10/09/2009	10/14/2009	6010B
Antimony	0.536	U	0.536	mg/kg	1	L910091	10/09/2009	10/14/2009	6010B
Arsenic	0.893	U	0.893	mg/kg	1	L910091	10/09/2009	10/14/2009	6010B
Barium	1.42		0.446	mg/kg	1	L910091	10/09/2009	10/14/2009	6010B
Beryllium	0.179	U	0.179	mg/kg	1	L910091	10/09/2009	10/14/2009	6010B
Bismuth	8.93	U	8.93	mg/kg	1	L910091	10/09/2009	10/14/2009	6010B
Boron	1.79	U	1.79	mg/kg	1	L910091	10/09/2009	10/14/2009	6010B
Cadmium	0.179	U	0.179	mg/kg	1	L910091	10/09/2009	10/14/2009	6010B
Calcium	30000		89.3	mg/kg	1	L910091	10/09/2009	10/14/2009	6010B
Chromium	0.648		0.179	mg/kg	1	L910091	10/09/2009	10/14/2009	6010B
Cobalt	1.79	U	1.79	mg/kg	1	L910091	10/09/2009	10/14/2009	6010B
Copper	0.893	U	0.893	mg/kg	1	L910091	10/09/2009	10/14/2009	6010B
Iron	10.3	B	17.9	mg/kg	1	L910091	10/09/2009	10/14/2009	6010B
Lead	0.446	U	0.446	mg/kg	1	L910091	10/09/2009	10/14/2009	6010B
Lithium	1.46	B	2.23	mg/kg	1	L910091	10/09/2009	10/14/2009	6010B
Magnesium	595		67.0	mg/kg	1	L910091	10/09/2009	10/14/2009	6010B
Manganese	1.66	B	4.46	mg/kg	1	L910091	10/09/2009	10/14/2009	6010B
Molybdenum	1.79	U	1.79	mg/kg	1	L910091	10/09/2009	10/14/2009	6010B
Nickel	3.57	U	3.57	mg/kg	1	L910091	10/09/2009	10/14/2009	6010B
Phosphorus	17600		536	mg/kg	1	L910091	10/09/2009	10/14/2009	6010B
Potassium	2350		357	mg/kg	12	L910091	10/09/2009	10/19/2009	6010B
Selenium	0.737	B	0.893	mg/kg	1	L910091	10/09/2009	10/14/2009	6010B
Silicon	2.44	J	1.79	mg/kg	1	L910091	10/09/2009	10/14/2009	6010B
Silver	0.179	U	0.179	mg/kg	1	L910091	10/09/2009	10/14/2009	6010B
Sodium	1760		44.6	mg/kg	1	L910091	10/09/2009	10/14/2009	6010B
Strontium	23.9		0.893	mg/kg	1	L910091	10/09/2009	10/14/2009	6010B
Thallium	0.446	U	0.446	mg/kg	1	L910091	10/09/2009	10/14/2009	6010B
Tin	13.6		8.93	mg/kg	1	L910091	10/09/2009	10/14/2009	6010B
Uranium	17.9	U	17.9	mg/kg	1	L910091	10/09/2009	10/14/2009	6010B
Vanadium	0.533	B	2.23	mg/kg	1	L910091	10/09/2009	10/14/2009	6010B
Zinc	27.6		8.93	mg/kg	1	L910091	10/09/2009	10/14/2009	6010B
Mercury	0.266		0.0290	mg/kg	1	L910095	10/12/2009	10/13/2009	7471A

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WCH Hanford, Inc. 2620 Fermi Avenue Richland WA, 99354	Project: RC-118 Project Number: K1785 Project Manager: Joan Kessner	Reported: 10/20/2009 11:05

J18XH5

0909124-15 (Fish)

2/3/10

Lionville Laboratory

Metals by SW846 6000/7000 series

Analyte	Result and Qualifier		Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Aluminum	**4.00**		3.62	mg/kg	1	L910091	10/09/2009	10/14/2009	6010B
Antimony	0.435	U	0.435	mg/kg	1	L910091	10/09/2009	10/14/2009	6010B
Arsenic	0.725	U	0.725	mg/kg	1	L910091	10/09/2009	10/14/2009	6010B
Barium	**0.862**		0.362	mg/kg	1	L910091	10/09/2009	10/14/2009	6010B
Beryllium	0.145	U	0.145	mg/kg	1	L910091	10/09/2009	10/14/2009	6010B
Bismuth	7.25	U	7.25	mg/kg	1	L910091	10/09/2009	10/14/2009	6010B
Boron	1.45	U	1.45	mg/kg	1	L910091	10/09/2009	10/14/2009	6010B
Cadmium	0.145	U	0.145	mg/kg	1	L910091	10/09/2009	10/14/2009	6010B
Calcium	**15900**		72.5	mg/kg	1	L910091	10/09/2009	10/14/2009	6010B
Chromium	**0.494**		0.145	mg/kg	1	L910091	10/09/2009	10/14/2009	6010B
Cobalt	1.45	U	1.45	mg/kg	1	L910091	10/09/2009	10/14/2009	6010B
Copper	**0.366**	B	0.725	mg/kg	1	L910091	10/09/2009	10/14/2009	6010B
Iron	**18.6**		14.5	mg/kg	1	L910091	10/09/2009	10/14/2009	6010B
Lead	0.362	U	0.362	mg/kg	1	L910091	10/09/2009	10/14/2009	6010B
Lithium	**0.980**	B	1.81	mg/kg	1	L910091	10/09/2009	10/14/2009	6010B
Magnesium	**457**		54.3	mg/kg	1	L910091	10/09/2009	10/14/2009	6010B
Manganese	**1.49**	B	3.62	mg/kg	1	L910091	10/09/2009	10/14/2009	6010B
Molybdenum	1.45	U	1.45	mg/kg	1	L910091	10/09/2009	10/14/2009	6010B
Nickel	2.90	U	2.90	mg/kg	1	L910091	10/09/2009	10/14/2009	6010B
Phosphorus	**10300**		435	mg/kg	12	L910091	10/09/2009	10/19/2009	6010B
Potassium	**3340**		290	mg/kg	1	L910091	10/09/2009	10/14/2009	6010B
Selenium	**0.732**		0.725	mg/kg	1	L910091	10/09/2009	10/14/2009	6010B
Silicon	**3.70**	J	1.45	mg/kg	1	L910091	10/09/2009	10/14/2009	6010B
Silver	0.145	U	0.145	mg/kg	1	L910091	10/09/2009	10/14/2009	6010B
Sodium	**1410**		36.2	mg/kg	1	L910091	10/09/2009	10/14/2009	6010B
Strontium	**12.2**		0.725	mg/kg	1	L910091	10/09/2009	10/14/2009	6010B
Thallium	0.362	U	0.362	mg/kg	1	L910091	10/09/2009	10/14/2009	6010B
Tin	**14.6**		7.25	mg/kg	1	L910091	10/09/2009	10/14/2009	6010B
Uranium	14.5	U	14.5	mg/kg	1	L910091	10/09/2009	10/14/2009	6010B
Vanadium	**0.473**	B	1.81	mg/kg	1	L910091	10/09/2009	10/14/2009	6010B
Zinc	**18.8**		7.25	mg/kg	1	L910091	10/09/2009	10/14/2009	6010B
Mercury	**0.195**		0.0281	mg/kg	1	L910095	10/12/2009	10/13/2009	7471A

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WC-Hanford, Inc. 2620 Fermi Avenue Richland WA, 99354	Project: RC-LTX Project Number: K1785 Project Manager: Joan Kessner	Reported: 10/20/2009 11:05

J19746
0909124-16 (Fish)

VL 2/3/10

Analyte	Result and Qualifier	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Lionville Laboratory								
Metals by SW846 6000/7000 series								
Aluminum	3.79 U	3.79	mg/kg	1	L910091	10/09/2009	10/14/2009	6010B
Antimony	0.455 U	0.455	mg/kg	1	L910091	10/09/2009	10/14/2009	6010B
Arsenic	0.758 U	0.758	mg/kg	1	L910091	10/09/2009	10/14/2009	6010B
Barium	**0.266 B**	0.379	mg/kg	1	L910091	10/09/2009	10/14/2009	6010B
Beryllium	0.152 U	0.152	mg/kg	1	L910091	10/09/2009	10/14/2009	6010B
Bismuth	7.58 U	7.58	mg/kg	1	L910091	10/09/2009	10/14/2009	6010B
Boron	1.52 U	1.52	mg/kg	1	L910091	10/09/2009	10/14/2009	6010B
Cadmium	0.152 U	0.152	mg/kg	1	L910091	10/09/2009	10/14/2009	6010B
Calcium	**3510**	75.8	mg/kg	1	L910091	10/09/2009	10/14/2009	6010B
Chromium	**0.416**	0.152	mg/kg	1	L910091	10/09/2009	10/14/2009	6010B
Cobalt	1.52 U	1.52	mg/kg	1	L910091	10/09/2009	10/14/2009	6010B
Copper	0.758 U	0.758	mg/kg	1	L910091	10/09/2009	10/14/2009	6010B
Iron	**5.26 B**	15.2	mg/kg	1	L910091	10/09/2009	10/14/2009	6010B
Lead	**0.259 B**	0.379	mg/kg	1	L910091	10/09/2009	10/14/2009	6010B
Lithium	**0.456 B**	1.89	mg/kg	1	L910091	10/09/2009	10/14/2009	6010B
Magnesium	**266**	56.8	mg/kg	1	L910091	10/09/2009	10/14/2009	6010B
Manganese	**0.217 B**	3.79	mg/kg	1	L910091	10/09/2009	10/14/2009	6010B
Molybdenum	1.52 U	1.52	mg/kg	1	L910091	10/09/2009	10/14/2009	6010B
Nickel	3.03 U	3.03	mg/kg	1	L910091	10/09/2009	10/14/2009	6010B
Phosphorus	**3460**	37.9	mg/kg	1	L910091	10/09/2009	10/14/2009	6010B
Potassium	**3110**	103	mg/kg	1	L910091	10/09/2009	10/14/2009	6010B
Selenium	**0.510 B**	0.758	mg/kg	1	L910091	10/09/2009	10/14/2009	6010B
Silicon	1.52 U J	1.52	mg/kg	1	L910091	10/09/2009	10/14/2009	6010B
Silver	0.152 U	0.152	mg/kg	1	L910091	10/09/2009	10/14/2009	6010B
Sodium	**1150**	37.9	mg/kg	1	L910091	10/09/2009	10/14/2009	6010B
Strontium	**2.85**	0.758	mg/kg	1	L910091	10/09/2009	10/14/2009	6010B
Thallium	0.379 U	0.379	mg/kg	1	L910091	10/09/2009	10/14/2009	6010B
Tin	**16.5**	7.58	mg/kg	1	L910091	10/09/2009	10/14/2009	6010B
Uranium	15.2 U	15.2	mg/kg	1	L910091	10/09/2009	10/14/2009	6010B
Vanadium	**0.152**	1.89	mg/kg	1	L910091	10/09/2009	10/14/2009	6010B
Zinc	**6.94 B**	7.58	mg/kg	1	L910091	10/09/2009	10/14/2009	6010B
Mercury	**0.297**	0.0231	mg/kg	1	L910095	10/12/2009	10/13/2009	7471A

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WC Hanford, Inc 2620 Fermi Avenue Richland WA, 99354	Project: RC-118 Project Number: K1785 Project Manager: Joan Kessner	Reported: 10/20/2009 11:05

J19748
0909124-17 (Fish)

2/2/10

Analyte	Result and Qualifier		Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Lionville Laboratory									
Metals by SW846 6000/7000 series									
Aluminum	3.33	U	3.33	mg/kg	1	L910091	10/09/2009	10/14/2009	6010B
Antimony	0.400	U	0.400	mg/kg	1	L910091	10/09/2009	10/14/2009	6010B
Arsenic	0.667	U	0.667	mg/kg	1	L910091	10/09/2009	10/14/2009	6010B
Barium	1.29		0.333	mg/kg	1	L910091	10/09/2009	10/14/2009	6010B
Beryllium	0.133	U	0.133	mg/kg	1	L910091	10/09/2009	10/14/2009	6010B
Bismuth	6.67	U	6.67	mg/kg	1	L910091	10/09/2009	10/14/2009	6010B
Boron	1.33	U	1.33	mg/kg	1	L910091	10/09/2009	10/14/2009	6010B
Cadmium	0.133	U	0.133	mg/kg	1	L910091	10/09/2009	10/14/2009	6010B
Calcium	21000		66.7	mg/kg	1	L910091	10/09/2009	10/14/2009	6010B
Chromium	0.481		0.133	mg/kg	1	L910091	10/09/2009	10/14/2009	6010B
Cobalt	1.33	U	1.33	mg/kg	1	L910091	10/09/2009	10/14/2009	6010B
Copper	0.667	U	0.667	mg/kg	1	L910091	10/09/2009	10/14/2009	6010B
Iron	6.52	B	13.3	mg/kg	1	L910091	10/09/2009	10/14/2009	6010B
Lead	0.333	U	0.333	mg/kg	1	L910091	10/09/2009	10/14/2009	6010B
Lithium	1.15	B	1.67	mg/kg	1	L910091	10/09/2009	10/14/2009	6010B
Magnesium	471		50.0	mg/kg	1	L910091	10/09/2009	10/14/2009	6010B
Manganese	1.81	B	3.33	mg/kg	1	L910091	10/09/2009	10/14/2009	6010B
Molybdenum	1.33	U	1.33	mg/kg	1	L910091	10/09/2009	10/14/2009	6010B
Nickel	2.67	U	2.67	mg/kg	1	L910091	10/09/2009	10/14/2009	6010B
Phosphorus	12200		400	mg/kg	12	L910091	10/09/2009	10/19/2009	6010B
Potassium	2120		267	mg/kg	1	L910091	10/09/2009	10/14/2009	6010B
Selenium	0.465	B	0.667	mg/kg	1	L910091	10/09/2009	10/14/2009	6010B
Silicon	1.33	U	1.33	mg/kg	1	L910091	10/09/2009	10/14/2009	6010B
Silver	0.133	U	0.133	mg/kg	1	L910091	10/09/2009	10/14/2009	6010B
Sodium	1830		33.3	mg/kg	1	L910091	10/09/2009	10/14/2009	6010B
Strontium	15.3		0.667	mg/kg	1	L910091	10/09/2009	10/14/2009	6010B
Thallium	0.333	U	0.333	mg/kg	1	L910091	10/09/2009	10/14/2009	6010B
Tin	12.4		6.67	mg/kg	1	L910091	10/09/2009	10/14/2009	6010B
Uranium	13.3	U	13.3	mg/kg	1	L910091	10/09/2009	10/14/2009	6010B
Vanadium	0.385	B	1.67	mg/kg	1	L910091	10/09/2009	10/14/2009	6010B
Zinc	15.7		6.67	mg/kg	1	L910091	10/09/2009	10/14/2009	6010B
Mercury	0.192		0.0300	mg/kg	1	L910095	10/12/2009	10/13/2009	7471A

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WC-Hanford, Inc 2620 Fermi Avenue Richland WA, 99354	Project: RC-118 Project Number: K1785 Project Manager: John Kessner	Reported: 10/20/2009 11:05

J18X86
0909124-18 (Fish)

2/1/10

Analyte	Result and Qualifier		Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Lionville Laboratory									
Metals by SW846 6000/7000 series									
Aluminum	3.85	U	3.85	mg/kg	1	L910091	10/09/2009	10/14/2009	6010B
Antimony	0.462	U	0.462	mg/kg	1	L910091	10/09/2009	10/14/2009	6010B
Arsenic	0.769	U	0.769	mg/kg	1	L910091	10/09/2009	10/14/2009	6010B
Barium	0.390		0.385	mg/kg	1	L910091	10/09/2009	10/14/2009	6010B
Beryllium	0.154	U	0.154	mg/kg	1	L910091	10/09/2009	10/14/2009	6010B
Bismuth	7.69	U	7.69	mg/kg	1	L910091	10/09/2009	10/14/2009	6010B
Boron	1.54	U	1.54	mg/kg	1	L910091	10/09/2009	10/14/2009	6010B
Cadmium	0.154	U	0.154	mg/kg	1	L910091	10/09/2009	10/14/2009	6010B
Calcium	6660		76.9	mg/kg	1	L910091	10/09/2009	10/14/2009	6010B
Chromium	0.353		0.154	mg/kg	1	L910091	10/09/2009	10/14/2009	6010B
Cobalt	1.54	U	1.54	mg/kg	1	L910091	10/09/2009	10/14/2009	6010B
Copper	0.769	U	0.769	mg/kg	1	L910091	10/09/2009	10/14/2009	6010B
Iron	4.35	B	15.4	mg/kg	1	L910091	10/09/2009	10/14/2009	6010B
Lead	0.385	U	0.385	mg/kg	1	L910091	10/09/2009	10/14/2009	6010B
Lithium	0.738	B	1.92	mg/kg	1	L910091	10/09/2009	10/14/2009	6010B
Magnesium	365		57.7	mg/kg	1	L910091	10/09/2009	10/14/2009	6010B
Manganese	0.254	B	3.85	mg/kg	1	L910091	10/09/2009	10/14/2009	6010B
Molybdenum	1.54	U	1.54	mg/kg	1	L910091	10/09/2009	10/14/2009	6010B
Nickel	3.08	U	3.08	mg/kg	1	L910091	10/09/2009	10/14/2009	6010B
Phosphorus	5590		462	mg/kg	12	L910091	10/09/2009	10/19/2009	6010B
Potassium	4000		308	mg/kg	1	L910091	10/09/2009	10/14/2009	6010B
Selenium	0.572	B	0.769	mg/kg	1	L910091	10/09/2009	10/14/2009	6010B
Silicon	1.97	J	1.54	mg/kg	1	L910091	10/09/2009	10/14/2009	6010B
Silver	0.154	U	0.154	mg/kg	1	L910091	10/09/2009	10/14/2009	6010B
Sodium	649		38.5	mg/kg	1	L910091	10/09/2009	10/14/2009	6010B
Strontium	5.32		0.769	mg/kg	1	L910091	10/09/2009	10/14/2009	6010B
Thallium	0.385	U	0.385	mg/kg	1	L910091	10/09/2009	10/14/2009	6010B
Tin	15.2		7.69	mg/kg	1	L910091	10/09/2009	10/14/2009	6010B
Uranium	15.4	U	15.4	mg/kg	1	L910091	10/09/2009	10/14/2009	6010B
Vanadium	0.278	B	1.92	mg/kg	1	L910091	10/09/2009	10/14/2009	6010B
Zinc	8.52		7.69	mg/kg	1	L910091	10/09/2009	10/14/2009	6010B
Mercury	0.234		0.0290	mg/kg	1	L910095	10/12/2009	10/13/2009	7471A

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Fax: 610-280-3041

WC-Hanford, Inc. 2620 Fermi Avenue Richland WA, 99354	Project: RC-118 Project Number: K1785 Project Manager: Joan Kessner	Reported: 10/20/2009 11:05

J18X87
0909124-19 (Fish)

2/7/10

Analyte	Result and Qualifier		Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method

Lionville Laboratory

Metals by SW846 6000/7000 series

Analyte	Result	Qualifier	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Aluminum	4.31	U	4.31	mg/kg	1	L910091	10/09/2009	10/14/2009	6010B
Antimony	0.517	U	0.517	mg/kg	1	L910091	10/09/2009	10/14/2009	6010B
Arsenic	0.862	U	0.862	mg/kg	1	L910091	10/09/2009	10/14/2009	6010B
Barium	**1.08**		0.431	mg/kg	1	L910091	10/09/2009	10/14/2009	6010B
Beryllium	0.172	U	0.172	mg/kg	1	L910091	10/09/2009	10/14/2009	6010B
Bismuth	8.62	U	8.62	mg/kg	1	L910091	10/09/2009	10/14/2009	6010B
Boron	1.72	U	1.72	mg/kg	1	L910091	10/09/2009	10/14/2009	6010B
Cadmium	0.172	U	0.172	mg/kg	1	L910091	10/09/2009	10/14/2009	6010B
Calcium	**18600**		86.2	mg/kg	1	L910091	10/09/2009	10/14/2009	6010B
Chromium	**0.814**		0.172	mg/kg	1	L910091	10/09/2009	10/14/2009	6010B
Cobalt	1.72	U	1.72	mg/kg	1	L910091	10/09/2009	10/14/2009	6010B
Copper	0.862	U	0.862	mg/kg	1	L910091	10/09/2009	10/14/2009	6010B
Iron	**5.40**	B	17.2	mg/kg	1	L910091	10/09/2009	10/14/2009	6010B
Lead	0.431	U	0.431	mg/kg	1	L910091	10/09/2009	10/14/2009	6010B
Lithium	**3.33**	B	7.16	mg/kg	1	L910091	10/09/2009	10/14/2009	6010B
Magnesium	**474**		64.7	mg/kg	1	L910091	10/09/2009	10/14/2009	6010B
Manganese	**1.04**	B	4.31	mg/kg	1	L910091	10/09/2009	10/14/2009	6010B
Molybdenum	1.72	U	1.72	mg/kg	1	L910091	10/09/2009	10/14/2009	6010B
Nickel	3.45	U	3.45	mg/kg	1	L910091	10/09/2009	10/14/2009	6010B
Phosphorus	**11800**		517	mg/kg	10	L910091	10/09/2009	10/19/2009	6010B
Potassium	**3610**		345	mg/kg	1	L910091	10/09/2009	10/14/2009	6010B
Selenium	**0.592**	B	0.862	mg/kg	1	L910091	10/09/2009	10/14/2009	6010B
Silicon	**2.17**	J	1.72	mg/kg	1	L910091	10/09/2009	10/14/2009	6010B
Silver	0.172	U	0.172	mg/kg	1	L910091	10/09/2009	10/14/2009	6010B
Sodium	**699**		43.1	mg/kg	1	L910091	10/09/2009	10/14/2009	6010B
Strontium	**15.3**		0.862	mg/kg	1	L910091	10/09/2009	10/14/2009	6010B
Thallium	0.431	U	0.431	mg/kg	1	L910091	10/09/2009	10/14/2009	6010B
Tin	**22.9**		8.62	mg/kg	1	L910091	10/09/2009	10/14/2009	6010B
Uranium	17.2	U	17.2	mg/kg	1	L910091	10/09/2009	10/14/2009	6010B
Vanadium	**0.339**	B	2.16	mg/kg	1	L910091	10/09/2009	10/14/2009	6010B
Zinc	**11.1**		8.62	mg/kg	1	L910091	10/09/2009	10/14/2009	6010B
Mercury	**0.606**		0.0290	mg/kg	1	L910095	10/12/2009	10/13/2009	7471A

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WC-Hanford, Inc.
2620 Fermi Avenue
Richland WA, 99354

Project: RC-118
Project Number: K1785
Project Manager: John Kessner

Reported:
10/20/2009 11:05

J18X89
0909124-20 (Fish)

2/9/10

Analyte	Result and Qualifier		Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Lionville Laboratory									
Metals by SW846 6000/7000 series									
Aluminum	3.38	U	3.38	mg/kg	1	L910091	10/09/2009	10/14/2009	6010B
Antimony	0.405	U	0.405	mg/kg	1	L910091	10/09/2009	10/14/2009	6010B
Arsenic	0.676	U	0.676	mg/kg	1	L910091	10/09/2009	10/14/2009	6010B
Barium	0.231	B	0.338	mg/kg	1	L910091	10/09/2009	10/14/2009	6010B
Beryllium	0.135	U	0.135	mg/kg	1	L910091	10/09/2009	10/14/2009	6010B
Bismuth	6.76	U	6.76	mg/kg	1	L910091	10/09/2009	10/14/2009	6010B
Boron	1.35	U	1.35	mg/kg	1	L910091	10/09/2009	10/14/2009	6010B
Cadmium	0.135	U	0.135	mg/kg	1	L910091	10/09/2009	10/14/2009	6010B
Calcium	2310		67.6	mg/kg	1	L910091	10/09/2009	10/14/2009	6010B
Chromium	0.182		0.135	mg/kg	1	L910091	10/09/2009	10/14/2009	6010B
Cobalt	1.35	U	1.35	mg/kg	1	L910091	10/09/2009	10/14/2009	6010B
Copper	0.676	U	0.676	mg/kg	1	L910091	10/09/2009	10/14/2009	6010B
Iron	3.51	B	13.5	mg/kg	1	L910091	10/09/2009	10/14/2009	6010B
Lead	0.338	U	0.338	mg/kg	1	L910091	10/09/2009	10/14/2009	6010B
Lithium	0.554	B	1.69	mg/kg	1	L910091	10/09/2009	10/14/2009	6010B
Magnesium	302		50.7	mg/kg	1	L910091	10/09/2009	10/14/2009	6010B
Manganese	0.225	B	3.38	mg/kg	1	L910091	10/09/2009	10/14/2009	6010B
Molybdenum	1.35	U	1.35	mg/kg	1	L910091	10/09/2009	10/14/2009	6010B
Nickel	2.70	U	2.70	mg/kg	1	L910091	10/09/2009	10/14/2009	6010B
Phosphorus	3030		33.8	mg/kg	1	L910091	10/09/2009	10/14/2009	6010B
Potassium	3840		270	mg/kg	1	L910091	10/09/2009	10/14/2009	6010B
Selenium	0.599	B	0.676	mg/kg	1	L910091	10/09/2009	10/14/2009	6010B
Silicon	2.23	J	1.35	mg/kg	1	L910091	10/09/2009	10/14/2009	6010B
Silver	0.135	U	0.135	mg/kg	1	L910091	10/09/2009	10/14/2009	6010B
Sodium	437		33.8	mg/kg	1	L910091	10/09/2009	10/14/2009	6010B
Strontium	2.03		0.676	mg/kg	1	L910091	10/09/2009	10/14/2009	6010B
Thallium	0.338	U	0.338	mg/kg	1	L910091	10/09/2009	10/14/2009	6010B
Tin	8.15		6.76	mg/kg	1	L910091	10/09/2009	10/14/2009	6010B
Uranium	13.5	U	13.5	mg/kg	1	L910091	10/09/2009	10/14/2009	6010B
Vanadium	0.229	B	1.69	mg/kg	1	L910091	10/09/2009	10/14/2009	6010B
Zinc	7.54		6.76	mg/kg	1	L910091	10/09/2009	10/14/2009	6010B
Mercury	0.231		0.0290	mg/kg	1	L910095	10/12/2009	10/13/2009	7471A

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WC-Hanford, Inc. 2620 Fermi Avenue Richland WA, 99354	Project: RC-118 Project Number: K1785 Project Manager: Joan Kessner	Reported: 10/20/2009 11:05

J18X88
0909124-21 (Fish)

2/1/10

Analyte	Result and Qualifier		Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Lionville Laboratory									
Metals by SW846 6000/7000 series									
Aluminum	3.25	U	3.25	mg/kg	1	L910091	10/09/2009	10/14/2009	6010B
Antimony	0.390	U	0.390	mg/kg	1	L910091	10/09/2009	10/14/2009	6010B
Arsenic	0.649	U	0.649	mg/kg	1	L910091	10/09/2009	10/14/2009	6010B
Barium	0.133	B	0.325	mg/kg	1	L910091	10/09/2009	10/14/2009	6010B
Beryllium	0.130	U	0.130	mg/kg	1	L910091	10/09/2009	10/14/2009	6010B
Bismuth	6.49	U	6.49	mg/kg	1	L910091	10/09/2009	10/14/2009	6010B
Boron	1.30	U	1.30	mg/kg	1	L910091	10/09/2009	10/14/2009	6010B
Cadmium	0.130	U	0.130	mg/kg	1	L910091	10/09/2009	10/14/2009	6010B
Calcium	2190		64.9	mg/kg	1	L910091	10/09/2009	10/14/2009	6010B
Chromium	0.375		0.130	mg/kg	1	L910091	10/09/2009	10/14/2009	6010B
Cobalt	1.30	U	1.30	mg/kg	1	L910091	10/09/2009	10/14/2009	6010B
Copper	0.649	U	0.649	mg/kg	1	L910091	10/09/2009	10/14/2009	6010B
Iron	3.32	B	13.0	mg/kg	1	L910091	10/09/2009	10/14/2009	6010B
Lead	0.325	U	0.325	mg/kg	1	L910091	10/09/2009	10/14/2009	6010B
Lithium	0.510	B	1.62	mg/kg	1	L910091	10/09/2009	10/14/2009	6010B
Magnesium	268		48.7	mg/kg	1	L910091	10/09/2009	10/14/2009	6010B
Manganese	0.240	B	3.25	mg/kg	1	L910091	10/09/2009	10/14/2009	6010B
Molybdenum	1.30	U	1.30	mg/kg	1	L910091	10/09/2009	10/14/2009	6010B
Nickel	2.60	U	2.60	mg/kg	1	L910091	10/09/2009	10/14/2009	6010B
Phosphorus	2940		32.5	mg/kg	1	L910091	10/09/2009	10/14/2009	6010B
Potassium	3650		260	mg/kg	1	L910091	10/09/2009	10/14/2009	6010B
Selenium	0.615	B	0.649	mg/kg	1	L910091	10/09/2009	10/14/2009	6010B
Silicon	2.74	J	1.30	mg/kg	1	L910091	10/09/2009	10/14/2009	6010B
Silver	0.130	U	0.130	mg/kg	1	L910091	10/09/2009	10/14/2009	6010B
Sodium	686		32.5	mg/kg	1	L910091	10/09/2009	10/14/2009	6010B
Strontium	1.85		0.649	mg/kg	1	L910091	10/09/2009	10/14/2009	6010B
Thallium	0.325	U	0.325	mg/kg	1	L910091	10/09/2009	10/14/2009	6010B
Tin	9.95		6.49	mg/kg	1	L910091	10/09/2009	10/14/2009	6010B
Uranium	13.0	U	13.0	mg/kg	1	L910091	10/09/2009	10/14/2009	6010B
Vanadium	0.199	B	1.62	mg/kg	1	L910091	10/09/2009	10/14/2009	6010B
Zinc	7.12		6.49	mg/kg	1	L910091	10/09/2009	10/14/2009	6010B
Mercury	0.398		0.0290	mg/kg	1	L910095	10/12/2009	10/13/2009	7471A

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WC Hanford, Inc. 2620 Fermi Avenue Richland WA, 99354	Project: RC-118 Project Number: K1785 Project Manager: Joan Kessner	Reported: 10/20/2009 11:05

J18X90
0909124-72 (Fish)

Lionville Laboratory

2/7/10

Metals by SW846 6000/7000 series

Analyte	Result and Qualifier		Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Aluminum	3.29	U	3.29	mg/kg	1	L910091	10/09/2009	10/14/2009	6010B
Antimony	0.395	U	0.395	mg/kg	1	L910091	10/09/2009	10/14/2009	6010B
Arsenic	0.658	U	0.658	mg/kg	1	L910091	10/09/2009	10/14/2009	6010B
Barium	**0.170**	B	0.329	mg/kg	1	L910091	10/09/2009	10/14/2009	6010B
Beryllium	0.132	U	0.132	mg/kg	1	L910091	10/09/2009	10/14/2009	6010B
Bismuth	6.58	U	6.58	mg/kg	1	L910091	10/09/2009	10/14/2009	6010B
Boron	1.32	U	1.32	mg/kg	1	L910091	10/09/2009	10/14/2009	6010B
Cadmium	0.132	U	0.132	mg/kg	1	L910091	10/09/2009	10/14/2009	6010B
Calcium	**2490**		65.8	mg/kg	1	L910091	10/09/2009	10/14/2009	6010B
Chromium	**0.261**		0.132	mg/kg	1	L910091	10/09/2009	10/14/2009	6010B
Cobalt	1.32	U	1.32	mg/kg	1	L910091	10/09/2009	10/14/2009	6010B
Copper	0.658	U	0.658	mg/kg	1	L910091	10/09/2009	10/14/2009	6010B
Iron	**2.91**	B	13.2	mg/kg	1	L910091	10/09/2009	10/14/2009	6010B
Lead	0.329	U	0.329	mg/kg	1	L910091	10/09/2009	10/14/2009	6010B
Lithium	**0.653**	B	1.64	mg/kg	1	L910091	10/09/2009	10/14/2009	6010B
Magnesium	**316**		49.3	mg/kg	1	L910091	10/09/2009	10/14/2009	6010B
Manganese	**0.228**	B	3.29	mg/kg	1	L910091	10/09/2009	10/14/2009	6010B
Molybdenum	1.32	U	1.32	mg/kg	1	L910091	10/09/2009	10/14/2009	6010B
Nickel	2.63	U	2.63	mg/kg	1	L910091	10/09/2009	10/14/2009	6010B
Phosphorus	**3160**		32.9	mg/kg	1	L910091	10/09/2009	10/14/2009	6010B
Potassium	**3920**		263	mg/kg	1	L910091	10/09/2009	10/14/2009	6010B
Selenium	**0.625**	B	0.658	mg/kg	1	L910091	10/09/2009	10/14/2009	6010B
Silicon	**1.96**	J	1.32	mg/kg	1	L910091	10/09/2009	10/14/2009	6010B
Silver	0.132	U	0.132	mg/kg	1	L910091	10/09/2009	10/14/2009	6010B
Sodium	**526**		32.9	mg/kg	1	L910091	10/09/2009	10/14/2009	6010B
Strontium	**2.16**		0.658	mg/kg	1	L910091	10/09/2009	10/14/2009	6010B
Thallium	0.329	U	0.329	mg/kg	1	L910091	10/09/2009	10/14/2009	6010B
Tin	**22.9**		6.58	mg/kg	1	L910091	10/09/2009	10/14/2009	6010B
Uranium	13.2	U	13.2	mg/kg	1	L910091	10/09/2009	10/14/2009	6010B
Vanadium	**0.246**	B	1.64	mg/kg	1	L910091	10/09/2009	10/14/2009	6010B
Zinc	**6.17**	B	6.58	mg/kg	1	L910091	10/09/2009	10/14/2009	6010B
Mercury	**0.177**		0.0290	mg/kg	1	L910095	10/12/2009	10/13/2009	7471A

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WC-Hanford, Inc.
2620 Fermi Avenue
Richland WA, 99354

Project: RC-118
Project Number: K1785
Project Manager: Joan Kessner

Reported:
12/31/2009 09:15

J18XF6
0912038-01 (Fish)

Ju 2/7/10

Analyte	Result and Qualifier		Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Lionville Laboratory									
Metals by SW846 6000/7000 series									
Aluminum	4.55	U	4.55	mg/kg	1	L912162	12/21/2009	12/29/2009	6010B
Antimony	0.545	U	0.545	mg/kg	1	L912162	12/21/2009	12/29/2009	6010B
Arsenic	0.909	U	0.909	mg/kg	1	L912162	12/21/2009	12/29/2009	6010B
Barium	0.455	U	0.455	mg/kg	1	L912162	12/21/2009	12/29/2009	6010B
Beryllium	0.182	U	0.182	mg/kg	1	L912162	12/21/2009	12/29/2009	6010B
Bismuth	9.09	U	9.09	mg/kg	1	L912162	12/21/2009	12/29/2009	6010B
Boron	1.82	U	1.82	mg/kg	1	L912162	12/21/2009	12/29/2009	6010B
Cadmium	**0.191**		0.182	mg/kg	1	L912162	12/21/2009	12/29/2009	6010B
Calcium	**166**		90.9	mg/kg	1	L912162	12/21/2009	12/29/2009	6010B
Chromium	0.182	U	0.182	mg/kg	1	L912162	12/21/2009	12/29/2009	6010B
Cobalt	1.82	U	1.82	mg/kg	1	L912162	12/21/2009	12/29/2009	6010B
Copper	**6.01**		0.909	mg/kg	1	L912162	12/21/2009	12/29/2009	6010B
Iron	**147**		18.2	mg/kg	1	L912162	12/21/2009	12/29/2009	6010B
Lead	0.455	U	0.455	mg/kg	1	L912162	12/21/2009	12/29/2009	6010B
Lithium	2.27	U	2.27	mg/kg	1	L912162	12/21/2009	12/29/2009	6010B
Magnesium	**156**		68.2	mg/kg	1	L912162	12/21/2009	12/29/2009	6010B
Manganese	**0.843**	B	1.55	mg/kg	1	L912162	12/21/2009	12/29/2009	6010B
Molybdenum	1.82	U	1.82	mg/kg	1	L912162	12/21/2009	12/29/2009	6010B
Nickel	3.64	U	3.64	mg/kg	1	L912162	12/21/2009	12/29/2009	6010B
Phosphorus	**2410**		45.5	mg/kg	1	L912162	12/21/2009	12/29/2009	6010B
Potassium	**2470**		364	mg/kg	1	L912162	12/21/2009	12/29/2009	6010B
Selenium	**2.18**		0.909	mg/kg	1	L912162	12/21/2009	12/29/2009	6010B
Silicon	**3.01**	J	1.82	mg/kg	1	L912162	12/21/2009	12/29/2009	6010B
Silver	0.182	U	0.182	mg/kg	1	L912162	12/21/2009	12/29/2009	6010B
Sodium	**1330**		15.5	mg/kg	1	L912162	12/21/2009	12/29/2009	6010B
Strontium	**0.189**	B	0.909	mg/kg	1	L912162	12/21/2009	12/29/2009	6010B
Thallium	0.455	U	0.455	mg/kg	1	L912162	12/21/2009	12/29/2009	6010B
Tin	**1.11**	B	9.09	mg/kg	1	L912162	12/21/2009	12/29/2009	6010B
Uranium	18.2	U	18.2	mg/kg	1	L912162	12/21/2009	12/29/2009	6010B
Vanadium	2.27	U	2.27	mg/kg	1	L912162	12/21/2009	12/29/2009	6010B
Zinc	**23.8**		9.09	mg/kg	1	L912162	12/21/2009	12/29/2009	6010B
Mercury	**0.705**	J	0.0273	mg/kg	1	L912140	12/16/2009	12/18/2009	7471A

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WCH-Hanford, Inc
2620 Fermi Avenue
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Project: RC-118
Project Number: K1785
Project Manager: Joan Kessner

Reported:
12/31/2009 09:15

J18XF7
0912038-02 (Fish)

2/2/10

Analyte	Result and Qualifier		Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
			Lionville Laboratory						
Metals by SW846 6000/7000 series									
Aluminum	4.24	U	4.24	mg/kg	1	1912162	12/21/2009	12/29/2009	6010B
Antimony	0.508	U	0.508	mg/kg	1	1912162	12/21/2009	12/29/2009	6010B
Arsenic	0.847	U	0.847	mg/kg	1	1912162	12/21/2009	12/29/2009	6010B
Barium	0.424	U	0.424	mg/kg	1	1912162	12/21/2009	12/29/2009	6010B
Beryllium	0.169	U	0.169	mg/kg	1	1912162	12/21/2009	12/29/2009	6010B
Bismuth	8.47	U	8.47	mg/kg	1	1912162	12/21/2009	12/29/2009	6010B
Boron	1.69	U	1.69	mg/kg	1	1912162	12/21/2009	12/29/2009	6010B
Cadmium	0.0833	B	0.169	mg/kg	1	1912162	12/21/2009	12/29/2009	6010B
Calcium	129		84.7	mg/kg	1	1912162	12/21/2009	12/29/2009	6010B
Chromium	0.169	U	0.169	mg/kg	1	1912162	12/21/2009	12/29/2009	6010B
Cobalt	1.69	U	1.69	mg/kg	1	1912162	12/21/2009	12/29/2009	6010B
Copper	3.15		0.847	mg/kg	1	1912162	12/21/2009	12/29/2009	6010B
Iron	342		16.9	mg/kg	1	1912162	12/21/2009	12/29/2009	6010B
Lead	0.424	U	0.424	mg/kg	1	1912162	12/21/2009	12/29/2009	6010B
Lithium	2.12	U	2.12	mg/kg	1	1912162	12/21/2009	12/29/2009	6010B
Magnesium	182		63.6	mg/kg	1	1912162	12/21/2009	12/29/2009	6010B
Manganese	0.815	B	4.24	mg/kg	1	1912162	12/21/2009	12/29/2009	6010B
Molybdenum	1.69	U	1.69	mg/kg	1	1912162	12/21/2009	12/29/2009	6010B
Nickel	3.39	U	3.39	mg/kg	1	1912162	12/21/2009	12/29/2009	6010B
Phosphorus	2490		42.4	mg/kg	1	1912162	12/21/2009	12/29/2009	6010B
Potassium	2630		339	mg/kg	1	1912162	12/21/2009	12/29/2009	6010B
Selenium	1.57		0.847	mg/kg	1	1912162	12/21/2009	12/29/2009	6010B
Silicon	2.83	J	1.69	mg/kg	1	1912162	12/21/2009	12/29/2009	6010B
Silver	0.169	U	0.169	mg/kg	1	1912162	12/21/2009	12/29/2009	6010B
Sodium	1250		42.4	mg/kg	1	1912162	12/21/2009	12/29/2009	6010B
Strontium	0.147	B	0.847	mg/kg	1	1912162	12/21/2009	12/29/2009	6010B
Thallium	0.424	U	0.424	mg/kg	1	1912162	12/21/2009	12/29/2009	6010B
Tin	1.30	B	8.47	mg/kg	1	1912162	12/21/2009	12/29/2009	6010B
Uranium	16.9	U	16.9	mg/kg	1	1912162	12/21/2009	12/29/2009	6010B
Vanadium	2.12	U	2.12	mg/kg	1	1912162	12/21/2009	12/29/2009	6010B
Zinc	23.5		8.47	mg/kg	1	1912162	12/21/2009	12/29/2009	6010B
Mercury	0.0438	J	0.0273	mg/kg	1	1912140	12/16/2009	12/18/2009	7471A

364 Welsh Pool Road
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WCH-Hanford, Inc 2620 Fermi Avenue Richland WA, 99354	Project: RC-118 Project Number: K1785 Project Manager: Joan Kessner	Reported: 12/31/2009 00:15

J18XF8

0912038-03 (Fish)

2/3/10

Analyte	Result and Qualifier		Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Lionville Laboratory									
Metals by SW846 6000/7000 series									
Aluminum	3.62	U	3.62	mg/kg	1	1912162	12/21/2009	12/29/2009	6010B
Antimony	0.435	U	0.435	mg/kg	1	1912162	12/21/2009	12/29/2009	6010B
Arsenic	0.725	U	0.725	mg/kg	1	1912162	12/21/2009	12/29/2009	6010B
Barium	0.0840	B	0.362	mg/kg	1	1912162	12/21/2009	12/29/2009	6010B
Beryllium	0.145	U	0.145	mg/kg	1	1912162	12/21/2009	12/29/2009	6010B
Bismuth	7.25	U	7.25	mg/kg	1	1912162	12/21/2009	12/29/2009	6010B
Boron	1.45	U	1.45	mg/kg	1	1912162	12/21/2009	12/29/2009	6010B
Cadmium	0.202		0.145	mg/kg	1	1912162	12/21/2009	12/29/2009	6010B
Calcium	110		72.5	mg/kg	1	1912162	12/21/2009	12/29/2009	6010B
Chromium	0.145	U	0.145	mg/kg	1	1912162	12/21/2009	12/29/2009	6010B
Cobalt	1.45	U	1.45	mg/kg	1	1912162	12/21/2009	12/29/2009	6010B
Copper	2.25		0.725	mg/kg	1	1912162	12/21/2009	12/29/2009	6010B
Iron	110		14.5	mg/kg	1	1912162	12/21/2009	12/29/2009	6010B
Lead	0.362	U	0.362	mg/kg	1	1912162	12/21/2009	12/29/2009	6010B
Lithium	1.81	U	1.81	mg/kg	1	1912162	12/21/2009	12/29/2009	6010B
Magnesium	336		36.2	mg/kg	1	1912162	12/21/2009	12/29/2009	6010B
Manganese	0.920	B	3.62	mg/kg	1	1912162	12/21/2009	12/29/2009	6010B
Molybdenum	1.45	U	1.45	mg/kg	1	1912162	12/21/2009	12/29/2009	6010B
Nickel	2.90	U	2.90	mg/kg	1	1912162	12/21/2009	12/29/2009	6010B
Phosphorus	2210		36.2	mg/kg	1	1912162	12/21/2009	12/29/2009	6010B
Potassium	2360		290	mg/kg	1	1912162	12/21/2009	12/29/2009	6010B
Selenium	1.69		0.725	mg/kg	1	1912162	12/21/2009	12/29/2009	6010B
Silicon	2.63	J	1.45	mg/kg	1	1912162	12/21/2009	12/29/2009	6010B
Silver	0.145	U	0.145	mg/kg	1	1912162	12/21/2009	12/29/2009	6010B
Sodium	1180		36.2	mg/kg	1	1912162	12/21/2009	12/29/2009	6010B
Strontium	0.179	B	0.725	mg/kg	1	1912162	12/21/2009	12/29/2009	6010B
Thallium	0.362	U	0.362	mg/kg	1	1912162	12/21/2009	12/29/2009	6010B
Tin	3.08	B	7.25	mg/kg	1	1912162	12/21/2009	12/29/2009	6010B
Uranium	14.5	U	14.5	mg/kg	1	1912162	12/21/2009	12/29/2009	6010B
Vanadium	1.81	U	1.81	mg/kg	1	1912162	12/21/2009	12/29/2009	6010B
Zinc	19.8		7.25	mg/kg	1	1912162	12/21/2009	12/29/2009	6010B
Mercury	0.0692	J	0.0281	mg/kg	1	1912140	12/16/2009	12/18/2009	7471A

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WC Hanford, Inc.
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Project: RC 118
Project Number: K1785
Project Manager: Joan Kessner

Reported:
12/31/2009 09:13

J18XF9
0912038-04 (Fish)

2/7/10

Analyte	Result and Qualifier		Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Lionville Laboratory									
Metals by SW846 6000/7000 series									
Aluminum	4.24	U	4.24	mg/kg	1	0912162	12/21/2009	12/29/2009	6010B
Antimony	0.508	U	0.508	mg/kg	1	0912162	12/21/2009	12/29/2009	6010B
Arsenic	0.847	U	0.847	mg/kg	1	0912162	12/21/2009	12/29/2009	6010B
Barium	0.424	U	0.424	mg/kg	1	0912162	12/21/2009	12/29/2009	6010B
Beryllium	0.169	U	0.169	mg/kg	1	0912162	12/21/2009	12/29/2009	6010B
Bismuth	8.47	U	8.47	mg/kg	1	0912162	12/21/2009	12/29/2009	6010B
Boron	1.69	U	1.69	mg/kg	1	0912162	12/21/2009	12/29/2009	6010B
Cadmium	**0.337**		0.169	mg/kg	1	0912162	12/21/2009	12/29/2009	6010B
Calcium	**103**		84.7	mg/kg	1	0912162	12/21/2009	12/29/2009	6010B
Chromium	0.169	U	0.169	mg/kg	1	0912162	12/21/2009	12/29/2009	6010B
Cobalt	1.69	U	1.69	mg/kg	1	0912162	12/21/2009	12/29/2009	6010B
Copper	**2.27**		0.847	mg/kg	1	0912162	12/21/2009	12/29/2009	6010B
Iron	**122**		16.9	mg/kg	1	0912162	12/21/2009	12/29/2009	6010B
Lead	0.424	U	0.424	mg/kg	1	0912162	12/21/2009	12/29/2009	6010B
Lithium	2.12	U	2.12	mg/kg	1	0912162	12/21/2009	12/29/2009	6010B
Magnesium	**125**		63.6	mg/kg	1	0912162	12/21/2009	12/29/2009	6010B
Manganese	**0.838**	B	4.24	mg/kg	1	0912162	12/21/2009	12/29/2009	6010B
Molybdenum	1.69	U	1.69	mg/kg	1	0912162	12/21/2009	12/29/2009	6010B
Nickel	**0.494**	B	3.39	mg/kg	1	0912162	12/21/2009	12/29/2009	6010B
Phosphorus	**2130**		42.4	mg/kg	1	0912162	12/21/2009	12/29/2009	6010B
Potassium	**2450**		339	mg/kg	1	0912162	12/21/2009	12/29/2009	6010B
Selenium	**1.18**		0.847	mg/kg	1	0912162	12/21/2009	12/29/2009	6010B
Silicon	**2.38**	J	1.69	mg/kg	1	0912162	12/21/2009	12/29/2009	6010B
Silver	0.169	U	0.169	mg/kg	1	0912162	12/21/2009	12/29/2009	6010B
Sodium	**1590**		42.4	mg/kg	1	0912162	12/21/2009	12/29/2009	6010B
Strontium	**0.218**	B	0.847	mg/kg	1	0912162	12/21/2009	12/29/2009	6010B
Thallium	0.424	U	0.424	mg/kg	1	0912162	12/21/2009	12/29/2009	6010B
Tin	**1.26**	B	8.47	mg/kg	1	0912162	12/21/2009	12/29/2009	6010B
Uranium	16.9	U	16.9	mg/kg	1	0912162	12/21/2009	12/29/2009	6010B
Vanadium	2.12	U	2.12	mg/kg	1	0912162	12/21/2009	12/29/2009	6010B
Zinc	**15.4**		8.47	mg/kg	1	0912162	12/21/2009	12/29/2009	6010B
Mercury	0.169	J	0.0225	mg/kg	1	0912140	12/16/2009	12/18/2009	7471A

WC-Hanford, Inc
2620 Fermi Avenue
Richland WA, 99354

Project: RC-118
Project Number: K1785
Project Manager: Joan Kessner

Reported:
12/31/2009 09:15

J18XH0
0912038-05 (Fish)

2/2/10

Lionville Laboratory

Metals by SW846 6000/7000 series

Analyte	Result and Qualifier		Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Aluminum	3.47	U	3.47	mg/kg	1	L912162	12/21/2009	12/29/2009	6010B
Antimony	0.417	U	0.417	mg/kg	1	L912162	12/21/2009	12/29/2009	6010B
Arsenic	0.694	U	0.694	mg/kg	1	L912162	12/21/2009	12/29/2009	6010B
Barium	0.347	U	0.347	mg/kg	1	L912162	12/21/2009	12/29/2009	6010B
Beryllium	0.139	U	0.139	mg/kg	1	L912162	12/21/2009	12/29/2009	6010B
Bismuth	6.94	U	6.94	mg/kg	1	L912162	12/21/2009	12/29/2009	6010B
Boron	1.39	U	1.39	mg/kg	1	L912162	12/21/2009	12/29/2009	6010B
Cadmium	**0.137**	**B**	0.139	mg/kg	1	L912162	12/21/2009	12/29/2009	6010B
Calcium	**85.2**		69.4	mg/kg	1	L912162	12/21/2009	12/29/2009	6010B
Chromium	0.139	U	0.139	mg/kg	1	L912162	12/21/2009	12/29/2009	6010B
Cobalt	1.39	U	1.39	mg/kg	1	L912162	12/21/2009	12/29/2009	6010B
Copper	**2.37**		0.694	mg/kg	1	L912162	12/21/2009	12/29/2009	6010B
Iron	**113**		13.9	mg/kg	1	L912162	12/21/2009	12/29/2009	6010B
Lead	0.347	U	0.347	mg/kg	1	L912162	12/21/2009	12/29/2009	6010B
Lithium	1.74	U	1.74	mg/kg	1	L912162	12/21/2009	12/29/2009	6010B
Magnesium	**137**		52.1	mg/kg	1	L912162	12/21/2009	12/29/2009	6010B
Manganese	**0.894**	**B**	3.47	mg/kg	1	L912162	12/21/2009	12/29/2009	6010B
Molybdenum	1.39	U	1.39	mg/kg	1	L912162	12/21/2009	12/29/2009	6010B
Nickel	2.78	U	2.78	mg/kg	1	L912162	12/21/2009	12/29/2009	6010B
Phosphorus	**4190**		34.7	mg/kg	1	L912162	12/21/2009	12/29/2009	6010B
Potassium	**3600**		278	mg/kg	1	L912162	12/21/2009	12/29/2009	6010B
Selenium	**1.33**		0.694	mg/kg	1	L912162	12/21/2009	12/29/2009	6010B
Silicon	**2.72**	J	1.39	mg/kg	1	L912162	12/21/2009	12/29/2009	6010B
Silver	0.139	U	0.139	mg/kg	1	L912162	12/21/2009	12/29/2009	6010B
Sodium	**1310**		34.7	mg/kg	1	L912162	12/21/2009	12/29/2009	6010B
Strontium	**0.103**	**B**	0.694	mg/kg	1	L912162	12/21/2009	12/29/2009	6010B
Thallium	0.347	U	0.347	mg/kg	1	L912162	12/21/2009	12/29/2009	6010B
Tin	**0.928**	**B**	6.94	mg/kg	1	L912162	12/21/2009	12/29/2009	6010B
Uranium	13.9	U	13.9	mg/kg	1	L912162	12/21/2009	12/29/2009	6010B
Vanadium	1.74	U	1.74	mg/kg	1	L912162	12/21/2009	12/29/2009	6010B
Zinc	**17.8**		6.94	mg/kg	1	L912162	12/21/2009	12/29/2009	6010B
Mercury	**0.0784**	J	0.0225	mg/kg	1	L912140	12/16/2009	12/18/2009	7471A

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WC-Hanford, Inc 2620 Fermi Avenue Richland WA, 99354	Project: RC, 118 Project Number: K1285 Project Manager: Joan Kessner	Reported: 12/31/2009 09:15

J195V7
0912038-06 (Fish)

2/7/10

Lionville Laboratory

Metals by SW846 6000/7000 series

Analyte	Result and Qualifier	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Aluminum	7.73	3.33	mg/kg	1	1912162	12/21/2009	12/29/2009	6010B
Antimony	0.400 U	0.400	mg/kg	1	1912162	12/21/2009	12/29/2009	6010B
Arsenic	0.272 B	0.667	mg/kg	1	1912162	12/21/2009	12/29/2009	6010B
Barium	3.58	0.333	mg/kg	1	1912162	12/21/2009	12/29/2009	6010B
Beryllium	0.133 U	0.133	mg/kg	1	1912162	12/21/2009	12/29/2009	6010B
Bismuth	6.67 U	6.67	mg/kg	1	1912162	12/21/2009	12/29/2009	6010B
Boron	1.33 U	1.33	mg/kg	1	1912162	12/21/2009	12/29/2009	6010B
Cadmium	0.0705 B	0.133	mg/kg	1	1912162	12/21/2009	12/29/2009	6010B
Calcium	3680	66.7	mg/kg	1	1912162	12/21/2009	12/29/2009	6010B
Chromium	1.64	0.333	mg/kg	1	1912162	12/21/2009	12/29/2009	6010B
Cobalt	1.33 U	1.33	mg/kg	1	1912162	12/21/2009	12/29/2009	6010B
Copper	4.80	0.667	mg/kg	1	1912162	12/21/2009	12/29/2009	6010B
Iron	40.0	13.3	mg/kg	1	1912162	12/21/2009	12/29/2009	6010B
Lead	0.333 U	0.333	mg/kg	1	1912162	12/21/2009	12/29/2009	6010B
Lithium	1.67 U	1.67	mg/kg	1	1912162	12/21/2009	12/29/2009	6010B
Magnesium	129	30.0	mg/kg	1	1912162	12/21/2009	12/29/2009	6010B
Manganese	1.21 B	1.33	mg/kg	1	1912162	12/21/2009	12/29/2009	6010B
Molybdenum	1.33 U	1.33	mg/kg	1	1912162	12/21/2009	12/29/2009	6010B
Nickel	0.701 B	2.67	mg/kg	1	1912162	12/21/2009	12/29/2009	6010B
Phosphorus	1850	13.3	mg/kg	1	1912162	12/21/2009	12/29/2009	6010B
Potassium	2280	267	mg/kg	1	1912162	12/21/2009	12/29/2009	6010B
Selenium	0.961	0.667	mg/kg	1	1912162	12/21/2009	12/29/2009	6010B
Silicon	25.3 J	1.33	mg/kg	1	1912162	12/21/2009	12/29/2009	6010B
Silver	0.133 U	0.133	mg/kg	1	1912162	12/21/2009	12/29/2009	6010B
Sodium	1470	33.3	mg/kg	1	1912162	12/21/2009	12/29/2009	6010B
Strontium	3.50	0.667	mg/kg	1	1912162	12/21/2009	12/29/2009	6010B
Thallium	0.333 U	0.333	mg/kg	1	1912162	12/21/2009	12/29/2009	6010B
Tin	0.980 B	6.67	mg/kg	1	1912162	12/21/2009	12/29/2009	6010B
Uranium	13.3 U	13.3	mg/kg	1	1912162	12/21/2009	12/29/2009	6010B
Vanadium	1.67 U	1.67	mg/kg	1	1912162	12/21/2009	12/29/2009	6010B
Zinc	20.2	6.67	mg/kg	1	1912162	12/21/2009	12/29/2009	6010B
Mercury	0.0327 J	0.0273	mg/kg	1	1912160	12/16/2009	12/18/2009	7471A

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WC Hanford, Inc 2620 Fermi Avenue Richland WA, 99354	Project: RC-118 Project Number: K1785 Project Manager: Joan Kessner	Reported: 12/31/2009 09:15

J195V8
0912038-07 (Fish)

2/7/10

Analyte	Result and Qualifier	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
		Lionville Laboratory						
Metals by SW846 6000/7000 series								
Aluminum	30.6	4.03	mg/kg	1	L912162	12/21/2009	12/29/2009	6010B
Antimony	0.484 U	0.484	mg/kg	1	L912162	12/21/2009	12/29/2009	6010B
Arsenic	0.581 B	0.806	mg/kg	1	L912162	12/21/2009	12/29/2009	6010B
Barium	12.5	0.403	mg/kg	1	L912162	12/21/2009	12/29/2009	6010B
Beryllium	0.161 U	0.161	mg/kg	1	L912162	12/21/2009	12/29/2009	6010B
Bismuth	8.06 U	8.06	mg/kg	1	L912162	12/21/2009	12/29/2009	6010B
Boron	1.61 U	1.61	mg/kg	1	L912162	12/21/2009	12/29/2009	6010B
Cadmium	0.105 B	0.161	mg/kg	1	L912162	12/21/2009	12/29/2009	6010B
Calcium	7210	80.6	mg/kg	1	L912162	12/21/2009	12/29/2009	6010B
Chromium	0.411	0.161	mg/kg	1	L912162	12/21/2009	12/29/2009	6010B
Cobalt	1.61 U	1.61	mg/kg	1	L912162	12/21/2009	12/29/2009	6010B
Copper	6.66	0.806	mg/kg	1	L912162	12/21/2009	12/29/2009	6010B
Iron	72.1	16.1	mg/kg	1	L912162	12/21/2009	12/29/2009	6010B
Lead	0.403 U	0.403	mg/kg	1	L912162	12/21/2009	12/29/2009	6010B
Lithium	2.02 U	2.02	mg/kg	1	L912162	12/21/2009	12/29/2009	6010B
Magnesium	744	60.5	mg/kg	1	L912162	12/21/2009	12/29/2009	6010B
Manganese	3.48 B	4.03	mg/kg	1	L912162	12/21/2009	12/29/2009	6010B
Molybdenum	1.61 U	1.61	mg/kg	1	L912162	12/21/2009	12/29/2009	6010B
Nickel	3.22 U	3.22	mg/kg	1	L912162	12/21/2009	12/29/2009	6010B
Phosphorus	1930	40.3	mg/kg	1	L912162	12/21/2009	12/29/2009	6010B
Potassium	2570	323	mg/kg	1	L912162	12/21/2009	12/29/2009	6010B
Selenium	1.12	0.806	mg/kg	1	L912162	12/21/2009	12/29/2009	6010B
Silicon	42.4 J	1.61	mg/kg	1	L912162	12/21/2009	12/29/2009	6010B
Silver	0.161 U	0.161	mg/kg	1	L912162	12/21/2009	12/29/2009	6010B
Sodium	1360	40.3	mg/kg	1	L912162	12/21/2009	12/29/2009	6010B
Strontium	8.94	0.806	mg/kg	1	L912162	12/21/2009	12/29/2009	6010B
Thallium	0.403 U	0.403	mg/kg	1	L912162	12/21/2009	12/29/2009	6010B
Tin	1.03 B	8.06	mg/kg	1	L912162	12/21/2009	12/29/2009	6010B
Uranium	16.1 U	16.1	mg/kg	1	L912162	12/21/2009	12/29/2009	6010B
Vanadium	0.256 B	2.02	mg/kg	1	L912162	12/21/2009	12/29/2009	6010B
Zinc	31.6	8.06	mg/kg	1	L912162	12/21/2009	12/29/2009	6010B
Mercury	0.0243 B J	0.0265	mg/kg	1	L912140	12/16/2009	12/18/2009	7471A

WC Hanford, Inc. 2620 Fermi Avenue Richland WA 99354	Project: 805113 Project Number: K1785 Project Manager: Joan Kessner	Reported: 12/31/2009 09:13

J195V9

0912038-08 (Fish)

2/2/10

Analyte	Result and Qualifier	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method

Lionville Laboratory

Metals by SW846 6000/7000 series

Analyte	Result	Qualifier	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Aluminum	3.57	U	3.57	mg/kg	1	L912162	12/21/2009	12/29/2009	6010B
Antimony	0.429	U	0.429	mg/kg	1	L912162	12/21/2009	12/29/2009	6010B
Arsenic	0.714	U	0.714	mg/kg	1	L912162	12/21/2009	12/29/2009	6010B
Barium	1.45		0.357	mg/kg	1	L912162	12/21/2009	12/29/2009	6010B
Beryllium	0.143	U	0.143	mg/kg	1	L912162	12/21/2009	12/29/2009	6010B
Bismuth	7.14	U	7.14	mg/kg	1	L912162	12/21/2009	12/29/2009	6010B
Boron	1.43	U	1.43	mg/kg	1	L912162	12/21/2009	12/29/2009	6010B
Cadmium	0.0472	B	0.143	mg/kg	1	L912162	12/21/2009	12/29/2009	6010B
Calcium	232		71.4	mg/kg	1	L912162	12/21/2009	12/29/2009	6010B
Chromium	1.53		0.143	mg/kg	1	L912162	12/21/2009	12/29/2009	6010B
Cobalt	2.20		1.43	mg/kg	1	L912162	12/21/2009	12/29/2009	6010B
Copper	1.63		0.714	mg/kg	1	L912162	12/21/2009	12/29/2009	6010B
Iron	20.6		14.3	mg/kg	1	L912162	12/21/2009	12/29/2009	6010B
Lead	0.357	U	0.357	mg/kg	1	L912162	12/21/2009	12/29/2009	6010B
Lithium	1.79	U	1.79	mg/kg	1	L912162	12/21/2009	12/29/2009	6010B
Magnesium	138		53.6	mg/kg	1	L912162	12/21/2009	12/29/2009	6010B
Manganese	0.586	B	3.57	mg/kg	1	L912162	12/21/2009	12/29/2009	6010B
Molybdenum	1.43	U	1.43	mg/kg	1	L912162	12/21/2009	12/29/2009	6010B
Nickel	2.86	U	2.86	mg/kg	1	L912162	12/21/2009	12/29/2009	6010B
Phosphorus	1890		35.7	mg/kg	1	L912162	12/21/2009	12/29/2009	6010B
Potassium	2620		286	mg/kg	1	L912162	12/21/2009	12/29/2009	6010B
Selenium	1.04		0.714	mg/kg	1	L912162	12/21/2009	12/29/2009	6010B
Silicon	2.44	J	1.43	mg/kg	1	L912162	12/21/2009	12/29/2009	6010B
Silver	0.143	U	0.143	mg/kg	1	L912162	12/21/2009	12/29/2009	6010B
Sodium	1560		35.7	mg/kg	1	L912162	12/21/2009	12/29/2009	6010B
Strontium	0.220	B	0.714	mg/kg	1	L912162	12/21/2009	12/29/2009	6010B
Thallium	0.357	U	0.357	mg/kg	1	L912162	12/21/2009	12/29/2009	6010B
Tin	1.51	B	7.14	mg/kg	1	L912162	12/21/2009	12/29/2009	6010B
Uranium	14.3	U	14.3	mg/kg	1	L912162	12/21/2009	12/29/2009	6010B
Vanadium	1.79	U	1.79	mg/kg	1	L912162	12/21/2009	12/29/2009	6010B
Zinc	26.9		7.14	mg/kg	1	L912162	12/21/2009	12/29/2009	6010B
Mercury	0.0630	J	0.0273	mg/kg	1	L912140	12/16/2009	12/18/2009	7471A

204 Welsh Pool Road
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WC Hanford, Inc
2620 Fermi Avenue
Richland WA, 99354

Project: RCS118
Project Number: K1785
Project Manager: John Kessner

Reported:
12/31/2009 09:15

J195W0

0912038-09 (Fish)

2/7/10

Analyte	Result and Qualifier	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Lionville Laboratory								
Metals by SW846 6000/7000 series								
Aluminum	16.0	4.39	mg/kg	1	L912162	12/21/2009	12/29/2009	6010B
Antimony	0.526 U	0.526	mg/kg	1	L912162	12/21/2009	12/29/2009	6010B
Arsenic	0.877 U	0.877	mg/kg	1	L912162	12/21/2009	12/29/2009	6010B
Barium	7.57	0.439	mg/kg	1	L912162	12/21/2009	12/29/2009	6010B
Beryllium	0.175 U	0.175	mg/kg	1	L912162	12/21/2009	12/29/2009	6010B
Bismuth	8.77 U	8.77	mg/kg	1	L912162	12/21/2009	12/29/2009	6010B
Boron	1.75 U	1.75	mg/kg	1	L912162	12/21/2009	12/29/2009	6010B
Cadmium	0.0469 B	0.175	mg/kg	1	L912162	12/21/2009	12/29/2009	6010B
Calcium	14100	87.7	mg/kg	1	L912162	12/21/2009	12/29/2009	6010B
Chromium	0.440	0.175	mg/kg	1	L912162	12/21/2009	12/29/2009	6010B
Cobalt	1.75 U	1.75	mg/kg	1	L912162	12/21/2009	12/29/2009	6010B
Copper	2.61	0.877	mg/kg	1	L912162	12/21/2009	12/29/2009	6010B
Iron	38.2	17.5	mg/kg	1	L912162	12/21/2009	12/29/2009	6010B
Lead	0.439 U	0.439	mg/kg	1	L912162	12/21/2009	12/29/2009	6010B
Lithium	2.19 U	2.19	mg/kg	1	L912162	12/21/2009	12/29/2009	6010B
Magnesium	75.4	65.8	mg/kg	1	L912162	12/21/2009	12/29/2009	6010B
Manganese	1.99 B	1.39	mg/kg	1	L912162	12/21/2009	12/29/2009	6010B
Molybdenum	1.75 U	1.75	mg/kg	1	L912162	12/21/2009	12/29/2009	6010B
Nickel	0.798 B	3.51	mg/kg	1	L912162	12/21/2009	12/29/2009	6010B
Phosphorus	3880	43.9	mg/kg	1	L912162	12/21/2009	12/29/2009	6010B
Potassium	2730	351	mg/kg	1	L912162	12/21/2009	12/29/2009	6010B
Selenium	1.19	0.877	mg/kg	1	L912162	12/21/2009	12/29/2009	6010B
Silicon	40.8 J	1.75	mg/kg	1	L912162	12/21/2009	12/29/2009	6010B
Silver	0.175 U	0.175	mg/kg	1	L912162	12/21/2009	12/29/2009	6010B
Sodium	1440	43.9	mg/kg	1	L912162	12/21/2009	12/29/2009	6010B
Strontium	14.0	0.877	mg/kg	1	L912162	12/21/2009	12/29/2009	6010B
Thallium	0.439 U	0.439	mg/kg	1	L912162	12/21/2009	12/29/2009	6010B
Tin	0.975 B	8.77	mg/kg	1	L912162	12/21/2009	12/29/2009	6010B
Uranium	17.5 U	17.5	mg/kg	1	L912162	12/21/2009	12/29/2009	6010B
Vanadium	2.19 U	2.19	mg/kg	1	L912162	12/21/2009	12/29/2009	6010B
Zinc	25.7	8.77	mg/kg	1	L912162	12/21/2009	12/29/2009	6010B
Mercury	0.0253 B J	0.0265	mg/kg	1	L912140	12/16/2009	12/18/2009	7471A

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WCH Hanford, Inc 2620 Fermi Avenue Richland WA, 99354	Project: RC-108 Project Number: K1785 Project Manager: Joan Kessner	Reported: 12/31/2009 09:15

J19661

0912038-10 (Fish)

2/1/10

Lionville Laboratory

Metals by SW846 6000/7000 series

Analyte	Result and Qualifier	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Aluminum	27.0	4.55	mg/kg	1	L912162	12/21/2009	12/29/2009	6010B
Antimony	0.545 U	0.545	mg/kg	1	L912162	12/21/2009	12/29/2009	6010B
Arsenic	0.909 U	0.909	mg/kg	1	L912162	12/21/2009	12/29/2009	6010B
Barium	1.46	0.455	mg/kg	1	L912162	12/21/2009	12/29/2009	6010B
Beryllium	0.182 U	0.182	mg/kg	1	L912162	12/21/2009	12/29/2009	6010B
Bismuth	9.09 U	9.09	mg/kg	1	L912162	12/21/2009	12/29/2009	6010B
Boron	1.82 U	1.82	mg/kg	1	L912162	12/21/2009	12/29/2009	6010B
Cadmium	0.102 B	0.182	mg/kg	1	L912162	12/21/2009	12/29/2009	6010B
Calcium	394	90.9	mg/kg	1	L912162	12/21/2009	12/29/2009	6010B
Chromium	0.568	0.182	mg/kg	1	L912162	12/21/2009	12/29/2009	6010B
Cobalt	1.82 U	1.82	mg/kg	1	L912162	12/21/2009	12/29/2009	6010B
Copper	4.01	0.909	mg/kg	1	L912162	12/21/2009	12/29/2009	6010B
Iron	54.3	18.2	mg/kg	1	L912162	12/21/2009	12/29/2009	6010B
Lead	0.455 U	0.455	mg/kg	1	L912162	12/21/2009	12/29/2009	6010B
Lithium	2.27 U	2.27	mg/kg	1	L912162	12/21/2009	12/29/2009	6010B
Magnesium	64.5 B	68.2	mg/kg	1	L912162	12/21/2009	12/29/2009	6010B
Manganese	1.11 B	4.55	mg/kg	1	L912162	12/21/2009	12/29/2009	6010B
Molybdenum	1.82 U	1.82	mg/kg	1	L912162	12/21/2009	12/29/2009	6010B
Nickel	3.64 U	3.64	mg/kg	1	L912162	12/21/2009	12/29/2009	6010B
Phosphorus	1920	45.5	mg/kg	1	L912162	12/21/2009	12/29/2009	6010B
Potassium	2320	364	mg/kg	1	L912162	12/21/2009	12/29/2009	6010B
Selenium	0.890 B	0.909	mg/kg	1	L912162	12/21/2009	12/29/2009	6010B
Silicon	75.3 J	1.82	mg/kg	1	L912162	12/21/2009	12/29/2009	6010B
Silver	0.182 U	0.182	mg/kg	1	L912162	12/21/2009	12/29/2009	6010B
Sodium	1390	45.5	mg/kg	1	L912162	12/21/2009	12/29/2009	6010B
Strontium	0.506 B	0.909	mg/kg	1	L912162	12/21/2009	12/29/2009	6010B
Thallium	0.455 U	0.455	mg/kg	1	L912162	12/21/2009	12/29/2009	6010B
Tin	1.21 B	9.09	mg/kg	1	L912162	12/21/2009	12/29/2009	6010B
Uranium	18.2 U	18.2	mg/kg	1	L912162	12/21/2009	12/29/2009	6010B
Vanadium	2.27 U	2.27	mg/kg	1	L912162	12/21/2009	12/29/2009	6010B
Zinc	23.0	9.09	mg/kg	1	L912162	12/21/2009	12/29/2009	6010B
Mercury	0.0355 J	0.0290	mg/kg	1	L912140	12/16/2009	12/18/2009	7471A

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WC-Hanford, Inc
2620 Fermi Avenue
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Project: RC-11B
Project Number: K1785
Project Manager: Joan Kessner

Reported:
12/31/2009 09:15

J19662
0912038-11 (Fish)

2/1/10

Analyte	Result and Qualifier	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
			Lionville Laboratory					
Metals by SW846 6000/7000 series								
Aluminum	608	3.29	mg/kg	1	L912162	12/21/2009	12/29/2009	6010B
Antimony	0.395 U	0.395	mg/kg	1	L912162	12/21/2009	12/29/2009	6010B
Arsenic	0.523 B	0.658	mg/kg	1	L912162	12/21/2009	12/29/2009	6010B
Barium	10.3	0.329	mg/kg	1	L912162	12/21/2009	12/29/2009	6010B
Beryllium	0.132 U	0.132	mg/kg	1	L912162	12/21/2009	12/29/2009	6010B
Bismuth	6.58 U	6.58	mg/kg	1	L912162	12/21/2009	12/29/2009	6010B
Boron	1.32 U	1.32	mg/kg	1	L912162	12/21/2009	12/29/2009	6010B
Cadmium	0.292	0.132	mg/kg	1	L912162	12/21/2009	12/29/2009	6010B
Calcium	406	65.8	mg/kg	1	L912162	12/21/2009	12/29/2009	6010B
Chromium	1.62	0.132	mg/kg	1	L912162	12/21/2009	12/29/2009	6010B
Cobalt	1.32 U	1.32	mg/kg	1	L912162	12/21/2009	12/29/2009	6010B
Copper	3.91	0.658	mg/kg	1	L912162	12/21/2009	12/29/2009	6010B
Iron	985	13.2	mg/kg	1	L912162	12/21/2009	12/29/2009	6010B
Lead	1.12	0.329	mg/kg	1	L912162	12/21/2009	12/29/2009	6010B
Lithium	0.610 B	1.64	mg/kg	1	L912162	12/21/2009	12/29/2009	6010B
Magnesium	401	39.5	mg/kg	1	L912162	12/21/2009	12/29/2009	6010B
Manganese	18.0	3.29	mg/kg	1	L912162	12/21/2009	12/29/2009	6010B
Molybdenum	1.32 U	1.32	mg/kg	1	L912162	12/21/2009	12/29/2009	6010B
Nickel	1.93 B	2.63	mg/kg	1	L912162	12/21/2009	12/29/2009	6010B
Phosphorus	2530	32.9	mg/kg	1	L912162	12/21/2009	12/29/2009	6010B
Potassium	2810	263	mg/kg	1	L912162	12/21/2009	12/29/2009	6010B
Selenium	2.02	0.658	mg/kg	1	L912162	12/21/2009	12/29/2009	6010B
Silicon	451 J	1.32	mg/kg	1	L912162	12/21/2009	12/29/2009	6010B
Silver	0.132 U	0.132	mg/kg	1	L912162	12/21/2009	12/29/2009	6010B
Sodium	1640	32.9	mg/kg	1	L912162	12/21/2009	12/29/2009	6010B
Strontium	3.14	0.658	mg/kg	1	L912162	12/21/2009	12/29/2009	6010B
Thallium	0.329 U	0.329	mg/kg	1	L912162	12/21/2009	12/29/2009	6010B
Tin	0.847 B	6.58	mg/kg	1	L912162	12/21/2009	12/29/2009	6010B
Uranium	13.2 U	13.2	mg/kg	1	L912162	12/21/2009	12/29/2009	6010B
Vanadium	1.87	1.64	mg/kg	1	L912162	12/21/2009	12/29/2009	6010B
Zinc	38.8	6.58	mg/kg	1	L912162	12/21/2009	12/29/2009	6010B
Mercury	0.0103 B J	0.0231	mg/kg	1	L912140	12/16/2009	12/18/2009	7471A

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WC Hanford, Inc. 2620 Fermi Avenue Richland WA, 99354	Project: RC 118 Project Number: K1785 Project Manager: Joan Kessner	Reported: 12/31/2009 09:15

J19747

0912038-12 (Fish)

K--- 2/7/10

Lionville Laboratory

Metals by SW846 6000/7000 series

Analyte	Result and Qualifier		Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Aluminum	1.97	U	1.97	mg/kg	1	L912162	12/21/2009	12/29/2009	6010B
Antimony	0.476	U	0.476	mg/kg	1	L912162	12/21/2009	12/29/2009	6010B
Arsenic	0.794	U	0.794	mg/kg	1	L912162	12/21/2009	12/29/2009	6010B
Barium	**0.0832**	**B**	0.397	mg/kg	1	L912162	12/21/2009	12/29/2009	6010B
Beryllium	0.159	U	0.159	mg/kg	1	L912162	12/21/2009	12/29/2009	6010B
Bismuth	7.94	U	7.94	mg/kg	1	L912162	12/21/2009	12/29/2009	6010B
Boron	1.59	U	1.59	mg/kg	1	L912162	12/21/2009	12/29/2009	6010B
Cadmium	**0.374**		0.159	mg/kg	1	L912162	12/21/2009	12/29/2009	6010B
Calcium	**278**		79.4	mg/kg	1	L912162	12/21/2009	12/29/2009	6010B
Chromium	0.159	U	0.159	mg/kg	1	L912162	12/21/2009	12/29/2009	6010B
Cobalt	1.59	U	1.59	mg/kg	1	L912162	12/21/2009	12/29/2009	6010B
Copper	**4.16**		0.794	mg/kg	1	L912162	12/21/2009	12/29/2009	6010B
Iron	**52.7**		15.9	mg/kg	1	L912162	12/21/2009	12/29/2009	6010B
Lead	0.397	U	0.397	mg/kg	1	L912162	12/21/2009	12/29/2009	6010B
Lithium	1.98	U	1.98	mg/kg	1	L912162	12/21/2009	12/29/2009	6010B
Magnesium	**145**		59.5	mg/kg	1	L912162	12/21/2009	12/29/2009	6010B
Manganese	**0.865**	**B**	1.97	mg/kg	1	L912162	12/21/2009	12/29/2009	6010B
Molybdenum	1.59	U	1.59	mg/kg	1	L912162	12/21/2009	12/29/2009	6010B
Nickel	3.17	U	3.17	mg/kg	1	L912162	12/21/2009	12/29/2009	6010B
Phosphorus	**2380**		39.7	mg/kg	1	L912162	12/21/2009	12/29/2009	6010B
Potassium	**1960**		317	mg/kg	1	L912162	12/21/2009	12/29/2009	6010B
Selenium	**0.851**		0.794	mg/kg	1	L912162	12/21/2009	12/29/2009	6010B
Silicon	**1.90**	J	1.59	mg/kg	1	L912162	12/21/2009	12/29/2009	6010B
Silver	0.159	U	0.159	mg/kg	1	L912162	12/21/2009	12/29/2009	6010B
Sodium	**2230**		39.7	mg/kg	1	L912162	12/21/2009	12/29/2009	6010B
Strontium	**0.362**	**B**	0.794	mg/kg	1	L912162	12/21/2009	12/29/2009	6010B
Thallium	0.397	U	0.397	mg/kg	1	L912162	12/21/2009	12/29/2009	6010B
Tin	**1.13**	**B**	7.94	mg/kg	1	L912162	12/21/2009	12/29/2009	6010B
Uranium	15.9	U	15.9	mg/kg	1	L912162	12/21/2009	12/29/2009	6010B
Vanadium	1.98	U	1.98	mg/kg	1	L912162	12/21/2009	12/29/2009	6010B
Zinc	**18.4**		7.94	mg/kg	1	L912162	12/21/2009	12/29/2009	6010B
Mercury	0.0894	J	0.0257	mg/kg	1	L912140	12/16/2009	12/18/2009	7471A

264 Welsh Pool Road
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WC Hanford, Inc. 2620 Fermi Avenue Richland WA, 99354	Project: RO-118 Project Number: K1785 Project Manager: Joan Kessner	Reported: 12/31/2009 07:56

J18XB1

0912037-01 (Fish) 2-7-10

Analyte	Result and Qualifier		Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method

Lionville Laboratory

Metals by SW846 6000/7000 series

Aluminum	4.10	U	4.10	mg/kg	1	L912162	12/21/2009	12/29/2009	6010B
Antimony	0.492	U	0.492	mg/kg	1	L912162	12/21/2009	12/29/2009	6010B
Arsenic	0.820	U	0.820	mg/kg	1	L912162	12/21/2009	12/29/2009	6010B
Barium	0.410	U	0.410	mg/kg	1	L912162	12/21/2009	12/29/2009	6010B
Beryllium	0.164	U	0.164	mg/kg	1	L912162	12/21/2009	12/29/2009	6010B
Bismuth	8.20	U	8.20	mg/kg	1	L912162	12/21/2009	12/29/2009	6010B
Boron	1.64	U	1.64	mg/kg	1	L912162	12/21/2009	12/29/2009	6010B
Cadmium	**0.241**		0.164	mg/kg	1	L912162	12/21/2009	12/29/2009	6010B
Calcium	**65.0**	B	82.0	mg/kg	1	L912162	12/21/2009	12/29/2009	6010B
Chromium	0.164	U	0.164	mg/kg	1	L912162	12/21/2009	12/29/2009	6010B
Cobalt	1.64	U	1.64	mg/kg	1	L912162	12/21/2009	12/29/2009	6010B
Copper	**3.93**		0.820	mg/kg	1	L912162	12/21/2009	12/29/2009	6010B
Iron	**172**		16.4	mg/kg	1	L912162	12/21/2009	12/29/2009	6010B
Lead	0.410	U	0.410	mg/kg	1	L912162	12/21/2009	12/29/2009	6010B
Lithium	2.05	U	2.05	mg/kg	1	L912162	12/21/2009	12/29/2009	6010B
Magnesium	**135**		61.5	mg/kg	1	L912162	12/21/2009	12/29/2009	6010B
Manganese	**0.710**	B	4.10	mg/kg	1	L912162	12/21/2009	12/29/2009	6010B
Molybdenum	1.64	U	1.64	mg/kg	1	L912162	12/21/2009	12/29/2009	6010B
Nickel	3.28	U	3.28	mg/kg	1	L912162	12/21/2009	12/29/2009	6010B
Phosphorus	**2180**		41.0	mg/kg	1	L912162	12/21/2009	12/29/2009	6010B
Potassium	**2460**		328	mg/kg	1	L912162	12/21/2009	12/29/2009	6010B
Selenium	**1.35**		0.820	mg/kg	1	L912162	12/21/2009	12/29/2009	6010B
Silicon	**3.39**	J	1.64	mg/kg	1	L912162	12/21/2009	12/29/2009	6010B
Silver	0.164	U	0.164	mg/kg	1	L912162	12/21/2009	12/29/2009	6010B
Sodium	**1390**		41.0	mg/kg	1	L912162	12/21/2009	12/29/2009	6010B
Strontium	**0.0914**	B	0.820	mg/kg	1	L912162	12/21/2009	12/29/2009	6010B
Thallium	0.410	U	0.410	mg/kg	1	L912162	12/21/2009	12/29/2009	6010B
Tin	**2.02**	B	8.20	mg/kg	1	L912162	12/21/2009	12/29/2009	6010B
Uranium	16.4	U	16.4	mg/kg	1	L912162	12/21/2009	12/29/2009	6010B
Vanadium	2.05	U	2.05	mg/kg	1	L912162	12/21/2009	12/29/2009	6010B
Zinc	**20.1**		8.20	mg/kg	1	L912162	12/21/2009	12/29/2009	6010B
Mercury	**0.115**	J	0.0357	mg/kg	1	L912140	12/16/2009	12/18/2009	7471A

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WCH Hanford, Inc.
2620 Fermi Avenue
Richland WA, 99354

Project: RC-118
Project Number: K1785
Project Manager: Joan Kessner

Reported:
12/31/2009 07:36

J18XB2
0912037-02 (Fish)

/Z- 2/7/10

Lionville Laboratory

Metals by SW846 6000/7000 series

Analyte	Result and Qualifier		Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Aluminum	4.55	U	4.55	mg/kg	1	1912162	12/21/2009	12/29/2009	6010B
Antimony	0.545	U	0.545	mg/kg	1	1912162	12/21/2009	12/29/2009	6010B
Arsenic	0.909	U	0.909	mg/kg	1	1912162	12/21/2009	12/29/2009	6010B
Barium	**0.104**	B	0.455	mg/kg	1	1912162	12/21/2009	12/29/2009	6010B
Beryllium	0.182	U	0.182	mg/kg	1	1912162	12/21/2009	12/29/2009	6010B
Bismuth	9.09	U	9.09	mg/kg	1	1912162	12/21/2009	12/29/2009	6010B
Boron	1.82	U	1.82	mg/kg	1	1912162	12/21/2009	12/29/2009	6010B
Cadmium	**1.38**		0.182	mg/kg	1	1912162	12/21/2009	12/29/2009	6010B
Calcium	**234**		90.9	mg/kg	1	1912162	12/21/2009	12/29/2009	6010B
Chromium	**0.278**		0.182	mg/kg	1	1912162	12/21/2009	12/29/2009	6010B
Cobalt	1.82	U	1.82	mg/kg	1	1912162	12/21/2009	12/29/2009	6010B
Copper	**2.42**		0.909	mg/kg	1	1912162	12/21/2009	12/29/2009	6010B
Iron	**148**		18.2	mg/kg	1	1912162	12/21/2009	12/29/2009	6010B
Lead	0.455	U	0.455	mg/kg	1	1912162	12/21/2009	12/29/2009	6010B
Lithium	2.27	U	2.27	mg/kg	1	1912162	12/21/2009	12/29/2009	6010B
Magnesium	**136**		68.2	mg/kg	1	1912162	12/21/2009	12/29/2009	6010B
Manganese	**2.03**	B	4.55	mg/kg	1	1912162	12/21/2009	12/29/2009	6010B
Molybdenum	1.82	U	1.82	mg/kg	1	1912162	12/21/2009	12/29/2009	6010B
Nickel	3.64	U	3.64	mg/kg	1	1912162	12/21/2009	12/29/2009	6010B
Phosphorus	**2150**		45.5	mg/kg	1	1912162	12/21/2009	12/29/2009	6010B
Potassium	**2390**		364	mg/kg	1	1912162	12/21/2009	12/29/2009	6010B
Selenium	**1.33**		0.909	mg/kg	1	1912162	12/21/2009	12/29/2009	6010B
Silicon	**3.51**	J	1.82	mg/kg	1	1912162	12/21/2009	12/29/2009	6010B
Silver	0.182	U	0.182	mg/kg	1	1912162	12/21/2009	12/29/2009	6010B
Sodium	**1550**		45.5	mg/kg	1	1912162	12/21/2009	12/29/2009	6010B
Strontium	**0.274**	B	0.909	mg/kg	1	1912162	12/21/2009	12/29/2009	6010B
Thallium	0.455	U	0.455	mg/kg	1	1912162	12/21/2009	12/29/2009	6010B
Tin	**1.20**	B	9.09	mg/kg	1	1912162	12/21/2009	12/29/2009	6010B
Uranium	18.2	U	18.2	mg/kg	1	1912162	12/21/2009	12/29/2009	6010B
Vanadium	2.27	U	2.27	mg/kg	1	1912162	12/21/2009	12/29/2009	6010B
Zinc	**21.6**		9.09	mg/kg	1	1912162	12/21/2009	12/29/2009	6010B
Mercury	**0.322**	J	0.0250	mg/kg	1	1912140	12/16/2009	12/18/2009	7471A

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WCH Hanford, Inc.
2620 Fermi Avenue
Richland WA, 99354

Project: RC-118
Project Number: K1785
Project Manager: Joan Kessner

Reported:
12/31/2009 07:36

J18XB3
0912037-03 (Fish)

Analyte	Result and Qualifier	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
		Lionville Laboratory						
Metals by SW846 6000/7000 series								
Aluminum	4.55 U	4.55	mg/kg	1	L912162	12/21/2009	12/29/2009	6010B
Antimony	0.545 U	0.545	mg/kg	1	L912162	12/21/2009	12/29/2009	6010B
Arsenic	0.909 U	0.909	mg/kg	1	L912162	12/21/2009	12/29/2009	6010B
Barium	0.455 U	0.455	mg/kg	1	L912162	12/21/2009	12/29/2009	6010B
Beryllium	0.182 U	0.182	mg/kg	1	L912162	12/21/2009	12/29/2009	6010B
Bismuth	9.09 U	9.09	mg/kg	1	L912162	12/21/2009	12/29/2009	6010B
Boron	1.82 U	1.82	mg/kg	1	L912162	12/21/2009	12/29/2009	6010B
Cadmium	**0.263**	0.182	mg/kg	1	L912162	12/21/2009	12/29/2009	6010B
Calcium	62.3 B	90.9	mg/kg	1	L912162	12/21/2009	12/29/2009	6010B
Chromium	0.182 U	0.182	mg/kg	1	L912162	12/21/2009	12/29/2009	6010B
Cobalt	1.82 U	1.82	mg/kg	1	L912162	12/21/2009	12/29/2009	6010B
Copper	**2.49**	0.909	mg/kg	1	L912162	12/21/2009	12/29/2009	6010B
Iron	**96.9**	18.2	mg/kg	1	L912162	12/21/2009	12/29/2009	6010B
Lead	0.455 U	0.455	mg/kg	1	L912162	12/21/2009	12/29/2009	6010B
Lithium	2.27 U	2.27	mg/kg	1	L912162	12/21/2009	12/29/2009	6010B
Magnesium	**140**	68.2	mg/kg	1	L912162	12/21/2009	12/29/2009	6010B
Manganese	1.19 B	4.55	mg/kg	1	L912162	12/21/2009	12/29/2009	6010B
Molybdenum	1.82 U	1.82	mg/kg	1	L912162	12/21/2009	12/29/2009	6010B
Nickel	3.64 U	3.64	mg/kg	1	L912162	12/21/2009	12/29/2009	6010B
Phosphorus	**2310**	45.5	mg/kg	1	L912162	12/21/2009	12/29/2009	6010B
Potassium	**2510**	364	mg/kg	1	L912162	12/21/2009	12/29/2009	6010B
Selenium	**1.20**	0.909	mg/kg	1	L912162	12/21/2009	12/29/2009	6010B
Silicon	**3.56** J	1.82	mg/kg	1	L912162	12/21/2009	12/29/2009	6010B
Silver	0.182 U	0.182	mg/kg	1	L912162	12/21/2009	12/29/2009	6010B
Sodium	**1180**	45.5	mg/kg	1	L912162	12/21/2009	12/29/2009	6010B
Strontium	0.103 B	0.909	mg/kg	1	L912162	12/21/2009	12/29/2009	6010B
Thallium	0.455 U	0.455	mg/kg	1	L912162	12/21/2009	12/29/2009	6010B
Tin	1.28 B	9.09	mg/kg	1	L912162	12/21/2009	12/29/2009	6010B
Uranium	18.2 U	18.2	mg/kg	1	L912162	12/21/2009	12/29/2009	6010B
Vanadium	2.27 U	2.27	mg/kg	1	L912162	12/21/2009	12/29/2009	6010B
Zinc	**19.5**	9.09	mg/kg	1	L912162	12/21/2009	12/29/2009	6010B
Mercury	**0.104** J	0.0231	mg/kg	1	L912140	12/16/2009	12/18/2009	7471A

JL 2/7/10

000045C

208 Welsh Pool Road
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WC Hanford, Inc. 2620 Fermi Avenue Richland WA, 99354	Project: RC-118 Project Number: K1785 Project Manager: Joan Kessner	Reported: 12/31/2009 07:16

J18XB4
0912037-04 (Fish)

2/7/10

Analyte	Result and Qualifier		Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method

Lionville Laboratory

Metals by SW846 6000/7000 series

Analyte	Result	Qualifier	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Aluminum	4.90	U	4.90	mg/kg	1	L912162	12/21/2009	12/29/2009	6010B
Antimony	0.588	U	0.588	mg/kg	1	L912162	12/21/2009	12/29/2009	6010B
Arsenic	0.980	U	0.980	mg/kg	1	L912162	12/21/2009	12/29/2009	6010B
Barium	0.490	U	0.490	mg/kg	1	L912162	12/21/2009	12/29/2009	6010B
Beryllium	0.196	U	0.196	mg/kg	1	L912162	12/21/2009	12/29/2009	6010B
Bismuth	9.80	U	9.80	mg/kg	1	L912162	12/21/2009	12/29/2009	6010B
Boron	1.96	U	1.96	mg/kg	1	L912162	12/21/2009	12/29/2009	6010B
Cadmium	**0.263**		0.196	mg/kg	1	L912162	12/21/2009	12/29/2009	6010B
Calcium	**81.7**	B	98.0	mg/kg	1	L912162	12/21/2009	12/29/2009	6010B
Chromium	0.196	U	0.196	mg/kg	1	L912162	12/21/2009	12/29/2009	6010B
Cobalt	1.96	U	1.96	mg/kg	1	L912162	12/21/2009	12/29/2009	6010B
Copper	**3.67**		0.980	mg/kg	1	L912162	12/21/2009	12/29/2009	6010B
Iron	**101**		19.6	mg/kg	1	L912162	12/21/2009	12/29/2009	6010B
Lead	0.490	U	0.490	mg/kg	1	L912162	12/21/2009	12/29/2009	6010B
Lithium	2.45	U	2.45	mg/kg	1	L912162	12/21/2009	12/29/2009	6010B
Magnesium	**125**		73.5	mg/kg	1	L912162	12/21/2009	12/29/2009	6010B
Manganese	**0.758**	B	4.90	mg/kg	1	L912162	12/21/2009	12/29/2009	6010B
Molybdenum	1.96	U	1.96	mg/kg	1	L912162	12/21/2009	12/29/2009	6010B
Nickel	3.92	U	3.92	mg/kg	1	L912162	12/21/2009	12/29/2009	6010B
Phosphorus	**2030**		49.0	mg/kg	1	L912162	12/21/2009	12/29/2009	6010B
Potassium	**3330**		392	mg/kg	1	L912162	12/21/2009	12/29/2009	6010B
Selenium	**1.56**		0.980	mg/kg	1	L912162	12/21/2009	12/29/2009	6010B
Silicon	**3.17**	J	1.96	mg/kg	1	L912162	12/21/2009	12/29/2009	6010B
Silver	0.196	U	0.196	mg/kg	1	L912162	12/21/2009	12/29/2009	6010B
Sodium	**1180**		49.0	mg/kg	1	L912162	12/21/2009	12/29/2009	6010B
Strontium	0.980	U	0.980	mg/kg	1	L912162	12/21/2009	12/29/2009	6010B
Thallium	0.490	U	0.490	mg/kg	1	L912162	12/21/2009	12/29/2009	6010B
Tin	**1.24**	B	9.80	mg/kg	1	L912162	12/21/2009	12/29/2009	6010B
Uranium	19.6	U	19.6	mg/kg	1	L912162	12/21/2009	12/29/2009	6010B
Vanadium	2.45	U	2.45	mg/kg	1	L912162	12/21/2009	12/29/2009	6010B
Zinc	**18.3**		9.80	mg/kg	1	L912162	12/21/2009	12/29/2009	6010B
Mercury	**0.149**	J	0.0245	mg/kg	1	L912140	12/16/2009	12/18/2009	7471A

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WC Hanford Inc
2620 Fermi Avenue
Richland WA, 99354

Project: RC 118
Project Number: K1785
Project Manager: Joan Kessner

Reported:
12/31/2009 07:36

J18XB5
0912037-05 (Fish)

JZ 2/7/10

Lionville Laboratory

Metals by SW846 6000/7000 series

Analyte	Result and Qualifier		Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Aluminum	3.85	U	3.85	mg/kg	1	L912162	12/21/2009	12/29/2009	6010B
Antimony	0.462	U	0.462	mg/kg	1	L912162	12/21/2009	12/29/2009	6010B
Arsenic	0.769	U	0.769	mg/kg	1	L912162	12/21/2009	12/29/2009	6010B
Barium	0.385	U	0.385	mg/kg	1	L912162	12/21/2009	12/29/2009	6010B
Beryllium	0.154	U	0.154	mg/kg	1	L912162	12/21/2009	12/29/2009	6010B
Bismuth	7.69	U	7.69	mg/kg	1	L912162	12/21/2009	12/29/2009	6010B
Boron	1.54	U	1.54	mg/kg	1	L912162	12/21/2009	12/29/2009	6010B
Cadmium	**0.238**		0.154	mg/kg	1	L912162	12/21/2009	12/29/2009	6010B
Calcium	**148**		76.9	mg/kg	1	L912162	12/21/2009	12/29/2009	6010B
Chromium	0.154	U	0.154	mg/kg	1	L912162	12/21/2009	12/29/2009	6010B
Cobalt	1.54	U	1.54	mg/kg	1	L912162	12/21/2009	12/29/2009	6010B
Copper	**3.70**		0.769	mg/kg	1	L912162	12/21/2009	12/29/2009	6010B
Iron	**153**		15.4	mg/kg	1	L912162	12/21/2009	12/29/2009	6010B
Lead	0.385	U	0.385	mg/kg	1	L912162	12/21/2009	12/29/2009	6010B
Lithium	1.92	U	1.92	mg/kg	1	L912162	12/21/2009	12/29/2009	6010B
Magnesium	**131**		57.7	mg/kg	1	L912162	12/21/2009	12/29/2009	6010B
Manganese	**0.720**	B	3.85	mg/kg	1	L912162	12/21/2009	12/29/2009	6010B
Molybdenum	1.54	U	1.54	mg/kg	1	L912162	12/21/2009	12/29/2009	6010B
Nickel	3.08	U	3.08	mg/kg	1	L912162	12/21/2009	12/29/2009	6010B
Phosphorus	**1970**		38.5	mg/kg	1	L912162	12/21/2009	12/29/2009	6010B
Potassium	**2330**		308	mg/kg	1	L912162	12/21/2009	12/29/2009	6010B
Selenium	**1.22**		0.769	mg/kg	1	L912162	12/21/2009	12/29/2009	6010B
Silicon	**2.71**	J	1.54	mg/kg	1	L912162	12/21/2009	12/29/2009	6010B
Silver	0.154	U	0.154	mg/kg	1	L912162	12/21/2009	12/29/2009	6010B
Sodium	**1400**		38.5	mg/kg	1	L912162	12/21/2009	12/29/2009	6010B
Strontium	**0.165**	B	0.769	mg/kg	1	L912162	12/21/2009	12/29/2009	6010B
Thallium	0.385	U	0.385	mg/kg	1	L912162	12/21/2009	12/29/2009	6010B
Tin	**1.05**	B	7.69	mg/kg	1	L912162	12/21/2009	12/29/2009	6010B
Uranium	15.4	U	15.4	mg/kg	1	L912162	12/21/2009	12/29/2009	6010B
Vanadium	1.92	U	1.92	mg/kg	1	L912162	12/21/2009	12/29/2009	6010B
Zinc	**17.3**		7.69	mg/kg	1	L912162	12/21/2009	12/29/2009	6010B
Mercury	**0.0851**	J	0.0257	mg/kg	1	L912140	12/16/2009	12/18/2009	7471A

Appendix 4

Laboratory Narrative and Chain-of-Custody Documentation

264 Welsh Pool Road
Exton, Pennsylvania 19341
Phone (610) 280-3000
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Case Narrative

Client: WC-HANFORD RC-118
LVL#: 0909124
SDG/SAF#: K1785/RC-118

W.O.#: 60049-001-001-0001-00
Date Received: 09-30-09

METALS

The following is a summary of the QC results accompanying the sample results. Lionville Laboratory (LvL) certifies that all test results meet the requirements of NELAC except as noted below.

All soil samples are reported on a dry weight basis unless requested by the client, required by the method, or noted otherwise

1. This narrative covers the analyses of 22 fish samples.

2. The samples were prepared and analyzed in accordance with methods listed on the data report forms. The samples were reported on a wet weight, 'as-received' basis.

   Samples J18XB6, J18XB7, J18XB8, J18XB9, J18XC0, J18XD1, J18XD2, J18XD5, J18XH1, J18XH2, J18XH3, J18XH4, J18XH5, J19748, J18X86, and J18X87 were rerun and reported with 12-fold dilutions for Phosphorous due to high concentration.

3. All analyses were performed within the required holding times.

4. All Initial and Continuing Calibration Verifications (ICV/CCVs) were within the 90-110% control limits (80-120% for Mercury).

5. All Initial and Continuing Calibration Blanks (ICB/CCBs) were within control limits (less than the LOQ).

6. All preparation/method blanks (MB) were within method criteria (less than the Limit of Quantitation (3-10X the LOD), or samples greater than 20X MB value).

7. All ICP Interference Check Standards were within control limits.

8. All Standard Reference Material (SRM) analytes were within the Prediction Interval control limits supplied by the manufacturer.

9. The matrix spike (MS) recoveries for 6 analytes were outside the 75-125% control limits.

10. For analytes where the ICP MS is out-of-control, a post-digestion MS (PDS) and serial

dilution are performed. A serial dilution is performed for Mercury. A PDS was prepared at meaningful concentration level for the following analytes:

Sample ID	Element	PDS Concentration (ppb)	PDS % Recovery
J18XB6	Calcium	800	no recovery*
	Potassium	22,000	98.9
	Phosphorous	2,500	106.4
J18XH2	Calcium	800	no recovery*
	Phosphorous	2,500	97.2

* spike added was an insufficient amount

11. The duplicate analyses for 9 analytes were outside the 20% Relative Percent Difference (RPD) control limits.

12. For the purposes of this report, the data have been reported to the Limit of Detection (LOD). Values between the LOD and the Limit of Quantitation (LOQ) are acquired in a region of less-certain quantification.

13. LvL is NELAP accredited by the State of Pennsylvania. For a complete listing of accrediting authorities and the corresponding analytes/methods, please contact your Project Manager.

14. I certify that this sample data package is in compliance with SOW requirements, both technically and for completeness, other than the conditions detailed above. Release of the data contained in this hard-copy data package has been authorized by the Laboratory Manager or a designee, as verified by the following signature.

Iain Daniels
Laboratory Manager
Lionville Laboratory

[illegible]
Date

dm/tn09-124

LVL
LIONVILLE LABORATORY
[illegible]

264 Welsh Pool Road
Exton, Pennsylvania 19341
Phone (610) 280-3000
Fax (610) 280-3041

Case Narrative

Client: WC-HANFORD RC-118
LVL#: 0912038
SDG/SAF#: K1785/RC-118

W.O.#: 60049-001-001 0001-00
Date Received: 12-15-09

METALS

The following is a summary of the QC results accompanying the sample results. Lionville Laboratory (LvL) certifies that all test results meet the requirements of NELAC except as noted below.

All soil samples are reported on a dry weight basis unless requested by the client, required by the method, or noted otherwise.

1. This narrative covers the analyses of 12 fish samples.
2. The samples were prepared and analyzed in accordance with methods listed on the data report forms. The samples were reported on a wet weight, 'as-received' basis.
3. All analyses were performed within the required holding times with the exception of Mercury. The samples were received past hold for Mercury.
4. Please refer to the Sample Receipt Check List for any sample discrepancies in LvLI's sample acceptance policy.
5. All Initial and Continuing Calibration Verifications (ICV/CCVs) were within the 90-110% control limits (80-120% for Mercury) with the exception of CCV3 (110.4%) and CCV4 (111.5%) for Bismuth. All sample results for Bismuth were below the reporting limit.
6. All Initial and Continuing Calibration Blanks (ICB/CCBs) were within control limits (less than the LOQ).
7. All preparation/method blanks (MB) were within method criteria (less than the Limit of Quantitation (3-10X the LOD), or samples greater than 20X MB value).
8. All ICP Interference Check Standards were within control limits.
9. All Standard Reference Material (SRM) analytes were within the Prediction Interval control limits supplied by the manufacturer.
10. The matrix spike (MS) recovery for 1 analyte was outside the 75-125% control limits.

11. For analytes where the ICP MS is out-of-control, a post-digestion MS (PDS) and serial dilution are performed. A PDS was prepared at meaningful concentration level for the following analytes:

Sample ID	Element	PDS Concentration (ppb)	PDS % Recovery
J18XF6	Phosphorous	6,000	97.3

12. All duplicate analyses were within the 20% Relative Percent Difference (RPD) control limit criteria. The ± 20% RPD control limit applies to sample results greater than ten times the MDL. The sample result for Tin was less than ten times the MDL.

13. For the purposes of this report, the data have been reported to the Limit of Detection (LOD). Values between the LOD and the Limit of Quantitation (LOQ) are acquired in a region of less-certain quantification.

14. LvL is NELAP accredited by the State of Pennsylvania. For a complete listing of accrediting authorities and the corresponding analytes/methods, please contact your Project Manager.

15. I certify that this sample data package is in compliance with SOW requirements, both technically and for completeness, other than the conditions detailed above. Release of the data contained in this hard-copy data package has been authorized by the Laboratory Manager or a designee, as verified by the following signature.

Iain Daniels
Laboratory Manager
Lionville Laboratory

1/4/13
Date

dm/12-018

LVL
LIONVILLE LABORATORY

264 Welsh Pool Road
Exton, Pennsylvania 19341
Phone (610) 280-3000
Fax (610) 280-3041

Case Narrative

Client: WC-HANFORD RC-118
LVL#: 0912037
SDG/SAF#: K1785/RC-118

W.O.#: 60049-001-001-0001-00
Date Received: 12-15-09

METALS

The following is a summary of the QC results accompanying the sample results. Lionville Laboratory (LvL) certifies that all test results meet the requirements of NELAC except as noted below.

All soil samples are reported on a dry weight basis unless requested by the client, required by the method, or noted otherwise.

1. This narrative covers the analyses of 5 fish samples.

2. The samples were prepared and analyzed in accordance with methods listed on the data report forms. The samples were reported on a wet weight, 'as-received' basis.

3. All analyses were performed within the required holding times with the exception of Mercury. The samples were received past hold for Mercury.

4. Please refer to the Sample Receipt Check List for any sample discrepancies in LvL's sample acceptance policy.

5. All Initial and Continuing Calibration Verifications (ICV/CCVs) were within the 90-110% control limits (80-120% for Mercury) with the exception of CCV3 and CCV4 for Bismuth. All sample results contained within this report were surrounded by QC within control.

6. All Initial and Continuing Calibration Blanks (ICB/CCBs) were within control limits (less than the LOQ).

7. All preparation/method blanks (MB) were within method criteria (less than the Limit of Quantitation (3-10X the LOD), or samples greater than 20X MB value).

8. All ICP Interference Check Standards were within control limits.

9. All Standard Reference Material (SRM) analytes were within the Prediction Interval control limits supplied by the manufacturer.

10. All matrix spike (MS) recoveries were within the 75-125% control limits.

11. All duplicate analyses were within the 20% Relative Percent Difference (RPD) control limit criteria. The ± 20% RPD control limit applies to sample results greater than ten times the MDL. The sample result for Tin was less than ten times the MDL.

12. For the purposes of this report, the data have been reported to the Limit of Detection (LOD). Values between the LOD and the Limit of Quantitation (LOQ) are acquired in a region of less-certain quantification.

13. LvL is NELAP accredited by the State of Pennsylvania. For a complete listing of accrediting authorities and the corresponding analytes/methods, please contact your Project Manager.

14. I certify that this sample data package is in compliance with SOW requirements, both technically and for completeness, other than the conditions detailed above. Release of the data contained in this hard-copy data package has been authorized by the Laboratory Manager or a designee, as verified by the following signature.

Iain Daniels
Laboratory Manager
Lionville Laboratory

1/4/10
Date

dm/12-037

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-118-206	Page 1 of 1
Collector Wendy West	Company Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator KESSNER, JH
Project Designation Columbia River Component of the RCBRA - [illegible]	Sampling Location 100SA-WALL-CARCASS	SAF No. RC-118	Price Code 9K-N Data Turnaround 45 Days
Ice Chest No. AES-04-004	Field Logbook No. 1633	COA BESCRC6520	Method of Shipment FEDEX
Shipped To EBERLINE SERVICES [illegible]	Offsite Property No. N/A		Bill of Lading/Air Bill No. FDX# 79698 6375399

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

[illegible]

150051

Preservation	None	None	None	None	Cool 4C	Cool 4C	None			
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	G/P			
No. of Container(s)	1	1	1	1	1	1	1			
Volume	1500g	100g	400g	10g	250g	120g	50g			
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Tritium - H3	See item (2) in Special Instructions	See item (3) in Special Instructions	[illegible]	Technetium-99			

Sample No.	Matrix *	Sample Date	Sample Time										
J18XP0	OTHER SOLID	9/4/09	1330					X	X				

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From Wendy West	Date/Time 1330 9/4/09	Received By/Stored In EAS LOCKED STORAGE Wendy West	Date/Time 1330 9/4/09
Relinquished By/Removed From EAS LOCKED STORAGE	Date/Time 9/29/09 1020	Received By/Stored In SHANNAN JOHNSON	Date/Time 9/29/09 1020
Relinquished By/Removed From SHANNAN JOHNSON	Date/Time 9/29/09 1020	Received By/Stored In FDX	Date/Time
Relinquished By/Removed From FedEx	Date/Time 9-30-09 0955	Received By/Stored In [illegible] Hernandez	Date/Time 9-30-09 0955
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) {Americium-241, Antimony-125, Beryllium-7, Cerium-144, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238}

(2) Strontium-89,90 -- Total Sr, Isotopic Thorium {Thorium-228, Thorium-230, Thorium-232}; Isotopic Uranium {Uranium-233/234, Uranium-235, Uranium-238}; Isotopic Plutonium

(3) ICP Metals - 6010 (Full List) {Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc}; Mercury - 7471 - (CV)

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab

Matrix *
S = Soil
SE = Sediment
SO = Solid
SL = Sludge
W = Water
O = Oil
A = Air
DS = Drum Solids
DL = Drum Liquids
T = Tissue
WI = Wipe
L = Liquid
V = Vegetation
X = Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-118-207

Page 1 of 1

Collector: Wendy West

Company Contact: JOAN KESSNER

Telephone No.: 3754688

Project Coordinator: KESSNER, JM

Price Code: 9K NJ and 9NY

Data Turnaround: 45 Days

Project Designation: Columbia River Component of the RCBRA - Tissues

Sampling Location: 100SA-WAL2-CARCASS

SAF No.: RC-118

Ice Chest No.: AES-09-004

Field Logbook No.: 1633

COA: BESCRC6920

Method of Shipment: FED EX

Shipped To: EBERLINE SERVICES (RICHMOND)

Offsite Property No.: N/A

Bill of Lading/Air Bill No.: FDX 796986375399

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage: FREEZE [illegible]

Preservation	None	None	None	None	Cool 4C	Cool 4C	None			
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	G/P			
No. of Container(s)	1	1	1	1	1	1	1			
Volume	1500g	10g	10g	10g	25g	120g	10g			
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Tritium - H3	See item (2) in Special Instructions	See item (3) in Special Instructions	Percent Moisture	Technetium-99			

Sample No.	Matrix *	Sample Date	Sample Time										
J18X87	OTHER SOLID	9/25/09	1130					X	X				

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From: Wendy West	Date/Time: 9/25/09 1130	Received By/Stored In: Wendy West EAS LOCKED STORAGE	Date/Time: 9/25/09 1130
Relinquished By/Removed From: EAS LOCKED STORAGE 4	Date/Time: 9/29/09 1000	Received By/Stored In: SHANNAN JOHNSON	Date/Time: 9/29/09 1000
Relinquished By/Removed From: SHANNAN JOHNSON	Date/Time: 9/29/09 1000	Received By/Stored In: FOY	Date/Time:
Relinquished By/Removed From: Fed Ex	Date/Time: 9-30-09 0955	Received By/Stored In: Nicole Hernandez	Date/Time: 9-30-09 0955
Relinquished By/Removed From:	Date/Time:	Received By/Stored In:	Date/Time:
Relinquished By/Removed From:	Date/Time:	Received By/Stored In:	Date/Time:

SPECIAL INSTRUCTIONS

C01

(1) Gamma Spec - (Full List) (Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238);
(2) Strontium-89,90 -- Total Sr, Isotopic Thorium (Thorium-232), Isotopic Uranium (Uranium-233/234, Uranium-235, Uranium-238); Isotopic Plutonium
(3) ICP Metals - 6010 (Full List) (Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc); Mercury - 7471 (CV)

Sampler unavailable to remove samples
from controlled storage. Shipper removed
samples from storage location taking custody
of samples for shipment to lab

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION — Received By: | Title: | Date/Time:

FINAL SAMPLE DISPOSITION — Disposal Method: | Disposed By: | Date/Time:

WCH-EE-011

Washington Closure Hanford	**CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST**		RC-118-208	Page 1 of 1
Collector: Wendy West	Company Contact: JOAN KESSNER	Telephone No.: 375-4688	Project Coordinator: KESSNER, JH	Price Code: 9K N [illegible]
Project Designation: Columbia River Component of the RCBRA - Tissues	Sampling Location: HRSA-WAL3-4/ARCASS		SAF No.: RC-118	Data Turnaround: 45 Days
Ice Chest No.: RFS-09-004	Field Logbook No.: 1633	COA: RESCHC6520	Method of Shipment: FED EX	
Shipped To: EBERLINE SERVICES/LIONVILLE	Offsite Property No.: N/A		Bill of Lading/Air Bill: FDX# 796986375399	

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

[illegible]

0000053

Preservation	None	None	None	None	Cool 4C	Cool 4C	None			
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	G/P			
No. of Container(s)	1	1	1	1	1	1	1			
Volume	1500g	100g	100g	10g	250g	120g	10g			
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Tritium - H3	See item (2) in Special Instructions	See item (3) in Special Instructions	Paint filter Test	Technetium-99			

Sample No.	Matrix *	Sample Date	Sample Time										
J18XD8	OTHER SOLID	9/25/09	1230					X	X				

CHAIN OF POSSESSION		Sign/Print Names	
Relinquished By/Removed From: Wendy West	Date/Time: 9/25/09 1230	Received By/Stored In: Wendy West EAS LOCKED STORAGE	Date/Time: 9/25/09 1230
Relinquished By/Removed From: EAS LOCKED STORAGE	Date/Time: 9/30/09 1000	Received By/Stored In: SHANNAN JOHNSON	Date/Time: 9/30/09 1000
Relinquished By/Removed From: SHANNAN JOHNSON	Date/Time: 9/30/09 1000	Received By/Stored In: FDX	Date/Time:
Relinquished By/Removed From:	Date/Time: 9-30-09 0955	Received By/Stored In: Victor Hernandez	Date/Time: 9-30-09 0955
Relinquished By/Removed From:	Date/Time:	Received By/Stored In:	Date/Time:
Relinquished By/Removed From:	Date/Time:	Received By/Stored In:	Date/Time:

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) {Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238};
(2) Strontium-89,90 -- Total Sr, Isotopic Thorium {Thorium-232}, Isotopic Uranium {Uranium-233/234, Uranium-235, Uranium-238}, Isotopic Plutonium;
(3) ICP Metals - 6010 (Full List) {Aluminum, Antimony, Arsenic, Barium, Beryllium, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc}, Mercury - 7471 - (CVAA)

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab.

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-118-209 | Page 1 of 1

Collector	Wendy West
Company Contact	JOAN KESSNER
Telephone No.	373-4685
Project Coordinator	KESSNER, JH
Price Code	~~9K~~ N HS 5/8/09
Data Turnaround	45 Days
Project Designation	Columbia River Component of the RCBRA - Tissues
Sampling Location	100SA-WALA-CARCASS
SAF No.	RC-118
Ice Chest No.	AFS-04-004
Field Logbook No.	1633
COA	HESCRL 6520
Method of Shipment	FED EX
Shipped To	EBERLINE SERVICES (OAKVILLE) [✓ LIONVILLE]
Offsite Property No.	N/A
Bill of Lading/Air Bill No.	FDX# 796986375399

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage
FREEZE - MATRIX COMPOSED OF FISH

0000054

Preservation	None	None	None	None	Cool 4C	Cool 4C	None
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	G/P
No. of Container(s)	1	1	1	1	1	1	1
Volume	1500g	400g	100g	10g	250g	120g	10g
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Tritium - H3	See item (2) in Special Instructions	See item (3) in Special Instructions	Percent Water	Technetium-99

Sample No.	Matrix *	Sample Date	Sample Time							
J16XB9	OTHER SOLID	9/24/09	1430					X	X	

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From: Wendy West	Date/Time 9/24/09 1430	Received By/Stored In: EAS LOCKED STORAGE 4 Wendy West	Date/Time 9/24/09 1430
Relinquished By/Removed From: EAS LOCKED STORAGE 4	Date/Time 9/29/09 1000	Received By/Stored In: SHANNAN JOHNSON	Date/Time 9/29/09 1000
Relinquished By/Removed From: SHANNAN JOHNSON	Date/Time 9/29/09 1000	Received By/Stored In: FDX	Date/Time
Relinquished By/Removed From: FDX	Date/Time 9-30-09 0955	Received By/Stored In: Victor Hernandez	Date/Time 9-30-09 0955
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) {Americium-241, Antimony-125, Beryllium-7, Cerium-144, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238}
(2) Strontium-89,90 - Total Sr; Isotopic Thorium {Thorium-232}; Isotopic Uranium {Uranium-233/234, Uranium-235, Uranium-238}; Isotopic Plutonium
(3) ICP Metals - 6010 (Full List) {Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc}; Mercury - 7471 - (CV)

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location using custody [illegible]

Matrix *

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-118-210 Page 1 of 1

Collector Wendy West	Company Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator KESSNER, JH
Project Designation Columbia River Component of the RI/BRA - Tissues	Sampling Location 100SA-WALS-CARCASS		SAF No. RC-118
Ice Chest No. AFS-CCI-004	Field Logbook No. 1633	COA RESCRC6520	Method of Shipment FED EX
Shipped To EBERLINE SERVICES LIONVILLE	Offsite Property No. N/A		Bill of Lading/Air Bill No. FDX# 796986375399

Price Code 9K N 4/4 9609

Data Turnaround 45 Days

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage
FREEZE *MATRIX CONTAINED IN FOIL*

0000SS

Preservation	None	None	None	None	Cool 4C	Cool 4C	None			
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	G/P			
No. of Container(s)	1	1	1	1	1	1	1			
Volume	1500g	100g	100g	10g	250g	120g	10g			
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Tritium - H-3	See item (2) in Special Instructions	See item (3) in Special Instructions	Percent Moisture	Technetium-99			

Sample No.	Matrix *	Sample Date	Sample Time										
J18XC0	OTHER SOLID	9/24/09	1545					X	X				

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Wendy West	9/24/09 1545	EAS LOCKED STORAGE 4 Wendy West	9/24/09 1545
EAS LOCKED STORAGE 4	9/29/09 1000	SHANNAN JOHNSON	9/29/09 1000
SHANNAN JOHNSON	9/29/09 1000	FDX	
Fed Ex	9-30-09 0955	Victor Kreusler	9-30-09 0955

SPECIAL INSTRUCTIONS

(1) Gamma Spec - {Full List} {Americium-241, Antimony-125, Beryllium-7, Cerium-144, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238}

(2) Strontium-89,90 - Total Sr; Isotopic Thorium {Thorium-232}; Isotopic Uranium {Uranium-233/234, Uranium-235, Uranium-238}; Isotopic Plutonium

(3) ICP Metals - 6010 {Full List} {Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc}; Mercury - 7471 (CV)

Sampler unavailable to remove samples
from controlled storage. Shipper removed
samples from storage location taking custody
[illegible]

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION — Received By — Title — Date/Time

FINAL SAMPLE DISPOSITION — Disposal Method — Disposed By — Date/Time

WCH-EE-011

[illegible]

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-118-121

Page 1 of 1

Collector: Wendy West

Company Contact: JOAN KESSNER

Telephone No.: 375-4688

Project Coordinator: KESSNER, JE

Price Code: 9K N

Data Turnaround: 45 Days

Project Designation: Columbia River Component of the RCBRA - Tissues

Sampling Location: 300SA-WALL FILLET

SAF No.: RC-118

Ice Chest No.: AF-S-04-004

Field Logbook No.: 1693

COA: BESCRC6520

Method of Shipment: FED EX

Shipped To: EBERLINE SERVICES [✓ CONVIRO]

Offsite Property No.: N/A

Bill of Lading/Air Bill No.: FDX# 796986375399

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

FREEZE MATRIX COMPOSITED ON CBSO

950000

Preservation	None	None	None	None	Cool 4C	Cool 4C	None			
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	G/P			
No. of Container(s)	1	1	1	1	1	1	1			
Volume	2500g	100g	100g	50g	250g	120g	10g			
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Tritium - H3	See item (2) in Special Instructions	See item (3) in Special Instructions	[illegible]	Technetium-99			

Sample No.	Matrix *	Sample Date	Sample Time										
J18XD1	OTHER SOLID	9/24/09	0900					X	X				

CHAIN OF POSSESSION	Date/Time	Sign/Print Names Received By/Stored In	Date/Time
Relinquished By/Removed From: Wendy West	9/24/09 0900	Received By/Stored In: EAS LOCKED STORAGE Wendy West	9/24/09 0900
Relinquished By/Removed From: EAS LOCKED STORAGE	9/29/09 1022	Received By/Stored In: SHANNAN JOHNSON	9/29/09 1022
Relinquished By/Removed From: SHANNAN JOHNSON	9/29/09 1120	Received By/Stored In: FDX	
Relinquished By/Removed From: FedEx	9-30-09 0755	Received By/Stored In: Victor Hernandez	9-30-09 0957
Relinquished By/Removed From		Received By/Stored In	
Relinquished By/Removed From		Received By/Stored In	

SPECIAL INSTRUCTIONS

(1) Gamma Spec - [illegible] {Americium-241, Antimony-125, Beryllium-7, Cerium-144, Cesium-134, 137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238};

(2) Strontium-89,90 -- Total Sr, Isotopic Thorium {Thorium-232}, Isotopic Uranium {Uranium-233/234, Uranium-235, Uranium-238}, Isotopic Plutonium;

(3) ICP Metals - 6010 (Full List) {Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc}, Mercury - 7471 - (CV)

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab.

Matrix *
S = Soil
SE = Sediment
SO = Solid
SL = Sludge
W = Water
O = Oil
A = Air
DS = Drum Solids
DL = Drum Liquids
T = Tissue
WI = Wipe
L = Liquid
V = Vegetation
X = Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

Washington Closure Hanford	**CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST**	RC-118-222	Page 1 of 1
Collector Wendy West	**Company Contact** JOAN KESSNER **Telephone No.** 373-4688	**Project Coordinator** KESSNER, JH	**Price Code** 9K N 1/6 7/30/09 **Data Turnaround** 45 Days
Project Designation Columbia River Component of the RCBRA - Tissues	**Sampling Location** RCSA-WALL, FILLET	**SAF No.** RC-118	
Ice Chest No. RFS-09-004	**Field Logbook No.** 1633 **COA** BESCRC0520	**Method of Shipment** FED EX	
Shipped To EBERLINE SERVICES (RICHMOND/OAK RIDGE)[✓ RICHLAND]	**Offsite Property No** N/A	**Bill of Lading/Air Bill No.** FDX# 796986375399	

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage
FREEZE "MATRIX CONSISTS OF FISH"

Preservation	None	None	None	None	Cool 4C	Cool 4C	None			
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	G/P			
No. of Container(s)	1	1	1	1	1	1	1			
Volume	1500g	10g	100g	10g	250g	125g	10g			
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Tritium - H3	See item (2) in Special Instructions	See item (3) in Special Instructions	Pesticides PCBs	Technetium-99			

Sample No.	Matrix *	Sample Date	Sample Time										
J1BXD2	OTHER SOLID	9/24/09	0945					X	X				

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From Wendy West	Date/Time 0945 9/24/09	Received By/Stored In Wendy West FAS LOCKED STORAGE4	Date/Time 0945 9/24/09
Relinquished By/Removed From FAS LOCKED STORAGE4	Date/Time 9/29/09 1000	Received By/Stored In SHANNAN JOHNSON	Date/Time 9/29/09 1000
Relinquished By/Removed From SHANNAN JOHNSON	Date/Time 9/29/09 1000	Received By/Stored In FDX	Date/Time
Relinquished By/Removed From FDX	Date/Time 9-30-09 0955	Received By/Stored In Victor Hernandez	Date/Time 9-30-09 0955
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) {Americium-241, Antimony-125, Beryllium-7, Cerium-144, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238};
(2) Strontium-89,90 -- Total Sr; Isotopic Thorium {Thorium-232}; Isotopic Uranium {Uranium-233/234, Uranium-235, Uranium-238}; Isotopic Plutonium
(3) ICP Metals - 6010 (Full List) {Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc}; Mercury - 7471 - (CV);

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Washington Closure Hanford | **CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST** | RC-118-223 | Page 1 of 1

Collector Wendy West	Company Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator KESSNER, JH
Project Designation Columbia River Component of the RCBRA - Tissues	Sampling Location 300SA-WALL FILLET		SAF No. RC-118
Ice Chest No. NFS-L4-004	Field Logbook No. 1603	COA BESCRC6520	Method of Shipment FEDEX
Shipped To EBERLINE SERVICES [✓ DONVILLE]	Offsite Property No. N/A		Bill of Lading/Air Bill No. FDX# 796986375399

Price Code ~~9L~~ 4 [illegible]

Data Turnaround: 45 Days

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage
FREEZE, DIRTY COMPOSITE SAMPLES

0000058

Preservation	None	None	None	None	Cool 4C	Cool 4C	None
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	G/P
No. of Container(s)	1	1	1	1	1	1	1
Volume	1500g	10g	10g	40g	25g	120g	40g
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Tritium - H3	See item (2) in Special Instructions	See item (3) in Special Instructions	Pesticides 8081	Technetium-99

Sample No.	Matrix *	Sample Date	Sample Time							
J18XC3	OTHER SOLID	9/24/09	1030				X	X		

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Wendy West	9/24/09 0930	Wendy West PAS LOCKED STORAGE 4	9/24/09 0930
PAS LOCKED STORAGE 4	9/24/09 1000	SHANNAN JOHNSON	9/24/09 1000
SHANNAN JOHNSON	9/29/09 1000	FDX	
FDX	9-30-09 0955	[illegible]	9-30-09 0955

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) {Americium-241, Antimony-125, Beryllium-7, Cerium-144, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238}
(2) Strontium-89,90 - Total Sr; Isotopic Thorium {Thorium-232}; Isotopic Uranium {Uranium-233/234, Uranium-235, Uranium-238}; Isotopic Plutonium
(3) ICP Metals - 6010 (Full List) {Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc}; Mercury - 7471 - (CV)

Sampler unavailable to remove samples
from controlled storage. Shipper removed
samples from storage location taking custody
of samples for shipment to lab.

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Washington Closure Hanford	**CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST**	RC-118-224	Page 1 of 1

Collector Wendy West	Company Contact JOAN KESSNER	Telephone No. 375-4698	Project Coordinator KESSNER, JH	Price Code 9K N MS 5/18/09
Project Designation Columbia River Component of the RCBRA - Tissues	Sampling Location 300SA-WALA, FILLET		SAF No. RC-118	Data Turnaround **45 Days**
Ice Chest No. NFS-09-004	Field Logbook No. 1633	COA BESCRC6530	Method of Shipment FED EX	
Shipped To EBERLINE SERVICES (LIONVILLE)	Offsite Property No. N/A		Bill of Lading/Air Bill No. FDX# 796986375399	

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage
[illegible]

Preservation	None	None	None	None	Cool 4C	Cool 4C	None			
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	G/P			
No. of Container(s)	1	2	1	1	1	1	1			
Volume	1500g	100g	10g	10g	250g	125g	10g			
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Tritium - H3	See item (2) in Special Instructions	See item (3) in Special Instructions	[illegible]	Technetium-99			

Sample No.	Matrix *	Sample Date	Sample Time										
J18XD4	OTHER SOLID	9/25/09	1400					X	X				

CHAIN OF POSSESSION	Date/Time	Sign/Print Names	Date/Time
Relinquished By/Removed From Wendy West	9/25/09 1400	Received By/Stored In Wendy West EAS LOCKED STORAGE	9/25/09 1400
Relinquished By/Removed From EAS LOCKED STORAGE	9/29/09 1020	Received By/Stored In SHANNAN JOHNSON	9/29/09 1020
Relinquished By/Removed From SHANNAN JOHNSON	9/29/09 1020	Received By/Stored In FDX	
Relinquished By/Removed From FDX	9-30-09 0855	Received By/Stored In Victor Hernandez	9-30-09 0855
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) (Americium-241, Antimony-125, Beryllium-7, Cerium-144, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238)
(2) Strontium-89,90 - Total Sr; Isotopic Thorium (Thorium-228, ...); Isotopic Uranium (Uranium-233/234, Uranium-235, Uranium-238); Isotopic Plutonium
(3) ICP Metals - 6010 (TAL) (Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc); Mercury - 7471 (CVA)

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab.

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

Washington Closure Hanford | **CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST** | RC-118-225 | Page 1 of 1

Collector Wendy West	Company Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator KESSNER, JH
Project Designation Columbia River Component of the RCBRA - Tissues	Sampling Location 300SA-WALS, FILLET		SAF No. RC-118
Ice Chest No. AFS-04-004	Field Logbook No. 1633	COA BESCRC6520	Method of Shipment FED EX
Shipped To EBERLINE SERVICES (LIONVILLE)	Offsite Property No. N/A		Bill of Lading/Air Bill No. FDX# 796986375399

Price Code 9K N 9/25/09 | Data Turnaround 45 Days

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage
FREEZE MATRIX COMPOSED OF LIMIT

Preservation	None	None	None	None	Cool 4C	Cool 4C	None			
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	G/P			
No. of Container(s)	1	1	1	1	1	1	1			
Volume	1500g	100g	100g	10g	250g	120g	10g			
SAMPLE ANALYSIS	Gamma Spec (1) - See Special Instructions	Carbon-14	Tritium - H3	Strontium (2) - See Special Instructions	Special Analyses (3) - See Special Instructions	Percent Solids	Technetium-99			

Sample No.	Matrix *	Sample Date	Sample Time										
J18KD5	OTHER SOLID	9/25/09	1630					X	X				

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Wendy West	9/25/09 1630	Wendy West FAS LOCKED STORAGE 4	9/25/09 1630
FAS LOCKED STORAGE 4	9/29/09 1000	SHANNAN JOHNSON	9/29/09 1000
SHANNAN JOHNSON	9/29/09 1000	FDX	
FedEx	9-30-09 0955	Victor Hernandez	9-30-09 0955

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) {Americium-241, Antimony-125, Beryllium-7, Cerium-144, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238}
(2) Strontium-89,90 -- Total Sr; Isotopic Thorium {Thorium-232}; Isotopic Uranium {Uranium-233/234, Uranium-235, Uranium-238}; Isotopic Plutonium
(3) ICP Metals - 6010 (Full List) {Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Titanium, Vanadium, Zinc}; Mercury - 7471 - (CV)

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-118-241

Page 1 of 1

Collector: Wendy West

Company Contact: JOAN KESSNER

Telephone No.: 375-4685

Project Coordinator: KESSNER, JH

Price Code: 9K N JM 9/24/09

Data Turnaround: 45 Days

Project Designation: Columbia River Component of the RCBRA - Tissues

Sampling Location: 100SA-WALL CARCASS

SAF No.: RC-118

Ice Chest No.: NES-CH-004

Field Logbook No.: EL-1653

COA: BESCRC0520

Method of Shipment: FEDEX

Shipped To: EBERLINE SERVICES (LIONVILLE)

Offsite Property No.: N/A

Bill of Lading/Air Bill No.: FDX# 796986375399

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage: FREEZE IMMEDIATELY UPON [illegible]

E90000

Preservation	None	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]			
Type of Container	G/P	G/P	G/P	G/P	G/P	G/P	G/P			
No. of Container(s)	1	1	1	1	1	1	1			
Volume	1500g	100g	100g	10g	250g	125g	10g			
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Tritium-H3	See item (2) in Special Instructions	See item (3) in Special Instructions	[illegible]	[illegible]			

Sample No.	Matrix *	Sample Date	Sample Time										
J18XH1	OTHER SOLID	9/24/09	0915					X	X				

CHAIN OF POSSESSION	Date/Time	Sign/Print Names	Date/Time
Relinquished By/Removed From Wendy West	0915 9/24/09	Received By/Stored In EAS LOCKED STORAGE Wendy West	0915 9/24/09
Relinquished By/Removed From EAS LOCKED STORAGE	9/24/09 1000	Received By/Stored In SHANNAN JOHNSON	9/24/09 1000
Relinquished By/Removed From SHANNAN JOHNSON	9/24/09 1000	Received By/Stored In FDX	
Relinquished By/Removed From	9-30-09 0755	Received By/Stored In Heather Hellwacher	9-30-09 0755
Relinquished By/Removed From		Received By/Stored In	
Relinquished By/Removed From		Received By/Stored In	

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (GEA) {Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238}

(2) Strontium-89,90 - Total Sr; Isotopic Thorium {Thorium-228, Thorium-230, Thorium-232}; Isotopic Uranium {Uranium-233/234, Uranium-235, Uranium-238}; Isotopic Plutonium

(3) ICP Metals - 6010 (Hold) {Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc}; Mercury - 7471 - (HOLD)

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment [illegible]

Matrix * [illegible]

LABORATORY SECTION — Received By: — Title: — Date/Time:

FINAL SAMPLE DISPOSITION — Disposal Method: — Disposed By: — Date/Time:

WCH-EE-011

Washington Closure Hanford	**CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST**	RC-118-242	Page 1 of 1
Collector Wendy West	Company Contact JOAN KESSNER Telephone No. 375-4688	Project Coordinator KESSNER, JH	Price Code ~~9A~~ N WO [illegible]
Project Designation Columbia River Component of the RC IIRA - Tissues	Sampling Location 300SA-WALE, CARCASS	SAF No. RC-118	Data Turnaround 45 Days
Ice Chest No. AFS-04-004	Field Logbook No. EL-1633 COA HESPRC6520	Method of Shipment FED EX	
Shipped To EBERLINE SERVICES (RICHMOND)	Offsite Property No. N/A	Bill of Lading/Air Bill No. FDX# 796986375399	

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage
FREEZE [illegible]

0000062

Preservation		None	None	None	None	Cool 4C	Cool 4C	None		
Type of Container		G/P	G/P	G/P	G/P	G/P	[illegible]	G/P		
No. of Container(s)		1	1	1	1	1	1	1		
Volume		50g	400g	150g	10g	250g	125g	10g		
SAMPLE ANALYSIS		See item (1) in Special Instructions	Carbon-14	[illegible]	See item (2) in Special Instructions	See item (3) in Special Instructions	[illegible]	Technetium-99		
Sample No.	**Matrix *** / **Sample Date** / **Sample Time**									
J18X112	OTHER SOLID / 9/24/09 / 1000					X	X			

CHAIN OF POSSESSION	Date/Time	Sign/Print Names	Date/Time
Relinquished By/Removed From Wendy West	1009 9/24/09	Received By/Stored In EAS LOCKED STORAGE 4 Wendy West	1009 9/24/09
Relinquished By/Removed From EAS LOCKED STORAGE 4	9/29/09 1000	Received By/Stored In SHANNAN JOHNSON	9/29/09 [illegible]
Relinquished By/Removed From SHANNAN JOHNSON	9/29/09 1200	Received By/Stored In FDX	
Relinquished By/Removed From Fed Ex	9-30-09 0955	Received By/Stored In [illegible]	9-30-09 0955
Relinquished By/Removed From		Received By/Stored In	
Relinquished By/Removed From		Received By/Stored In	

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) {Americium-241, Antimony-125, [illegible], Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238}
(2) Strontium-89,90 -- Total Sr, Isotopic Thorium {Thorium-232}, Isotopic Uranium {Uranium-233/234, Uranium-235, Uranium-238}, Isotopic Plutonium
(3) ICP Metals - 6010 (Full List) {Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc}, Mercury - 7471 - (CV)

Sampler unavailable to remove samples
from controlled storage. Shipper removed
samples from storage location using custody
of samples for shipment to lab

Matrix *
[illegible]

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-118-243	Page 1 of 1

Collector Wendy West	Company Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator KESSNER, JH
Project Designation Columbia River Component of the RCBRA - Tissues	Sampling Location 300SA-WALL CARCASS		SAF No. RC-118
Ice Chest No. AFS-04-004	Field Logbook No. EL-1611	COA DESCRC6520	Method of Shipment FED EX
Shipped To EBERLINE SERVICES (LIONVILLE)	Offsite Property No. N/A		Bill of Lading/Air Bill No. FDX# 796986375399

Price Code 9K N WJ 5/1/09

Data Turnaround 45 Days

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage
FREEZE - [illegible] COMPOSITED [illegible]

Preservation	None	None	None	None	Cool 4C	Cool 4C	None
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	G/P
No. of Container(s)	1	1	1	1	1	1	1
Volume	1100g	100g	100g	10g	250g	120g	10g
SAMPLE ANALYSIS	Gamma Spec (1) - See Special Instructions	Carbon-14	Tritium - H3	Strontium (2) - See Special Instructions	ICP Metals (3) - See Special Instructions	Percent Moisture	Technetium-99

Sample No.	Matrix *	Sample Date	Sample Time							
J18XH3	OTHER SOLID	9/24/09	1045					X	X	

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From Wendy West	Date/Time 9/24/09 1045	Received By/Stored In EAS LOCKED STORAGE 4	Date/Time 9/24/09 1045
Relinquished By/Removed From EAS LOCKED STORAGE 4	Date/Time 9/29/09 1020	Received By/Stored In SHANNAN JOHNSON	Date/Time 9/29/09 1020
Relinquished By/Removed From SHANNAN JOHNSON	Date/Time 9/29/09 [illegible]	Received By/Stored In FDX	Date/Time
Relinquished By/Removed From FDX	Date/Time 9-30-09 0955	Received By/Stored In [illegible]	Date/Time 9-30-09 0955
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) {Americium-241, Antimony-125, Beryllium-7, Cerium-144, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238}

(2) Strontium-89,90 - Total Sr; Isotopic Thorium {Thorium-232}; Isotopic Uranium {Uranium-233/234, Uranium-235, Uranium-238}; Isotopic Plutonium

(3) ICP Metals - 6010 (Full List) {Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Titanium, Vanadium, Zinc}; Mercury - 7471 - (CV)

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab.

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-118-244 | Page 1 of 1

Collector Wendy West	Company Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator KESSNER, JH
Project Designation Columbia River Component of the RCBRA - Tissues	Sampling Location 300SA-WALL CARCASS		SAF No. RC-118
Ice Chest No. ABS-09-004	Field Logbook No. EL-1633	COA HESCRC6570	Method of Shipment FED EX
Shipped To EBERLINE SERVICES (JOSVILLE)	Offsite Property No. N/A		Bill of Lading/Air Bill No. FDX 796986375399

Price Code 9K N 4/05/09

Data Turnaround 45 Days

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

[illegible]

0900064

Preservation	None	None	None	None	Cool 4C	Cool 4C	None
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	G/P
No. of Container(s)	1	1	1	1	1	1	1
Volume	1500g	100g	100g	10g	25g	125g	10g
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Tritium - H3	See item (2) in Special Instructions	See item (3) in Special Instructions	[illegible]	Technetium-99

Sample No.	Matrix *	Sample Date	Sample Time							
J18XH4	OTHER SOLID	9/25/09	1415					X	X	

CHAIN OF POSSESSION		Sign/Print Names	
Relinquished By/Removed From Wendy West	Date/Time 1415 9/25/09	Received By/Stored In Wendy West EAS LOCKED STORAGE	Date/Time 1415 9/25/09
Relinquished By/Removed From EAS LOCKED STORAGE	Date/Time 9/29/09 1020	Received By/Stored In SHANNAN JOHNSON	Date/Time 9/29/09 1020
Relinquished By/Removed From SHANNAN JOHNSON	Date/Time 9/29/09 1020	Received By/Stored In FDX	Date/Time
Relinquished By/Removed From	Date/Time 9-30-09 0955	Received By/Stored In Victor Hernandez	Date/Time 9-30-09 0955
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time

SPECIAL INSTRUCTIONS

(1) Gamma Spec - Add-on (Full List) {Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238}
(2) Strontium-89,90 - Total Sr; Isotopic Thorium {Thorium-232}; Isotopic Uranium {Uranium-233/234, Uranium-235, Uranium-238}; Isotopic Plutonium
(3) ICP Metals - 6010 (Full List) {Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Titanium, Vanadium, Zinc}; Mercury - 7471 - (CV)

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab

Matrix *

[illegible]

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-118-245 Page 1 of 1

Collector Wendy West	Company Contact JOAN KESSNER Telephone No. 375-4683	Project Coordinator KESSNER, JR	Price Code 9K N 10 5/09 Data Turnaround 45 Days
Project Designation Columbia River Component of the RCBRA - Tissues	Sampling Location 300SA-WALS CARCASS	SAF No. RC-118	
Ice Chest No. RFS-CH-004	Field Logbook No. EL-1655 COA BESCRC6520	Method of Shipment FED EX	
Shipped To EBERLINE SERVICES [✓ LIONVILLE]	Offsite Property No. N/A	Bill of Lading/Air Bill No. FDX# 796996375399	

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage
FREEZE - MATRIX COMPOSED OF FISH

Preservation	None	None	None	Cool	Cool 4C	Cool 4C	None			
Type of Container	G/P	G/P	G/P	G/P	G/P	G	G/P			
No. of Container(s)	1	1	1	1	1	1	1			
Volume	1500g	200g	100g	10g	250g	100g	40g			
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Tritium - H3	See item (2) in Special Instructions	See item (3) in Special Instructions	Percent Ash	Technetium-99			

Sample No.	Matrix *	Sample Date	Sample Time										
J18XH5	OTHER SOLID	9/25/09	1700					X	X				

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Wendy West	9/25/09 1709	Wendy West EAS LOCKED STORAGE 4	9/25/09 1710
EAS LOCKED STORAGE 4	9/29/09 1000	SHANNAN JOHNSON	9/29/09 1000
SHANNAN JOHNSON	9/29/09 1100	FDX	
FedEx	9-30-09 0955	Victor Hernandez	9-30-09 0955

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) {Americium-241, Antimony-125, Beryllium-7, Cerium-144, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238}
(2) Strontium-89,90 - Total Sr; Isotopic Thorium {Thorium-232}; Isotopic Uranium {Uranium-233/234, Uranium-235, Uranium-238}; Isotopic Plutonium
(3) ICP Metals - 6010 (Full List) {Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc}; Mercury - 7471 - (CV)

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location, taking custody of samples for shipment to lab

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-118-1073	Page 1 of 1

Collector Wendy Ward	Company Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator KESSNER, JH
Project Designation Columbia River Component of the RCBRA - Tissues	Sampling Location 100SA-WAL 6 FILLET		SAF No. RC-118
Ice Chest No. APS-04-004	Field Logbook No. EL-1658	COA [illegible]	Method of Shipment FED EX
Shipped To EBERLINE SERVICES (LIONVILLE)	Offsite Property No. N/A		Bill of Lading/Air Bill No. FDX# 796986375399

Price Code 9K

Data Turnaround 45 Days

POSSIBLE SAMPLE HAZARDS/REMARKS

N/A

Special Handling and/or Storage

FREEZE [illegible]

Preservation	None	None	None	None	Cool 4C	Cool 4C	None
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	G/P
No. of Container(s)	1	1	1	1	1	1	1
Volume	1500g	100g	100g	10g	250g	10g	10g
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Tritium - H3	See item (2) in Special Instructions	See item (3) in Special Instructions	Pesticides 8081	Technetium-99

Sample No.	Matrix *	Sample Date	Sample Time							
J19746	OTHER SOLID	9/24/09	1115					X	X	

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Wendy Ward	9/24/09 1115	FAS LOCKED STORAGE	9/24/09 1115
FAS LOCKED STORAGE	9/29/09 1000	SHANNAN JOHNSON	9/29/09 1000
SHANNAN JOHNSON	9/29/09 1006	FDX	
	9-30-09 0955	Kurt Hecklinger	9-30-09 0955

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) {Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238}
(2) Strontium-89,90 - Total Sr, Isotopic Thorium {Thorium-232}, Isotopic Uranium {Uranium-233/234, Uranium-235, Uranium-238}, Isotopic Plutonium
(3) ICP Metals - 6010 (Full List) {Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc}, Mercury - 7471 - (CV)

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab

Matrix *
[illegible]

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Washington Closure Hanford	**CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST**	RC-118-1075 Page 1 of 1

Collector Wendy Wert	Company Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator KESSNER, JH
Project Designation Columbia River Component of the RCBRA - Tissues	Sampling Location HRSA-WAL 6 CARCASS		SAF No. RC-118
Ice Chest No. APS-04-004	Field Logbook No. EL-1618	COA BESCRC652C	Method of Shipment FED EX
Shipped To EBERLINE SERVICES (LIONVILLE)	Offsite Property No. N/A		Bill of Lading/Air Bill No. FDX 796986375399

Price Code 9K N 10/5/09   Data Turnaround 45 Days

POSSIBLE SAMPLE HAZARDS/REMARKS

N/A

Special Handling and/or Storage

FREEZE [illegible]

Preservation	None	None	None	None	Cool 4C	Cool 4C	None
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	G/P
No. of Container(s)	1	1	1	1	1	1	1
Volume	1500g	10g	100g	15g	450g	120g	30g
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Tritium - H3	See item (2) in Special Instructions	See item (3) in Special Instructions	[illegible]	[illegible]

Sample No.	Matrix *	Sample Date	Sample Time							
J19748	OTHER SOLID	9/24/09	1130					X	X	

CHAIN OF POSSESSION   Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Wendy Wert	9/24/09 1130	Wendy Wert / FAS LOCKED STORAGE 4	9/24/09 1130
FAS LOCKED STORAGE 4	9/24/09 1020	SHANNAN JOHNSON	9/24/09 1020
SHANNAN JOHNSON	9/24/09 1020	FDX	
	9-30-09 0955	Heather Alexander	9-30-09 0955

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) {Americium-241, Antimony-125, Beryllium-7, Cerium-144, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238}

(2) Strontium-89,90 -- Total Sr; Isotopic Thorium {Thorium-232}; Isotopic Uranium {Uranium-233/234, Uranium-235, Uranium-238}; Isotopic Plutonium

(3) ICP Metals - 6010 (Full List) {Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc} [illegible] 7471 - (CV)}

Samples unavailable to recover partial
from custody storage. Shipper removed
samples from storage location taking custody
of samples for shipment to lab

Matrix * [illegible]

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-118-106

Page 1 of 1

Collector: Wendy West

Company Contact: JOAN KESSNER

Telephone No.: 375-4688

Project Coordinator: KESSNER, JH

Price Code: ~~9K~~ N

Data Turnaround: 45 Days

Project Designation: Columbia River Component of the RCBRA - Tissues

Sampling Location: 100SA-WALL-FILLET

SAF No.: RC-118

AJO 5Sep09

Ice Chest No.: AFS-09-004

Field Logbook No.: [illegible]

COA: HLSCRC6520

Method of Shipment: FED EX

Shipped To: LIONVILLE SERVICES (LIONVILLE)

Offsite Property No.: N/A

Bill of Lading/Air Bill No.: FDX# 796986375399

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage: FREEZE MATRIX COMPOSED OF FISH

		Preservation	None	None	None	None	Cool 4C	Cool 4C	None
		Type of Container	G/P	G/P	G/P	G/P	G/P	aG	G/P
		No. of Container(s)	1	1	1	1	1	1	1
		Volume	1500g	100g	200g	10g	250g	20g	10g
SAMPLE ANALYSIS			See item (1) in Special Instructions	Carbon-14	[illegible]	See item (2) in Special Instructions	See item (3) in Special Instructions	Pesticides - 8081	Technetium-99

Sample No.	Matrix *	Sample Date	Sample Time										
J1BXB6	OTHER SOLID	9/24/09	1300					X	X				

R300000

CHAIN OF POSSESSION

Sign/Print Names

Relinquished By/Removed From: Wendy West	Date/Time: 9/24/09 1400	Received By/Stored In: FAS LOCKED STORAGE Wendy West	Date/Time: 9/24/09 1400
Relinquished By/Removed From: FAS LOCKED STORAGE	Date/Time: 9/29/09 1000	Received By/Stored In: SHANNAN JOHNSON	Date/Time: 9/29/09 1000
Relinquished By/Removed From: SHANNAN JOHNSON	Date/Time: 9/29/09 1000	Received By/Stored In: FDX	Date/Time
Relinquished By/Removed From: FDX	Date/Time: 9-30-09 0955	Received By/Stored In: VICTOR HERNANDEZ	Date/Time: 9-30-09 0955
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) {Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238

(2) Strontium-89,90 -- Total Sr, Isotopic Thorium {Thorium-232}, Isotopic Uranium {Uranium-233/234, Uranium-235, Uranium-238}, Isotopic Plutonium

(3) ICP Metals - 6020 (Full List) {Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc}, Mercury - 7471 - (CVAA)

Sampler cleared/use to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab

Matrix *

[illegible]

LABORATORY SECTION | Received By | Title | Date/Time

FINAL SAMPLE DISPOSITION | Disposal Method | Disposed By | Date/Time

WCH-EE-011

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-118-187	Page 1 of 1

Collector Wendy Wert	Company Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator KESSNER, JH
Project Designation Columbia River Component of the RCBRA - Tissues	Sampling Location 100SA-WAL2-FILLL1		SAF No. RC-118
Ice Chest No. AES-04-004	Field Logbook No. 1693	COA BPSCRC6520	Method of Shipment FED EX
Shipped To ESI RE INC SERVICES (KNOXVILLE)	Offsite Property No. N/A		Bill of Lading/Air Bill No. FDX # 796986375399

Price Code 9K N ~~~~ [illegible] 5/9/09

Data Turnaround 45 Days

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage
FREEZE MATRIX COMPOSED OF FISH

Preservation	None	None	None	None	Cool 4C	Cool 4C	None			
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	G/P			
No. of Container(s)	1	1	1	1	1	1	1			
Volume	1500g	100g	100g	10g	250g	120g	10g			
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Tritium - H3	See item (2) in Special Instructions	See item (3) in Special Instructions	Pesticides 8081	Technetium-99			

Sample No.	Matrix *	Sample Date	Sample Time										
J18X87	OTHER SOLID	9/25/09	~~1100~~ 1100					X	X				

CHAIN OF POSSESSION	Date/Time	Sign/Print Names	Date/Time
Relinquished By/Removed From Wendy Wert	1100 9/25/09	Received By/Stored In Wendy Wert EAS LOCKED STORAGE	1100 9/25/09
Relinquished By/Removed From EAS LOCKED STORAGE	9/29/09 1022	Received By/Stored In SHANNAN JOHNSON	9/29/09 1022
Relinquished By/Removed From SHANNAN JOHNSON	9/29/09 1023	Received By/Stored In FDX	
Relinquished By/Removed From FedEx	9-30-09 0935	Received By/Stored In	9-30-09 0935
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) (Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238)
(2) Strontium-89,90 -- Total Sr, Isotopic Thorium (Thorium-232), Isotopic Uranium (Uranium-233/234, Uranium-235, Uranium-238), Isotopic Plutonium
(3) ICP Metals - 6010 (Full List) (Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc), Mercury - 7471 - (CV)

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab.

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Washington Closure Hanford	**CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST**	RC-118-189	Page 1 of 1

Collector Wendy West	Company Contact JOAN KESSNER	Telephone No. 375-4658	Project Coordinator KESSNER, JH
Project Designation Columbia River Component of the RCBRA - Tissue	Sampling Location 100SA-WALL-FILLET		SAF No. RC-118
Ice Chest No. NFS-09-004	Field Logbook No. 1611	COA HESCRC0520	Method of Shipment FED EX
Shipped To EBERLINE SERVICES - KNOXVILLE	Offsite Property No. N/A		Bill of Lading/Air Bill No. FDX# 796986375399

Price Code 9K N

Data Turnaround 45 Days

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage
FREEZE MATRIX COMPOSED OF FISH

0240000

Preservation	None	None	None	None	Cool 4C	Cool 4C	None
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	G/P
No. of Container(s)	1	1	1	1	5	1	1
Volume	1500g	100g	100g	10g	250g	250g	10g
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Tritium - H3	See item (2) in Special Instructions	See item (3) in Special Instructions	Pesticides 8081	Technetium-99

Sample No.	Matrix *	Sample Date	Sample Time							
J18X89	OTHER SOLID	9/24/09	1400					X	X	

CHAIN OF POSSESSION	Date/Time	Sign/Print Names	Date/Time
Relinquished By/Removed From Wendy West	9/24/09 1400	Received By/Stored In FAS LOCKED STORAGE Wendy West	9/24/09 1400
Relinquished By/Removed From FAS LOCKED STORAGE	9/29/09 1020	Received By/Stored In SHANNAN JOHNSON	9/29/09 1020
Relinquished By/Removed From SHANNAN JOHNSON	9/29/09 1020	Received By/Stored In FDX	
Relinquished By/Removed From FDX	9-30-09 0955	Received By/Stored In	9-30-09 0955
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) {Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238}
(2) Strontium-89,90 – Total Sr; Isotopic Thorium {Thorium-232}, Isotopic Uranium {Uranium-233/234, Uranium-235, Uranium-238}, Isotopic Plutonium
(3) ICP Metals - 6010 (Full List) {Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc}, Mercury - 7471 - (CV)

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody

Matrix *
S = Soil
SE = Sediment
SO = Solid
SL = Sludge
W = Water
O = Oil
A = Air
DS = Drum Solids
DL = Drum Liquids
T = Tissue
WI = Wipe
L = Liquid
V = Vegetation
X = Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-118-188 | Page 1 of 1

Collector: Wendy West	Company Contact: JOAN KESSNER Telephone No.: 375-4688	Project Coordinator: KESSNER, JH	Price Code: 9K N [illegible] Data Turnaround: 45 Days
Project Designation: Columbia River Component of the RCBRA - Tissues	Sampling Location: 100SA-WALS-FIELD	SAF No.: RC-118	
Ice Chest No.: AES-04-004	Field Logbook No.: 1611 COA: DESCRC5520	Method of Shipment: FED EX	
Shipped To: EBERLINE SERVICES (LIONVILLE)	Offsite Property No.: N/A	Bill of Lading/Air Bill No.: FDX # 796986375399	

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage
[illegible]

T200071

Preservation	None	None	None	None	Cool 4C	Cool 4C	None			
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	G/P			
No. of Container(s)	1	1	1	1	1	1	1			
Volume	1500g	40g	100g	10g	250g	120g	10g			
SAMPLE ANALYSIS	See Item (1) in Special Instructions	Carbon-14	Tritium - H3	See Item (2) in Special Instructions	See Item (3) in Special Instructions	[illegible]	Technetium-99			

Sample No.	Matrix *	Sample Date	Sample Time										
J18X80	OTHER SOLID	9/25/09	1200					X	X				

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Wendy West	9/25/09 1200	EAS LOCKED STORAGE 4	9/25/09 1200
EAS LOCKED STORAGE 4	9/29/09 1000	SHANNAN JOHNSON	9/29/09 1000
SHANNAN JOHNSON	9/29/09 1000	FDX	
	9-30-09 0955	Victor Hernandez	9-30-09 0955

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) {Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238}
(2) Strontium-89,90 - Total Sr; Isotopic Thorium {Thorium-228, Thorium-230, Thorium-232}; Isotopic Uranium {Uranium-233/234, Uranium-235, Uranium-238}; Isotopic Plutonium
(3) ICP Metals - 6010 (Full List) {Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc}; Mercury - 7471 - (CV)

Sampler unavailable to remove samples
from controlled storage. Shipper removed
samples from storage location taking custody
of samples for shipment to lab

Matrix *
[illegible]

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-118-190

Page 1 of 3

Collector: Woody West

Company Contact: JOAN KESSNER

Telephone No.: 375-4686

Project Coordinator: KESSNER, JH

Price Code: ~~9K~~ AJ 1/18 5/1/09

Data Turnaround: 45 Days

Project Designation: Columbia River Component of the RCRA - Tissues

Sampling Location: 100SA WALS-FILLET

SAF No.: RC-118

Ice Chest No.: AB-(U)-004

Field Logbook No.: 1655

COA: RESCRC6520

Method of Shipment: FED EX

Shipped To: EBERLINE SERVICES [✓ LIONVILLE]

Offsite Property No.: N/A

Bill of Lading/Airbill No.: FDX# 796986375399

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage: FREEZE [illegible]

Preservation	None	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]			
Type of Container	G/P	G/P	G/P	G/P	G/P	[illegible]	[illegible]			
No. of Container(s)	1	1	1	1	1	1	1			
Volume	1500g	100g	600g	10g	250g	120g	1g			
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Tritium - H3	See item (2) in Special Instructions	See item (3) in Special Instructions	[illegible]	[illegible]			

Sample No.	Matrix *	Sample Date	Sample Time										
J18X90	OTHER SOLID	9/24/09	1515					X	X				

CHAIN OF POSSESSION Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Woody West	1515 9/24/09	FAS LOCKED STORAGE 4 Woody West	1515 9/24/09
FAS LOCKED STORAGE 4	9/29/09 1000	SHANNAN JOHNSON	9/29/09 1000
SHANNAN JOHNSON	9/29/09 1020	FOX	
[illegible]	9-30-09 0955	[illegible]	9-30-09 0955

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) [Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238];
(2) Strontium-89,90 -- Total Sr; Isotopic Thorium [Thorium-232]; Isotopic Uranium [Uranium-233/234, Uranium-235, Uranium-238]; Isotopic Plutonium
(3) ICP Metals - 6010 (Full List) [Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc]; Mercury - 7471 - (CV)

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody

Matrix *

LABORATORY SECTION | Received By | Title | Date/Time

FINAL SAMPLE DISPOSITION | Disposal Method | Disposed By | Date/Time

WCH-EE-011

Washington Closure Hanford	**CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST**	RC-118-236	Page 1 of 1
Collector Wendy West	Company Contact JOAN KESSNER Telephone No. 375-4688	Project Coordinator KESSNER, JH	Price Code 9N N 45 9/24/09 Data Turnaround 45 Days
Project Designation Columbia River Component of the RCBRA - Tissues	Sampling Location 300SA-WALL LIV/KID K1785 (7474)	SAF No. RC-118	
Ice Chest No. AFS-04-0123	Field Logbook No. EL-1633 COA RESCRC6520	Method of Shipment FED EX	
Shipped To EBERLINE SERVICES LIONVILLE	Offsite Property No. N/A	Bill of Lading/Airbill No. FDX 796986398930	

E40000

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage
FREEZE "MATRIX COMPOSED OF FISH"

Preservation	None	None	None	None	None	Cool 4C	Cool 4C				
Type of Container	G/P	G/P	G	G/P	G/P	G/P	aG				
No. of Container(s)	1	0	0	0	0	0	0				
Volume	750g	5g	25g	5g	5g	15g	10g				
SAMPLE ANALYSIS 3/24 K1785	See item (1) in Special Instructions	Carbon-14	Tritium - H3	See item (2) in Special Instructions	Technetium-99	See item (3) in Special Instructions	Percent Solids				

Sample No.	Matrix *	Sample Date	Sample Time										
J18XF6	OTHER SOLID	9/24/09	1735	X	X	X	X	X	X	X			

CHAIN OF POSSESSION Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Wendy West	9/24/09 1735	Wendy West EAS LOCKED STORAGE 4	9/24/09 1735
EAS LOCKED STORAGE 4	9/29/09 900	SHANNAN JOHNSON	9/29/09 900
SHANNAN JOHNSON	9/29/09 900	FDX	
FED EX		F. Alathu	09/30/09 0900
Rick Kessner KES CAGE 4	12/1/09 1600	FED EX	
FEDEX	12-5-09 1015	Victor Hernandez	12/5/09 1015

SPECIAL INSTRUCTIONS

Perform gamma spec then contact Joan Kessner for additional analyses. Minimum MMC/?? [illegible] as practical

(1) Gamma Spec - (Full List) (Americium-241, Antimony-125, Beryllium-7, Cerium-144, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238)
(2) Strontium-89,90 -- Total Sr; Isotopic Thorium, Isotopic Uranium, Isotopic Plutonium
(3) ICP Metals - 6010 (Full List) (Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc); Mercury - 7471 - (CV)

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location & relinquished custody of samples for shipment to lab

Matrix *
[illegible]

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-118-237 | Page 1 of 1

Collector Wendy Watt	**Company Contact** JOAN KESSNER	**Telephone No.** 373-4684
Project Designation Columbia River Component of the RCBRA - Tissues	**Sampling Location** 300SA-WAL2, LIV/XID K1785 (9/24)	**Project Coordinator** KESSNER, JH
Ice Chest No. AFS-04-0123	**Field Logbook No.** EL-1633	**COA** BESCRC6520
Shipped To EBERLINE SERVICES RICHMOND	**Offsite Property No.** N/A	**SAF No.** RC-118
		Method of Shipment FED EX
		Bill of Lading/Air Bill No. FD: 796986398930

Price Code 9K N 9/25/09 | **Data Turnaround** 45 Days

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage
FREEZE MATRIX COMPOSED OF FISH

B20000

SAMPLE ANALYSIS K1785

Preservation	None	None	None	None	None	Cool 4C	Cool 4C
Type of Container	G/P	G/P	G	G/P	G/P	G/P	aG
No. of Container(s)	1	0	0	0	0	0	0
Volume	750g	2g	25g	5g	5g	15g	30g
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Tritium - H3	See item (2) in Special Instructions	Technetium-99	See item (3) in Special Instructions	Pesticides - 8081

Sample No.	Matrix *	Sample Date	Sample Time							
J16XF7	OTHER SOLID	9/24/09	1750	X	X	X	X	X	X	X

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From Wendy Watt	Date/Time 1750 9/24/09	Received By/Stored In EAS LOCKED STORAGE 4	Date/Time 1750 9/24/09
Relinquished By/Removed From EAS LOCKED STORAGE 4	Date/Time 9/27/09 9:00	Received By/Stored In SHANNAN JOHNSON	Date/Time 9/27/09 9:00
Relinquished By/Removed From SHANNAN JOHNSON	Date/Time 9/27/09 9:00	Received By/Stored In FDX	Date/Time
Relinquished By/Removed From Fed Ex	Date/Time	Received By/Stored In F. LUTTA	Date/Time 09/28/09 0930
Relinquished By/Removed From	Date/Time 1200 12/14/09	Received By/Stored In FED EX	Date/Time
Relinquished By/Removed From	Date/Time 12-15-09 1015	Received By/Stored In	Date/Time 12-15-09 1015

SPECIAL INSTRUCTIONS
Perform gamma spec then contact Joan Kessner for additional analysis. Maintain FREEZE (cooling as practical.

(1) Gamma Spec - (Full List) [Americium-241, Antimony-125, Beryllium-7, Cerium-144, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238]
(2) Strontium-89,90 – Total Sr, Isotopic Thorium, Isotopic Uranium, Isotopic Plutonium
(3) ICP Metals - 6010 (Full List) [Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc], Mercury - 7471 - (CV)

Sampler unavailable to remove samples from controlled storage. Shipper removing samples from storage location taking custody of samples for shipment to lab

Matrix *
[illegible]

LABORATORY SECTION	Received By	Title / Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By / Date/Time

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-110-238 Page 1 of 1

Collector Wendy West	Company Contact JOAN KESSNER	Telephone No. 375-4684	Project Coordinator KESSNER, JH
Project Designation Columbia River Component of the RCBRA - Tissues	Sampling Location 300SA-WALE, LIV/KID K1785 (7474)		SAF No. RC-135
Ice Chest No. AFS-04-012-3	Field Logbook No. EL-1633	COA BENCRC6520	Method of Shipment FEDEX
Shipped To LIBERLINE SERVICES LIONVILLE	Offsite Property No. N/A		Bill of Lading/Air Bill No. FDX 796986399930

Price Code 9K N JM 5/09

Data Turnaround 45 Days

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage
FREEZE "MATRIX COMPOSED OF FISH"

0000425

SAMPLE ANALYSIS 50G K1785

Preservation	None	None	None	None	None	Cool 4C	Cool 4C			
Type of Container	G/P	G/P	G	G/P	G/P	G/P	aG			
No. of Container(s)	1	0	0	0	0	0	0			
Volume	750g	3g	75g	3g	3g	15g	50g			
Sample Analysis	See item (1) in Special Instructions	Carbon-14	Tritium - H3	See item (2) in Special Instructions	Technetium-99	See item (3) in Special Instructions	Pesticides [illegible]			

Sample No.	Matrix *	Sample Date	Sample Time										
J18XF8	OTHER SOLID	9/24/09	1815	X	X	X	X	X	X	X			

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Wendy West	1815 9/24/09	Wendy West EAS LOCKED STORAGE	1815 9/24/09
EAS LOCKED STORAGE	9/29/09 920	SHANNAN JOHNSON	9/29/09 920
SHANNAN JOHNSON	9/29/09 920	FDX	
FED EX		E. LUKTHU	[illegible]/30/09 0915
[illegible] RECEIVED	12/14/09	FEDEX	
[illegible]	12-15-09 1015	[illegible]	12-15-09 1015

SPECIAL INSTRUCTIONS
Perform gamma spec, then contact Joan Kessner for additional analyses. Maintain FREEZE cond. as practical

(1) Gamma Spec - (Full List) [Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238]
(2) Strontium-89,90 -- Total Sr, Isotopic Thorium, Isotopic Uranium, Isotopic Plutonium
(3) ICP Metals - 6010 (Full List) [Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc]. Mercury - 7471 - (CV)

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab

Matrix *
[illegible]

LABORATORY SECTION Received By Title Date/Time

FINAL SAMPLE DISPOSITION Disposal Method Disposed By Date/Time

WCH EE-011

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-118-239	Page 1 of 1

Collector: Wendy West

Company Contact: JOAN KESSNER Telephone No.: 375-4688

Project Coordinator: KESSNER, JH

Price Code: 9N 8N

Data Turnaround: 45 Days

Project Designation: Columbia River Component of the RCBRA - Tissues

Sampling Location: 300SA-WAL4 - LIVER ID K1785 (7474)

SAF No.: RC-118

Ice Chest No.: APS-04-D123

Field Logbook No.: EL-1633

COA: OESCRC6520

Method of Shipment: FED EX

Shipped To: EBERLINE SERVICES [illegible]

Offsite Property No.: N/A

Bill of Lading/Air Bill No.: FDX 7969 8639 8930

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

FREEZE "MATRIX COMPOSED OF FISH"

9200076

Preservation	None	None	None	None	None	Cool 4C	Cool 4C	
Type of Container	G/P	G/P	G	G/P	G/P	G/P	aG	
No. of Container(s)	1	0	0	0	0	0	0	
Volume	750g	2g	25g	5g	5g	35g	30g	
SAMPLE ANALYSIS -SDGK K1785	See item (1) in Special Instructions	Carbon-14	Tritium - H3	See item (2) in Special Instructions	Technetium-99	See item (3) in Special Instructions	Pesticides - 8081	

Sample No.	Matrix *	Sample Date	Sample Time	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
J18XF9	OTHER SOLID	9/25/09	1720	X	X	X	X	X	X	X			

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Wendy West	9/25/09 1720	EAS LOCKED STORAGE Wendy West	9/25/09 1720
EAS LOCKED STORAGE	9/29/10 900	SHANNAN JOHNSON	9/29/10 900
SHANNAN JOHNSON	9/29/10 900	FOV	
		M. E. Winters	09/30/09 0700
Mike Winters	12/1/09 1600	FED EX	
	12-1-09 1015	Victor Hernandez	12-5-09 1015

SPECIAL INSTRUCTIONS

Perform gamma spec then contact Joan Kessner for addition of analyses. Maintain FREEZE cooling as practical.

(1) Gamma Spec - (Full List) (Americium-241, Antimony-125, Beryllium-7, Cerium-144, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238)

(2) Strontium-89,90 -- Total Sr; Isotopic Thorium; Isotopic Uranium; Isotopic Plutonium;

(3) ICP Metals - 6010 (Full List) (Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc); Mercury - 7471 - (CV)

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab.

Matrix * [illegible]

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-118-240 Page 1 of 1

Collector Wendy West	Company Contact JOAN KESSNER	Telephone No. 373-4654	Project Coordinator KESSNER, JH
Project Designation Columbia River Component of the RCBRA - Tissue	Sampling Location 300SA-WALS, LIV/KID K1785 (7474)		SAF No. RC-118
Ice Chest No. AFS-04-0123	Field Logbook No. EL-1611	COA BESCRC6120	Method of Shipment FED EX
Shipped To EBERLINE SERVICES LIONVILLE	Offsite Property No. N/A		Bill of Lading/Air Bill No. FDX # 796986398930

Price Code 9K N 12/15/09

Data Turnaround 45 Days

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage
FREEZE MATRIX COMPOSED OF FISH

2200027

SAMPLE ANALYSIS SDG# K1785

			Preservation	None	None	None	None	None	Cool 4C	Cool 4C	
			Type of Container	G/P	G/P	G	G/P	G/P	G/P	aG	
			No. of Container(s)	1	0	0	0	0	0	0	
			Volume	250g	2g	25g	5g	5g	25g	10g	
			SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Tritium - H3	See item (2) in Special Instructions	Technetium-99	See item (3) in Special Instructions	[illegible]	
Sample No.	Matrix *	Sample Date	Sample Time								
J18XH0	OTHER SOLID	9/25/09	1125	X	X	X	X	X	X	X	

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From Wendy West	Date/Time 1725 9/25/09	Received By/Stored In FAS LOCKED STORAGE 4 Wendy West	Date/Time 1725 9/25/09
Relinquished By/Removed From FAS LOCKED STORAGE 4	Date/Time 12/9/09 900	Received By/Stored In SHANNAN JOHNSON	Date/Time 12/9/09 900
Relinquished By/Removed From SHANNAN JOHNSON	Date/Time 12/9/09 900	Received By/Stored In FDX	Date/Time
Relinquished By/Removed From FED EX	Date/Time	Received By/Stored In M E [illegible]	Date/Time 12/14/09 0900
Relinquished By/Removed From [illegible]	Date/Time 12/14/09	Received By/Stored In FED EX	Date/Time
Relinquished By/Removed From Fed Ex	Date/Time 12-15-09 1015	Received By/Stored In Victor Hernandez	Date/Time 12-15-09 1015

SPECIAL INSTRUCTIONS
Perform gamma spec then contact Joan Kessner for additional analysis. Maintain FRISK at counting as practical.

(1) Gamma Spec - (Full List) (Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238)
(2) Strontium-89,90 – Total Sr, Isotopic Thorium, Isotopic Uranium, Isotopic Plutonium
(3) ICP Metals - 6010 (Full List) (Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc); Mercury - 7471 - (CV)

Samples unavailable to remove samples
from controlled storage. Shipper removed
samples from storage location taking custody

Matrix *
[illegible]

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Washington Closure Hanford	**CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST**	RC-118-858	Page 1 of 1
Collector Kylie Barron	Company Contact JOAN KESSNER Telephone No. 375-4688	Project Coordinator KESSNER, JH	Price Code 9K N 4/21/09
Project Designation Columbia River Component of the RCBRA - Tissues	Sampling Location STURGEON 17 VISERA K1785 (7474)	SAF No. RC-118	Data Turnaround 45 Days
Ice Chest No. AFS-04-0123	Field Logbook No. EL-1638 COA DESCRC6520	Method of Shipment FED EX	
Shipped To EBERLINE SERVICES RICHMOND / [illegible] IONVILLE	Offsite Property No. N/A	Bill of Lading/Air Bill No. FDX# 796986398930	

POSSIBLE SAMPLE HAZARDS/REMARKS

N/A

Special Handling and/or Storage

FREEZE "MATRIX COMPOSED OF FISH"

R400000

Preservation	None	[illegible]	[illegible]	None	[illegible]	Cool 4C	Cool 4C			
Type of Container	G/P	G/P	G	G/P	G/P	G/P	aG			
No. of Container(s)	1	0	0	0	0	0	0			
Volume	250g	2g	25g	5g	5g	15g	50g			
SAMPLE ANALYSIS SDG# K1785	See item (1) in Special Instructions	Carbon-14	Tritium - H3	See item (2) in Special Instructions	Technetium-99	See item (3) in Special Instructions	[illegible] - 4041			

Sample No.	Matrix *	Sample Date	Sample Time										
J195V7	OTHER SOLID	4/21/09	1420	X	X	X	X	X	X	X			

CHAIN OF POSSESSION Sign/Print Names

Relinquished By/Removed From Kyle Barron	Date/Time 4/21/09 1420	Received By/Stored In EAS LOCKED STORAGE 4 Kyle Barron	Date/Time 4/21/09 1420
Relinquished By/Removed From EAS LOCKED STORAGE 4	Date/Time 4/22/09 9:20	Received By/Stored In SHANNAN JOHNSON	Date/Time 4/22/09
Relinquished By/Removed From SHANNAN JOHNSON	Date/Time 4/23/09 1400	Received By/Stored In FDX	Date/Time
Relinquished By/Removed From FED EX	Date/Time	Received By/Stored In [illegible]	Date/Time 04/24/09 [illegible]
Relinquished By/Removed From [illegible]	Date/Time 4/24/09 16:00	Received By/Stored In FEDEX	Date/Time
Relinquished By/Removed From FEDEX	Date/Time 4/25/09 1015	Received By/Stored In Victor Hernandez	Date/Time 4/25/09 1015

SPECIAL INSTRUCTIONS

TRANSSHIPPING REQUIRED. Perform gamma spec then contact Joan Kessner for additional analyses. Maintain FREEZE cooling as practical.

(1) Gamma Spec - (Full List) (Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238)

(2) Strontium-89,90 – Total Sr, Isotopic Thorium, Isotopic Uranium, Isotopic Plutonium

(3) ICP Metals - 6020 (Full List) (Aluminum, Antimony, Arsenic, Barium, Beryllium, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc), Mercury - 7471 - (CV)

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody.

Matrix *

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-158-859 Page 1 of 1

Collector Wendy West	Company Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator KESSNER, JH
Project Designation Columbia River Component of the RCBRA - Tissues	Sampling Location STURGEON 18 VISCERA K1785 (7474)		SAF No. RC-118
Ice Chest No. AFS-04-0123	Field Logbook No. EL-1635	COA BESCRC6520	Method of Shipment FED EX
Shipped To ENERLINE SERVICES ALKINVILLE	Offsite Property No. N/A		Bill of Lading/Air Bill No. FDX# 796986398930

Price Code 9K N Wmsley

Data Turnaround 45 Days

POSSIBLE SAMPLE HAZARDS/REMARKS

N/A

Special Handling and/or Storage

FREEZE MATRIX COMPOSED OF FISH

660000

SAMPLE ANALYSIS

SDG # K1785

Preservation	None	None	None	None	None	Cool 4C	Cool 4c
Type of Container	G/P	G/P	G	G/P	G/P	G/P	aG
No. of Container(s)	1	0	0	0	0	0	0
Volume	150g	2g	15g	5g	5g	15g	50g
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Tritium - H3	See item (2) in Special Instructions	Technetium-99	See item (3) in Special Instructions	Lipids and Fat

Sample No.	Matrix *	Sample Date	Sample Time										
J195V8	OTHER SOLID	9/21/09	1500	X	X	X	X	X	X	X			

CHAIN OF POSSESSION

Sign/Print Names

Relinquished By/Removed From Wendy West	Date/Time 9/21/09 1500	Received By/Stored In EAS LOCKED STORAGE Wendy West	Date/Time 9/21/09 1500
Relinquished By/Removed From EAS LOCKED STORAGE	Date/Time 9/29/09 9:10	Received By/Stored In SHANNAN JOHNSON	Date/Time 9/29/09 9:10
Relinquished By/Removed From SHANNAN JOHNSON	Date/Time 9/29/09 9:10	Received By/Stored In FDX	Date/Time
Relinquished By/Removed From FED EX	Date/Time	Received By/Stored In M. MATHEWSON	Date/Time 09/30/09
Relinquished By/Removed From KELEHAN	Date/Time 10/4/09	Received By/Stored In FEDEX	Date/Time
Relinquished By/Removed From FedEx	Date/Time 10-5-09 1015	Received By/Stored In Victor Hernandez	Date/Time 10/5/09 1015

SPECIAL INSTRUCTIONS

TRANSSHIPPING REQUIRED. Perform gamma spec then contact Joan Kessner for additional analysis. Maintain FREEZE cooling as practical.

(1) Gamma Spec - {Full List} {Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238}

(2) Strontium-89,90 -- Total Sr, Isotopic Thorium, Isotopic Uranium, Isotopic Plutonium

(3) ICP Metals - 6010 {Full List} {Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc}; Mercury - 7471 - (CV)

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab.

Matrix *

S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-118-860 Page 1 of 1

Collector Kylie Barron	Company Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator KESSNER, JH
Project Designation Columbia River Component of the RCBRA - Tissues	Sampling Location STURGEON 19 VISCERA	K1785 (7474)	SAP No. RC-118
Ice Chest No. NFS-04-0123	Field Logbook No. EL-1638	COA DESCRC5510	Method of Shipment FED EX
Shipped To [✓ EBERLINE SERVICES] LIONVILLE	Offsite Property No. N/A		Bill of Lading/Air Bill No. FDX# 796986398930

Price Code 9K N 9/21/09

Data Turnaround 45 Days

POSSIBLE SAMPLE HAZARDS/REMARKS
N/A

Special Handling and/or Storage
FREEZE [illegible]

0809030

SAMPLE ANALYSIS

SDG# K1785

Preservation	None	None	None	None	None	[illegible]	[illegible]			
Type of Container	G/P	G/P	G	G/P	G/P	G/P	aG			
No. of Container(s)	1	0	0	0	0	0	0			
Volume	750g	3g	15g	5g	5g	15g	50g			
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Tritium - H3	See item (2) in Special Instructions	Technetium-99	See item (3) in Special Instructions	[illegible]			

Sample No.	Matrix *	Sample Date	Sample Time										
J195V9	OTHER SOLID	9/21/09	1620	X	X	X	X	X	X	X			

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Kylie Barron KB	9/21/09 1620	EAS LOCKED STORAGE 4 Kylie Barron KB	9/21/09 1620
EAS LOCKED STORAGE 4	9/23/09 900	SHANNAN JOHNSON	9/23/09 900
SHANNAN JOHNSON	9/24/09 900	FDX	
FED EX		M. WATAWA	09/25/09 0900
[illegible] KEITENGAMA	11:00 [illegible]	FEDEX	
FDX	12-5-09 1015	[illegible]	12-5-09 1015

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

SPECIAL INSTRUCTIONS
TRANSSHIPPING REQUIRED. Perform gamma spec then contact Joan Kessner for additional analysis. Maintain FREEZE cooling as practical.

(1) Gamma Spec - (Full List) (Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238)
(2) Strontium-89,90 -- Total Sr, Isotopic Thorium, Isotopic Uranium, Isotopic Plutonium
(3) ICP Metals - 6010 (Full List) (Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Titanium, Vanadium, Zinc], Mercury - 7471 (CV)

[illegible]
Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody.

Matrix *
[illegible]

WCH-EE-011

Washington Closure Hanford	**CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST**	RC-118-861 Page 1 of 1

Collector Wendy West	Company Contact JOAN KESSNER Telephone No. 375-4688	Project Coordinator KESSNER, JH	Price Code 9K N Data Turnaround 45 Days 10/03/09
Project Designation Columbia River Component of the RCBRA - Tissues	Sampling Location STURGEON 20 VISCERA K1785 (2-174)	SAF No. RC-118	
Ice Chest No. AFS-04-0123	Field Logbook No. EL-1638 COA BESCHC6520	Method of Shipment FED EX	
Shipped To ENGLINE SERVICES / LIONVILLE	Offsite Property No. N/A	Bill of Lading/Air Bill No. FDX# 796986398930	

POSSIBLE SAMPLE HAZARDS/REMARKS
N/A

Special Handling and/or Storage
FREEZE TISSUE COMPOSED OF FISH

Preservation	None	None	None	None	None	Cool 4C	Cool 4C			
Type of Container	G/P	G/P	G	G/P	G/P	G/P	aG			
No. of Container(s)	1	0	0	0	0	0	0			
Volume	750g	2g	25g	5g	1g	15g	50g			
SAMPLE ANALYSIS SDG# K1785	See item (1) in Special Instructions	Carbon-14	Tritium - H3	See item (2) in Special Instructions	Technetium-99	See item (3) in Special Instructions	Pesticides - 8081			

Sample No.	Matrix *	Sample Date	Sample Time										
J195WD	OTHER SOLID	9/24/09	1745	X	X	X	X	X	X	X			

CHAIN OF POSSESSION Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Wendy West	9/24/09 1745	EAS LOCKED STORAGE 4 Wendy West	9/24/09 1745
EAS LOCKED STORAGE 4	9/23/09 902	SHANNAN JOHNSON	9/23/09 902
SHANNAN JOHNSON	9/23/09 902	FDX	
FED EX		M MATTHEWSON	09/30/09 0915
K. ERICSON	10/6/09	FED EX	
[illegible]	12-15-09 1015	VICTOR HERNANDEZ	12-15-09 1015

SPECIAL INSTRUCTIONS
TRANSSHIPPING REQUIRED. Perform gamma spec then contact Joan Kessner for additional analysis. Maintain FREEZE cooling as practical.

(1) Gamma Spec - (Full List) (Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238)
(2) Strontium-89,90 - Total Sr, Isotopic Thorium, Isotopic Uranium, Isotopic Plutonium.
(3) ICP Metals - 6010 (Full List) (Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc), Mercury - 7471 - (CV)

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location (using custody)
[illegible]

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-118-930 Page 1 of 1

Collector Wendy West	Company Contact JOAN KESSNER	Telephone No. 375-4688
Project Designation Columbia River Component of the RCBRA - Tissues	Sampling Location 28 Adult STURGEON VICERA K1785 (7474)	Project Coordinator KESSNER, JH
Ice Chest No. APS-04-0123	Field Logbook No. FL-1636	SAF No. RC-118
Shipped To (CHEMLINE SERVICES) LIONVILLE	COA BESCRC6520	Method of Shipment FED EX
	Offsite Property No. N/A	Bill of Lading/Air Bill No. FDX# 796986398930

Price Code 9N
AJ 9/8/09

Data Turnaround
45 Days

POSSIBLE SAMPLE HAZARDS/REMARKS
N/A

Special Handling and/or Storage
FREEZE TISSUE COMPOSED OF FISH

2800060

Preservation	None	None	None	None	None	Cool 4C	Cool 4C			
Type of Container	G/P	G/P	G	G/P	G/P	G/P	aG			
No. of Container(s)	1	0	0	0	0	0	0			
Volume	250g	2g	25g	5g	5g	25g	50g			
SAMPLE ANALYSIS SDG# K1785	See item (1) in Special Instructions	Carbon-14	Tritium - H3	See item (2) in Special Instructions	Technetium-99	See item (3) in Special Instructions	Pesticides 8081			

Sample No.	Matrix *	Sample Date	Sample Time										
J19601	OTHER SOLID	9/24/09	1810	X	X	X	X	X	X	X			

CHAIN OF POSSESSION

Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Wendy West	1810 9/24/09	Wendy West FAS LOCKED STORAGE 4	1819 9/24/09
FAS LOCKED STORAGE 4	1/27/10 9/2/09	SHANNAN JOHNSON	1/27/10 9/2/09
SHANNAN JOHNSON	1/27/10 9/2/09	FDX	
Fed Ex		K. UNTATHAM	09/30/09 0915
Alex Corcoran Refrigerated	12/14/09	FEDEX	
Fed Ex	12-15-09 1015	Vicki Alexander	12-15-09 1015

SPECIAL INSTRUCTIONS
TRANSSHIPPING REQUIRED. Perform gamma spec then contact Joan Kessner for additional analysis. Maintain FREEZE cooling as practical.

(1) Gamma Spec - (Full List) [Americium-241, Antimony-125, Beryllium-7, Cerium-144, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238]
(2) Strontium-89,90 -- Total Sr, Isotopic Thorium, Isotopic Uranium, Isotopic Plutonium
(3) ICP Metals - 6010 (Full List) [Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc], Mercury - 7471 (CV)

* Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody.
[illegible]

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-118-931

Page 1 of 1

Collector Wendy Watt	Company Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator KESSNER, JH
Project Designation Columbia River Component of the RCBRA - Tissues	Sampling Location STURGEON 27 VISCERA K1785 (7474)		SAF No. RC-118
Ice Chest No. AP6-04-012-3	Field Logbook No. EL-1638	COA BESCRC6520	Method of Shipment FED EX
Shipped To EBERLINE SERVICES, LIONVILLE	Offsite Property No. N/A		Bill of Lading/Air Bill No. FDX# 796986398930

Price Code 9K N [illegible]

Data Turnaround 45 Days

POSSIBLE SAMPLE HAZARDS/REMARKS

N/A

Special Handling and/or Storage

FREEZE "MATRIX COMPOSED OF FISH"

Preservation	None	None	None	None	None	Cool 4C	Cool 4C
Type of Container	G/P	G/P	G	G/P	G/P	G/P	aG
No. of Container(s)	1	0	0	0	0	0	0
Volume	750g	5g	25g	5g	5g	15g	50g
SAMPLE ANALYSIS SDG# K1785	See item (1) in Special Instructions	Carbon-14	Tritium - H3	See item (2) in Special Instructions	Tc/Technetium-99	See item (3) in Special Instructions	Pesticides (list)

Sample No.	Matrix *	Sample Date	Sample Time							
J19062	OTHER SOLID	9/24/09	1800	X	X	X	X	X	X	X

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Wendy Watt	1800 9/24/09	EAS LOCKED STORAGE Wendy Watt	1800 9/24/09
EAS LOCKED STORAGE	9/29/09 1100	SHANNAN JOHNSON	9/29/09 1100
SHANNAN JOHNSON	9/29/09 1100	FDX	
FED EX		[illegible]	[illegible]
[illegible] KEVC/ARON	1600 12/14/09	FED EX	
Fed Ex	12-15-09 1015	Victor Hernandez	12-15-09 1015

SPECIAL INSTRUCTIONS

TRANSSHIPPING REQUIRED. Perform gamma spec then contact Joan Kessner for additional analysis. Maintain FREEZE cooling as practical.

(1) Gamma Spec - (Full List) {Americium-241, Antimony-125, Beryllium-7, Cerium-144, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238}

(2) Strontium-89,90 - Total Sr; Isotopic Thorium; Isotopic Uranium; Isotopic Plutonium

(3) ICP Metals - 6010 (Full List) {Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc}, Mercury - [illegible] (CV)

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab.

Matrix *

[illegible]

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-118-1074 Page [illegible] of [illegible]

Collector Wendy West	Company Contact JOAN KESSNER	Telephone No. 373-4684	Project Coordinator KESSNER, JH
Project Designation Columbia River Component of the RCBRA - Tissues	Sampling Location 100SA-WAL 6 LIV/KID K1785 (7474)		SAF No. RC-118
Ice Chest No. APS-04-0123	Field Logbook No. EL-1638	COA BESCRCA520	Method of Shipment FED EX
Shipped To EBERLINE SERVICES LIONVILLE	Offsite Property No. N/A		Bill of Lading/Air Bill No. FD 796986398930

Price Code ~~9K~~ N 9/7/09

Data Turnaround 45 Days

POSSIBLE SAMPLE HAZARDS/REMARKS

N/A

Special Handling and/or Storage

FREEZE *MATRIX COMPOSED OF FISH*

000084

Preservation	None	None	None	None	None	Cool 4C	Cool 4C
Type of Container	G/P	G/P	G	G/P	G/P	G/P	G/P
No. of Container(s)	1	0	0	0	0	0	0
Volume	750g	3g	25g	5g	5g	15g	50g
SAMPLE ANALYSIS ~50Gpt K1785	See item (1) in Special Instructions	Carbon-14	Tritium - H3	See item (2) in Special Instructions	Technetium-99	See item (3) in Special Instructions	Percent Lipids

Sample No.	Matrix *	Sample Date	Sample Time										
J19747	OTHER SOLID	9/24/09	1825	X	X	X	X	X	X	X			

CHAIN OF POSSESSION

Sign/Print Names

Relinquished By/Removed From Wendy West	Date/Time 9/24/09 1825	Received By/Stored In Wendy West EAS LOCKED STORAGE 4	Date/Time 9/24/09 1825
Relinquished By/Removed From EAS LOCKED STORAGE 4	Date/Time 9/29/09 900	Received By/Stored In SHANNAN JOHNSON	Date/Time 9/29/09 920
Relinquished By/Removed From SHANNAN JOHNSON	Date/Time 9/29/09 900	Received By/Stored In FEDEX	Date/Time
Relinquished By/Removed From FED EX	Date/Time	Received By/Stored In [illegible]	Date/Time 09/30/09 0920
Relinquished By/Removed From [illegible] RECEIVING	Date/Time 11/4/09 [illegible]	Received By/Stored In FED EX	Date/Time
Relinquished By/Removed From [illegible] 11-5-09	Date/Time 1015	Received By/Stored In [illegible] 11-5-09	Date/Time 1015

SPECIAL INSTRUCTIONS

TRANSSHIPPING REQUIRED. Perform gamma spec then contact Joan Kessner for additional analysis. Maintain FREEZE cooling as practical.

(1) Gamma Spec - (Full List) [Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238]

(2) Strontium-89,90 - Total Sr, Isotopic Thorium, Isotopic Uranium, Isotopic Plutonium

(3) ICP Metals - 6010 (Full List) [Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc]; Mercury - 7471 - (CV)

* Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab

Matrix *

[illegible]

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-118-201

Page 1 of 1

Collector
Wendy West

Company Contact
JOAN KESSNER

Telephone No.
375-4688

Project Coordinator
KESSNER, JH

Price Code 9~~K~~ N
~~40~~ 9/1/09

Data Turnaround
45 Days

Project Designation
Columbia River Component of the RCBRA - Tissues

Sampling Location
100SA-WALL-LIV/KID K1785 (7473)

SAF No.
RC-118

Ice Chest No. AFS-04-0123

Field Logbook No.
1611

COA
BESCRC6320

Method of Shipment
FED EX

Shipped To
EBERLINE SERVICES RICHMOND ~~LIONVILLE~~

Offsite Property No.
N/A

Bill of Lading/Air Bill No.
FDX 796986398930

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage
FREEZE "MATRIX COMPOSED OF FISH"

4280000

Preservation	None	None	None	None	None	Cool 4C	Cool 4C			
Type of Container	G/P	G/P	G	G/P	G/P	G/P	aG			
No. of Container(s)	1	0	0	0	0	0	0			
Volume	750g	2g	25g	5g	5g	15g	30g			
SAMPLE ANALYSIS SDG K1785	See item (1) in Special Instructions	Carbon-14	Tritium - H3	See item (2) in Special Instructions	Technetium-99	See item (3) in Special Instructions	Pesticides - 8081			

Sample No.	Matrix *	Sample Date	Sample Time										
J18XB1	OTHER SOLID	9/24/09	1850	X	X	X	X	X	X	X			

CHAIN OF POSSESSION

Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Wendy West	1850 9/24/09	Wendy EAS LOCKED STORAGE	1850 9/24/09
EAS LOCKED STORAGE	9/29/09 0906	SHANNAN JOHNSON	9/29/09 0905
SHANNAN JOHNSON	9/29/09 0900	FDX	
FED EX		K. LLATKHAM	9/30/09 0900
Kerguson KERGUSON	12/4/09 6:00	FEDEX	
[illegible]	12-5-09 1015	Vicre Hernandez	12-5-09 1015

SPECIAL INSTRUCTIONS

Perform gamma spec then contact Joan Kessner for additional analysis. Maintain FREEZE storage as practical.

(1) Gamma Spec - (Full List) (Americium-241, Antimony-125, Beryllium-7, Cerium-144, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238)

(2) Strontium-89,90 – Total Sr; Isotopic Thorium; Isotopic Uranium; Isotopic Plutonium

(3) ICP Metals - 6010 (Full List) (Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc) [illegible] - (CV)

Sample unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab.

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION
Received By
Title
Date/Time

FINAL SAMPLE DISPOSITION
Disposal Method
Disposed By
Date/Time

WCH-EE-011

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-118-202 | Page 1 of 1

Collector Wendy West	Company Contact JOAN KESSNER	Telephone No. 375-4618	Project Coordinator KESSNER, JH
Project Designation Columbia River Component of the RCBRA - Tissues	Sampling Location 100SA-WAL2-LIV/KID K1785 (74/75)		SAF No. RC-118
Ice Chest No. AFS-04-0123	Field Logbook No. 1633	COA DESCHC6520	Method of Shipment FED EX
Shipped To EBERLINE SERVICES / LIONVILLE	Offsite Property No. N/A		Bill of Lading/Air Bill No. FDX 796986398930

Price Code 9K N 9/25/09

Data Turnaround: 45 Days

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

FREEZE "MATRIX COMPOSED OF FISH"

0000840D

SAMPLE ANALYSIS 9064 K1785

Preservation	None	None	None	None	None	Cool 4C	Cool 4C
Type of Container	G/P	G/P	G	G/P	G/P	G/P	aG
No. of Container(s)	1	0	0	0	0	0	0
Volume	750g	2g	25g	5g	2g	15g	30g
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Tritium - H3	See item (2) in Special Instructions	Technetium-99	See item (3) in Special Instructions	Pesticides - 8081

Sample No.	Matrix *	Sample Date	Sample Time										
8XB2	OTHER SOLID	9/25/09	1720	X	X	X	X	X	X	X			

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Wendy West	9/25/09 1730	Wendy West EAS LOCKED STORAGE	9/25/09 1730
EAS LOCKED STORAGE	9/28/09 900	SHANNAN JOHNSON	9/28/09 9:00
SHANNAN JOHNSON	9/28/09 900	FDX	
FedEx		F. Kuratawa	09/30/09 0900
Keessen	12/15/09	FED EX	
FedEx	12-15-09 1015	Victor Hernandez	12-15-09 1015

SPECIAL INSTRUCTIONS

Perform gamma spec then contact Joan Kessner for additional analysis. Maintain FREEZE cooling as practical.

(1) Gamma Spec - (Full List) [Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238]

(2) Strontium-89,90 -- Total Sr, Isotopic Thorium, Isotopic Uranium, Isotopic Plutonium

(3) ICP Metals - 6010 (Full List) [Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc]; Mercury - 7471 - (CV)

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location during custody of samples for shipment to lab.

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION — Received By / Title / Date/Time

FINAL SAMPLE DISPOSITION — Disposal Method / Disposed By / Date/Time

CH-EE-011

Washington Closure Hanford	**CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST**	RC-118-103	Page 1 of 1

Collector: Unit West	Company Contact: JOAN KESSNER	Telephone No.: 375-4688	Project Coordinator: KESSNER, JH
Project Designation: Columbia River Component of the RCBRA - Tissues	Sampling Location: 100SA-WAL3-LIV/KID K1785 (7473)	SAF No.: RC-118	Price Code: 9K N 12/15/09
Ice Chest No.: AFS-04-0123	Field Logbook No.: 1633	COA: BESCRC6520	Data Turnaround: 45 Days
Shipped To: (EBERLINE SERVICES) LIONVILLE	Offsite Property No.: N/A	Method of Shipment: FED EX	Bill of Lading/Air Bill No.: FDX 796986398930

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

FREEZE "MATRIX COMPOSED OF FISH"

0000184

Preservation	None	None	None	None	None	Cool 4C	Cool 4C			
Type of Container	G/P	G/P	G	G/P	G/P	G/P	aG			
No. of Container(s)	1	0	0	0	0	0	0			
Volume	750g	2g	25g	5g	5g	15g	50g			
SAMPLE ANALYSIS SDG4 K1785	See item (1) in Special Instructions	Carbon-14	Tritium - 3D	See item (2) in Special Instructions	Technetium-99	See item (3) in Special Instructions	Pesticides - 8081			

Sample No.	Matrix *	Sample Date	Sample Time										
18XB0	OTHER SOLID	9/25/09	1735	X	X	X	X	X	X	X			

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
[illegible]	1735 9/25/09	[illegible] EAS LOCKED STORAGE	1735 9/25/09
EAS LOCKED STORAGE	9/28/09 900	SHANNAN JOHNSON	9/28/09 900
SHANNAN JOHNSON	9/28/09 1015	FDX	
FED EX		[illegible]	09/30/09 0900
[illegible]	11/14/09 10:00	FED EX	
FedEx	12/15/09 1015	Victor Hernandez	12-15-09 1015

SPECIAL INSTRUCTIONS

Perform gamma spec then contact Joan Kessner for additional analysis. Maintain FREEZE cooling as practical

(1) Gamma Spec - (Full List) [Americium-241, Antimony-125, Beryllium-7, Cerium-144, Cesium 137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238]

(2) Strontium-89,90 – Total Sr; Isotopic Thorium, Isotopic Uranium; Isotopic Plutonium

(3) ICP Metals - 6010 (Full List) {Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc}; Mercury - 7471 - (CV)

Sample unavailable to remove [illegible] from controlled storage. [illegible] samples from storage location [illegible] custody 4 samples for shipment to [illegible]

Matrix *

S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

BCH-EE-011

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-118-204 Page 1 of 1

Collector Wendy West	Company Contact JOAN KESSNER	Telephone No. 375-4688
Project Designation Columbia River Component of the RCBRA - Tissues	Sampling Location 100SA-WALA-LIV/KID K1785 (7473)	Project Coordinator KESSNER, JH
Ice Chest No. APS-04-0123	Field Logbook No. 1633	COA BESCRC6520
Shipped To EBERLINE SERVICES/LIONVILLE	Offsite Property No. N/A	SAF No. RC-118

Price Code 9K 51809

Data Turnaround
45 Days

Method of Shipment
FED EX

Bill of Lading/Air Bill No. FDX# 796986398930

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage
FREEZE "MATRIX COMPOSED OF FISH"

0280000

SAMPLE ANALYSIS

SDG#
K1785

Preservation	None	None	None	None	None	Cool 4C	Cool 4C
Type of Container	G/P	G/P	G	G/P	G/P	G/P	aG
No. of Container(s)	1	0	0	0	0	0	0
Volume	750g	3g	25g	3g	3g	15g	50g
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Tritium - H3	See item (2) in Special Instructions	Technetium-99	See item (3) in Special Instructions	Plutonium-241

Sample No.	Matrix *	Sample Date	Sample Time										
18XB4	OTHER SOLID	9/24/09	1840	X	X	X	X	X	X	X			

CHAIN OF POSSESSION

Sign/Print Names

Relinquished By/Removed From Wendy West	Date/Time 9/24/09 1840	Received By/Stored In EAS LOCKED STORAGE 4 Wendy West	Date/Time 9/24/09 1840
Relinquished By/Removed From EAS LOCKED STORAGE 4	Date/Time 9/29/09 900	Received By/Stored In SHANNAN JOHNSON	Date/Time 9/29/09 900
Relinquished By/Removed From SHANNAN JOHNSON	Date/Time 9/29/09 900	Received By/Stored In FDX	Date/Time
Relinquished By/Removed From Fed Ex	Date/Time	Received By/Stored In K. Wat[illegible]	Date/Time 09/30/09 0900
Relinquished By/Removed From [illegible]	Date/Time RECEIVING 12/14/09 1630	Received By/Stored In FEDEX	Date/Time
Relinquished By/Removed From FEDEX	Date/Time 12-15-09 1015	Received By/Stored In VICTOR HERNANDEZ	Date/Time 12-15-09 1015

SPECIAL INSTRUCTIONS

Perform gamma spec then contact Joan Kessner for additional analysis. Maintain FREEZE cooling as practical

(1) Gamma Spec - (Full Lib) (Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238)
(2) Strontium-89,90 - Total Sr; Isotopic Thorium; Isotopic Uranium; Isotopic Plutonium
(3) ICP Metals - 6010 (Full List) (Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc); Mercury - 7471 - (CV)

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location using custody of samples for shipment to lab.

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION Received By Title Date/Time

FINAL SAMPLE DISPOSITION Disposal Method Disposed By Date/Time

CH-EE-011

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-118-205 Page 1 of 1

Collector: Wendy West

Company Contact: JOAN KESSNER

Telephone No.: 375-4688

Project Coordinator: KESSNER, JH

Price Code: ~~9K~~ N 1/4 5/8/09

Data Turnaround: 45 Days

Project Designation: Columbia River Component of the RCBRA - Tissues

Sampling Location: 100SA-WALS-LIV/KID K1785 (7473)

SAF No.: RC-118

Ice Chest No.: AFS-04-0123

Field Logbook No.: 1633

COA: BFSCRC6320

Method of Shipment: FED EX

Shipped To: EBERLINE SERVICES, RICHLONVILLE

Offsite Property No.: N/A

Bill of Lading/Air Bill No.: FD 796986398930

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

FREEZE "MATRIX COMPOSED OF FISH"

Preservation	None	None	None	None	None	Cool 4C	Cool 4C			
Type of Container	G/P	G/P	G	G/P	G/P	G/P	aG			
No. of Container(s)	1	0	0	0	0	0	0			
Volume	750g	2g	21g	5g	5g	15g	50g			
SAMPLE ANALYSIS SDG# K1785	See item (1) in Special Instructions	Carbon-14	Tritium - H3	See item (2) in Special Instructions	Technetium-99	See item (3) in Special Instructions	Pesticides - 8081			

Sample No.	Matrix *	Sample Date	Sample Time										
1BXD5	OTHER SOLID	9/24/09	1845	X	X	X	X	X	X	X			

CHAIN OF POSSESSION

Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Wendy West	9/24/09 1845	EAS LOCKED STORAGE Wendy West	9/24/09 1845
EAS LOCKED STORAGE	9/29/09 900	SHANNAN JOHNSON	9/29/09 900
SHANNAN JOHNSON	9/29/09 900	FDX	
Fed Ex		M.F. MAHTHUKKAN	09/30/09 0900
KELENFO	8:00	FEDEX	
FEDEX	12-15-09 1015	KATIE HERNANDEZ	12-15-09 1015

LABORATORY SECTION Received By Title Date/Time

FINAL SAMPLE DISPOSITION Disposal Method Disposed By Date/Time

SPECIAL INSTRUCTIONS

Perform gamma spec then contact Joan Kessner for additional analyses. Maintain FREEZE cooling as practical.

(1) Gamma Spec - (Full List) (Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238)
(2) Strontium-89,90 – Total Sr, Isotopic Thorium, Isotopic Uranium; Isotopic Plutonium
(3) ICP Metals - 6010 (Full List) (Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc), Mercury - 7471 - (CV)

Shipper unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab.

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

Appendix 5

Data Validation Supporting Documentation

INORGANIC ANALYSIS DATA VALIDATION CHECKLIST

VALIDATION LEVEL	A	B	[✓ C]	D	E

PROJECT: RCBRA
DATA PACKAGE: K1785
VALIDATOR: CLR
LAB: LLI
DATE: 2/8/10
SDG: K1785

ANALYSES PERFORMED

[✓ SW-846/ICP]	SW-846/GFAA	[✓ SW-846/Hg]	SW-846 Cyanide		

SAMPLES/MATRIX J18YF6 J18YF7 J18YF8 J18YF9 J18Y110
J19SV7 J19SV8 J19SV9 J19SW6 J18661 J18662 J18747
J18XB6 J18XB7 J18YB8 J18YB9 J18YC0 J18YD1 J18XD2
J18XD3 J18XD4 J18XD5 J18YH1 J18XH2 J18YH3 J18XH4
J18XH5 J18056 J18748 J18X86 J18X87 J18X89 J18X9P
J18Y50 J18XB1 J18YB2 J18YB3 J18YB4 J18XB5 Soil

1. DATA PACKAGE COMPLETENESS AND CASE NARRATIVE

Technical verification documentation present? .... Yes [✓ No] N/A
Comments:

2. INSTRUMENT PERFORMANCE AND CALIBRATIONS (Levels D and E)

Initial calibrations performed on all instruments? .... Yes No [✓ N/A]
Initial calibrations acceptable? .... Yes No [✓ N/A]
ICP interference checks acceptable? .... Yes No [✓ N/A]
ICV and CCV checks performed on all instruments? .... Yes No [✓ N/A]
ICV and CCV checks acceptable? .... Yes No [✓ N/A]
Standards traceable? .... Yes No [✓ N/A]
Standards expired? .... Yes No [✓ N/A]
Calculation check acceptable? .... Yes No [✓ N/A]
Comments:

INORGANIC ANALYSIS DATA VALIDATION CHECKLIST

3. BLANKS (Levels B, C, D, and E)

ICB and CCB checks performed for all applicable analyses? (Levels D, E) .... Yes No [✓ N/A]

ICB and CCB results acceptable? (Levels D, E) .... Yes No [✓ N/A]

Laboratory blanks analyzed? .... [✓ Yes] No N/A

Laboratory blank results acceptable? .... Yes [✓ No] N/A

Field blanks analyzed? (Levels C, D, E) .... Yes [✓ No] N/A

Field blank results acceptable? (Levels C, D, E) .... Yes No [✓ N/A]

Transcription/calculation errors? (Levels D, E) .... Yes No [✓ N/A]

Comments: Lithium - B6, B7, B8, B9, C0, D1, D2, D3, H(- UJ

Iron - D7,

No FB

4. ACCURACY (Levels C, D, and E)

MS/MSD samples analyzed? .... [✓ Yes] No N/A

MS/MSD results acceptable? .... Yes [✓ No] N/A

MS/MSD standards NIST traceable? (Levels D, E) .... Yes No [✓ N/A]

MS/MSD standards expired? (Levels D, E) .... Yes No [✓ N/A]

LCS/BSS samples analyzed? .... [✓ Yes] No N/A

LCS/BSS results acceptable? .... Yes [✓ No] N/A

Standards traceable? (Levels D, E) .... Yes No [✓ N/A]

Standards expired? (Levels D, E) .... Yes No [✓ N/A]

Transcription/calculation errors? (Levels D, E) .... Yes No [✓ N/A]

Performance audit sample(s) analyzed? .... Yes [✓ No] N/A

Performance audit sample results acceptable? .... Yes No [✓ N/A]

Comments: MS - Selenium (73) - J detects

LCS - Silicon (43%) (90) - J detects (91)

LCS - Antimony (135%) (91) - J detects (none)

MS - Hg - (74) - J all detects

No PAS

INORGANIC ANALYSIS DATA VALIDATION CHECKLIST

5. PRECISION (Levels C, D, and E)

Duplicate RPD values acceptable? .... Yes [✓ No] N/A
Duplicate results acceptable? .... Yes [✓ No] N/A
MS/MSD standards NIST traceable? (Levels D, E) .... Yes No [✓ N/A]
MS/MSD standards expired? (Levels D, E) .... Yes No [✓ N/A]
Field duplicate RPD values acceptable? .... Yes No [✓ N/A]
Field split RPD values acceptable? .... Yes No [✓ N/A]
Transcription/calculation errors? (Levels D, E) .... Yes No [✓ N/A]

Comments: Strontium - (32%) (20) - J all

6. ICP QUALITY CONTROL (Levels D and E)

ICP serial dilution samples analyzed? .... Yes No [✓ N/A]
ICP serial dilution %D values acceptable? .... Yes No [✓ N/A]
ICP post digestion spike required? .... Yes No [✓ N/A]
ICP post digestion spike values acceptable? .... Yes No [✓ N/A]
Standards traceable? .... Yes No [✓ N/A]
Standards expired? .... Yes No [✓ N/A]
Transcription/calculation errors? .... Yes No [✓ N/A]
Comments:

INORGANIC ANALYSIS DATA VALIDATION CHECKLIST

7. FURNACE AA QUALITY CONTROL (Levels D and E)

Duplicate injections performed as required? .... Yes No [✓ N/A]
Duplicate injection %RSD values acceptable? .... Yes No [✓ N/A]
Analytical spikes performed as required? .... Yes No [✓ N/A]
Analytical spike recoveries acceptable? .... Yes No [✓ N/A]
Standards traceable? .... Yes No [✓ N/A]
Standards expired? .... Yes No [✓ N/A]
MSA performed as required? .... Yes No [✓ N/A]
MSA results acceptable? .... Yes No [✓ N/A]
Transcription/calculation errors? .... Yes No [✓ N/A]
Comments:

8. HOLDING TIMES (all levels)

Samples properly preserved? .... [✓ Yes] No N/A
Sample holding times acceptable? .... ~~Yes~~ [✓ No] N/A
Comments:

HG-FL-747-52A-J all
B1-B5

INORGANIC ANALYSIS DATA VALIDATION CHECKLIST

9. RESULT QUANTITATION AND DETECTION LIMITS (all levels)

Results reported for all requested analyses? .... [✓ Yes] No N/A

Results supported in the raw data? (Levels D, E). .... Yes No [✓ N/A]

Samples properly prepared? (Levels D, E) .... Yes No [✓ N/A]

Detection limits meet RDL? .... ~~Yes~~ [✓ No] N/A

Transcription/calculation errors? (Levels D, E) .... Yes No [✓ N/A]

Comments: beryllium = all [illegible] [illegible]

Appendix 6

Additional Documentation Requested by Client

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

WC-Hanford, Inc.	Project: RC-118	
2620 Fermi Avenue	Project Number: K1785	**Reported:**
Richland WA, 99354	Project Manager: Joan Kessner	10/20/2009 11:05

Metals by SW846 6000/7000 series - Quality Control

Lionville Laboratory

Analyte	Result and Qualifiers		Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch L910090 - SW 3050B										
Blank (L910090-BLK1)				Prepared: 10/09/2009 Analyzed: 10/14/2009						
Aluminum	3.47	U	3.47	mg/kg						
Antimony	0.417	U	0.417	mg/kg						
Arsenic	0.694	U	0.694	mg/kg						
Barium	0.347	U	0.347	mg/kg						
Beryllium	0.139	U	0.139	mg/kg						
Bismuth	6.94	U	6.94	mg/kg						
Boron	1.39	U	1.39	mg/kg						
Cadmium	0.139	U	0.139	mg/kg						
Calcium	69.4	U	69.4	mg/kg						
Chromium	0.139	U	0.139	mg/kg						
Cobalt	1.39	U	1.39	mg/kg						
Copper	0.694	U	0.694	mg/kg						
Iron	13.9	U	13.9	mg/kg						
Lead	0.347	U	0.347	mg/kg						
Lithium	0.545	B	1.74	mg/kg						
Magnesium	0.945	B	52.1	mg/kg						
Manganese	3.47	U	3.47	mg/kg						
Molybdenum	1.39	U	1.39	mg/kg						
Nickel	2.78	U	2.78	mg/kg						
Phosphorus	34.7	U	34.7	mg/kg						
Potassium	278	U	278	mg/kg						
Selenium	0.694	U	0.694	mg/kg						
Silicon	1.39	U	1.39	mg/kg						
Silver	0.139	U	0.139	mg/kg						
Sodium	34.7	U	34.7	mg/kg						
Strontium	0.694	U	0.694	mg/kg						
Thallium	0.347	U	0.347	mg/kg						
Tin	0.828	B	6.94	mg/kg						
Uranium	13.9	U	13.9	mg/kg						
Vanadium	1.74	U	1.74	mg/kg						
Zinc	0.729	B	6.94	mg/kg						

WCH-Hanford, Inc	Project: RC-118	
2620 Fermi Avenue	Project Number: K1785	Reported:
Richland WA, 99354	Project Manager: Joan Kessner	10/20/2009 11:05

Metals by SW846 6000/7000 series - Quality Control

Lionville Laboratory

Analyte	Result and Qualifiers		Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch L910090 - SW 3050B										
Duplicate (L910090-DUP1)			**Source: 0909124-01**	Prepared: 10/09/2009 Analyzed: 10/13/2009						
Aluminum	4.39	U	4.39	mg/kg		3.25 U				20
Antimony	0.526	U	0.526	mg/kg		0.390 U				20
Arsenic	0.877	U	0.877	mg/kg		0.649 U				20
Barium	0.825		0.439	mg/kg		1.14			32*	20
Beryllium	0.175	U	0.175	mg/kg		0.130 U				20
Bismuth	8.77	U	8.77	mg/kg		6.49 U				20
Boron	1.75	U	1.75	mg/kg		1.30 U				20
Cadmium	0.175	U	0.175	mg/kg		0.130 U				20
Calcium	20000		87.7	mg/kg		26200			27*	20
Chromium	0.456		0.175	mg/kg		0.563			21*	20
Cobalt	1.75	U	1.75	mg/kg		1.30 U				20
Copper	0.877	U	0.877	mg/kg		0.649 U				20
Iron	7.66	B	17.5	mg/kg		9.32			20	20
Lead	0.439	U	0.439	mg/kg		0.325 U				20
Lithium	1.26	B	2.19	mg/kg		1.43			13	20
Magnesium	483		65.8	mg/kg		552			13	20
Manganese	1.57	B	4.39	mg/kg		1.95			21*	20
Molybdenum	1.75	U	1.75	mg/kg		1.30 U				20
Nickel	3.51	U	3.51	mg/kg		2.60 U				20
Phosphorus	11600		526	mg/kg		15500			29*	20
Potassium	2530		351	mg/kg		2830			11	20
Selenium	0.591	B	0.877	mg/kg		0.679			14	20
Silicon	2.41		1.75	mg/kg		2.67			10	20
Silver	0.175	U	0.175	mg/kg		0.130 U				20
Sodium	1790		43.9	mg/kg		1570			16	20
Strontium	14.5		0.877	mg/kg		20.1			32*	20
Thallium	0.439	U	0.439	mg/kg		0.325 U				20
Tin	11.3		8.77	mg/kg		18.3			47*	20
Uranium	17.5	U	17.5	mg/kg		13.0 U				20
Vanadium	0.469	B	2.19	mg/kg		0.517			10	20
Zinc	16.6		8.77	mg/kg		17.3			4	20

Metals by SW846 6000/7000 series - Quality Control

Lionville Laboratory

Analyte	Result and Qualifiers	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch L910090 - SW 3050B									
Matrix Spike (L910090-MS1)		**Source: 0909124-01**	Prepared: 10/09/2009 Analyzed: 10/14/2009						
Aluminum	132	3.29	mg/kg	131.58	3.25 U	100	75-125		
Antimony	32.8	0.395	mg/kg	32.895	0.390 U	100	75-125		
Arsenic	122	0.658	mg/kg	131.58	0.649 U	93	75-125		
Barium	138	0.329	mg/kg	131.58	1.14	104	75-125		
Beryllium	3.32	0.132	mg/kg	3.2895	0.130 U	101	75-125		
Bismuth	308	6.58	mg/kg	328.95	6.49 U	94	75-125		
Boron	64.0	1.32	mg/kg	65.789	1.30 U	97	75-125		
Cadmium	3.10	0.132	mg/kg	3.2895	0.130 U	94	75-125		
Calcium	14200	65.8	mg/kg	1644.7	26200	-728*	75-125		
Chromium	13.6	0.132	mg/kg	13.158	0.563	99	75-125		
Cobalt	32.8	1.32	mg/kg	32.895	1.30 U	100	75-125		
Copper	16.1	0.658	mg/kg	16.447	0.649 U	98	75-125		
Iron	74.1	13.2	mg/kg	65.789	9.32	99	75-125		
Lead	28.8	0.329	mg/kg	32.895	0.325 U	88	75-125		
Lithium	71.6	1.64	mg/kg	65.789	1.43	107	75-125		
Magnesium	2000	49.3	mg/kg	1644.7	552	88	75-125		
Manganese	34.3	3.29	mg/kg	32.895	1.95	98	75-125		
Molybdenum	66.6	1.32	mg/kg	65.789	1.30 U	101	75-125		
Nickel	32.6	2.63	mg/kg	32.895	2.60 U	99	75-125		
Phosphorus	8040	395	mg/kg	328.95	15500	-2250*	75-125		
Potassium	4000	263	mg/kg	1644.7	2810	72*	75-125		
Selenium	119	0.658	mg/kg	131.58	0.679	90	75-125		
Silicon	67.2	1.32	mg/kg	65.789	2.67	98	75-125		
Silver	3.26	0.132	mg/kg	3.2895	0.130 U	99	75-125		
Sodium	2830	32.9	mg/kg	1644.7	1520	80	75-125		
Strontium	80.0	0.658	mg/kg	65.789	20.1	91	75-125		
Thallium	111	0.329	mg/kg	131.58	0.325 U	85	75-125		
Tin	77.1	6.58	mg/kg	65.789	18.3	89	75-125		
Uranium	333	13.2	mg/kg	328.95	13.0 U	101	75-125		
Vanadium	35.5	1.64	mg/kg	32.895	0.517	106	75-125		
Zinc	46.0	6.58	mg/kg	32.895	17.3	87	75-125		

LIONVILLE LABORATORY

264 Welsh Pool Road
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WC-Hanford, Inc.	Project: RC-118	
2620 Fermi Avenue	Project Number: K1785	Reported:
Richland WA, 99354	Project Manager: Joan Kessner	10/20/2009 11:05

Metals by SW846 6000/7000 series - Quality Control

Lionville Laboratory

Analyte	Result and Qualifiers	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch L910090 - SW 3050B									
Reference (L910090-SRM1)			Prepared: 10/09/2009 Analyzed: 10/14/2009						
Aluminum	7530	12.1	mg/kg	6766.6		111	0-225.5		
Antimony	71.7	1.45	mg/kg	56.630		127	0-225.6		
Arsenic	117	2.42	mg/kg	113.85		102	85-115		
Barium	301	1.21	mg/kg	298.35		101	75.7-124.3		
Beryllium	109	0.484	mg/kg	108.32		101	85.2-114.8		
Boron	81.0	4.84	mg/kg	86.580		94	68.5-131.6		
Cadmium	223	0.484	mg/kg	224.09		99	84.9-115.1		
Calcium	3260	242	mg/kg	3305.9		99	82.8-117.2		
Chromium	81.2	0.484	mg/kg	77.390		105	76.8-123.2		
Cobalt	161	4.84	mg/kg	163.19		99	79.4-120.6		
Copper	264	2.42	mg/kg	265.65		99	82.4-117.6		
Iron	8480	48.4	mg/kg	8402.8		101	78.9-121.1		
Lead	186	1.21	mg/kg	187.62		99	81.5-118.5		
Lithium	121	6.05	mg/kg	113.01		107	33.8-166.2		
Magnesium	8590	181	mg/kg	8352.3		103	84.2-115.8		
Manganese	920	12.1	mg/kg	951.35		97	69-131		
Molybdenum	242	4.84	mg/kg	234.78		103	80.1-119.9		
Nickel	220	9.68	mg/kg	220.85		100	81.4-118.6		
Potassium	14400	968	mg/kg	14177		102	85.7-114.3		
Selenium	186	2.42	mg/kg	187.99		99	78.8-121.2		
Silicon	399	4.84	mg/kg	939.78		43	0-272.3		
Silver	85.0	0.484	mg/kg	83.960		101	81.9-118.1		
Sodium	9380	121	mg/kg	9587.1		98	83.5-116.4		
Strontium	187	2.42	mg/kg	171.65		109	67.5-132.5		
Thallium	86.8	1.21	mg/kg	85.410		102	77.1-122.9		
Tin	98.8	24.2	mg/kg	101.60		97	86.7-113.2		
Vanadium	106	6.05	mg/kg	97.430		109	75.8-124.2		
Zinc	196	24.2	mg/kg	196.52		100	78.9-121.1		

WCH-Hanford, Inc
2620 Fermi Avenue
Richland WA, 99354

Project: RC-118
Project Number: K1785
Project Manager: Joan Kessner

Reported:
10/20/2009 11:05

Metals by SW846 6000/7000 series - Quality Control

Lionville Laboratory

Analyte	Result and Qualifiers	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch L910091 - SW 3050B									
Blank (L910091-BLK1)			Prepared: 10/09/2009 Analyzed: 10/14/2009						
Aluminum	3.68 U	3.68	mg/kg						
Antimony	0.441 U	0.441	mg/kg						
Arsenic	0.735 U	0.735	mg/kg						
Barium	0.368 U	0.368	mg/kg						
Beryllium	0.147 U	0.147	mg/kg						
Bismuth	7.35 U	7.35	mg/kg						
Boron	1.47 U	1.47	mg/kg						
Cadmium	0.147 U	0.147	mg/kg						
Calcium	73.5 U	73.5	mg/kg						
Chromium	0.147 U	0.147	mg/kg						
Cobalt	1.47 U	1.47	mg/kg						
Copper	0.735 U	0.735	mg/kg						
Iron	14.7 U	14.7	mg/kg						
Lead	0.368 U	0.368	mg/kg						
Lithium	1.84 U	1.84	mg/kg						
Magnesium	55.1 U	55.1	mg/kg						
Manganese	3.68 U	3.68	mg/kg						
Molybdenum	1.47 U	1.47	mg/kg						
Nickel	2.94 U	2.94	mg/kg						
Phosphorus	36.8 U	36.8	mg/kg						
Potassium	294 U	294	mg/kg						
Selenium	0.735 U	0.735	mg/kg						
Silicon	1.47 U	1.47	mg/kg						
Silver	0.147 U	0.147	mg/kg						
Sodium	36.8 U	36.8	mg/kg						
Strontium	0.735 U	0.735	mg/kg						
Thallium	0.368 U	0.368	mg/kg						
Tin	1.02 B	7.35	mg/kg						
Uranium	14.7 U	14.7	mg/kg						
Vanadium	1.84 U	1.84	mg/kg						
Zinc	7.35 U	7.35	mg/kg						

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Metals by SW846 6000/7000 series - Quality Control

Lionville Laboratory

Analyte	Result and Qualifiers		Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch L910091 - SW 3050B										
Duplicate (L910091 DUP1)	Source: 0909124-12		Prepared: 10/09/2009 Analyzed: 10/14/2009							
Aluminum	4.10	U	4.10	mg/kg		3.38 U				20
Antimony	0.492	U	0.492	mg/kg		0.405 U				20
Arsenic	0.820	U	0.820	mg/kg		0.676 U				20
Barium	0.638		0.410	mg/kg		0.729			13	20
Beryllium	0.164	U	0.164	mg/kg		0.135 U				20
Bismuth	8.20	U	8.20	mg/kg		6.76 U				20
Boron	1.64	U	1.64	mg/kg		1.35 U				20
Cadmium	0.164	U	0.164	mg/kg		0.135 U				20
Calcium	15500		82.0	mg/kg		14400			8	20
Chromium	0.551		0.164	mg/kg		0.645			16	20
Cobalt	1.64	U	1.64	mg/kg		1.35 U				20
Copper	0.820	U	0.820	mg/kg		0.676 U				20
Iron	7.98	B	16.4	mg/kg		7.71			3	20
Lead	0.410	U	0.410	mg/kg		0.338 U				20
Lithium	0.973	B	2.05	mg/kg		0.677			36*	20
Magnesium	421		61.5	mg/kg		438			4	20
Manganese	0.993	B	4.10	mg/kg		0.931			6	20
Molybdenum	1.64	U	1.64	mg/kg		1.35 U				20
Nickel	3.28	U	3.28	mg/kg		2.70 U				20
Phosphorus	9560		492	mg/kg		9630			0.7	20
Potassium	2910		328	mg/kg		3180			9	20
Selenium	0.898		0.820	mg/kg		0.841			7	20
Silicon	2.11		1.64	mg/kg		2.31			9	20
Silver	0.164	U	0.164	mg/kg		0.135 U				20
Sodium	1280		41.0	mg/kg		1230			3	20
Strontium	12.8		0.820	mg/kg		12.7			1	20
Thallium	0.410	U	0.410	mg/kg		0.338 U				20
Tin	7.75	B	8.20	mg/kg		8.06			4	20
Uranium	16.4	U	16.4	mg/kg		13.5 U				20
Vanadium	0.310	B	2.05	mg/kg		0.377			19	20
Zinc	20.1		8.20	mg/kg		21.1			5	20

WC Hanford, Inc.	Project: RC-118	
2620 Fermi Avenue	Project Number: K1785	Reported:
Richland WA, 99354	Project Manager: Joan Kessner	10/20/2009 11:05

Metals by SW846 6000/7000 series - Quality Control

Lionville Laboratory

Analyte	Result and Qualifiers	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch L910091 - SW 3050B									
Matrix Spike (L910091-MS1)	Source: 0909124-12		Prepared: 10/09/2009 Analyzed: 10/14/2009						
Aluminum	148	3.85	mg/kg	153.85	3.38 U	96	75-125		
Antimony	36.6	0.462	mg/kg	38.462	0.405 U	95	75-125		
Arsenic	138	0.769	mg/kg	153.85	0.676 U	90	75-125		
Barium	151	0.385	mg/kg	153.85	0.729	98	75-125		
Beryllium	3.66	0.154	mg/kg	3.8462	0.135 U	95	75-125		
Bismuth	355	7.69	mg/kg	384.62	6.76 U	92	75-125		
Boron	72.0	1.54	mg/kg	76.923	1.35 U	94	75-125		
Cadmium	3.55	0.154	mg/kg	3.8462	0.135 U	92	75-125		
Calcium	17400	76.9	mg/kg	1923.1	14400	158*	75-125		
Chromium	15.2	0.154	mg/kg	15.385	0.645	95	75-125		
Cobalt	36.6	1.54	mg/kg	38.462	1.35 U	95	75-125		
Copper	17.8	0.769	mg/kg	19.231	0.676 U	92	75-125		
Iron	81.6	15.4	mg/kg	76.923	7.73	96	75-125		
Lead	32.8	0.385	mg/kg	38.462	0.338 U	85	75-125		
Lithium	78.8	1.92	mg/kg	76.923	0.677	102	75-125		
Magnesium	2290	57.7	mg/kg	1923.1	438	96	75-125		
Manganese	38.1	3.85	mg/kg	38.462	0.931	97	75-125		
Molybdenum	75.7	1.54	mg/kg	76.923	1.35 U	98	75-125		
Nickel	36.9	3.08	mg/kg	38.462	2.70 U	96	75-125		
Phosphorus	11100	462	mg/kg	384.62	9610	173*	75-125		
Potassium	4650	308	mg/kg	1923.1	3180	76	75-125		
Selenium	138	0.769	mg/kg	153.85	0.841	89	75-125		
Silicon	76.2	1.54	mg/kg	76.923	2.11	96	75-125		
Silver	3.62	0.154	mg/kg	3.8462	0.135 U	94	75-125		
Sodium	3030	38.5	mg/kg	1923.1	1250	93	75-125		
Strontium	89.8	0.769	mg/kg	76.923	12.7	100	75-125		
Thallium	131	0.385	mg/kg	153.85	0.338 U	85	75-125		
Tin	78.6	7.69	mg/kg	76.923	4.06	97	75-125		
Uranium	361	15.4	mg/kg	384.62	13.5 U	94	75-125		
Vanadium	39.7	1.92	mg/kg	38.462	0.377	102	75-125		
Zinc	59.6	7.69	mg/kg	38.462	21.1	100	75-125		

Metals by SW846 6000/7000 series - Quality Control

Lionville Laboratory

Analyte	Result and Qualifiers	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch L910091 - SW 3050B									
Reference (L910091-SRM1)				Prepared: 10/09/2009 Analyzed: 10/14/2009					
Aluminum	7100	14.4	mg/kg	6566.6		108	0-225.5		
Antimony	75.2	1.73	mg/kg	56.630		133	0-225.6		
Arsenic	120	2.88	mg/kg	113.85		105	85-115		
Barium	321	1.44	mg/kg	298.15		108	75.7-124.3		
Beryllium	113	0.577	mg/kg	108.12		105	85.2-114.8		
Boron	86.5	5.77	mg/kg	86.580		100	68.5-131.6		
Cadmium	232	0.577	mg/kg	224.09		104	84.9-115.1		
Calcium	3470	288	mg/kg	3305.9		105	82.8-117.2		
Chromium	83.5	0.577	mg/kg	77.590		108	76.8-123.2		
Cobalt	168	5.77	mg/kg	161.19		104	79.4-120.6		
Copper	272	2.88	mg/kg	265.65		102	82.4-117.6		
Iron	8760	57.7	mg/kg	8202.8		107	78.9-121.1		
Lead	201	1.44	mg/kg	187.62		107	81.5-118.5		
Lithium	124	7.21	mg/kg	113.01		110	33.3-166.7		
Magnesium	8960	216	mg/kg	8352.3		107	84.2-115.8		
Manganese	837	14.4	mg/kg	951.35		88	69-131		
Molybdenum	254	5.77	mg/kg	234.78		108	80.1-119.9		
Nickel	233	11.5	mg/kg	220.85		106	81.4-118.6		
Potassium	14900	1150	mg/kg	14177		105	85.7-114.3		
Selenium	196	2.88	mg/kg	187.99		104	78.8-121.2		
Silicon	498	5.77	mg/kg	939.78		53	0-277.3		
Silver	85.4	0.577	mg/kg	83.960		102	81.9-118.1		
Sodium	9850	144	mg/kg	9587.1		103	83.6-116.4		
Strontium	187	2.88	mg/kg	171.65		109	67.5-132.5		
Thallium	92.1	1.44	mg/kg	85.410		108	77.1-122.9		
Tin	105	28.8	mg/kg	101.60		103	86.7-113.3		
Vanadium	110	7.21	mg/kg	97.430		112	75.8-124.2		
Zinc	204	28.8	mg/kg	196.57		104	78.9-121.1		

Metals by SW846 6000/7000 series - Quality Control

Lionville Laboratory

Analyte	Result and Qualifiers	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch L910094 - SW 7471A Prep									
Blank (L910094-BLK1)			Prepared: 10/12/2009 Analyzed: 10/13/2009						
Mercury	0.0300 U	0.0300	mg/kg						
Duplicate (L910094-DUP1)		Source: 0909124-01	Prepared: 10/12/2009 Analyzed: 10/13/2009						
Mercury	0.197	0.0250	mg/kg		0.145			30.2*	20
Matrix Spike (L910094-MS1)		Source: 0909124-01	Prepared: 10/12/2009 Analyzed: 10/13/2009						
Mercury	0.405	0.0281	mg/kg	0.15625	0.145	166*	75-125		
Reference (L910094-SRM1)			Prepared: 10/12/2009 Analyzed: 10/13/2009						
Mercury	1.32	0.0281	mg/kg	1.2600		105	65.9-133.3		
Batch L910095 - SW 7471A Prep									
Blank (L910095-BLK1)			Prepared: 10/12/2009 Analyzed: 10/13/2009						
Mercury	0.0300 U	0.0300	mg/kg						
Duplicate (L910095-DUP1)		Source: 0909124-12	Prepared: 10/12/2009 Analyzed: 10/13/2009						
Mercury	0.0807	0.0250	mg/kg		0.0936			14.8	20
Matrix Spike (L910095-MS1)		Source: 0909124-12	Prepared: 10/12/2009 Analyzed: 10/13/2009						
Mercury	0.231	0.0281	mg/kg	0.15625	0.0936	88.1	75-125		
Reference (L910095-SRM1)			Prepared: 10/12/2009 Analyzed: 10/13/2009						
Mercury	1.38	0.0300	mg/kg	1.2600		110	65.9-133.3		

Metals by SW846 6000/7000 series - Quality Control

Lionville Laboratory

Analyte	Result and Qualifiers		Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch L912140 - SW 7471A Prep										
Blank (L912140-BLK1)				Prepared: 12/16/2009 Analyzed: 12/18/2009						
Mercury	0.0300	U	0.0300	mg/kg						
Duplicate (L912140-DUP2)		Source: 0912038-01		Prepared: 12/16/2009 Analyzed: 12/18/2009						
Mercury	0.0918		0.0243	mg/kg		0.105			13.6	20
Matrix Spike (L912140-MS2)		Source: 0912038-01		Prepared: 12/16/2009 Analyzed: 12/18/2009						
Mercury	0.224		0.0273	mg/kg	0.15132	0.105	78.6	75-125		
Reference (L912140-SRM1)				Prepared: 12/16/2009 Analyzed: 12/18/2009						
Mercury	1.24		0.0273	mg/kg	1.2600		98.2	65.9-111.4		
Batch L912162 - SW 3050B										
Blank (L912162-BLK1)				Prepared: 12/21/2009 Analyzed: 12/30/2009						
Aluminum	4.24	U	4.24	mg/kg						
Antimony	0.508	U	0.508	mg/kg						
Arsenic	0.847	U	0.847	mg/kg						
Barium	0.424	U	0.424	mg/kg						
Beryllium	0.169	U	0.169	mg/kg						
Bismuth	8.47	U	8.47	mg/kg						
Boron	1.69	U	1.69	mg/kg						
Cadmium	0.169	U	0.169	mg/kg						
Calcium	10.6	B	84.7	mg/kg						
Chromium	0.169	U	0.169	mg/kg						
Cobalt	1.69	U	1.69	mg/kg						
Copper	0.847	U	0.847	mg/kg						
Iron	16.9	U	16.9	mg/kg						
Lead	0.424	U	0.424	mg/kg						
Lithium	2.12	U	2.12	mg/kg						
Magnesium	63.6	U	63.6	mg/kg						
Manganese	4.24	U	4.24	mg/kg						
Molybdenum	1.69	U	1.69	mg/kg						
Nickel	3.39	U	3.39	mg/kg						
Phosphorus	22.6	B	42.4	mg/kg						
Potassium	25.4	B	339	mg/kg						
Selenium	0.847	U	0.847	mg/kg						
Silicon	1.69	U	1.69	mg/kg						
Silver	0.169	U	0.169	mg/kg						
Sodium	42.4	U	42.4	mg/kg						

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WC Hanford, Inc. 2620 Fermi Avenue Richland WA, 99354	Project: RC 118 Project Number: K1785 Project Manager: Joan Kessner	Reported: 12/31/2009 09:15

Metals by SW846 6000/7000 series - Quality Control

Lionville Laboratory

Analyte	Result and Qualifiers		Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch L912162 - SW 3050B										
Blank (L912162-BLK1)				Prepared: 12/21/2009 Analyzed: 12/29/2009						
Strontium	0.847	U	0.847	mg/kg						
Thallium	0.424	U	0.424	mg/kg						
Tin	8.47	U	8.47	mg/kg						
Uranium	16.9	U	16.9	mg/kg						
Vanadium	2.12	U	2.12	mg/kg						
Zinc	8.47	U	8.47	mg/kg						
Duplicate (L912162-DUP2)		Source: 0912038-01		Prepared: 12/21/2009 Analyzed: 12/29/2009						
Aluminum	4.72	U	4.72	mg/kg		4.55 U				20
Antimony	0.566	U	0.566	mg/kg		0.545 U				20
Arsenic	0.943	U	0.943	mg/kg		0.909 U				20
Barium	0.472	U	0.472	mg/kg		0.455 U				20
Beryllium	0.189	U	0.189	mg/kg		0.182 U				20
Bismuth	9.43	U	9.43	mg/kg		9.09 U				20
Boron	1.89	U	1.89	mg/kg		1.82 U				20
Cadmium	0.199		0.189	mg/kg		0.191			4	20
Calcium	163		94.3	mg/kg		166			2	20
Chromium	0.189	U	0.189	mg/kg		0.182 U				20
Cobalt	1.89	U	1.89	mg/kg		1.82 U				20
Copper	7.05		0.943	mg/kg		6.01			16	20
Iron	149		18.9	mg/kg		147			1	20
Lead	0.472	U	0.472	mg/kg		0.455 U				20
Lithium	2.36	U	2.36	mg/kg		2.27 U				20
Magnesium	150		70.8	mg/kg		156			4	20
Manganese	0.912	B	4.72	mg/kg		0.841			8	20
Molybdenum	1.89	U	1.89	mg/kg		1.82 U				20
Nickel	3.77	U	3.77	mg/kg		3.64 U				20
Phosphorus	2350		47.2	mg/kg		2410			1	20
Potassium	2340		177	mg/kg		2470			5	20
Selenium	1.88		0.943	mg/kg		2.18			14	20
Silicon	3.34		1.89	mg/kg		3.01			10	20
Silver	0.189	U	0.189	mg/kg		0.182 U				20
Sodium	1280		47.2	mg/kg		1330			4	20
Strontium	0.186	B	0.943	mg/kg		0.189			2	20
Thallium	0.472	U	0.472	mg/kg		0.455 U				20
Tin	1.44	B	9.43	mg/kg		1.13			26*	20
Uranium	18.9	U	18.9	mg/kg		18.2 U				20

Metals by SW846 6000/7000 series - Quality Control

Lionville Laboratory

Analyte	Result and Qualifiers	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch L912162 - SW 3050B									
Duplicate (L912162-DUP2)		**Source: 0912038-01**		**Prepared: 12/21/2009 Analyzed: 12/29/2009**					
Vanadium	2.36 U	2.36	mg/kg		2.27 U				20
Zinc	24.0	9.41	mg/kg		21.8			0.9	20
Matrix Spike (L912162-MS2)		**Source: 0912038-01**		**Prepared: 12/21/2009 Analyzed: 12/29/2009**					
Aluminum	140	3.52	mg/kg	140.85	4.55 U	100	75-125		
Antimony	36.5	0.423	mg/kg	35.211	0.345 U	104	75-125		
Arsenic	147	0.704	mg/kg	140.85	0.909 U	104	75-125		
Barium	149	0.352	mg/kg	140.85	0.455 U	106	75-125		
Beryllium	3.53	0.141	mg/kg	3.5211	0.182 U	100	75-125		
Bismuth	390	7.04	mg/kg	352.11	9.09 U	111	75-125		
Boron	73.7	1.41	mg/kg	70.423	1.82 U	105	75-125		
Cadmium	4.02	0.141	mg/kg	3.5211	0.191	109	75-125		
Calcium	1880	70.4	mg/kg	1760.6	166	97	75-125		
Chromium	14.3	0.141	mg/kg	14.085	0.182 U	102	75-125		
Cobalt	37.2	1.41	mg/kg	35.211	1.82 U	106	75-125		
Copper	25.2	0.704	mg/kg	17.606	6.01	109	75-125		
Iron	277	14.1	mg/kg	70.423	147	106	75-125		
Lead	34.5	0.352	mg/kg	35.211	0.455 U	98	75-125		
Lithium	75.6	1.76	mg/kg	70.423	2.27 U	107	75-125		
Magnesium	1840	52.8	mg/kg	1760.6	156	96	75-125		
Manganese	37.0	1.57	mg/kg	35.211	0.843	103	75-125		
Molybdenum	72.5	1.41	mg/kg	70.423	1.82 U	103	75-125		
Nickel	36.2	2.82	mg/kg	35.211	3.64 U	103	75-125		
Phosphorus	2860	35.2	mg/kg	352.11	2410	126*	75-125		
Potassium	4290	282	mg/kg	1760.6	2470	103	75-125		
Selenium	157	0.704	mg/kg	140.85	2.18	110	75-125		
Silicon	77.9	1.41	mg/kg	70.423	3.01	106	75-125		
Silver	3.56	0.141	mg/kg	3.5211	0.182 U	101	75-125		
Sodium	3250	35.2	mg/kg	1760.6	1330	109	75-125		
Strontium	75.0	0.704	mg/kg	70.423	0.189	106	75-125		
Thallium	136	0.352	mg/kg	140.85	0.455 U	97	75-125		
Tin	68.0	7.04	mg/kg	70.423	1.11	95	75-125		
Uranium	336	14.1	mg/kg	352.11	18.2 U	95	75-125		
Vanadium	34.3	1.76	mg/kg	35.211	2.27 U	97	75-125		
Zinc	60.8	7.04	mg/kg	35.211	23.8	105	75-125		

WCH-Hanford, Inc	Project: RC-118	
2620 Fermi Avenue	Project Number: K1285	Reported:
Richland WA, 99354	Project Manager: Joan Kessner	12/31/2009 09:15

Metals by SW846 6000/7000 series - Quality Control

Lionville Laboratory

Analyte	Result and Qualifiers	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch L912162 - SW 3050B									
Reference (L912162-SRM1)			Prepared: 12/21/2009 Analyzed: 12/29/2009						
Aluminum	6800	12.5	mg/kg	6766.6		101	0-225.5		
Antimony	60.4	1.50	mg/kg	56.630		107	0-225.6		
Arsenic	125	2.50	mg/kg	113.85		110	85-115		
Barium	330	1.25	mg/kg	298.35		111	75.7-124.3		
Beryllium	115	0.500	mg/kg	108.32		106	85.2-114.8		
Boron	96.1	5.00	mg/kg	86.580		111	68.5-131.6		
Cadmium	256	0.500	mg/kg	224.09		114	84.9-115.1		
Calcium	3120	250	mg/kg	3105.9		100	82.8-117.2		
Chromium	81.0	0.500	mg/kg	77.590		104	76.8-123.2		
Cobalt	182	5.00	mg/kg	164.39		111	79.4-120.6		
Copper	304	2.50	mg/kg	265.65		115	82.4-117.6		
Iron	9030	50.0	mg/kg	8202.8		110	78.9-121.1		
Lead	199	1.25	mg/kg	187.62		106	81.5-118.5		
Lithium	128	6.25	mg/kg	113.01		111	33.8-166.2		
Magnesium	8390	188	mg/kg	8352.3		100	84.2-115.8		
Manganese	992	12.5	mg/kg	951.35		104	69-131		
Molybdenum	258	5.00	mg/kg	234.78		110	80.1-119.9		
Nickel	239	10.0	mg/kg	220.85		108	81.4-118.6		
Potassium	15800	1000	mg/kg	14177		111	85.7-114.3		
Selenium	217	2.50	mg/kg	187.99		115	78.8-121.2		
Silicon	1390	5.00	mg/kg	939.78		148	0-277.3		
Silver	86.0	0.500	mg/kg	83.960		102	81.9-118.1		
Sodium	10600	125	mg/kg	9587.1		111	83.5-116.5		
Strontium	190	2.50	mg/kg	171.65		111	67.5-132.5		
Thallium	90.5	1.25	mg/kg	85.410		106	77.1-122.9		
Tin	109	25.0	mg/kg	101.60		107	86.7-113.3		
Vanadium	103	6.25	mg/kg	97.430		106	75.8-124.2		
Zinc	218	25.0	mg/kg	196.52		111	78.9-121.1		

000104

Date: 8 February 2010
To: Washington Closure Hanford Inc. (technical representative)
From: ELR Consulting
Project: Columbia River Component of the RCBRA - Tissues
Subject: Radiochemistry - Data Package No. K1785-EB

INTRODUCTION

This memo presents the results of data validation on Data Package No. K1765 prepared by Eberline Services (EB). A list of samples validated along with the analyses reported and the method of analysis is provided in the following table.

Sample ID	Sample Date	Media	Validation	Date
J18X86	9/24/09	Solid	C	See note 1
J18X87	9/25/09	Solid	C	See note 1
J18X88	9/25/09	Solid	C	See note 1
J18X89	9/24/09	Solid	C	See note 1
J18X90	9/24/09	Solid	C	See note 1
J18XB1	9/24/09	Solid	C	See note 1
J18XB2	9/25/09	Solid	C	See note 1
J18XB3	9/25/09	Solid	C	See note 1
J18XB4	9/25/09	Solid	C	See note 1
J18XB5	9/24/09	Solid	C	See note 1
J18XB6	9/24/09	Solid	C	See note 1
J18XB7	9/25/09	Solid	C	See note 1
J18XB8	9/25/09	Solid	C	See note 1
J18XB9	9/24/09	Solid	C	See note 1
J18XC0	9/24/09	Solid	C	See note 1
J18XD1	9/24/09	Solid	C	See note 1
J18XD2	9/24/09	Solid	C	See note 1
J18XD3	9/24/09	Solid	C	See note 1
J18XD4	9/25/09	Solid	C	See note 1
J18XD5	9/25/09	Solid	C	See note 1
J18XF6	9/24/09	Solid	C	See note 1
J18XF7	9/24/09	Solid	C	See note 1
J18XF8	9/24/09	Solid	C	See note 1
J18XF9	9/25/09	Solid	C	See note 1
J18XH0	9/25/09	Solid	C	See note 1
J18XH1	9/24/09	Solid	C	See note 1
J18XH2	9/24/09	Solid	C	See note 1
J18XH3	9/24/09	Solid	C	See note 1
J18XH4	9/25/09	Solid	C	See note 1
J18XH5	9/25/09	Solid	C	See note 1
J195V7	9/21/09	Solid	C	See note 1
J195V8	9/21/09	Solid	C	See note 1
J195V9	9/21/09	Solid	C	See note 1
J195W0	9/24/09	Solid	C	See note 1
J19661	9/24/09	Solid	C	See note 1
J19662	9/24/09	Solid	C	See note 1

J19746	9/24/09	Solid	C	See note 1
J19747	9/24/09	Solid	C	See note 1
J19748	9/24/09	Solid	C	See note 1

1 Tritium, carbon-14, total strontium, technetium 99, alpha spectroscopy and gamma spectroscopy.

Data validation was conducted in accordance with the Washington Closure Hanford (WCH) validation statement of work and the Remedial Investigation Work Plan for Hanford Site Releases to the Columbia River (DOE/RL-2008, Rev. 0, September 2006). Appendices 1 through 6 provide the following information as indicated below:

Appendix 1. Glossary of Data Reporting Qualifiers
Appendix 2. Summary of Data Qualification
Appendix 3. Qualified Data Summary and Annotated Laboratory Reports
Appendix 4. Laboratory Narrative and Chain-of-Custody Documentation
Appendix 5. Data Validation Supporting Documentation
Appendix 6. Additional Data Requested by Client

DATA QUALITY PARAMETERS

Holding Times

Holding times are calculated from Chain-of-Custody forms to determine the validity of the results. The maximum holding time for radiochemical analysis is 6 months.

All holding times were acceptable

Preparation (Method) Blanks

Laboratory Blanks

Blank samples are analyzed to determine if positive results are due to laboratory reagent, sample container, or detector contamination. If blank analysis results indicate the presence of an analyte above the minimum detectable activity (MDA), the following qualifiers are applied: All positive sample results less than five times the highest blank concentration are qualified as estimates and flagged "J"; sample results below the MDA are qualified as undetected and flagged "U"; sample results above the MDA and greater than five times the highest blank concentration are not qualified.

All blank results were acceptable

Field (Equipment) Blank

No field blanks were submitted for analysis.

- **Accuracy**

Accuracy is evaluated from laboratory control sample (LCS) or blank spike sample (BSS) batch samples and spiked samples from the analytical batch. Measured activities are compared to the known added amounts. The acceptable LCS or BSS and matrix spike (MS) recovery range is 70-130%. In addition, samples may be spiked with a radiochemical tracer to assist in isolating the radioisotope of interest with the yield of 8/25/09the tracer being used in calculating sample activity. The acceptable range for tracer recovery is 20% to 105%. Spike sample results outside the above ranges result in associated sample results being qualified as estimates, or not qualified, depending on the activity of the individual sample. Results are rejected for LCS/BSS recoveries of less than 30% and tracer recoveries of less than 20%, and tracer recoveries of greater than 115% for detected results.

Due to the lack of an LCS analysis, all thorium-228 (aspec) and thorium-232 (aspec) results were qualified as estimates and flagged "J".

Due to the lack of a matrix spike analysis, all tritium and carbon-14 results were qualified as estimates and flagged "J".

All other accuracy results were acceptable.

- **Laboratory Duplicates**

Analytical precision is expressed by the relative percent differences (RPD) between the recoveries of duplicate matrix spike analyses performed on a sample in the analytical batch. Precision may alternatively be assessed using unspiked duplicate analyses performed on a sample in the analytical batch. If both sample and replicate activities (concentrations) are greater than five times the contract required detection limit (CRDL) and the RPD is less than 30%, no qualification is required. If either activity (concentration) is less than five times the CRDL, the RPD control limit is less than or equal to two times the CRDL. If the RPD is outside the applicable control limit, associated results are qualified as estimated detects or estimated non-detects.

All duplicate results were acceptable.

Field Duplicates

No field duplicates were submitted for analysis.

- **Detection Levels**

Reported analytical detection levels for undetected analytes are compared against the RCBRA tissue RQLs to ensure that laboratory detection levels meet the required criteria. Fiftty-six analytes exceeded the RQL. Under the WCH statement of work, no qualification is required. All other analytes met the RQL.

- **Completeness**

Data package No. K1785 was submitted for validation and verified for completeness. Completeness is based on the percentage of data determined to be valid (i.e., not rejected). The completion percentage was 100%.

MAJOR DEFICIENCIES

None found.

MINOR DEFICIENCIES

The following minor deficiencies were noted:

- Due to the lack of an LCS analysis, all thorium-228 (aspec) and thorium-232 (aspec) results were qualified as estimates and flagged "J".
- Due to the lack of a matrix spike analysis, all tritium and carbon-14 results were qualified as estimates and flagged "J".

Data flagged "J" indicates that the associated concentration is an estimate, but under the WCH statement of work, the data may be usable for decision-making purposes. All other validated results are considered accurate within the standard error associated with the methods.

Fifty-six analytes exceeded the RQL. Under the WCH statement of work, no qualification is required.

REFERENCES

Washington Closure Hanford Contract #S00W307A00 (March 2008), *Data Validation Services*.

DOE/RL-2008-11, Rev. 0, September 2008, *Remedial Investigation Work Plan for Hanford Site Releases to the Columbia River*.

Appendix 1

Glossary of Data Reporting Qualifiers

Qualifiers which may be applied by data validators in compliance with the WCH statement of work are as follows:

U - Indicates the compound or analyte was analyzed for and not detected above the minimum detectable activity (MDA) in the sample. The value reported is the sample result corrected for sample dilution and moisture content by the laboratory. The data is usable for decision making purposes

UJ - Indicates the compound or analyte was analyzed for and not detected at concentrations above the minimum detectable activity (MDA) in the sample. Due to a minor QC deficiency identified during the data validation, the associated quantitation limit is an estimate, but is usable for decision making purposes.

J - Indicates the compound or analyte was analyzed for and detected. Due to a minor QC deficiency identified during the data validation, the associated concentration is an estimate, but the data are usable for decision-making purposes.

R - Indicates the compound or analyte was analyzed for, detected, and due to an identified major QC deficiency, the data are unusable.

UR - Indicates the compound or analyte was analyzed for and not detected in the sample. Additionally, the data is unusable due to an identified major QC deficiency.

Appendix 2

Summary of Data Qualification

RADIOCHEMISTRY DATA QUALIFICATION SUMMARY*

SDG: K1785	REVIEWER: ELR	Project: RCBRA	PAGE 1 OF 1
COMPOUND	QUALIFIER	SAMPLES AFFECTED	REASON
Thorium-228 (aspec) Thorium-232 (aspec)	J	All	No LCS analysis
Tritium Carbon-14	J	All	No MS analysis

* - The Qualified Data Summary Table includes laboratory applied "U" qualifiers not specifically identified here. The laboratory applied "U" qualifiers are included to minimize misinterpretation of results contained in the table.

Appendix 3

Qualified Data Summary and Annotated Laboratory Reports

EBERLINE ANALYTICAL/RICHMOND

SAMPLE DELIVERY GROUP K1785

7474-001

J18XF6

DATA SHEET

SDG	7474	Client/Case no	Hanford SDG K1785
Contact	N. Joseph Verville	Contract	No. 500N235A00
Lab sample id	K909133-01	Client sample id	J18XF6
Dept sample id	7474 001	Location/Matrix	1008A-WALL LIV/KID SOLID
Received	09/30/09	Collected/Weight	09/24/09 17:35 58 g
% solids	100.0	Custody/SAP No	RC-118-236 RC-118

2/7/10

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Tritium	10028-17-8	-0.420	4.0	6.85	400	U J	H
Carbon 14	14762 75-5	-2.29	1.6	6.21	50.0	U J	C
Total Strontium	SR-RAD	-0.055	0.15	0.268	1.00	U	SR
Technetium 99	14133-76-7	0.050	0.24	0.394	15.0	U	TC
Thorium 228	14274 82-9	0	0.15	0.360	1.00	U J	TH
Thorium 230	14269-63-7	0.125	0.35	0.539	1.00	U	TH
Thorium 232	TH-232	0	0.050	0.191	1.00	U J	TH
Uranium 233/234	U-233/234	0	0.065	0.249	1.00	U	U
Uranium 235	15117-96-1	0	0.079	0.302	1.00	U	U
Uranium 238	U-238	0	0.065	0.249	1.00	U	U
Plutonium 238	13981-16-3	0	0.064	0.243	1.00	U	PU
Plutonium 239/240	PU-239/240	0.032	0.064	0.243	1.00	U	PU
Potassium 40	13966-00 2	1.51	0.81	0.404			GAM
Cobalt 60	10198-40-0	U		0.042	0.050	U	GAM
Cesium 137	10045-97-3	U		0.044	0.100	U	GAM
Radium 226	13982-63-3	U		0.097	0.100	U	GAM
Radium 228	15262-20-1	U		0.202	0.200	U	GAM
Europium 152	14683-23-9	U		0.116	0.400	U	GAM
Europium 154	15585 10-1	U		0.159	0.100	U	GAM
Europium 155	14391-16 3	U		0.114	0.100	U	GAM
Thorium 228	14274-82-9	U		0.082		U	GAM
Thorium 232	TH-232	U		0.202		U	GAM
Uranium 235	15117-96-1	U		0.247		U	GAM
Uranium 238	U 238	U		4.89		U	GAM
Americium 241	14596-10 2	U		0.103		U	GAM
Beryllium 7	13966-02-4	U		0.434		U	GAM
Ruthenium 106	13967-48-1	U		0.145		U	GAM
Antimony 125	14234-35-6	U		0.096		U	GAM

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SUMMARY DATA SECTION
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Lab id	EBERLINE
Protocol	Hanford
Version	Ver 1.0
Form	DVD-DS
Version	3.06
Report date	11/10/09

EBERLINE ANALYTICAL/RICHMOND

SAMPLE DELIVERY GROUP K1785

7474-001

J18XP6

DATA SHEET, cont

SDG 7474
Contact N. Joseph Verville

Client/Case no Hanford SDG K1785
Contract No. 300W235A00

Lab sample id R909133-01
Dept sample id 7474-001
Received 09/30/09
% solids 100.0

Client sample id J18XP6
Location/Matrix 300SA WALL LIV/KID SOLID
Collected/Weight 09/24/09 17:35 58 g
Custody/SAF No RC-118-236 RC-118

2/7/10

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Cesium 134	13967-70-9	U		0.057		U	GAM

Columbia River Component of the RCBRA Tissues

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SUMMARY DATA SECTION
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Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD DS
Version 1.06
Report date 11/10/09

EBERLINE ANALYTICAL/RICHMOND

SAMPLE DELIVERY GROUP K1785

7474-002

DATA SHEET

J18XF7

SDG 7474
Contact N. Joseph Verville
Client/Case no Hanford
SDG K1785
Contract NO. 500W235A00

Lab sample id K909133-02
Dept sample id 7474.002
Received 09/30/09
% solids 100.0

Client sample id J18XF7
Location/Matrix 300SA-WAL2.LIV/KID SOLID
Collected/Weight 09/24/09 17:50 55 g
Custody/SAF No RC-118-237 RC-118

✓ 2/7/10

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	ADL pCi/g	QUALI-FIERS	TEST
Tritium	10028 17-8	-0.852	3.5	6.17	400	U J	H
Carbon 14	14762-75-5	0.369	2.6	4.38	50.0	U J	C
Total Strontium	SR-RAD	-0.058	0.10	0.274	1.00	U	SR
Technetium 99	14133-76-7	0.071	0.22	0.303	15.0	U	TC
Thorium 228	14274-82-9	0.076	0.16	0.292	1.00	U J	TH
Thorium 230	14269-63-7	-0.237	0.32	0.570	1.00	U	TH
Thorium 232	TH-232	0.026	0.053	0.202	1.00	U J	TH
Uranium 233/234	U-233/234	0.025	0.099	0.190	1.00	U	U
Uranium 235	15117-96-1	0	0.060	0.230	1.00	U	U
Uranium 238	U-238	0	0.050	0.190	1.00	U	U
Plutonium 238	13981-16-3	0	0.074	0.278	1.00	U	PU
Plutonium 239/240	PU-239/240	0.036	0.15	0.277	1.00	U	PU
Potassium 40	13966-00-2	2.06	1.0	1.01			GAM
Cobalt 60	10198-40-0	U		0.082	0.050	U	GAM
Cesium 137	10045-97-3	U		0.085	0.100	U	GAM
Radium 226	13982-63-3	U		0.161	0.100	U	GAM
Radium 228	15262-20-1	U		0.148	0.200	U	GAM
Europium 152	14683-23-9	U		0.105	0.100	U	GAM
Europium 154	15585-10-1	U		0.232	0.100	U	GAM
Europium 155	14391-16-3	U		0.134	0.100	U	GAM
Thorium 228	14274-82-9	U		0.105		U	GAM
Thorium 232	TH-232	U		0.348		U	GAM
Uranium 235	15117-96-1	U		0.307		U	GAM
Uranium 238	U-238	U		10.2		U	GAM
Americium 241	14596-10-2	U		0.068		U	GAM
Beryllium 7	13966-02-4	U		0.621		U	GAM
Ruthenium 106	13967-48-1	U		0.638		U	GAM
Antimony 125	14234-35-6	U		0.147		U	GAM

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD DS
Version 1.06
Report date 11/10/09

E B E R L I N E   A N A L Y T I C A L / R I C H M O N D

SAMPLE DELIVERY GROUP K1785

7474-002

J18XF7

DATA SHEET, cont

SDG	7474	Client/Case no	Hanford SDG K1785
Contact	N. Joseph Verville	Contract	No. S00W215A00
Lab sample id	R909133-02	Client sample id	J18XF7
Dept sample id	7474-002	Location/Matrix	300SA:WAL2,LIV/KID SOLID
Received	09/30/09	Collected/Weight	09/24/09 17:50 55. g
% solids	100.0	Custody/SAF No	RC-118-237 RC-118

✓ 2/7/10

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Cesium 134	13967-70-9	U		0.096		U	GAM

Columbia River Component of the RCBRA - Tissues

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Lab id	EBERLNE
Protocol	Hanford1
Version	Ver 1.0
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EBERLINE ANALYTICAL/RICHMOND

SAMPLE DELIVERY GROUP K1785

7474-003

DATA SHEET

J18XF8

SDG 7474
Contact N. Joseph Verville
Client/Case no Hanford
SDG K1785
Contract No. 500W235A00

Lab sample id R909131-03
Dept sample id 7474-003
Received 09/30/09
% solids 100.0
Client sample id J18XF8
Location/Matrix 300SA-WALL, LIV/RAD
SOLID
Collected/Weight 09/24/09 10:15
61 g
Custody/SAF No RC-110-238
RC-110

2/7/10

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALIFIERS	TEST
Tritium	10028-17-8	1.02	3.9	6.62	400	U J	H
Carbon 14	14762-75-5	0.760	3.6	6.00	40.0	U J	C
Total Strontium	SR RAD	0.024	0.11	0.216	1.00	U	SR
Technetium 99	14133-76-7	0.031	0.22	0.403	15.0	U	TC
Thorium 228	14274-82-9	-0.032	0.13	0.356	1.00	U J	TH
Thorium 230	14269-63-7	-0.257	0.26	0.618	1.00	U	TH
Thorium 232	TH-232	0	0.064	0.246	1.00	U J	TH
Uranium 233/234	U-233/234	0	0.043	0.164	1.00	U	U
Uranium 235	15117-96-1	0	0.052	0.198	1.00	U	U
Uranium 238	U 238	0	0.043	0.164	1.00	U	U
Plutonium 238	13981-16-3	0	0.12	0.294	1.00	U	PU
Plutonium 239/240	PU 239/240	0	0.061	0.235	1.00	U	PU
Potassium 40	13966-00-2	2.34	0.95	0.751			GAM
Cobalt 60	10198-40-0	U		0.086	0.050	U	GAM
Cesium 137	10045-97-3	U		0.075	0.100	U	GAM
Radium 226	13982-63-3	U		0.152	0.100	U	GAM
Radium 228	15262-20-1	U		0.321	0.200	U	GAM
Europium 152	14683-23-9	U		0.197	0.100	U	GAM
Europium 154	15585-10-1	U		0.230	0.100	U	GAM
Europium 155	14391-16-3	U		0.141	0.100	U	GAM
Thorium 228	14274-82-9	U		0.110		U	GAM
Thorium 232	TH-232	U		0.471		U	GAM
Uranium 235	15117-96-1	U		0.307		U	GAM
Uranium 238	U-238	U		10.2		U	GAM
Americium 241	14596-10-2	U		0.081		U	GAM
Beryllium 7	13966-02-4	U		0.665		U	GAM
Ruthenium 106	13967-48-1	U		0.714		U	GAM
Antimony 125	14234-35-6	U		0.172		U	GAM

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Lab id EBERLINE
Protocol Hanford1
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DATA SHEET, cont

SDG	7474	Client/Case no	Hanford SDG K1785
Contact	N. Joseph Verville	Contract	No. 300W235A00
Lab sample id	R909133 01	Client sample id	J18XF8
Dept sample id	7474-003	Location/Matrix	300SA-WAL3 LIV/KID SOLID
Received	09/30/09	Collected/Weight	09/24/09 10:15 61 g
% solids	100.0	Custody/SAF No	RC-130-238 RC-138

2/9/10

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALIFIERS	TEST
Cesium 134	13967-70-9	U		0.097		U	GAM

Columbia River Component of the RCBRA - Tissues

Lab id EBERLINE
Protocol Hanford1
Version Ver 1.0
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Report date 11/10/09

EBERLINE ANALYTICAL/RICHMOND
SAMPLE DELIVERY GROUP K1785

7474-004

J18XF9

DATA SHEET

SDG	7474	Client/Case no	Hanford SDG K1785
Contact	N. Joseph Verville	Contract	No. 300W235A00
Lab sample id	R909133-04	Client sample id	J18XF9
Dept sample id	7474-004	Location/Matrix	300SA-WAL4,LIV/KID SOLID
Received	09/30/09	Collected/Weight	09/25/09 17:20 123 g
% solids	100.0	Custody/SAP No	RC-118-239 RC-118

✓ 2/7/10

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Tritium	10028-17-8	-1.06	4.1	7.40	400	U J	H
Carbon 14	14762-75-5	-0.733	3.1	5.35	50.0	U J	C
Total Strontium	SR-RAD	0.049	0.11	0.230	1.00	U	SR
Technetium 99	14133-76-7	0.075	0.18	0.402	15.0	U	TC
Thorium 228	14274-82-9	0.016	0.22	0.348	1.00	U J	TH
Thorium 230	14269-63-7	-0.288	0.29	0.687	1.00	U	TH
Thorium 232	TH-232	0	0.072	0.275	1.00	U J	TH
Uranium 233/234	U-233/234	0	0.047	0.181	1.00	U	U
Uranium 235	15117-96-1	0	0.057	0.220	1.00	U	U
Uranium 238	U-238	0.024	0.047	0.181	1.00	U	U
Plutonium 238	13981-16-3	0	0.082	0.313	1.00	U	PU
Plutonium 239/240	PU-239/240	0	0.082	0.313	1.00	U	PU
Potassium 40	13966-00-2	7.95	0.57	0.496			GAM
Cobalt 60	10198-40-0	U		0.046	0.050	U	GAM
Cesium 137	10045-97-3	U		0.048	0.100	U	GAM
Radium 226	13982-63-3	U		0.101	0.100	U	GAM
Radium 228	15262-20-1	U		0.195	0.200	U	GAM
Europium 152	14683-23-9	U		0.121	0.100	U	GAM
Europium 154	15585-10-1	U		0.134	0.100	U	GAM
Europium 155	14391-16-3	U		0.090	0.100	U	GAM
Thorium 228	14274-82-9	U		0.071		U	GAM
Thorium 232	TH-232	U		0.195		U	GAM
Uranium 235	15117-96-1	U		0.209		U	GAM
Uranium 238	U-238	U		5.84		U	GAM
Americium 241	14596-10-2	U		0.042		U	GAM
Beryllium 7	13966-02-4	U		0.407		U	GAM
Ruthenium 106	13967-48-1	U		0.448		U	GAM
Antimony 125	14234-35-6	U		0.109		U	GAM

Lab id	EBRLNE
Protocol	Hanford1
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EBERLINE ANALYTICAL/RICHMOND

SAMPLE DELIVERY GROUP K1785

7474-004

J18XF9

DATA SHEET, cont

SDG	7474	Client/Case no	Hanford
Contact	N. Joseph Verville	Contract	No. 300W235A00
			SDG K1785
Lab sample id	R909133-04	Client sample id	J18XF9
Dept sample id	7474-004	Location/Matrix	100SA-WAL4,LIV/KID SOLID
Received	09/30/09	Collected/Weight	09/25/09 17:20 123 g
% solids	100.0	Custody/SAF No	RC-118-239 RC-118

✓ 2/7/10

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Cesium 134	13967-70-9	U		0.058		U	GAM

Columbia River Component of the RCBRA - Tissues

Lab id EBRLNE
Protocol Hanford1
Version Ver 1.0
Form DVD-DS
Version 1.06
Report date 11/10/09

EBERLINE ANALYTICAL/RICHMOND

SAMPLE DELIVERY GROUP K1785

7474-005

DATA SHEET

J18XH0

SDG 7474
Contact N. Joseph Verville
Lab sample id K909131-05
Dept sample id 7474-005
Received 09/30/09
% solids 100.0

Client/Case no Hanford
Contract No. 600W235A00
SDG K1785
Client sample id J18XH0
Location/Matrix 300SA WALL LIV/KIO SOLID
Collected/Weight 09/25/09 11.75 107 g
Custody/SAF No KC-118 240 KC-118

2/7/10

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Tritium	10028-17 8	-2.16	4.4	7.04	400	U J	H
Carbon 14	14762-75-5	0.674	4.2	7.10	50.0	U J	C
Total Strontium	SR-RAD	0.002	0.10	0.205	1.00	U	SR
Technetium 99	14133-76-7	-0.036	0.20	0.418	15.0	U	TC
Thorium 228	14274-82 9	-0.114	0.17	0.411	1.00	U J	TH
Thorium 230	14269 63-7	-0.086	0.29	0.582	1.00	U	TH
Thorium 232	TH-232	0	0.047	0.218	1.00	U J	TH
Uranium 233/234	U-233/234	0	0.040	0.187	1.00	U	U
Uranium 235	15117-96 1	0	0.059	0.226	1.00	U	U
Uranium 238	U-238	0.024	0.049	0.487	1.00	U	U
Plutonium 238	13981-16-3	0.037	0.22	0.409	1.00	U	PU
Plutonium 239/240	PU 239/240	0	0.074	0.203	1.00	U	PU
Potassium 40	13966-00-2	2.09	0.69	0.386			GAM
Cobalt 60	10198-40-0	U		0.045	0.050	U	GAM
Cesium 137	10045-97-3	U		0.040	0.100	U	GAM
Radium 226	13982-63-3	U		0.075	0.100	U	GAM
Radium 228	15262-20-1	U		0.181	0.200	U	GAM
Europium 152	14683-23-9	U		0.108	0.100	U	GAM
Europium 154	15585-10-1	U		0.124	0.100	U	GAM
Europium 155	14391-16-3	U		0.087	0.100	U	GAM
Thorium 228	14274-82 9	U		0.059	0.100	U	GAM
Thorium 232	TH-232	U		0.181		U	GAM
Uranium 235	15117-96 1	U		0.196		U	GAM
Uranium 238	U-238	U		4.88		U	GAM
Americium 241	14596-10 2	U		0.162		U	GAM
Beryllium 7	13966 02-4	U		0.388		U	GAM
Ruthenium 106	13967-48-1	U		0.336		U	GAM
Antimony 125	14234-35-6	U		0.092		U	GAM

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Lab id EBRLNE
Protocol Hanford1
Version Ver 1.0
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Version 3.06
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EBERLINE ANALYTICAL/RICHMOND
SAMPLE DELIVERY GROUP K1785

7474-005

J18XH0

DATA SHEET, cont

SOW:	7474	Client/Case no	Hanford	SDG K1785
Contact	N. Joseph Verville	Contract	No. 500WZ3SA00	
Lab sample id	R909133-05	Client sample id	J18XH0	
Dept sample id	7474-005	Location/Matrix	100SA WALL LIV/KID	SOLID
Received	09/30/09	Collected/Weight	09/25/09 11:25	107 g
% solids	100.0	Custody/SAF No	RC-118-240	RC-118

2/7/10

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Cesium 134	13967-70-9	U		0.046		U	GAM

Columbia River Component of the RCBRA - Tissues

Lab id EBERLINE
Protocol Hanford1
Version Ver 1.0
Form DVD-DS
Version 3.06
Report date 11/10/09

EBERLINE ANALYTICAL/RICHMOND

SAMPLE DELIVERY GROUP K1705

7474-006

J18XH1

DATA SHEET

SDG	7474	Client/Case no	Hanford SDG K1705
Contact	N. Joseph Verville	Contract	No. S00W235A00
Lab sample id	E709133-06	Client sample id	J18XH1
Dept sample id	7474-006	Location/Matrix	100SA-WALL CARCASS SOLID
Received	09/30/09	Collected/Weight	09/24/09 09:15 1440 g.
% solids	100.0	Custody/SAF No	RC-118-241 RC-118

✓ 2/7/10

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALIFIERS	TEST
Tritium	10028-17-8	-0.769	3.6	6.27	400	U J	H
Carbon 14	14762-75-5	-0.419	4.4	5.68	50.0	U J	C
Total Strontium	SR RAD	-0.022	0.090	0.193	1.00	U	SR
Technetium 99	14133-76-7	0.006	0.25	0.415	15.0	U	TC
Thorium 228	14274-82-9	0.050	0.15	0.308	1.00	U J	TH
Thorium 230	14269-63-7	-0.125	0.30	0.526	1.00	U	TH
Thorium 232	TH-232	0	0.050	0.191	1.00	U J	TH
Uranium 233/234	U-233/234	0.020	0.081	0.155	1.00	U	U
Uranium 235	15117-96-1	0	0.049	0.188	1.00	U	U
Uranium 238	U-238	0	0.041	0.155	1.00	U	U
Plutonium 238	13981-16-3	0.032	0.29	0.350	1.00	U	PU
Plutonium 239/240	PU-239/240	0	0.063	0.242	1.00	U	PU
Potassium 40	13966-00-2	2.37	0.51	0.255			GAM
Cobalt 60	10198-40-0	U		0.025	0.050	U	GAM
Cesium 137	10045-97-3	U		0.033	0.100	U	GAM
Radium 226	13982-63-3	U		0.052	0.100	U	GAM
Radium 228	15262-20-1	U		0.175	0.200	U	GAM
Europium 152	14683-23-9	U		0.077	0.100	U	GAM
Europium 154	15585-10-1	U		0.046	0.100	U	GAM
Europium 155	14391-16-3	U		0.068	0.100	U	GAM
Thorium 228	14274-82-9	U		0.053		U	GAM
Thorium 232	TH-232	U		0.115		U	GAM
Uranium 235	15117-96-1	U		0.151		U	GAM
Uranium 238	U-238	U		3.85		U	GAM
Americium 241	14596-10-2	U		0.061		U	GAM
Beryllium 7	13966-02-4	U		0.260		U	GAM
Ruthenium 106	13967-48-1	U		0.193		U	GAM
Antimony 125	14234-35-6	U		0.059		U	GAM

Lab id	EBERLINE
Protocol	Hanford1
Version	Ver 1.0
Form	DVD-DS
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DATA SHEET, cont

SDG 7474
Contact N. Joseph Verville
Client/Case no Hanford
SDG K1785
Contract No. 600W23UA00

Lab sample id R909111-06
Dept sample id 7474-006
Received 09/30/09
% solids 100.0
Client sample id J18XH1
Location/Matrix 300SA-WALL.CARCASS SOLID
Collected/Weight 09/24/09 09:15 1440 g
Custody/SAF No RC-118-241 RC-118

2/7/10

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALIFIERS	TEST
Cesium 134	13967-70-9	U		0.029		U	GAM

Columbia River Component of the RCBRA - Tissues

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
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EBERLINE ANALYTICAL/RICHMOND
SAMPLE DELIVERY GROUP K1785

7474-007

J18XH2

DATA SHEET

SDG	7474	Client/Case no	Hanford	SDG K1785
Contact	N. Joseph Verville	Contract	No. 500W235A00	
Lab sample id	K309113-07	Client sample id	J18XH2	
Dept sample id	7474.007	Location/Matrix	300SA-WALL,CARCASS	SOLID
Received	09/10/09	Collected/Weight	09/24/09 10:00	1369 g
% solids	100.0	Custody/SAP No	RC-118-242	RC-110

2/7/10

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Tritium	10028-17-8	-0.293	3.7	6.36	400	U J	H
Carbon 14	14762-75-5	3.22	3.3	5.53	50.0	U J	C
Total Strontium	SR-RAD	0.046	0.083	0.131	1.00	U	SR
Technecium 99	14133-76-7	0.066	0.16	0.451	15.0	U	TC
Thorium 228	14274-82-9	-0.031	0.19	0.386	1.00	U J	TH
Thorium 230	14269-63-7	0.282	0.40	0.599	1.00	U	TH
Thorium 232	TH-232	0	0.063	0.240	1.00	U J	TH
Uranium 233/234	U-233/234	-0.020	0.040	0.154	1.00	U	U
Uranium 235	15117-96-1	0	0.049	0.186	1.00	U	U
Uranium 238	U-238	0	0.040	0.154	1.00	U	U
Plutonium 238	13981-16-3	0	0.060	0.230	1.00	U	PU
Plutonium 239/240	PU-239/240	0	0.060	0.230	1.00	U	PU
Potassium 40	13966-00-2	2.06	0.57	0.507			GAM
Cobalt 60	10198-40-0	U		0.047	0.050	U	GAM
Cesium 137	10045-97-3	U		0.044	0.100	U	GAM
Radium 226	13982-63-3	U		0.096	0.100	U	GAM
Radium 228	15262-20-1	U		0.174	0.200	U	GAM
Europium 152	14683-23-9	U		0.108	0.100	U	GAM
Europium 154	15585-10-1	U		0.120	0.100	U	GAM
Europium 155	14391-16-3	U		0.077	0.100	U	GAM
Thorium 228	14274-82-9	U		0.069		U	GAM
Thorium 232	TH-232	U		0.174		U	GAM
Uranium 235	15117-96-1	U		0.176		U	GAM
Uranium 238	U-238	U		4.99		U	GAM
Americium 241	14596-10-2	U		0.038		U	GAM
Beryllium 7	13966-02-4	U		0.449		U	GAM
Ruthenium 106	13967-48-1	U		0.386		U	GAM
Antimony 125	14234-35-6	U		0.104		U	GAM

Lab id	EBRLNE
Protocol	Hanford1
Version	Ver 1.0
Form	DVD-DS
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DATA SHEET, cont

SDG 7474
Client/Case no Hanford , SDG K1785
Contact N. Joseph Verville
Contract No. 000W235A00

Lab sample id K909133-07
Client sample id J18XH2
Dept sample id 7474-007
Location/Matrix 300SA MALE,CARCASS SOLID
Received 09/30/09
Collected/Weight 09/24/09 10:00 1369 g
% solids 100.0
Custody/SAF No RC 110-242 RC-118

2/7/10

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	MDL pCi/g	QUALI-FIERS	TEST
Cesium 134	13967-70-9	U		0.051		U	GAM

Columbia River Component of the RCBRA - Tissues

Lab id EBERLINE
Protocol Hanford1
Version Ver 1.0
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EBERLINE ANALYTICAL/RICHMOND

SAMPLE DELIVERY GROUP K1785

7474-008

J18XH3

DATA SHEET

SDG	7474	Client/Case no	Hanford
			SDG K1785
Contact	N. Joseph Verville	Contract	No. 500W235A00
Lab sample id	K909133-08	Client sample id	J18XH3
Dept sample id	7474-008	Location/Matrix	100SA-WAL3,CARCASS SOLID
Received	09/30/09	Collected/Weight	09/24/09 10:45 1444 g
% solids	100.0	Custody/SAF No	RC-118 243 RC-118

~~pl~~ 2/7/10

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Tritium	10028-17-8	0.610	3.9	6.84	400	U J	H
Carbon 14	14762-75-5	-0.188	3.5	5.75	50.0	U J	C
Total Strontium	SR-RAD	-0.027	0.070	0.126	1.00	U	SR
Technetium 99	14133-76-7	0.100	0.21	0.387	15.0	U	TC
Thorium 228	14274-82-9	-0.125	0.13	0.385	1.00	U J	TH
Thorium 230	14269-63-7	0.375	0.25	0.598	1.00	U	TH
Thorium 232	TH-232	0	0.063	0.239	1.00	U J	TH
Uranium 233/234	U-233/234	0.073	0.095	0.182	1.00	U	U
Uranium 235	15117-96-1	0.029	0.050	0.221	1.00	U	U
Uranium 238	U-238	0	0.048	0.182	1.00	U	U
Plutonium 238	13981-16-3	-0.038	0.077	0.294	1.00	U	PU
Plutonium 239/240	PU-239/240	0.038	0.077	0.294	1.00	U	PU
Potassium 40	13966-00-2	2.06	0.63	0.361			GAM
Cobalt 60	10198-40-0	U		0.031	0.050	U	GAM
Cesium 137	10045-97-3	U		0.038	0.100	U	GAM
Radium 226	13982-63-3	U		0.081	0.100	U	GAM
Radium 228	15262-20-1	U		0.176	0.200	U	GAM
Europium 152	14683-23-9	U		0.100	0.100	U	GAM
Europium 154	15585-10-1	U		0.097	0.100	U	GAM
Europium 155	14391-16-3	U		0.099	0.100	U	GAM
Thorium 228	14274-82-9	U		0.076		U	GAM
Thorium 232	TH-232	U		0.176		U	GAM
Uranium 235	15117-96-1	U		0.217		U	GAM
Uranium 238	U-238	U		3.98		U	GAM
Americium 241	14596-10-2	U		0.083		U	GAM
Beryllium 7	13966-02-4	U		0.478		U	GAM
Ruthenium 106	13967-48-1	U		0.317		U	GAM
Antimony 125	14234-35-6	U		0.008		U	GAM

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Lab id	EBRLNE
Protocol	Hanford1
Version	Ver 1.0
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7474-008

J18XH3

DATA SHEET, cont

SDG 7474
Contact N. Joseph Verville
Client/Case no Hanford
SDG K1785
Contract No. 500W235A00
Lab sample id R909133-08
Dept sample id 7474-008
Received 09/30/09
% solids 100.0
Client sample id J18XH3
Location/Matrix 300SA WAL3 CARCASS
SOLID
Collected/Weight 09/24/09 10:45
1444 g
Custody/SAF No RC 118-243
RC-118

2/7/10

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALIFIERS	TEST
Cesium 134	13967-70-9	U		0.043		U	GAM

Columbia River Component of the RCBRA - Tissues

Lab id EBRLNE
Protocol Hanford1
Version Ver 1.0
Form DVD-DS
Version 3.06
Report date 11/13/09

EBERLINE ANALYTICAL/RICHMOND

SAMPLE DELIVERY GROUP K1785

7474-009

J18XH4

DATA SHEET

SDG	7474	Client/Case no	Hanford SDG_K1785
Contact	N. Joseph Verville	Contract	No. S00W345A00
Lab sample id	R909133-09	Client sample id	J18XH4
Dept sample id	7474-009	Location/Matrix	300SA-WAL4,CARCASS SOLID
Received	09/30/09	Collected/Weight	09/23/09 14:15 1400 g
% solids	100.0	Custody/SAF No	RC-118 044 RC-118

2/7/10

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALIFIERS	TEST
Tritium	10028-17-8	0.180	3.6	6.14	400	U J	H
Carbon 14	14762-75-5	0.504	3.2	5.35	50.0	U J	C
Total Strontium	SR-RAD	-0.005	0.099	0.209	1.00	U	SR
Technetium 99	14133-76-7	0.052	0.30	0.374	15.0	U	TC
Thorium 228	14274-82-9	0.032	0.19	0.358	1.00	U J	TH
Thorium 230	14269-63-7	-0.227	0.32	0.640	1.00	U	TH
Thorium 232	TH-232	0	0.065	0.248	1.00	U J	TH
Uranium 233/234	U-233/234	-0.027	0.055	0.209	1.00	U	U
Uranium 235	15117-96-1	0	0.066	0.253	1.00	U	U
Uranium 238	U-238	0	0.055	0.209	1.00	U	U
Plutonium 238	13981-16-3	0.049	0.20	0.375	1.00	U	PU
Plutonium 239/240	PU-239/240	0.098	0.098	0.375	1.00	U	PU
Potassium 40	13966-00-2	1.83	0.77	0.489			GAM
Cobalt 60	10198-40-0	U		0.054	0.050	U	GAM
Cesium 137	10045-97-3	U		0.053	0.100	U	GAM
Radium 226	13982-63-3	U		0.081	0.100	U	GAM
Radium 228	15262-20-1	U		0.211	0.200	U	GAM
Europium 152	14683-23-9	U		0.139	0.100	U	GAM
Europium 154	15585-10-1	U		0.151	0.100	U	GAM
Europium 155	14391-16-3	U		0.107	0.100	U	GAM
Thorium 228	14274-82-9	U		0.103		U	GAM
Thorium 232	TH-232	U		0.211		U	GAM
Uranium 235	15117-96-1	U		0.251		U	GAM
Uranium 238	U-238	U		5.83		U	GAM
Americium 241	14596-10-2	U		0.104		U	GAM
Beryllium 7	13966-02-4	U		0.483		U	GAM
Ruthenium 106	13967-48-1	U		0.410		U	GAM
Antimony 125	14234-35-6	U		0.116		U	GAM

Lab id	EBERLINE
Protocol	Hanford1
Version	Ver 1.0
Form	DVD-DS
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Report date	11/10/09

7474-009

J18XH4

DATA SHEET, cont

SDG	7474	Client/Case no	Hanford SDG K1785
Contact	N. Joseph Verville	Contract	No. C00W235A00
Lab sample id	R909133-09	Client sample id	J18XH4
Dept sample id	7474-009	Location/Matrix	300SA-WAL4,CARCASE SOLID
Received	09/30/09	Collected/Weight	09/25/09 14:15 1468 g
% solids	100.0	Custody/SAF No	RC-118-244 RC-118

2/7/10

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Cesium 134	13967-70-9	U		0.060		U	GAM

Columbia River Component of the RCBRA - Tissues

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Lab id EBRLNE
Protocol Hanford1
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EBERLINE ANALYTICAL/RICHMOND

SAMPLE DELIVERY GROUP K1785

7474-010

J18XH5

DATA SHEET

SDG	7474	Client/Case no	Hanford SDG K1785
Contact	N. Joseph Verville	Contract	No. 500W235A00
Lab sample id	R909113-10	Client sample id	J18XH5
Dept sample id	7474-010	Location/Matrix	300SA-WALL CARCASS SOLID
Received	09/30/09	Collected/Weight	09/25/09 17:00 1445 g
% solids	100.0	Custody/SAF No	RC-118-245 RC-118

2/7/10

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Tritium	10028-17-8	-0.587	4.4	7.65	400	U J	H
Carbon 14	14762-75-5	1.75	4.0	6.66	50.0	U J	C
Total Strontium	SR-RAD	0.044	0.088	0.198	1.00	U	SR
Technetium 99	14133-76-7	-0.068	0.14	0.408	15.0	U	TC
Thorium 228	14274-82-9	0.030	0.18	0.334	1.00	U J	TH
Thorium 230	14269-63-7	-0.151	0.30	0.617	1.00	U	TH
Thorium 232	TH-232	0	0.060	0.231	1.00	U J	TH
Uranium 233/234	U-233/234	0.023	0.090	0.172	1.00	U	U
Uranium 235	15117-96-1	0	0.055	0.209	1.00	U	U
Uranium 238	U-238	0.023	0.045	0.172	1.00	U	U
Plutonium 238	13981-16-3	0	0.14	0.384	1.00	U	PU
Plutonium 239/240	PU-239/240	0.015	0.069	0.765	1.00	U	PU
Potassium 40	13966-00-2	2.51	0.46	0.297			GAM
Cobalt 60	10198-40-0	U		0.035	0.050	U	GAM
Cesium 137	10045-97-3	U		0.031	0.100	U	GAM
Radium 226	13982-63-3	U		0.057	0.100	U	GAM
Radium 228	15262-20-1	U		0.127	0.200	U	GAM
Europium 152	14683-23-9	U		0.074	0.100	U	GAM
Europium 154	15585-10-1	U		0.091	0.100	U	GAM
Europium 155	14391-16-3	U		0.057	0.100	U	GAM
Thorium 228	14274-82-9	U		0.046		U	GAM
Thorium 232	TH-232	U		0.127		U	GAM
Uranium 235	15117-96-1	U		0.133		U	GAM
Uranium 238	U-238	U		3.50		U	GAM
Americium 241	14596-10-2	U		0.031		U	GAM
Beryllium 7	13966-02-4	U		0.200		U	GAM
Ruthenium 106	13967-48-1	U		0.253		U	GAM
Antimony 125	14234-35-6	U		0.066		U	GAM

Lab id	EBRLNE
Protocol	Hanford1
Version	Ver 1.0
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DATA SHEET, cont

SDC 7474
Contact N. Joseph Verville
Client/Case no Hanford SDG K1785
Contract No. 500W235A00

Lab sample id R909133-10
Dept sample id 7474-010
Received 09/30/09
% solids 100.0
Client sample id J18XH5
Location/Matrix 300SA-WALS,CARCASS SOLID
Collected/Weight 09/25/09 17:00 1445 g
Custody/SAF No RC-110-245 RC 110

2/7/10

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Cesium 134	13967-70-9	U		0.035		U	GAM

Columbia River Component of the RCBRA - Tissues

Lab id EBRLNE
Protocol Hanford1
Version Ver 1.0
Form DVD-DS
Version 3.06
Report date 11/10/09

EBERLINE ANALYTICAL/RICHMOND
SAMPLE DELIVERY GROUP K1705

7474-011

J195V7

DATA SHEET

SDG	7474	Client/Case no	Hanford SDG K1705
Contact	N. Joseph Verville	Contract	No. 0008215A00
Lab sample id	R909133-11	Client sample id	J195V7
Dept sample id	7474-011	Location/Matrix	STURGEON 17 VISERA SOLID
Received	09/30/09	Collected/Weight	09/21/09 14:20 258 g
% solids	100.0	Custody/SAF No	RC-118-858 RC-118

2/7/10

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Tritium	10028-17-8	0.494	3.8	6.44	400	U J	H
Carbon 14	14762-75-5	-0.524	3.2	5.53	50.0	U J	C
Total Strontium	SR-RAD	-0.005	0.10	0.206	1.00	U	SR
Technetium 99	14133-76-7	-0.052	0.13	0.396	15.0	U	TC
Thorium 228	14274-82-9	0.064	0.19	0.354	1.00	U J	TH
Thorium 230	14269-63-7	0.256	0.26	0.611	1.00	U	TH
Thorium 232	TH-232	0	0.064	0.245	1.00	U J	TH
Uranium 233/234	U-233/234	0	0.088	0.336	1.00	U	U
Uranium 235	15117-96-1	0.053	0.11	0.407	1.00	U	U
Uranium 238	U 238	0	0.088	0.336	1.00	U	U
Plutonium 238	13981-16-3	0.036	0.14	0.341	1.00	U	PU
Plutonium 239/240	PU-239/240	0.036	0.071	0.272	1.00	U	PU
Potassium 40	13966-00-2	1.94	0.40	0.316			GAM
Cobalt 60	10198-40-0	U		0.032	0.050	U	GAM
Cesium 137	10045-97-3	U		0.048	0.100	U	GAM
Radium 226	13982-63-3	U		0.072	0.100	U	GAM
Radium 228	15262-20-1	U		0.136	0.200	U	GAM
Europium 152	14683-23-9	U		0.082	0.100	U	GAM
Europium 154	15585-10-1	U		0.093	0.100	U	GAM
Europium 155	14391-16-3	U		0.061	0.100	U	GAM
Thorium 228	14274-82-9	U		0.050		U	GAM
Thorium 232	TH-232	U		0.136		U	GAM
Uranium 235	15117-96-1	U		0.135		U	GAM
Uranium 238	U-238	U		3.96		U	GAM
Americium 241	14596-10-2	U		0.030		U	GAM
Beryllium 7	13966-02-4	U		0.323		U	GAM
Ruthenium 106	13967-48-1	U		0.300		U	GAM
Antimony 125	14234-35-6	U		0.075		U	GAM

Lab id	EBERLINE
Protocol	Hanford1
Version	Ver 1.0
Form	DVD-DS
Version	3.06
Report date	11/10/09

7474-011

J19SV7

DATA SHEET, cont

SDG	7474	Client/Case no	Hanford SDG K1785
Contact	M. Joseph Verville	Contract	No. 500W235A00
Lab sample id	8909113-11	Client sample id	J19SV7
Dept sample id	7474-011	Location/Matrix	STURGEON 17 VISERA SOLID
Received	09/30/09	Collected/Weight	09/21/09 14:20 258 g
% solids	100.0	Custody/SAP No	RC-118-850 RC 118

V 2/7/10

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALIFIERS	TEST
Cesium 134	13967-70-9	U		0.039		U	GAM

Columbia River Component of the RCBRA - Tissues

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Lab id	EBRLNE
Protocol	Hanford1
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EBERLINE ANALYTICAL/RICHMOND

SAMPLE DELIVERY GROUP K1785

7474-012

DATA SHEET

J195V0

SDG 7474
Contact N. Joseph Verville
Client/Case no Hanford SDG K1785
Contract No. 500N235A00

Lab sample id K909133-12
Dept sample id 7474-012
Received 09/30/09
% solids 100.0

Client sample id J195V0
Location/Matrix STURGEON 18 VISCERA SOLID
Collected/Weight 09/21/09 15:00 319 g
Custody/SAF No RC-118-857 RC-118

2/7/10

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Tritium	10028-17-8	1.34	3.7	6.24	400	U J	H
Carbon 14	14762-75-5	1.72	3.3	5.42	50.0	U J	C
Total Strontium	SR-RAD	-0.011	0.10	0.206	1.00	U	SR
Technetium 99	14133-76-7	0.004	0.16	0.385	15.0	U	TC
Thorium 228	14274-82-9	0	0.17	0.395	1.00	U J	TH
Thorium 230	14269-63-7	-0.330	0.25	0.699	1.00	U	TH
Thorium 232	TH-232	0	0.082	0.316	1.00	U J	TH
Uranium 233/234	U-233/234	0	0.081	0.311	1.00	U	U
Uranium 235	15117-96-1	0	0.098	0.377	1.00	U	U
Uranium 238	U-238	0	0.081	0.311	1.00	U	U
Plutonium 238	13981-16-3	0.149	0.18	0.786	1.00	U	PU
Plutonium 239/240	PU-239/240	0	0.060	0.228	1.00	U	PU
Potassium 40	13966-00-2	1.96	0.59	0.341			GAM
Cobalt 60	10198-40-0	U		0.035	0.050	U	GAM
Cesium 137	10045-97-3	U		0.036	0.100	U	GAM
Radium 226	13982-63-3	U		0.071	0.100	U	GAM
Radium 228	15262-20-1	U		0.156	0.200	U	GAM
Europium 152	14683-23-9	U		0.100	0.100	U	GAM
Europium 154	15585-10-1	U		0.105	0.100	U	GAM
Europium 155	14391-16-3	U		0.078	0.100	U	GAM
Thorium 228	14274-82-9	U		0.052		U	GAM
Thorium 232	TH-232	U		0.156		U	GAM
Uranium 235	15117-96-1	U		0.180		U	GAM
Uranium 238	U-238	U		5.02		U	GAM
Americium 241	14596-10-2	U		0.134		U	GAM
Beryllium 7	13966-02-4	U		0.379		U	GAM
Ruthenium 106	13967-48-1	U		0.321		U	GAM
Antimony 125	14234-35-6	U		0.085		U	GAM

Lab id EBERLINE
Protocol Hanford1
Version Ver 1.0
Form DVD-DS
Version 3.06
Report date 11/10/09

7474-012

J195V8

DATA SHEET, cont

SDG 7474
Contact N. Joseph Verville
Client/Case no Hanford SDG K1785
Contract No. S00W235A00

Lab sample id R909133-12
Dept sample id 7474-012
Received 09/30/09
% solids 100.0

Client sample id J195V8
Location/Matrix STURGEON 10 VISCERA SOLID
Collected/Weight 09/21/09 15:00 319 g
Custody/SAF No RC 110-859 RC-118

2/1/10

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Cesium 134	13967-70-9	U		0.040		U	GAM

Columbia River Component of the RCBRA - Tissues

Lab id EBERLINE
Protocol Hanford1
Version Ver 1.0
Form DVD-DS
Version 1.06
Report date 11/10/09

EBERLINE ANALYTICAL/RICHMOND

SAMPLE DELIVERY GROUP K1785

7474-013

J195V9

DATA SHEET

SDG	7474	Client/Case no	Hanford SDG K1785
Contact	N. Joseph Verville	Contract	No. 500W745A00
Lab sample id	R909111-11	Client sample id	J195V9
Dept sample id	7474-013	Location/Matrix	STURGEON 19 VISCERA SOLID
Received	09/30/09	Collected/Weight	09/21/09 16:20 442 g
% solids	100.0	Custody/SAF No	RC-118-060 RC-118

2/7/10

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Tritium	10028-17-8	-1.06	4.0	6.91	400	U J	H
Carbon 14	14762-75-5	-1.45	3.5	5.99	50.0	U J	C
Total Strontium	SR-RAD	0.013	0.11	0.212	1.00	U	SR
Technetium 99	14133-76-7	0.077	0.20	0.385	15.0	U	TC
Thorium 228	14274-82-9	0.040	0.16	0.363	1.00	U J	TH
Thorium 230	14269-63-7	-0.200	0.32	0.736	1.00	U	TH
Thorium 232	TH-232	0	0.080	0.305	1.00	U J	TH
Uranium 233/234	U 233/234	0	0.070	0.368	1.00	U	U
Uranium 235	15117-96-1	0.042	0.085	0.324	1.00	U	U
Uranium 238	U-238	0	0.070	0.268	1.00	U	U
Plutonium 238	13981-16-3	-0.034	0.067	0.257	1.00	U	PU
Plutonium 239/240	PU-239/240	0.034	0.067	0.257	1.00	U	PU
Potassium 40	13966-00-2	1.94	0.52	0.269			GAM
Cobalt 60	10198-40-0	U		0.026	0.050	U	GAM
Cesium 137	10045-97-3	U		0.028	0.100	U	GAM
Radium 226	13982-63-3	U		0.062	0.100	U	GAM
Radium 228	15262-20-1	U		0.129	0.200	U	GAM
Europium 152	14683-23-9	U		0.080	0.100	U	GAM
Europium 154	15585-10-1	U		0.075	0.100	U	GAM
Europium 155	14391-16-3	U		0.076	0.100	U	GAM
Thorium 228	14274-82-9	U		0.957		U	GAM
Thorium 232	TH-232	U		0.129		U	GAM
Uranium 235	15117-96-1	U		0.171		U	GAM
Uranium 238	U-238	U		3.17		U	GAM
Americium 241	14596-10-2	U		0.061		U	GAM
Beryllium 7	13966-02-4	U		0.319		U	GAM
Ruthenium 106	13967-48-1	U		0.235		U	GAM
Antimony 125	14234-35-6	U		0.066		U	GAM

Lab id	EBRLNE
Protocol	Hanford1
Version	Ver 1.0
Form	DVD-DS
Version	3.06
Report date	11/10/09

EBERLINE ANALYTICAL/RICHMOND

SAMPLE DELIVERY GROUP K1785

7474-013

J195V9

DATA SHEET, cont

SDG	7474	Client/Case no	Hanford SDG K1785
Contact	N. Joseph Verville	Contract	No. 300M235A00
Lab sample id	R909131-13	Client sample id	J195V9
Dept sample id	7474-013	Location/Matrix	STURGEON 19 VISCERA SOLID
Received	09/30/09	Collected/Weight	09/21/09 16:20 442 g
% solids	100.0	Custody/SAF No	RC-118-860 RC-118

2/7/10

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Cesium 134	13967-70-9	U		0.034		U	GAM

Columbia River Component of the RCRA - Tissues

Lab id EBERLNE
Protocol Hanford1
Version Ver 1.0
Form DVD-DS
Version 3.06
Report date 11/10/09

EBERLINE ANALYTICAL/RICHMOND

SAMPLE DELIVERY GROUP K1785

7474-014

J195W0

DATA SHEET

SDG	7474	Client/Case no	Hanford SDG K1785
Contact	N. Joseph Verville	Contract	NO. 500W235A00
Lab sample id	R909111-14	Client sample id	J195W0
Dept sample id	7474-014	Location/Matrix	STURGEON 20 VISCERA SOLID
Received	09/30/09	Collected/Weight	09/24/09 17:45 360 g
% solids	100.0	Custody/SAF No	RC-110-861 RC-110

✓ 2/7/10

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Tritium	10028-17-8	0.588	3.7	6.40	400	U J	H
Carbon 14	14762-75-5	0.058	3.1	5.54	50.0	U J	C
Total Strontium	SR-RAD	0.456	0.15	0.206	1.00		SR
Technetium 99	14133-76-7	0.012	0.17	0.378	15.0	U	TC
Thorium 228	14274-82-9	-0.054	0.16	0.365	1.00	U J	TH
Thorium 230	14269-63-7	-0.082	0.27	0.554	1.00	U	TH
Thorium 232	TH-232	0	0.054	0.208	1.00	U J	TH
Uranium 233/234	U 233/234	0.124	0.17	0.315	1.00	U	U
Uranium 235	15117-96-1	0	0.10	0.302	1.00	U	U
Uranium 238	U 238	0	0.082	0.315	1.00	U	U
Plutonium 238	13981-16-3	-0.032	0.11	0.308	1.00	U	PU
Plutonium 239/240	PU-239/240	0.064	0.13	0.246	1.00	U	PU
Potassium 40	13966-00-2	2.31	0.43	0.300			GAM
Cobalt 60	10198-40-0	U		0.030	0.050	U	GAM
Cesium 137	10045-97-3	U		0.027	0.100	U	GAM
Radium 226	13982-63-3	U		0.057	0.100	U	GAM
Radium 228	15262-20-1	U		0.140	0.200	U	GAM
Europium 152	14683-23-9	U		0.065	0.100	U	GAM
Europium 154	15585-10-1	U		0.089	0.100	U	GAM
Europium 155	14391-16-3	U		0.054	0.100	U	GAM
Thorium 228	14274-82-9	U		0.117		U	GAM
Thorium 232	TH 232	U		0.140		U	GAM
Uranium 235	15117-96-1	U		0.127		U	GAM
Uranium 238	U-238	U		3.47		U	GAM
Americium 241	14596-10-2	U		0.031		U	GAM
Beryllium 7	13966-02-4	U		0.275		U	GAM
Ruthenium 106	13967-48-5	U		0.236		U	GAM
Antimony 125	14234-35-6	U		0.066		U	GAM

Lab id	EBERLINE
Protocol	Hanford1
Version	Ver 1.0
Form	DVD-DS
Version	3.06
Report date	11/10/09

DATA SHEET, cont

SDG	7474	Client/Case no	Hanford	SDG K1785
Contact	N. Joseph Verville	Contract	No. C00W215A00	
Lab sample id	R909133-14	Client sample id	J195W0	
Dept sample id	7474-014	Location/Matrix	STURGEON 20 VISCERA	SOLID
Received	09/30/09	Collected/Weight	09/24/09 17:45	360 g
% solids	100.0	Custody/SAF No	RC-118-861	RC-118

2/7/10

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Cesium 134	13967-70-9	U		0.035		U	GAM

Columbia River Component of the RCBRA Tissues

Lab id	EBERLINE
Protocol	Hanford1
Version	Ver 1.0
Form	DVD DS
Version	1.06
Report date	11/10/09

EBERLINE ANALYTICAL/RICHMOND

SAMPLE DELIVERY GROUP K1785

7474-015

J19661

DATA SHEET

SDG 7474
Contact N. Joseph Verville
Client/Case no Hanford
SDG K1785
Contract No. 500W235A00

Lab sample id R909133-15
Dept sample id 7474-015
Received 09/30/09
% Solids 100.0

Client sample id J19661
Location/Matrix STURGEON 28 VICERA SOLID
Collected/Weight 09/24/09 18:10 198 g
Custody/SAP No RC-118-930 RC-118

✓ 2/7/10

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALIFIERS	TEST
Tritium	10028-17-8	2.07	4.1	6.92	400	U J	H
Carbon 14	14762-75-5	1.08	1.6	6.07	50.0	U J	C
Total Strontium	SR-RAD	0.047	0.12	0.232	1.00	U	SR
Technetium 99	14133-76-7	0.072	0.18	0.400	15.0	U	TC
Thorium 228	14274-82-9	0.041	0.24	0.500	1.00	U J	TH
Thorium 230	14269-63-7	-0.203	0.32	0.688	1.00	U	TH
Thorium 232	TH-232	0	0.081	0.310	1.00	U J	TH
Uranium 233/234	U 233/234	0	0.071	0.271	1.00	U	U
Uranium 235	15117-96-1	0	0.086	0.328	1.00	U	U
Uranium 238	U 238	0.015	0.071	0.271	1.00	U	U
Plutonium 238	13981-16-3	-0.028	0.11	0.267	1.00	U	PU
Plutonium 239/240	PU 239/240	0	0.056	0.213	1.00	U	PU
Potassium 40	13966-00-2	2.34	0.41	0.293			GAM
Cobalt 60	10198-40-0	U		0.031	0.050	U	GAM
Cesium 137	10045-97-3	U		0.030	0.100	U	GAM
Radium 226	13982-63-3	U		0.063	0.100	U	GAM
Radium 228	15262-20-1	U		0.131	0.200	U	GAM
Europium 152	14683-23-9	U		0.077	0.100	U	GAM
Europium 154	15585-10-1	U		0.086	0.100	U	GAM
Europium 155	14391-16-3	U		0.055	0.100	U	GAM
Thorium 228	14274-82-9	U		0.040		U	GAM
Thorium 232	TH-232	U		0.131		U	GAM
Uranium 235	15117-96-1	U		0.123		U	GAM
Uranium 238	U-238	U		3.61		U	GAM
Americium 241	14596-10-2	U		0.027		U	GAM
Beryllium 7	13966-02-4	U		0.280		U	GAM
Ruthenium 106	13967-48-1	U		0.261		U	GAM
Antimony 125	14234-35-6	U		0.069		U	GAM

Lab id EBRLNE
Protocol Hanford1
Version Ver 1.0
Form DVD-DS
Version 3.06
Report date 11/10/09

DATA SHEET, cont

SDG	7474	Client/Case no	Hanford SDG K1785
Contact	N. Joseph Verville	Contract	No. Q00W235A00
Lab sample id	R909133 15	Client sample id	J19661
Dept. sample id	7474-015	Location/Matrix	STURGEON 28 VICERA SOLID
Received	09/30/09	Collected/Weight	09/24/09 10:10 198 g
% solids	100.0	Custody/SAF No	RC-118 930 RC-118

2/7/10

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Cesium 134	13967-70-9	U		0.035		U	GAM

Columbia River Component of the RCBRA - Tissues

Lab id	EBERLINE
Protocol	Hanford1
Version	Ver 1.0
Form	DVD-DS
Version	1.06
Report date	11/10/09

EBERLINE ANALYTICAL/RICHMOND

SAMPLE DELIVERY GROUP K1785

7474-016

J19662

DATA SHEET

SDG	7474	Client/Case no	Hanford, SDG K1785
Contact	N. Joseph Verville	Contract	No. 000W315A00
Lab sample id	K909133-16	Client sample id	J19662
Dept sample id	7474-016	Location/Matrix	STURGEON 27 VICERA SOLID
Received	09/30/09	Collected/Weight	09/24/09 18:00 322 g
% solids	100.0	Custody/SAF No	RC-118-931 RC-118

2/7/10

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Tritium	10028-17-8	-1.60	3.9	6.93	400	U J	H
Carbon 14	14762-75-5	1.40	3.5	6.04	50.0	U J	C
Total Strontium	SR-RAD	-0.010	0.098	0.202	1.00	U	SR
Technetium 99	14133-76-7	0.172	0.28	0.384	15.0	U	TC
Thorium 228	14274-82-9	0	0.15	0.401	1.00	U J	TH
Thorium 230	14269-63-7	-0.109	0.29	0.668	1.00	U	TH
Thorium 232	TH-232	0.109	0.15	0.277	1.00	U J	TH
Uranium 233/234	U-233/234	0.029	0.12	0.221	1.00	U	U
Uranium 235	15117-96-1	0	0.070	0.267	1.00	U	U
Uranium 238	U-238	0.058	0.058	0.221	1.00	U	U
Plutonium 238	13981-16-3	0	0.066	0.251	1.00	U	PU
Plutonium 239/240	PU-239/240	0	0.066	0.251	1.00	U	PU
Potassium 40	13966-00-2	2.52	0.51	0.259			GAM
Cobalt 60	10198-40-0	U		0.025	0.050	U	GAM
Cesium 137	10045-97-3	U		0.028	0.100	U	GAM
Radium 226	13982-63-3	U		0.059	0.100	U	GAM
Radium 228	15262-20-1	U		0.172	0.200	U	GAM
Europium 152	14683-23-9	U		0.078	0.100	U	GAM
Europium 154	15585-10-1	U		0.069	0.100	U	GAM
Europium 155	14391-16-3	U		0.071	0.100	U	GAM
Thorium 228	14274-82-9	U		0.054		U	GAM
Thorium 232	TH-232	U		0.122		U	GAM
Uranium 235	15117-96-1	U		0.156		U	GAM
Uranium 238	U-238	U		3.00		U	GAM
Americium 241	14596-10-2	U		0.058		U	GAM
Beryllium 7	13966-02-4	U		0.293		U	GAM
Ruthenium 106	13967-48-1	U		0.221		U	GAM
Antimony 125	14234-35-6	U		0.061		U	GAM

Lab id	EBRLNE
Protocol	Hanford1
Version	Ver 1.0
Form	DVD_DS
Version	3.06
Report date	11/10/09

EBERLINE ANALYTICAL/RICHMOND

SAMPLE DELIVERY GROUP K1785

7474-016

J19662

DATA SHEET, cont

SDG	7474	Client/Case no	Hanford
			SDG K1785
Contact	N. Joseph Verville	Contract	No. 500W215A00
Lab sample id	R909103-16	Client sample id	J19662
Dept sample id	7474-016	Location/Matrix	STURGEON 27 VICERA SOLID
Received	09/30/09	Collected/Weight	09/24/09 18:00 122 g
% solids	100.0	Custody/SAF No	RC-118 011 RC 118

2/7/10

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Cesium 134	13967-70-9	U		0.031		U	GAM

Columbia River Component of the RCDRA - Tissues

Lab id EBERLNE
Protocol Hanford1
Version Ver 1.0
Form DVD-DS
Version 3.06
Report date 11/10/09

EBERLINE ANALYTICAL/RICHMOND

SAMPLE DELIVERY GROUP K1785

7474-017

J19746

DATA SHEET

SDG	7474	Client/Case no	Hanford SDG K1785
Contact	N. Joseph Verville	Contract	No. 500W215A00
Lab sample id	8909133 17	Client sample id	J19746
Dept sample id	7474-017	Location/Matrix	100SA-WAL 6 FILLET SOLID
Received	09/30/09	Collected/Weight	09/24/09 11:15 818 g
% solids	100.0	Custody/SAP No	RC-118-1073 RC-118

✓ 2/7/10

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Tritium	10028-17-8	2.09	3.7	6.19	400	U J	H
Carbon 14	14762-75-5	1.25	3.2	5.38	50.0	U J	C
Total Strontium	SR-RAD	-0.009	0.10	0.210	1.00	U	SR
Technetium 99	14133-76-7	-0.014	0.26	0.409	15.0	U	TC
Thorium 228	14274-82-9	0.052	0.31	0.700	1.00	U J	TH
Thorium 230	14269-63-7	-0.313	0.21	0.799	1.00	U	TH
Thorium 232	TH-232	0	0.10	0.499	1.00	U J	TH
Uranium 233/234	U-233/234	0	0.057	0.219	1.00	U	U
Uranium 235	15117-96-1	0	0.069	0.265	1.00	U	U
Uranium 238	U-238	0	0.057	0.219	1.00	U	U
Plutonium 238	13981-16-3	0	0.14	0.199	1.00	U	PU
Plutonium 239/240	PU-239/240	0.072	0.072	0.276	1.00	U	PU
Potassium 40	13966-00-2	3.26	0.60	0.443			GAM
Cobalt 60	10198-40-0	U		0.047	0.050	U	GAM
Cesium 137	10045-97-3	U		0.048	0.100	U	GAM
Radium 226	13982-63-3	U		0.106	0.100	U	GAM
Radium 228	15262-20-1	U		0.206	0.200	U	GAM
Europium 152	14683-23-9	U		0.114	0.100	U	GAM
Europium 154	15585-10-1	U		0.144	0.100	U	GAM
Europium 155	14391-16-3	U		0.088	0.100	U	GAM
Thorium 228	14274-82-9	U		0.070		U	GAM
Thorium 232	TH-232	U		0.206		U	GAM
Uranium 235	15117-96-1	U		0.190		U	GAM
Uranium 238	U-238	U		5.61		U	GAM
Americium 241	14596-10-2	U		0.041		U	GAM
Beryllium 7	13966-02-4	U		0.458		U	GAM
Ruthenium 106	13967-48-1	U		0.407		U	GAM
Antimony 125	14234-35-6	U		0.114		U	GAM

Lab id	EBRLNE
Protocol	Hanford1
Version	Ver 1.0
Form	DVD-DS
Version	3.06
Report date	11/10/09

EBERLINE ANALYTICAL/RICHMOND

SAMPLE DELIVERY GROUP K1785

7474-017

J19746

DATA SHEET, cont

SDG	7474	Client/Case no	Hanford SDG K1785
Contact	N. Joseph Verville	Contract	No. 000W315A00
Lab sample id	R909111-17	Client sample id	J19746
Dept sample id	7474-017	Location/Matrix	100SA WAL 6 FILLET SOLID
Received	09/10/09	Collected/Weight	09/24/09 11:15 818 g
% solids	100.0	Custody/SAF No	RC-118 1073 RC-118

K 3/17/10

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALIFIERS	TEST
Cesium 134	13967-70-9	U		0.058		U	GAM

Columbia River Component of the RCBRA - Tissues

Lab id EBRLNE
Protocol Hanford)
Version Ver 1.0
Form DVD-DS
Version 3.06
Report date 11/10/09

EBERLINE ANALYTICAL/RICHMOND

SAMPLE DELIVERY GROUP K1785

7474-018

J19747

DATA SHEET

SDG 7474		Client/Case no Hanford		SDG K1785
Contact N. Joseph Verville		Contract No. 500N235A00		
Lab sample id 8909133-10		Client sample id J19747		
Dept sample id 7474-018		Location/Matrix 100SA-WAL 6 LIV/KID		SOLID
Received 09/30/09		Collected/Weight 09/24/09 18:25		50 g
% solids 100.0		Custody/SAF No RC-118-1074		RC-118

2/1/10

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Tritium	10028-17-8	-3.07	3.8	6.91	400	U J	H
Carbon 14	14762-75-5	0.419	3.5	5.94	50.0	U J	C
Total Strontium	SR-RAD	0.021	0.096	0.146	1.00	U	SR
Technetium 99	14133-76-7	0.081	0.27	0.397	15.0	U	TC
Thorium 228	14274-82-9	0.037	0.22	0.460	1.00	U J	TH
Thorium 230	14269-63-7	-0.075	0.30	0.609	1.00	U	TH
Thorium 232	TH-232	0	0.075	0.286	1.00	U J	TH
Uranium 233/234	U-233/234	0.036	0.073	0.270	1.00	U	U
Uranium 235	15117-96-1	0.044	0.088	0.337	1.00	U	U
Uranium 238	U-238	0	0.073	0.270	1.00	U	U
Plutonium 238	13981-16-3	-0.054	0.11	0.401	1.00	U	PU
Plutonium 239/240	PU-239/240	0.027	0.054	0.208	1.00	U	PU
Potassium 40	13966-00-2	2.22	1.1	0.610			GAM
Cobalt 60	10198-40-0	U		0.074	0.050	U	GAM
Cesium 137	10045-97-3	U		0.069	0.100	U	GAM
Radium 226	13982-63-3	U		0.164	0.100	U	GAM
Radium 228	15262-20-1	U		0.352	0.200	U	GAM
Europium 152	14683-23-9	U		0.213	0.100	U	GAM
Europium 154	15585-10-1	U		0.205	0.100	U	GAM
Europium 155	14391-16-3	U		0.185	0.100	U	GAM
Thorium 228	14274-82-9	U		0.136		U	GAM
Thorium 232	TH 232	U		0.352		U	GAM
Uranium 235	15117-96-1	U		0.422		U	GAM
Uranium 238	U-238	U		0.56		U	GAM
Americium 241	14596-10-2	U		0.171		U	GAM
Beryllium 7	13966-02-4	U		0.812		U	GAM
Ruthenium 106	13967-48-1	U		0.571		U	GAM
Antimony 125	14234-35-6	U		0.166		U	GAM

DATA SHEETS
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SUMMARY DATA SECTION
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Lab id EBRLNE
Protocol Hanford1
Version Ver 1.0
Form DVD-DS
Version 3.06
Report date 11/10/09

EBERLINE ANALYTICAL/RICHMOND
SAMPLE DELIVERY GROUP K1785

7474-018

J19747

DATA SHEET, cont

SDG	7474	Client/Case no	Hanford SDG K1785
Contact	N. Joseph Verville	Contract	No. 000W235A00
Lab sample id	K909133-18	Client sample id	J19747
Dept sample id	7474-018	Location/Matrix	100DA-WAL 6 LIV/KID SOLID
Received	09/30/09	Collected/Weight	09/24/09 10:25 50 g
% solids	100.0	Custody/SAF No	RC-118-1074 RC-118

2/7/10

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Cesium 134	13967-70-9	U		0.091		U	GAM

Columbia River Component of the RCBRA - Tissues

Lab id EBERLINE
Protocol Hanford1
Version Ver 1.0
Form DVD-DG
Version 3.06
Report date 11/10/09

EBERLINE ANALYTICAL/RICHMOND

SAMPLE DELIVERY GROUP K1785

7474-019 J19748

DATA SHEET

SDG	7474	Client/Case no	Hanford SDG K1785
Contact	N. Joseph Veryalle	Contract	No. 500W235A00
Lab sample id	R909133-19	Client sample id	J19748
Dept sample id	7474-019	Location/Matrix	1000A-WAL 6 CARCASS SOLID
Received	09/30/09	Collected/Weight	09/24/09 11:30 849 g
% solids	100.0	Custody/SAP No	RC-118-1075 RC-118

2/2/10

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Tritium	10028-17-8	-0.416	3.9	6.78	400	U J	H
Carbon 14	14762-75-5	0	1.4	5.70	50.0	U J	C
Total Strontium	SR-RAD	-0.031	0.096	0.201	1.00	U	SR
Technetium 99	14133-76-7	0.158	0.27	0.376	15.0	U	TC
Thorium 228	14274-82-9	0.035	0.14	0.338	1.00	U J	TH
Thorium 230	14269-63-7	-0.106	0.28	0.474	1.00	U	TH
Thorium 232	TH-232	0	0.071	0.270	1.00	U J	TH
Uranium 233/234	U-233/234	0	0.087	0.334	1.00	U	U
Uranium 235	15117-96-1	0	0.11	0.404	1.00	U	U
Uranium 238	U-238	0	0.087	0.334	1.00	U	U
Plutonium 238	13981-16-3	0.029	0.12	0.320	1.00	U	PU
Plutonium 239/240	PU-239/240	0	0.058	0.220	1.00	U	PU
Potassium 40	13966-00-2	2.72	0.95	0.558			GAM
Cobalt 60	10198-40-0	U		0.063	0.050	U	GAM
Cesium 137	10045-97-3	U		0.052	0.100	U	GAM
Radium 226	13982-63-3	U		0.115	0.100	U	GAM
Radium 228	15262-20-1	U		0.235	0.200	U	GAM
Europium 152	14683-23-9	U		0.141	0.100	U	GAM
Europium 154	15585-10-1	U		0.178	0.100	U	GAM
Europium 155	14391-16-3	U		0.110	0.100	U	GAM
Thorium 228	14274-82-9	U		0.156		U	GAM
Thorium 232	TH-232	U		0.215		U	GAM
Uranium 235	15117-96-1	U		0.253		U	GAM
Uranium 238	U-238	U		5.09		U	GAM
Americium 241	14596-10-2	U		0.189		U	GAM
Beryllium 7	13966-02-4	U		0.552		U	GAM
Ruthenium 106	13967-48-1	U		0.439		U	GAM
Antimony 125	14234-35-6	U		0.127		U	GAM

Lab id	EBERLNE
Protocol	Hanford1
Version	Ver 1.0
Form	DVD DS
Version	3.06
Report date	11/10/09

EBERLINE ANALYTICAL/RICHMOND

SAMPLE DELIVERY GROUP K1785

7474-019

J19748

DATA SHEET, cont

SDG	7474	Client/Case no	Hanford SDG K1785
Contact	N. Joseph Verville	Contract	No. 600W23SA00
Lab sample id	E909134-19	Client sample id	J19748
Dept sample id	7474-019	Location/Matrix	100SA-WAL 6 CARCASS SOLID
Received	09/30/09	Collected/Weight	09/24/09 11:30 849 g
% solids	100.0	Custody/SAF No	KC-118-1025 EC 118

2/2/10

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALIFIERS	TEST
Cesium 134	13967-70-9	U		0.059		U	GAM

Columbia River Component of the RCBRA - Tissues

Lab id EBRLNE
Protocol Hanford1
Version Ver 1.0
Form DVD-DS
Version 3.06
Report date 11/10/09

EBERLINE ANALYTICAL/RICHMOND

SAMPLE DELIVERY GROUP K1785

7473-001

J18X86

DATA SHEET

SDG	7473	Client/Case no	Hanford SDG K1785
Contact	N. Joseph Verville	Contract	No. 800W235A00
Lab sample id	8909131-01	Client sample id	J18X86
Dept sample id	7473-001	Location/Matrix	100BA WALL-FILLET SOLID
Received	09/30/09	Collected/Weight	09/24/09 13:00 1422 g
% solids	100.0	Custody/SAF No	RC 118-186 RC-118

2/7/10

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Tritium	10028-17-8	0.811	3.7	6.50	400	U J	H
Carbon 14	14762-75-5	-0.143	3.0	5.04	50.0	U J	C
Total Strontium	SR-RAD	-0.063	0.11	0.256	1.00	U	SR
Technetium 99	14133-76-7	0.002	0.16	0.404	15.0	U	TC
Thorium 228	14274-82-9	0.040	0.16	0.386	1.00	U J	TH
Thorium 230	14269-63-7	-0.201	0.12	0.712	1.00	U	TH
Thorium 232	TH-232	0	0.080	0.108	1.00	U J	TH
Uranium 233/234	U-233/234	0.028	0.056	0.215	1.00	U	U
Uranium 235	15117-96-1	0.034	0.068	0.260	1.00	U	U
Uranium 238	U-238	0	0.056	0.215	1.00	U	U
Plutonium 238	13981-16-3	0.027	0.064	0.119	1.00	U	PU
Plutonium 239/240	PU 239/240	-0.009	0.018	0.050	1.00	U	PU
Potassium 40	13966-00-2	2.84	0.49	0.211			GAM
Cobalt 60	10198-40-0	U		0.024	0.050	U	GAM
Cesium 137	10045-97-3	U		0.024	0.100	U	GAM
Radium 226	13982-63-3	U		0.054	0.100	U	GAM
Radium 228	15262-20-1	U		0.108	0.200	U	GAM
Europium 152	14683-23-9	U		0.074	0.100	U	GAM
Europium 154	15585-10-1	U		0.062	0.100	U	GAM
Europium 155	14391-16-3	U		0.065	0.100	U	GAM
Thorium 228	14274-82-9	U		0.046		U	GAM
Thorium 232	TH-232	U		0.108		U	GAM
Uranium 235	15117-96-1	U		0.148		U	GAM
Uranium 238	U-238	U		2.70		U	GAM
Americium 241	14596-10-2	U		0.061		U	GAM
Beryllium 7	13966-02-4	U		0.214		U	GAM
Ruthenium 106	13967-48-1	U		0.211		U	GAM
Antimony 125	14234-35-6	U		0.057		U	GAM

Lab id	EBERLINE
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EBERLINE ANALYTICAL/RICHMOND

SAMPLE DELIVERY GROUP K1785

7473-001

J18X86

DATA SHEET, cont

SDG	7473	Client/Case no	Hanford SDG K1785
Contact	N. Joseph Verville	Contract	No. 200W335A00
Lab sample id	R909111-01	Client sample id	J18X86
Dept sample id	7473-001	Location/Matrix	100BA-WALL-FILLET SOLID
Received	09/30/09	Collected/Weight	09/24/09 11:00 1422 g
% solids	100.0	Custody/SAF No	RC-118-186 RC-118

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ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Cesium 134	13967-70-9	U		0.028		U	GAM

Columbia River Component of the RCBRA - Tissues

Lab id	EBRLNE
Protocol	Hanford1
Version	Ver 1.0
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EBERLINE ANALYTICAL/RICHMOND

SAMPLE DELIVERY GROUP K1785

7473-002

J18X87

DATA SHEET

SDG	7473	Client/Case no	Hanford SDG K1785
Contact	N. Joseph Verville	Contract	No. 00W335A00
Lab sample id	8909131-02	Client sample id	J18X87
Dept sample id	7473-002	Location/Matrix	100SA-WAL2-FILLET SOLID
Received	09/30/09	Collected/Weight	09/25/09 11:00 1463 g
% solids	100.0	Custody/SAP No	RC-118-187 RC-118

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ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Tritium	10028-17-8	0.218	4.1	6.98	400	U J	H
Carbon 14	14762-75-5	0.196	3.1	5.20	50.0	U J	C
Total Strontium	SR-RAD	-0.022	0.15	0.301	1.00	U	SR
Technetium 99	14133-76-7	0.089	0.15	0.410	15.0	U	TC
Thorium 228	14274-82-9	0	0.16	0.431	1.00	U J	TH
Thorium 230	14269-63-7	-0.112	0.31	0.718	1.00	U	TH
Thorium 232	TH-232	0	0.078	0.298	1.00	U J	TH
Uranium 233/234	U 233/234	0	0.056	0.216	1.00	U	U
Uranium 235	15117-96-1	0.034	0.068	0.262	1.00	U	U
Uranium 238	U-238	0	0.056	0.216	1.00	U	U
Plutonium 238	13981-16-3	-0.019	0.046	0.092	1.00	U	PU
Plutonium 239/240	PU 239/240	-0.008	0.015	0.047	1.00	U	PU
Potassium 40	13966-00-2	2.53	0.59	0.370			GAM
Cobalt 60	10198-40-0	U		0.031	0.050	U	GAM
Cesium 137	10045-97-3	U		0.031	0.100	U	GAM
Radium 226	13982-63-3	U		0.055	0.100	U	GAM
Radium 228	15262-20-1	U		0.166	0.200	U	GAM
Europium 152	14683-23-9	U		0.080	0.100	U	GAM
Europium 154	15585-10-1	U		0.094	0.100	U	GAM
Europium 155	14391-16-3	U		0.086	0.100	U	GAM
Thorium 228	14274-82-9	U		0.044		U	GAM
Thorium 232	TH-232	U		0.166		U	GAM
Uranium 235	15117-96-1	U		0.151		U	GAM
Uranium 238	U-238	U		3.92		U	GAM
Americium 241	14596-10-2	U		0.124		U	GAM
Beryllium 7	13966-02-4	U		0.288		U	GAM
Ruthenium 106	13967-48-1	U		0.261		U	GAM
Antimony 125	14234-35-6	U		0.072		U	GAM

Lab id	EBRLNE
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SDG	7473	Client/Case no	Hanford SDG K1785
Contact	N. Joseph Verville	Contract	No. 00W235A00
Lab sample id	R909131-02	Client sample id	J10X07
Dept sample id	7473-002	Location/Matrix	100SA WALL-FILLET SOLID
Received	09/30/09	Collected/Weight	09/25/09 11:00 1463 g
% solids	100.0	Custody/SAF No	RC-110-107 RC-110

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ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALIFIERS	TEST
Cesium 134	13967-70-9	U		0.035		U	CAM

Columbia River Component of the RCBRA Tissues

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EBERLINE ANALYTICAL/RICHMOND

SAMPLE DELIVERY GROUP K1785

7473-003

J18X88

DATA SHEET

SDG	7473	Client/Case no	Hanford — SDG K1785
Contact	N. Joseph Verville	Contract	No. 200W235A00
Lab sample id	8709131-01	Client sample id	J18X80
Dept sample id	7473-003	Location/Matrix	100SA-WALJ-PILLET SOLID
Received	09/30/09	Collected/Weight	09/25/09 12:00 1480 g
% Solids	100.0	Custody/SAF No	RC 110-188 RC 118

K 2/7/10

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Tritium	10028-17-8	-0.178	1.5	6.05	400	U J	H
Carbon 14	14762-75-5	0.690	2.7	4.63	50.0	U J	C
Total Strontium	SR RAD	-0.083	0.11	0.761	1.00	U	SR
Technetium 99	14133-76-7	0.024	0.15	0.443	15.0	U	TC
Thorium 228	14274-82-9	-0.032	0.11	0.355	1.00	U J	TH
Thorium 230	14269-63-7	0.757	0.26	0.613	1.00	U	TH
Thorium 232	TH-232	0	0.064	0.246	1.00	U J	TH
Uranium 233/234	U-233/234	0	0.063	0.239	1.00	U	U
Uranium 235	15117-96-1	0	0.076	0.290	1.00	U	U
Uranium 238	U-238	0	0.063	0.239	1.00	U	U
Plutonium 238	13981-16-3	0.007	0.034	0.064	1.00	U	PU
Plutonium 239/240	PU 239/240	0	0.007	0.026	1.00	U	PU
Potassium 40	13966-00-2	2.81	0.44	0.167			GAM
Cobalt 60	10198-40-0	U		0.027	0.050	U	GAM
Cesium 137	10045-97-3	U		0.028	0.100	U	GAM
Radium 226	13982-63-3	U		0.057	0.100	U	GAM
Radium 228	15262-20-1	U		0.172	0.200	U	GAM
Europium 152	14683-23-9	U		0.068	0.100	U	GAM
Europium 154	15585-10-1	U		0.077	0.100	U	GAM
Europium 155	14391-16-3	U		0.050	0.100	U	GAM
Thorium 228	14274-82-9	U		0.087		U	GAM
Thorium 232	TH-232	U		0.172		U	GAM
Uranium 235	15117-96-1	U		0.116		U	GAM
Uranium 238	U-238	U		3.22		U	GAM
Americium 241	14596-10-2	U		0.025		U	GAM
Beryllium 7	13966-02-4	U		0.230		U	GAM
Ruthenium 106	13967-48-1	U		0.222		U	GAM
Antimony 125	14234-35-6	U		0.065		U	GAM

Lab id	EBERLNE
Protocol	Hanford1
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SAMPLE DELIVERY GROUP K1785

7473-003

J18X88

DATA SHEET, cont

SDG	7473	Client/Case No	Hanford SDG K1785
Contact	N. Joseph Verville	Contract	No. S00W215A00
Lab sample id	R909131-03	Client sample id	J18X88
Dept sample id	7473-003	Location/Matrix	100SA-WAL3-FILLET SOLID
Received	09/30/09	Collected/Weight	09/25/09 12:00 1400 g
% solids	100.0	Custody/SAF No	RC-118-188 RC-118

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ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Cesium 134	13967-70-9	U		0.045		U	GAM

Columbia River Component of the RCBRA - Tissues

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EBERLINE ANALYTICAL/RICHMOND

SAMPLE DELIVERY GROUP K1785

7473-004 J18X09

DATA SHEET

SDG	7473	Client/Case no	Hanford SDG K1785
Contact	N. Joseph Verville	Contract	No. 200WZ15A00
Lab sample id	R909151-04	Client sample id	J18X09
Dept sample id	7473-004	Location/Matrix	100GA-WALA-FILLET SOLID
Received	09/30/09	Collected/Weight	09/24/09 14:00, 1448 g
% solids	100.0	Custody/SAF No	RC 118-182 RC-118

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ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Tritium	10028-17-8	0.505	3.8	6.46	400	U J	H
Carbon 14	14762-75-5	-1.47	2.8	4.77	50.0	U J	C
Total Strontium	SR-RAD	0.015	0.12	0.253	1.00	U	SR
Technetium 99	14133-76-7	0.020	0.13	0.373	15.0	U	TC
Thorium 228	14274-82-9	0	0.18	0.422	1.00	U J	TH
Thorium 230	14269-63-7	-0.176	0.35	0.746	1.00	U	TH
Thorium 232	TH-232	0	0.088	0.337	1.00	U J	TH
Uranium 233/234	U-233/234	0.034	0.14	0.259	1.00	U	U
Uranium 235	15117-96-1	0	0.082	0.314	1.00	U	U
Uranium 238	U 238	0	0.068	0.259	1.00	U	U
Plutonium 238	13981-16-3	0.009	0.038	0.080	1.00	U	PU
Plutonium 239/240	PU-239/240	0.019	0.028	0.058	1.00	U	PU
Potassium 40	13966-00-2	1.59	0.64	0.477			GAM
Cobalt 60	10198-40-0	U		0.048	0.050	U	GAM
Cesium 137	10045-97-3	U		0.042	0.100	U	GAM
Radium 226	13982-63-3	U		0.096	0.100	U	GAM
Radium 228	15262-20-1	U		0.184	0.200	U	GAM
Europium 152	14683-23-9	U		0.119	0.100	U	GAM
Europium 154	15585-10-1	U		0.115	0.100	U	GAM
Europium 155	14391-16-3	U		0.076	0.100	U	GAM
Thorium 228	14274-82-9	U		0.066		U	GAM
Thorium 232	TH-232	U		0.183		U	GAM
Uranium 235	15117-96-1	U		0.193		U	GAM
Uranium 238	U-238	U		5.14		U	GAM
Americium 241	14596-10-2	U		0.047		U	GAM
Beryllium 7	13966-02-4	U		0.406		U	GAM
Ruthenium 106	13967-48-1	U		0.356		U	GAM
Antimony 125	14234-35-6	U		0.102		U	GAM

Lab id EBERLINE
Protocol Hanford1
Version Ver 1.0
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EBERLINE ANALYTICAL/RICHMOND

SAMPLE DELIVERY GROUP K1785

7473-004 J18X89

DATA SHEET, cont

SDG	7473	Client/Case no	Hanford SDG_K1785
Contact	M. Joseph Verville	Contract	No. 200W235A00
Lab sample id	R909131-04	Client sample id	J18X89
Dept sample id	7473-004	Location/Matrix	100SA-WALA-FILLET SOLID
Received	09/30/09	Collected/Weight	09/24/09 13:00 1448.9
% solids	100.0	Custody/SAF No	RC-118-109 RC-118

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ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Cesium 134	13967-70-9	U		0.052		U	GAM

Columbia River Component of the RCBRA Tissues

Lab id	EBRLNE
Protocol	Hanford1
Version	Ver 1.0
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EBERLINE ANALYTICAL/RICHMOND

SAMPLE DELIVERY GROUP K1785

7473-005

J18X90

DATA SHEET

SDG	7473	Client/Case no	Hanford SDG K1785
Contact	N. Joseph Verville	Contract	No. 300W235A00
Lab sample id	8909131 05	Client sample id	J18X90
Dept sample id	7473 005	Location/Matrix	100SA WALS-PILLET SOLID
Received	09/30/09	Collected/Weight	09/24/09 15:15 1405 g
% solids	100.0	Custody/SAF No	RC 118-190 RC 118

✓ 2/7/10

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Tritium	10028-17-8	0.724	1.8	6.62	400	U J	H
Carbon 14	14762-75-5	-1.63	2.8	4.80	50.0	U J	C
Total Strontium	SR-RAD	-0.016	0.14	0.285	1.00	U	SR
Technetium 99	14133-76-7	0.054	0.14	0.386	15.0	U	TC
Thorium 228	14274-82-9	0	0.16	0.394	1.00	U J	TH
Thorium 230	14269-63-7	0.164	0.33	0.697	1.00	U	TH
Thorium 232	TH-232	0.041	0.082	0.114	1.00	U J	TH
Uranium 233/234	U 233/234	0.031	0.12	0.236	1.00	U	U
Uranium 235	15117-96-1	0	0.075	0.286	1.00	U	U
Uranium 238	U-238	0	0.062	0.236	1.00	U	U
Plutonium 238	13981-16-3	-0.012	0.033	0.077	1.00	U	PU
Plutonium 239/240	PU 239/240	-0.017	0.025	0.067	1.00	U	PU
Potassium 40	13966-00-2	3.25	0.66	0.124			GAM
Cobalt 60	10198-40-0	U		0.038	0.050	U	GAM
Cesium 137	10045-97-3	U		0.042	0.100	U	GAM
Radium 226	13982-63-3	U		0.084	0.100	U	GAM
Radium 228	15262-20-1	U		0.177	0.200	U	GAM
Europium 152	14683-23-9	U		0.122	0.100	U	GAM
Europium 154	15585-10-1	U		0.107	0.100	U	GAM
Europium 155	14391-16-3	U		0.100	0.100	U	GAM
Thorium 228	14274-82-9	U		0.128		U	GAM
Thorium 232	TH-232	U		0.177		U	GAM
Uranium 235	15117-96-1	U		0.231		U	GAM
Uranium 238	U-238	U		4.90		U	GAM
Americium 241	14596-10-2	U		0.101		U	GAM
Beryllium 7	13966-02-4	U		0.365		U	GAM
Ruthenium 106	13967-48-1	U		0.338		U	GAM
Antimony 125	14234-35-6	U		0.088		U	GAM

Lab id	EBERLINE
Protocol	Hanford1
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SDG 7473
Contact N. Joseph Verville

Client/Case no Hanford
SDG K1785
Contract No. 500W235A00

Lab sample id R909131-05
Dept sample id 7473-005
Received 09/30/09
% solids 100.0

Client sample id J18X90
Location/Matrix 100SA-WALS-FILLET SOLID
Collected/Weight 09/24/09 15:15 1485 g
Custody/SAF No RC-118-190 RC-118

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ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Cesium 134	13967-70-9	U		0.044		U	GAM

Columbia River Component of the RCBRA - Tissues

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EBERLINE ANALYTICAL/RICHMOND
SAMPLE DELIVERY GROUP K1705

7473-006

J18XB1

DATA SHEET

SDG	7473	Client/Case no	Hanford SDG K1705
Contact	N. Joseph Verville	Contract	No. 00072445A00
Lab sample id	R909131-06	Client sample id	J18XB1
Dept sample id	7473-006	Location/Matrix	100BA-WOLL DIV/RID SOLID
Received	09/30/09	Collected/Weight	09/24/09 10:50 132 g
% solids	100.0	Custody/SAF No	RC-118-201 RC 118

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ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Tritium	10028-17-8	3.21	3.9	6.42	400	U J	H
Carbon 14	14762-75-5	-0.498	2.8	4.79	50.0	U J	C
Total Strontium	SR-RAD	-0.067	0.10	0.204	1.00	U	SR
Technetium 99	14133-76-7	0.014	0.14	0.384	15.0	U	TC
Thorium 228	14274-82-9	-0.032	0.19	0.397	1.00	U J	TH
Thorium 230	14269-63-7	-0.162	0.26	0.616	1.00	U	TH
Thorium 232	TH-232	0	0.064	0.246	1.00	U J	TH
Uranium 233/234	U-233/234	0	0.052	0.197	1.00	U	U
Uranium 235	15117-96-1	0	0.062	0.239	1.00	U	U
Uranium 238	U-238	0	0.052	0.197	1.00	U	U
Plutonium 238	13981-16-3	0.003	0.034	0.068	1.00	U	PU
Plutonium 239/240	PU-239/240	0.007	0.014	0.026	1.00	U	PU
Potassium 40	13966-00-2	2.52	0.45	0.287			GAM
Cobalt 60	10198-40-0	U		0.032	0.050	U	GAM
Cesium 137	10045-97-3	U		0.029	0.100	U	GAM
Radium 226	13982-63-3	U		0.121	0.100	U	GAM
Radium 228	15262-20-1	U		0.117	0.200	U	GAM
Europium 152	14683-23-9	U		0.076	0.100	U	GAM
Europium 154	15585-10-1	U		0.091	0.100	U	GAM
Europium 155	14391-16-3	U		0.054	0.100	U	GAM
Thorium 228	14274-82-9	U		0.043		U	GAM
Thorium 232	TH-232	U		0.117		U	GAM
Uranium 235	15117-96-1	U		0.130		U	GAM
Uranium 238	U-238	U		3.76		U	GAM
Americium 241	14596-10-2	U		0.012		U	GAM
Beryllium 7	13966-02-4	U		0.262		U	GAM
Ruthenium 106	13967-48-1	U		0.266		U	GAM
Antimony 125	14234-35-6	U		0.066		U	GAM

Lab id	EBERLINE
Protocol	Hanford1
Version	Ver 1.0
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SDG	7473	Client/Case no	Hanford SDG_K1785
Contact	N. Joseph Verville	Contract	No. 600W215A00
Lab sample id	E909131-06	Client sample id	J18XB1
Dept sample id	7473-006	Location/Matrix	100SA-WALL-LIV/KID SOLID
Received	09/30/09	Collected/Weight	09/24/09 18:50 132 g
% solids	100.0	Custody/SAF No	RC-118-201 RC-118

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ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALIFIERS	TEST
Cesium 134	13967-70-9	U		0.034		U	GAM

Columbia River Component of the RCBRA - Tissues

Lab id	EBRLNE
Protocol	Hanford1
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Report date	11/12/09

E B E R L I N E   A N A L Y T I C A L / R I C H M O N D

SAMPLE DELIVERY GROUP K1785

2473-007

J18XB2

D A T A   S H E E T

SDG:	2473	Client/Case no	Hanford SDG_K1705
Contact	N. Joseph Verville	Contract	No. 00QW215A00
Lab sample id	R909131-07	Client sample id	J18XB2
Dept sample id	2473-007	Location/Matrix	100SA-WAL2-LIV/KID SOLID
Received	09/30/09	Collected/Weight	09/25/09 17:30 236 g
% solids	100.0	Custody/SAF No	RC-118-202 RC-118

2/7/10

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Tritium	10028-17-8	0.283	3.5	6.01	400	U J	H
Carbon 14	14762-75-5	0.402	2.8	4.73	50.0	U J	C
Total Strontium	SR-RAD	0.010	0.14	0.213	1.00	U	SR
Technetium 99	14133-76-7	0.002	0.11	0.369	15.0	U	TC
Thorium 228	14274-82-9	0	0.18	0.377	1.00	U J	TH
Thorium 230	14269-63-7	0.214	0.11	0.605	1.00	U	TH
Thorium 232	TH-232	0.031	0.061	0.234	1.00	U J	TH
Uranium 233/234	U-233/234	0	0.049	0.188	1.00	U	U
Uranium 235	15117-96-1	0	0.060	0.228	1.00	U	U
Uranium 238	U-238	0	0.049	0.188	1.00	U	U
Plutonium 238	13981-16-3	0.010	0.041	0.095	1.00	U	PU
Plutonium 239/240	PU-239/240	0.005	0.031	0.057	1.00	U	PU
Potassium 40	13966-00-2	2.21	0.43	0.337			GAM
Cobalt 60	10198-40-0	U		0.017	0.050	U	GAM
Cesium 137	10045-97-3	U		0.032	0.100	U	GAM
Radium 226	13982-63-3	U		0.068	0.100	U	GAM
Radium 228	15262-20-1	U		0.143	0.200	U	GAM
Europium 152	14683-23-9	U		0.084	0.100	U	GAM
Europium 154	15585-10-1	U		0.098	0.100	U	GAM
Europium 155	14391-16-3	U		0.061	0.100	U	GAM
Thorium 228	14274-82-9	U		0.050		U	GAM
Thorium 232	TH-232	U		0.143		U	GAM
Uranium 235	15117-96-1	U		0.142		U	GAM
Uranium 238	U-238	U		4.00		U	GAM
Americium 241	14596-10-2	U		0.029		U	GAM
Beryllium 7	13966-02-4	U		0.304		U	GAM
Ruthenium 106	13967-48-1	U		0.282		U	GAM
Antimony 125	14234-35-6	U		0.083		U	GAM

Lab id	EBRLNE
Protocol	Hanford1
Version	Ver 1.0
Form	DVD-DS
Version	3.06
Report date	11/12/09

EBERLINE ANALYTICAL/RICHMOND

SAMPLE DELIVERY GROUP E1785

7473-007 J18X82

DATA SHEET, cont

SDG 7473 Client/Case no Hanford SDG E1785
Contact N. Joseph Verville Contract No. S00W835A00

Lab sample id R909131-07 Client sample id J18X82
Dept sample id 7473-007 Location/Matrix 100SA WALL LIV/KID SOLID
Received 09/30/09 Collected/Weight 09/25/09 17:30 236 g
% solids 100.0 Custody/SAF No RC 110-203 RC-110

2/7/10

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALIFIERS	TEST
Cesium 134	13967-70-9	U		0.039		U	GAM

Columbia River Component of the RCBRA - Tissues

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-DS
Version 3.06
Report date 11/12/09

EBERLINE ANALYTICAL/RICHMOND

SAMPLE DELIVERY GROUP K1785

7473-008

J18XB3

DATA SHEET

SDG	7473	Client/Case no	Hanford SDG K1785
Contact	N. Joseph Verville	Contract	No. S00W235A00
Lab sample id	K902111-08	Client sample id	J18XB3
Dept sample id	7473-008	Location/Matrix	100GA-WAL3 LIV/KID SOLID
Received	09/30/09	Collected/Weight	09/25/09 17:35 53 g
% solids	100.0	Custody/SAF No	RC-118 203 RC-118

2/7/10

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Tritium	10028-17-8	0.518	3.9	6.64	400	U J	H
Carbon 14	14762-75-5	0	2.9	4.84	50.0	U J	C
Total Strontium	SR-RAD	-0.031	0.16	0.281	1.00	U	SR
Technetium 99	14133-76-7	-0.015	0.13	0.364	15.0	U	TC
Thorium 228	14274-82-9	0.040	0.24	0.442	1.00	U J	TH
Thorium 230	14269-63-7	-0.359	0.34	0.734	1.00	U	TH
Thorium 232	TH-232	0	0.080	0.305	1.00	U J	TH
Uranium 233/234	U-233/234	0	0.051	0.202	1.00	U	U
Uranium 235	15117-96-1	0	0.064	0.244	1.00	U	U
Uranium 238	U-238	0	0.051	0.202	1.00	U	U
Plutonium 238	13981-16-3	-0.025	0.15	0.304	1.00	U	PU
Plutonium 239/240	PU-239/240	0	0.049	0.189	1.00	U	PU
Potassium 40	13966-00-2	7.24	1.2	0.756			GAM
Cobalt 60	10198-40-0	U		0.062	0.050	U	GAM
Cesium 137	10045-97-3	U		0.065	0.100	U	GAM
Radium 226	13982-63-3	U		0.115	0.100	U	GAM
Radium 228	15262-20-1	U		0.291	0.200	U	GAM
Europium 152	14683-23-9	U		0.169	0.100	U	GAM
Europium 154	15585-10-1	U		0.180	0.100	U	GAM
Europium 155	14391-16-3	U		0.130	0.100	U	GAM
Thorium 228	14274-82-9	U		0.071		U	GAM
Thorium 232	TH-232	U		0.291		U	GAM
Uranium 235	15117-96-1	U		0.278		U	GAM
Uranium 238	U-238	U		7.91		U	GAM
Americium 241	14596-10-2	U		0.253		U	GAM
Beryllium 7	13966-02-4	U		0.581		U	GAM
Ruthenium 106	13967-48-1	U		0.580		U	GAM
Antimony 125	14234-35-6	U		0.150		U	GAM

Lab id EBRLNE
Protocol Hanford1
Version Ver 1.0
Form DVD-DS
Version 3.06
Report date 11/12/09

EBERLINE ANALYTICAL/RICHMOND

SAMPLE DELIVERY GROUP K1785

7473-008

J18XB3

DATA SHEET, cont

SDG	7473	Client/Case no	Hanford SDG K1785
Contact	N. Joseph Verville	Contract	No. 000M235A00
Lab sample id	R909131-09	Client sample id	J18XB3
Dept. sample id	7473-008	Location/Matrix	100SA WALL-LIV/KID SOLID
Received	09/30/09	Collected/Weight	09/25/09 17:35 53 g
% Solids	100.0	Custody/SAP No	RC-118-203 RC_118

1/~ 2/2/10

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Cesium 134	13967-70-9	U		0.080		U	GAM

Columbia River Component of the RCBRA - Tissues

Lab id EBRLNE
Protocol Hanford1
Version Ver 1.0
Form DVD-DS
Version 1.06
Report date 11/12/09

EBERLINE ANALYTICAL/RICHMOND

SAMPLE DELIVERY GROUP K1785

7473-009

J18X84

DATA SHEET

SDG	7473	Client/Case no	Hanford SDG K1785
Contact	N. Joseph Verville	Contract	No. 00W215A00
Lab sample id	8909131-09	Client sample id	J18X84
Dept sample id	7473-009	Location/Matrix	100SA WA04 LIV/KID SOLID
Received	09/30/09	Collected/Weight	09/25/09 18:40 327 g
% solids	100.0	Custody/SAF No	RC-110-204 RC 118

2/7/10

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Tritium	10028-17-8	-1.82	4.1	7.27	400	U J	H
Carbon 14	14762-75-5	0.402	1.7	5.42	50.0	U J	C
Total Strontium	SR-RAD	0.008	0.10	0.198	1.00	U	SR
Technetium 99	14133-76-7	0.005	0.11	0.362	15.0	U	TC
Thorium 228	14274-82-9	0.069	0.14	0.382	1.00	U J	TH
Thorium 230	14269-63-7	-0.173	0.20	0.616	1.00	U	TH
Thorium 232	TH-232	0	0.069	0.264	1.00	U J	TH
Uranium 233/234	U-233/234	0	0.050	0.192	1.00	U	U
Uranium 235	15117-96-1	0	0.061	0.237	1.00	U	U
Uranium 238	U-238	0	0.050	0.192	1.00	U	U
Plutonium 238	13981-16-3	0.004	0.036	0.064	1.00	U	PU
Plutonium 239/240	PU-239/240	0.004	0.022	0.048	1.00	U	PU
Potassium 40	13966-00-2	1.95	0.54	0.291			GAM
Cobalt 60	10198-40-0	U		0.027	0.050	U	GAM
Cesium 137	10045-97-3	U		0.031	0.100	U	GAM
Radium 226	13982-63-3	U		0.061	0.100	U	GAM
Radium 228	15262-20-1	U		0.130	0.200	U	GAM
Europium 152	14683-23-9	U		0.082	0.100	U	GAM
Europium 154	15585-10-1	U		0.074	0.100	U	GAM
Europium 155	14391-16-3	U		0.072	0.100	U	GAM
Thorium 228	14274-82-9	U		0.055		U	GAM
Thorium 232	TH-232	U		0.110		U	GAM
Uranium 235	15117-96-1	U		0.165		U	GAM
Uranium 238	U-238	U		3.21		U	GAM
Americium 241	14596-10-2	U		0.073		U	GAM
Beryllium 7	13966-02-4	U		0.270		U	GAM
Ruthenium 106	13967-48-1	U		0.234		U	GAM
Antimony 125	14234-35-6	U		0.065		U	GAM

Lab id	EBERLNR
Protocol	Hanford1
Version	Ver 1.0
Form	DVD DS
Version	1.06
Report date	11/12/09

EBERLINE ANALYTICAL/RICHMOND
SAMPLE DELIVERY GROUP K1705

7471-009

J18XB4

DATA SHEET, cont

SDG	7471	Client/Case no	Hanford SDG K1705
Contact	N. Joseph Verville	Contract	No. 500W235A00
Lab sample id	E909131-09	Client sample id	J18XB4
Dept. sample id	7471-009	Location/Matrix	100FA-WA14-LIV/KID SOLID
Received	09/30/09	Collected/Weight	09/29/09 18:10 127 g
% Solids	100.0	Custody/SAF No	RC-118-204 RC-110

2/7/10

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALIFIERS	TEST
Cesium 134	13967-70-9	U		0.032		U	GAM

Columbia River component of the RCBRA - Tissues

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Lab id EBRLNE
Protocol Hanford1
Version Ver 1.0
Form DVD-DS
Version 3.06
Report date 11/12/09

EBERLINE ANALYTICAL/RICHMOND

SAMPLE DELIVERY GROUP K1785

7473-010

J1NXB5

DATA SHEET

SDG	7473	Client/Case no	Hanford SDG K1785
Contact	N. Joseph Verville	Contract	No. 00W235A00
Lab sample id	E209131-10	Client sample id	J1NXB5
Dept sample id	7473-010	Location/Matrix	100BA-WALS-LIV/KID SOLID
Received	09/30/09	Collected/Weight	09/24/09 18:45 137 g
% solids	100.0	Custody/SAF No	RC-118-205 RC-118

V— 2/7/10

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Tritium	10028-17-8	1.16	4.4	7.40	400	U J	H
Carbon 14	14762-75-5	-0.108	3.3	5.54	50.0	U J	C
Total Strontium	SR-RAD	0.047	0.14	0.272	1.00	U	SR
Technetium 99	14133-76-7	-0.020	0.15	0.436	15.0	U	TC
Thorium 228	14274-82-9	-0.041	0.16	0.389	1.00	U J	TH
Thorium 230	14269-63-7	-0.284	0.24	0.668	1.00	U	TH
Thorium 232	TH-232	0	0.081	0.310	1.00	U J	TH
Uranium 233/234	U-233/234	0.027	0.055	0.210	1.00	U	U
Uranium 235	15117-96-1	0	0.067	0.255	1.00	U	U
Uranium 238	U-238	0	0.055	0.210	1.00	U	U
Plutonium 238	13981-16-3	0	0.017	0.075	1.00	U	PU
Plutonium 239/240	PU-239/240	0.008	0.032	0.067	1.00	U	PU
Potassium 40	13966-00-2	1.82	0.41	0.142			GAM
Cobalt 60	10198-40-0	U		0.030	0.050	U	GAM
Cesium 137	10045-97-3	U		0.030	0.100	U	GAM
Radium 226	13982-63-3	U		0.064	0.100	U	GAM
Radium 228	15262-20-1	U		0.133	0.200	U	GAM
Europium 152	14683-23-9	U		0.077	0.100	U	GAM
Europium 154	15585-10-1	U		0.085	0.100	U	GAM
Europium 155	14391-16-3	U		0.056	0.100	U	GAM
Thorium 228	14274-82-9	U		0.047		U	GAM
Thorium 232	TH-232	U		0.143		U	GAM
Uranium 235	15117-96-1	U		0.127		U	GAM
Uranium 238	U-238	U		3.71		U	GAM
Americium 241	14596-10-2	U		0.027		U	GAM
Beryllium 7	13966-02-4	U		0.264		U	GAM
Ruthenium 106	13967-48-1	U		0.268		U	GAM
Antimony 125	14234-35-6	U		0.074		U	GAM

Lab id	EBERLINE
Protocol	Hanford1
Version	Ver 1.0
Form	DVD-DS
Version	3.06
Report date	11/12/09

EBERLINE ANALYTICAL/RICHMOND

SAMPLE DELIVERY GROUP K1785

7473-010

DATA SHEET, cont

J18XB5

SDG	7473	Client/Case no	Hanford SDG K1785
Contact	N. Joseph Verville	Contract	No. 300W[illegible]A00
Lab sample id	R909131-10	Client sample id	J18XB5
Dept sample id	7473-010	Location/Matrix	100SA-WAL5-LIV/KID SOLID
Received	09/30/09	Collected/Weight	09/24/09 10:45 137 g
% solids	100.0	Custody/SAF No	RC-118 205 RC-118

✓ 2/7/10

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALIFIERS	TEST
Cesium 134	13967-70-9	U		0.036		U	GAM

Columbia River Component of the RCBRA - Tissues

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Lab id	EBRLNE
Protocol	Hanford1
Version	Ver 1.0
Form	DVD-DS
Version	3.06
Report date	11/12/09

EBERLINE ANALYTICAL/RICHMOND

SAMPLE DELIVERY GROUP K1785

7473-011 J18XB6

DATA SHEET

SDG	7473	Client/Case no	Hanford	SDG K1785
Contact	N. Joseph Verville	Contract	No. 500W235A00	
Lab sample id	E909131-11	Client sample id	J18XB6	
Dept sample id	7473 011	Location/Matrix	100SA WALL-CARCASS	SOLID
Received	09/30/09	Collected/Weight	09/24/09 13:30	1506 g
% solids	100.0	Custody/SAF No	RC-118-206	RC:118

2-17/10

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Tritium	10028-17-8	0.752	3.4	6.01	400	U J	H
Carbon 14	14762-75-5	-1.92	2.6	4.42	50.0	U J	C
Total Strontium	SR-RAD	-0.066	0.12	0.261	1.00	U	SR
Technetium 99	14133 76 7	0.116	0.16	0.369	15.0	U	TC
Thorium 228	14274-82-9	0.016	0.27	0.421	1.00	U J	TH
Thorium 230	14269 63 7	0.126	0.28	0.419	1.00	U	TH
Thorium 232	TH-232	0	0.063	0.150	1.00	U J	TH
Uranium 233/234	U-233/234	0.050	0.050	0.190	1.00	U	U
Uranium 235	15117 96 1	0	0.060	0.216	1.00	U	U
Uranium 238	U-238	0	0.050	0.190	1.00	U	U
Plutonium 238	13981-16-3	0.007	0.079	0.142	1.00	U	PU
Plutonium 239/240	PU-239/240	-0.007	0.026	0.063	1.00	U	PU
Potassium 40	13966-00-2	2.36	0.51	0.274			GAM
Cobalt 60	10198 40 0	U		0.023	0.050	U	GAM
Cesium 137	10045-97-3	U		0.025	0.100	U	GAM
Radium 226	13982 63-3	U		0.054	0.100	U	GAM
Radium 228	15262-20-1	U		0.116	0.200	U	GAM
Europium 152	14683-23-9	U		0.078	0.100	U	GAM
Europium 154	15585-10-1	U		0.071	0.100	U	GAM
Europium 155	14391 16-3	U		0.066	0.100	U	GAM
Thorium 228	14274-82-9	U		0.051		U	GAM
Thorium 232	TH 232	U		0.116		U	GAM
Uranium 235	15117-96-1	U		0.148		U	GAM
Uranium 238	U 238	U		2.83		U	GAM
Americium 241	14596-10-2	U		0.062		U	GAM
Beryllium 7	13966 02 4	U		0.265		U	GAM
Ruthenium 106	13967 48-1	U		0.203		U	GAM
Antimony 125	14234-35-6	U		0.061		U	GAM

Lab id EBERLINE
Protocol Hanford
Version Ver 1.0
Form DVD-DS
Version 1.06
Report date 11/13/09

EBERLINE ANALYTICAL/RICHMOND

SAMPLE DELIVERY GROUP K1785

7473-011

J10XB6

DATA SHEET, cont

SDG 7473

Contact N. Joseph Verville

Client/Case no Hanford

SDG K1785

Contract No. 000W235A00

Lab sample id R909111-11

Dept sample id 7473-011

Received 09/10/09

% solids 100.0

Client sample id J10XB6

Location/Matrix 100SA WALL-CARCASS SOLID

Collected/Weight 09/24/09 11:10 1506.7

Custody/SAF No RC-118-306 RC-118

✓ 2/7/10

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALIFIERS	TEST
Cesium 134	13967-70-9	U		0.030		U	GAM

Columbia River Component of the RCBRA - Tissues

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Lab id EBRLNE
Protocol Hanford1
Version Ver 1.0
Form DVD-DS
Version 3.06
Report date 11/12/09

EBERLINE ANALYTICAL/RICHMOND

SAMPLE DELIVERY GROUP K1785

7473-012 J18XB7

DATA SHEET

SDG	7473	Client/Case no	Hanford SDG K1785
Contact	N. Joseph Verville	Contract	No. 00W235A00
Lab sample id	R909131-12	Client sample id	J18XB7
Dept sample id	7473-012	Location/Matrix	100SA-WAL2 CARCASS SOLID
Received	09/30/09	Collected/Weight	09/25/09 11:30 1484 g
% solids	100.0	Custody/SAP No	RC-118-207 RC-118

μ~ 2/7/10

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Tritium	10028-17-8	1.74	3.9	6.53	400	U J	H
Carbon 14	14762-75-5	-0.356	2.8	4.72	50.0	U J	C
Total Strontium	SR-RAD	0.022	0.13	0.272	1.00	U	SR
Technetium 99	14133-76-7	0.021	0.17	0.493	15.0	U	TC
Thorium 228	14274-82-9	-0.044	0.18	0.426	1.00	U J	TH
Thorium 230	14269-63-7	0.353	0.44	0.747	1.00	U	TH
Thorium 232	TH-232	0.044	0.088	0.337	1.00	U J	TH
Uranium 233/234	U-233/234	0.053	0.053	0.202	1.00	U	U
Uranium 235	15117-96-1	0	0.064	0.245	1.00	U	U
Uranium 238	U-238	0	0.053	0.202	1.00	U	U
Plutonium 238	13981-16-3	0.015	0.050	0.095	1.00	U	PU
Plutonium 239/240	PU-239/240	0	0.070	0.055	1.00	U	PU
Potassium 40	13966-00-2	2.48	0.62	0.339			GAM
Cobalt 60	10198-40-0	U		0.033	0.050	U	GAM
Cesium 137	10045-97-3	U		0.034	0.100	U	GAM
Radium 226	13982-63-3	U		0.062	0.100	U	GAM
Radium 228	15262-20-1	U		0.136	0.200	U	GAM
Europium 152	14683-23-9	U		0.087	0.100	U	GAM
Europium 154	15585-10-1	U		0.099	0.100	U	GAM
Europium 155	14391-16-3	U		0.068	0.100	U	GAM
Thorium 228	14274-82-9	U		0.047		U	GAM
Thorium 232	TH-232	U		0.136		U	GAM
Uranium 235	15117-96-1	U		0.155		U	GAM
Uranium 238	U-238	U		3.87		U	GAM
Americium 241	14596-10-2	U		0.113		U	GAM
Beryllium 7	13966-02-4	U		0.317		U	GAM
Ruthenium 106	13967-48-1	U		0.291		U	GAM
Antimony 125	14234-35-6	U		0.075		U	GAM

Lab id	EBRLNE
Protocol	Hanford1
Version	Ver 1.0
Form	DVD-DS
Version	1.06
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E B E R L I N E   A N A L Y T I C A L / R I C H M O N D

SAMPLE DELIVERY GROUP K1785

7473-012

J18X87

DATA SHEET, cont

SDG 7473
Client/Case no Hanford SDG K1785
Contact N. Joseph Verville
Contract No. S00W215A00

Lab sample id 8909131-12
Client sample id J18X87
Dept sample id 7473-012
Location/Matrix 100SA-WAL2-CARCASS SOLID
Received 09/30/09
Collected/Weight 09/25/09 11:30 1384 g
% solids 100.0
Custody/SAP No RC 118,207 RC 118

2/7/10

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Cesium 134	13967-70-9	U		0.037		U	GAM

Columbia River Component of the RCBRA - Tissues

Lab id EBRLNE
Protocol Hanford1
Version Ver 1.0
Form DVD-DS
Version 3.06
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EBERLINE ANALYTICAL/RICHMOND

SAMPLE DELIVERY GROUP K1785

7473-013

J18XN8

DATA SHEET

SDG 7473		Client/Case no Hanford	SDG_K1785
Contact N. Joseph Verville		Contract No. 00W235A00	
Lab sample id 8909111-13		Client sample id J18XN8	
Dept sample id 7473-013		Location/Matrix 100SA-WALL-CARCASS	SOLID
Received 09/30/09		Collected/Weight 09/25/09 12:30	1410 g
% solids 100.0		Custody/SAF No RC-118-008	RC-118

2/7/10

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Tritium	10028-17-8	-0.406	1.7	6.50	400	UJ	H
Carbon 14	14762-75-5	0.170	2.9	4.90	50.0	UJ	C
Total Strontium	SR-RAD	-0.061	0.11	0.206	1.00	U	SR
Technetium 99	14133-76-7	0.060	0.19	0.534	15.0	U	TC
Thorium 228	14274-82-9	-0.043	0.17	0.472	1.00	UJ	TH
Thorium 230	14269-63-7	0.120	0.34	0.722	1.00	U	TH
Thorium 232	TH-232	0	0.085	0.326	1.00	UJ	TH
Uranium 233/234	U-233/234	0	0.073	0.280	1.00	U	U
Uranium 235	15117-96-1	0	0.089	0.339	1.00	U	U
Uranium 238	U-238	0	0.073	0.280	1.00	U	U
Plutonium 238	13981-16-3	0.019	0.059	0.102	1.00	U	PU
Plutonium 239/240	PU-239/240	-0.004	0.022	0.046	1.00	U	PU
Potassium 40	13966-00-2	3.17	0.45	0.321			GAM
Cobalt 60	10198-40-0	U		0.028	0.050	U	GAM
Cesium 137	10045-97-3	U		0.027	0.100	U	GAM
Radium 226	13982-63-3	U		0.052	0.100	U	GAM
Radium 228	15262-20-1	U		0.112	0.200	U	GAM
Europium 152	14683-23-9	U		0.064	0.100	U	GAM
Europium 154	15585-10-1	U		0.082	0.100	U	GAM
Europium 155	14391-16-3	U		0.051	0.100	U	GAM
Thorium 228	14274-82-9	U		0.040		U	GAM
Thorium 232	TH-232	U		0.112		U	GAM
Uranium 235	15117-96-1	U		0.123		U	GAM
Uranium 238	U-238	U		3.29		U	GAM
Americium 241	14596-10-2	U		0.029		U	GAM
Beryllium 7	13966-02-4	U		0.252		U	GAM
Ruthenium 106	13967-48-1	U		0.250		U	GAM
Antimony 125	14234-35-6	U		0.064		U	GAM

Lab id EBRLNE
Protocol Hanford1
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EBERLINE ANALYTICAL/RICHMOND
SAMPLE DELIVERY GROUP K1785

J18XB8

7473-013

DATA SHEET, cont

SDG	7473	Client/Case no	Hanford SDG K1785
Contact	N. Joseph Verville	Contract	No. 500M235A00
Lab sample id	R909131-13	Client sample id	J18XB8
Dept sample id	7473-013	Location/Matrix	100GA WALL CARCASS SOLID
Received	09/30/09	Collected/Weight	09/25/09 12:10 1410 g
% solids	100.0	Custody/SAF No	RC-118-200 RC-118

2/7/10

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALIFIERS	TEST
Cesium 134	13967-70-9	U		0.032		U	GAM

Columbia River Component of the RCBRA - Tissues

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Lab id EBERLNE
Protocol Hanford1
Version Ver 1.0
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E B E R L I N E   A N A L Y T I C A L / R I C H M O N D

SAMPLE DELIVERY GROUP K1785

7473-014 J18XB9

DATA SHEET

SDG	7473	Client/Case no	Hanford SDG K1785
Contact	N. Joseph Verville	Contract	No. 300W235A00
Lab sample id	R909131-14	Client sample id	J18XB9
Dept sample id	7473-014	Location/Matrix	100GA WALA-CARCASS SOLID
Received	09/30/09	Collected/Weight	09/24/09 14:30 1406 g
% solids	100.0	Custody/SAF No	RC-118-209 RC-118

rv 2/7/10

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Tritium	10028-17-8	-0.213	3.9	6.82	400	U J	H
Carbon 14	14762-75-5	-2.81	3.8	6.61	50.0	U J	C
Total Strontium	SR-RAD	0.040	0.15	0.271	1.00	U	SR
Technetium 99	14133-76-7	0.074	0.17	0.459	15.0	U	TC
Thorium 228	14274-82-9	0.052	0.21	0.494	1.00	U J	TH
Thorium 230	14269-63-7	-0.103	0.33	0.788	1.00	U	TH
Thorium 232	TH 232	0	0.10	0.194	1.00	U J	TH
Uranium 233/234	U-233/234	-0.033	0.067	0.255	1.00	U	U
Uranium 235	15117-96-1	0	0.081	0.309	1.00	U	U
Uranium 238	U-238	-0.033	0.067	0.255	1.00	U	U
Plutonium 238	13981-16-3	-0.006	0.039	0.080	1.00	U	PU
Plutonium 239/240	PU-239/240	0	0.019	0.040	1.00	U	PU
Potassium 40	13966-00-2	2.92	0.64	0.343			GAM
Cobalt 60	10198-40-0	U		0.015	0.050	U	GAM
Cesium 137	10045-97-3	U		0.038	0.100	U	GAM
Radium 226	13982-63-3	U		0.081	0.100	U	GAM
Radium 228	15262-20-1	U		0.189	0.200	U	GAM
Europium 152	14683-23-9	U		0.107	0.100	U	GAM
Europium 154	15585-10-1	U		0.101	0.100	U	GAM
Europium 155	14391-16-3	U		0.099	0.100	U	GAM
Thorium 228	14274-82-9	U		0.079		U	GAM
Thorium 232	TH-232	U		0.189		U	GAM
Uranium 235	15117-96-1	U		0.224		U	GAM
Uranium 238	U-238	U		4.20		U	GAM
Americium 241	14596-10-2	U		0.092		U	GAM
Beryllium 7	13966-02-4	U		0.407		U	GAM
Ruthenium 106	13967-48-1	U		0.327		U	GAM
Antimony 125	14234-35-6	U		0.092		U	GAM

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SDG	7473	Client/Case no	Hanford SDG K1785
Contact	N. Joseph Verville	Contract	No. 00W715A00
Lab sample id	E909111-14	Client sample id	J18XB9
Dept sample id	7473 014	Location/Matrix	100NA-WAIH-CARCASS SOLID
Received	09/10/09	Collected/Weight	07/24/09 14:30 1466 g
% solids	100.0	Custody/SAF No	RC 110 209 RC-118

2/7/10

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Cesium 134	13967-70-9	U		0.044		U	GAM

Columbia River Component of the RCBRA Tissues

Lab id	EBRLNE
Protocol	Hanford1
Version	Ver 1.0
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EBERLINE ANALYTICAL/RICHMOND

SAMPLE DELIVERY GROUP K1785

7473-015

J18XC0

DATA SHEET

SDG	7473	Client/Case no	Hanford SDG K1785
Contact	N. Joseph Verville	Contract	No. 00002I5A00
Lab sample id	E909131-15	Client sample id	J18XC0
Dept sample id	7473-015	Location/Matrix	100DA-WALS-CARCASS SOLID
Received	09/30/09	Collected/Weight	09/24/09 15:45 1440 g
% solids	100.0	Custody/SAP No	RC-118-210 RC-118

2-17-10

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Tritium	10028-17-8	0.591	3.7	6.30	400	U J	H
Carbon 14	14762-75-5	-3.37	3.5	6.16	50.0	U J	C
Total Strontium	SR-RAD	0.020	0.13	0.262	1.00	U	SR
Technetium 99	14133-76-7	0.018	0.18	0.427	15.0	U	TC
Thorium 228	14274-82-9	0.072	0.22	0.484	1.00	U J	TH
Thorium 230	14269-63-7	-0.180	0.29	0.688	1.00	U	TH
Thorium 232	TH-232	0	0.072	0.276	1.00	U J	TH
Uranium 233/234	U-233/234	0	0.065	0.247	1.00	U	U
Uranium 235	15117-96-1	0	0.078	0.299	1.00	U	U
Uranium 238	U-238	0	0.065	0.247	1.00	U	U
Plutonium 238	13981-16-1	0.006	0.031	0.062	1.00	U	PU
Plutonium 239/240	PU-239/240	-0.001	0.012	0.040	1.00	U	PU
Potassium 40	13966-00-2	2.42	0.63	0.472			GAM
Cobalt 60	10198-40-0	U		0.045	0.050	U	GAM
Cesium 137	10045-97-1	U		0.045	0.100	U	GAM
Radium 226	13982-63-3	U		0.079	0.100	U	GAM
Radium 228	15262-20-1	U		0.157	0.200	U	GAM
Europium 152	14683-23-9	U		0.101	0.100	U	GAM
Europium 154	15585-10-1	U		0.126	0.100	U	GAM
Europium 155	14391-16-3	U		0.077	0.100	U	GAM
Thorium 228	14274-82-9	U		0.069		U	GAM
Thorium 232	TH-232	U		0.157		U	GAM
Uranium 235	15117-96-1	U		0.184		U	GAM
Uranium 238	U-238	U		5.00		U	GAM
Americium 241	14596-10-2	U		0.042		U	GAM
Beryllium 7	13966-02-4	U		0.388		U	GAM
Ruthenium 106	13967-48-1	U		0.404		U	GAM
Antimony 125	14234-35-6	U		0.091		U	GAM

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EBERLINE ANALYTICAL/RICHMOND

SAMPLE DELIVERY GROUP K1785

7473-015

J18XC0

DATA SHEET, cont

SDG 7473
Contact N. Joseph Verville

Client/Case no Hanford SDG K1785
Contract No. 00W235A00

Lab sample id R909131-15
Dept sample id 7473-015
Received 09/30/09
% solids 100.0

Client sample id J18XC0
Location/Matrix 100DA-WALS-CARCASS SOLID
Collected/Weight 09/24/09 15:45 1940 g
Custody/SAP No RC-110-210 RC-118

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ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALIFIERS	TEST
Cesium 134	13967-70-9	0		0.045		U	GAM

Columbia River Component of the RCBRA - Tissues

Lab id EBRLNE
Protocol Hanford1
Version Ver 1.0
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EBERLINE ANALYTICAL/RICHMOND
SAMPLE DELIVERY GROUP K1785

7473-016

J18XD1

DATA SHEET

SDG	7473	Client/Case no	Hanford SDG K1785
Contact	N. Joseph Verville	Contract	No. 000W235A00
Lab sample id	E909131-16	Client sample id	J18XD1
Dept sample id	7473-016	Location/Matrix	300SA-WALL FILLET SOLID
Received	09/30/09	Collected/Weight	09/24/09 09:00 1947 g
% solids	100.0	Custody/SAF No	RC-118 221 RC-118

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ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Tritium	10028-17-8	2.44	3.9	6.51	400	U	H
Carbon 14	14762-75-5	-0.868	2.8	4.84	50.0	U	C
Total Strontium	SR RAD	-0.059	0.12	0.267	1.00	U	SR
Technetium 99	14133-76-7	-0.061	0.14	0.404	15.0	U	TC
Thorium 228	14274-82-9	0	0.18	0.464	1.00	U	TH
Thorium 230	14269-63-7	0.089	0.15	0.583	1.00	U	TH
Thorium 232	TH-232	0	0.057	0.226	1.00	U	TH
Uranium 233/234	U-233/234	-0.011	0.067	0.255	1.00	U	U
Uranium 235	15117-96-1	0	0.081	0.309	1.00	U	U
Uranium 238	U-238	0.033	0.067	0.255	1.00	U	U
Plutonium 238	13981-16-3	0.014	0.063	0.117	1.00	U	PU
Plutonium 239/240	PU 239/240	0.014	0.027	0.041	1.00	U	PU
Potassium 40	13966-00-2	3.62	0.46	0.327			GAM
Cobalt 60	10198-40-0	U		0.013	0.050	U	GAM
Cesium 137	10045-97-3	U		0.027	0.100	U	GAM
Radium 226	13982-63-3	U		0.052	0.100	U	GAM
Radium 228	15262-20-1	U		0.116	0.200	U	GAM
Europium 152	14683-23-9	U		0.065	0.100	U	GAM
Europium 154	15585-10-1	U		0.087	0.100	U	GAM
Europium 155	14391-16-3	U		0.050	0.100	U	GAM
Thorium 228	14274-82-9	U		0.043		U	GAM
Thorium 232	TH-232	U		0.116		U	GAM
Uranium 235	15117-96-1	U		0.126		U	GAM
Uranium 238	U-238	U		3.22		U	GAM
Americium 241	14596-10-2	U		0.028		U	GAM
Beryllium 7	13966-02-4	U		0.266		U	GAM
Ruthenium 106	13967-48-1	U		0.233		U	GAM
Antimony 125	14234-35-6	U		0.056		U	GAM

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DATA SHEET, cont

SDG	7473	Client/Case no	Hanford		SDG K1785
Contact	M. Joseph Vorville	Contract No.	00082358A00		
Lab sample id	R909131-16	Client sample id	J18XD1		
Dept sample id	7473 016	Location/Matrix	100SA-WALL FILLET		SOLID
Received	09/30/09	Collected/Weight	02/24/09 09:00	1447 g	
% solids	100.0	Custody/SAF No	RC-118-221	RC-118	

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ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Cesium 134	13967-70-9	U		0.031		U	GAM

Columbia River Component of the RCBRA - Tissues

Lab id	EBERLINE
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EBERLINE ANALYTICAL/RICHMOND

SAMPLE DELIVERY GROUP K1785

7473-017

J18XD2

DATA SHEET

SDG 7473
Contact N. Joseph Verville

Client/Case no Hanford
Contract No. 500W237A00
SDG K1785

Lab sample id 0909131-17
Dept sample id 7473-017
Received 09/30/09
% solids 100.0

Client sample id J18XD2
Location/Matrix 100SA-WA02,FILLET SOLID
Collected/Weight 09/24/09 09:45 1437 g
Custody/SAF No RC-118 222 RC-118

k 2/7/10

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Tritium	10028-17-8	-1.04	1.5	6.05	400	U J	H
Carbon 14	14762-75-5	-0.567	2.7	4.62	50.0	U J	C
Total Strontium	SR-RAD	0.002	0.14	0.279	1.00	U	SR
Technetium 99	14133-76-7	0.010	0.14	0.396	15.0	U	TC
Thorium 228	14274-82-9	0.084	0.17	0.402	1.00	U J	TH
Thorium 230	14269-63-7	0.084	0.34	0.710	1.00	U	TH
Thorium 232	TH-232	0.042	0.084	0.320	1.00	U J	TH
Uranium 233/234	U-233/234	0	0.087	0.334	1.00	U	U
Uranium 235	15117-96-1	0	0.11	0.404	1.00	U	U
Uranium 238	U-238	0	0.087	0.334	1.00	U	U
Plutonium 238	13981-16-3	0.017	0.040	0.085	1.00	U	PU
Plutonium 239/240	PU-239/240	0.007	0.021	0.049	1.00	U	PU
Potassium 40	13966-00-2	3.19	0.45	0.350			GAM
Cobalt 60	10198-40-0	U		0.031	0.050	U	GAM
Cesium 137	10045-97-3	U		0.030	0.100	U	GAM
Radium 226	13982-63-3	U		0.063	0.100	U	GAM
Radium 228	15262-20-1	U		0.123	0.200	U	GAM
Europium 152	14683-23-9	U		0.077	0.100	U	GAM
Europium 154	15585-10-1	U		0.092	0.100	U	GAM
Europium 155	14391-16-3	U		0.055	0.100	U	GAM
Thorium 228	14274-82-9	U		0.046		U	GAM
Thorium 232	TH-232	U		0.123		U	GAM
Uranium 235	15117-96-1	U		0.136		U	GAM
Uranium 238	U-238	U		3.79		U	GAM
Americium 241	14596-10-2	U		0.026		U	GAM
Beryllium 7	13966-02-4	U		0.258		U	GAM
Ruthenium 106	13967-48-1	U		0.261		U	GAM
Antimony 125	14234-35-6	U		0.069		U	GAM

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EBERLINE ANALYTICAL/RICHMOND
SAMPLE DELIVERY GROUP K1785

7473-017

J18XD2

DATA SHEET, cont

SDG	7473	Client/Case no	Hanford SDG K1785
Contact	N. Joseph Verville	Contract	No. 00QW235A00
Lab sample id	K009131-17	Client sample id	J18XD2
Dept sample id	7473-017	Location/Matrix	300SA-WAL2 FILLET SOLID
Received	09/30/09	Collected/Weight	09/24/09 07:45 1417 g
% solids	100.0	Custody/SAF No	RC-118-222 RC-118

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ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALIFIERS	TEST
Cesium 134	13967-70-9	U		0.014		U	GAM

Columbia River Component of the RCBRA - Tissues

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EBERLINE ANALYTICAL/RICHMOND

SAMPLE DELIVERY GROUP K1785

7473-018 J18XD3

DATA SHEET

SDG 7473 Client/Case no Hanford SDG K1785
Contact N. Joseph Verville Contract No. C00H235A00

Lab sample id 9909131-18 Client sample id J18XD3
Dept sample id 7473 018 Location/Matrix 100SA-WAL3 FILLET SOLID
Received 09/30/99 Collected/Weight 09/24/99 10:30 1470 g
% solids 100.0 Custody/SAF No RC 118 233 RC-118

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ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Tritium	10028-17-8	0.570	3.5	6.08	400	U J	H
Carbon 14	14762-75-5	-2.92	2.6	4.55	50.0	U J	C
Total Strontium	SR-RAD	0.019	0.16	0.334	1.00	U	SR
Technetium 99	14133-76-7	0.079	0.23	0.567	15.0	U	TC
Thorium 228	14274-82-9	0	0.16	0.443	1.00	U J	TH
Thorium 230	14269-63-7	-0.240	0.32	0.707	1.00	U	TH
Thorium 232	TH-232	0	0.080	0.305	1.00	U J	TH
Uranium 233/234	U-233/234	0.035	0.070	0.366	1.00	U	U
Uranium 235	15117-96-1	0	0.084	0.322	1.00	U	U
Uranium 238	U-238	0	0.070	0.266	1.00	U	U
Plutonium 238	13981-16-3	0.084	0.17	0.322	1.00	U	PU
Plutonium 239/240	PU-239/240	-0.042	0.084	0.127	1.00	U	PU
Potassium 40	13966-00-2	3.20	0.51	0.216			GAM
Cobalt 60	10198-40-0	U		0.021	0.050	U	GAM
Cesium 137	10045-97-3	U		0.025	0.100	U	GAM
Radium 226	13982-63-3	U		0.052	0.100	U	GAM
Radium 228	15262-20-1	U		0.116	0.200	U	GAM
Europium 152	14683-23-9	U		0.072	0.100	U	GAM
Europium 154	15585-10-1	U		0.066	0.100	U	GAM
Europium 155	14391-16-3	U		0.068	0.100	U	GAM
Thorium 228	14274-82-9	U		0.053		U	GAM
Thorium 232	TH-232	U		0.116		U	GAM
Uranium 235	15117-96-1	U		0.152		U	GAM
Uranium 238	U-238	U		2.88		U	GAM
Americium 241	14596-10-2	U		0.062		U	GAM
Beryllium 7	13966-02-4	U		0.251		U	GAM
Ruthenium 106	13967-48-1	U		0.223		U	GAM
Antimony 125	14234-35-6	U		0.060		U	GAM

Lab id EBRLNE
Protocol Hanford1
Version Ver 1.0
Form DVD-DS
Version 1.06
Report date 11/12/99

EBERLINE ANALYTICAL/RICHMOND

SAMPLE DELIVERY GROUP K1785

7473-018

J18XD3

DATA SHEET, cont

SDG 7473

Contact N. Joseph Verville

Lab sample id R909131-10

Dept sample id 7473-018

Received 09/30/09

% solids 100.0

Client/Case no Hanford SDG K1785

Contract No. 600W935A00

Client sample id J18XD3

Location/Matrix 100SA-WALL.FILLET SOLID

Collected/Weight 09/24/09 10:30 1470 g

Custody/SAF No RC-118-221 RC-110

2/7/10

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Cesium 134	13967-70-9	U		0.029		U	GAM

Columbia River Component of the RCBRA - Tissues

Lab id EBRLNE

Protocol Hanford1

Version Ver 1.0

Form DVD-DS

Version 1.06

Report date 11/12/09

EBERLINE ANALYTICAL/RICHMOND

SAMPLE DELIVERY GROUP K1705

7473-019 J18XD4

DATA SHEET

SDG	7473	Client/Case no	Hanford SDG K1705
Contact	N. Joseph Verville	Contract	No. C00W235A00
Lab sample id	E909131-19	Client sample id	J18XD4
Dept sample id	7473-019	Location/Matrix	100SA-WALA FILLET SOLID
Received	09/30/09	Collected/Weight	09/25/09 14:00 1521 g
% solids	100.0	Custody/SAF No	RC 118 334 RC 118

✓ 2/7/10

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Tritium	10028-17-8	-1.16	3.5	6.20	400	UJ	H
Carbon 14	14762-75-5	-1.20	2.8	4.72	50.0	UJ	C
Total Strontium	SR-RAD	0.169	0.11	0.275	1.00	U	SR
Technetium 99	14133-76-7	0.072	0.25	0.695	15.0	U	TC
Thorium 228	14274-82-9	-0.063	0.13	0.390	1.00	U J	TH
Thorium 230	14269-63-7	-0.126	0.32	0.404	1.00	U	TH
Thorium 232	TH-232	0	0.064	0.242	1.00	U J	TH
Uranium 233/234	U-233/234	0	0.062	0.236	1.00	U	U
Uranium 235	15117-96-1	0	0.075	0.286	1.00	U	U
Uranium 238	U-238	0	0.062	0.236	1.00	U	U
Plutonium 238	13981-16-3	-0.051	0.10	0.392	1.00	U	PU
Plutonium 239/240	PU-239/240	0	0.10	0.372	1.00	U	PU
Potassium 40	13966-00-2	1.09	0.44	0.352			GAM
Cobalt 60	10198-40-0	U		0.029	0.050	U	GAM
Cesium 137	10045-97-3	U		0.029	0.100	U	GAM
Radium 226	13982-63-3	U		0.060	0.100	U	GAM
Radium 228	15262-20-1	U		0.122	0.200	U	GAM
Europium 152	14683-23-9	U		0.072	0.100	U	GAM
Europium 154	15585-10-1	U		0.086	0.100	U	GAM
Europium 155	14391-16-3	U		0.054	0.100	U	GAM
Thorium 228	14274-82-9	U		0.044		U	GAM
Thorium 232	TH-232	U		0.122		U	GAM
Uranium 235	15117-96-1	U		0.141		U	GAM
Uranium 238	U-238	U		3.53		U	GAM
Americium 241	14596-10-2	U		0.026		U	GAM
Beryllium 7	13966-02-4	U		0.278		U	GAM
Ruthenium 106	13967-48-1	U		0.250		U	GAM
Antimony 125	14234-35-6	U		0.069		U	GAM

Lab id	EBERLINE
Protocol	Hanford1
Version	Ver 1.0
Form	DVD-DS
Version	3.06
Report date	11/12/09

EBERLINE ANALYTICAL/RICHMOND

SAMPLE DELIVERY GROUP K1785

J18XD4

7473-019

DATA SHEET, cont

SDG	7473	Client/Case no	Hanford	SDG K1785
Contact	N. Joseph Verville	Contract	No. S00W232A00
Lab sample id	R909131-19	Client sample id	J18XD4
Dept sample id	7473-019	Location/Matrix	100SA-WALA FILLET SOLID
Received	09/30/09	Collected/Weight	09/25/09 14:00 1521 g
% solids	100.0	Custody/SAF No	RC-110 224 RC-118

2/7/10

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALIFIERS	TEST
Cesium 134	13967-70-9	U		0.034		U	GAM

Columbia River Component of the RCBRA - Tissues

Lab id EBRLNE
Protocol Hanford1
Version Ver 1.0
Form DVD-DS
Version 3.06
Report date 11/12/09

EBERLINE ANALYTICAL/RICHMOND
SAMPLE DELIVERY GROUP K1785

7473-020

J18X05

DATA SHEET

SDG 7473
Contact N. Joseph Verville
Lab sample id K909131-20
Dept sample id 7473 020
Received 09/30/09
% solids 100.0

Client/Case no Hanford SDG K1785
Contract No. 500W215A00
Client sample id J18X05
Location/Matrix 100SA-WALS,FILLET SOLID
Collected/Weight 09/29/09 16:30 1459 g
Custody/SAP No RC-118-225 RC 118

2/7/

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALIFIERS	TEST
Tritium	10028-17-8	0.283	3.5	6.04	400	U J	H
Carbon 14	14762-75-5	0.668	2.6	4.42	50.0	U J	C
Total Strontium	SR-RAD	-0.048	0.11	0.274	1.00	U	SR
Technetium 99	14133-76-7	0.034	0.15	0.413	15.0	U	TC
Thorium 228	14274-82-9	0.102	0.20	0.377	1.00	U J	TH
Thorium 230	14269-63-7	-0.238	0.27	0.626	1.00	U	TH
Thorium 232	TH-232	0.034	0.068	0.260	1.00	U J	TH
Uranium 233/234	U-233/234	0	0.071	0.272	1.00	U	U
Uranium 235	15117-96-1	0	0.086	0.330	1.00	U	U
Uranium 238	U-238	0	0.071	0.275	1.00	U	U
Plutonium 238	13981-16-3	0.058	0.12	0.280	1.00	U	PU
Plutonium 239/240	PU-239/240	0.029	0.058	0.224	1.00	U	PU
Potassium 40	13966-00-2	3.16	0.64	0.476			GAM
Cobalt 60	10198-40-0	U		0.043	0.050	U	GAM
Cesium 137	10045-97-3	U		0.047	0.100	U	GAM
Radium 226	13982-63-3	U		0.087	0.100	U	GAM
Radium 228	15262-20-1	U		0.176	0.200	U	GAM
Europium 152	14683-23-9	U		0.110	0.100	U	GAM
Europium 154	15585-10-1	U		0.140	0.100	U	GAM
Europium 155	14391-16-3	U		0.078	0.100	U	GAM
Thorium 228	14274-82-9	U		0.049		U	GAM
Thorium 232	TH-232	U		0.176		U	GAM
Uranium 235	15117-96-1	U		0.189		U	GAM
Uranium 238	U-238	U		5.29		U	GAM
Americium 241	14596-10-2	U		0.039		U	GAM
Beryllium 7	13966-02-4	U		0.384		U	GAM
Ruthenium 106	13967-48-1	U		0.398		U	GAM
Antimony 125	14234-35-6	U		0.101		U	GAM

Lab id EBRLNE
Protocol Hanford1
Version Ver 1.0
Form DVD DS
Version 3.06
Report date 11/12/09

EBERLINE ANALYTICAL/RICHMOND

SAMPLE DELIVERY GROUP K1785

7473-020

J18XD5

DATA SHEET, cont

SDG 7473	Client/Case no Hanford SDG K1785
Contact N. Joseph Verville	Contract No. 800W235A00
Lab sample id K909131-20	Client sample id J18XD5
Dept sample id 7473-020	Location/Matrix 100BA-WALS,FILLET SOLID
Received 09/30/09	Collected/Weight 09/25/09 10:10 1459 g
% solids 100.0	Custody/SAP No RC-118 225 RC-118

2/7/10

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALIFIERS	TEST
Cesium 134	13967-70-9	U		0.036		U	GAM

Columbia River Component of the RCBRA - Tissues

DATA SHEETS
Page 40
SUMMARY DATA SECTION
Page 58

Lab id EBRLNK
Protocol Hanford1
Version Ver 1.0
Form DVD-DS
Version 1.06
Report date 11/12/09

Appendix 4

Laboratory Narrative and Chain-of-Custody Documentation

1.0 GENERAL

Washington Closure Hanford (WCH) Sample Delivery Group K1785 was composed of nineteen solid (other solid) samples designated under SAF No. RC-118 with a Project Designation of: Columbia River Component of the RCBRA - Tissues.

The samples were received as stated on the Chain-of-Custody documents. Any discrepancies are noted on the Eberline Analytical Sample Receipt Checklist. The results were sent to WCH via e-mail November 10, 2009.

2.0 ANALYSIS NOTES

2.1 Carbon-14 Analysis

No problems were encountered during the course of the analyses.

2.2 Tritium Analysis

No problems were encountered during the course of the analyses.

2.3 Strontium-90 Analysis

The initial analysis of the QC Blank exhibited activity above the MDA. The outside of the planchet was cleaned with an antistatic wipe and recounted, yielding acceptable results. No other problems were encountered during the course of the analyses.

2.4 Technetium-99 Analysis

No problems were encountered during the course of the analyses.

2.5 Isotopic Thorium Analysis

No problems were encountered during the course of the analyses.

2.6 Isotopic Uranium Analysis

No problems were encountered during the course of the analyses.

2.7 Isotopic Plutonium Analysis

No problems were encountered during the course of the analyses.

2.8 Gamma Spectroscopy

No problems were encountered during the course of the analyses.

3.0 Case Narrative Certification Statement

"I certify that this data package is in compliance with the SOW, both technically and for completeness, for other than the conditions detailed above. Release of the data obtained in this hard copy data package has been authorized by the Laboratory Manager or a designee, as verified by the following signature."

N. Joseph Verville
Client Services Manager

11/12/09
Date

1.0 GENERAL

Washington Closure Hanford (WCH) Sample Delivery Group K1785 was composed of twenty solid (other solid) samples designated under SAF No. RC-118 with a Project Designation of: Columbia River Component of the RCBRA - Tissues.

The samples were received as stated on the Chain-of-Custody documents. Any discrepancies are noted on the Eberline Analytical Sample Receipt Checklist. The results were sent to WCH via e-mail November 12, 2009.

2.0 ANALYSIS NOTES

2.1 Carbon-14 Analysis

The carbon-14 recovery for the QC LCS was 75%, which is less than the control limit of 80%, but above the absolute limit of 60%. No other problems were encountered during the course of the analyses.

2.2 Tritium Analysis

No problems were encountered during the course of the analyses.

2.3 Strontium-90 Analysis

No other problems were encountered during the course of the analyses.

2.4 Technetium-99 Analysis

No problems were encountered during the course of the analyses.

2.5 Isotopic Thorium Analysis

The thorium-229 tracer yield for the initial analysis for sample J18XB7 was below acceptable limits. The plating supernate for the aliquot was passed through a 1X8 column and then replated onto the original low yield plate. The reworked planchet was recounted and resulted in an acceptable yield of 85%. No other problems were encountered during the course of the reanalyses.

2.6 Isotopic Uranium Analysis

No problems were encountered during the course of the analyses.

2.7 Isotopic Plutonium Analysis

No problems were encountered during the course of the analyses.

2.8 Gamma Spectroscopy

No problems were encountered during the course of the analyses.

3.0 Case Narrative Certification Statement

"I certify that this data package is in compliance with the SOW, both technically and for completeness, for other than the conditions detailed above. Release of the data obtained in this hard copy data package has been authorized by the Laboratory Manager or a designee, as verified by the following signature."

N. Joseph Verville
Client Services Manager

[illegible]
Date

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-118-236

Page 1 of 1

Collector Wendy West	**Company Contact** JOAN KESSNER	**Telephone No.** 375-4688	**Project Coordinator** KESSNER, JH
Project Designation Columbia River Component of the RCBRA - Tissues	**Sampling Location** 300SA-WALI, LIV/KID K1755 (7474)		**SAF No.** RC-118
Ice Chest No. AFS-04-0123	**Field Logbook No.** EL-1633	**COA** BESCRC6520	**Method of Shipment** FED EX
Shipped To EBERLINE SERVICES LIONVILLE	**Offsite Property No.** N/A		**Bill of Lading/Air Bill No.** FDX# 796986398930

Price Code 9K N ~~K~~ 5/1/09

Data Turnaround 45 Days

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage
FREEZE "MATRIX COMPOSED OF FISH"

360000

Preservation	None	None	None	None	None	Cool 4C	Cool 4C			
Type of Container	G/P	G/P	G	G/P	G/P	G/P	aG			
No. of Container(s)	1	0	0	0	0	0	0			
Volume	250g	2g	25g	5g	3g	15g	50g			
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Tritium - H3	See item (2) in Special Instructions	Technetium-99	See item (3) in Special Instructions	Pesticides - 8081			

Sample No.	Matrix *	Sample Date	Sample Time										
J18XF6	OTHER SOLID	9/24/09	1735	X	X	X	X	X	X	X			

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Wendy West	9/24/09 1735	EAS LOCKED STORAGE 4	9/24/09 1735
EAS LOCKED STORAGE 4	9/29/09 900	SHANNAN JOHNSON	9/29/09 900
SHANNAN JOHNSON	9/29/09 900	FDX	
FED EX		K MATHW	09/30/09 0900

SPECIAL INSTRUCTIONS

Perform gamma spec then contact Joan Kessner for additional analyses. Maintain FREEZE cooling as practical.

(1) Gamma Spec - (Full List) [Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238]
(2) Strontium-89,90 - Total Sr, Isotopic Thorium, Isotopic Uranium, Isotopic Plutonium
(3) ICP Metals - 6010 (Full List) [Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Titanium, Vanadium, Zinc]; Mercury - 7471 - (CV)

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab.

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-118-237	Page 1 of 1

Collector: Wendy Wert

Company Contact: JOAN KESSNER

Telephone No.: 375-4688

Project Coordinator: KESSNER, JH

Price Code: ~~9K~~ N [illegible]

Data Turnaround: 45 Days

Project Designation: Columbia River Component of the RCBRA - Tissues

Sampling Location: 300SA-WAL2, LIV/KID K1795 (7474)

SAF No.: RC-118

Ice Chest No.: AFS-04-0123

Field Logbook No.: EL-1633

COA: BESCRC6320

Method of Shipment: FED EX

Shipped To: [✓ EBERLINE SERVICES] LIONVILLE

Offsite Property No.: N/A

Bill of Lading/Air Bill No.: FD 796986398930

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage: FREEZE "MATRIX COMPOSED OF FISH"

0000094

	Preservation	None	None	None	None	None	Cool 4C	Cool 4C			
	Type of Container	G/P	G/P	G	G/P	G/P	G/P	aG			
	No. of Container(s)	1	0	0	0	0	0	0			
	Volume	750g	2g	25g	5g	5g	15g	30g			
SAMPLE ANALYSIS		See item (1) in Special Instructions	Carbon-14	Tritium - H3	See item (2) in Special Instructions.	Technetium-99	See item (3) in Special Instructions.	Pesticides - 8081			

Sample No.	Matrix *	Sample Date	Sample Time										
J1BXF7	OTHER SOLID	9/24/09	1750	X	X	X	X	X	X	X			

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Wendy Wert	9/24/09 1750	Wendy Wert EAS LOCKED STORAGE4	9/24/09 1750
EAS LOCKED STORAGE4	9/29/09 900	SHANNAN JOHNSON	9/29/09 900
SHANNAN JOHNSON	9/29/09 900	FEDX	
Fed Ex		[illegible]	09 30 09 09[illegible]

SPECIAL INSTRUCTIONS

Perform gamma spec then contact Joan Kessner for additional analysis. Maintain FREEZE cooling as practical.

(1) Gamma Spec - (Full List) [Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238]

(2) Strontium-89,90 – Total Sr; Isotopic Thorium; Isotopic Uranium; Isotopic Plutonium

(3) ICP Metals - 6010 (Full List) [Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc]; Mercury - 7471 - (CV)

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab.

Matrix *

S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-118-238 | Page 1 of 1

Collector Wendy West	Company Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator KESSNER, JH
Project Designation Columbia River Component of the RCBRA - Tissues	Sampling Location 300SA-WAL3 , LIV/KID	K1785 (7474)	SAF No. RC-118
Ice Chest No. AFS-04-0123	Field Logbook No. EL-1633	COA BESCRC6320	Method of Shipment FED EX
Shipped To EBERLINE SERVICES LIONVILLE	Offsite Property No. N/A		Bill of Lading/Air Bill No. FDX 796986398930

Price Code 9K N
JM 5999

Data Turnaround
45 Days

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

FREEZE "MATRIX COMPOSED OF FISH"

000095

Preservation	None	None	None	None	None	Cool 4C	Cool 4C			
Type of Container	G/P	G/P	G	G/P	G/P	G/P	aG			
No. of Container(s)	1	0	0	0	0	0	0			
Volume	750g	2g	25g	5g	5g	15g	50g			
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Tritium - H3	See item (2) in Special Instructions	Technetium-99	See item (3) in Special Instructions	Pesticides - 8081			

Sample No.	Matrix *	Sample Date	Sample Time										
J18XF8	OTHER SOLID	9/24/09	1815	X	X	X	X	X	X	X			

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Wendy West	9/24/09 1815	Wendy West EAS LOCKED STORAGE 4	9/24/09 1815
EAS LOCKED STORAGE 4	9/29/09 920	SHANNAN JOHNSON	9/29/09 920
SHANNAN JOHNSON	9/29/09 920	FDX	
FED EX		[illegible]	09/30/09 [illegible]

SPECIAL INSTRUCTIONS

Perform gamma spec then contact Joan Kessner for additional analysis. Maintain *FREEZE* cooling as practical

(1) Gamma Spec - (Full List) {Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238}

(2) Strontium-89,90 – Total Sr; Isotopic Thorium; Isotopic Uranium; Isotopic Plutonium

(3) ICP Metals - 6010 (Full List) {Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc}; Mercury - 7471 - (CV)

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab.

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

Washington Closure Hanford	**CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST**	RC-118-239	Page 1 of 1
Collector Wendy West	Company Contact: JOAN KESSNER Telephone No.: 375-4688	Project Coordinator KESSNER, JH	Price Code 9K N JAS 5/1/09
Project Designation Columbia River Component of the RCBRA - Transect	Sampling Location 300SA-WAL4, LIV/KID K1785 (7474)	SAF No. RC-118	Data Turnaround 45 Days
Ice Chest No. APS-04-D123	Field Logbook No.: EL-1633 COA: BESLRC6510	Method of Shipment FED EX	
Shipped To EBERLINE SERVICES LIONVILLE	Offsite Property No. N/A	Bill of Lading/Air Bill No. FDX(US)N# 796986398930	

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

FREEZE "MATRIX COMPOSED OF FISH"

9610000

			Preservation	None	None	None	None	None	Cool 4C	Cool 4C
			Type of Container	G/P	G/P	G	G/P	G/P	G/P	aG
			No. of Container(s)	1	0	0	0	0	0	0
			Volume	750g	2g	25g	5g	5g	15g	30g
SAMPLE ANALYSIS				See item (1) in Special Instructions	Carbon-14	Tritium - H3	See item (2) in Special Instructions	Technetium-99	See item (3) in Special Instructions	Pesticides - 8081
Sample No.	**Matrix ***	**Sample Date**	**Sample Time**							
J18XF9	OTHER SOLID	9/25/09	1720	X	X	X	X	X	X	X

CHAIN OF POSSESSION	Date/Time	Sign/Print Names	Date/Time
Relinquished By/Removed From Wendy West	1720 9/25/09	Received By/Stored In EAS LOCKED STORAGE Wendy West	1720 9/25/09
Relinquished By/Removed From EAS LOCKED STORAGE	9/29/09 900	Received By/Stored In EAS LOCKED STORAGE SHANNAN JOHNSON	9/29/09 900
Relinquished By/Removed From SHANNAN JOHNSON	9/29/09 900	Received By/Stored In FDX	
Relinquished By/Removed From Fed Ex		Received By/Stored In EF-[illegible]	09/30/09 0900
Relinquished By/Removed From		Received By/Stored In	
Relinquished By/Removed From		Received By/Stored In	

SPECIAL INSTRUCTIONS

Perform gamma spec then contact Joan Kessner for additional analyses. Maintain FREEZE cooling in protocol

(1) Gamma Spec - (Full List) (Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238)
(2) Strontium-89,90 - Total Sr, Isotopic Thorium, Isotopic Uranium, Isotopic Plutonium
(3) ICP Metals - 6010 (Full List) (Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc); Mercury - 7471 - (CV)

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody for shipment to lab.

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-118-240 | Page 1 of 1

Collector Wendy West	Company Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator KESSNER, JH
Project Designation Columbia River Component of the RCBRA - Tissues	Sampling Location 300SA-WALS , LIV/KID K1785 (7474)		SAF No. RC-118
Ice Chest No. AFS-04-0123	Field Logbook No. EL-1633	COA BESCRC8320	Method of Shipment FED EX
Shipped To EBERLINE SERVICES LIONVILLE	Offsite Property No. N/A		Bill of Lading/Air Bill No. FDX." 796986398930

Price Code ~~9K~~ N 9/25/09

Data Turnaround 45 Days

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

FREEZE "MATRIX COMPOSED OF FISH"

2600097

Preservation	None	None	None	None	None	Cool 4C	Cool 4C			
Type of Container	G/P	G/P	G	G/P	G/P	G/P	aG			
No. of Container(s)	1	0	0	0	0	0	0			
Volume	350g	2g	25g	5g	5g	15g	50g			
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Tritium - H3	See item (2) in Special Instructions	Technetium-99	See item (3) in Special Instructions	Pesticides - 8081			

Sample No	Matrix *	Sample Date	Sample Time										
J18XH0	OTHER SOLID	9/25/09	1125	X	X	X	X	X	X	X			

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Wendy West	9/25/09 1725	EAS LOCKED STORAGE Wendy West	9/25/09 1725
EAS LOCKED STORAGE	9/29/09 900	SHANNAN JOHNSON	9/29/09 900
SHANNAN JOHNSON	9/29/09 900	FDX	
FED EX		M. E. ALHTRA	09/30/09 0900

SPECIAL INSTRUCTIONS

Perform gamma spec then contact Joan Kessner for additional analysis. Maintain FREEZE custody as practical.

(1) Gamma Spec - (Full List) (Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238)
(2) Strontium-89,90 -- Total Sr; Isotopic Thorium; Isotopic Uranium, Isotopic Plutonium
(3) ICP Metals - 6010 (Full List) (Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc), Mercury - 7471 - (CV)

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Washington Closure Hanford	**CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST**	RC-118-243	Page 1 of 1
Collector Wendy West	**Company Contact** JOAN KESSNER **Telephone No.** 373-4688	**Project Coordinator** KESSNER, JH	**Price Code** ~~9K~~ AJ AJA 5/8/09 **Data Turnaround** 45 Days
Project Designation Columbia River Component of the RCBRA - Tissues	**Sampling Location** 300SA-WALL CARCASS K1755 (7474)	**SAF No.** RC-118	
Ice Chest No. ERC-96-058	**Field Logbook No.** EL-1633 **COA** BESCRC6520	**Method of Shipment** FED EX	
Shipped To EBERLINE SERVICES LIONVILLE	**Offsite Property No.** N/A	**Bill of Lading/Air Bill No.** FDX 796986399098	

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

FREEZE "MATRIX COMPOSED OF FISH"

Preservation	None	None	None	None	Cool 4C	Cool 4C	None
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	G/P
No. of Container(s)	1	1	1	1	1	1	1
Volume	1500g	100g	100g	10g	250g	120g	10g
SAMPLE ANALYSIS	See item (1) in Special Instructions.	Carbon-14	Tritium - H3	See item (2) in Special Instructions.	See item (3) in Special Instructions.	Pesticides - 8081	Technetium-99

Sample No.	Matrix *	Sample Date	Sample Time							
J18XH1	OTHER SOLID	9/24/09	0915	X	X	X	X			X

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Wendy West	9/24/09 0915	EAS LOCKED STORAGE 1 Wendy West	9/24/09 0915
EAS LOCKED STORAGE 1	9/29/09 900	SHANNAN JOHNSON	9/29/09 900
SHANNAN JOHNSON	9/29/09 900	FDX	
FED EX		M. WATKINS	09/30/09 0925

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) {Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238}
(2) Strontium-89,90 -- Total Sr, Isotopic Thorium (Thorium-232), Isotopic Uranium (Uranium-233/234, Uranium-235, Uranium-238); Isotopic Plutonium
(3) ICP Metals - 6010 (Full List) {Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc}; [illegible] 71 - (CV)

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab.

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-118-242

Page 1 of 1

Collector Wendy West	**Company Contact** JOAN KESSNER	**Telephone No.** 375-4688	**Project Coordinator** KESSNER, JH
Project Designation Columbia River Component of the RCBRA - Tissues	**Sampling Location** 100SA-WAL2, CARCASS	K1795 (7474)	**SAF No.** RC-118
Ice Chest No. ERC-96-058	**Field Logbook No.** EL-1633	**COA** BESCRC6520	**Method of Shipment** FED EX
Shipped To EBERLINE SERVICES LIONVILLE	**Offsite Property No.** N/A		**Bill of Lading/Air Bill No.** FDX# 796986399098

Price Code ~~9K~~ N JHJ 5/4/09

Data Turnaround 45 Days

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

FREEZE "MATRIX COMPOSED OF FISH"

0000199

Preservation	None	None	None	None	Cool 4C	Cool 4C	None			
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	G/P			
No. of Container(s)	1	1	1	1	1	1	1			
Volume	1500g	100g	100g	10g	250g	120g	10g			
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Tritium - H3	See item (2) in Special Instructions	See item (3) in Special Instructions	Pesticides - 8081	Technetium-99			

Sample No.	Matrix *	Sample Date	Sample Time										
J18XH2	OTHER SOLID	9/24/09	1000	X	X	X	X			X			

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Wendy West	9/24/09 1000	EAS LOCKED STORAGE Wendy West	9/24/09 1000
EAS LOCKED STORAGE	9/29/09 900	SHANNAN JOHNSON	9/29/09 900
SHANNAN JOHNSON	9/29/09	FDX	
FED EX			09/30/09 0900

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) [Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238]

(2) Strontium-89,90 – Total Sr; Isotopic Thorium (Thorium-232); Isotopic Uranium (Uranium-233/234, Uranium-235, Uranium-238); Isotopic Plutonium

(3) ICP Metals - 6010 (Full List) [Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc]; Mercury - 7471 - (CV)

Sampler unavailable to remove samples
from controlled storage. Shipper removed
samples from storage location taking custody
of samples for shipment to lab.

Matrix *

S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W = Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Washington Closure Hanford	**CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST**	RC-118-243	Page 1 of 1

Collector Wendy West	**Company Contact** JOAN KESSNER **Telephone No.** 375-4688	**Project Coordinator** KESSNER, JH	**Price Code** ~~9K~~ N 40 51409 **Data Turnaround** 45 Days
Project Designation Columbia River Component of the RCBRA - Tissues	**Sampling Location** 300SA-WAL3, CARCASS K 1785 (7474)	**SAP No.** RC-118	
Ice Chest No. EKC-96-058	**Field Logbook No.** EL-1633 **COA** BESCRC6520	**Method of Shipment** FED EX	
Shipped To EBERLINE SERVICES / LIONVILLE	**Offsite Property No.** N/A	**Bill of Lading/Air Bill No.** FDX 796986399098	

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

FREEZE *MATRIX COMPOSED OF FISH*

Preservation	None	None	None	None	Cool 4C	Cool 4C	None
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	G/P
No. of Container(s)	1	1	1	1	1	1	1
Volume	1500g	100g	100g	10g	250g	120g	10g
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Tritium - H3	See item (2) in Special Instructions	See item (3) in Special Instructions	Pesticides - 8081	Technetium-99

Sample No.	Matrix *	Sample Date	Sample Time							
J18XH3	OTHER SOLID	9/24/09	1045	X	X	X	X			X

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Wendy West	9/24/09 1045	EAS LOCKED STORAGE	9/24/09 1045
EAS LOCKED STORAGE	9/29/09 900	SHANNAN JOHNSON	9/29/09 900
SHANNAN JOHNSON	9/29/09 900	FDX	
FED EX		ME AUSTIN	09/29/09 0905

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) (Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238)

(2) Strontium-89,90 -- Total Sr; Isotopic Thorium (Thorium-232); Isotopic Uranium (Uranium-233/234, Uranium-235, Uranium-238); Isotopic Plutonium

(3) ICP Metals - 6010 (Full List) (Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc); Mercury - 7471 - (CV)

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody

Matrix *

S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-118-244 | Page 1 of 1

Collector Wendy West	Company Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator KESSNER, JH
Project Designation Columbia River Component of the RCBRA - Tissues	Sampling Location 300SA-WALA, CARCASS K1785 (7474)		SAF No. RC-118
Ice Chest No. AFS-04-042	Field Logbook No. EL-1633	COA BESCRC6520	Method of Shipment FED EX
Shipped To EBERLINE SERVICES RICHMOND/DANVILLE	Offsite Property No. N/A		Bill of Lading/Air Bill No. FDX#797974081283

Price Code ~~9K~~ N 9/25/09

Data Turnaround 45 Days

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage
FREEZE "MATRIX COMPOSED OF FISH"

000101

Preservation	None	None	None	None	Cool 4C	Cool 4C	None
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	G/P
No. of Container(s)	1	1	1	1	1	1	1
Volume	1500g	100g	100g	10g	230g	120g	10g
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Tritium - H3	See item (2) in Special Instructions	See item (3) in Special Instructions	Pesticides - 8081	Technetium-99

Sample No.	Matrix *	Sample Date	Sample Time							
J1BXH4	OTHER SOLID	9/25/09	1415	X	X	X	X			X

CHAIN OF POSSESSION Sign/Print Names

Relinquished By/Removed From Wendy West	Date/Time 1415 9/25/09	Received By/Stored In EAS LOCKED STORAGE	Date/Time 1415 9/25/09
Relinquished By/Removed From EAS LOCKED STORAGE	Date/Time 9/29/09 9:00	Received By/Stored In SHANNAN JOHNSON	Date/Time 9/29/09 9:00
Relinquished By/Removed From SHANNAN JOHNSON	Date/Time 9/29/09 9:00	Received By/Stored In FDX	Date/Time
Relinquished By/Removed From FED EX	Date/Time	Received By/Stored In F. MATRO	Date/Time 09/30/09 0920
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) {Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238}
(2) Strontium-89,90 – Total Sr; Isotopic Thorium {Thorium-232}; Isotopic Uranium {Uranium-233/234, Uranium-235, Uranium-238}; Isotopic Plutonium
(3) ICP Metals - 6010 (Full List) {Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc}; Mercury - 7471 - (CV)

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab.

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-118-245

Page 1 of 1

Collector: Wendy West

Company Contact: JOAN KESSNER

Telephone No.: 373-4658

Project Coordinator: KESSNER, JH

Price Code: 9~~K~~ N 9/29/09

Data Turnaround: 45 Days

Project Designation: Columbia River Component of the RCBRA - Tissues

Sampling Location: 300GA-WALS, CARCASS K1755 (7474)

SAF No.: RC-118

Ice Chest No.: AFS-04-042

Field Logbook No.: EL-1633

COA: BESCRC6330

Method of Shipment: FED EX

Shipped To: EBERLINE SERVICES LIONVILLE

Offsite Property No.: N/A

Bill of Lading/Air Bill No.: FDX# 797974081263

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

FREEZE "MATRIX COMPOSED OF FISH"

0090102

Preservation	None	None	None	None	Cool 4C	Cool 4C	None			
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	G/P			
No. of Container(s)	1	1	1	1	1	1	1			
Volume	1500g	100g	100g	10g	250g	130g	10g			
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Tritium - H3	See item (2) in Special Instructions	See item (3) in Special Instructions	Pesticides - 8081	Technetium-99			

Sample No.	Matrix *	Sample Date	Sample Time										
J18XH5	OTHER SOLID	9/25/09	1700	X	X	X	X			X			

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Wendy West	9/25/09 1700	Wendy West EAS LOCKED STORAGE 4	9/25/09 1700
EAS LOCKED STORAGE 4	9/29/09 900	SHANNAN JOHNSON	9/29/09 900
SHANNAN JOHNSON	9/29/09 900	FDX	
FED EX		F. ALVARADO	09/30/09 0905

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) {Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238}

(2) Strontium-89,90 – Total Sr; Isotopic Thorium {Thorium-232}; Isotopic Uranium {Uranium-233/234, Uranium-235, Uranium-238}; Isotopic Plutonium

(3) ICP Metals - 6010 (Full List) {Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Titanium, Vanadium, Zinc}; Mercury - 7471 - (CV)

[illegible]
Sampler unavailable to remove samples
from controlled storage. Shipper removed
samples from storage location having custody.
[illegible]

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Washington Closure Hanford	**CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST**	RC-118-858	Page 1 of 1

Collector Rylie Barron	**Company Contact** JOAN KESSNER	**Telephone No.** 375-4688	**Project Coordinator** KESSNER, JH	**Price Code** 9K N **Data Turnaround** 45 Days
Project Designation Columbia River Component of the RCBRA - Tissues	**Sampling Location** STURGEON 17 VISERA K1735 (7474)		**SAF No.** RC-118	[illegible]
Ice Chest No. AFS-04-0123	**Field Logbook No.** EL-1638	**COA** BESCRC6520	**Method of Shipment** FED EX	
Shipped To EBERLINE SERVICES LIONVILLE	**Offsite Property No.** N/A		**Bill of Lading/Air Bill No.** FDX 796986398930	

POSSIBLE SAMPLE HAZARDS/REMARKS
N/A

Special Handling and/or Storage
FREEZE "MATRIX COMPOSED OF FISH"

001103

Preservation	None	None	None	None	None	Cool 4C	Cool 4C			
Type of Container	G/P	G/P	G	G/P	G/P	G/P	aG			
No. of Container(s)	1	0	0	0	0	0	0			
Volume	750g	2g	15g	5g	5g	15g	50g			
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Tritium - H3	See item (2) in Special Instructions	Technetium-99	See item (3) in Special Instructions	Pesticide - 8081			

Sample No.	Matrix *	Sample Date	Sample Time										
J19SV7	OTHER SOLID	9/21/09	1420	X	X	X	X	X	X	X			

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Rylie Barron	9/21/09 1420	EAS LOCKED STORAGE 4 Rylie Barron	9/21/09 1420
EAS LOCKED STORAGE 4	[illegible]	SHANNAN JOHNSON	[illegible]
SHANNAN JOHNSON	9/23/09 [illegible]	FDX	
FED EX		[illegible]	09 [illegible] 09 [illegible]

SPECIAL INSTRUCTIONS
TRANSSHIPPING REQUIRED. Perform gamma spec then contact Joan Kessner for additional analysis. Maintain FREEZE cooling as practical.

(1) Gamma Spec - (Full List) (Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238)
(2) Strontium-89,90 – Total Sr, Isotopic Thorium, Isotopic Uranium, Isotopic Plutonium
(3) ICP Metals - 6010 (Full List) (Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc); Mercury - 7471 - (CV)

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-118-859 | Page 1 of 1

Collector Wendy West	Company Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator KESSNER, JH
Project Designation Columbia River Component of the RCBRA - Tissues	Sampling Location STURGEON 18 VISCERA	K1785 (7474)	SAF No. RC-118
Ice Chest No. APS-04-0123	Field Logbook No. EL-1638	COA BESCRC6520	Method of Shipment FED EX
Shipped To EBERLINE SERVICES ALIONVILLE	Offsite Property No. N/A		Bill of Lading/Air Bill No. FDX#796906398930

Price Code 9K N

Data Turnaround 45 Days

POSSIBLE SAMPLE HAZARDS/REMARKS

N/A

Special Handling and/or Storage

FREEZE "MATRIX COMPOSED OF FISH"

000104

Preservation	None	None	None	None	None	Cool 4C	Cool 4C			
Type of Container	G/P	G/P	G	G/P	G/P	G/P	aG			
No. of Container(s)	1	0	0	0	0	0	0			
Volume	750g	2g	25g	5g	5g	15g	50g			
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Tritium - H3	See item (2) in Special Instructions	Technetium-99	See item (3) in Special Instructions	Pesticides - PCBs			

Sample No.	Matrix *	Sample Date	Sample Time										
J195V8	OTHER SOLID	9/21/09	1500	X	X	X	X	X	X	X			

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Wendy West	9/21/09 1500	EAS LOCKED STORAGE 9 Wendy West	9/21/09 1500
EAS LOCKED STORAGE 9	9/29/09 900	SHANNAN JOHNSON	9/29/09 900
SHANNAN JOHNSON	9/29/09 900	FEDX	
FED EX		M. F. MATAU	09/30/09 940

SPECIAL INSTRUCTIONS

TRANSSHIPPING REQUIRED. Perform gamma spec then contact Joan Kessner for additional analysis. Maintain FREEZE cooling as practical.

(1) Gamma Spec - (Full List) {Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238}

(2) Strontium-89,90 – Total Sr; Isotopic Thorium, Isotopic Uranium; Isotopic Plutonium

(3) ICP Metals - 6010 (Full List) {Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc}; Mercury - 7471 - (CV)

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location using custody of samples for shipment to lab.

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-118-860	Page 1 of 1

Collector Rylie Barron

Company Contact JOAN KESSNER

Telephone No. 375-4688

Project Coordinator KESSNER, JH

Price Code ~~9K~~ N [illegible]

Data Turnaround 45 Days

Project Designation Columbia River Component of the RCBRA - Transect

Sampling Location STURGEON 19 VISCERA K1755 (7474)

SAF No. RC-118

Ice Chest No. APS-04-0123

Field Logbook No. EL-1638

COA BESCRC6520

Method of Shipment FED EX

Shipped To [✓ EBERLINE SERVICES] LIONVILLE

Offsite Property No. N/A

Bill of Lading/Air Bill No. FDX# 796986398930

POSSIBLE SAMPLE HAZARDS/REMARKS

N/A

Special Handling and/or Storage

FREEZE "MATRIX COMPOSED OF FISH"

000105

		Preservation	None	None	None	None	None	Cool 4C	Cool 4C			
		Type of Container	G/P	G/P	G	G/P	G/P	G/P	aG			
		No. of Container(s)	1	0	0	0	0	0	0			
		Volume	750g	2g	25g	5g	5g	15g	50g			
SAMPLE ANALYSIS			See item (1) in Special Instructions	Carbon-14	Tritium - H3	See item (2) in Special Instructions	Technetium-99	See item (3) in Special Instructions	Pesticide - 8081			
Sample No.	Matrix *	Sample Date	Sample Time	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
J105V9	OTHER SOLID	9/21/09	1620	X	X	X	X	X	X	X		

CHAIN OF POSSESSION Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Rylie Barron R.B.	9/21/09 1620	EAS LOCKED STORAGE 4 Rylie Barron R.B.	9/21/09 1620
EAS LOCKED STORAGE 4	9/22/09 900	SHANNAN JOHNSON	9/22/09 900
SHANNAN JOHNSON	9/22/09 900	FDX	
FED EX		F. MATHEW[illegible]	9/23/09 0900

SPECIAL INSTRUCTIONS

TRANSSHIPPING REQUIRED. Perform gamma spec then contact Joan Kessner for additional analysis. Maintain FREEZE cooling as practical.

(1) Gamma Spec - (Full List) (Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238)

(2) Strontium-89,90 -- Total Sr; Isotopic Thorium; Isotopic Uranium; Isotopic Plutonium

(3) ICP Metals - 6010 (Full List) (Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc); Mercury - 7471 - (CV)

[illegible]

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody

Matrix *

S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W = Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Washington Closure Hanford	**CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST**	RC-118-061	Page 1 of 1
Collector Wendy West	Company Contact JOAN KESSNER Telephone No. 375-4688	Project Coordinator KESSNER, JH	Price Code 9K AJ 9/23/09 Data Turnaround 45 Days
Project Designation Columbia River Component of the RCBRA - Tissues	Sampling Location STURGEON 20 VISCERA k1755 (7474)	SAF No. RC-118	
Ice Chest No. AFS-04-0123	Field Logbook No. EL-1638 COA BUSCRC6520	Method of Shipment FED EX	
Shipped To EBERLINE SERVICES / LIONVILLE	Offsite Property No. N/A	Bill of Lading/Air Bill No. FDX#796986398930	

POSSIBLE SAMPLE HAZARDS/REMARKS

N/A

Special Handling and/or Storage

FREEZE "MATRIX COMPOSED OF FISH"

		Preservation	None	None	None	None	None	Cool 4C	Cool 4C
		Type of Container	G/P	G/P	G	G/P	G/P	G/P	aG
		No. of Container(s)	1	0	0	0	0	0	0
		Volume	750g	2g	25g	5g	5g	15g	50g
SAMPLE ANALYSIS			See item (1) in Special Instructions	Carbon-14	Tritium - 3H	See item (2) in Special Instructions	Technetium-99	See item (3) in Special Instructions	Pesticides - 8081
Sample No.	Matrix *	Sample Date	Sample Time							
J195W0	OTHER SOLID	9/24/09	1745	X	X	X	X	X	X	X

000106

CHAIN OF POSSESSION		Sign/Print Names	
Relinquished By/Removed From Wendy West	Date/Time 1745 9/24/09	Received By/Stored In EAS LOCKED STORAGE Wendy West	Date/Time 1745 9/24/09
Relinquished By/Removed From EAS LOCKED STORAGE 4	Date/Time 9/28/09 902	Received By/Stored In SHANNAN JOHNSON	Date/Time 9/28/09 902
Relinquished By/Removed From SHANNAN JOHNSON	Date/Time 9/28/09 902	Received By/Stored In FDX	Date/Time
Relinquished By/Removed From FGD	Date/Time	Received By/Stored In K. Whitaker	Date/Time 09/30/09 0902
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time

SPECIAL INSTRUCTIONS

TRANSSHIPPING REQUIRED. Perform gamma spec then contact Joan Kessner for additional analysis. Maintain FREEZE cooling at protocol.

(1) Gamma Spec - (Full List) {Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238}

(2) Strontium-89,90 – Total Sr, Isotopic Thorium, Isotopic Uranium, Isotopic Plutonium

(3) ICP Metals - 6010 (Full List) {Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, ~~Uranium, Vanadium, Zinc~~}; Mercury - 7471 - (CV)

Sampler unavailable to remove samples
from controlled storage. Shipper removed
samples from storage location taking custody
for [illegible] lab.

Matrix *

S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-118-930

Page 1 of 1

Collector Wendy West	Company Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator KESSNER, JH
Project Designation Columbia River Component of the RCBRA - Tissues	Sampling Location 28 ~~[illegible]~~ STURGEON 26 VICERA	K1785 (7474)	SAF No. RC-118
Ice Chest No. APS-04-0123	Field Logbook No. EL-1638	COA BESCRC6320	Method of Shipment FED EX
Shipped To EBERLINE SERVICES LIONVILLE	Offsite Property No. N/A		Bill of Lading FDX# 796986398930

Price Code 9K N

Data Turnaround 45 Days

POSSIBLE SAMPLE HAZARDS/REMARKS

N/A

Special Handling and/or Storage

FREEZE "MATRIX COMPOSED OF FISH"

001107

Preservation	None	None	None	None	None	Cool 4C	Cool 4C
Type of Container	G/P	G/P	G	G/P	G/P	G/P	aG
No. of Container(s)	1	0	0	0	0	0	0
Volume	750g	2g	25g	5g	5g	15g	50g
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Tritium - H3	See item (2) in Special Instructions	Technetium-99	See item (3) in Special Instructions	Pesticides - 8081

Sample No.	Matrix *	Sample Date	Sample Time							
J19661	OTHER SOLID	9/24/09	1810	X	X	X	X	X	X	X

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Wendy West	9/24/09 1810	FAS LOCKED STORAGE 4 Wendy West	9/24/09 1819
FAS LOCKED STORAGE 4	9/29/09 9:00	SHANNAN JOHNSON	9/29/09 9:00
SHANNAN JOHNSON	9/29/09 9:00	FDX	
FED EX		F. UATAF	09/30/09 0959

SPECIAL INSTRUCTIONS

TRANSSHIPPING REQUIRED. Perform gamma spec then contact Joan Kessner for additional analysis. Maintain FREEZE cooling as practical.

(1) Gamma Spec - (Full List) [Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238]

(2) Strontium-89,90 – Total Sr; Isotopic Thorium; Isotopic Uranium; Isotopic Plutonium

(3) ICP Metals - 6010 (Full List) [Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc]; Mercury - 7471 - (CV)

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab.

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-118-931

Page 1 of 1

Collector Wendy West	Company Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator KESSNER, JH
Project Designation Columbia River Component of the RCBRA - Tissues	Sampling Location STURGEON 27 VICERA K1785 (7474)		SAF No. RC-118
Ice Chest No. AFG-04-0123	Field Logbook No. EL-1638	COA BESCRC6520	Method of Shipment FED EX
Shipped To EBERLINE SERVICES RICHMOND LIONVILLE	Offsite Property No. N/A		Bill of Lading/Air Bill No. FDX# 796986398930

Price Code 9K N 11/2/09

Data Turnaround 45 Days

POSSIBLE SAMPLE HAZARDS/REMARKS

N/A

Special Handling and/or Storage

FREEZE "MATRIX COMPOSED OF FISH"

0011006

Preservation				None	None	None	None	None	Cool 4C	Cool 4C
Type of Container				G/P	G/P	G	G/P	G/P	G/P	aG
No. of Container(s)				1	0	0	0	0	0	0
Volume				750g	2g	25g	5g	5g	15g	30g
SAMPLE ANALYSIS				See item (1) in Special Instructions	Carbon-14	Tritium - H3	See item (2) in Special Instructions	Technetium-99	See item (3) in Special Instructions	Pesticides - 8081
Sample No.	Matrix *	Sample Date	Sample Time							
J19662	OTHER SOLID	9/24/09	1800	X	X	X	X	X	X	X

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From Wendy West	Date/Time 1800 9/24/09	Received By/Stored In FAS LOCKED STORAGE 4 Wendy West	Date/Time 1800 9/24/09
Relinquished By/Removed From FAS LOCKED STORAGE 4	Date/Time 9/29/09 900	Received By/Stored In SHANNAN JOHNSON	Date/Time 9/29/09 900
Relinquished By/Removed From SHANNAN JOHNSON	Date/Time 9/29/09 900	Received By/Stored In FDX	Date/Time
Relinquished By/Removed From FEDEX	Date/Time	Received By/Stored In E. [illegible]	Date/Time 9/30/09 0910
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time

SPECIAL INSTRUCTIONS

TRANSSHIPPING REQUIRED. Perform gamma spec then contact Joan Kessner for additional analysis. Maintain FREEZE cooling as practical

(1) Gamma Spec - (Full List) {Americium-241, Antimony-125, Beryllium-7, Cerium-144, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238}

(2) Strontium-89,90 -- Total Sr; Isotopic Thorium; Isotopic Uranium; Isotopic Plutonium

(3) ICP Metals - 6010 (Full List) {Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc}; Mercury - 7471 - (CV)

[illegible]
Sample unavailable to narrow samples
from controlled storage. Shipper removed
samples from storage location taking custody
of samples for shipment to lab.

Matrix *
[illegible]

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-118-1073

Page 1 of 1

Collector: Wendy West

Company Contact: JOAN KESSNER

Telephone No.: 375-4688

Project Coordinator: KESSNER, JH

Price Code: 9K

Data Turnaround: 45 Days

Project Designation: Columbia River Component of the RCBRA - Tissues

Sampling Location: 100SA-WAL 6 FILLET K1755 (7474)

SAF No.: RC-118

Ice Chest No.: EKC-96-058

Field Logbook No.: EL-1638

COA: HESCRCA520

Method of Shipment: FED EX

Shipped To: EBERLINE SERVICES LIONVILLE

Offsite Property No.: N/A

Bill of Lading/Air Bill No.: FDX # 796986399098

POSSIBLE SAMPLE HAZARDS/REMARKS

N/A

Special Handling and/or Storage

FREEZE "MATRIX COMPOSED OF FISH"

000109

Preservation	None	None	None	None	Cool 4C	Cool 4C	None			
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	G/P			
No. of Container(s)	1	1	1	1	1	1	1			
Volume	1500g	100g	100g	10g	250g	120g	10g			
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Tritium - H3	See item (2) in Special Instructions	See item (3) in Special Instructions	Pesticides - 8081	Technetium-99			

Sample No.	Matrix *	Sample Date	Sample Time										
J19746	OTHER SOLID	9/24/09	1115	X	X	X	X			X			

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Wendy West	9/24/09 1115	EAS LOCKED STORAGE Wendy West	9/24/09 1115
EAS LOCKED STORAGE	9/29/09 900	SHANNAN JOHNSON	9/29/09 900
SHANNAN JOHNSON	9/29/09 900	FDX	
FDX			9/30/09 0950

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) (Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238)
(2) Strontium-89,90 – Total Sr; Isotopic Thorium (Thorium-232); Isotopic Uranium (Uranium-233/234, Uranium-235, Uranium-238); Isotopic Plutonium
(3) ICP Metals - 6010 (Full List) (Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc), Mercury - 7471 - (CV)

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples to be shipped to lab.

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION — Received By: Title: Date/Time:

FINAL SAMPLE DISPOSITION — Disposal Method: Disposed By: Date/Time:

WCH-EE-011

Washington Closure Hanford	**CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST**	RC-118-1074	Page 1 of 1
Collector Wendy West	Company Contact JOAN KESSNER Telephone No. 375-4688	Project Coordinator KESSNER, JH	Price Code ~~9K~~ N KA 9/7/09 Data Turnaround 45 Days
Project Designation Columbia River Component of the RCBRA - Tissues	Sampling Location 100SA-WAL 6 LIV/KID K1755 (7474)	SAP No. RC-118	
Ice Chest No. APS-04-0123	Field Logbook No. EL-1638 COA BESCRC6520	Method of Shipment FED EX	
Shipped To EBERLINE SERVICES ALIONVILLE	Offsite Property No. N/A	Bill of Lading/Air Bill No. FD 796986398930	

POSSIBLE SAMPLE HAZARDS/REMARKS
N/A

Special Handling and/or Storage
FREEZE "MATRIX COMPOSED OF FISH"

000110

Preservation				None	None	None	None	None	Cool 4C	Cool 4C
Type of Container				G/P	G/P	G	G/P	G/P	G/P	aG
No. of Container(s)				1	0	0	0	0	0	0
Volume				750g	2g	25g	3g	5g	15g	50g
SAMPLE ANALYSIS				See item (1) in Special Instructions	Carbon-14	Tritium - H3	See item (2) in Special Instructions	Technetium-99	See item (3) in Special Instructions	Pesticides - 8081
Sample No.	Matrix *	Sample Date	Sample Time							
J19747	OTHER SOLID	9/24/09	1825	X	X	X	X	X	X	X

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Wendy West	9/24/09 1825	EAS LOCKED STORAGE 4 Wendy West	9/24/09 1825
EAS LOCKED STORAGE 4	9/29/09 900	SHANNAN JOHNSON	9/29/09 900
SHANNAN JOHNSON	9/29/09 900	FED X	
Fed EX		[illegible]	09/30/09 0950

SPECIAL INSTRUCTIONS
TRANSSHIPPING REQUIRED. Perform gamma spec then contact Joan Kessner for additional analyses. Maintain FREEZE cooling as practical.

(1) Gamma Spec - (Full List) {Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238}
(2) Strontium-89,90 – Total Sr, Isotopic Thorium, Isotopic Uranium, Isotopic Plutonium
(3) ICP Metals - 6010 (Full List) {Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc}; Mercury - 7471 - (CV)

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab.

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-118-1075

Page 1 of 1

Collector: Wendy West

Company Contact: JOAN KESSNER

Telephone No.: 375-4688

Project Coordinator: KESSNER, JH

Price Code: 9K N MD 9/17/09

Data Turnaround: 45 Days

Project Designation: Columbia River Component of the RCBRA - Tissues

Sampling Location: 100SA-WAL 6 CARCASS K1755 (7474)

SAF No.: RC-118

Ice Chest No.: AFS-04-0123

Field Logbook No.: EL-1638

COA: BESCRC6520

Method of Shipment: FED EX

Shipped To: [✓ EBERLINE SERVICES] LIONVILLE

Offsite Property No.: N/A

Bill of Lading/Air Bill No.: FD 796986398930

POSSIBLE SAMPLE HAZARDS/REMARKS

N/A

Special Handling and/or Storage

*FREEZE *MATRIX COMPOSED OF FISH**

000111

Preservation	None	None	None	None	Cool 4C	Cool 4C	None				
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	G/P				
No. of Container(s)	1	1	1	1	1	1	1				
Volume	1500g	100g	100g	10g	250g	120g	10g				
SAMPLE ANALYSIS	See item (1) in Special Instructions.	Carbon-14	Tritium - H3	See item (2) in Special Instructions.	See item (3) in Special Instructions.	Pesticides - 8081	Technetium-99				

Sample No.	Matrix *	Sample Date	Sample Time										
J19748	OTHER SOLID	9/24/09	1130	X	X	X	X			X			

CHAIN OF POSSESSION	Date/Time	Sign/Print Names	Date/Time
Relinquished By/Removed From Wendy West	1130 9/24/09	Received By/Stored In EAS LOCKED STORAGE Wendy West	1130 9/24/09
Relinquished By/Removed From EAS LOCKED STORAGE	9/24/09 1220	Received By/Stored In SHANNAN JOHNSON	9/24/09 1220
Relinquished By/Removed From SHANNAN JOHNSON	9/24/09 1220	Received By/Stored In FDX	
Relinquished By/Removed From FEDEX		Received By/Stored In K. WATADSHAN	09/25/09 0950
Relinquished By/Removed From		Received By/Stored In	
Relinquished By/Removed From		Received By/Stored In	

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) {Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238}
(2) Strontium-89,90 -- Total Sr; Isotopic Thorium (Thorium-232); Isotopic Uranium (Uranium-233/234, Uranium-235, Uranium-238); Isotopic Plutonium
(3) ICP Metals - 6010 (Full List) {Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc}; Mercury - 7471 - (CV)

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab.

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-118-186	Page 1 of 1

Collector Wendy West	**Company Contact** JOAN KESSNER	**Telephone No.** 375-4688	**Project Coordinator** KESSNER, JH
Project Designation Columbia River Component of the RCBRA - Tissues	**Sampling Location** 100SA-WAL1-FILLET K1785 (7473)		**SAF No.** RC-118
Ice Chest No. ERC-96-008 9/29/09 OCP	**Field Logbook No.** 1633	**COA** BESCRC6520	**Method of Shipment** FED EX
Shipped To EBERLINE SERVICES LIONVILLE	**Offsite Property No.** N/A		**Bill of Lading/Air Bill No.** FDX 7969 8639 9098

Price Code 9~~5~~ N JH 5/18/09

Data Turnaround 45 Days

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage
FREEZE "MATRIX COMPOSED OF FISH"

Preservation	None	None	None	None	Cool 4C	Cool 4C	None			
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	G/P			
No. of Container(s)	1	1	1	1	1	1	1			
Volume	1500g	100g	100g	10g	250g	120g	10g			
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Tritium - H3	See item (2) in Special Instructions	See item (3) in Special Instructions	Pesticides - 8081	Technetium-99			

Sample No.	Matrix *	Sample Date	Sample Time										
J18X88	OTHER SOLID	9/24/09	1300	X	X	X	X			X			

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Wendy West	1300 9/24/09	Wendy West EAS LOCKED STORAGE	1300 9/24/09
EAS LOCKED STORAGE	9/29/09 900	SHANNAN JOHNSON	9/29/09 900
SHANNAN JOHNSON	9/29/09 900	FDX	
FED EX		R.F. MATAW	09/30/09 09

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) [Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium 235, Uranium-238]
(2) Strontium-89,90 – Total Sr; Isotopic Thorium (Thorium-232), Isotopic Uranium (Uranium-233/234, Uranium-235, Uranium-238); Isotopic Plutonium
(3) ICP Metals - 6010 (Full List) [Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc]; Mercury - 7471 - (CV)

Sampler unavailable to remove samples
from controlled storage. Shipper removed
samples from storage location, taking custody
of samples for shipment to lab

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-118-187

Page 1 of 1

Collector: Wendy West

Company Contact: JOAN KESSNER

Telephone No.: 375-4688

Project Coordinator: KESSNER, JH

Price Code: ~~93~~ N

Data Turnaround: 45 Days

Project Designation: Columbia River Component of the RCBRA - Tissues

Sampling Location: 100SA-WAL2-FILLET K1785 (7473)

SAF No.: RC-118

Ice Chest No.: AFS-04-042

Field Logbook No.: 1633

COA: BESCRC6520

Method of Shipment: FED EX

Shipped To: (EBERLINE SERVICES) OAK RIDGE / LKNVILLE

Offsite Property No.: N/A

Bill of Lading: FDX#797974081263

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

FREEZE "MATRIX COMPOSED OF FISH"

0001113

Preservation	None	None	None	None	Cool 4C	Cool 4C	None			
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	G/P			
No. of Container(s)	1	1	1	1	1	1	1			
Volume	1500g	100g	100g	10g	250g	120g	10g			
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Tritium - H3	See item (2) in Special Instructions	See item (3) in Special Instructions	Pesticides - 8081	Technetium-99			

Sample No.	Matrix *	Sample Date	Sample Time	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]			
J18X87	OTHER SOLID	9/25/09	1100	X	X	X	X			X			

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Wendy West	9/25/09 1100	SAS LOCKED STORAGE Wendy West	9/25/09 1100
SAS LOCKED STORAGE	9/29/09 900	SHANNAN JOHNSON	9/29/09 900
SHANNAN JOHNSON	9/29/09 900	FDX	
FED EX		AF. MATTAN	09/30/09 0950

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) [Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238]
(2) Strontium-89,90 – Total Sr; Isotopic Thorium (Thorium-232); Isotopic Uranium (Uranium-233/234, Uranium-235, Uranium-238); Isotopic Plutonium
(3) ICP Metals - 6010 (Full List) [Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc]; Mercury - 7471 - (CV)

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab.

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION — Received By — Title — Date/Time

FINAL SAMPLE DISPOSITION — Disposal Method — Disposed By — Date/Time

WCH-EE-011

Washington Closure Hanford	**CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST**	RC-118-188	Page 1 of 1
Collector Wendy West	Company Contact JOAN KESSNER Telephone No. 375-4688	Project Coordinator KESSNER, JH	Price Code 9N N JAS 5/09
Project Designation Columbia River Component of the RCBRA - Tissues	Sampling Location 100SA-WAL3-FILLET K1785 (7473)	SAF No. RC-118	Data Turnaround 45 Days
Ice Chest No. AFS-04-042	Field Logbook No. 1633 COA BESCRC6520	Method of Shipment FED EX	
Shipped To EBERLINE SERVICES LIONVILLE	Offsite Property No. N/A	Bill of Lading/Air FDX#797974081263	

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage
FREEZE "MATRIX COMPOSED OF FISH"

000114

	Preservation	None	None	None	None	Cool 4C	Cool 4C	None			
	Type of Container	G/P	G/P	G/P	G/P	G/P	aG	G/P			
	No. of Container(s)	1	1	1	1	1	1	1			
	Volume	1500g	100g	100g	10g	250g	120g	10g			
SAMPLE ANALYSIS		See item (1) in Special Instructions	Carbon-14	Tritium - H3	See item (2) in Special Instructions	See item (3) in Special Instructions	Pesticides - 8081	Technetium-99			

Sample No.	Matrix *	Sample Date	Sample Time										
J18X68	OTHER SOLID	9/25/09	1200	X	X	X	X			X			

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Wendy West	9/25/09 1200	Wendy West EAS LOCKED STORAGE 9	9/25/09 1200
EAS LOCKED STORAGE 9	9/29/09 920	SHANNAN JOHNSON	9/29/09 920
SHANNAN JOHNSON	9/29/09 920	FDX	
FEDEX		M. [illegible]	09/30/09 0920

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) (Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238)
(2) Strontium-89/90 – Total Sr, Isotopic Thorium (Thorium-232), Isotopic Uranium (Uranium-233/234, Uranium-235, Uranium-238); Isotopic Plutonium
(3) ICP Metals - 6010 (Full List) (Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc); Mercury - 7471 - (CV)

Sampler unavailable to remove samples
from controlled storage. Shipper removed
samples from storage location taking custody
& samples hand delivered to lab.

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-118-189

Page 1 of 1

Collector Wendy Wat	**Company Contact** JOAN KESSNER	**Telephone No.** 375-4668	**Project Coordinator** KESSNER, JH
Price Code 9K N 455809	**Data Turnaround** 45 Days		
Project Designation Columbia River Component of the RCBRA - Tissues	**Sampling Location** 100SA-WALA-FILLET K1785 (7473)		**SAF No.** RC-118
Ice Chest No. RC-96-058	**Field Logbook No.** 1633	**COA** BESCRC6520	**Method of Shipment** FED EX
Shipped To EBERLINE SERVICES LIONVILLE	**Offsite Property No.** N/A		**Bill of Lading/Air Bill No.** FDX#796986399098

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage
FREEZE "MATRIX COMPOSED OF FISH"

000115

Preservation	None	None	None	None	Cool 4C	Cool 4C	None			
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	G/P			
No. of Container(s)	1	1	1	1	1	1	1			
Volume	1500g	100g	100g	10g	250g	120g	10g			
SAMPLE ANALYSIS	See item (1) in Special Instructions.	Carbon-14	Tritium - H3	See item (2) in Special Instructions.	See item (3) in Special Instructions.	Pesticides - 8081	Technetium-99			

Sample No.	Matrix *	Sample Date	Sample Time										
J18X89	OTHER SOLID	9/24/07	1400	X	X	X	X			X			

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From Wendy Wat	**Date/Time** 9/24/09 1400	**Received By/Stored In** Wendy Wat EAS LOCKED STORAGE 4	**Date/Time** 9/24/09 1400
Relinquished By/Removed From EAS LOCKED STORAGE 4	**Date/Time** 9/29/09 900	**Received By/Stored In** SHANNAN JOHNSON	**Date/Time** 9/29/09 900
Relinquished By/Removed From SHANNAN JOHNSON	**Date/Time** 9/29/09 900	**Received By/Stored In** FDX	**Date/Time**
Relinquished By/Removed From FED EX	**Date/Time**	**Received By/Stored In** K. ELATHUPARAMBIL	**Date/Time** 09/30/09 0900
Relinquished By/Removed From	**Date/Time**	**Received By/Stored In**	**Date/Time**
Relinquished By/Removed From	**Date/Time**	**Received By/Stored In**	**Date/Time**

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) {Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238}
(2) Strontium-89,90 – Total Sr; Isotopic Thorium {Thorium-232}; Isotopic Uranium {Uranium-233/234, Uranium-235, Uranium-238}; Isotopic Plutonium
(3) ICP Metals - 6010 (Full List) {Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc}; Mercury - 7471 - (CV)

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W = Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	**Received By**	**Title**	**Date/Time**
FINAL SAMPLE DISPOSITION	**Disposal Method**	**Disposed By**	**Date/Time**

WCH-EE-011

Washington Closure Hanford	**CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST**	RC-118-190	Page 1 of 1
Collector Wendy West	**Company Contact** JOAN KESSNER **Telephone No.** 375-4688	**Project Coordinator** KESSNER, JH	**Price Code** ~~8G~~ N JH 9/24/09
Project Designation Columbia River Component of the RCBRA - Tissues	**Sampling Location** 100SA-WALS-FILLET K1785 (7473)	**SAF No.** RC-118	**Data Turnaround** 45 Days
Ice Chest No. AFS-04-0123	**Field Logbook No.** 1633 **COA** BESCRC6520	**Method of Shipment** FED EX	
Shipped To EBERLINE SERVICES LIONVILLE	**Offsite Property No.** N/A	**Bill of Lading/Air Bill No.** FDX 796986398930	

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage
FREEZE "MATRIX COMPOSED OF FISH"

000116

Preservation	None	None	None	None	Cool 4C	Cool 4C	None			
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	G/P			
No. of Container(s)	1	1	1	1	1	1	1			
Volume	1500g	100g	100g	10g	250g	120g	10g			
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Tritium - H3	See item (2) in Special Instructions	See item (3) in Special Instructions	Pesticides - 8081	Technetium-99			

Sample No.	Matrix *	Sample Date	Sample Time										
J18X90	OTHER SOLID	9/24/09	1515	X	X	X	X			X			

CHAIN OF POSSESSION Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Wendy West	9/24/09 1515	Wendy West EAS LOCKED STORAGE 4	9/24/09 1515
EAS LOCKED STORAGE 4	9/29/09 900	SHANNAN JOHNSON	9/29/09 900
SHANNAN JOHNSON	9/29/09 900	FDX	
FED EX		M. MATAWAKI	09/30/09 0930

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) (Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238)
(2) Strontium-89,90 – Total Sr, Isotopic Thorium (Thorium-232), Isotopic Uranium (Uranium-233/234, Uranium-235, Uranium-238), Isotopic Plutonium
(3) ICP Metals - 6010 (Full List) (Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc); Mercury - 7471 - (CV)

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab.

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
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DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By Date/Time

WCH-EE-011

Washington Closure Hanford	**CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST**	RC-118-201	Page 1 of 1

Collector Wendy West	Company Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator KESSNER, JH	Price Code 9K N JD 9/30/09
Project Designation Columbia River Component of the RCBRA - Tissues	Sampling Location 100SA-WALI-LIV/KID	K1755 (7473)	SAF No. RC-118	Data Turnaround 45 Days
Ice Chest No. AFS-04-0123	Field Logbook No. 1633	COA BESCRC6520	Method of Shipment FED EX	
Shipped To EBERLINE SERVICES / LIONVILLE	Offsite Property No. N/A		Bill of Lading/Air Bill No. FDX 796986398930	

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage
FREEZE "MATRIX COMPOSED OF FISH"

0001117

Preservation	None	None	None	None	None	Cool 4C	Cool 4C			
Type of Container	G/P	G/P	G	G/P	G/P	G/P	aG			
No. of Container(s)	1	0	0	0	0	0	0			
Volume	750g	2g	25g	5g	5g	15g	50g			
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Tritium - H3	See item (2) in Special Instructions	Technetium-99	See item (3) in Special Instructions	Pesticides - 8081			

Sample No.	Matrix *	Sample Date	Sample Time										
J18XB1	OTHER SOLID	9/24/09	1850	X	X	X	X	X	X	X			

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Wendy West	9/24/09 1850	Wendy EAS LOCKED STORAGE	9/24/09 1850
EAS LOCKED STORAGE	9/29/09 906	SHANNAN JOHNSON	9/29/09 905
SHANNAN JOHNSON	9/29/09 900	FDX	
FED EX		[illegible] WATKINSON	09/30/09 [illegible]

SPECIAL INSTRUCTIONS
Perform gamma spec then contact Joan Kessner for additional analyses. Maintain FREEZE cooling as practical.

(1) Gamma Spec - (Full List) [Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238]
(2) Strontium-89,90 -- Total Sr, Isotopic Thorium, Isotopic Uranium, Isotopic Plutonium
(3) ICP Metals - 6010 (Full List) [Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc] [illegible] - (CV)

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab.

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Washington Closure Hanford	**CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST**	RC-118-202	Page 1 of 1
Collector Wendy West	**Company Contact** JOAN KESSNER **Telephone No.** 375-4688	**Project Coordinator** KESSNER, JH	**Price Code** 9K N 4th Setup **Data Turnaround** 45 Days
Project Designation Columbia River Component of the RCBRA - Tissues	**Sampling Location** 100SA-WAL2-LIV/KID K1755 (7473)	**SAF No.** RC-118	
Ice Chest No. AFS-04-0123	**Field Logbook No.** 1633 **COA** BESCRC6520	**Method of Shipment** FED EX	
Shipped To EBERLINE SERVICES LIONVILLE	**Offsite Property No.** N/A	**Bill of Lading/Air Bill No.** FDX 796986398930	

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage
FREEZE "MATRIX COMPOSED OF FISH"

Preservation	None	None	None	None	None	Cool 4C	Cool 4C
Type of Container	G/P	G/P	G	G/P	G/P	G/P	aG
No. of Container(s)	1	0	0	0	0	0	0
Volume	750g	3g	25g	3g	3g	15g	30g
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Tritium - H3	See item (2) in Special Instructions	Technetium-99	See item (3) in Special Instructions	Pesticides - 8081

000118

Sample No.	Matrix *	Sample Date	Sample Time							
J18XB2	OTHER SOLID	9/23/09	1730	X	X	X	X	X	X	X

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From Wendy West	Date/Time 1730 9/23/09	Received By/Stored In Wendy EAS LOCKED STORAGE 4	Date/Time 1730 9/23/09
Relinquished By/Removed From EAS LOCKED STORAGE 4	Date/Time 9/24/09 900	Received By/Stored In SHANNAN JOHNSON	Date/Time 9/24/09 925
Relinquished By/Removed From SHANNAN JOHNSON	Date/Time 9/24/09 1535	Received By/Stored In FDX	Date/Time
Relinquished By/Removed From FDX	Date/Time	Received By/Stored In K. Leatherwood	Date/Time 09/25/09 0950
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time

SPECIAL INSTRUCTIONS
Perform gamma spec then contact Joan Kessner for additional analyses. Maintain FREEZE cooling as protocol.

(1) Gamma Spec - (Full List) (Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238)
(2) Strontium-89,90 – Total Sr; Isotopic Thorium; Isotopic Uranium; Isotopic Plutonium
(3) ICP Metals - 6010 (Full List) (Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc); Mercury - 7471 - (CV)

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to Lab.

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Washington Closure Hanford	**CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST**	RC-118-203	Page 1 of 1
Collector WendyWest	**Company Contact** JOAN KESSNER **Telephone No.** 375-4688	**Project Coordinator** KESSNER, JH	**Price Code** 9K N **Data Turnaround** 45 Days
Project Designation Columbia River Component of the RCBRA - Tissues	**Sampling Location** 100SA-WAL3-LIV/KID K-785 (7473)	**SAF No.** RC-118	
Ice Chest No. AFS-04-0123	**Field Logbook No.** 1633 **COA** BESCRC6520	**Method of Shipment** FED EX	
Shipped To EBERLINE SERVICES LIONVILLE	**Offsite Property No.** N/A	**Bill of Lading/Air Bill No.** FDX 796986398930	

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage
FREEZE "MATRIX COMPOSED OF FISH"

000119

Preservation	None	None	None	None	None	Cool 4C	Cool 4C
Type of Container	G/P	G/P	G	G/P	G/P	G/P	aG
No. of Container(s)	1	0	0	0	0	0	0
Volume	750g	2g	25g	5g	5g	15g	30g
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Tritium - H3	See item (2) in Special Instructions	Technetium-99	See item (3) in Special Instructions	Pesticides - 8081

Sample No.	Matrix *	Sample Date	Sample Time							
J18XB3	OTHER SOLID	9/25/09	1735	X	X	X	X	X	X	X

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
WendyWest	1735 9/25/09	EAS LOCKED STORAGE	1735 9/25/09
EAS LOCKED STORAGE	9/28/09 900	SHANNAN JOHNSON	9/28/09 900
SHANNAN JOHNSON	9/28/09 900	FDX	
FedEx		M. Uhtenwoldt	09/30/09 0900

SPECIAL INSTRUCTIONS
Perform gamma spec then contact Joan Kessner for additional analysis. Maintain FREEZE custody as protocol.

(1) Gamma Spec - (Full List) {Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238}
(2) Strontium-89,90 - Total Sr, Isotopic Thorium, Isotopic Uranium, Isotopic Plutonium
(3) ICP Metals - 6010 (Full List) {Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc}, Mercury - 7471 - (CV)

Samples unavailable to [illegible] [illegible] from controlled storage. Shipper [illegible] samples from storage location taking custody & samples [illegible] shipped to lab.

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-118-204

Page 1 of 1

Collector Wendy West	**Company Contact** JOAN KESSNER	**Telephone No.** 375-4688	**Project Coordinator** KESSNER, JH
Project Designation Columbia River Component of the RCBRA - Tissues	**Sampling Location** 100SA-WAL4-LIV/KID K1785 (7473)		**SAF No.** RC-118
Ice Chest No. AFS-04-0123	**Field Logbook No.** 1633	**COA** BESCRC6520	**Method of Shipment** FED EX
Shipped To EBERLINE SERVICES - ALIONVILLE	**Offsite Property No.** N/A		**Bill of Lading/Airbill No.** FDX# 796986398930

Price Code 9J5 9809

Data Turnaround 45 Days

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage
FREEZE "MATRIX COMPOSED OF FISH"

000120

Preservation	None	None	None	None	None	Cool 4C	Cool 4C			
Type of Container	G/P	G/P	G	G/P	G/P	G/P	aG			
No. of Container(s)	1	0	0	0	0	0	0			
Volume	750g	2g	25g	5g	5g	15g	30g			
SAMPLE ANALYSIS	See item (1) in Special Instructions.	Carbon-14	Tritium - H3	See item (2) in Special Instructions.	Technetium-99	See item (3) in Special Instructions.	Pesticides - 8081			

Sample No.	Matrix *	Sample Date	Sample Time	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]			
J18XB4	OTHER SOLID	9/24/09	1840	X	X	X	X	X	X	X			

CHAIN OF POSSESSION — **Sign/Print Names**

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Wendy West	1840 9/24/09	EAS LOCKED STORAGE 4 Wendy West	1840 9/24/09
EAS LOCKED STORAGE 4 SJ	9/28/09 900	SHANNAN JOHNSON	9/28/09 900
SHANNAN JOHNSON	9/28/09 900	FDX	
Fed Ex		F. Llatt[illegible]	09/30/09 0950

SPECIAL INSTRUCTIONS
Perform gamma spec then contact Joan Kessner for additional analysis. Maintain FREEZE cooling as practical.

(1) Gamma Spec - (Full List) (Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238)
(2) Strontium-89,90 -- Total Sr; Isotopic Thorium; Isotopic Uranium; Isotopic Plutonium
(3) ICP Metals - 6010 (Full List) (Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc]; Mercury - 7471 - (CV)

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab.

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Washington Closure Hanford	**CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST**	RC-118-205	Page 1 of 1

Collector Wendy West	**Company Contact** JOAN KESSNER	**Telephone No.** 375-4686	**Project Coordinator** KESSNER, JH	**Price Code** 9K N
Project Designation Columbia River Component of the RCBRA - Tissue	**Sampling Location** 100SA-WALS-LIV/KID K-755 (7473)		**SAP No.** RC-118	**Data Turnaround** 45 Days
Ice Chest No. AES-04-0123	**Field Logbook No.** 1633	**COA** BESCRC6320	**Method of Shipment** FED EX	
Shipped To EBERLINE SERVICES / RICHMOND RICHVILLE	**Offsite Property No.** N/A		**Bill of Lading/Air Bill No.** FD# 7969 8639 8930	

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

FREEZE "MATRIX COMPOSED OF FISH"

000121

Preservation	Freeze	Freeze	Freeze	Freeze	Freeze	Cool 4C	Cool 4C			
Type of Container	G/P	G/P	G	G/P	G/P	G/P	aG			
No. of Container(s)	1	0	0	0	0	0	0			
Volume	250g	2g	25g	5g	5g	15g	50g			
SAMPLE ANALYSIS	See item (1) in Special Instructions.	Carbon-14	Tritium - H3	See item (2) in Special Instructions.	Technetium-99	See item (3) in Special Instructions.	Pesticides - 8081			

Sample No.	Matrix *	Sample Date	Sample Time										
J18XB5	OTHER SOLID	9/24/09	1845	X	X	X	X	X	X	X			

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Wendy West	9/24/09 1845	EAS LOCKED STORAGE Wendy West	9/24/09 1845
EAS LOCKED STORAGE	9/29/09 900	SHANNAN JOHNSON	9/29/09 900
SHANNAN JOHNSON	9/29/09 900	FDX	
FED EX		M.F.	09/30/09 0910

SPECIAL INSTRUCTIONS

Perform gamma spec then contact Joan Kessner for additional analyses. Maintain FREEZE cooling as practical.

(1) Gamma Spec - (Full List) (Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238)
(2) Strontium-89,90 – Total Sr; Isotopic Thorium; Isotopic Uranium, Isotopic Plutonium
(3) ICP Metals - 6010 (Full List) (Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc), Mercury - 7471 - (CV)

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab.

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Washington Closure Hanford	**CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST**	RC-118-206	Page 1 of 1
Collector Wendy West	**Company Contact** JOAN KESSNER **Telephone No.** 375-4688	**Project Coordinator** KESSNER, JH	**Price Code** ~~9K~~ N [illegible] 5/8/09 **Data Turnaround** 45 Days
Project Designation Columbia River Component of the RCBRA - Tissues	**Sampling Location** 100SA-WALL-CARCASS K1785 (7473)	**SAF No.** RC-118	
Ice Chest No. AFS-04-0123	**Field Logbook No.** 1633 **COA** BESCRC8520	**Method of Shipment** FED EX	
Shipped To EBERLINE SERVICES LIONVILLE	**Offsite Property No.** N/A	**Bill of Lading/Air Bill No.** FDX # 796986398930	

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

FREEZE "MATRIX COMPOSED OF FISH"

Preservation				None	None	None	None	Cool 4C	Cool 4C	None	
Type of Container				G/P	G/P	G/P	G/P	G/P	aG	G/P	
No. of Container(s)				1	1	1	1	1	1	1	
Volume				1500g	100g	100g	10g	250g	120g	10g	
SAMPLE ANALYSIS				See item (1) in Special Instructions	Carbon-14	Tritium - H3	See item (2) in Special Instructions	See item (3) in Special Instructions	Pesticides - 8081	Technetium-99	
Sample No.	**Matrix ***	**Sample Date**	**Sample Time**								
J18XB6	OTHER SOLID	9/24/09	1330	X	X	X	X			X	

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From Wendy West	**Date/Time** 9/24/09 1330	**Received By/Stored In** EAS LOCKED STORAGE	**Date/Time** 9/24/09 1330
Relinquished By/Removed From EAS LOCKED STORAGE	**Date/Time** 9/29/09 900	**Received By/Stored In** SHANNAN JOHNSON	**Date/Time** 9/29/09 900
Relinquished By/Removed From SHANNAN JOHNSON	**Date/Time** 9/29/09 900	**Received By/Stored In** FDX	**Date/Time**
Relinquished By/Removed From FED EX	**Date/Time**	**Received By/Stored In** M. F. MATRA	**Date/Time** 09/30/09 0900
Relinquished By/Removed From	**Date/Time**	**Received By/Stored In**	**Date/Time**
Relinquished By/Removed From	**Date/Time**	**Received By/Stored In**	**Date/Time**

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) (Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238)
(2) Strontium-89,90 – Total Sr; Isotopic Thorium (Thorium-232); Isotopic Uranium (Uranium-233/234, Uranium-235, Uranium-238); Isotopic Plutonium
(3) ICP Metals - 6010 (Full List) (Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc); Mercury - 7471 - (CV)

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab.

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W = Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Washington Closure Hanford	**CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST**	RC-118-207	Page 1 of 1

Collector Wendy West	Company Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator KESSNER, JH
Project Designation Columbia River Component of the RCBRA - Tissues	Sampling Location 100SA-WAL2-CARCASS K1785 (7473)		SAF No. RC-118
Ice Chest No. AFS-04-042	Field Logbook No. 1633	COA BESCRC6520	Method of Shipment FED EX
Shipped To EBERLINE SERVICES / LIONVILLE	Offsite Property No. N/A		Bill of Lading/Air Bill No. FDX#797974081261

Price Code 9K-
NJ

Data Turnaround
45 Days

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage
FREEZE "MATRIX COMPOSED OF FISH"

000123

Preservation	None	None	None	None	Cool 4C	Cool 4C	None			
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	G/P			
No. of Container(s)	1	1	1	1	1	1	1			
Volume	1500g	100g	100g	10g	250g	120g	10g			
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Tritium - H3	See item (2) in Special Instructions	See item (3) in Special Instructions	Pesticides - 8081	Technetium-99			

Sample No.	Matrix *	Sample Date	Sample Time										
J18XB7	OTHER SOLID	9/25/09	1130	X	X	X	X			X			

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From Wendy West	Date/Time 1130 9/25/09	Received By/Stored In Wendy West EAS LOCKED STORAGE 4	Date/Time 1130 9/25/09
Relinquished By/Removed From EAS LOCKED STORAGE 4	Date/Time 9/29/09 920	Received By/Stored In SHANNAN JOHNSON	Date/Time 9/29/09 920
Relinquished By/Removed From SHANNAN JOHNSON	Date/Time 9/29/09 920	Received By/Stored In FDX	Date/Time
Relinquished By/Removed From FED EX	Date/Time	Received By/Stored In F. MANTAL	Date/Time 09/30/09 0900
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) {Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238}

(2) Strontium-89,90 -- Total Sr; Isotopic Thorium {Thorium-232}; Isotopic Uranium {Uranium-233/234, Uranium-235, Uranium-238}; Isotopic Plutonium

(3) ICP Metals - 6010 (Full List) {Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc}; Mercury - 7471 - (CV)

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody 4 samples for shipment in lab.

Matrix *

S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Washington Closure Hanford	**CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST**	RC-118-208	Page 1 of 1
Collector Wendy West	**Company Contact** JOAN KESSNER **Telephone No.** 373-4615	**Project Coordinator** KESSNER, JJ	**Price Code** ~~9K~~ N JJS 5/19/09 **Data Turnaround** 45 Days
Project Designation Columbia River Component of the RCBRA - Tissues	**Sampling Location** 100SA-WAL3-CARCASS K1755 (7473)	**SAF No.** RC-118	
Ice Chest No. AFS-04-042	**Field Logbook No.** 1633 **COA** BUSCRC6520	**Method of Shipment** FED EX	
Shipped To EBERLINE SERVICES LIONVILLE	**Offsite Property No.** N/A	**Bill of Lading/Air Bill No.** FDX#7979 / 4093269	

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage
FREEZE "MATRIX COMPOSED OF FISH"

Preservation	None	None	None	None	Cool 4C	Cool 4C	None
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	G/P
No. of Container(s)	1	1	1	1	1	1	1
Volume	1500g	100g	100g	10g	250g	120g	10g
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Tritium - H3	See item (2) in Special Instructions	See item (3) in Special Instructions	Pesticides - 8081	Technetium-99

Sample No.	Matrix *	Sample Date	Sample Time										
J18XB8	OTHER SOLID	9/25/09	1230	X	X	X	X			X			

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Wendy West	1230 9/25/09	EAS LOCKED STORAGE 4	1250 9/25/09
EAS LOCKED STORAGE 4	9/29/09 900	SHANNAN JOHNSON	9/29/09 900
SHANNAN JOHNSON	9/29/09 9:00	FDX	
FED EX		NF-MATTAUHIPTAN	09/30/09

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) [Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238]
(2) Strontium-89,90 -- Total Sr; Isotopic Thorium [Thorium-232]; Isotopic Uranium [Uranium-233/234, Uranium-235, Uranium-238]; Isotopic Plutonium
(3) ICP Metals - 6010 (Full List) [Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc]; Mercury - 7471 - (CV)

[illegible]
Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody
[illegible]

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W = Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-118-209

Page 1 of 1

Collector Wendy West

Company Contact JOAN KESSNER

Telephone No. 373-4688

Project Coordinator KESSNER, JH

Price Code ~~9K~~ N ~~JS~~ 5/1/09

Data Turnaround 45 Days

Project Designation Columbia River Component of the RCBRA - Tissue

Sampling Location 100SA-WAL4-CARCASS K1785 (7473)

SAF No. RC-118

Ice Chest No. AFS-04-0123

Field Logbook No. 1633

COA BESCRC0320

Method of Shipment FED EX

Shipped To [✓ SERVICES] LIONVILLE

Offsite Property No. N/A

Bill of Lading/Air Bill No. FDX # 796986398930

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

FREEZE "MATRIX COMPOSED OF FISH"

0001125

Preservation	None	None	None	None	Cool 4C	Cool 4C	None				
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	G/P				
No. of Container(s)	1	1	1	1	1	1	1				
Volume	1500g	100g	100g	10g	250g	120g	10g				
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Tritium - H3	See item (2) in Special Instructions	See item (3) in Special Instructions	Pesticides - 8081	Technetium-99				

Sample No.	Matrix *	Sample Date	Sample Time	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]			
J18XB9	OTHER SOLID	9/24/09	1430	X	X	X	X			X			

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Wendy West	1430 9/24/09	EAS LOCKED STORAGE 4 Wendy West	1430 9/24/09
EAS LOCKED STORAGE 4 SJ	9/29/09 900	SHANNAN JOHNSON	9/29/09 900
SHANNAN JOHNSON	9/29/09 900	FDX	
FED EX		MARTAWAHANTAN	09/30/09 0900

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) (Americium-241, Antimony-125, Beryllium-7, Cerium-144, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238)
(2) Strontium-89,90 – Total Sr, Isotopic Thorium (Thorium-232), Isotopic Uranium (Uranium-233/234, Uranium-235, Uranium-238), Isotopic Plutonium
(3) ICP Metals - 6010 (Full List) (Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc); Mercury - 7471 - (CV)

Sampler unavailable to receive samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab.

Matrix *

[illegible]

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-118-210

Page 1 of 1

Collector Wendy West	**Company Contact** JOAN KESSNER	**Telephone No.** 375-4688	**Project Coordinator** KESSNER, JH
Project Designation Columbia River Component of the RCBRA - Tissues	**Sampling Location** 100SA-WAL5-CARCASS K1785 (7473)		**SAF No.** RC-118
Ice Chest No. AFS-04-0123	**Field Logbook No.** 1633	**COA** BESCRC6530	**Method of Shipment** FED EX
Shipped To EBERLINE SERVICES LIONVILLE	**Offsite Property No.** N/A		**Bill of Lading/Air Bill No.** FDX# 796986398930

Price Code

Data Turnaround 45 Days

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage
FREEZE "MATRIX COMPOSED OF FISH"

000126

Preservation	None	None	None	None	Cool 4C	Cool 4C	None
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	G/P
No. of Container(s)	1	1	1	1	1	1	1
Volume	1500g	100g	100g	10g	250g	120g	10g
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Tritium - H3	See item (2) in Special Instructions	See item (3) in Special Instructions	Pesticides - 8081	Technetium-99

Sample No.	Matrix *	Sample Date	Sample Time									
J18XC0	OTHER SOLID	9/24/09	1545	X	X	X	X			X		

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Wendy West	1545 9/24/09	Wendy West EAS LOCKED STORAGE	1545 9/24/09
EAS LOCKED STORAGE	9/29/09 900	SHANNAN JOHNSON	9/29/09 921
SHANNAN JOHNSON	9/29/09 928	FDX	
FED EX		K. LEHTAU	09/30/09 0905

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) (Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238)
(2) Strontium-89,90 – Total Sr; Isotopic Thorium (Thorium-232); Isotopic Uranium (Uranium-233/234, Uranium-235, Uranium-238); Isotopic Plutonium
(3) ICP Metals - 6010 (Full List) (Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc); Mercury - 7471 - (CV)

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab.

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-118-221

Page 1 of 1

Collector: Wendy West

Company Contact: JOAN KESSNER

Telephone No.: 375-4633

Project Coordinator: KESSNER, JH

Price Code: ~~9K~~ N JJD 51609

Data Turnaround: 45 Days

Project Designation: Columbia River Component of the RCBRA - Tissues

Sampling Location: 300SA-WALL, FILLET K1765 (7473)

SAF No.: RC-118

Ice Chest No.: ERC-96-058

Field Logbook No.: 1633

COA: BESCRC6520

Method of Shipment: FED EX

Shipped To: EBERLINE SERVICES LIONVILLE

Offsite Property No.: N/A

Bill of Lading/Air Bill No.: FDX 796986399098

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage: FREEZE *MATRIX COMPOSED OF FISH*

000127

Preservation	None	None	None	None	Cool 4C	Cool 4C	None			
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	G/P			
No. of Container(s)	1	1	1	1	1	1	1			
Volume	1500g	100g	100g	10g	250g	120g	10g			
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Tritium - H3	See item (2) in Special Instructions	See item (3) in Special Instructions	Pesticides - 8081	Technetium-99			

Sample No	Matrix *	Sample Date	Sample Time										
J18XD1	OTHER SOLID	9/24/09	0900	X	X	X	X			X			

CHAIN OF POSSESSION

Sign/Print Names

Relinquished By/Removed From: Wendy West	Date/Time: 0900 9/24/09	Received By/Stored In: Wendy West EAS LOCKED STORAGE 4	Date/Time: 0900 9/24/09
Relinquished By/Removed From: ~~EAS LOCKED~~ STORAGE 4	Date/Time: 9/28/09 900	Received By/Stored In: SHANNAN JOHNSON	Date/Time: 9/28/09 900
Relinquished By/Removed From: SHANNAN JOHNSON	Date/Time: 9/28/09 900	Received By/Stored In: FDX	Date/Time:
Relinquished By/Removed From: FED EX	Date/Time:	Received By/Stored In: [illegible]	Date/Time: 09/29/09 0907
Relinquished By/Removed From:	Date/Time:	Received By/Stored In:	Date/Time:
Relinquished By/Removed From:	Date/Time:	Received By/Stored In:	Date/Time:

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) [Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238]

(2) Strontium-89,90 -- Total Sr; Isotopic Thorium (Thorium-232); Isotopic Uranium (Uranium-233/234, Uranium-235, Uranium-238); Isotopic Plutonium

(3) ICP Metals - 6010 (Full List) [Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc]; Mercury - 7471 - (CV)

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab.

Matrix *

S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-118-222

Page 1 of 1

Collector Wendy West	**Company Contact** JOAN KESSNER **Telephone No.** 375-4688	**Project Coordinator** KESSNER, JH	**Price Code** 9K N **Data Turnaround** 45 Days
Project Designation Columbia River Component of the RCBRA - Tissues	**Sampling Location** 300SA-WALL FILLET K1765 (7473)	**SAF No.** RC-118	2/23/09
Ice Chest No. EKC-96-058	**Field Logbook No.** 1833 **COA** BESCRC6520	**Method of Shipment** FED EX	
Shipped To EBERLINE SERVICES / LIONVILLE	**Offsite Property No.** N/A	**Bill of Lading/Air Bill No.** FDX# 796986399098	

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

FREEZE "MATRIX COMPOSED OF FISH"

000125

Preservation	None	None	None	None	Cool 4C	Cool 4C	None			
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	G/P			
No. of Container(s)	1	1	1	1	1	1	1			
Volume	1500g	100g	100g	10g	250g	120g	10g			
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Tritium - 3H	See item (2) in Special Instructions	See item (3) in Special Instructions	Pesticides - 8081	Technetium-99			

Sample No.	Matrix *	Sample Date	Sample Time										
J18XD2	OTHER SOLID	9/24/09	0945	X	X	X	X			X			

CHAIN OF POSSESSION

Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Wendy West	9/24/09 0945	EAS LOCKED STORAGE 4	9/24/09 0945
EAS LOCKED STORAGE 4	9/29/09 920	SHANNAN JOHNSON	9/29/09 920
SHANNAN JOHNSON	9/29/09 400	FDX	
		F. E. WATAH	9/30/09 0945

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) (Americium-241, Antimony-125, Beryllium-7, Cerium-144, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238)

(2) Strontium-89,90 – Total Sr; Isotopic Thorium (Thorium-232); Isotopic Uranium (Uranium-233/234, Uranium-235, Uranium-238); Isotopic Plutonium

(3) ICP Metals - 6010 (Full List) (Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc); Mercury - 7471 - (CV)

[illegible]

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody

[illegible]

Matrix *

S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-118-223

Page 1 of 1

Collector Wendy West	**Company Contact** JOAN KESSNER	**Telephone No.** 375-4688	**Project Coordinator** KESSNER, JH
Project Designation Columbia River Component of the RCBRA - Tissue	**Sampling Location** 300SA-WAL3, FILLET K1765 (7473)		**SAF No.** RC-118
Ice Chest No. ERC-96-058	**Field Logbook No.** 1633	**COA** BESCRC6520	**Method of Shipment** FED EX
Shipped To EBERLINE SERVICES LIONVILLE	**Offsite Property No.** N/A		**Bill of Lading/Air Bill No.** FDX# 7969 8639 9098

Price Code ~~9K~~ N JAS 5/18/09

Data Turnaround 45 Days

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

FREEZE "MATRIX COMPOSED OF FISH"

000129

Preservation	None	None	None	None	Cool 4C	Cool 4C	None
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	G/P
No. of Container(s)	1	1	1	1	1	1	1
Volume	1300g	100g	100g	10g	230g	120g	10g
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Tritium - H3	See item (2) in Special Instructions	See item (3) in Special Instructions	Pesticides - 8081	Technetium-99

Sample No.	Matrix *	Sample Date	Sample Time										
J18XD3	OTHER SOLID	9/24/09	1030	X	X	X	X			X			

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Wendy West	9/24/09 1030	Wendy West EAS LOCKED STORAGE 4	9/24/09 1030
EAS LOCKED STORAGE 4	9/29/09 9:00	SHANNAN JOHNSON	9/29/09 9:00
SHANNAN JOHNSON	9/29/09 9:00	FEDEX	
FED EX		[illegible]	09/30/09 [illegible]

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) (Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238)
(2) Strontium-89,90 – Total Sr; Isotopic Thorium (Thorium-232); Isotopic Uranium (Uranium-233/234, Uranium-235, Uranium-238); Isotopic Plutonium
(3) ICP Metals - 6010 (Full List) (Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc); Mercury - 7471 - (CV)

[illegible]
Sampler unavailable to remove samples
from controlled storage. Shipper removed
samples from storage location taking custody
of samples for shipment to lab

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-118-224 | Page 1 of 1

Collector Wendy West	Company Contact JOAN KESSNER	Telephone No. 373-4688	Project Coordinator KESSNER, JH
Project Designation Columbia River Component of the RCBRA - Tissues	Sampling Location 300SA-WALA, FILLET	K1785 (7+73)	SAF No. RC-118
Ice Chest No. EKA-96-058	Field Logbook No. 1633	COA HESCRC6520	Method of Shipment FED EX
Shipped To EBERLINE SERVICES LIONVILLE	Offsite Property No. N/A		Bill of Lading/Air Bill No. FDX 796986399098

Price Code 9K N
JJB 5/18/09

Data Turnaround
45 Days

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage
FREEZE "MATRIX COMPOSED OF FISH"

Preservation	None	None	None	None	Cool 4C	Cool 4C	None			
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	G/P			
No. of Container(s)	1	1	1	1	1	1	1			
Volume	1500g	100g	100g	10g	250g	120g	10g			
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Tritium - H3	See item (2) in Special Instructions	See item (3) in Special Instructions	Pesticides - 8081	Technetium-99			

Sample No.	Matrix *	Sample Date	Sample Time										
J18XD4	OTHER SOLID	9/25/09	1400	X	X	X	X			X			

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Wendy West	9/25/09 1400	Wendy West EAS LOCKED STORAGE 4	9/25/09 1400
EAS LOCKED STORAGE 4	9/29/09 920	SHANNAN JOHNSON	9/29/09 920
SHANNAN JOHNSON	9/29/09 1100	FDX	
FED EX		ME-MATTAU	09/30/09 0930

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) [Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238]
(2) Strontium-89,90 -- Total Sr; Isotopic Thorium (Thorium-232); Isotopic Uranium (Uranium-233/234, Uranium-235, Uranium-238); Isotopic Plutonium
(3) ICP Metals - 6010 (Full List) [Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc], Mercury - 7471 - (CV)

Sampler unavailable to retrieve samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab.

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-118-225	Page 1 of 1

Collector Wendy West	Company Contact JOAN KESSNER	Telephone No. 375-4658	Project Coordinator KESSNER, JH
Project Designation Columbia River Component of the RCBRA - Tissues	Sampling Location 300SA-WALS, FILLET K1785 (7473)		SAF No. RC-118
Ice Chest No. ERC-96-058	Field Logbook No. 1633	COA BESCRC6530	Method of Shipment FED EX
Shipped To EBERLINE SERVICES LIONVILLE	Offsite Property No. N/A		Bill of Lading/Air Bill No. FDX 796986399098

Price Code ~~9K~~ N 5/1/09

Data Turnaround 45 Days

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage
FREEZE "MATRIX COMPOSED OF FISH"

000131

Preservation	None	None	None	None	Cool 4C	Cool 4C	None
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	G/P
No. of Container(s)	1	1	1	1	1	1	1
Volume	1500g	100g	100g	10g	250g	120g	10g
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Tritium - H3	See item (2) in Special Instructions	See item (3) in Special Instructions	Pesticides - 8081	Technetium-99

Sample No.	Matrix *	Sample Date	Sample Time	(1)	C-14	H-3	(2)	(3)	Pest.	Tc-99
J18XD5	OTHER SOLID	9/25/09	1630	X	X	X	X			X

CHAIN OF POSSESSION

Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Wendy West	1630 9/25/09	Wendy West EAS LOCKED STORAGE	1630 9/25/09
EAS LOCKED STORAGE	9/29/09 900	SHANNAN JOHNSON	9/29/09 900
SHANNAN JOHNSON	9/29/09 900	FDX	
FED EX		[illegible]	[illegible]

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) [Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238]
(2) Strontium-89,90 -- Total Sr; Isotopic Thorium (Thorium-232), Isotopic Uranium (Uranium-233/234, Uranium-235, Uranium-238); Isotopic Plutonium
(3) ICP Metals - 6010 (Full List) [Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc], Mercury - 7471 - (CV)

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab.

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Appendix 5

Data Validation Supporting Documentation

APPENDIX A

RADIOCHEMICAL DATA VALIDATION CHECKLIST

VALIDATION LEVEL:	A	B	[✓ C]	D	E
PROJECT: XCBRA			DATA PACKAGE: K1795		
VALIDATOR: ESR	LAB: GB			DATE: 2/6/10	
			SDG: K1795		

ANALYSES PERFORMED

☐ Gross Alpha/Beta	☑ Strontium-90	☒ Technetium-99	☒ Alpha Spectroscopy	☒ Gamma Spectroscopy	
☐ Total Uranium	☐ [illegible]	☒ [illegible]	☒ C-14		

SAMPLES/MATRIX J18XF6 J18XF7 J18XF8 J18XF9 J18XH0 J18XH1 J18XH2
J18XH3 J18XH4 J18XH5 J18XY7 J18XY8 J18XY9 J18Y60 J18Y61 J18Y62
J18Y36 J18Y37 J18Y38 J18Y39 J18Y01 J18Y02 J18Y03 J18Y04 J18Y[illegible]
J18Y56 J18XY7 J18Y58 J18Y59 J18Y56 J18Y67 J18Y68 J18Y69 J18Y70
J18X01 J18X02 J18X03 J18X04 J18X05
solid

1. Completeness ☐ N/A

Technical verification forms present? Yes [✓ No] N/A

Comments:

2. Initial Calibration (Levels D, E) ☒ N/A

Instruments/detectors calibrated? Yes No N/A

Initial calibration acceptable? Yes No N/A

Standards NIST traceable? Yes No N/A

Standards Expired? Yes No N/A

Calculation check acceptable? Yes No N/A

Comments:

3. Continuing Calibration (Levels D, E) ☑ N/A

Calibration checked within required frequency? .... Yes No N/A

Calibration check acceptable? .... Yes No N/A

Calibration check standards traceable? .... Yes No N/A

Calibration check standards expired? .... Yes No N/A

Calculation check acceptable? .... Yes No N/A

Comments:

4. Background Counts (Levels D, E) .... ☑ N/A

Background Counts checked within required frequency? .... Yes No N/A

Background Counts acceptable? .... Yes No N/A

Calculation check acceptable? .... Yes No N/A

Comments:

5. Blanks (Levels B, C, D, E) .... ☐ N/A

Method blank analyzed within required frequency? .... [✓ Yes] No N/A

Method blank results acceptable? .... [✓ Yes] No N/A

Analytes detected in method blank? .... Yes [✓ No] N/A

Field blank(s) analyzed? .... Yes [✓ No] N/A

Field blank results acceptable? .... Yes No [✓ N/A]

Analytes detected in field blank(s)? .... Yes No [✓ N/A]

Transcription/Calculation Errors? (Levels D, E) .... Yes No [✓ N/A]

Comments: NO FB

6. Laboratory Control Samples or Blank Spike Samples (Levels C, D, E) .... ☐ N/A

LCS /BSS analyzed within required frequency? .... [✓ Yes] No N/A

LCS/BSS recoveries acceptable? .... [✓ Yes] No N/A

LCS/BSS traceable? (Levels D,E) .... Yes No [✓ N/A]

LCS/BSS expired? (Levels D,E) .... Yes No [✓ N/A]

LCS/BSS levels correct? (Levels D,E) .... Yes No [✓ N/A]

Transcription/Calculation Errors? (Levels D, E) .... Yes No [✓ N/A]

Comments: NO Th-228 or Th-232 ([illegible]) LCS - Jaly

7. Chemical Carrier Recovery (Levels C, D, E) .... ☒ N/A

Chemical carrier added? .... Yes No N/A

Chemical recovery acceptable? .... Yes No N/A

Chemical carrier traceable? (Levels D, E) .... Yes No N/A

Chemical carrier expired? (Levels D, E) .... Yes No N/A

Transcription/Calculation errors? (Levels D, E) .... Yes No N/A

Comments:

8. Tracer Recovery (Levels C, D, E) .... ☐ N/A

Tracer added? .... [✓ Yes] No N/A

Tracer recovery acceptable? .... [✓ Yes] No N/A

Tracer traceable? (Levels D, E) .... Yes No [✓ N/A]

Tracer expired? (Levels D, E) .... Yes No [✓ N/A]

Transcription/Calculation errors? (Levels D, E) .... Yes No [✓ N/A]

Comments:

9. Matrix Spikes (Levels C, D, E) .... ☐ N/A

Matrix spike analyzed? .... Yes [✓ No] N/A

Spike recoveries acceptable? .... Yes No [✓ N/A]

Spike source traceable? (Levels D, E) .... Yes No [✓ N/A]

Spike source expired? Levels D, E) .... Yes No [✓ N/A]

Transcription/Calculation Errors? (Levels D, E) .... Yes No [✓ N/A]

Comments: NO 3H or C-14 MS - J all

10. Duplicates (Levels C, D, E) .... ☐ N/A

Duplicates Analyzed at required frequency? .... [✓ Yes] No N/A

RPD Values Acceptable? .... [✓ Yes] No N/A

Transcription/Calculation Errors? (Levels D, E) .... Yes No [✓ N/A]

Comments:

11. Field QC Samples (Levels C, D E) .... ☐ N/A

Field duplicate sample(s) analyzed? .... Yes [✓ No] N/A

Field duplicate RPD values acceptable? .... Yes No [✓ N/A]

Field split sample(s) analyzed? .... Yes [✓ No] N/A

Field split RPD values acceptable? .... Yes No [✓ N/A]

Performance audit sample(s) analyzed? .... Yes [✓ No] N/A

Performance audit sample results acceptable? .... Yes No [✓ N/A]

Comments: no field QC

12. Holding Times (All levels)

Are sample holding times acceptable? .... [✓ Yes] No N/A

Comments:

13. Results and Detection Limits (All Levels) .... ☐ N/A

Results reported for all required sample analyses?.. [✓ Yes] No N/A

Results supported in raw data?(Levels D, E).. Yes No [✓ N/A]

Results Acceptable? (Levels D, E) .... Yes No [✓ N/A]

Transcription/Calculation errors? (Levels D, E).. Yes No [✓ N/A]

MDA's meet required detection limits? .... Yes [✓ No] N/A

Transcription/calculation errors? (Levels D, E).. Yes No [✓ N/A]

Comments: 2σ cnt

Appendix 6

Additional Documentation Requested by Client

EBERLINE ANALYTICAL/RICHMOND

SAMPLE DELIVERY GROUP K1785

7474-021

Method Blank

METHOD BLANK

SDG	7474	Client/Case no	Hanford	SDG_K1785
Contact	N. Joseph Verville	Contract	No. 0000235A00	
Lab sample id	R909131-21	Client sample id	Method Blank	
Dept sample id	7474-021	Material/Matrix		SOLID
		SAF No	RC-110	

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Tritium	10028-17-8	-0.241	4.6	7.86	400	U	H
Carbon 14	14762-75-5	1.13	3.4	5.63	50.0	U	C
Total Strontium	SR-RAD	-0.077	0.078	0.170	1.00	U	SR
Technetium 99	14133-76-7	0.143	0.16	0.441	15.0	U	TC
Thorium 228	14274-82-9	-0.023	0.14	0.325	1.00	U	TH
Thorium 230	14269-63-7	0.023	0.12	0.512	1.00	U	TH
Thorium 232	TH-232	0	0.045	0.172	1.00	U	TH
Uranium 233/234	U-233/234	0.021	0.043	0.163	1.00	U	U
Uranium 235	15117-96-1	0	0.052	0.197	1.00	U	U
Uranium 238	U-238	0	0.041	0.163	1.00	U	U
Plutonium 238	13981-16-3	0.029	0.059	0.224	1.00	U	PU
Plutonium 239/240	PU-239/240	0.029	0.059	0.224	1.00	U	PU
Potassium 40	13966-00-2	U		0.977		U	GAM
Cobalt 60	10198-40-0	U		0.087	0.050	U	GAM
Cesium 137	10045-97-3	U		0.083	0.100	U	GAM
Radium 226	13982-63-3	U		0.175	0.100	U	GAM
Radium 228	15262-20-1	U		0.347	0.200	U	GAM
Europium 152	14683-23-9	U		0.210	0.100	U	GAM
Europium 154	15585-10-1	U		0.230	0.100	U	GAM
Europium 155	14391-16-3	U		0.152	0.100	U	GAM
Thorium 228	14274-82-9	U		0.128		U	GAM
Thorium 232	TH-232	U		0.347		U	GAM
Uranium 235	15117-96-1	U		0.347		U	GAM
Uranium 238	U-238	U		9.82		U	GAM
Americium 241	14596-10-2	U		0.074		U	GAM
Beryllium 7	13966-02-4	U		0.552		U	GAM
Ruthenium 106	13967-48-1	U		0.720		U	GAM
Antimony 125	14234-35-6	U		0.193		U	GAM
Cesium 134	13967-70-9	U		0.097		U	GAM

Lab id	EBRLNE
Protocol	Hanford1
Version	Ver 1.0
Form	DVD-DS
Version	3.06
Report date	11/10/09

BLANK, cont.

SDG	7474	Client/Case no	Hanford SDG K1785
Contact	N. Joseph Verville	Contract	No. 500W715A00
Lab sample id	R909133-21	Client sample id	Method Blank
Dept sample id	7474-021	Material/Matrix	SOLID
		SAF No	RC-118

QC-BLANK #71166

Lab id EBERLINE
Protocol Hanford1
Version Ver 1.0
Form DVD DG
Version 3.06
Report date 11/10/99

EBERLINE ANALYTICAL/RICHMOND

SAMPLE DELIVERY GROUP K1785

7474-024

Method Blank

METHOD BLANK

SDG 7474		Client/Case no Hanford	SDG K1785
Contact N. Joseph Verville		Contract No. S00W23-A00	
Lab sample id R909133-24		Client sample id Method Blank	
Dept sample id 7474-024		Material/Matrix	SOLID
		SAP No RC-118	

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Technetium 99	14133-76-7	-0.095	0.18	0.415	15.0	U	TC

QC-BLANK #71274

METHOD BLANKS
Page 3
SUMMARY DATA SECTION
Page 16

Lab id EBRLNE
Protocol Hanford1
Version Ver 1.0
Form DVD LC
Version 3.06
Report date 11/10/09

EBERLINE ANALYTICAL/RICHMOND

SAMPLE DELIVERY GROUP E1745

3474 020 Lab Control Sample

LAB CONTROL SAMPLE

SDG 3474	Client/Case no Hanford SDG E1745
Contact R. Joseph Verville	Contract No. MOHR75SA00
Lab sample id 00072113-00	Client sample id Lab Control Sample
Dept sample id 3474 020	Material/matrix SOLID
	SAF No RC 118

ANALYTE	RESULT pCi/g	2σ ERR (COUNTING)	MDA pCi/g	RDL pCi/g	QUALIFIERS	TEST	ADDED pCi/g	2σ ERR pCi/g	REC %	3σ LMTS (TOTAL)	PROTOCOL LIMITS
Tritium	941	22	7.26	400		H	1140	46	83	86-114	80-120
Carbon 14	1720	45	55.0	50.0		C	1700	110	101	81-119	80-120
Total Strontium	5.11	0.52	0.206	1.00		SR	4.92	0.42	104	86-114	80-120
Technetium 99	129	2.0	0.436	15.0		TC	129	4.0	100	78-122	80-120
Thorium 230	20.9	2.2	0.216	1.00		TH	22.7	0.91	92	78-122	80-120
Uranium 233/234	4.72	0.90	0.409	1.00		U	5.20	0.21	91	71-129	80-120
Uranium 235	4.42	0.86	0.240	1.00		U	4.22	0.17	105	56-144	80-120
Uranium 238	5.26	0.92	0.573	1.00		U	5.44	0.21	97	72-128	80-120
Plutonium 238	6.98	1.0	0.252	1.00		PU	6.94	0.28	101	75-125	80-120
Plutonium 239/240	7.61	1.1	0.301	1.00		PU	7.92	0.32	96	75-125	80-120
Cobalt 60	5.92	0.35	0.114	0.050		GAM	5.35	0.22	111	84-116	80-120
Cesium 137	7.04	0.34	0.230	0.100		GAM	6.80	0.27	104	86-114	80-120

QC LOG E7145

LAB CONTROL SAMPLES
Page 1
SUMMARY DATA SECTION
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Lab id EBERL
Protocol Hanford
Version Ver 1.0
Form DVD-LCS
Version 3.06
Report date 11/10/00

EBERLINE ANALYTICAL/RICHMOND

SAMPLE DELIVERY GROUP K1765

LAB CONTROL SAMPLE

SDG 1474

Contact N. Joanna Verville

Lab sample id [illegible]

Dept sample id 1474 023

Client/Case no Hanford SDG K1765

Contract No. [illegible]

Client sample id Lab Control Sample

Material/Matrix SOLID

SAF no HC-118

ANALYTE	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	ADL pCi/g	QUALIFIERS	TEST	ADDED pCi/g	2σ ERR pCi/g	REC %	3σ LMTS (TOTAL)	PROTOCOL LIMITS
Technetium 99	120	9.1	0.404	15.0		TC	109	4.4	110	73-127	80-120

LC LCS 871271

Lab id EBERLINE

Protocol Hanford

Version Ver 1.0

Form DVD-LCS

Version 3.06

Report date 12/10/99

EBERLINE ANALYTICAL/RICHMOND

SAMPLE DELIVERY GROUP [illegible]

7474-022

J18XP6

DUPLICATE

SDG 7474
Contact N. Joseph Verville

DUPLICATE
Lab sample id [illegible]-22
Dept sample id 7474-022
% solids 100.0

ORIGINAL
Lab sample id [illegible]-01
Dept sample id 7474-001
Received 09/30/09
% solids 100.0

Client/Case no Hanford
SDG [illegible]
Contract NO. [illegible]
Client sample id J18XP6
Location/Matrix [illegible] SOLID
Collected/Weight 09/24/09 [illegible]
Custody/Ser no [illegible]

ANALYTE	DUPLICATE pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALIFIERS	TEST	ORIGINAL pCi/g	2σ ERR (COUNT)	MDA pCi/g	QUALIFIERS	RPD %	3σ TOT	DER σ
Tritium	0.418	4.0	6.50	400	U	H	-0.420	4.0	6.05	U			0.1
Carbon 14	0.980	2.9	4.87	50.0	U	C	2.29	3.6	4.71	U			1.4
Total Strontium	-0.032	0.086	0.188	1.00	U	SR	0.055	0.15	0.260	U			0.5
Technetium 99	0.233	0.24	0.417	15.0	U	TC	0.050	0.24	0.394	U			0.3
Thorium 228	0.041	0.16	0.394	1.00	U	TH	0	0.15	0.360	U			0.4
Thorium 230	-0.123	0.31	0.726	1.00	U	TH	0.125	0.35	0.519	U			1.0
Thorium 232	0	0.012	0.114	1.00	U	TH	0	0.050	0.151	U			0
Uranium 233/234	0.027	0.044	0.169	1.00	U	U	0	0.065	0.249	U			0.6
Uranium 235	0	0.054	0.205	1.00	U	U	0	0.079	0.187	U			0
Uranium 238	0	0.044	0.169	1.00	U	U	0	0.065	0.249	U			0
Plutonium 238	0	0.019	0.075	1.00	U	PU	0	0.064	0.241	U			0
Plutonium 239/240	0.035	0.021	0.048	1.00	U	PU	0.032	0.064	0.243	U			0.1
Potassium 40	2.46	0.88	0.456			GAM	3.53	0.83	0.404		40	93	1.6
Cobalt 60	0		0.042	0.050	U	GAM	0		0.042	U			0
Cesium 137	0		0.042	0.100	U	GAM	0		0.044	U			0.1
Radium 226	0		0.099	0.100	U	GAM	0		0.097	U			0
Radium 228	0		0.193	0.200	U	GAM	0		0.202	U			0.1
Europium 152	0		0.122	0.100	U	GAM	0		0.116	U			0.1
Europium 154	0		0.127	0.100	U	GAM	0		0.132	U			0.4
Europium 155	0		0.122	0.100	U	GAM	0		0.114	U			0.2
Thorium 228	0		0.318		U	GAM	0		0.083	U			0.7
Thorium 232	0		0.193		U	GAM	0		0.202	U			0.1
Uranium 235	0		0.244		U	GAM	0		0.247	U			0.1
Uranium 238	0		4.78		U	GAM	0		4.89	U			0
Americium 241	0		0.078		U	GAM	0		0.101	U			0.1
Beryllium 7	0		0.470		U	GAM	0		0.434	U			0.1
Ruthenium 106	0		0.386		U	GAM	0		0.345	U			0
Antimony 125	0		0.097		U	GAM	0		0.096	U			0

DUPLICATE
Page 1
SUMMARY DATA SECTION
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Lab id EMRICH
Protocol Hanford
Version Ver 1.0
Form DVD-DUP
Version 3.06
Report date 11/19/09

DUPLICATE, cont.

SDG	7474			Client/Case no	HANFORD [illegible]
Contact	N. Joseph Verville			Contract No	[illegible]
	DUPLICATE		ORIGINAL		
Lab sample id	[illegible]	Lab sample id	[illegible]	Client sample id	[illegible]
Dept sample id	7474-022	Dept sample id	7474-001	Location/Matrix	[illegible] SOLID
		Received	09/13/07	Collected/Weight	07/24/07 12:15 58 g
% solids	100.0	% solids	100.0	Custody/SAF No	BC-119 [illegible]

ANALYTE	DUPLICATE pCi/g	2σ ERR (COUNT)	MDA pCi/g	ERL pCi/g	QUALI-FIERS	TEST	ORIGINAL pCi/g	2σ ERR (COUNT)	MDA pCi/g	QUALI-FIERS	RPD %	3σ TOT	DER σ
Cesium 134	U		0.051		U	GAM	U		0.062	U			0.7

QC-DUP#1 [illegible]

Columbia River Component of the RCBRA Tissues

Lab id EBERLINE
Protocol Hanford
Version Ver 1.0
Form DVD-DUP
Version 3.06
Report date 11/10/07

EBERLINE ANALYTICAL/RICHMOND

SAMPLE DELIVERY GROUP X1705

7474-025

J155V7

DUPLICATE

SDG 7474

Contact [illegible]

DUPLICATE	**ORIGINAL**	Client/Case no Hanford	SDG X1705
		Contract No. [illegible]	
Lab sample id [illegible]	Lab sample id [illegible]	Client sample id J155V7	
Dept sample id 7474-025	Dept sample id 7474-017	Location/Matrix [illegible]	[illegible]
	Received 09/30/09	Collected/Weight 09/21/09 14:20	250 g
% solids 100.0	% solids 100.0	Custody/SAF No RC-110-858	RC-110

ANALYTE	DUPLICATE pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALIFIERS	TEST	ORIGINAL pCi/g	2σ ERR (COUNT)	MDA pCi/g	QUALIFIERS	RPD %	1σ TOT	DER σ
Technetium 99	0.001	0.16	0.393	15.0	U	TC	0.052	0.13	0.[illegible]	U			0.5

QC-BATCH: 71275

Columbia River Component of the RCBRA - Tissues

DUPL/BATCH

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SUMMARY DATA SECTION

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Lab id EBERLINE

Protocol Hanford

Version Ver 1.0

Form DVD-DUP

Version 3.06

Report date 11/10/09

EBERLINE ANALYTICAL/RICHMOND

SAMPLE DELIVERY GROUP R1785

7473-022

Method Blank

METHOD BLANK

SDG	7473	Client/Case no	Hanford
Contact	N. Joseph Verville	Contract No.	200W235A00
			SDG K1795
Lab sample id	R909131-22	Client sample id	Method Blank
Dept sample id	7473-022	Material/Matrix	SOLID
		SAF No	RC 118

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Tritium	10028-17-8	-2.04	4.3	7.60	400	U	H
Carbon 14	14762-75-5	2.02	3.8	6.28	50.0	U	C
Total Strontium	SR-RAD	-0.057	0.14	0.296	1.00	U	SR
Technetium 99	14133-76-7	0.020	0.16	0.481	15.0	U	TC
Thorium 228	14274-82-9	0	0.16	0.334	1.00	U	TH
Thorium 230	14269-63-7	-0.136	0.27	0.553	1.00	U	TH
Thorium 232	TH-232	0	0.054	0.207	1.00	U	TH
Uranium 233/234	U-233/234	0.029	0.058	0.222	1.00	U	U
Uranium 235	15117-96-1	0.035	0.070	0.260	1.00	U	U
Uranium 238	U-238	0	0.058	0.222	1.00	U	U
Plutonium 238	13981-16-3	0	0.31	0.908	1.00	U	PU
Plutonium 239/240	PU-239/240	0.082	0.16	0.628	1.00	U	PU
Potassium 40	13966-00-2	U		1.52		U	GAM
Cobalt 60	10198-40-0	U		0.150	0.050	U	GAM
Cesium 137	10045-97-3	U		0.138	0.100	U	GAM
Radium 226	13982-63-3	U		0.241	0.100	U	GAM
Radium 228	15262-20-1	U		0.556	0.200	U	GAM
Europium 152	14683-23-9	U		0.355	0.100	U	GAM
Europium 154	15585-10-1	U		0.469	0.100	U	GAM
Europium 155	14391-16-3	U		0.255	0.100	U	GAM
Thorium 228	14274-82-9	U		0.218		U	GAM
Thorium 232	TH-232	U		0.556		U	GAM
Uranium 235	15117-96-1	U		0.619		U	GAM
Uranium 238	U-238	U		15.0		U	GAM
Americium 241	14596-10-2	U		0.154		U	GAM
Beryllium 7	13966-02-4	U		0.986		U	GAM
Ruthenium 106	13967-48-1	U		1.11		U	GAM
Antimony 125	14234-35-6	U		0.309		U	GAM
Cesium 134	13967-70-9	U		0.155		U	GAM

Lab id	EBERLINE
Protocol	Hanford1
Version	Ver 1.0
Form	DVD-DS
Version	3.06
Report date	11/12/09

METHOD BLANKS
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EBERLINE ANALYTICAL/RICHMOND

SAMPLE DELIVERY GROUP K1785

7473-022

Method Blank

BLANK, cont.

SDG 7473

Contact N. Joseph Verville

Client/Case no Hanford SDG K1785

Contract No. 300W035A00

Lab sample id 9909111-27

Dept sample id 7473-022

Client sample id Method Blank

Material/Matrix SOLID

SAP No RC-138

QC-BLANK #71163

Lab id EBRLNE

Protocol Hanford1

Version Ver 1.0

Form DVD-DS

Version 3.06

Report date 11/12/99

EBERLINE ANALYTICAL/RICHMOND

SAMPLE DELIVERY GROUP [illegible]

[illegible]

Lab Control Sample

LAB CONTROL SAMPLE

SDG [illegible]

Contact N. Joseph Verville

Lab sample id [illegible]

Dept sample id [illegible]

Client/Case no Hanford [illegible]

Contract no [illegible]

Client sample id Lab Control Sample

Material/Matrix [illegible] SOLID

SAF no [illegible]

ANALYTE	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALIFIERS	TEST	ADDED pCi/g	2σ ERR pCi/g	REC %	3σ LMTS (TOTAL)	PROTOCOL LIMITS
Tritium	[illegible]	22	[illegible]	400		[illegible]	[illegible]	46	102	[illegible]	[illegible]
Carbon 14	2600	41	[illegible]	[illegible]		[illegible]	[illegible]	110	[illegible]	87-111	80-120
Total Strontium	[illegible]	0.41	0.242	1.00		SR	[illegible]	[illegible]	100	[illegible]	80-120
Technetium 99	[illegible]	2.0	[illegible]	[illegible]		TC	109	4.4	[illegible]	[illegible]	80-120
Thorium 230	[illegible]	[illegible]	0.614	1.00		TH	[illegible]	[illegible]	[illegible]	[illegible]	80-120
Uranium 233/234	[illegible]	[illegible]	[illegible]	[illegible]		U	4.45	[illegible]	98	[illegible]	80-120
Uranium 235	[illegible]	[illegible]	[illegible]	1.00		U	[illegible]	0.14	[illegible]	60-140	80-120
Uranium 238	[illegible]	[illegible]	[illegible]	1.00		U	[illegible]	[illegible]	[illegible]	[illegible]	80-120
Plutonium 238	[illegible]	[illegible]	0.280	1.00		PU	[illegible]	[illegible]	98	[illegible]	80-120
Plutonium 239/240	[illegible]	[illegible]	[illegible]	1.00		PU	[illegible]	[illegible]	[illegible]	[illegible]	80-120
Cobalt 60	[illegible]	[illegible]	[illegible]	0.050		GAM	[illegible]	[illegible]	[illegible]	[illegible]	80-120
Cesium 137	[illegible]	[illegible]	[illegible]	0.100		GAM	[illegible]	[illegible]	104	[illegible]	80-120

QC LCS [illegible]

LAB CONTROL SAMPLES

Page 1

SUMMARY DATA SECTION

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Lab id EBERLINE

Protocol Hanford

Version Ver 1.5

Form DVD-LCS

Version [illegible]

Report date [illegible]

EBERLINE ANALYTICAL/RICHMOND

SAMPLE DELIVERY GROUP [illegible]

DUPLICATE

SDG [illegible]
Contact [illegible]

Client/Case no Hanford [illegible]
Contract No. [illegible]

DUPLICATE
Lab sample id [illegible]
Dept sample id [illegible]
% solids 100.0

ORIGINAL
Lab sample id [illegible]
Dept sample id [illegible]
Received [illegible]
% solids 100.0

Client sample id [illegible]
Location/Matrix [illegible]
Collected/Volume [illegible]
Custody/SAF No [illegible]

ANALYTE	DUPLICATE pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALIFIERS	TEST	ORIGINAL pCi/g	2σ ERR (COUNT)	MDA pCi/g	QUALIFIERS	RPD %	3σ TOT	DER σ
Tritium	0.[illegible]	2.0	2.49	400	U	H	0.21	1.9	2.42	U			1.0
Carbon 14	0	2.9	4.41	50.0	U	C	0.490	2.8	4.79	U			4.2
Total Strontium	0.148	0.15	0.257	1.00	U	SR	-0.067	0.10	0.204	U			1.3
Technetium 99	-0.05[illegible]	0.24	0.421	15.0	U	TC	0.014	0.24	0.384	U			0.6
Thorium 228	0.068	0.14	0.1[illegible]	1.00	U	TH	0.012	0.19	0.197	U			0.1
Thorium 230	0.190	0.27	0.476	1.00	U	TH	0.107	0.26	0.616	U			0.2
Thorium 232	0	0.068	0.260	1.00	U	TH	0	0.064	0.246	U			0
Uranium 233/234	0.041	0.062	0.247	1.00	U	U	0	0.052	0.197	U			0.8
Uranium 235	0	0.035	0.247	1.00	U	U	0	0.062	0.219	U			0
Uranium 238	0	0.062	0.247	1.00	U	U	0	0.052	0.197	U			0
Plutonium 238	0.026	0.15	0.283	1.00	U	PU	0.003	0.034	0.066	U			0.4
Plutonium 239/240	0.026	0.053	0.134	1.00	U	PU	0.507	0.014	0.056	U			0.7
Potassium 40	1.61	0.54	0.100			GAM	2.52	0.45	0.241		11	50	2.0
Cobalt 60	0		0.011	0.050	U	GAM	0		0.012	U			0
Cesium 137	0		0.011	0.100	U	GAM	0		0.029	U			0.2
Radium 226	0		0.062	0.100	U	GAM	0		0.1[illegible]	U			0.7
Radium 228	0		0.141	0.200	U	GAM	0		0.117	U			0.1
Europium 152	0		0.384	0.100	U	GAM	0		0.076	U			0.1
Europium 154	0		0.101	0.100	U	GAM	0		0.091	U			0.2
Europium 155	0		0.067	0.100	U	GAM	0		0.064	U			0.1
Thorium 228	0		0.044		U	GAM	0		0.043	U			0
Thorium 232	0		0.161		U	GAM	0		0.117	U			0.1
Uranium 235	0		0.154		U	GAM	0		0.114	U			0.1
Uranium 238	0		1.57		U	GAM	0		1.78	U			0.1
Americium 241	0		0.134		U	GAM	0		0.012	U			1.4
Beryllium 7	0		0.129		U	GAM	0		0.143	U			0.1
Ruthenium 106	0		0.206		U	GAM	0		0.266	U			0.1
Antimony 125	0		0.074		U	GAM	0		0.064	U			0.2

DUPLICATES
Page 1
SUMMARY DATA SECTION
Page 17

Lab id EBERLINE
Protocol Hanford
Version Ver 1.0
Form DVD-DUP
Version 3.06
Report date [illegible]

EBERLINE ANALYTICAL/RICHMOND

SAMPLE DELIVERY GROUP [illegible]

[illegible]

[illegible]

DUPLICATE, cont.

SDG	[illegible]			Client/Case no	Hanford
Contact	[illegible]			Contract	[illegible]
	DUPLICATE		ORIGINAL		
Lab sample id	[illegible]	Lab sample id	[illegible]	Client sample id	[illegible]
Dept sample id	[illegible]	Dept sample id	[illegible]	Location/Matrix	[illegible]
		Received	[illegible]	Collected/Weight	[illegible]
% moisture	[illegible]	% moisture	[illegible]	Custody/Chain No	[illegible]

ANALYTE	DUPLICATE pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALIFIERS	TEST	ORIGINAL pCi/g	2σ ERR (COUNT)	MDA pCi/g	QUALIFIERS	RPD %	3σ TOT	DER σ
Cesium 134	U		0.036		U	GAM	U		[illegible]	U			[illegible]

QC [illegible]

Calculate lower component of the [illegible] [illegible]

DUPLICATES
Page 2
SUMMARY DATA SECTION
Page 16

Lab id [illegible]
Protocol Hanford
Version Ver 1.0
Form DVD DUP
Version 3.06
Report date [illegible]

F.3.1.4 SDG K1839

SAF-RC-118
Columbia River Component of the RCBRA – Tissues
FINAL VALIDATION PACKAGE

COMPLETE COPY OF VALIDATION PACKAGE TO:

Kathy Wendt H4-21

COMMENTS:

SDG K1839 **SAF-RC-118**

Date: 4 March 2010
To: Washington Closure Hanford (technical representative)
From: LLR Consulting
Project: Columbia River Component of the RCBRA - Tissue
Subject: Inorganic - Data Package No. K1839-LLI

INTRODUCTION

This memo presents the results of data validation on Data Package No. K1839 prepared by Lionville Laboratory Inc. (LLI). A list of samples validated along with the analyses reported and the method of analysis is provided in the following table.

Sample ID	Sample Date	Media	Validation	Date
J18WW9	11/18/09	Solid	C	See note 1
J18WX0	11/18/09	Solid	C	See note 1
J190T7	11/18/09	Solid	C	See note 1
J190T8	11/18/09	Solid	C	See note 1
J190T9	11/18/09	Solid	C	See note 1
J196H2	11/18/09	Solid	C	See note 1
J196H3	11/18/09	Solid	C	See note 1
J196H7	11/18/09	Solid	C	See note 1
J196H8	11/18/09	Solid	C	See note 1
J18WV4	11/17/09	Solid	C	See note 1
J18WV5	11/17/09	Solid	C	See note 1
J18WX5	11/17/09	Solid	C	See note 1
J18WX6	11/17/09	Solid	C	See note 1
J190R1	11/17/09	Solid	C	See note 1
J190R2	11/17/09	Solid	C	See note 1
J190R3	11/17/09	Solid	C	See note 1
J190V2	11/17/09	Solid	C	See note 1
J190V3	11/17/09	Solid	C	See note 1
J190V4	11/17/09	Solid	C	See note 1
J196D7	11/18/09	Solid	C	See note 1
J196D8	11/18/09	Solid	C	See note 1
J196J2	11/18/09	Solid	C	See note 1
J196J3	11/18/09	Solid	C	See note 1
J196K8	11/18/09	Solid	C	See note 1
J196K9	11/18/09	Solid	C	See note 1
J196Y1	11/18/09	Solid	C	See note 1
J196Y2	11/18/09	Solid	C	See note 1

1 - ICP metals (6010B) & mercury by 7471A.

Data validation was conducted in accordance with the Washington Closure Hanford (WCH) validation statement of work and the Remedial Investigation Work Plan for Hanford Site Releases to the Columbia River (DOE/RL 2008, Rev. 0, September 2008) Appendices 1 through 6 provide the following information as indicated below:

Appendix 1. Glossary of Data Reporting Qualifiers
Appendix 2. Summary of Data Qualification
Appendix 3. Qualified Data Summary and Annotated Laboratory Reports
Appendix 4. Laboratory Narrative and Chain-of-Custody Documentation
Appendix 5. Data Validation Supporting Documentation
Appendix 6. Additional Documentation Requested by Client

DATA QUALITY PARAMETERS

Holding Times

Analytical holding times for metals are assessed to ascertain whether the holding time requirements were met by the laboratory. The holding time requirements are as follows: Soil samples must be analyzed within 6 months for ICP metals and 28 days for mercury.

Due to the holding time being exceeded by greater than twice the limit, the mercury results in samples J18WW9, J18WX0, J190T7, J190T8, J1890T9, J196H2, J196H3, J196H7 and J196H8 were qualified as estimates and flagged "J".

All other holding times were acceptable.

Preparation (Method) Blanks

Preparation Blanks

At least one preparation blank, consisting of deionized distilled water processed through each sample preparation and analysis procedure, must be prepared and analyzed with every sample delivery group. In the case of positive blank results, samples with digestate concentrations less than five times the preparation blank value have had their associated values qualified as non-detected and flagged "UJ". Samples with concentrations of greater than five times the highest blank concentration do not require qualification.

In the case of negative blank results, if the absolute value exceeds the contract required detection limit (CRDL), all nondetects are rejected and flagged "UR" and all detects that are less than ten times the absolute value of the associated preparation blank result are qualified as estimates and flagged "J". If the absolute value of the negative preparation blank is greater than the instrument detection limit (IDL) and less than or equal to the CRDL, all nondetects are qualified as estimates and flagged "UJ" and all detects less than ten times the absolute value of the blank are qualified as estimates and flagged "J". If the sample results are greater than ten times the absolute value of the preparation blank, no qualification is necessary.

Due to method blank contamination, the tin results in samples J18WV4, J190V4, J190V3, J190R2, J190V2, J190R1, J18WX5, J18WW9, J18WX0, J190T7,

J190T8, J1890T9, J196H2, J196H3, J196H7 and J196H8 were qualified as estimates and flagged "UJ".

All other preparation blank results were acceptable.

Field (Equipment) Blank

No field blanks were submitted for analysis.

- **Accuracy**

Matrix Spike and Laboratory Control Sample

Matrix spike (MS) and laboratory control sample (LCS) analyses are used to assess the analytical accuracy of the reported data. The matrix spike is used to assess the effect of the matrix on the ability to accurately quantify sample concentrations. Recoveries must fall within the range of 70% to 130%. Samples with a recovery of less than 30% and a sample result below the IDL are rejected and flagged "UR". Samples with a recovery of 30% to 69% and a sample result less than the IDL are qualified "UJ". Samples with a recovery of greater than 130% or less than 70% and a sample result greater than the IDL are qualified as estimates and flagged "J". Finally, for samples with a recovery greater than 130% and a sample result less than the IDL, no qualification is required.

Due to a matrix spike recovery outside QC limits, the iron (69%), potassium (55%), tin (67%) and zinc (69%) results in samples J18WW9, J18WX0, J190T7, J190T8, J1890T9, J196H2, J196H3, J196H7 and J196H8 were qualified as estimates and flagged "J".

Due to a matrix spike recovery outside QC limits (149%), the mercury result in samples J18WV5, J18WX6, J18WV4, J18WX5, J190R1, J190V2, J190R2, J190V3, J190R3, J190V4, J196D7, J196D8, J196J2, J196J3, J196K8, J196K9, J196Y2 and J196Y1 were qualified as estimates and flagged "J".

Due to LCS recoveries outside QC limits, the silicon (56% & 56%) result in all samples were qualified as estimates and flagged "J".

All other accuracy results were acceptable.

- **Precision**

Laboratory Duplicate Samples

Analytical precision is expressed by the relative percent differences (RPD) between the recoveries of matrix spike duplicate (MSD) analyses performed on a sample in the analytical batch. Precision may alternatively be assessed using unspiked duplicate analyses performed on a sample in the analytical batch. If both sample and replicate activities (concentrations) are greater than five times the CRDL and the RPD is less than 30%, no qualification is required. If either activity (concentration) is less than five times the CRDL, the RPD control limit is less than or equal to two times the CRDL. If the RPD is outside the applicable control limit, associated results are qualified as estimated detects or estimated non-detects.

Due to RPDs outside QC limits, all calcium (63%), phosphorous (41%) and strontium (65%) results in samples J18WV5, J18WX6, J18WV4, J18WX5, J190R1, J190V2, J190R2, J190V3, J190R3, J190V4, J196D7, J196D8, J196J2, J196J3, J196K8, J196K9, J196Y2 and J196Y1 were qualified as estimates and flagged "J".

All other laboratory duplicate results were acceptable.

Field Duplicate

No field duplicates were submitted for analysis.

Analytical Detection Levels

Reported analytical detection levels are compared against the 100 and 300 Area RQLs to ensure that laboratory detection levels meet the required criteria. All undetected beryllium results exceeded the RQL. Under the WCH statement of work, no qualification is required. All other results met the RQL.

Completeness

Data package No. K1639 was submitted for validation and verified for completeness. Completeness is based on the percentage of data determined to be valid (i.e., not rejected). The completion percentage was 100%.

MAJOR DEFICIENCIES

None found.

MINOR DEFICIENCIES

The following minor deficiencies were noted:

- Due to the holding time being exceeded by greater than twice the limit, the mercury results in samples J18WV4, J18WW9, J18WX0, J190T7, J190T8, J1890T9, J196H2, J196H3, J196H7 and J196H8 were qualified as estimates and flagged "J".
- Due to method blank contamination, the tin results in samples J190V4, J190V3, J190R2, J190V2, J190R1, J18WX5, J18WW9, J18WX0, J190T7, J190T8, J1890T9, J196H2, J196H3, J196H7 and J196H8 were qualified as

estimates and flagged "UJ".

- Due to a matrix spike recovery outside QC limits, the iron (69%), potassium (55%), tin (67%) and zinc (69%) results in samples J18WW9, J18WX0, J190T7, J190T8, J1890T9, J196H2, J196H3, J196H7 and J196H8 were qualified as estimates and flagged "J"

- Due to a matrix spike recovery outside QC limits (149%), the mercury result in samples J18WV5, J18WX6, J18WV4, J18WX5, J190R1, J190V2, J190R2, J190V3, J190R3, J190V4, J196D7, J196D8, J196J2, J196J3, J196K8, J196K9, J196Y2 and J196Y1 were qualified as estimates and flagged "J".

- Due to LCS recoveries outside QC limits, the silicon (56% & 56%) result in all samples were qualified as estimates and flagged "J".

- Due to RPDs outside QC limits, all calcium (63%), phosphorous (41%) and strontium (65%) results in samples J18WV5, J18WX6, J18WV4, J18WX5, J190R1, J190V2, J190R2, J190V3, J190R3, J190V4, J196D7, J196D8, J196J2, J196J3, J196K8, J196K9, J196Y2 and J196Y1 were qualified as estimates and flagged "J".

Data flagged "J" indicates that the associated concentration is an estimate, but under the WCH statement of work, the data may be usable for decision-making purposes. All other validated results are considered accurate within the standard error associated with the methods

All undetected beryllium results exceeded the RQL. Under the WCH statement of work, no qualification is required.

REFERENCES

Washington Closure Hanford Contract #S00W307A00 (March 2008), *Data Validation Services.*

DOE/RL-2008-11, Rev. 0, September 2008, *Remedial Investigation Work Plan for Hanford Site Releases to the Columbia River.*

Appendix 1

Glossary of Data Reporting Qualifiers

Qualifiers which may be applied by data validators in compliance with WCH validation SOW are as follows:

U - Indicates the compound or analyte was analyzed for and not detected in the sample. The value reported is the sample quantitation limit corrected for sample dilution and moisture content by the laboratory.

UJ - Indicates the compound or analyte was analyzed for and not detected in the sample. Due to a minor QC deficiency identified during the data validation, the associated quantitation limit is an estimate.

J - Indicates the compound or analyte was analyzed for and detected. Due to a minor QC deficiency identified during the data validation, the associated concentration is an estimate, but the data are usable for decision-making purposes.

BJ - Applied to inorganic analyses only. Indicates the analyte concentration was greater than the IDL but less than the CRDL and is considered an estimated value.

R - Indicates the compound or analyte was analyzed for, detected, and due to an identified major QC deficiency, the data are unusable.

UR - Indicates the compound or analyte was analyzed for and not detected in the sample. Additionally, the data is unusable due to an identified major QC deficiency.

NJ - Indicates presumptive evidence of a compound at an estimated value. The data may not be valid for some specific applications (i.e., usable for decision-making purposes).

N - Indicates presumptive evidence of a compound. The data may not be valid for some specific applications (i.e., usable for decision-making purposes).

Appendix 2

Summary of Data Qualification

METALS DATA QUALIFICATION SUMMARY*

SDG: K1839	**REVIEWER: ELR**	**Project: RCBRA**	**PAGE 1 OF 1**
COMPOUND	QUALIFIER	SAMPLES AFFECTED	REASON
Mercury	J	J18WW9, J18WX0 J190T7, J190T8 J1890T9, J196H2 J196H3, J196H7 J196H8	Hold time
Tin	UJ	J190V4, J190V3 J190R2, J190V2 J190R1, J18WX5 J18WW9, J18WX0 J190T7, J190T8 J1890T9, J196H2 J196H3, J196H7 J196H8, J18WV4	Method blank contamination
Iron Potassium Tin Zinc	J	J18WW9, J18WX0 J190T7, J190T8 J1890T9, J196H2 J196H3, J196H7 J196H8	MS recovery
Mercury	J	J18WV5, J18WX6 J18WV4, J18WX5 J190R1, J190V2 J190R2, J190V3 J190R3, J190V4 J196D7, J196D8 J196J2, J196J3 J196K8, J196K9 J196Y2, J196Y1	MS recovery
Silicon	J	All	LCS recovery
Calcium Phosphorous Strontium	J	J18WV5, J18WX6 J18WV4, J18WX5 J190R1, J190V2 J190R2, J190V3 J190R3, J190V4 J196D7, J196D8 J196J2, J196J3 J196K8, J196K9 J196Y2, J196Y1	RPD

* - The Qualified Data Summary Table includes laboratory applied "U" qualifiers not specifically identified here. The laboratory applied "U" qualifiers are included to minimize misinterpretation of results contained in the table.

Appendix 3

Qualified Data Summary and Annotated Laboratory Reports

564 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

WC Hanford, Inc.	Project: RC-118	
2620 Fermi Avenue	Project Number: K1839	Reported:
Richland WA, 99354	Project Manager: Joan Kessner	01/13/2010 17:15

J18WW9
1001022-01 (Fish)

JK 3/3/10

Lionville Laboratory

Metals by SW846 6000/7000 series

Analyte	Result and Qualifier			Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Aluminum	4.90	U		4.90	mg/kg	1	1001063	01/12/2010	01/13/2010	6010B
Antimony	0.588	U		0.588	mg/kg	1	1001063	01/12/2010	01/13/2010	6010B
Arsenic	0.980	U		0.980	mg/kg	1	1001063	01/12/2010	01/13/2010	6010B
Barium	0.490	U		0.490	mg/kg	1	1001063	01/12/2010	01/13/2010	6010B
Beryllium	0.196	U		0.196	mg/kg	1	1001063	01/12/2010	01/13/2010	6010B
Bismuth	9.80	U		9.80	mg/kg	1	1001063	01/12/2010	01/13/2010	6010B
Boron	1.96	U		1.96	mg/kg	1	1001063	01/12/2010	01/13/2010	6010B
Cadmium	**0.159**	B		0.196	mg/kg	1	1001063	01/12/2010	01/13/2010	6010B
Calcium	**149**			98.0	mg/kg	1	1001063	01/12/2010	01/13/2010	6010B
Chromium	0.196	U		0.196	mg/kg	1	1001063	01/12/2010	01/13/2010	6010B
Cobalt	1.96	U		1.96	mg/kg	1	1001063	01/12/2010	01/13/2010	6010B
Copper	**4.04**			0.980	mg/kg	1	1001063	01/12/2010	01/13/2010	6010B
Iron	**122**		J	19.6	mg/kg	1	1001063	01/12/2010	01/13/2010	6010B
Lead	0.490	U		0.490	mg/kg	1	1001063	01/12/2010	01/13/2010	6010B
Lithium	2.45	U		2.45	mg/kg	1	1001063	01/12/2010	01/13/2010	6010B
Magnesium	**159**			73.5	mg/kg	1	1001063	01/12/2010	01/13/2010	6010B
Manganese	**0.921**	B		4.90	mg/kg	1	1001063	01/12/2010	01/13/2010	6010B
Molybdenum	1.96	U		1.96	mg/kg	1	1001063	01/12/2010	01/13/2010	6010B
Nickel	3.92	U		3.92	mg/kg	1	1001063	01/12/2010	01/13/2010	6010B
Phosphorus	**2100**			49.0	mg/kg	1	1001063	01/12/2010	01/13/2010	6010B
Potassium	**2520**		J	392	mg/kg	1	1001063	01/12/2010	01/13/2010	6010B
Selenium	**1.23**			0.980	mg/kg	1	1001063	01/12/2010	01/13/2010	6010B
Silicon	**3.59**		J	1.96	mg/kg	1	1001063	01/12/2010	01/13/2010	6010B
Silver	0.196	U		0.196	mg/kg	1	1001063	01/12/2010	01/13/2010	6010B
Sodium	**1340**			49.0	mg/kg	1	1001063	01/12/2010	01/13/2010	6010B
Strontium	**0.175**	B		0.980	mg/kg	1	1001063	01/12/2010	01/13/2010	6010B
Thallium	0.490	U		0.490	mg/kg	1	1001063	01/12/2010	01/13/2010	6010B
Tin	**1.21**	B	UJ	9.80	mg/kg	1	1001063	01/12/2010	01/13/2010	6010B
Uranium	19.6	U		19.6	mg/kg	1	1001063	01/12/2010	01/13/2010	6010B
Vanadium	**0.212**	B		2.45	mg/kg	1	1001063	01/12/2010	01/13/2010	6010B
Zinc	**31.5**		J	9.80	mg/kg	1	1001063	01/12/2010	01/13/2010	6010B
Mercury	**0.136**		J	0.0265	mg/kg	1	1001073	01/13/2010	01/13/2010	7471A

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

WC Hanford, Inc 2620 Fermi Avenue Richland WA, 99354	Project: RC-118 Project Number: K1839 Project Manager: Joan Kessner	Reported: 01/15/2010 17:15

J18WX0
1001022-02 (Fish)

K 3/3/10

Analyte	Result and Qualifier	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method

Lionville Laboratory

Metals by SW846 6000/7000 series

Analyte	Result and Qualifier	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Aluminum	3.21 U	3.21	mg/kg	1	1001063	01/12/2010	01/13/2010	6010B
Antimony	0.385 U	0.385	mg/kg	1	1001063	01/12/2010	01/13/2010	6010B
Arsenic	0.641 U	0.641	mg/kg	1	1001063	01/12/2010	01/13/2010	6010B
Barium	0.321 U	0.321	mg/kg	1	1001063	01/12/2010	01/13/2010	6010B
Beryllium	0.128 U	0.128	mg/kg	1	1001063	01/12/2010	01/13/2010	6010B
Bismuth	6.41 U	6.41	mg/kg	1	1001063	01/12/2010	01/13/2010	6010B
Boron	1.28 U	1.28	mg/kg	1	1001063	01/12/2010	01/13/2010	6010B
Cadmium	0.254	0.128	mg/kg	1	1001063	01/12/2010	01/13/2010	6010B
Calcium	132	64.1	mg/kg	1	1001063	01/12/2010	01/13/2010	6010B
Chromium	0.128 U	0.128	mg/kg	1	1001063	01/12/2010	01/13/2010	6010B
Cobalt	1.28 U	1.28	mg/kg	1	1001063	01/12/2010	01/13/2010	6010B
Copper	4.26	0.641	mg/kg	1	1001063	01/12/2010	01/13/2010	6010B
Iron	134 J	12.8	mg/kg	1	1001063	01/12/2010	01/13/2010	6010B
Lead	0.321 U	0.321	mg/kg	1	1001063	01/12/2010	01/13/2010	6010B
Lithium	1.60 U	1.60	mg/kg	1	1001063	01/12/2010	01/13/2010	6010B
Magnesium	349	48.1	mg/kg	1	1001063	01/12/2010	01/13/2010	6010B
Manganese	0.931 B	3.21	mg/kg	1	1001063	01/12/2010	01/13/2010	6010B
Molybdenum	1.28 U	1.28	mg/kg	1	1001063	01/12/2010	01/13/2010	6010B
Nickel	2.56 U	2.56	mg/kg	1	1001063	01/12/2010	01/13/2010	6010B
Phosphorus	2020	32.1	mg/kg	1	1001063	01/12/2010	01/13/2010	6010B
Potassium	2260 J	256	mg/kg	1	1001063	01/12/2010	01/13/2010	6010B
Selenium	1.39	0.641	mg/kg	1	1001063	01/12/2010	01/13/2010	6010B
Silicon	2.48 J	1.28	mg/kg	1	1001063	01/12/2010	01/13/2010	6010B
Silver	0.128 U	0.128	mg/kg	1	1001063	01/12/2010	01/13/2010	6010B
Sodium	1220	32.1	mg/kg	1	1001063	01/12/2010	01/13/2010	6010B
Strontium	0.139 B	0.641	mg/kg	1	1001063	01/12/2010	01/13/2010	6010B
Thallium	0.321 U	0.321	mg/kg	1	1001063	01/12/2010	01/13/2010	6010B
Tin	0.787 B UJ	6.41	mg/kg	1	1001063	01/12/2010	01/13/2010	6010B
Uranium	12.8 U	12.8	mg/kg	1	1001063	01/12/2010	01/13/2010	6010B
Vanadium	1.60 U	1.60	mg/kg	1	1001063	01/12/2010	01/13/2010	6010B
Zinc	40.5 J	6.41	mg/kg	1	1001063	01/12/2010	01/13/2010	6010B
Mercury	0.244 J	0.0290	mg/kg	1	1001073	01/13/2010	01/13/2010	7471A

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WC Hanford, Inc	Project: RG-118	
2620 Fermi Avenue	Project Number: K1839	Reported:
Richland WA, 99354	Project Manager: Joan Kessner	01/13/2010 17:15

J190F17
1001022-03 (Fish)

✓ 3/3/10

Analyte	Result and Qualifier		Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
			Lionville Laboratory						
Metals by SW846 6000/7000 series									
Aluminum	3.29	U	3.29	mg/kg	1	1.001063	01/12/2010	01/13/2010	6010B
Antimony	0.395	U	0.395	mg/kg	1	1.001063	01/12/2010	01/13/2010	6010B
Arsenic	0.658	U	0.658	mg/kg	1	1.001063	01/12/2010	01/13/2010	6010B
Barium	**0.116**	B	0.329	mg/kg	1	1.001063	01/12/2010	01/13/2010	6010B
Beryllium	0.132	U	0.132	mg/kg	1	1.001063	01/12/2010	01/13/2010	6010B
Bismuth	6.58	U	6.58	mg/kg	1	1.001063	01/12/2010	01/13/2010	6010B
Boron	1.32	U	1.32	mg/kg	1	1.001063	01/12/2010	01/13/2010	6010B
Cadmium	**2.35**		0.132	mg/kg	1	1.001063	01/12/2010	01/13/2010	6010B
Calcium	**97.4**		65.8	mg/kg	1	1.001063	01/12/2010	01/13/2010	6010B
Chromium	**0.190**		0.132	mg/kg	1	1.001063	01/12/2010	01/13/2010	6010B
Cobalt	1.32	U	1.32	mg/kg	1	1.001063	01/12/2010	01/13/2010	6010B
Copper	**1.33**		0.658	mg/kg	1	1.001063	01/12/2010	01/13/2010	6010B
Iron	**119**	J	13.2	mg/kg	1	1.001063	01/12/2010	01/13/2010	6010B
Lead	0.329	U	0.329	mg/kg	1	1.001063	01/12/2010	01/13/2010	6010B
Lithium	1.64	U	1.64	mg/kg	1	1.001063	01/12/2010	01/13/2010	6010B
Magnesium	**112**		49.3	mg/kg	1	1.001063	01/12/2010	01/13/2010	6010B
Manganese	**0.938**	B	3.29	mg/kg	1	1.001063	01/12/2010	01/13/2010	6010B
Molybdenum	1.32	U	1.32	mg/kg	1	1.001063	01/12/2010	01/13/2010	6010B
Nickel	**0.719**	B	2.63	mg/kg	1	1.001063	01/12/2010	01/13/2010	6010B
Phosphorus	**2000**		32.9	mg/kg	1	1.001063	01/12/2010	01/13/2010	6010B
Potassium	**2110**	J	263	mg/kg	1	1.001063	01/12/2010	01/13/2010	6010B
Selenium	**0.870**		0.658	mg/kg	1	1.001063	01/12/2010	01/13/2010	6010B
Silicon	**2.91**	J	1.32	mg/kg	1	1.001063	01/12/2010	01/13/2010	6010B
Silver	0.132	U	0.132	mg/kg	1	1.001063	01/12/2010	01/13/2010	6010B
Sodium	**1180**		32.9	mg/kg	1	1.001063	01/12/2010	01/13/2010	6010B
Strontium	**0.140**	B	0.658	mg/kg	1	1.001063	01/12/2010	01/13/2010	6010B
Thallium	0.329	U	0.329	mg/kg	1	1.001063	01/12/2010	01/13/2010	6010B
Tin	**0.759**	B UJ	6.58	mg/kg	1	1.001063	01/12/2010	01/13/2010	6010B
Uranium	13.2	U	13.2	mg/kg	1	1.001063	01/12/2010	01/13/2010	6010B
Vanadium	1.64	U	1.64	mg/kg	1	1.001063	01/12/2010	01/13/2010	6010B
Zinc	**24.2**	J	6.58	mg/kg	1	1.001063	01/12/2010	01/13/2010	6010B
Mercury	**0.0335**	J	0.0231	mg/kg	1	1.001073	01/13/2010	01/13/2010	7471A

WC-Hanford, Inc	Project: RC-118	
2620 Fermi Avenue	Project Number: K1839	Reported:
Richland WA, 99354	Project Manager: Joan Kessner	01/15/2010 17:1

J190T8

1001022-04 (Fish)

V 3/3/10

Lionville Laboratory

Metals by SW846 6000/7000 series

Analyte	Result and Qualifier		Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Me
Aluminum	3.85	U	3.85	mg/kg	1	1001063	01/12/2010	01/13/2010	6
Antimony	0.462	U	0.462	mg/kg	1	1001063	01/12/2010	01/13/2010	6
Arsenic	0.769	U	0.769	mg/kg	1	1001063	01/12/2010	01/13/2010	6
Barium	**0.102**	B	0.385	mg/kg	1	1001063	01/12/2010	01/13/2010	6
Beryllium	0.154	U	0.154	mg/kg	1	1001063	01/12/2010	01/13/2010	6
Bismuth	7.69	U	7.69	mg/kg	1	1001063	01/12/2010	01/13/2010	6
Boron	1.54	U	1.54	mg/kg	1	1001063	01/12/2010	01/13/2010	6
Cadmium	**1.65**		0.154	mg/kg	1	1001063	01/12/2010	01/13/2010	6
Calcium	**126**		76.9	mg/kg	1	1001063	01/12/2010	01/13/2010	6
Chromium	0.154	U	0.154	mg/kg	1	1001063	01/12/2010	01/13/2010	6
Cobalt	1.54	U	1.54	mg/kg	1	1001063	01/12/2010	01/13/2010	6
Copper	**2.84**		0.769	mg/kg	1	1001063	01/12/2010	01/13/2010	6
Iron	**169**	J	15.4	mg/kg	1	1001063	01/12/2010	01/13/2010	6
Lead	0.385	U	0.385	mg/kg	1	1001063	01/12/2010	01/13/2010	6
Lithium	1.92	U	1.92	mg/kg	1	1001063	01/12/2010	01/13/2010	6
Magnesium	**126**		57.7	mg/kg	1	1001063	01/12/2010	01/13/2010	6
Manganese	**4.15**		3.85	mg/kg	1	1001063	01/12/2010	01/13/2010	6
Molybdenum	1.54	U	1.54	mg/kg	1	1001063	01/12/2010	01/13/2010	6
Nickel	3.08	U	3.08	mg/kg	1	1001063	01/12/2010	01/13/2010	6
Phosphorus	**2060**		38.5	mg/kg	1	1001063	01/12/2010	01/13/2010	6
Potassium	**2110**	J	308	mg/kg	1	1001063	01/12/2010	01/13/2010	6
Selenium	**0.894**		0.769	mg/kg	1	1001063	01/12/2010	01/13/2010	6
Silicon	**4.10**	J	1.54	mg/kg	1	1001063	01/12/2010	01/13/2010	6
Silver	0.154	U	0.154	mg/kg	1	1001063	01/12/2010	01/13/2010	6
Sodium	**1070**		38.5	mg/kg	1	1001063	01/12/2010	01/13/2010	6
Strontium	**0.208**	B	0.769	mg/kg	1	1001063	01/12/2010	01/13/2010	6
Thallium	0.385	U	0.385	mg/kg	1	1001063	01/12/2010	01/13/2010	6
Tin	**0.865**	B UJ	7.69	mg/kg	1	1001063	01/12/2010	01/13/2010	6
Uranium	15.4	U	15.4	mg/kg	1	1001063	01/12/2010	01/13/2010	6
Vanadium	1.92	U	1.92	mg/kg	1	1001063	01/12/2010	01/13/2010	6
Zinc	**22.9**	J	7.69	mg/kg	1	1001063	01/12/2010	01/13/2010	6
Mercury	**0.0361**	J	0.0257	mg/kg	1	1001073	01/13/2010	01/13/2010	6

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WC Hanford, Inc 2620 Fermi Avenue Richland WA, 99354	Project: RC-118 Project Number: K1839 Project Manager: Joan Kessner	Reported: 01/15/2010 17:15

J190T9
1001022-05 (Fish)

K 3/3/10

Analyte	Result and Qualifier	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method

Lionville Laboratory

Metals by SW846 6000/7000 series

Analyte	Result and Qualifier	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Aluminum	3.38 U	3.38	mg/kg	1	L001063	01/12/2010	01/13/2010	6010B
Antimony	0.405 U	0.405	mg/kg	1	L001063	01/12/2010	01/13/2010	6010B
Arsenic	0.676 U	0.676	mg/kg	1	L001063	01/12/2010	01/13/2010	6010B
Barium	**0.0985 B**	0.338	mg/kg	1	L001063	01/12/2010	01/13/2010	6010B
Beryllium	0.135 U	0.135	mg/kg	1	L001063	01/12/2010	01/13/2010	6010B
Bismuth	6.76 U	6.76	mg/kg	1	L001063	01/12/2010	01/13/2010	6010B
Boron	1.35 U	1.35	mg/kg	1	L001063	01/12/2010	01/13/2010	6010B
Cadmium	**0.855**	0.135	mg/kg	1	L001063	01/12/2010	01/13/2010	6010B
Calcium	**117**	67.6	mg/kg	1	L001063	01/12/2010	01/13/2010	6010B
Chromium	0.135 U	0.135	mg/kg	1	L001063	01/12/2010	01/13/2010	6010B
Cobalt	1.35 U	1.35	mg/kg	1	L001063	01/12/2010	01/13/2010	6010B
Copper	**6.16**	0.676	mg/kg	1	L001063	01/12/2010	01/13/2010	6010B
Iron	**135** J	13.5	mg/kg	1	L001063	01/12/2010	01/13/2010	6010B
Lead	0.338 U	0.338	mg/kg	1	L001063	01/12/2010	01/13/2010	6010B
Lithium	1.69 U	1.69	mg/kg	1	L001063	01/12/2010	01/13/2010	6010B
Magnesium	**150**	50.7	mg/kg	1	L001063	01/12/2010	01/13/2010	6010B
Manganese	**3.97**	1.08	mg/kg	1	L001063	01/12/2010	01/13/2010	6010B
Molybdenum	**0.214 B**	1.35	mg/kg	1	L001063	01/12/2010	01/13/2010	6010B
Nickel	2.70 U	2.70	mg/kg	1	L001063	01/12/2010	01/13/2010	6010B
Phosphorus	**2440**	33.8	mg/kg	1	L001063	01/12/2010	01/13/2010	6010B
Potassium	**2280** J	270	mg/kg	1	L001063	01/12/2010	01/13/2010	6010B
Selenium	**1.42**	0.676	mg/kg	1	L001063	01/12/2010	01/13/2010	6010B
Silicon	**5.37** J	1.35	mg/kg	1	L001063	01/12/2010	01/13/2010	6010B
Silver	0.135 U	0.135	mg/kg	1	L001063	01/12/2010	01/13/2010	6010B
Sodium	**1290**	33.8	mg/kg	1	L001063	01/12/2010	01/13/2010	6010B
Strontium	**0.275 B**	0.676	mg/kg	1	L001063	01/12/2010	01/13/2010	6010B
Thallium	0.338 U	0.338	mg/kg	1	L001063	01/12/2010	01/13/2010	6010B
Tin	**0.704 B** UJ	6.76	mg/kg	1	L001063	01/12/2010	01/13/2010	6010B
Uranium	13.5 U	13.5	mg/kg	1	L001063	01/12/2010	01/13/2010	6010B
Vanadium	1.69 U	1.69	mg/kg	1	L001063	01/12/2010	01/13/2010	6010B
Zinc	**26.3** J	6.76	mg/kg	1	L001063	01/12/2010	01/13/2010	6010B
Mercury	**0.0303** J	0.0237	mg/kg	1	L001073	01/13/2010	01/13/2010	7471A

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WC Hanford, Inc	Project: RC 118	
2620 Fermi Avenue	Project Number: K1839	Reported:
Richland WA, 99354	Project Manager: Joan Kessner	01/15/2010 17:15

J196H2
1001022-06 (Fish)

K 3/3/10

Lionville Laboratory

Metals by SW846 6000/7000 series

Analyte	Result and Qualifier	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Aluminum	9.01	3.57	mg/kg	1	1001063	01/12/2010	01/13/2010	6010B
Antimony	0.429 U	0.429	mg/kg	1	1001063	01/12/2010	01/13/2010	6010B
Arsenic	0.714 U	0.714	mg/kg	1	1001063	01/12/2010	01/13/2010	6010B
Barium	0.248 B	0.357	mg/kg	1	1001063	01/12/2010	01/13/2010	6010B
Beryllium	0.143 U	0.143	mg/kg	1	1001063	01/12/2010	01/13/2010	6010B
Bismuth	7.14 U	7.14	mg/kg	1	1001063	01/12/2010	01/13/2010	6010B
Boron	1.43 U	1.43	mg/kg	1	1001063	01/12/2010	01/13/2010	6010B
Cadmium	1.60	0.143	mg/kg	1	1001063	01/12/2010	01/13/2010	6010B
Calcium	991	71.4	mg/kg	1	1001063	01/12/2010	01/13/2010	6010B
Chromium	0.324	0.143	mg/kg	1	1001063	01/12/2010	01/13/2010	6010B
Cobalt	1.43 U	1.43	mg/kg	1	1001063	01/12/2010	01/13/2010	6010B
Copper	35.3	0.714	mg/kg	1	1001063	01/12/2010	01/13/2010	6010B
Iron	96.2 J	14.3	mg/kg	1	1001063	01/12/2010	01/13/2010	6010B
Lead	0.357 U	0.357	mg/kg	1	1001063	01/12/2010	01/13/2010	6010B
Lithium	1.79 U	1.79	mg/kg	1	1001063	01/12/2010	01/13/2010	6010B
Magnesium	154	53.6	mg/kg	1	1001063	01/12/2010	01/13/2010	6010B
Manganese	2.12 B	3.57	mg/kg	1	1001063	01/12/2010	01/13/2010	6010B
Molybdenum	0.290 B	1.43	mg/kg	1	1001063	01/12/2010	01/13/2010	6010B
Nickel	0.361 B	2.86	mg/kg	1	1001063	01/12/2010	01/13/2010	6010B
Phosphorus	2120	35.7	mg/kg	1	1001063	01/12/2010	01/13/2010	6010B
Potassium	2480 J	286	mg/kg	1	1001063	01/12/2010	01/13/2010	6010B
Selenium	1.43	0.714	mg/kg	1	1001063	01/12/2010	01/13/2010	6010B
Silicon	22.9 J	1.43	mg/kg	1	1001063	01/12/2010	01/13/2010	6010B
Silver	0.143 U	0.143	mg/kg	1	1001063	01/12/2010	01/13/2010	6010B
Sodium	942	35.7	mg/kg	1	1001063	01/12/2010	01/13/2010	6010B
Strontium	1.04	0.714	mg/kg	1	1001063	01/12/2010	01/13/2010	6010B
Thallium	0.357 U	0.357	mg/kg	1	1001063	01/12/2010	01/13/2010	6010B
Tin	0.791 B UJ	7.14	mg/kg	1	1001063	01/12/2010	01/13/2010	6010B
Uranium	14.3 U	14.3	mg/kg	1	1001063	01/12/2010	01/13/2010	6010B
Vanadium	0.449 B	1.79	mg/kg	1	1001063	01/12/2010	01/13/2010	6010B
Zinc	208 J	7.14	mg/kg	1	1001063	01/12/2010	01/13/2010	6010B
Mercury	0.0350 J	0.0211	mg/kg	1	1001073	01/13/2010	01/13/2010	7471A

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WC Hanford, Inc. 2620 Fermi Avenue Richland WA, 99354	Project: RC-HB Project Number: K1839 Project Manager: Joan Kessner	Reported: 01/15/2010 17:15

J196H3
1001022-07 (Fish)

K 3/3/10

Lionville Laboratory

Metals by SW846 6000/7000 series

Analyte	Result and Qualifier	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Aluminum	3.91	3.21	mg/kg	1	1001063	01/12/2010	01/13/2010	6010B
Antimony	0.385 U	0.385	mg/kg	1	1001063	01/12/2010	01/13/2010	6010B
Arsenic	0.641 U	0.641	mg/kg	1	1001063	01/12/2010	01/13/2010	6010B
Barium	0.230 B	0.321	mg/kg	1	1001063	01/12/2010	01/13/2010	6010B
Beryllium	0.128 U	0.128	mg/kg	1	1001063	01/12/2010	01/13/2010	6010B
Bismuth	6.41 U	6.41	mg/kg	1	1001063	01/12/2010	01/13/2010	6010B
Boron	1.28 U	1.28	mg/kg	1	1001063	01/12/2010	01/13/2010	6010B
Cadmium	5.58	0.128	mg/kg	1	1001063	01/12/2010	01/13/2010	6010B
Calcium	262	64.1	mg/kg	1	1001063	01/12/2010	01/13/2010	6010B
Chromium	0.128 U	0.128	mg/kg	1	1001063	01/12/2010	01/13/2010	6010B
Cobalt	1.28 U	1.28	mg/kg	1	1001063	01/12/2010	01/13/2010	6010B
Copper	36.5	0.641	mg/kg	1	1001063	01/12/2010	01/13/2010	6010B
Iron	92.3 J	12.8	mg/kg	1	1001063	01/12/2010	01/13/2010	6010B
Lead	0.321 U	0.321	mg/kg	1	1001063	01/12/2010	01/13/2010	6010B
Lithium	1.60 U	1.60	mg/kg	1	1001063	01/12/2010	01/13/2010	6010B
Magnesium	171	38.1	mg/kg	1	1001063	01/12/2010	01/13/2010	6010B
Manganese	2.78 B	3.21	mg/kg	1	1001063	01/12/2010	01/13/2010	6010B
Molybdenum	0.251 B	1.28	mg/kg	1	1001063	01/12/2010	01/13/2010	6010B
Nickel	2.56 U	2.56	mg/kg	1	1001063	01/12/2010	01/13/2010	6010B
Phosphorus	3,990	32.1	mg/kg	1	1001063	01/12/2010	01/13/2010	6010B
Potassium	2550 J	256	mg/kg	1	1001063	01/12/2010	01/13/2010	6010B
Selenium	1.57	0.641	mg/kg	1	1001063	01/12/2010	01/13/2010	6010B
Silicon	9.63 J	1.28	mg/kg	1	1001063	01/12/2010	01/13/2010	6010B
Silver	0.233	0.128	mg/kg	1	1001063	01/12/2010	01/13/2010	6010B
Sodium	888	32.1	mg/kg	1	1001063	01/12/2010	01/13/2010	6010B
Strontium	0.469 B	0.641	mg/kg	1	1001063	01/12/2010	01/13/2010	6010B
Thallium	0.321 U	0.321	mg/kg	1	1001063	01/12/2010	01/13/2010	6010B
Tin	0.785 B UJ	6.41	mg/kg	1	1001063	01/12/2010	01/13/2010	6010B
Uranium	12.8 U	12.8	mg/kg	1	1001063	01/12/2010	01/13/2010	6010B
Vanadium	0.261 B	1.60	mg/kg	1	1001063	01/12/2010	01/13/2010	6010B
Zinc	216 J	6.41	mg/kg	1	1001063	01/12/2010	01/13/2010	6010B
Mercury	0.0508 J	0.0237	mg/kg	1	1001073	01/13/2010	01/13/2010	7471A

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WC-Hanford, Inc	Project: RC-118	
2620 Fermi Avenue	Project Number: K1839	Reported:
Richland WA, 99354	Project Manager: Joan Kessner	01/15/2010 17:15

J196H7
1001022-09 (Fish)

3/3/10

Analyte	Result and Qualifier		Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method

Lionville Laboratory

Metals by SW846 6000/7000 series

Analyte	Result	Qualifier	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Aluminum	3.52	U	3.52	mg/kg	1	1001063	01/12/2010	01/13/2010	6010B
Antimony	0.423	U	0.423	mg/kg	1	1001063	01/12/2010	01/13/2010	6010B
Arsenic	0.704	U	0.704	mg/kg	1	1001063	01/12/2010	01/13/2010	6010B
Barium	0.352	U	0.352	mg/kg	1	1001063	01/12/2010	01/13/2010	6010B
Beryllium	0.141	U	0.141	mg/kg	1	1001063	01/12/2010	01/13/2010	6010B
Bismuth	7.04	U	7.04	mg/kg	1	1001063	01/12/2010	01/13/2010	6010B
Boron	1.41	U	1.41	mg/kg	1	1001063	01/12/2010	01/13/2010	6010B
Cadmium	6.26		0.141	mg/kg	1	1001063	01/12/2010	01/13/2010	6010B
Calcium	289		70.4	mg/kg	1	1001063	01/12/2010	01/13/2010	6010B
Chromium	0.141	U	0.141	mg/kg	1	1001063	01/12/2010	01/13/2010	6010B
Cobalt	1.41	U	1.41	mg/kg	1	1001063	01/12/2010	01/13/2010	6010B
Copper	4.72		0.704	mg/kg	1	1001063	01/12/2010	01/13/2010	6010B
Iron	126	J	14.1	mg/kg	1	1001063	01/12/2010	01/13/2010	6010B
Lead	0.352	U	0.352	mg/kg	1	1001063	01/12/2010	01/13/2010	6010B
Lithium	1.76	U	1.76	mg/kg	1	1001063	01/12/2010	01/13/2010	6010B
Magnesium	126		52.8	mg/kg	1	1001063	01/12/2010	01/13/2010	6010B
Manganese	0.736	B	3.52	mg/kg	1	1001063	01/12/2010	01/13/2010	6010B
Molybdenum	0.250	B	1.41	mg/kg	1	1001063	01/12/2010	01/13/2010	6010B
Nickel	2.82	U	2.82	mg/kg	1	1001063	01/12/2010	01/13/2010	6010B
Phosphorus	1970		35.2	mg/kg	1	1001063	01/12/2010	01/13/2010	6010B
Potassium	2220	J	282	mg/kg	1	1001063	01/12/2010	01/13/2010	6010B
Selenium	1.77		0.704	mg/kg	1	1001063	01/12/2010	01/13/2010	6010B
Silicon	5.09	J	1.41	mg/kg	1	1001063	01/12/2010	01/13/2010	6010B
Silver	0.141	U	0.141	mg/kg	1	1001063	01/12/2010	01/13/2010	6010B
Sodium	1060		35.2	mg/kg	1	1001063	01/12/2010	01/13/2010	6010B
Strontium	0.346	B	0.704	mg/kg	1	1001063	01/12/2010	01/13/2010	6010B
Thallium	0.352	U	0.352	mg/kg	1	1001063	01/12/2010	01/13/2010	6010B
Tin	**0.882**	B UJ	7.04	mg/kg	1	1001063	01/12/2010	01/13/2010	6010B
Uranium	14.1	U	14.1	mg/kg	1	1001063	01/12/2010	01/13/2010	6010B
Vanadium	3.62		1.76	mg/kg	1	1001063	01/12/2010	01/13/2010	6010B
Zinc	410	J	7.04	mg/kg	1	1001063	01/12/2010	01/13/2010	6010B
Mercury	0.0509	J	0.0281	mg/kg	1	1001073	01/13/2010	01/13/2010	7471A

WCH Hanford, Inc	Project: RC-118	
2620 Fermi Avenue	Project Number: K1839	Reported:
Richland WA, 99354	Project Manager: Joan Kessner	01/15/2010 17:15

J196H8
1001022-09 (Fish)

K 3/3/10

Lionville Laboratory

Metals by SW846 6000/7000 series

Analyte	Result and Qualifier		Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Aluminum	4.46	U	4.46	mg/kg	1	1001063	01/12/2010	01/13/2010	6010B
Antimony	0.536	U	0.536	mg/kg	1	1001063	01/12/2010	01/13/2010	6010B
Arsenic	0.893	U	0.893	mg/kg	1	1001063	01/12/2010	01/13/2010	6010B
Barium	0.446	U	0.446	mg/kg	1	1001063	01/12/2010	01/13/2010	6010B
Beryllium	0.179	U	0.179	mg/kg	1	1001063	01/12/2010	01/13/2010	6010B
Bismuth	8.93	U	8.93	mg/kg	1	1001063	01/12/2010	01/13/2010	6010B
Boron	1.79	U	1.79	mg/kg	1	1001063	01/12/2010	01/13/2010	6010B
Cadmium	**9.40**		0.179	mg/kg	1	1001063	01/12/2010	01/13/2010	6010B
Calcium	**93.0**		89.3	mg/kg	1	1001063	01/12/2010	01/13/2010	6010B
Chromium	0.179	U	0.179	mg/kg	1	1001063	01/12/2010	01/13/2010	6010B
Cobalt	1.79	U	1.79	mg/kg	1	1001063	01/12/2010	01/13/2010	6010B
Copper	**1.82**		0.893	mg/kg	1	1001063	01/12/2010	01/13/2010	6010B
Iron	**109**	J	1.79	mg/kg	1	1001063	01/12/2010	01/13/2010	6010B
Lead	0.446	U	0.446	mg/kg	1	1001063	01/12/2010	01/13/2010	6010B
Lithium	2.23	U	2.23	mg/kg	1	1001063	01/12/2010	01/13/2010	6010B
Magnesium	**324**		67.0	mg/kg	1	1001063	01/12/2010	01/13/2010	6010B
Manganese	**1.05**	B	4.46	mg/kg	1	1001063	01/12/2010	01/13/2010	6010B
Molybdenum	**0.194**	B	1.79	mg/kg	1	1001063	01/12/2010	01/13/2010	6010B
Nickel	3.57	U	3.57	mg/kg	1	1001063	01/12/2010	01/13/2010	6010B
Phosphorus	**1940**		44.6	mg/kg	1	1001063	01/12/2010	01/13/2010	6010B
Potassium	**1930**	J	357	mg/kg	1	1001063	01/12/2010	01/13/2010	6010B
Selenium	**1.66**		0.893	mg/kg	1	1001063	01/12/2010	01/13/2010	6010B
Silicon	**5.10**	J	1.79	mg/kg	1	1001063	01/12/2010	01/13/2010	6010B
Silver	0.179	U	0.179	mg/kg	1	1001063	01/12/2010	01/13/2010	6010B
Sodium	**1130**		44.6	mg/kg	1	1001063	01/12/2010	01/13/2010	6010B
Strontium	**0.150**	B	0.893	mg/kg	1	1001063	01/12/2010	01/13/2010	6010B
Thallium	0.446	U	0.446	mg/kg	1	1001063	01/12/2010	01/13/2010	6010B
Tin	**1.01**	B U J	8.93	mg/kg	1	1001063	01/12/2010	01/13/2010	6010B
Uranium	17.9	U	17.9	mg/kg	1	1001063	01/12/2010	01/13/2010	6010B
Vanadium	**0.939**	B	2.23	mg/kg	1	1001063	01/12/2010	01/13/2010	6010B
Zinc	**288**	J	8.93	mg/kg	1	1001063	01/12/2010	01/13/2010	6010B
Mercury	**0.0655**	J	0.0243	mg/kg	1	1001073	01/13/2010	01/13/2010	7471A

204 Welsh Pool Road
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WCH Hanford, Inc	Project: RC-118	
2620 Fermi Avenue	Project Number: [none]	Reported:
Richland WA 99354	Project Manager: Joan Kessner	11/30/2009 15:31

J18WV5

0911072-01 (Fish)

3/3/10

Analyte	Result and Qualifier		Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method

Lionville Laboratory

Metals by SW846 6000/7000 series

Analyte	Result	Qualifier	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Aluminum	3.47	U	3.47	mg/kg	1	L911220	11/24/2009	11/24/2009	6010B
Antimony	0.417	U	0.417	mg/kg	1	L911220	11/24/2009	11/24/2009	6010B
Arsenic	0.694	U	0.694	mg/kg	1	L911220	11/24/2009	11/24/2009	6010B
Barium	**0.628**		0.347	mg/kg	1	L911220	11/24/2009	11/24/2009	6010B
Beryllium	0.139	U	0.139	mg/kg	1	L911220	11/24/2009	11/24/2009	6010B
Bismuth	6.94	U	6.94	mg/kg	1	L911220	11/24/2009	11/24/2009	6010B
Boron	1.39	U	1.39	mg/kg	1	L911220	11/24/2009	11/24/2009	6010B
Cadmium	0.139	U	0.139	mg/kg	1	L911220	11/24/2009	11/24/2009	6010B
Calcium	**9510**	J	69.4	mg/kg	1	L911220	11/24/2009	11/24/2009	6010B
Chromium	**0.928**		0.139	mg/kg	1	L911220	11/24/2009	11/24/2009	6010B
Cobalt	**1.30**	B	1.39	mg/kg	1	L911220	11/24/2009	11/24/2009	6010B
Copper	0.694	U	0.694	mg/kg	1	L911220	11/24/2009	11/24/2009	6010B
Iron	**5.60**	B	13.9	mg/kg	1	L911220	11/24/2009	11/24/2009	6010B
Lead	0.347	U	0.347	mg/kg	1	L911220	11/24/2009	11/24/2009	6010B
Lithium	**0.539**	B	1.74	mg/kg	1	L911220	11/24/2009	11/24/2009	6010B
Magnesium	**378**		52.1	mg/kg	1	L911220	11/24/2009	11/24/2009	6010B
Manganese	**0.480**	B	3.47	mg/kg	1	L911220	11/24/2009	11/24/2009	6010B
Molybdenum	1.39	U	1.39	mg/kg	1	L911220	11/24/2009	11/24/2009	6010B
Nickel	2.78	U	2.78	mg/kg	1	L911220	11/24/2009	11/24/2009	6010B
Phosphorus	**6730**	J	417	mg/kg	12	L911220	11/24/2009	11/25/2009	6010B
Potassium	**3540**		278	mg/kg	1	L911220	11/24/2009	11/24/2009	6010B
Selenium	**0.689**	B	0.694	mg/kg	1	L911220	11/24/2009	11/24/2009	6010B
Silicon	**2.22**		1.39	mg/kg	1	L911220	11/24/2009	11/24/2009	6010B
Silver	0.139	U	0.139	mg/kg	1	L911220	11/24/2009	11/24/2009	6010B
Sodium	**748**		34.7	mg/kg	1	L911220	11/24/2009	11/24/2009	6010B
Strontium	**7.51**	J	0.694	mg/kg	1	L911220	11/24/2009	11/24/2009	6010B
Thallium	0.347	U	0.347	mg/kg	1	L911220	11/24/2009	11/24/2009	6010B
Tin	**7.18**		6.94	mg/kg	1	L911220	11/24/2009	11/24/2009	6010B
Uranium	13.9	U	13.9	mg/kg	1	L911220	11/24/2009	11/24/2009	6010B
Vanadium	**0.399**	B	1.74	mg/kg	1	L911220	11/24/2009	11/24/2009	6010B
Zinc	**11.9**		6.94	mg/kg	1	L911220	11/24/2009	11/24/2009	6010B
Mercury	**0.230**	J	0.0347	mg/kg	1	L911147	11/25/2009	11/25/2009	7471A

264 Welsh Pool Road
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WC-Hanford, Inc	Project: RC-11X	
2620 Fermi Avenue	Project Number: [none]	**Reported:**
Richland WA 99354	Project Manager: Joan Kessner	11/30/2009 15:21

J18WX6
0911072-02 (Fish)

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Lionville Laboratory

Metals by SW846 6000/7000 series

Analyte	Result and Qualifier		Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Aluminum	3.52	U	3.52	mg/kg	1	1911220	11/24/2009	11/24/2009	6010B
Antimony	0.423	U	0.423	mg/kg	1	1911220	11/24/2009	11/24/2009	6010B
Arsenic	0.704	U	0.704	mg/kg	1	1911220	11/24/2009	11/24/2009	6010B
Barium	3.14		0.352	mg/kg	1	1911220	11/24/2009	11/24/2009	6010B
Beryllium	0.141	U	0.141	mg/kg	1	1911220	11/24/2009	11/24/2009	6010B
Bismuth	7.04	U	7.04	mg/kg	1	1911220	11/24/2009	11/24/2009	6010B
Boron	1.41	U	1.41	mg/kg	1	1911220	11/24/2009	11/24/2009	6010B
Cadmium	0.141	U	0.141	mg/kg	1	1911220	11/24/2009	11/24/2009	6010B
Calcium	43200	J	70.4	mg/kg	1	1911220	11/24/2009	11/24/2009	6010B
Chromium	1.33		0.141	mg/kg	1	1911220	11/24/2009	11/24/2009	6010B
Cobalt	1.60		1.41	mg/kg	1	1911220	11/24/2009	11/24/2009	6010B
Copper	0.704	U	0.704	mg/kg	1	1911220	11/24/2009	11/24/2009	6010B
Iron	13.4	B	14.1	mg/kg	1	1911220	11/24/2009	11/24/2009	6010B
Lead	0.352	U	0.352	mg/kg	1	1911220	11/24/2009	11/24/2009	6010B
Lithium	0.979	B	1.76	mg/kg	1	1911220	11/24/2009	11/24/2009	6010B
Magnesium	527		35.2	mg/kg	1	1911220	11/24/2009	11/24/2009	6010B
Manganese	1.56	B	3.52	mg/kg	1	1911220	11/24/2009	11/24/2009	6010B
Molybdenum	1.41	U	1.41	mg/kg	1	1911220	11/24/2009	11/24/2009	6010B
Nickel	2.82	U	2.82	mg/kg	1	1911220	11/24/2009	11/24/2009	6010B
Phosphorus	13200	J	423	mg/kg	12	1911220	11/24/2009	11/25/2009	6010B
Potassium	2650		282	mg/kg	1	1911220	11/24/2009	11/24/2009	6010B
Selenium	0.852		0.704	mg/kg	1	1911220	11/24/2009	11/24/2009	6010B
Silicon	1.91		1.41	mg/kg	1	1911220	11/24/2009	11/24/2009	6010B
Silver	0.141	U	0.141	mg/kg	1	1911220	11/24/2009	11/24/2009	6010B
Sodium	1390		35.2	mg/kg	1	1911220	11/24/2009	11/24/2009	6010B
Strontium	17.3	J	0.704	mg/kg	1	1911220	11/24/2009	11/24/2009	6010B
Thallium	0.352	U	0.352	mg/kg	1	1911220	11/24/2009	11/24/2009	6010B
Tin	6.48	B	7.04	mg/kg	1	1911220	11/24/2009	11/24/2009	6010B
Uranium	14.1	U	14.1	mg/kg	1	1911220	11/24/2009	11/24/2009	6010B
Vanadium	0.528	B	1.76	mg/kg	1	1911220	11/24/2009	11/24/2009	6010B
Zinc	21.5		7.04	mg/kg	1	1911220	11/24/2009	11/24/2009	6010B
Mercury	0.250	J	0.0281	mg/kg	1	1911237	11/25/2009	11/25/2009	7471A

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WC-Hanford, Inc
2620 Fermi Avenue
Richland WA, 99354

Project: RC-118
Project Number: [none]
Project Manager: Joan Kessner

Reported:
11/30/2009 15:31

J18WV4

0911072-03 (Fish)

K 3/3/10

Lionville Laboratory

Analyte	Result and Qualifier		Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Metals by SW846 6000/7000 series									
Aluminum	3.91	U	3.91	mg/kg	1	1911220	11/24/2009	11/24/2009	6010B
Antimony	0.469	U	0.469	mg/kg	1	1911220	11/24/2009	11/24/2009	6010B
Arsenic	0.781	U	0.781	mg/kg	1	1911220	11/24/2009	11/24/2009	6010B
Barium	**0.208**	B	0.391	mg/kg	1	1911220	11/24/2009	11/24/2009	6010B
Beryllium	0.156	U	0.156	mg/kg	1	1911220	11/24/2009	11/24/2009	6010B
Bismuth	7.81	U	7.81	mg/kg	1	1911220	11/24/2009	11/24/2009	6010B
Boron	1.56	U	1.56	mg/kg	1	1911220	11/24/2009	11/24/2009	6010B
Cadmium	0.156	U	0.156	mg/kg	1	1911220	11/24/2009	11/24/2009	6010B
Calcium	**3930**	J	78.1	mg/kg	1	1911220	11/24/2009	11/24/2009	6010B
Chromium	**0.714**		0.156	mg/kg	1	1911220	11/24/2009	11/24/2009	6010B
Cobalt	**0.820**	B	1.56	mg/kg	1	1911220	11/24/2009	11/24/2009	6010B
Copper	0.781	U	0.781	mg/kg	1	1911220	11/24/2009	11/24/2009	6010B
Iron	**4.91**	B	15.6	mg/kg	1	1911220	11/24/2009	11/24/2009	6010B
Lead	0.391	U	0.391	mg/kg	1	1911220	11/24/2009	11/24/2009	6010B
Lithium	**0.399**	B	1.95	mg/kg	1	1911220	11/24/2009	11/24/2009	6010B
Magnesium	**327**		58.6	mg/kg	1	1911220	11/24/2009	11/24/2009	6010B
Manganese	**0.289**	B	3.91	mg/kg	1	1911220	11/24/2009	11/24/2009	6010B
Molybdenum	1.56	U	1.56	mg/kg	1	1911220	11/24/2009	11/24/2009	6010B
Nickel	3.12	U	3.12	mg/kg	1	1911220	11/24/2009	11/24/2009	6010B
Phosphorus	**3930**	J	469	mg/kg	12	1911220	11/24/2009	11/25/2009	6010B
Potassium	**3630**		312	mg/kg	1	1911220	11/24/2009	11/24/2009	6010B
Selenium	**0.686**	B	0.781	mg/kg	1	1911220	11/24/2009	11/24/2009	6010B
Silicon	**4.40**		1.56	mg/kg	1	1911220	11/24/2009	11/24/2009	6010B
Silver	0.156	U	0.156	mg/kg	1	1911220	11/24/2009	11/24/2009	6010B
Sodium	**658**		39.1	mg/kg	1	1911220	11/24/2009	11/24/2009	6010B
Strontium	**3.72**	J	0.781	mg/kg	1	1911220	11/24/2009	11/24/2009	6010B
Thallium	0.391	U	0.391	mg/kg	1	1911220	11/24/2009	11/24/2009	6010B
Tin	**4.78**	B UJ	7.81	mg/kg	1	1911220	11/24/2009	11/24/2009	6010B
Uranium	15.6	U	15.6	mg/kg	1	1911220	11/24/2009	11/24/2009	6010B
Vanadium	**0.366**	B	1.95	mg/kg	1	1911220	11/24/2009	11/24/2009	6010B
Zinc	**6.97**	B	7.81	mg/kg	1	1911220	11/24/2009	11/24/2009	6010B
Mercury	**0.277**	J	0.0281	mg/kg	1	1911237	11/25/2009	11/25/2009	7471A

WCH Hanford, Inc	Project: RC-118	
2620 Fermi Avenue	Project Number: [none]	Reported:
Richland WA, 99354	Project Manager: Joan Kessner	11/30/2009 15:21

J18WX5
0911072-04 (Fish)

JK 3/3/10

Lionville Laboratory

Metals by SW846 6000/7000 series

Analyte	Result and Qualifier		Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Aluminum	3.85	U	3.85	mg/kg	1	1911220	11/24/2009	11/24/2009	6010B
Antimony	0.462	U	0.462	mg/kg	1	1911220	11/24/2009	11/24/2009	6010B
Arsenic	0.769	U	0.769	mg/kg	1	1911220	11/24/2009	11/24/2009	6010B
Barium	**0.623**		0.385	mg/kg	1	1911220	11/24/2009	11/24/2009	6010B
Beryllium	0.154	U	0.154	mg/kg	1	1911220	11/24/2009	11/24/2009	6010B
Bismuth	7.69	U	7.69	mg/kg	1	1911220	11/24/2009	11/24/2009	6010B
Boron	1.54	U	1.54	mg/kg	1	1911220	11/24/2009	11/24/2009	6010B
Cadmium	0.154	U	0.154	mg/kg	1	1911220	11/24/2009	11/24/2009	6010B
Calcium	**12500**	J	76.9	mg/kg	1	1911220	11/24/2009	11/24/2009	6010B
Chromium	**0.802**		0.154	mg/kg	1	1911220	11/24/2009	11/24/2009	6010B
Cobalt	**1.04**	B	1.54	mg/kg	1	1911220	11/24/2009	11/24/2009	6010B
Copper	**0.435**	B	0.769	mg/kg	1	1911220	11/24/2009	11/24/2009	6010B
Iron	**26.7**		15.4	mg/kg	1	1911220	11/24/2009	11/24/2009	6010B
Lead	0.385	U	0.385	mg/kg	1	1911220	11/24/2009	11/24/2009	6010B
Lithium	**0.664**	B	1.92	mg/kg	1	1911220	11/24/2009	11/24/2009	6010B
Magnesium	**361**		57.7	mg/kg	1	1911220	11/24/2009	11/24/2009	6010B
Manganese	**0.925**	B	3.85	mg/kg	1	1911220	11/24/2009	11/24/2009	6010B
Molybdenum	1.54	U	1.54	mg/kg	1	1911220	11/24/2009	11/24/2009	6010B
Nickel	3.08	U	3.08	mg/kg	1	1911220	11/24/2009	11/24/2009	6010B
Phosphorus	**7950**	J	362	mg/kg	12	1911220	11/24/2009	11/25/2009	6010B
Potassium	**2490**		308	mg/kg	1	1911220	11/24/2009	11/24/2009	6010B
Selenium	**0.749**	B	0.769	mg/kg	1	1911220	11/24/2009	11/24/2009	6010B
Silicon	**2.49**		1.54	mg/kg	1	1911220	11/24/2009	11/24/2009	6010B
Silver	0.154	U	0.154	mg/kg	1	1911220	11/24/2009	11/24/2009	6010B
Sodium	**1450**		38.5	mg/kg	1	1911220	11/24/2009	11/24/2009	6010B
Strontium	**11.0**	J	0.769	mg/kg	1	1911220	11/24/2009	11/24/2009	6010B
Thallium	0.385	U	0.385	mg/kg	1	1911220	11/24/2009	11/24/2009	6010B
Tin	**4.14**	B UJ	7.69	mg/kg	1	1911220	11/24/2009	11/24/2009	6010B
Uranium	15.4	U	15.4	mg/kg	1	1911220	11/24/2009	11/24/2009	6010B
Vanadium	**0.408**	B	1.92	mg/kg	1	1911220	11/24/2009	11/24/2009	6010B
Zinc	**15.5**		7.69	mg/kg	1	1911220	11/24/2009	11/24/2009	6010B
Mercury	**0.114**	J	0.0225	mg/kg	1	1911217	11/25/2009	11/25/2009	7471A

WC Hanford, Inc	Project: RC-118	
2620 Fermi Avenue	Project Number: [none]	Reported:
Richland WA, 99354	Project Manager: Joan Kessner	11/30/2009 15:11

J190R1

0911072-05 (Fish)

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Analyte	Result and Qualifier	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method

Lionville Laboratory

Metals by SW846 6000/7000 series

Analyte	Result and Qualifier	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Aluminum	3.29 U	3.29	mg/kg	1	L911220	11/24/2009	11/24/2009	6010B
Antimony	0.395 U	0.395	mg/kg	1	L911220	11/24/2009	11/24/2009	6010B
Arsenic	0.658 U	0.658	mg/kg	1	L911220	11/24/2009	11/24/2009	6010B
Barium	**0.714**	0.329	mg/kg	1	L911220	11/24/2009	11/24/2009	6010B
Beryllium	0.132 U	0.132	mg/kg	1	L911220	11/24/2009	11/24/2009	6010B
Bismuth	6.58 U	6.58	mg/kg	1	L911220	11/24/2009	11/24/2009	6010B
Boron	1.32 U	1.32	mg/kg	1	L911220	11/24/2009	11/24/2009	6010B
Cadmium	0.132 U	0.132	mg/kg	1	L911220	11/24/2009	11/24/2009	6010B
Calcium	**2220** J	65.8	mg/kg	1	L911220	11/24/2009	11/24/2009	6010B
Chromium	**0.585**	0.132	mg/kg	1	L911220	11/24/2009	11/24/2009	6010B
Cobalt	**0.812** B	1.32	mg/kg	1	L911220	11/24/2009	11/24/2009	6010B
Copper	0.658 U	0.658	mg/kg	1	L911220	11/24/2009	11/24/2009	6010B
Iron	**4.75** B	13.2	mg/kg	1	L911220	11/24/2009	11/24/2009	6010B
Lead	0.329 U	0.329	mg/kg	1	L911220	11/24/2009	11/24/2009	6010B
Lithium	1.64 U	1.64	mg/kg	1	L911220	11/24/2009	11/24/2009	6010B
Magnesium	**909**	49.3	mg/kg	1	L911220	11/24/2009	11/24/2009	6010B
Manganese	**2.78** B	3.29	mg/kg	1	L911220	11/24/2009	11/24/2009	6010B
Molybdenum	1.32 U	1.32	mg/kg	1	L911220	11/24/2009	11/24/2009	6010B
Nickel	2.63 U	2.63	mg/kg	1	L911220	11/24/2009	11/24/2009	6010B
Phosphorus	**3140** J	395	mg/kg	12	L911220	11/24/2009	11/25/2009	6010B
Potassium	**3770**	263	mg/kg	1	L911220	11/24/2009	11/24/2009	6010B
Selenium	**0.579** B	0.658	mg/kg	1	L911220	11/24/2009	11/24/2009	6010B
Silicon	**2.58**	1.32	mg/kg	1	L911220	11/24/2009	11/24/2009	6010B
Silver	0.132 U	0.132	mg/kg	1	L911220	11/24/2009	11/24/2009	6010B
Sodium	**642**	32.9	mg/kg	1	L911220	11/24/2009	11/24/2009	6010B
Strontium	**2.50** J	0.658	mg/kg	1	L911220	11/24/2009	11/24/2009	6010B
Thallium	0.329 U	0.329	mg/kg	1	L911220	11/24/2009	11/24/2009	6010B
Tin	**2.81** B UJ	6.58	mg/kg	1	L911220	11/24/2009	11/24/2009	6010B
Uranium	13.2 U	13.2	mg/kg	1	L911220	11/24/2009	11/24/2009	6010B
Vanadium	**0.285** B	1.64	mg/kg	1	L911220	11/24/2009	11/24/2009	6010B
Zinc	**17.8**	6.58	mg/kg	1	L911220	11/24/2009	11/24/2009	6010B
Mercury	**0.0850** J	0.0281	mg/kg	1	L911237	11/25/2009	11/25/2009	7471A

208 Welsh Pool Road
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WC-Hanford, Inc 2620 Fermi Avenue Richland WA, 99354	Project: RC-118 Project Number: [none] Project Manager: Joan Kessner	Reported: 12/10/2009 15:21

J190V2
0911072-06 (Fish)

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Lionville Laboratory

Metals by SW846 6000/7000 series

Analyte	Result and Qualifier		Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Aluminum	4.72	U	4.72	mg/kg	1	0911220	11/24/2009	11/24/2009	6010B
Antimony	0.566	U	0.566	mg/kg	1	0911220	11/24/2009	11/24/2009	6010B
Arsenic	0.943	U	0.943	mg/kg	1	0911220	11/24/2009	11/24/2009	6010B
Barium	3.72		0.472	mg/kg	1	0911220	11/24/2009	11/24/2009	6010B
Beryllium	0.189	U	0.189	mg/kg	1	0911220	11/24/2009	11/24/2009	6010B
Bismuth	9.43	U	9.43	mg/kg	1	0911220	11/24/2009	11/24/2009	6010B
Boron	1.89	U	1.89	mg/kg	1	0911220	11/24/2009	11/24/2009	6010B
Cadmium	0.0619	B	0.189	mg/kg	1	0911220	11/24/2009	11/24/2009	6010B
Calcium	13600	J	94.3	mg/kg	1	0911220	11/24/2009	11/24/2009	6010B
Chromium	1.36		0.189	mg/kg	1	0911220	11/24/2009	11/24/2009	6010B
Cobalt	1.67	B	1.89	mg/kg	1	0911220	11/24/2009	11/24/2009	6010B
Copper	0.943	U	0.943	mg/kg	1	0911220	11/24/2009	11/24/2009	6010B
Iron	8.68	B	18.9	mg/kg	1	0911220	11/24/2009	11/24/2009	6010B
Lead	0.172	B	0.472	mg/kg	1	0911220	11/24/2009	11/24/2009	6010B
Lithium	0.746	B	2.36	mg/kg	1	0911220	11/24/2009	11/24/2009	6010B
Magnesium	387		70.8	mg/kg	1	0911220	11/24/2009	11/24/2009	6010B
Manganese	14.8		1.73	mg/kg	1	0911220	11/24/2009	11/24/2009	6010B
Molybdenum	1.89	U	1.89	mg/kg	1	0911220	11/24/2009	11/24/2009	6010B
Nickel	3.77	U	3.77	mg/kg	1	0911220	11/24/2009	11/24/2009	6010B
Phosphorus	8180	J	566	mg/kg	12	0911220	11/24/2009	11/25/2009	6010B
Potassium	2420		377	mg/kg	1	0911220	11/24/2009	11/24/2009	6010B
Selenium	0.624	B	0.943	mg/kg	1	0911220	11/24/2009	11/24/2009	6010B
Silicon	2.93		1.89	mg/kg	1	0911220	11/24/2009	11/24/2009	6010B
Silver	0.189	U	0.189	mg/kg	1	0911220	11/24/2009	11/24/2009	6010B
Sodium	3160		47.2	mg/kg	1	0911220	11/24/2009	11/24/2009	6010B
Strontium	14.4	J	0.943	mg/kg	1	0911220	11/24/2009	11/24/2009	6010B
Thallium	0.472	U	0.472	mg/kg	1	0911220	11/24/2009	11/24/2009	6010B
Tin	2.92	B UJ	9.43	mg/kg	1	0911220	11/24/2009	11/24/2009	6010B
Uranium	18.9	U	18.9	mg/kg	1	0911220	11/24/2009	11/24/2009	6010B
Vanadium	0.421	B	2.36	mg/kg	1	0911220	11/24/2009	11/24/2009	6010B
Zinc	26.8		9.43	mg/kg	1	0911220	11/24/2009	11/24/2009	6010B
Mercury	0.0754	J	0.0257	mg/kg	1	0911517	11/25/2009	11/25/2009	7471A

Project: RC-118
Project Number: [none]
Project Manager: Joan Kessner

Reported:
11/30/2009 15:21

J190R2
0911072-07 (Fish)

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Lionville Laboratory

Metals by SW846 6000/7000 series

Analyte	Result and Qualifier		Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Aluminum	4.39	U	4.39	mg/kg	1	L911220	11/24/2009	11/24/2009	6010B
Antimony	0.526	U	0.526	mg/kg	1	L911220	11/24/2009	11/24/2009	6010B
Arsenic	0.877	U	0.877	mg/kg	1	L911220	11/24/2009	11/24/2009	6010B
Barium	**0.651**		0.439	mg/kg	1	L911220	11/24/2009	11/24/2009	6010B
Beryllium	0.175	U	0.175	mg/kg	1	L911220	11/24/2009	11/24/2009	6010B
Bismuth	8.77	U	8.77	mg/kg	1	L911220	11/24/2009	11/24/2009	6010B
Boron	1.75	U	1.75	mg/kg	1	L911220	11/24/2009	11/24/2009	6010B
Cadmium	0.175	U	0.175	mg/kg	1	L911220	11/24/2009	11/24/2009	6010B
Calcium	**2290**	J	87.7	mg/kg	1	L911220	11/24/2009	11/24/2009	6010B
Chromium	**0.342**		0.175	mg/kg	1	L911220	11/24/2009	11/24/2009	6010B
Cobalt	1.75	U	1.75	mg/kg	1	L911220	11/24/2009	11/24/2009	6010B
Copper	0.877	U	0.877	mg/kg	1	L911220	11/24/2009	11/24/2009	6010B
Iron	**26.5**		17.5	mg/kg	1	L911220	11/24/2009	11/24/2009	6010B
Lead	0.439	U	0.439	mg/kg	1	L911220	11/24/2009	11/24/2009	6010B
Lithium	**0.526**	B	2.19	mg/kg	1	L911220	11/24/2009	11/24/2009	6010B
Magnesium	**290**		65.8	mg/kg	1	L911220	11/24/2009	11/24/2009	6010B
Manganese	**3.15**	B	4.39	mg/kg	1	L911220	11/24/2009	11/24/2009	6010B
Molybdenum	1.75	U	1.75	mg/kg	1	L911220	11/24/2009	11/24/2009	6010B
Nickel	3.51	U	3.51	mg/kg	1	L911220	11/24/2009	11/24/2009	6010B
Phosphorus	**3070**	J	526	mg/kg	12	L911220	11/24/2009	11/25/2009	6010B
Potassium	**3450**		351	mg/kg	1	L911220	11/24/2009	11/24/2009	6010B
Selenium	**0.554**	B	0.877	mg/kg	1	L911220	11/24/2009	11/24/2009	6010B
Silicon	**3.15**		1.75	mg/kg	1	L911220	11/24/2009	11/24/2009	6010B
Silver	0.175	U	0.175	mg/kg	1	L911220	11/24/2009	11/24/2009	6010B
Sodium	**573**		43.9	mg/kg	1	L911220	11/24/2009	11/24/2009	6010B
Strontium	**2.37**	J	0.877	mg/kg	1	L911220	11/24/2009	11/24/2009	6010B
Thallium	0.439	U	0.439	mg/kg	1	L911220	11/24/2009	11/24/2009	6010B
Tin	**3.70**	B UJ	8.77	mg/kg	1	L911220	11/24/2009	11/24/2009	6010B
Uranium	17.5	U	17.5	mg/kg	1	L911220	11/24/2009	11/24/2009	6010B
Vanadium	**0.324**	B	2.19	mg/kg	1	L911220	11/24/2009	11/24/2009	6010B
Zinc	**19.6**		8.77	mg/kg	1	L911220	11/24/2009	11/24/2009	6010B
Mercury	**0.105**	J	0.0281	mg/kg	1	L911237	11/25/2009	11/25/2009	7471A

WC Hanford, Inc	Project: RC-118	
2620 Fermi Avenue	Project Number: [none]	Reported:
Richland WA, 99354	Project Manager: Joan Kessner	12/10/2009 15:21

J190V3
0911072-08 (Fish)

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Analyte	Result and Qualifier	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
		Lionville Laboratory						
Metals by SW846 6000/7000 series								
Aluminum	4.90 U	4.90	mg/kg	1	L911220	11/24/2009	11/24/2009	6010B
Antimony	0.588 U	0.588	mg/kg	1	L911220	11/24/2009	11/24/2009	6010B
Arsenic	0.980 U	0.980	mg/kg	1	L911220	11/24/2009	11/24/2009	6010B
Barium	**1.51**	0.490	mg/kg	1	L911220	11/24/2009	11/24/2009	6010B
Beryllium	0.196 U	0.196	mg/kg	1	L911220	11/24/2009	11/24/2009	6010B
Bismuth	9.80 U	9.80	mg/kg	1	L911220	11/24/2009	11/24/2009	6010B
Boron	1.96 U	1.96	mg/kg	1	L911220	11/24/2009	11/24/2009	6010B
Cadmium	**0.0528** B	0.196	mg/kg	1	L911220	11/24/2009	11/24/2009	6010B
Calcium	**21000** J	98.0	mg/kg	1	L911220	11/24/2009	11/24/2009	6010B
Chromium	**0.924**	0.196	mg/kg	1	L911220	11/24/2009	11/24/2009	6010B
Cobalt	1.96 U	1.96	mg/kg	1	L911220	11/24/2009	11/24/2009	6010B
Copper	**0.648** B	0.980	mg/kg	1	L911220	11/24/2009	11/24/2009	6010B
Iron	**12.7** B	19.6	mg/kg	1	L911220	11/24/2009	11/24/2009	6010B
Lead	0.490 U	0.490	mg/kg	1	L911220	11/24/2009	11/24/2009	6010B
Lithium	**0.953** B	2.45	mg/kg	1	L911220	11/24/2009	11/24/2009	6010B
Magnesium	**414**	23.5	mg/kg	1	L911220	11/24/2009	11/24/2009	6010B
Manganese	**19.5**	4.90	mg/kg	1	L911220	11/24/2009	11/24/2009	6010B
Molybdenum	1.96 U	1.96	mg/kg	1	L911220	11/24/2009	11/24/2009	6010B
Nickel	1.92 U	1.92	mg/kg	1	L911220	11/24/2009	11/24/2009	6010B
Phosphorus	**12000** J	588	mg/kg	12	L911220	11/24/2009	11/25/2009	6010B
Potassium	**2670**	196	mg/kg	1	L911220	11/24/2009	11/24/2009	6010B
Selenium	**0.613** B	0.980	mg/kg	1	L911220	11/24/2009	11/24/2009	6010B
Silicon	**3.86**	1.96	mg/kg	1	L911220	11/24/2009	11/24/2009	6010B
Silver	0.196 U	0.196	mg/kg	1	L911220	11/24/2009	11/24/2009	6010B
Sodium	**1450**	19.6	mg/kg	1	L911220	11/24/2009	11/24/2009	6010B
Strontium	**25.2** J	0.980	mg/kg	1	L911220	11/24/2009	11/24/2009	6010B
Thallium	0.490 U	0.490	mg/kg	1	L911220	11/24/2009	11/24/2009	6010B
Tin	**3.26** B UJ	9.80	mg/kg	1	L911220	11/24/2009	11/24/2009	6010B
Uranium	19.6 U	19.6	mg/kg	1	L911220	11/24/2009	11/24/2009	6010B
Vanadium	**0.545** B	2.45	mg/kg	1	L911220	11/24/2009	11/24/2009	6010B
Zinc	**34.4**	9.80	mg/kg	1	L911220	11/24/2009	11/24/2009	6010B
Mercury	**0.0715** J	0.0263	mg/kg	1	L911232	11/25/2009	11/25/2009	7471A

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WC Hanford, Inc.	Project: RC-118	
2620 Fermi Avenue	Project Number: [none]	**Reported**
Richland WA, 99354	Project Manager: Joan Kessner	12/10/2009 15:21

J190R3
0911072-09 (Fish) K 3/3/10

Lionville Laboratory

Metals by SW846 6000/7000 series

Analyte	Result and Qualifier		Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Aluminum	4.17	U	4.17	mg/kg	1	L911220	11/24/2009	11/24/2009	6010B
Antimony	0.500	U	0.500	mg/kg	1	L911220	11/24/2009	11/24/2009	6010B
Arsenic	0.833	U	0.833	mg/kg	1	L911220	11/24/2009	11/24/2009	6010B
Barium	**1.05**		0.417	mg/kg	1	L911220	11/24/2009	11/24/2009	6010B
Beryllium	0.167	U	0.167	mg/kg	1	L911220	11/24/2009	11/24/2009	6010B
Bismuth	8.33	U	8.33	mg/kg	1	L911220	11/24/2009	11/24/2009	6010B
Boron	1.67	U	1.67	mg/kg	1	L911220	11/24/2009	11/24/2009	6010B
Cadmium	0.167	U	0.167	mg/kg	1	L911220	11/24/2009	11/24/2009	6010B
Calcium	**3340**	J	83.3	mg/kg	1	L911220	11/24/2009	11/24/2009	6010B
Chromium	**0.230**		0.167	mg/kg	1	L911220	11/24/2009	11/24/2009	6010B
Cobalt	1.67	U	1.67	mg/kg	1	L911220	11/24/2009	11/24/2009	6010B
Copper	0.833	U	0.833	mg/kg	1	L911220	11/24/2009	11/24/2009	6010B
Iron	**1.96**	B	16.7	mg/kg	1	L911220	11/24/2009	11/24/2009	6010B
Lead	0.417	U	0.417	mg/kg	1	L911220	11/24/2009	11/24/2009	6010B
Lithium	**0.480**	B	2.08	mg/kg	1	L911220	11/24/2009	11/24/2009	6010B
Magnesium	**305**		62.5	mg/kg	1	L911220	11/24/2009	11/24/2009	6010B
Manganese	**3.58**	B	4.17	mg/kg	1	L911220	11/24/2009	11/24/2009	6010B
Molybdenum	1.67	U	1.67	mg/kg	1	L911220	11/24/2009	11/24/2009	6010B
Nickel	3.33	U	3.33	mg/kg	1	L911220	11/24/2009	11/24/2009	6010B
Phosphorus	**3760**	J	500	mg/kg	12	L911220	11/24/2009	11/25/2009	6010B
Potassium	**6640**		333	mg/kg	1	L911220	11/24/2009	11/24/2009	6010B
Selenium	**0.612**	B	0.833	mg/kg	1	L911220	11/24/2009	11/24/2009	6010B
Silicon	**2.16**		1.67	mg/kg	1	L911220	11/24/2009	11/24/2009	6010B
Silver	0.167	U	0.167	mg/kg	1	L911220	11/24/2009	11/24/2009	6010B
Sodium	**833**		41.7	mg/kg	1	L911220	11/24/2009	11/24/2009	6010B
Strontium	**4.49**	J	0.833	mg/kg	1	L911220	11/24/2009	11/24/2009	6010B
Thallium	0.417	U	0.417	mg/kg	1	L911220	11/24/2009	11/24/2009	6010B
Tin	**7.15**	B	8.33	mg/kg	1	L911220	11/24/2009	11/24/2009	6010B
Uranium	16.7	U	16.7	mg/kg	1	L911220	11/24/2009	11/24/2009	6010B
Vanadium	**0.335**	B	2.08	mg/kg	1	L911220	11/24/2009	11/24/2009	6010B
Zinc	**18.7**		8.33	mg/kg	1	L911220	11/24/2009	11/24/2009	6010B
Mercury	**0.0763**	J	0.0290	mg/kg	1	L911237	11/25/2009	11/25/2009	7471A

WC Hanford, Inc.
2620 Fermi Avenue
Richland WA, 99354

Project: RC-118
Project Number: [none]
Project Manager: Joan Kessner

Reported:
11/30/2009 15:21

J190V4
0911072-10 (Fish)

K 3/3/10

Lionville Laboratory

Metals by SW846 6000/7000 series

Analyte	Result and Qualifier		Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Aluminum	3.47	U	3.47	mg/kg	1	L911220	11/24/2009	11/24/2009	6010B
Antimony	0.417	U	0.417	mg/kg	1	L911220	11/24/2009	11/24/2009	6010B
Arsenic	0.694	U	0.694	mg/kg	1	L911220	11/24/2009	11/24/2009	6010B
Barium	**2.37**		0.347	mg/kg	1	L911220	11/24/2009	11/24/2009	6010B
Beryllium	0.139	U	0.139	mg/kg	1	L911220	11/24/2009	11/24/2009	6010B
Bismuth	6.94	U	6.94	mg/kg	1	L911220	11/24/2009	11/24/2009	6010B
Boron	1.39	U	1.39	mg/kg	1	L911220	11/24/2009	11/24/2009	6010B
Cadmium	**0.0367**	B	0.139	mg/kg	1	L911220	11/24/2009	11/24/2009	6010B
Calcium	**10400**	J	69.4	mg/kg	1	L911220	11/24/2009	11/24/2009	6010B
Chromium	**0.434**		0.139	mg/kg	1	L911220	11/24/2009	11/24/2009	6010B
Cobalt	1.39	U	1.39	mg/kg	1	L911220	11/24/2009	11/24/2009	6010B
Copper	**0.568**	B	0.694	mg/kg	1	L911220	11/24/2009	11/24/2009	6010B
Iron	**14.5**		13.9	mg/kg	1	L911220	11/24/2009	11/24/2009	6010B
Lead	0.347	U	0.347	mg/kg	1	L911220	11/24/2009	11/24/2009	6010B
Lithium	**0.735**	B	1.74	mg/kg	1	L911220	11/24/2009	11/24/2009	6010B
Magnesium	**330**		52.1	mg/kg	1	L911220	11/24/2009	11/24/2009	6010B
Manganese	**10.9**		3.47	mg/kg	1	L911220	11/24/2009	11/24/2009	6010B
Molybdenum	1.39	U	1.39	mg/kg	1	L911220	11/24/2009	11/24/2009	6010B
Nickel	2.78	U	2.78	mg/kg	1	L911220	11/24/2009	11/24/2009	6010B
Phosphorus	**6700**	J	417	mg/kg	12	L911220	11/24/2009	11/25/2009	6010B
Potassium	**3420**		278	mg/kg	1	L911220	11/24/2009	11/24/2009	6010B
Selenium	**0.641**	B	0.694	mg/kg	1	L911220	11/24/2009	11/24/2009	6010B
Silicon	**3.60**		1.39	mg/kg	1	L911220	11/24/2009	11/24/2009	6010B
Silver	0.139	U	0.139	mg/kg	1	L911220	11/24/2009	11/24/2009	6010B
Sodium	**1460**		34.7	mg/kg	1	L911220	11/24/2009	11/24/2009	6010B
Strontium	**12.8**	J	0.694	mg/kg	1	L911220	11/24/2009	11/24/2009	6010B
Thallium	0.347	U	0.347	mg/kg	1	L911220	11/24/2009	11/24/2009	6010B
Tin	**4.51**	B UJ	6.94	mg/kg	1	L911220	11/24/2009	11/24/2009	6010B
Uranium	13.9	U	13.9	mg/kg	1	L911220	11/24/2009	11/24/2009	6010B
Vanadium	**0.349**	B	1.74	mg/kg	1	L911220	11/24/2009	11/24/2009	6010B
Zinc	**15.8**		6.94	mg/kg	1	L911220	11/24/2009	11/24/2009	6010B
Mercury	**0.0497**	J	0.0300	mg/kg	1	L911237	11/25/2009	11/25/2009	7471A

264 Welsh Pool Road
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WCH Hanford, Inc	Project: RC 118	
2620 Fermi Avenue	Project Number: [none]	Reported:
Richland WA, 99354	Project Manager: Joan Kessner	11/30/2009 15:21

J196D7
0911072-11 (Fish)

K 3/3/10

Analyte	Result and Qualifier		Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Lionville Laboratory									
Metals by SW846 6000/7000 series									
Aluminum	4.24	U	4.24	mg/kg	1	L911220	11/24/2009	11/24/2009	6010B
Antimony	0.508	U	0.508	mg/kg	1	L911220	11/24/2009	11/24/2009	6010B
Arsenic	0.847	U	0.847	mg/kg	1	L911220	11/24/2009	11/24/2009	6010B
Barium	**0.396**	B	0.424	mg/kg	1	L911220	11/24/2009	11/24/2009	6010B
Beryllium	0.169	U	0.169	mg/kg	1	L911220	11/24/2009	11/24/2009	6010B
Bismuth	8.47	U	8.47	mg/kg	1	L911220	11/24/2009	11/24/2009	6010B
Boron	1.69	U	1.69	mg/kg	1	L911220	11/24/2009	11/24/2009	6010B
Cadmium	0.169	U	0.169	mg/kg	1	L911220	11/24/2009	11/24/2009	6010B
Calcium	**1740**	J	84.7	mg/kg	1	L911220	11/24/2009	11/24/2009	6010B
Chromium	**0.216**		0.169	mg/kg	1	L911220	11/24/2009	11/24/2009	6010B
Cobalt	1.69	U	1.69	mg/kg	1	L911220	11/24/2009	11/24/2009	6010B
Copper	**0.666**	B	0.847	mg/kg	1	L911220	11/24/2009	11/24/2009	6010B
Iron	**13.8**	B	16.9	mg/kg	1	L911220	11/24/2009	11/24/2009	6010B
Lead	0.424	U	0.424	mg/kg	1	L911220	11/24/2009	11/24/2009	6010B
Lithium	**0.580**	B	2.12	mg/kg	1	L911220	11/24/2009	11/24/2009	6010B
Magnesium	**262**		84.7	mg/kg	1	L911220	11/24/2009	11/24/2009	6010B
Manganese	**0.648**	B	1.24	mg/kg	1	L911220	11/24/2009	11/24/2009	6010B
Molybdenum	1.69	U	1.69	mg/kg	1	L911220	11/24/2009	11/24/2009	6010B
Nickel	3.39	U	3.39	mg/kg	1	L911220	11/24/2009	11/24/2009	6010B
Phosphorus	**2590**	J	508	mg/kg	10	L911220	11/24/2009	11/25/2009	6010B
Potassium	**2900**		339	mg/kg	1	L911220	11/24/2009	11/24/2009	6010B
Selenium	**0.930**		0.847	mg/kg	1	L911220	11/24/2009	11/24/2009	6010B
Silicon	**2.89**		1.69	mg/kg	1	L911220	11/24/2009	11/24/2009	6010B
Silver	0.169	U	0.169	mg/kg	1	L911220	11/24/2009	11/24/2009	6010B
Sodium	**493**		42.4	mg/kg	1	L911220	11/24/2009	11/24/2009	6010B
Strontium	**3.52**	J	0.847	mg/kg	1	L911220	11/24/2009	11/24/2009	6010B
Thallium	0.424	U	0.424	mg/kg	1	L911220	11/24/2009	11/24/2009	6010B
Tin	**13.4**		8.47	mg/kg	1	L911220	11/24/2009	11/24/2009	6010B
Uranium	16.9	U	16.9	mg/kg	1	L911220	11/24/2009	11/24/2009	6010B
Vanadium	**0.279**	B	2.12	mg/kg	1	L911220	11/24/2009	11/24/2009	6010B
Zinc	**21.2**		8.47	mg/kg	1	L911220	11/24/2009	11/24/2009	6010B
Mercury	**0.153**	J	0.0243	mg/kg	1	L911237	11/25/2009	11/25/2009	7471A

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WCH-Hanford, Inc	Project: RC-118	
2620 Fermi Avenue	Project Number: [none]	Reported:
Richland WA, 99354	Project Manager: Joan Kessner	11/30/2009 15:21

J196D8
0911072-12 (Fish)

3/3/10

Analyte	Result and Qualifier		Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method

Lionville Laboratory

Metals by SW846 6000/7000 series

Analyte	Result	Qualifier	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Aluminum	3.62	U	3.62	mg/kg	1	L911220	11/24/2009	11/24/2009	6010B
Antimony	0.435	U	0.435	mg/kg	1	L911220	11/24/2009	11/24/2009	6010B
Arsenic	0.725	U	0.725	mg/kg	1	L911220	11/24/2009	11/24/2009	6010B
Barium	**0.782**		0.362	mg/kg	1	L911220	11/24/2009	11/24/2009	6010B
Beryllium	0.145	U	0.145	mg/kg	1	L911220	11/24/2009	11/24/2009	6010B
Bismuth	7.25	U	7.25	mg/kg	1	L911220	11/24/2009	11/24/2009	6010B
Boron	1.45	U	1.45	mg/kg	1	L911220	11/24/2009	11/24/2009	6010B
Cadmium	**0.0403**	B	0.145	mg/kg	1	L911220	11/24/2009	11/24/2009	6010B
Calcium	**4370**	J	72.5	mg/kg	1	L911220	11/24/2009	11/24/2009	6010B
Chromium	**0.456**		0.145	mg/kg	1	L911220	11/24/2009	11/24/2009	6010B
Cobalt	1.45	U	1.45	mg/kg	1	L911220	11/24/2009	11/24/2009	6010B
Copper	**0.615**	B	0.725	mg/kg	1	L911220	11/24/2009	11/24/2009	6010B
Iron	**12.1**	B	14.5	mg/kg	1	L911220	11/24/2009	11/24/2009	6010B
Lead	**0.281**	B	0.362	mg/kg	1	L911220	11/24/2009	11/24/2009	6010B
Lithium	**0.543**	B	1.81	mg/kg	1	L911220	11/24/2009	11/24/2009	6010B
Magnesium	**317**		54.3	mg/kg	1	L911220	11/24/2009	11/24/2009	6010B
Manganese	**1.29**	B	3.62	mg/kg	1	L911220	11/24/2009	11/24/2009	6010B
Molybdenum	1.45	U	1.45	mg/kg	1	L911220	11/24/2009	11/24/2009	6010B
Nickel	2.90	U	2.90	mg/kg	1	L911220	11/24/2009	11/24/2009	6010B
Phosphorus	**3910**	J	435	mg/kg	12	L911220	11/24/2009	11/25/2009	6010B
Potassium	**3030**		290	mg/kg	1	L911220	11/24/2009	11/24/2009	6010B
Selenium	**0.768**		0.725	mg/kg	1	L911220	11/24/2009	11/24/2009	6010B
Silicon	**2.22**		1.45	mg/kg	1	L911220	11/24/2009	11/24/2009	6010B
Silver	0.145	U	0.145	mg/kg	1	L911220	11/24/2009	11/24/2009	6010B
Sodium	**552**		36.2	mg/kg	1	L911220	11/24/2009	11/24/2009	6010B
Strontium	**6.46**	J	0.725	mg/kg	1	L911220	11/24/2009	11/24/2009	6010B
Thallium	0.362	U	0.362	mg/kg	1	L911220	11/24/2009	11/24/2009	6010B
Tin	**22.4**		7.25	mg/kg	1	L911220	11/24/2009	11/24/2009	6010B
Uranium	14.5	U	14.5	mg/kg	1	L911220	11/24/2009	11/24/2009	6010B
Vanadium	**0.321**	B	1.81	mg/kg	1	L911220	11/24/2009	11/24/2009	6010B
Zinc	**22.7**		7.25	mg/kg	1	L911220	11/24/2009	11/24/2009	6010B
Mercury	**0.112**	J	0.0273	mg/kg	1	L911232	11/25/2009	11/25/2009	7471A

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WC Hanford, Inc.	Project: RC-118	
2620 Fermi Avenue	Project Number: [none]	Reported:
Richland WA, 99354	Project Manager: Joan Kessner	12/01/2009 13:29

J19612
0911072-13 (Fish)

3/3/10

Analyte	Result and Qualifier		Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Lionville Laboratory									
Metals by SW846 6000/7000 series									
Aluminum	3.79	U	3.79	mg/kg	1	I911220	11/24/2009	11/24/2009	6010B
Antimony	0.455	U	0.455	mg/kg	1	I911220	11/24/2009	11/24/2009	6010B
Arsenic	0.758	U	0.758	mg/kg	1	I911220	11/24/2009	11/24/2009	6010B
Barium	5.13		0.379	mg/kg	1	I911220	11/24/2009	11/24/2009	6010B
Beryllium	0.152	U	0.152	mg/kg	1	I911220	11/24/2009	11/24/2009	6010B
Bismuth	7.58	U	7.58	mg/kg	1	I911220	11/24/2009	11/24/2009	6010B
Boron	1.52	U	1.52	mg/kg	1	I911220	11/24/2009	11/24/2009	6010B
Cadmium	0.0685	B	0.152	mg/kg	1	I911220	11/24/2009	11/24/2009	6010B
Calcium	36200	J	75.8	mg/kg	1	I911220	11/24/2009	11/24/2009	6010B
Chromium	0.654		0.152	mg/kg	1	I911220	11/24/2009	11/24/2009	6010B
Cobalt	1.52	U	1.52	mg/kg	1	I911220	11/24/2009	11/24/2009	6010B
Copper	0.541	B	0.758	mg/kg	1	I911220	11/24/2009	11/24/2009	6010B
Iron	19.1		15.2	mg/kg	1	I911220	11/24/2009	11/24/2009	6010B
Lead	0.227	B	0.379	mg/kg	1	I911220	11/24/2009	11/24/2009	6010B
Lithium	1.33	B	1.89	mg/kg	1	I911220	11/24/2009	11/24/2009	6010B
Magnesium	702		56.8	mg/kg	1	I911220	11/24/2009	11/24/2009	6010B
Manganese	7.07		3.79	mg/kg	1	I911220	11/24/2009	11/24/2009	6010B
Molybdenum	1.52	U	1.52	mg/kg	1	I911220	11/24/2009	11/24/2009	6010B
Nickel	3.03	U	3.03	mg/kg	1	I911220	11/24/2009	11/24/2009	6010B
Phosphorus	19200	J	155	mg/kg	12	I911220	11/24/2009	11/25/2009	6010B
Potassium	2250		303	mg/kg	1	I911220	11/24/2009	11/24/2009	6010B
Selenium	0.892		0.758	mg/kg	1	I911220	11/24/2009	11/24/2009	6010B
Silicon	6.18		1.52	mg/kg	1	I911220	11/24/2009	11/24/2009	6010B
Silver	0.152	U	0.152	mg/kg	1	I911220	11/24/2009	11/24/2009	6010B
Sodium	1580		37.9	mg/kg	1	I911220	11/24/2009	11/24/2009	6010B
Strontium	70.7	J	0.758	mg/kg	1	I911220	11/24/2009	11/24/2009	6010B
Thallium	0.379	U	0.379	mg/kg	1	I911220	11/24/2009	11/24/2009	6010B
Tin	5.46	B	7.58	mg/kg	1	I911220	11/24/2009	11/24/2009	6010B
Uranium	15.2	U	15.2	mg/kg	1	I911220	11/24/2009	11/24/2009	6010B
Vanadium	0.991	B	1.89	mg/kg	1	I911220	11/24/2009	11/24/2009	6010B
Zinc	85.3	N	7.58	mg/kg	1	I911220	11/24/2009	11/24/2009	6010B

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WC Hanford, Inc	Project: [illegible]	
2620 Fermi Avenue	Project Number: [none]	Reported:
Richland WA, 99354	Project Manager: Joan Kessner	11/30/2009 15:21

J196J3
0911072-14 (Fish)

K 3/3/10

Analyte	Result and Qualifier		Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Lionville Laboratory									
Metals by SW846 6000/7000 series									
Aluminum	3.81	B	3.91	mg/kg	1	L911220	11/24/2009	11/24/2009	6010B
Antimony	0.469	U	0.469	mg/kg	1	L911220	11/24/2009	11/24/2009	6010B
Arsenic	0.781	U	0.781	mg/kg	1	L911220	11/24/2009	11/24/2009	6010B
Barium	5.60		0.391	mg/kg	1	L911220	11/24/2009	11/24/2009	6010B
Beryllium	0.156	U	0.156	mg/kg	1	L911220	11/24/2009	11/24/2009	6010B
Bismuth	7.81	U	7.81	mg/kg	1	L911220	11/24/2009	11/24/2009	6010B
Boron	1.56	U	1.56	mg/kg	1	L911220	11/24/2009	11/24/2009	6010B
Cadmium	0.0728	B	0.156	mg/kg	1	L911220	11/24/2009	11/24/2009	6010B
Calcium	23500	J	78.1	mg/kg	1	L911220	11/24/2009	11/24/2009	6010B
Chromium	0.610		0.156	mg/kg	1	L911220	11/24/2009	11/24/2009	6010B
Cobalt	1.56	U	1.56	mg/kg	1	L911220	11/24/2009	11/24/2009	6010B
Copper	0.524	B	0.781	mg/kg	1	L911220	11/24/2009	11/24/2009	6010B
Iron	27.8		15.6	mg/kg	1	L911220	11/24/2009	11/24/2009	6010B
Lead	0.271	B	0.391	mg/kg	1	L911220	11/24/2009	11/24/2009	6010B
Lithium	1.03	B	1.95	mg/kg	1	L911220	11/24/2009	11/24/2009	6010B
Magnesium	523		58.6	mg/kg	1	L911220	11/24/2009	11/24/2009	6010B
Manganese	7.99		3.91	mg/kg	1	L911220	11/24/2009	11/24/2009	6010B
Molybdenum	1.56	U	1.56	mg/kg	1	L911220	11/24/2009	11/24/2009	6010B
Nickel	3.12	U	3.12	mg/kg	1	L911220	11/24/2009	11/24/2009	6010B
Phosphorus	12900	J	469	mg/kg	12	L911220	11/24/2009	11/25/2009	6010B
Potassium	1980		312	mg/kg	1	L911220	11/24/2009	11/24/2009	6010B
Selenium	0.786		0.781	mg/kg	1	L911220	11/24/2009	11/24/2009	6010B
Silicon	7.12		1.56	mg/kg	1	L911220	11/24/2009	11/24/2009	6010B
Silver	0.156	U	0.156	mg/kg	1	L911220	11/24/2009	11/24/2009	6010B
Sodium	1310		39.1	mg/kg	1	L911220	11/24/2009	11/24/2009	6010B
Strontium	33.9	J	0.781	mg/kg	1	L911220	11/24/2009	11/24/2009	6010B
Thallium	0.391	U	0.391	mg/kg	1	L911220	11/24/2009	11/24/2009	6010B
Tin	6.18	B	7.81	mg/kg	1	L911220	11/24/2009	11/24/2009	6010B
Uranium	15.6	U	15.6	mg/kg	1	L911220	11/24/2009	11/24/2009	6010B
Vanadium	0.737	B	1.95	mg/kg	1	L911220	11/24/2009	11/24/2009	6010B
Zinc	86.1		7.81	mg/kg	1	L911220	11/24/2009	11/24/2009	6010B
Mercury	0.0689	J	0.0281	mg/kg	1	L911217	11/25/2009	11/25/2009	7471A

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WCH-Hanford, Inc	Project: RC-118	
2620 Fermi Avenue	Project Number: [none]	Reported:
Richland WA, 99354	Project Manager: Joan Kessner	11/30/2009 15:21

J196K8
0911072-13 (Fish) 3/3/10

Lionville Laboratory

Metals by SW846 6000/7000 series

Analyte	Result and Qualifier		Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Aluminum	3.33	U	3.33	mg/kg	1	L911220	11/24/2009	11/24/2009	6010B
Antimony	0.400	U	0.400	mg/kg	1	L911220	11/24/2009	11/24/2009	6010B
Arsenic	0.667	U	0.667	mg/kg	1	L911220	11/24/2009	11/24/2009	6010B
Barium	0.434		0.333	mg/kg	1	L911220	11/24/2009	11/24/2009	6010B
Beryllium	0.133	U	0.133	mg/kg	1	L911220	11/24/2009	11/24/2009	6010B
Bismuth	6.67	U	6.67	mg/kg	1	L911220	11/24/2009	11/24/2009	6010B
Boron	3.33	U	3.33	mg/kg	1	L911220	11/24/2009	11/24/2009	6010B
Cadmium	0.133	U	0.133	mg/kg	1	L911220	11/24/2009	11/24/2009	6010B
Calcium	2380	J	66.7	mg/kg	1	L911220	11/24/2009	11/24/2009	6010B
Chromium	0.548		0.133	mg/kg	1	L911220	11/24/2009	11/24/2009	6010B
Cobalt	1.33	U	1.33	mg/kg	1	L911220	11/24/2009	11/24/2009	6010B
Copper	0.638	B	0.667	mg/kg	1	L911220	11/24/2009	11/24/2009	6010B
Iron	13.3		13.3	mg/kg	1	L911220	11/24/2009	11/24/2009	6010B
Lead	0.333	U	0.333	mg/kg	1	L911220	11/24/2009	11/24/2009	6010B
Lithium	0.398	B	1.67	mg/kg	1	L911220	11/24/2009	11/24/2009	6010B
Magnesium	303		50.0	mg/kg	1	L911220	11/24/2009	11/24/2009	6010B
Manganese	0.944	B	1.33	mg/kg	1	L911220	11/24/2009	11/24/2009	6010B
Molybdenum	1.33	U	1.33	mg/kg	1	L911220	11/24/2009	11/24/2009	6010B
Nickel	2.67	U	2.67	mg/kg	1	L911220	11/24/2009	11/24/2009	6010B
Phosphorus	3020	J	400	mg/kg	12	L911220	11/24/2009	11/25/2009	6010B
Potassium	3340		267	mg/kg	1	L911220	11/24/2009	11/24/2009	6010B
Selenium	0.755		0.667	mg/kg	1	L911220	11/24/2009	11/24/2009	6010B
Silicon	2.66		1.33	mg/kg	1	L911220	11/24/2009	11/24/2009	6010B
Silver	0.133	U	0.133	mg/kg	1	L911220	11/24/2009	11/24/2009	6010B
Sodium	491		13.3	mg/kg	1	L911220	11/24/2009	11/24/2009	6010B
Strontium	4.03	J	0.667	mg/kg	1	L911220	11/24/2009	11/24/2009	6010B
Thallium	0.333	U	0.333	mg/kg	1	L911220	11/24/2009	11/24/2009	6010B
Tin	13.2		6.67	mg/kg	1	L911220	11/24/2009	11/24/2009	6010B
Uranium	13.3	U	13.3	mg/kg	1	L911220	11/24/2009	11/24/2009	6010B
Vanadium	0.306	B	1.67	mg/kg	1	L911220	11/24/2009	11/24/2009	6010B
Zinc	18.7		6.67	mg/kg	1	L911220	11/24/2009	11/24/2009	6010B
Mercury	0.133	J	0.0237	mg/kg	1	L911237	11/25/2009	11/25/2009	7471A

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

WCH Hanford, Inc 2620 Fermi Avenue Richland WA 99354	Project: RCBRA Project Number: [none] Project Manager: Joan Kessner	Reported: 11/30/2009 15:21

J196K9
0911072-16 (Fish)

3/3/10

Analyte	Result and Qualifier		Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
			Lionville Laboratory						
Metals by SW846 6000/7000 series									
Aluminum	3.38	U	3.38	mg/kg	1	L911220	11/24/2009	11/24/2009	6010B
Antimony	0.405	U	0.405	mg/kg	1	L911220	11/24/2009	11/24/2009	6010B
Arsenic	0.676	U	0.676	mg/kg	1	L911220	11/24/2009	11/24/2009	6010B
Barium	**0.386**		0.338	mg/kg	1	L911220	11/24/2009	11/24/2009	6010B
Beryllium	0.135	U	0.135	mg/kg	1	L911220	11/24/2009	11/24/2009	6010B
Bismuth	6.76	U	6.76	mg/kg	1	L911220	11/24/2009	11/24/2009	6010B
Boron	1.35	U	1.35	mg/kg	1	L911220	11/24/2009	11/24/2009	6010B
Cadmium	0.135	U	0.135	mg/kg	1	L911220	11/24/2009	11/24/2009	6010B
Calcium	**1280**	J	67.6	mg/kg	1	L911220	11/24/2009	11/24/2009	6010B
Chromium	**0.324**		0.135	mg/kg	1	L911220	11/24/2009	11/24/2009	6010B
Cobalt	1.35	U	1.35	mg/kg	1	L911220	11/24/2009	11/24/2009	6010B
Copper	**0.627**	B	0.676	mg/kg	1	L911220	11/24/2009	11/24/2009	6010B
Iron	**14.2**		13.5	mg/kg	1	L911220	11/24/2009	11/24/2009	6010B
Lead	0.338	U	0.338	mg/kg	1	L911220	11/24/2009	11/24/2009	6010B
Lithium	1.69	U	1.69	mg/kg	1	L911220	11/24/2009	11/24/2009	6010B
Magnesium	**245**		50.7	mg/kg	1	L911220	11/24/2009	11/24/2009	6010B
Manganese	**0.560**	B	3.38	mg/kg	1	L911220	11/24/2009	11/24/2009	6010B
Molybdenum	1.35	U	1.35	mg/kg	1	L911220	11/24/2009	11/24/2009	6010B
Nickel	2.70	U	2.70	mg/kg	1	L911220	11/24/2009	11/24/2009	6010B
Phosphorus	**2440**	J	405	mg/kg	12	L911220	11/24/2009	11/25/2009	6010B
Potassium	**3830**		270	mg/kg	1	L911220	11/24/2009	11/24/2009	6010B
Selenium	**0.730**		0.676	mg/kg	1	L911220	11/24/2009	11/24/2009	6010B
Silicon	**2.56**		1.35	mg/kg	1	L911220	11/24/2009	11/24/2009	6010B
Silver	0.135	U	0.135	mg/kg	1	L911220	11/24/2009	11/24/2009	6010B
Sodium	**478**		33.8	mg/kg	1	L911220	11/24/2009	11/24/2009	6010B
Strontium	**2.10**	J	0.676	mg/kg	1	L911220	11/24/2009	11/24/2009	6010B
Thallium	0.338	U	0.338	mg/kg	1	L911220	11/24/2009	11/24/2009	6010B
Tin	**15.5**		6.76	mg/kg	1	L911220	11/24/2009	11/24/2009	6010B
Uranium	13.5	U	13.5	mg/kg	1	L911220	11/24/2009	11/24/2009	6010B
Vanadium	**0.261**	B	1.69	mg/kg	1	L911220	11/24/2009	11/24/2009	6010B
Zinc	**23.6**		6.76	mg/kg	1	L911220	11/24/2009	11/24/2009	6010B
Mercury	**0.109**	J	0.0281	mg/kg	1	L911237	11/25/2009	11/25/2009	7471A

764 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

WC-Hanford, Inc 2620 Fermi Avenue Richland WA, 99354	Project: RC-118 Project Number: [none] Project Manager: Joan Kessner	**Reported:** 12/10/2009 15:21

J196Y2
0911072-17 (Fish)

3/3/10

Lionville Laboratory

Metals by SW846 6000/7000 series

Analyte	Result and Qualifier		Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Aluminum	3.91	U	3.91	mg/kg	1	L911220	11/24/2009	11/24/2009	6010B
Antimony	0.469	U	0.469	mg/kg	1	L911220	11/24/2009	11/24/2009	6010B
Arsenic	0.781	U	0.781	mg/kg	1	L911220	11/24/2009	11/24/2009	6010B
Barium	**2.72**		0.391	mg/kg	1	L911220	11/24/2009	11/24/2009	6010B
Beryllium	0.156	U	0.156	mg/kg	1	L911220	11/24/2009	11/24/2009	6010B
Bismuth	7.81	U	7.81	mg/kg	1	L911220	11/24/2009	11/24/2009	6010B
Boron	1.56	U	1.56	mg/kg	1	L911220	11/24/2009	11/24/2009	6010B
Cadmium	**0.0521**	B	0.156	mg/kg	1	L911220	11/24/2009	11/24/2009	6010B
Calcium	**14900**	J	78.1	mg/kg	1	L911220	11/24/2009	11/24/2009	6010B
Chromium	**0.552**		0.156	mg/kg	1	L911220	11/24/2009	11/24/2009	6010B
Cobalt	1.56	U	1.56	mg/kg	1	L911220	11/24/2009	11/24/2009	6010B
Copper	**0.520**	B	0.781	mg/kg	1	L911220	11/24/2009	11/24/2009	6010B
Iron	**27.0**		15.6	mg/kg	1	L911220	11/24/2009	11/24/2009	6010B
Lead	0.391	U	0.391	mg/kg	1	L911220	11/24/2009	11/24/2009	6010B
Lithium	**0.930**	B	1.95	mg/kg	1	L911220	11/24/2009	11/24/2009	6010B
Magnesium	**427**		58.6	mg/kg	1	L911220	11/24/2009	11/24/2009	6010B
Manganese	**4.43**		3.91	mg/kg	1	L911220	11/24/2009	11/24/2009	6010B
Molybdenum	1.56	U	1.56	mg/kg	1	L911220	11/24/2009	11/24/2009	6010B
Nickel	3.12	U	3.12	mg/kg	1	L911220	11/24/2009	11/24/2009	6010B
Phosphorus	**8830**	J	469	mg/kg	12	L911220	11/24/2009	11/25/2009	6010B
Potassium	**1870**		312	mg/kg	1	L911220	11/24/2009	11/24/2009	6010B
Selenium	**0.924**		0.781	mg/kg	1	L911220	11/24/2009	11/24/2009	6010B
Silicon	**5.83**		1.56	mg/kg	1	L911220	11/24/2009	11/24/2009	6010B
Silver	0.156	U	0.156	mg/kg	1	L911220	11/24/2009	11/24/2009	6010B
Sodium	**1150**		39.1	mg/kg	1	L911220	11/24/2009	11/24/2009	6010B
Strontium	**23.7**	J	0.781	mg/kg	1	L911220	11/24/2009	11/24/2009	6010B
Thallium	0.391	U	0.391	mg/kg	1	L911220	11/24/2009	11/24/2009	6010B
Tin	**5.18**	B	7.81	mg/kg	1	L911220	11/24/2009	11/24/2009	6010B
Uranium	15.6	U	15.6	mg/kg	1	L911220	11/24/2009	11/24/2009	6010B
Vanadium	**0.591**	B	1.95	mg/kg	1	L911220	11/24/2009	11/24/2009	6010B
Zinc	**167**		7.81	mg/kg	1	L911220	11/24/2009	11/24/2009	6010B
Mercury	**0.0604**	J	0.0231	mg/kg	1	L911217	11/25/2009	11/25/2009	7471A

WCI Hanford, Inc	Project: RC-118	
2620 Fermi Avenue	Project Number: [none]	Reported:
Richland WA, 99354	Project Manager: Joan Kessner	12/10/2009 15:21

J196Y1
0911072-18 (Fish)

K 3/3/10

Lionville Laboratory

Metals by SW846 6000/7000 series

Analyte	Result and Qualifier		Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Aluminum	4.55		4.31	mg/kg	1	1911220	11/24/2009	11/25/2009	6010B
Antimony	0.517	U	0.517	mg/kg	1	1911220	11/24/2009	11/24/2009	6010B
Arsenic	0.862	U	0.862	mg/kg	1	1911220	11/24/2009	11/24/2009	6010B
Barium	3.49		0.431	mg/kg	1	1911220	11/24/2009	11/24/2009	6010B
Beryllium	0.172	U	0.172	mg/kg	1	1911220	11/24/2009	11/24/2009	6010B
Bismuth	8.62	U	8.62	mg/kg	1	1911220	11/24/2009	11/24/2009	6010B
Boron	1.72	U	1.72	mg/kg	1	1911220	11/24/2009	11/24/2009	6010B
Cadmium	**0.0683**	B	0.172	mg/kg	1	1911220	11/24/2009	11/24/2009	6010B
Calcium	**18400**	J	86.2	mg/kg	1	1911220	11/24/2009	11/24/2009	6010B
Chromium	**0.962**		0.172	mg/kg	1	1911220	11/24/2009	11/24/2009	6010B
Cobalt	**1.23**	B	1.72	mg/kg	1	1911220	11/24/2009	11/24/2009	6010B
Copper	**0.577**	B	0.862	mg/kg	1	1911220	11/24/2009	11/24/2009	6010B
Iron	**24.8**		17.2	mg/kg	1	1911220	11/24/2009	11/24/2009	6010B
Lead	0.431	U	0.431	mg/kg	1	1911220	11/24/2009	11/24/2009	6010B
Lithium	**0.721**	B	2.16	mg/kg	1	1911220	11/24/2009	11/24/2009	6010B
Magnesium	**454**		64.7	mg/kg	1	1911220	11/24/2009	11/24/2009	6010B
Manganese	**5.02**		4.31	mg/kg	1	1911220	11/24/2009	11/24/2009	6010B
Molybdenum	1.72	U	1.72	mg/kg	1	1911220	11/24/2009	11/24/2009	6010B
Nickel	3.45	U	3.45	mg/kg	1	1911220	11/24/2009	11/24/2009	6010B
Phosphorus	**10600**	J	517	mg/kg	12	1911220	11/24/2009	11/25/2009	6010B
Potassium	**1940**		345	mg/kg	1	1911220	11/24/2009	11/24/2009	6010B
Selenium	**0.807**	B	0.862	mg/kg	1	1911220	11/24/2009	11/24/2009	6010B
Silicon	**7.72**		1.72	mg/kg	1	1911220	11/24/2009	11/24/2009	6010B
Silver	0.172	U	0.172	mg/kg	1	1911220	11/24/2009	11/24/2009	6010B
Sodium	**1290**		43.1	mg/kg	1	1911220	11/24/2009	11/24/2009	6010B
Strontium	**27.7**	J	0.862	mg/kg	1	1911220	11/24/2009	11/24/2009	6010B
Thallium	0.431	U	0.431	mg/kg	1	1911220	11/24/2009	11/24/2009	6010B
Tin	**7.29**	B	8.62	mg/kg	1	1911220	11/24/2009	11/24/2009	6010B
Uranium	17.2	U	17.2	mg/kg	1	1911220	11/24/2009	11/24/2009	6010B
Vanadium	**0.622**	B	2.16	mg/kg	1	1911220	11/24/2009	11/24/2009	6010B
Zinc	**141**		8.62	mg/kg	1	1911220	11/24/2009	11/24/2009	6010B
Mercury	**0.0788**	J	0.0265	mg/kg	1	1911237	11/25/2009	11/25/2009	7471A

Appendix 4

Laboratory Narrative and Chain-of-Custody Documentation

264 Welsh Pool Road
Exton, Pennsylvania 19341
Phone (610) 280-3000
Fax (610) 280-3041

Case Narrative

Client: WC HANFORD RC-118
LVL#: 0911072 K1839
SDG/SAF#: K/RC-118

W.O.#: 60049-001-001-0001-00
Date Received: 11-23-09

METALS

The following is a summary of the QC results accompanying the sample results. Lionville Laboratory (LvL) certifies that all test results meet the requirements of NELAC except as noted below

All soil samples are reported on a dry weight basis unless requested by the client, required by the method, or noted otherwise.

1. This narrative covers the analyses of 18 fish samples
2. The samples were prepared and analyzed in accordance with methods listed on the data report forms The samples were reported on a wet weight, 'as-received' basis.
3. All analyses were performed within the required holding times.
4. Please refer to the Sample Receipt Check List for any sample discrepancies in LvLl's sample acceptance policy.
5. All Initial and Continuing Calibration Verifications (ICV/CCVs) were within the 90-110% control limits (80-120% for Mercury) with the exception Phosphorous in file ICP1124B. All samples were rerun and reported with 12-fold dilutions for Phosphorous in file ICP1125C due to sample matrix and/or high concentration.
6. All Initial and Continuing Calibration Blanks (ICB/CCBs) were within control limits (less than the LOQ).
7. All preparation/method blanks (MB) were within method criteria (less than the Limit of Quantitation (3-10X the LOD), or samples greater than 20X MB value).
8. All ICP Interference Check Standards were within control limits.
9. All Standard Reference Material (SRM) analytes were within the Prediction Interval control limits supplied by the manufacturer
10. The matrix spike (MS) recoveries for 3 analytes were outside the 75-125% control limits.

11 For analytes where the ICP MS is out-of-control, a post-digestion MS (PDS) and serial dilution are performed. A serial dilution is performed for Mercury. A PDS was prepared at meaningful concentration level for the following analytes

Sample ID	Element	PDS Concentration (ppb)	PDS % Recovery
J18WV5	Calcium	20,800	85.5
	Phosphorous	2,000	92.1

12. The duplicate analyses for 7 analytes were outside the 20% Relative Percent Difference (RPD) control limits.

13 For the purposes of this report, the data have been reported to the Limit of Detection (LOD). Values between the LOD and the Limit of Quantitation (LOQ) are acquired in a region of less-certain quantitation.

14 LvL is NELAP accredited by the State of Pennsylvania. For a complete listing of accrediting authorities and the corresponding analytes/methods, please contact your Project Manager.

15 I certify that this sample data package is in compliance with SOW requirements, both technically and for completeness, other than the conditions detailed above. Release of the data contained in this hard-copy data package has been authorized by the Laboratory Manager or a designee, as verified by the following signature.

Iain Daniels
Laboratory Manager
Lionville Laboratory

12/5/02
Date

akp11.072

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-118-152 Page 1 of 1

Collector WENDY WEST	Company Contact JOAN KESSNER	Telephone No. 375-4698	Project Coordinator KESSNER, JH
Project Designation Columbia River Component of the RCBRA - Tissues	Sampling Location UPRIVER SA - WAL 2, FILLET		SAF No. RC-118
Ice Chest No. EFCP-06-004	Field Logbook No. 1633	COA BSSLRC6520	Method of Shipment FED EX
Shipped To EBERLINE SERVICES (LIONVILLE)	Offsite Property No. N/A		Bill of Lading/Airbill No. FEDEX 793037096331

Price Code 9K N [illegible]

Data Turnaround 45 Days

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage
FREEZE. MATRIX: COMPOSITE OF FISH

Preservation	None	None	None	None	Cool 4C	Cool 4C	None
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	G/P
No. of Container(s)	1	1	1	1	1	1	1
Volume	1500g	100g	100g	10g	250g	125g	10g
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Tritium - H3	See item (2) in Special Instructions	See item (3) in Special Instructions	Percent Moisture - Lipids	Technetium-99

Sample No.	Matrix *	Sample Date	Sample Time							
J1BVV5	OTHER SOLID	11/17/09	1015					X	X	

CHAIN OF POSSESSION	Date/Time	Sign/Print Names Received By/Stored In	Date/Time
Relinquished By/Removed From WENDY WEST	11/17/09 1015	EAS LOCKED STORAGE 4 WENDY WEST	11/17/09 1045
Relinquished By/Removed From EAS LOCKED STORAGE 4	11/20/09 1000	Received By/Stored In SHANNAN JOHNSON	11/20/09 1000
Relinquished By/Removed From SHANNAN JOHNSON	11/20/09 1040	Received By/Stored In FDX	
Relinquished By/Removed From Fed Ex	11-23-09 0915	Received By/Stored In	11-23-09 0915
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) {Americium-241, Antimony-125, Beryllium-7, Cerium-144, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238}
(2) Strontium-89,90 - Total Sr, Isotopic Thorium {Thorium-232}, Isotopic Uranium {Uranium-233/234, Uranium-235, Uranium-238}, Isotopic Plutonium
(3) ICP Metals - 6010 (Full List) {Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Titanium, Vanadium, Zinc}, Mercury - 7471 - (CV)

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab.

Matrix *
S = Soil
SE = Sediment
SO = Solid
SL = Sludge
W = Water
O = Oil
A = Air
DS = Drum Solids
DL = Drum Liquids
T = Tissue
WI = Wipe
L = Liquid
V = Vegetation
X = Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-118-172

Page 1 of 1

Collector: **WENDY WEST**

Company Contact: JOAN KESSNER

Telephone No.: 375-4658

Project Coordinator: KESSNER, JH

Price Code: 9K– 8J JH 3/6/09

Data Turnaround: 45 Days

Project Designation: Columbia River Component of the RCBRA - Tissues

Sampling Location: UPRIVER SA - WAL 2, CARCASS

SAF No.: RC-118

Ice Chest No.: GFP-EL-004

Field Logbook No.: 1611

COA: DESCRC6320

Method of Shipment: FED EX

Shipped To: [illegible] SERVICES [illegible]

Offsite Property No.: N/A

Bill of Lading/Air Bill No.: FEDEX 793037096331

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage
[illegible]

Preservation	None	None	None	None	Cool 4C	Cool 4C	None			
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	G/P			
No. of Container(s)	1	2	3	1	3	1	1			
Volume	1500g	100g	100g	10g	250g	473g	10g			
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Tritium - H3	See item (2) in Special Instructions	See item (3) in Special Instructions	Percent Lipids	Technetium-99			

Sample No.	Matrix *	Sample Date	Sample Time										
J18WX6	OTHER SOLID	11/17/09	1045					X	X				

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
WENDY WEST Wendy West	11/17/09 1045	EAS LOCKED STORAGE 4	11/17/09 1045
EAS LOCKED STORAGE 4	11/20/09 1022	SHANNAN JOHNSON	11/20/09 1022
SHANNAN JOHNSON	11/20/09 1022	FEDEX	
FedEx	11/23/09 0915	Victor Hernandez	11-23-09 0915

SPECIAL INSTRUCTIONS
Perform gamma spec then contact Joan Kessner for release of analysis. [illegible]

(1) Gamma Spec - (Full List) {Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238}

(2) Strontium-89/90 - Total Sr; Isotopic Thorium {Thorium-228, [illegible]}; Isotopic Uranium {Uranium-233/234, Uranium-235, Uranium-238}; Isotopic Plutonium

(3) ICP Metals - 6010 (Full List) {Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc}, Mercury - 7471 - [illegible]

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab

Matrix *
[illegible]

LABORATORY SECTION — Received By: Title: Date/Time:

FINAL SAMPLE DISPOSITION — Disposal Method: Disposed By: Date/Time:

WCH-EE-011

000042

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-118-151

Page 1 of 1

Collector WENDY WEST	Company Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator KESSNER, JL
Project Designation Columbia River Component of the RCBRA - Tissues	Sampling Location UPRIVER SA - WAE 1, FILLET		SAF No. RC-118
Ice Chest No. GRP-06 2024	Field Logbook No. (61)	COA BESCRC6320	Method of Shipment FED EX
Shipped To GENERAL ENGINEERING SERVICES ~~DONVILLE~~	Offsite Property No. N/A		Bill of Lading/Air Bill No. FD 793037096331

Price Code ~~8N~~ N

Data Turnaround 45 Days

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage
FREEZE TISSUE COMPOSITED OF FISH

Preservation	None	None	None	None	Cool 4C	Cool 4C	None
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	G/P
No. of Container(s)	1	1	1	1	1	1	1
Volume	1500g	100g	400g	10g	250g	120g	10g
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Tritium - H3	See item (2) in Special Instructions	See item (3) in Special Instructions	Pesticides 8081	Technetium-99

Sample No.	Matrix *	Sample Date	Sample Time							
J18WV4	OTHER SOLID	11/17/09	1115					X	X	

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
WENDY WEST Wendy West	11/17/09 1115	FAS LOCKED STORAGE Wendy West	11/17/09 1115
FAS LOCKED STORAGE	11/20/09 1000	SHANNAN JOHNSON	11/20/09 1000
SHANNAN JOHNSON	11/20/09 1000	FEDEX	
	11-23-09 0915	Victor Hernandez	11-23-09 0915

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List (Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238)
(2) Strontium-89,90 -- Total Sr; Isotopic Thorium (Thorium-232); Isotopic Uranium (Uranium-233/234, Uranium-235, Uranium-238); Isotopic Plutonium
(3) ICP Metals - 6010 (Full List (Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Titanium, Vanadium, Zinc); Mercury - 7471 - (CV)

Sampler unavailable to remove samples
from controlled storage. Shipper removed
samples from storage location taking custody
of samples for shipment to lab

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-118-171 Page 1 of 1

Collector WENDY WEST	Company Contact JOAN KESSNER	Telephone No. 375-4686	Project Coordinator KESSNER, JH
Project Designation Columbia River Component of the RCBRA - Tissues	Sampling Location UPRIVER SA- WALLEYE CARCASS		SAF No. RC-118
Ice Chest No. GRP-66-06 4	Field Logbook No. 1673	COA BESCRC6920	Method of Shipment FEDEX
Shipped To [illegible] SERVICES (KNOXVILLE)	Offsite Property No. N/A		Bill of Lading/Air Bill No. FEDEX 799037096331

Price Code 9K
N
JH 5/2/09

Data Turnaround 45 Days

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

[illegible]

Preservation	None	None	None	None	Cool 4C	Cool 4C	None
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	G/P
No. of Container(s)	1	1	1	1	1	1	1
Volume	1500g	500g	100g	10g	250g	125g	10g
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Tritium - H3	See item (2) in Special Instructions	See item (3) in Special Instructions	Percent Moisture	Technetium-99

Sample No.	Matrix *	Sample Date	Sample Time										
J18WX5	OTHER SOLID	11/17/09	1145					X	X				

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
WENDY WEST	11/17/09 1145	EAS LOCKED STORAGE Wendy West	11/17/09 1145
EAS LOCKED STORAGE	11/20/09 1000	SHANNAN JOHNSON	11/20/09 1000
SHANNAN JOHNSON	11/20/09 1000	FDX	
FedEx	11-23-09 0915	VICTOR HERNANDEZ	11/23/09 0915

SPECIAL INSTRUCTIONS

Perform gamma spec then contact Joan Kessner for additional analyses. Maintain FIRST 72 [illegible] as practical

(1) Gamma Spec - {Full List} {Americium-241, Antimony-125, Beryllium-7, Cerium-144, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Thorium-228, Uranium-238}
(2) Strontium-89,90 - Total Sr; Isotopic Thorium {Thorium-232}; Isotopic Uranium {Uranium-233/234, Uranium-235, Uranium-238}; Isotopic Plutonium
(3) ICP Metals - 6010 {Full List} {Aluminum, Antimony, Arsenic, Barium, Beryllium, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc}; Mercury - 7471 - {CVA}

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

CHEE-011

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-118-448

Page 1 of 1

Collector: WENDY WEST

Company Contact: JOAN KESSNER

Telephone No.: 375-4688

Project Coordinator: KESSNER, JG

Price Code: ~~9K~~ U NG 6/22/09

Data Turnaround: 45 Days

Project Designation: Columbia River Component of the RCBRA - Tissues

Sampling Location: LRSA-SUCKER1-3(L6)

SAF No.: RC-118

Ice Chest No.: GKP 08-004

Field Logbook No.: EL-1615

COA: [illegible]

Method of Shipment: FED EX

Shipped To: EBERLINE SERVICES KNOXVILLE

Offsite Property No.: N/A

Bill of Lading/Air Bill No.: FE [illegible] 793037096331

POSSIBLE SAMPLE HAZARDS/REMARKS

N/A

Special Handling and/or Storage

FREEZE - MATRIX COMPOSED OF FISH

Preservation	None	None	None	None	Cool 4C	Cool 4C	None			
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	G/P			
No. of Container(s)	1	1	1	1	2	1	1			
Volume	2500g	100g	100g	10g	250g	120g	10g			
SAMPLE ANALYSIS	See Item (1) in Special Instructions	Carbon-14	Tritium - H3	See Item (2) in Special Instructions	See Item (3) in Special Instructions	Pesticides - 8081	[illegible]			

Sample No.	Matrix *	Sample Date	Sample Time										
J19981	OTHER SOLID	11/17/09	1315					X	X				

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
WENDY WEST	11/17/09 1315	FAS LOCKED STORAGE 4	11/17/09 1315
FAS LOCKED STORAGE 4	11/20/09 1000	SHANNAN JOHNSON	11/20/09 1000
SHANNAN JOHNSON	11/20/09 1000	FDX	
Fed Ex	11-23-09 0915	VICTOR HERNANDEZ	11-23-09 0915

SPECIAL INSTRUCTIONS

(1) Gamma Spec - {Full List [Americium-241, Antimony-125, Beryllium-7, Cerium-144, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Thorium-228, Uranium-235]}

(2) Strontium-89,90 - Total Sr, Isotopic Thorium {Thorium-228, -230, -232}; Isotopic Uranium {Uranium-233/234, Uranium-235, Uranium-238}; Isotopic Plutonium

(3) ICP Metals - 6010 (Full List) [Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Titanium, Vanadium, Zinc], Mercury - 7471 - (CV)

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location using custody of samples for shipment to lab.

Matrix *
S = Soil
SE = Sediment
SO = Solid
SL = Sludge
W = Water
O = Oil
A = Air
DS = Drum Solids
DL = Drum Liquids
T = Tissue
WI = Wipe
L = Liquid
V = Vegetation
X = Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-051

Washington Closure Hanford	**CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST**	RC-118-468	Page 1 of 1
Collector WENDY WEST	Company Contact JOAN KESSNER Telephone No. 375-4688	Project Coordinator KESSNER, JH	Price Code 9K N Data Turnaround 45 Days
Project Designation Columbia River Component of the RCBRA - Tissues	Sampling Location URSA-SUCKER1-CARCASS	SAF No. RC-118	
Ice Chest No. GEF-06-004	Field Logbook No. EL-1638 COA DESCRC6320	Method of Shipment FED EX	
Shipped To EBERLINE SERVICES ([illegible])	Offsite Property No. N/A	Bill of Lading/Air Bill No. 793037096331	

POSSIBLE SAMPLE HAZARDS/REMARKS
N/A

Special Handling and/or Storage
FREEZE MATRIX CONTAINS ONE FISH

Preservation	None	None	None	None	Cool 4C	Cool 4C	None			
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	G/P			
No. of Container(s)	1	1	1	1	1	1	1			
Volume	1500g	100g	100g	10g	350g	120g	10g			
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Tritium - H3	See item (2) in Special Instructions	See item (3) in Special Instructions	Potassium - 40K	Technetium-99			

Sample No.	Matrix *	Sample Date	Sample Time										
J190V2	OTHER SOLID	11/17/09	1345					X	X				

CHAIN OF POSSESSION Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
WENDY WEST	1345 11/17/09	FAS LOCKED STORAGE 4	1345 11/17/09
FAS LOCKED STORAGE 4	11/20/09 1002	SHANNAN JOHNSON	11/20/09 1002
SHANNAN JOHNSON	11/20/09 1020	FDX	
FDX	11-23-09 0915	VICTOR HERNANDEZ	11/23/09 0915

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) {Americium-241, Antimony-125, Beryllium-7, Cerium-144, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238}
(2) Strontium-89,90 - Total Sr; Isotopic Thorium {Thorium-232}; Isotopic Uranium {Uranium-233/234, Uranium-235, Uranium-238}; Isotopic Plutonium
(3) ICP Metals - 6010 (Full List) {Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc}; Mercury - 7471 - (CVAA)

Sampler unavailable to remove samples
from controlled storage. Shipper removed
samples from storage location taking custody
of samples for shipment to lab.

Matrix *
S = Soil
SE = Sediment
SO = Solid
SL = Sludge
W = Water
O = Oil
A = Air
DS = Drum Solids
DL = Drum Liquids
T = Tissue
WI = Wipe
L = Liquid
V = Vegetation
X = Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-118-449 | Page 1 of 1

Collector **WENDY WEST**	Company Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator KESSNER, JH
Project Designation Columbia River Component of the RCBRA - Tissues	Sampling Location LRSA-SUCKER2-FILLET		SAF No. RC-118
Ice Chest No. ERV-06-004	Field Logbook No. EL-1636	COA BESCRC6535	Method of Shipment FED EX
Shipped To EBERLINE SERVICES [✓ LIONVILLE]	Offsite Property No. N/A		Bill of Lading/Air Bill No. FDX 793037096331

Price Code ~~9~~ 8N 11/16/09

Data Turnaround: 45 Days

POSSIBLE SAMPLE HAZARDS/REMARKS

N/A

Special Handling and/or Storage

FREEZE - [illegible]

Preservation	None	None	None	None	Cool 4C	Cool 4C	None			
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	G/P			
No. of Container(s)	1	1	1	1	2	1	1			
Volume	1500g	100g	100g	10g	250g	125g	10g			
SAMPLE ANALYSIS	[illegible] Special Instructions	[illegible]	[illegible]	[illegible] Special Instructions	[illegible] Special Instructions	[illegible]	[illegible]			

Sample No.	Matrix *	Sample Date	Sample Time										
J19GR2	OTHER SOLID	11/17/09	1400					X	X				

CHAIN OF POSSESSION	Date/Time	Sign/Print Names	Date/Time
Relinquished By/Removed From WENDY WEST Wendy West	1400 11/17/09	Received By/Stored In Wendy West FAS LOCKED STORAGE 4	1400 11/17/09
Relinquished By/Removed From FAS LOCKED STORAGE 4	11/20/09 1020	Received By/Stored In SHANNAN JOHNSON	11/20/09 1020
Relinquished By/Removed From SHANNAN JOHNSON	11/20/09 1020	Received By/Stored In FDX	
Relinquished By/Removed From FDX	11-23-09 0915	Received By/Stored In Kitur Hernandez	11-23-09 0915
Relinquished By/Removed From		Received By/Stored In	
Relinquished By/Removed From		Received By/Stored In	

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) {Americium-241, Antimony-125, Beryllium-7, Cerium-144, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238}

(2) Strontium-89,90 - Total Sr; Isotopic Thorium {Thorium-232}; Isotopic Uranium {Uranium-233/234, Uranium-235, Uranium-238}; Isotopic Plutonium

(3) ICP Metals - 6010 (Full List) {Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc}; Mercury - 7471 - [illegible]

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab.

Matrix *

S = Soil
SE = Sediment
SO = Solid
SL = Sludge
W = Water
O = Oil
A = Air
DS = Drum Solids
DL = Drum Liquids
T = Tissue
WI = Wipe
L = Liquid
V = Vegetation
X = Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Washington Closure Hanford	**CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST**	RC-118-469	Page 1 of 1
Collector **WENDY WEST**	Company Contact JOAN KESSNER Telephone No. 375-4650	Project Coordinator KESSNER, JH	Price Code 9K N Data Turnaround 45 Days
Project Designation Columbia River Component of the RC SRA - Tissues	Sampling Location GRSA-SUCKER2-CARCASS	SAF No. RC-118	JJB 7/7/09
Ice Chest No. GRP-66-664	Field Logbook No. EL-1638 COA BESCRC6520	Method of Shipment FED EX	
Shipped To EBERLINE SERVICES (CONVERT)	Offsite Property No. N/A	Bill of Lading/Air Bill No. FED EX 793037096331	

POSSIBLE SAMPLE HAZARDS/REMARKS

N/A

Special Handling and/or Storage

FREEZE TO KEEP COLD [illegible]

0000048

Preservation	None	None	None	None	Cool 4C	Cool 4C	None
Type of Container	G/P	G/P	G/P	G/P	G/P	G/P	G/P
No. of Container(s)	1	1	1	1	1	1	1
Volume	500g	100g	100g	10g	250g	150g	10g
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Tritium - H3	See item (2) in Special Instructions	See item (3) in Special Instructions	[illegible]	Technetium-99

Sample No.	Matrix *	Sample Date	Sample Time							
J100V3	OTHER SOLID	11/17/09	1430					X	X	

CHAIN OF POSSESSION Sign/Print Names

Relinquished By/Removed From **WENDY WEST** Wendy West	Date/Time 1430 11/17/09	Received By/Stored In FAS LOCKED STORAGE4 Wendy West Wendy West	Date/Time 1430 11/17/09
Relinquished By/Removed From FAS LOCKED STORAGE4	Date/Time 11/20/09 1022	Received By/Stored In SHANNAN JOHNSON	Date/Time 11/20/09 1022
Relinquished By/Removed From SHANNAN JOHNSON	Date/Time 11/20/09 1022	Received By/Stored In FDX	Date/Time
Relinquished By/Removed From FED EX	Date/Time 11-23-09 0915	Received By/Stored In VICTOR HERNANDEZ	Date/Time 11-23-09 0915
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time

SPECIAL INSTRUCTIONS

(1) Gamma Spec - {Full List} (Americium-241, Antimony-125, Beryllium-7, Cerium-144, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238)
(2) Strontium-89,90 - Total Sr, Isotopic Plutonium {Plutonium-239/240, [illegible]}, Isotopic Uranium {Uranium-233/234, Uranium-235, Uranium-238}, Isotopic Plutonium
(3) ICP Metals - 6010 {Full List} (Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc); Mercury - 7471 - (LV)

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location using custody of samples for shipment to lab.

Matrix *
S = Soil
SE = Sediment
SO = Solid
SL = Sludge
W = Water
O = Oil
A = Air
DS = Drum Solids
DL = Drum Liquids
T = Tissue
WI = Wipe
L = Liquid
V = Vegetation
X = Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Washington Closure Hanford	**CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST**	RC-118-450	Page 1 of 1
Collector: WENDY WEST	Company Contact: JOAN KESSNER Telephone No.: 375-4688	Project Coordinator: KESSNER, JH	Price Code: ~~9K~~ U AA 6/7/09 Data Turnaround: 45 Days
Project Designation: Columbia River Component of the RCBRA - Tissues	Sampling Location: URSA-SUCKER3-FILLET	SAF No.: RC-118	
Ice Chest No.: GRP-16 004	Field Logbook No.: EL-1638 COA: 0ESCRC6520	Method of Shipment: FED EX	
Shipped To: EBERLINE SERVICES [✓ LIONVILLE]	Offsite Property No.: N/A	Bill of Lading/Air Bill No.: FD... 793037096331	

POSSIBLE SAMPLE HAZARDS/REMARKS

N/A

Special Handling and/or Storage

FREEZE - MATRIX COMPRISED OF FISH

0000049

Preservation	[illegible]	None	None	None	Cool 4C	Cool 4C	None			
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	G/P			
No. of Container(s)	2	1	1	1	1	1	1			
Volume	1500g	10g	100g	10g	250g	120g	10g			
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Tritium - H3	See item (2) in Special Instructions	See item (3) in Special Instructions	Percent Lipids	Technetium-99			

Sample No.	Matrix *	Sample Date	Sample Time										
J190R3	OTHER SOLID	11/17/09	1445					X	X				

CHAIN OF POSSESSION	Date/Time	Sign/Print Names	Date/Time
Relinquished By/Removed From WENDY WEST Wendy West	1445 11/17/09	Received By/Stored In FAS LOCKED STORAGE 4 Wendy West	1445 11/17/09
Relinquished By/Removed From FAS LOCKED STORAGE 4	11/20/09 1020	Received By/Stored In SHANNAN JOHNSON	11/20/09 1020
Relinquished By/Removed From SHANNAN JOHNSON	11/20/09 1030	Received By/Stored In FDX	
Relinquished By/Removed From FedEx	11-23-09 0915	Received By/Stored In Victor Hernandez	
Relinquished By/Removed From		Received By/Stored In	
Relinquished By/Removed From		Received By/Stored In	

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List [Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238])
(2) Strontium-89,90 - Total Sr; Isotopic Thorium (Thorium-232); Isotopic Uranium (Uranium-233/234, Uranium-235, Uranium-238); Isotopic Plutonium
(3) ICP Metals - 6010 (Full List) [Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc], Mercury - 7471 - (CV)

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab.

Matrix *
S = Soil
SE = Sediment
SO = Solid
SL = Sludge
W = Water
O = Oil
A = Air
DS = Drum Solids
DL = Drum Liquids
T = Tissue
WI = Wipe
L = Liquid
V = Vegetation
X = Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-118-470

Page 1 of 1

Collector: WENDY WEST

Company Contact: JOAN KESSNER

Telephone No.: 375-4088

Project Coordinator: KESSNER, JH

Price Code: ~~9N~~ N [illegible] 11/18/09

Data Turnaround: 45 Days

Project Designation: Columbia River Component of the RCBRA - Tissues

Sampling Location: URSA-SUCKER3-CARCASS

SAF No.: RC-118

Ice Chest No.: GRP-06-004

Field Logbook No.: EL-1638

COA: BESCRC6520

Method of Shipment: FED EX

Shipped To: EBERLINE SERVICES ([illegible])

Offsite Property No.: N/A

Bill of Lading/Air Bill No.: FDX 793037096331

POSSIBLE SAMPLE HAZARDS/REMARKS

N/A

Special Handling and/or Storage

[illegible]

Preservation	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Type of Container	G/P	G/P	G/P	G/P	G/P	[illegible]	G/P
No. of Container(s)	1	1	1	1	1	1	1
Volume	1500g	100g	10g	10g	250g	120g	10g
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Tritium - H3	See item (2) in Special Instructions	See item (3) in Special Instructions	Percent Solids	Technetium-99

Sample No.	Matrix *	Sample Date	Sample Time							
J190V4	OTHER SOLID	11/17/09	1500					X	X	

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From: WENDY WEST	Date/Time: 11/17/09 1500	Received By/Stored In: EAS LOCKED STORAGE4	Date/Time: 11/17/09 1500
Relinquished By/Removed From: EAS LOCKED STORAGE4	Date/Time: 11/20/09 1000	Received By/Stored In: SHANNAN JOHNSON	Date/Time: 11/20/09 1000
Relinquished By/Removed From: SHANNAN JOHNSON	Date/Time: 11/20/09 1000	Received By/Stored In: FDX	Date/Time:
Relinquished By/Removed From:	Date/Time: 11/23/09 0915	Received By/Stored In:	Date/Time: 11/23/09 0915
Relinquished By/Removed From:	Date/Time:	Received By/Stored In:	Date/Time:
Relinquished By/Removed From:	Date/Time:	Received By/Stored In:	Date/Time:

SPECIAL INSTRUCTIONS

(1) Gamma Spec - {Full List} {Americium-241, Antimony-125, Beryllium-7, Cerium-144, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238}
(2) Strontium-89,90 - Total Sr, Isotopic Thorium {Thorium-232}, Isotopic Uranium {Uranium-233/234, Uranium-235, Uranium-238}, Isotopic Plutonium
(3) ICP Metals - 6010 {[illegible] Add List} {Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Titanium, Vanadium, Zinc}, Mercury - 7471 - (CVAA)

Sample unavailable to name of sampler from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION — Received By: Title: Date/Time:

FINAL SAMPLE DISPOSITION — Disposal Method: Disposed By: Date/Time:

Washington Closure Hanford	**CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST**	RC-118-995	Page 1 of 1
Collector WENDY WEST	Company Contact JOAN KESSNER Telephone No. 375-4688	Project Coordinator KESSNER, JH	Price Code 9K N Data Turnaround 45 Days
Project Designation Columbia River Component of the RCBRA - Tissues	Sampling Location 100SA-CARP 3 FILLET	SAF No. RC-118	
Ice Chest No. CRP-06-004	Field Logbook No. EL-1619 COA HESCRC0138	Method of Shipment FED EX	
Shipped To EBERLINE SERVICES (LIONVILLE)	Offsite Property No. N/A	Bill of Lading/Air Bill No. FE 793037096331	

POSSIBLE SAMPLE HAZARDS/REMARKS

N/A

Special Handling and/or Storage

FREEZE TISSUE SAMPLES [illegible]

T500051

Preservation		None	None	None	None	Cool 4C	Cool 4C	None
Type of Container		G/P	G/P	G/P	G/P	G/P	aG	G/P
No. of Container(s)		1	1		1	1	1	1
Volume		1500g	500g	500g	15g	20g	150g	15g
SAMPLE ANALYSIS		See item (1) in Special Instructions	Carbon-14	Strontium-90	See item (2) in Special Instructions	See item (3) in Special Instructions	Pesticides - 8081	[illegible]
Sample No.	**Matrix ***	**Sample Date**	**Sample Time**					
J195D7	OTHER SOLID	11/18/09	0900				X	X

CHAIN OF POSSESSION		**Sign/Print Names**	
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
WENDY WEST	0900 11/18/09	EAS LOCKED STORAGE 9	0900 11/18/09
EAS LOCKED STORAGE 9	11/24/09 1000	SHANNAN JOHNSON	11/24/09 1000
SHANNAN JOHNSON	11/24/09 1000	FDX	
FDX	11-23-09 0915	VICTOR HERNANDEZ	11-23-09 0915
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) {Americium-241, Antimony-125, Beryllium-7, Cerium-144, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238};

(2) Strontium-89,90 -- Total Sr, Isotopic Thorium {Thorium-232}, Isotopic Uranium {Uranium-233/234, Uranium-235, Uranium-238}, Isotopic Plutonium

(3) ICP Metals - 6010 (Full List) {Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc}, Mercury - 7471 - (CV)

Sampler unavailable to remove samples from locked storage. Shipper removed samples from storage location taking custody of samples for shipment to lab.

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

3304003

Washington Closure Hanford	**CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST**		RC-118-996	Page 1 of 1
Collector WENDY WEST	Company Contact JOAN KESSNER	Telephone No. 375-4699	Project Coordinator KESSNER, JH	Price Code 9K Data Turnaround 45 Days
Project Designation Columbia River Component of the RCBRA - Tissues	Sampling Location 300SA-CARP 4 [illegible]		SAF No. RC-118	N/ 1998
Ice Chest No. [illegible] 06 - 009	Field Logbook No. EL-1615	COA DESC RC0520	Method of Shipment FED EX	
Shipped To TBI REIN SERVICES [illegible]	Offsite Property No. N/A		Bill of Lading/Air Bill No. FDX 793037096331	

POSSIBLE SAMPLE HAZARDS/REMARKS

[illegible]

Special Handling and/or Storage

FREEZE [illegible]

	Preservation	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]		
	Type of Container	G/P	G/P	G/P	G/P	G/P	[illegible]	G/P		
	No. of Container(s)	1	1	1	1	1	1	1		
	Volume	1500g	100g	100g	10g	250g	20g	10g		
SAMPLE ANALYSIS		[illegible] (See Special Instructions)	Carbon-14	Tritium - H3	[illegible] (See Special Instructions)	[illegible] (See Special Instructions)	Percent [illegible]	[illegible]		

Sample No.	Matrix *	Sample Date	Sample Time										
J196D6	OTHER SOLID	11/18/09	0945					X	X				

CHAIN OF POSSESSION	Date/Time	Sign/Print Names	Date/Time
Relinquished By/Removed From WENDY WEST	11/18/09 0945	Received By/Stored In FAS LOCKED STORAGE	11/18/09 0945
Relinquished By/Removed From FAS LOCKED STORAGE	11/20/09 1020	Received By/Stored In SHANNAN JOHNSON	11/20/09 1020
Relinquished By/Removed From SHANNAN JOHNSON	11/20/09 1020	Received By/Stored In FDX	
Relinquished By/Removed From	11-23-09 0915	Received By/Stored In VICTOR HERNANDEZ	11-23-09 0915
Relinquished By/Removed From		Received By/Stored In	
Relinquished By/Removed From		Received By/Stored In	

SPECIAL INSTRUCTIONS

(1) Gamma Spec - [illegible] (Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238);
(2) Strontium-89,90 - Total Sr, Isotopic Thorium (Thorium-232), Isotopic Uranium (Uranium-233/234, Uranium-235, Uranium-238), Isotopic Plutonium;
(3) ICP Metals - 6010 (Full List) (Aluminum, Antimony, Arsenic, Barium, Beryllium, [illegible], Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, [illegible], Tin, Titanium, Vanadium, Zinc); Mercury - 7471 [illegible]

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab

Matrix *

[illegible]

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-118-1020 Page 1 of 1

Collector: **WENDY WEST**

Company Contact: JOAN KESSNER Telephone No. 375-4684

Project Coordinator: KESSNER, JH

Price Code: 9~~K~~ N

Data Turnaround: 45 Days

Project Designation: Columbia River Component of the RCBRA - Toxics

Sampling Location: 300SA-CARP 3-CARCASS

SAF No. RC-114

4D 9/009

Ice Chest No. ARC-06-029

Field Logbook No. EL-1618

COA: DESCRC0520

Method of Shipment: FEDEX

Shipped To: EBERLINE SERVICES / LIONVILLE

Offsite Property No. N/A

Bill of Lading/Air Bill No. FE. 793037096331

POSSIBLE SAMPLE HAZARDS/REMARKS

N/A

Special Handling and/or Storage

[illegible]

F500053

Preservation	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	G/P
No. of Container(s)	1	1	1	1	1	1	1
Volume	1500g	100g	100g	10g	25g	120g	10g
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	[illegible]	See item (2) in Special Instructions	See item (3) in Special Instructions	Pesticides 8081	Technetium-99

Sample No.	Matrix *	Sample Date	Sample Time							
J196J2	OTHER SOLID	11/18/09	0915					X	X	

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
WENDY WEST	11/18/09 0915	FAS LOCKED STORAGE 9	11/18/09 0915
FAS LOCKED STORAGE 9	11/20/09 1222	SHANNAN JOHNSON	11/20/09 1222
SHANNAN JOHNSON	11/20/09 1222	FEDX	
FEDX	11-23-09 0945	[illegible]	

SPECIAL INSTRUCTIONS

(1) Gamma Spec - {Full List} [Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238]
(2) Strontium-89,90 -- Total Sr; Isotopic Thorium {Thorium-232}; Isotopic Uranium {Uranium-233/234, Uranium-235, Uranium-238}; Isotopic Plutonium
(3) ICP Metals - 6010 {Full List} [Aluminum, Antimony, Arsenic, Barium, Beryllium, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc]; Mercury - 7471 - {CV}

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab.

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION — Received By — Title — Date/Time

FINAL SAMPLE DISPOSITION — Disposal Method — Disposed By — Date/Time

A-6003-618

Washington Closure Hanford	**CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST**		RC-118-1021	Page 1 of 1
Collector WENDY WEST	Company Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator KESSNER, JH	Price Code 9X N Data Turnaround 45 Days
Project Designation Columbia River Component of the RCBRA - Inputs	Sampling Location 300SA-CARP 4 CARCASS		SAF No. RC-118	
Ice Chest No. ZEP-06-2004	Field Logbook No. EL-1634	COA BESCRC6120	Method of Shipment FED EX	
Shipped To EBERLINE SERVICES (KNOXVILLE)	Offsite Property No. N/A		Bill of Lading/Airbill No. FD: 793037096331	

POSSIBLE SAMPLE HAZARDS/REMARKS

N/A

Special Handling and/or Storage

FREEZE [illegible]

E1500000

Preservation	None	None	None	[illegible]	Cool 4C	Cool 4C	None			
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	G/P			
No. of Container(s)	1	1	1	1	1	1	1			
Volume	1500g	100g	100g	10g	250g	120g	10g			
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Tritium - H3	See item (2) in Special Instructions	See item (3) in Special Instructions	[illegible]	Technetium-99			

Sample No.	Matrix *	Sample Date	Sample Time										
J19633	OTHER SOLID	11/18/09	1000					X	X				

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
WENDY WEST	11/18/09 1000	FAS LOCKED STORAGE	11/18/09 1000
FAS LOCKED STORAGE	11/20/09 1022	SHANNAN JOHNSON	11/20/09 1022
SHANNAN JOHNSON	11/20/09 1022	FDX	
FDX	11/23/09 0915	HILDA HERNANDEZ	11-23-09 0915

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) (Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238)
(2) Strontium-89,90 -- Total Sr, Isotopic Thorium (Thorium-232), Isotopic Uranium (Uranium-233/234, Uranium-235, Uranium-238), Isotopic Plutonium
(3) ICP Metals - 6010 (Full List) (Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc), Mercury - 7471 - (CV)

Sampler unavailable to remove samples
from controlled storage. Shipper removed
samples from storage location taking custody
of samples for shipment to [illegible]

Matrix *
[illegible]

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Washington Closure Hanford	**CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST**	RC-118-1036	Page 1 of 1
Collector WENDY WEST	Company Contact RYAN KESSNER Telephone No 375-4695	Project Coordinator KESSNER, JH	Price Code 9K N AB 9/4/08
Project Designation Columbia River Component of the RI/ERA - Tissues	Sampling Location EWSA-CARP 4 FILLET	SAF No. RC-118	Data Turnaround 45 Days
Ice Chest No. ERC-06-004	Field Logbook No. EL-1638 COA RESCRC6520	Method of Shipment FED EX	
Shipped To EBERLINE SERVICES [✓ LIONVILLE]	Offsite Property No. N/A	Bill of Lading/Air Bill No. FDX 793037096331	

POSSIBLE SAMPLE HAZARDS/REMARKS

N/A

Special Handling and/or Storage

[illegible]

SS0000

	1	2	3	4	5	6	7	8	9	10
Preservation	None	None	None	None	Cool 4C	Cool 4C	None			
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	G/P			
No. of Container(s)	1	1	1	1	1	1	1			
Volume	1500g	60g	500g	10g	150g	125g	10g			
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	[illegible]	See item (2) in Special Instructions	See item (3) in Special Instructions	Pesticides 8081	Technetium-99			

Sample No.	Matrix *	Sample Date	Sample Time	1	2	3	4	5	6	7	8	9	10
J15658	OTHER SOLID	11/18/09	1130					X	X				

CHAIN OF POSSESSION	Sign/Print Names		
Relinquished By/Removed From WENDY WEST	Date/Time 1130 11/18/09	Received By/Stored In FAS LOCKED STORAGE 4	Date/Time 1130 11/18/09
Relinquished By/Removed From FAS LOCKED STORAGE 4	Date/Time 11/24/09 1000	Received By/Stored In SHANNAN JOHNSON	Date/Time 11/24/09 1000
Relinquished By/Removed From SHANNAN JOHNSON	Date/Time 11/24/09 1000	Received By/Stored In FDX	Date/Time
Relinquished By/Removed From FDX 11-25-09 0915	Date/Time	Received By/Stored In VICTOR HOLLMAN	Date/Time 11/25/09 0915
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) {Americium-241, Antimony-125, Beryllium-7, Cerium-144, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238};
(2) Strontium 89,90 -- Total Sr; Isotopic Thorium {Thorium-232}; Isotopic Uranium {Uranium-233/234, Uranium-235, Uranium-238}; Isotopic Plutonium
(3) ICP Metals - 6010 (Full List) {Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc}; Mercury - 7471 - (CV)

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab.

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-118-1037 Page 1 of 1

Collector: WENDY WEST	Company Contact: JOAN KESSNER	Telephone No: 375-4686	Project Coordinator: KESSNER JH
Project Designation: Columbia River Component of the RCBRA - Tissues	Sampling Location: LWSA/CARP SHELLET		SAF No.: RC-118
Ice Chest No.: GRP-LK-664	Field Logbook No.: EL-1638	COA: BESCRC4529	Method of Shipment: FED EX
Shipped To: STERLING SERVICES (LIONVILLE)	Offsite Property No.: N/A		Bill of Lading/Air Bill No.: FDX 793037096331

Price Code: ~~9K~~ 10 11/19/09

Data Turnaround: 45 Days

POSSIBLE SAMPLE HAZARDS/REMARKS

N/A

Special Handling and/or Storage

[illegible]

			Preservation	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	Cool 4C	[illegible]		
			Type of Container	G/P	G/P	G/P	G/P	G/P	aG	G/P		
			No. of Container(s)	1	1	1		1	1	1		
			Volume	1500g	100g	10g	10g	750g	120g	10g		
SAMPLE ANALYSIS				See item (1) in Special Instructions	Carbon-14	Tritium - H3	See item (2) in Special Instructions	See item (3) in Special Instructions	[illegible]	[illegible]		
Sample No.	Matrix *	Sample Date	Sample Time									
J196K9	OTHER SOLID	11/18/09	1400					X	X			

CHAIN OF POSSESSION Sign/Print Names

Relinquished By/Removed From: WENDY WEST	Date/Time: 1400 11/18/09	Received By/Stored In: EAS LOCKED STORAGE	Date/Time: 1400 11/18/09
Relinquished By/Removed From: EAS LOCKED STORAGE	Date/Time: 11/20/09 1002	Received By/Stored In: SHANNAN JOHNSON	Date/Time: 11/20/09 1002
Relinquished By/Removed From: SHANNAN JOHNSON	Date/Time: 11/20/09 1004	Received By/Stored In: FedEx	Date/Time:
Relinquished By/Removed From: FedEx	Date/Time: 11-23-09 0915	Received By/Stored In: Victor Hee[illegible]	Date/Time: 11-23-09 0915
Relinquished By/Removed From:	Date/Time:	Received By/Stored In:	Date/Time:
Relinquished By/Removed From:	Date/Time:	Received By/Stored In:	Date/Time:

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) {Americium-241, Antimony-125, Beryllium-7, [illegible] Cesium-134, Cesium-137, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238}

(2) Strontium-89,90 -- Total Sr; Isotopic Thorium {Thorium-232}; Isotopic Uranium {Uranium-233/234, Uranium-235, Uranium-238}; Isotopic Plutonium

(3) ICP Metals - 6010 (Full List) {Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc}; Mercury - 7471 - (CVAA)

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location using custody chain for shipment to lab.

Matrix *

S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EF-011

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-118-1062 Page 1 of 1

Collector WENDY WEST	Company Contact JOAN KESSNER	Telephone No. 375-4648	Project Coordinator KESSNER, JH	Price Code 9K N
Project Designation Columbia River Component of the RCBRA - Tissues	Sampling Location LWSA-CARP 5 CARCASS		SAF No. RC118	Data Turnaround 45 Days
Ice Chest No. CRP-N6-0004	Field Logbook No. EL-1638	COA BESCRC6520	Method of Shipment FED EX	
Shipped To EBERLINE SERVICES ~~[✓ RICHMOND]~~ [✓ OAKRIDGE]	Offsite Property No. N/A		Bill of Lading/Air Bill No. FDX 793037096331	

POSSIBLE SAMPLE HAZARDS/REMARKS

N/A

Special Handling and/or Storage

[illegible]

Preservation	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Type of Container	G/P	G/T	G/P	G/P	G/T	aG	G/P
No. of Container(s)	1	1	1	1	1	1	1
Volume	1500g	100g	100g	10g	25g	50g	10g
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Tritium - H3	See item (2) in Special Instructions	See item (3) in Special Instructions	[illegible]	[illegible]

Sample No.	Matrix *	Sample Date	Sample Time							
J1E9X2	OTHER SOLID	11/18/09	1430					X	X	

CHAIN OF POSSESSION	Date/Time	Sign/Print Names	Date/Time
Relinquished By/Removed From WENDY WEST	1430 11/18/09	Received By/Stored In EAS LOCKED STORAGE	1430 11/18/09
Relinquished By/Removed From EAS LOCKED STORAGE	11/20/09 1022	Received By/Stored In SHANNAN JOHNSON	11/20/09 1022
Relinquished By/Removed From SHANNAN JOHNSON	11/20/09 1022	Received By/Stored In FDX	
Relinquished By/Removed From	0915	Received By/Stored In	11-24-09 0915
Relinquished By/Removed From		Received By/Stored In	
Relinquished By/Removed From		Received By/Stored In	

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) {Americium-241, Antimony-125, Beryllium-7, Cerium-144, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238}
(2) Strontium-89,90 -- Total Sr; Isotopic Thorium {Thorium-228, Thorium-230, Thorium-232}; Isotopic Uranium {Uranium-233/234, Uranium-235, Uranium-238}; Isotopic Plutonium
(3) ICP Metals - 6010 (Full List) {Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc}; Mercury - 7471 - (CV)

Shipper unavailable to remove samples from controlled storage. Shipper removed samples from storage location using custody of samples for shipment to lab.

Matrix *

[illegible]

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-118-1061 Page 1 of 1

Collector: **WENDY WEST**

Company Contact: JOAN KESSNER Telephone No. 375-4668

Project Coordinator: KESSNER, JH

Price Code: 9K/N

Data Turnaround: 45 Days

Project Designation: Columbia River Component of the RI/FFS - Tissues

Sampling Location: LWSA-CARP 4 CARCASS

SAF No. RC-118

Ice Chest No. GRP-06-664

Field Logbook No. EL-1635

COA: BESCRC6520

Method of Shipment: FED EX

Shipped To: GENERAL ENGINEERING SERVICES (GEL) [✓ LLP]

Offsite Property No. N/A

Bill of Lading/Air Bill No. FED EX 793037096331

POSSIBLE SAMPLE HAZARDS/REMARKS

N/A

Special Handling and/or Storage

[illegible]

Preservation	[illegible]	[illegible]	[illegible]	[illegible]	Cool 4C	[illegible]	[illegible]			
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	G/P			
No. of Container(s)	1	1	1	1	1	1	1			
Volume	150g	150g	100g	10g	250g	170g	15g			
SAMPLE ANALYSIS	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]			

Sample No.	Matrix *	Sample Date	Sample Time										
J19671	OTHER SOLID	11/13/09	1200					X	X				

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From: WENDY WEST	Date/Time 1200 11/13/09	Received By/Stored In: FAS LOCKED STORAGE 4	Date/Time 1200 11/13/09
Relinquished By/Removed From: FAS LOCKED STORAGE 4	Date/Time 11/24/09 1122	Received By/Stored In: SHANNAN JOHNSON	Date/Time 11/24/09 1122
Relinquished By/Removed From: SHANNAN JOHNSON	Date/Time 11/24/09 1122	Received By/Stored In: FOX	Date/Time
Relinquished By/Removed From: FEDEX	Date/Time 11-25-09 0915	Received By/Stored In: [illegible]	Date/Time 11-25-09 [illegible]
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) {Americium-241, Antimony-125, Beryllium-7, Cerium-144, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238}

(2) Strontium-89,90 - Total Sr; Isotopic Thorium {Thorium-232}; Isotopic Uranium {Uranium-233/234, Uranium-235, Uranium-238}; Isotopic Plutonium

(3) ICP Metals - 6010 (Full List) {Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Titanium, Vanadium, Zinc}; Mercury - 7471 - CVAA

Sampler unavailable to remove samples
from controlled storage. Shipper removed
samples from storage location taking custody
of samples for shipment to lab.

Matrix *

[illegible]

LABORATORY SECTION — Received By — Title — Date/Time

FINAL SAMPLE DISPOSITION — Disposal Method — Disposed By — Date/Time

WCH-EF-011

264 Welsh Pool Road
Exton, Pennsylvania 19341
Phone (610) 280-3000
Fax (610) 280-3041

Case Narrative

Client: WC-HANFORD RC-118
LVL#: 1001022
SDG/SAF#: K1839/RC-118

W.O.#: 60049-001-001-0001-00
Date Received: 01-12-09

METALS

The following is a summary of the QC results accompanying the sample results. Lionville Laboratory (LvL) certifies that all test results meet the requirements of NELAC except as noted below.

All soil samples are reported on a dry weight basis unless requested by the client, required by the method, or noted otherwise.

1. This narrative covers the analyses of 9 fish samples.
2. The samples were prepared and analyzed in accordance with methods listed on the data report forms. The samples were reported on a wet weight, 'as-received' basis.
3. All analyses were performed within the required holding times.
4. Please refer to the Sample Receipt Check List for any sample discrepancies in LvLI's sample acceptance policy.
5. All Initial and Continuing Calibration Verifications (ICV/CCVs) were within the 90-110% control limits (80-120% for Mercury).
6. All Initial and Continuing Calibration Blanks (ICB/CCBs) were within control limits (less than the LOQ).
7. All preparation/method blanks (MB) were within method criteria (less than the Limit of Quantitation (3-10X the LOD), or samples greater than 20X MB value).
8. All ICP Interference Check Standards were within control limits.
9. All Standard Reference Material (SRM) analytes were within the Prediction Interval control limits supplied by the manufacturer.
10. The matrix spike (MS) recoveries for 6 analytes were outside the 75-125% control limits.

11. For analytes where the ICP MS is out-of-control, a post-digestion MS (PDS) and serial dilution are performed. A PDS was prepared at meaningful concentration level for the following analytes.

Sample ID	Element	PDS Concentration (ppb)	PDS % Recovery
J19238	Iron	2,000	112.9
	Phosphorous	4,000	98.2
	Potassium	12,000	121.3
	Sodium	12,000	120.5
	Tin	100	105.2
	Zinc	100	126.3

12. All duplicate analyses were within the 20% Relative Percent Difference (RPD) control limits. The ± 20% RPD control limit applies to sample results greater than ten times the MDL. The sample result for Copper was less than ten times the MDL.

13. For the purposes of this report, the data have been reported to the Limit of Detection (LOD). Values between the LOD and the Limit of Quantitation (LOQ) are acquired in a region of less-certain quantification.

14. LvL is NELAP accredited by the State of Pennsylvania. For a complete listing of accrediting authorities and the corresponding analytes/methods, please contact your Project Manager.

15. I certify that this sample data package is in compliance with SOW requirements, both technically and for completeness, other than the conditions detailed above. Release of the data contained in this hard-copy data package has been authorized by the Laboratory Manager or a designee, as verified by the following signature.

by

Iain Daniels
Laboratory Manager
Lionville Laboratory

1/20/10
Date

pw12-054

Lionville Laboratory Incorporated

SAMPLE RECEIPT CHECKLIST (SRC)

CLIENT: WV Hanford NEWS SDG# 01531
Date: 9/7/01
Project/SAF/SOW/Release #:

LVLI Batch #: 0109L020
Sample Custodian:

NOTE: EXPLAIN ALL DISCREPANCIES

1. Samples Hand Delivered or Shipped? Carrier: Fed Ex Airbill # 7980 4242 7369

2. Custody Seals on coolers or shipping containers intact, signed & dated? ☑ Yes ☐ No ☐ No Seals

3. Outside of coolers or shipping containers are free from damage? ☑ Yes ☐ No Comments:

4. All expected paperwork received (coc & other client specific information) sealed in plastic bag and easily accessible? ☑ Yes ☐ No

5. Samples received cooled or ambient? Temp 3.3° °C Cooler # ECC-01-061

How was the temperature taken? ☑ IR ☐ Temp. Blank ☐ Other (Specify):

Is the Temp. Criteria met for these samples? (Hg in soils @ 4°C) ☑ Yes ☐ No

6. Custody seals on sample containers intact, signed and dated? ☑ Yes ☐ No ☐ No Seals

7. COC (Client & LVLI) signed & dated? ☑ Yes ☐ No

8. Sample containers are intact? ☑ Yes ☐ No

9. All samples on COC received? ☑ Yes ☐ No
All samples received on COC? ☑ Yes ☐ No

10. All sample label information matches COC? ☑ Yes ☐ No

11. Samples properly preserved? (If #5 is no, then this is no.) ☑ Yes ☐ No

12. Samples received within hold times? ~~☑ Yes~~ 9/7/01 ☑ No Outside of holdtime for mercury
Short holds taken to wet lab? ☐ Yes ☐ No ☑ N/A

13. VOA, TOC, TOX free of headspace? ☐ Yes ☐ No ☑ N/A

14. QC stickers placed on bottles designated by client? ☐ Yes ☐ No ☑ N/A

15. Shipment meets LVLI Sample Acceptance Policy? (Identify all bottles that do not meet the policy, which is on the reverse of this page.) ☑ Yes ☐ No

16. Project Manager contacted concerning any discrepancies? ☐ Yes ☑ No ☑ N/A
Person Contacted ______ Date ______

LVL I

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-118-166 | Page 1 of 1

Collector WENDY WEST	Company Contact JOAN KESSNER	Telephone No. 375-4688
Project Designation Columbia River Component of the RC BRA - Tissues	Sampling Location UPRIVER SA - WAL [illegible] LIVER	K1839 (9526)
Ice Chest No. APS-[illegible]-006	Field Logbook No. 1633	COA RESCRC6530
Shipped To [illegible] SERVICES [illegible]	Offsite Property No. N/A	

Project Coordinator KESSNER, JH	Price Code ~~9K~~ N [illegible]	Data Turnaround 45 Days
SAF No. RC-118		
Method of Shipment FEDEX		
Bill of Lading/Air Bill No. FDX 793158140050		

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage
FREEZE [illegible]

Preservation	None	None	None	None	None	Cool 4C	Cool 4C
Type of Container	G/P	G/P	G	G/P	G/P	G/P	aG
No. of Container(s)	1	0	0	0	0	0	0
Volume	750g	1g	25g	5g	5g	15g	50g
SAMPLE ANALYSIS SDG # K1839	See item (1) in Special Instructions	Carbon-14	Tritium - H3	See item (2) in Special Instructions	Technetium-99	See item (3) in Special Instructions	[illegible]

Sample No.	Matrix *	Sample Date	Sample Time							
J18WW9	OTHER SOLID	11/18/09	1545	X	X	X	X	X	X	X

CHAIN OF POSSESSION	Date/Time	Sign/Print Names Received By/Stored In	Date/Time
Relinquished By/Removed From WENDY WEST	1545 11/18/09	Received By/Stored In FAS LOCKED STORAGE 9	1545 11/18/09
Relinquished By/Removed From FAS LOCKED STORAGE 9	11/20/09 1030	Received By/Stored In SHANNAN JOHNSON	11/20/09 1030
Relinquished By/Removed From SHANNAN JOHNSON	11/20/09 1030	Received By/Stored In FDX	Date/Time
Relinquished By/Removed From FEDEX	Date/Time	Received By/Stored In [illegible]	11/23/09 09 [illegible]
Relinquished By/Removed From [illegible]	[illegible]	Received By/Stored In FEDEX	Date/Time
Relinquished By/Removed From [illegible]	[illegible] [illegible]	Received By/Stored In [illegible]	[illegible] 0950

SPECIAL INSTRUCTIONS
Perform gamma spec then contact Joan Kessner for additional analyses. [illegible] as practical

(1) Gamma Spec - (Full List) {Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238}
(2) Strontium-89,90 - Total Sr, Isotopic Thorium, Isotopic Uranium, Isotopic Plutonium
(3) ICP Metals - 6010 (Full List) {Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Titanium, Vanadium, Zinc}, Mercury - 7471 - (CV)

Sample unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab

Matrix *
S = Soil
SE = Sediment
SO = Solid
SL = Sludge
W = Water
O = Oil
A = Air
DS = Drum Solids
DL = Drum Liquids
T = Tissue
WI = Wipe
L = Liquid
V = Vegetation
X = Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

Washington Closure Hanford	**CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST**	RC-118-167	Page 1 of 1

Collector **WENDY WEST**	Company Contact JOAN KESSNER	Telephone No. 373-4688	Project Coordinator KESSNER, JH	Price Code ~~9E~~ N 11/25/09 — Data Turnaround **45 Days**
Project Designation Columbia River Component of the RCBRA - Tissues	Sampling Location UPRIVER SA- WAL 2, [illegible] K1839 (7520)		SAF No. RC-118	
Ice Chest No. APS 64 066	Field Logbook No. 1655	COA HESCRC0520	Method of Shipment FED EX	
Shipped To EBERLINE SERVICES - [illegible]	Offsite Property No. N/A		Bill of Lading/Air Bill No. FD 7901 5914 0050	

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage
FREEZE [illegible]

Preservation	None	None	None	None	None	Cool 4C	Cool 4C
Type of Container	G/P	G/P	G	G/P	G/P	G/P	aG
No. of Container(s)	1	0	0	0	0	0	0
Volume	250g	5g	25g	5g	5g	5g	50g
SAMPLE ANALYSIS SDG# K1839	See item (1) in Special Instructions	Carbon-14	Tritium - H3	See item (2) in Special Instructions	Technetium-99	See item (3) in Special Instructions	Percent Dry Wt

Sample No.	Matrix *	Sample Date	Sample Time							
J18WX0	OTHER SOLID	11/18/09	1550	X	X	X	X	X	X	X

CHAIN OF POSSESSION	Date/Time	Sign/Print Names	Date/Time
Relinquished By/Removed From WENDY WEST	11/18/09 1550	Received By/Stored In EAS LOCKED STORAGE 4	11/18/09 1550
Relinquished By/Removed From EAS LOCKED STORAGE 4	11/20/09 1030	Received By/Stored In SHANNAN JOHNSON	11/20/09 1030
Relinquished By/Removed From SHANNAN JOHNSON	11/20/09 1030	Received By/Stored In FED EX	
Relinquished By/Removed From FED EX		Received By/Stored In [illegible]	11/23/09 0926
Relinquished By/Removed From [illegible]	[illegible]	Received By/Stored In FED EX	
Relinquished By/Removed From FED EX	[illegible] 0930	Received By/Stored In VICTOR HERNANDEZ	[illegible] 0930

SPECIAL INSTRUCTIONS
Perform gamma spec then contact Joan Kessner for additional analysis. Maintain FROZEN [illegible] as practical.

(1) Gamma Spec - Full List {Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Thorium-228}
(2) Strontium-89/90 - Total Sr, Isotopic Thorium, Isotopic Uranium, Isotopic Plutonium
(3) ICP Metals - 6010 (Full List) {Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Titanium, Vanadium, Zinc}, Mercury - 7471 [illegible]

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody.
[illegible]

Matrix *
S = Soil
SE = Sediment
SO = Solid
SL = Sludge
W = Water
O = Oil
A = Air
DS = Drum Solids
DL = Drum Liquids
T = Tissue
WI = Wipe
L = Liquid
V = Vegetation
X = Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

Washington Closure Hanford	**CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST**	RC-118-463	Page 1 of 1
Collector **WENDY WEST**	Company Contact JOAN KESSNER Telephone No. 375-4688	Project Coordinator KESSNER, JL	Price Code QK D [illegible] Data Turnaround **45 Days**
Project Designation Columbia River Component of the RCBRA - Biota	Sampling Location CRSA SUCKER-LIV/KID K1839 (7520)	SAF No. RC-118	
Ice Chest No. [illegible]-09-006	Field Logbook No. EL-1638 COA RESCRE6520	Method of Shipment FED EX	
Shipped To EBERLINE SERVICES LIONVILLE	Offsite Property No. N/A	Bill of Lading/Air Bill No. FE 799158140054	

POSSIBLE SAMPLE HAZARDS/REMARKS

N/A

Special Handling and/or Storage

FREEZE [illegible]

SAMPLE ANALYSIS

SDG# K1839

	Preservation	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]		
	Type of Container	G/P	G/P	G	G/P	G/P	G/P	aG		
	No. of Container(s)	1	0	0	0	0	0	0		
	Volume	150g	3g	25g	5g	1g	11g	50g		
		See item (1) in Special Instructions	Carbon-14	Tritium - H3	See item (2) in Special Instructions	Technetium-99	See item (3) in Special Instructions	[illegible]		

Sample No.	Matrix *	Sample Date	Sample Time									
J19017	OTHER SOLID	1/16/09	500	X	X	X	X	X	X	X		

CHAIN OF POSSESSION	Date/Time	Sign/Print Names	Date/Time
Relinquished By/Removed From WENDY WEST	1500 1/16/09	Received By/Stored In FAS LOCKED STORAGE 4	1500 1/16/09
Relinquished By/Removed From FAS LOCKED STORAGE 4	[illegible]	Received By/Stored In SHANNAH JOHNSON	[illegible]
Relinquished By/Removed From SHANNAH JOHNSON	[illegible]	Received By/Stored In FDX	
Relinquished By/Removed From FED EX		Received By/Stored In [illegible]	[illegible] 09 07 40
Relinquished By/Removed From [illegible]	[illegible]	Received By/Stored In FEDEX	
Relinquished By/Removed From Fed Ex	1-12-10 0750	Received By/Stored In Victor Hernandez	1-12-10 0750

SPECIAL INSTRUCTIONS

TRANSSHIPMENT REQUIRED. Perform general spec [illegible] analysis. Maintain FREEZE cooling as practical.

(1) Gamma Spec - [illegible] (Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238)

(2) Strontium-89/90 - Total Sr, Isotopic Thorium, Isotopic Uranium, Isotopic Plutonium

(3) ICP Metals - 6010 (Full List) (Aluminum, Antimony, Arsenic, Barium, Beryllium, [illegible], Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc); Mercury - 7471 - (CVAA)

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab.

Matrix *

[illegible]

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-118-464

Page 1 of 1

Collector: WENDY WEST	Company Contact: JOAN KESSNER Telephone No.: 375-4658	Project Coordinator: KESSNER, JH	Price Code: ~~8L~~ N 11/24/09
Project Designation: Columbia River Component of the RCBRA - Tissues	Sampling Location: [illegible] SUCKERS LIV/KID K1839 (7520)	SAF No.: RC-118	Data Turnaround: 45 Days
Ice Chest No.: AYF-CH-006	Field Logbook No.: EL 1658 COA: DESCRC6520	Method of Shipment: FED EX	
Shipped To: EBERLINE SERVICES [illegible]	Offsite Property No.: N/A	Bill of Lading/Air Bill No.: FD 799158140053	

POSSIBLE SAMPLE HAZARDS/REMARKS

N/A

Special Handling and/or Storage

[illegible]

Preservation	None	None	None	None	None	Cool 4C	Cool 4C
Type of Container	G/P	G/P	G	G/P	G/P	G/P	aG
No. of Container(s)	1	0	6	6	0	0	0
Volume	750g	2g	35g	5g	5g	15g	50g
SAMPLE ANALYSIS 8/20/4# K1839	Gamma Spec (1) - See Special Instructions	Carbon-14	Tritium - H3	Strontium (2) - See Special Instructions	Technetium-99	See metals (3) - See Special Instructions	Mercury - 7471

Sample No.	Matrix *	Sample Date	Sample Time							
J19DT8	OTHER SOLID	11/16/09	1515	X	X	X	X	X	X	X

CHAIN OF POSSESSION	Date/Time	Sign/Print Names	Date/Time
Relinquished By/Removed From: WENDY WEST	11/16/09 1515	Received By/Stored In: EAS LOCKED STORAGE	11/16/09 1515
Relinquished By/Removed From: EAS LOCKED STORAGE	11/23/09 1020	Received By/Stored In: SHANNON JOHNSON	11/23/09 1020
Relinquished By/Removed From: SHANNON JOHNSON	11/23/09 1130	Received By/Stored In: FDX	
Relinquished By/Removed From: FED EX		Received By/Stored In: F. [illegible]	11/24/09 0930
Relinquished By/Removed From: [illegible]	[illegible]	Received By/Stored In: FEDEX	
Relinquished By/Removed From: FedEx	[illegible] 0950	Received By/Stored In: VICTOR [illegible]	1-12-10 0950

SPECIAL INSTRUCTIONS

TRANSHIPPING REQUIRED. Perform gamma spec, then contact Joan Kessner for additional analysis. [illegible]

(1) Gamma Spec - (GEA) [Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Thorium-228]

(2) Strontium-89,90 - Total Sr, Isotopic Thorium, Isotopic Uranium, Isotopic Plutonium

(3) ICP Metals - 6010 (TAL List) (Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Titanium, Vanadium, Zinc), Mercury - 7471 - (CVA)

[illegible]

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody [illegible]

Matrix *

S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By: Date/Time

WCH-EE-011

Washington Closure Hanford	**CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST**	RC-118-465	Page 1 of 1

Collector WENDY WEST	Company Contact JOAN KESSNER	Telephone No. 373-4414	Project Coordinator KESSNER, JH	Price Code ~~9K~~ N 1/13/09
Project Designation Columbia River Component of the RCBRA - Tissues	Sampling Location HRSA-SOCKEYE LIVER K1839 (7520)		SAF No. RC-118	Data Turnaround 45 Days
Ice Chest No. NPN-CJ 006	Field Logbook No. EL-1618	COA HESCRC6520	Method of Shipment FED EX	
Shipped To FIBERTEC SERVICES LOUISVILLE	Offsite Property No. N/A		Bill of Lading/Air Bill No. FT 799156340858	

POSSIBLE SAMPLE HAZARDS/REMARKS

N/A

Special Handling and/or Storage

FREEZE TISSUES/COMPOSITE ON [illegible]

SAMPLE ANALYSIS

SDG # K1839

Preservation			[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Type of Container				G/P	G/P	G	G/P	G/P	G/P	aG
No. of Container(s)				1	0	0	0	0	0	0
Volume				750g	5g	15g	5g	5g	15g	50g
				See item (1) in Special Instructions	Carbon-14	Nickel-63	See item (2) in Special Instructions	Technetium-99	See item (3) in Special Instructions	[illegible]
Sample No.	Matrix *	Sample Date	Sample Time							
J1S0T9	OTHER SOLID	1/13/09	1520	X	X	X	X	X	X	X

CHAIN OF POSSESSION	Sign/Print Names		
Relinquished By/Removed From Wendy West	Date/Time 1/13/09 1540	Received By/Stored In FAS LOCKED STORAGE 7	Date/Time 1/13/09 1540
Relinquished By/Removed From FAS LOCKED STORAGE 7	Date/Time 1/21/09 1020	Received By/Stored In SHANNAN JOHNSON	Date/Time 1/21/09 1020
Relinquished By/Removed From SHANNAN JOHNSON	Date/Time 1/21/09 1520	Received By/Stored In FEDEX	Date/Time
Relinquished By/Removed From FED EX	Date/Time	Received By/Stored In M. WATHU[illegible]	Date/Time 1/23/09 [illegible]
Relinquished By/Removed From [illegible]	Date/Time [illegible]	Received By/Stored In FEDEX	Date/Time
Relinquished By/Removed From FedEx	Date/Time [illegible] [illegible]	Received By/Stored In Miche Hernandez	Date/Time [illegible] [illegible]

SPECIAL INSTRUCTIONS

TRANSSHIPPING REQUIRED. Perform gamma spec then transfer from Eberline for other rad analyses. Maintain FREEZE cooling as practical.

(1) Gamma Spec - {Full List} (Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238);

(2) Strontium-89,90 -- Total Sr, Isotopic Thorium, Isotopic Uranium, Isotopic Plutonium;

(3) ICP Metals - 6010 (Full List) (Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc), Mercury - 7471 - [illegible]

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location [illegible] custody.

[illegible]

Matrix *
S = Soil
SE = Sediment
SO = Solid
SL = Sludge
W = Water
O = Oil
A = Air
DS = Drum Solids
DL = Drum Liquids
T = Tissue
WI = Wipe
L = Liquid
V = Vegetation
X = Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EF-011

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-118-1010 Page 1 of 1

Collector WENDY WEST	Company Contact JOAN KESSNER	Telephone No 375-4688	Project Coordinator KESSNER, JH
Project Designation Columbia River Component of the RCBRA - Tissues	Sampling Location 100SA CARP 3 LIVER K1839 (7520)		SAF No. RC 155
Ice Chest No. AFS-04-006	Field Logbook No. EL 1648	COA BESCRC6510	Method of Shipment FED EX
Shipped To EBERLINE SERVICES [illegible]RONVILLE	Offsite Property No. N/A		Bill of Lading/Air Bill No. FD 7901501400 50

Price Code 95 Data Turnaround 45 Days

JH 9/1/09

POSSIBLE SAMPLE HAZARDS/REMARKS

N/A

Special Handling and/or Storage

FREEZE [illegible]

Preservation	None	None	None	None	None	None	None			
Type of Container	G/P	G/P	G	G/P	G/P	G/P	aG			
No. of Container(s)	1	0	0	0	0	0	0			
Volume	150g	2g	75g	5g	5g	10g	5g			
SAMPLE ANALYSIS SDG # K1839	See item (1) in Special Instructions	Carbon 14	Tritium (H3)	See item (2) in Special Instructions	Technetium-99	See item (3) in Special Instructions	[illegible]			

Sample No.	Matrix *	Sample Date	Sample Time										
J19GJ2	OTHER SOLID	11/18/09	1558	X	X	X	X	X	X	X			

CHAIN OF POSSESSION	Date/Time	Sign/Print Names	Date/Time
Relinquished By/Removed From WENDY WEST	11/18/09 1558	Received By/Stored In EAS LOCKED STORAGE 4	11/18/09 1558
Relinquished By/Removed From EAS LOCKED STORAGE 4	11/19/09 1030	Received By/Stored In SHANNAN JOHNSON	11/19/09 1030
Relinquished By/Removed From SHANNAN JOHNSON	11/20/09 1130	Received By/Stored In FEDX	
Relinquished By/Removed From FED EX		Received By/Stored In F. KURTAGH	11/23/09 0930
Relinquished By/Removed From [illegible] RECEIVING	1/8/10	Received By/Stored In FEDEX	
Relinquished By/Removed From FEDEX	1-12-10 0930	Received By/Stored In [illegible]	1-12-10 0950

SPECIAL INSTRUCTIONS

(1) Gamma Spec - 4Full List [Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238]
(2) Strontium-89,90 - Total Sr; Isotopic Thorium; Isotopic Uranium; Isotopic Plutonium
(3) ICP Metals - 6010 (Full List) [Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Titanium, Vanadium, Zinc]; Mercury - 7471 - [illegible]

Sample unavailable to remove samples from controlled storage. Shipped removed samples from storage location taking custody. Samples for shipment to lab.

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-118-1011 Page 1 of 1

Collector WENDY WEST	Company Contact JOAN KESSNER Telephone No. 373-4688	Project Coordinator KESSNER, JH	Price Code 8HL N Data Turnaround 45 Days
Project Designation Columbia River Component of the RCBRA - Tissues	Sampling Location 300SA-CARP 4 LIVER K1839 (7520)	SAF No. RC-115	
Ice Chest No. AFS-011-006	Field Logbook No. EL-1618 COA RESCRC6520	Method of Shipment FEDEX	
Shipped To THERMO SERVICES RICHLAND	Offsite Property No. N/A	Bill of Lading/Air Bill No. FDX 798153140053	

POSSIBLE SAMPLE HAZARDS/REMARKS
NA

Special Handling and/or Storage
FREEZE - ALL RAW COMPOSITE SAMPLE

Preservation	None	None	None	None	None	Cool 4C	Cool 4C
Type of Container	G/P	G/P	G	G/P	G/P	G/P	aG
No. of Container(s)	1	0	0	0	0	0	0
Volume	250g	2g	25g	2g	5g	15g	50g
SAMPLE ANALYSIS SDG# K1839	See item (1) in Special Instructions	Carbon-14	Iodine-129	See item (2) in Special Instructions	Technetium-99	See item (3) in Special Instructions	Pesticides 8081

Sample No.	Matrix *	Sample Date	Sample Time							
J19H43	OTHER SOLID	11/18/09	1005	X	X	X	X	X	X	X

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From WENDY WEST Date/Time 1405 11/18/09	Received By/Stored In EAS LOCKED STORAGE 9 Date/Time 1405 11/18/09
Relinquished By/Removed From EAS LOCKED STORAGE 9 Date/Time 11/20/09 1030	Received By/Stored In SHANNAN JOHNSON Date/Time 11/20/09 1030
Relinquished By/Removed From SHANNAN JOHNSON Date/Time 11/20/09 1520	Received By/Stored In F-18 Date/Time
Relinquished By/Removed From FED EX Date/Time	Received By/Stored In Date/Time 09 0930
Relinquished By/Removed From Date/Time	Received By/Stored In FEDEX Date/Time
Relinquished By/Removed From Date/Time 12-14 0950	Received By/Stored In Date/Time 12-14 0950

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) {Americium-241, Antimony-125, Beryllium-7, Cerium-144, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238}
(2) Strontium-89,90 - Total Sr; Isotopic Thorium; Isotopic Uranium; Isotopic Plutonium
(3) ICP Metals - 6010 (Full List) {Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc}; Mercury - 7471 - (CVA)

Sample unavailable to remove sample
from controlled storage. Shipper removed
samples from storage location using (?)
samples for shipment to lab

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Washington Closure Hanford	**CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST**	RC-118-1015	Page 1 of 1
Collector WENDY WEST	Company Contact JOAN KESSNER Telephone No. 375-4655	Project Coordinator KESSNER, JH	Price Code 9K N J15909 Data Turnaround 45 Days
Project Designation Columbia River Component of the RCBRA - Tissues	Sampling Location 100SA CARP 3 KIDNEY K1839 (7520)	SAF No. RC-118	
Ice Chest No. AFS-04-006	Field Logbook No. EL-1638 COA BESTRC6530	Method of Shipment FED EX	
Shipped To EBERLINE SERVICES [illegible]	Offsite Property No. N/A	Bill of Lading/Air Bill No. FDX 790150140058	

POSSIBLE SAMPLE HAZARDS/REMARKS
N/A

Special Handling and/or Storage
[illegible]

Preservation	[illegible]	None	[illegible]	[illegible]	None	[illegible]	[illegible]
Type of Container	G/P	G/P	G	G/P	G/P	G/P	aG
No. of Container(s)	1	0	0	0	0	0	0
Volume	750g	2g	25g	5g	5g	15g	50g
SAMPLE ANALYSIS J15909 K1839	See item (1) in Special Instructions	Carbon-14	Tritium - H3	See item (2) in Special Instructions	Technetium-99	See item (3) in Special Instructions	Extractable [illegible]

Sample No.	Matrix *	Sample Date	Sample Time							
J15907	OTHER SOLID	11/1/05	1555	X	X	X	X	X	X	X

CHAIN OF POSSESSION	Date/Time	Sign/Print Names	Date/Time
Relinquished By/Removed From WENDY WEST	1555 11/1/05	Received By/Stored In EAS LOCKED STORAGE #1	1555 11/1/05
Relinquished By/Removed From EAS LOCKED STORAGE #4	11/29/05 1625	Received By/Stored In SHANNAN JOHNSON	11/29/05 1625
Relinquished By/Removed From SHANNAN JOHNSON	11/29/05 1721	Received By/Stored In FDX	
Relinquished By/Removed From FED EX		Received By/Stored In R. Castanon [illegible]	12-7-05 0920
Relinquished By/Removed From [illegible] KEYSTONE	[illegible]	Received By/Stored In FEDEX	
Relinquished By/Removed From [illegible]	12-2-0 0930	Received By/Stored In Vickie Hernandez	12-2-05 0930

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) {Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238}; (2) Strontium-89,90 - Total Sr; Isotopic Uranium; Isotopic Plutonium; (3) ICP Metals - 6010 (Full List) {Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc}; Mercury - 7471 - [illegible]

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location (along custody) & samples for shipment to lab

Matrix *
S = Soil
SE = Sediment
SO = Solid
SL = Sludge
W = Water
O = Oil
A = Air
DS = Drum Solids
DL = Drum Liquids
T = Tissue
WI = Wipe
L = Liquid
V = Vegetation
X = Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-118-1016 Page 1 of 1

Collector: WENDY WEST	Company Contact: JOAN KESSNER	Telephone No.: 375-4688	Project Coordinator: KESSNER, JH
Project Designation: Columbia River Component of the RCBRA - Tissues	Sampling Location: 100-A CARP + KIDNEY K1839 (7520)		SAF No.: RC-118
Ice Chest No.: AFS-09-1-006	Field Logbook No.: EL-1638	COA: RESCRT6520	Method of Shipment: FEDEX
Shipped To: (EBERLINE SERVICES) RICHMOND	Offsite Property No.: N/A		Bill of Lading/Air Bill No.: FDX# 798150140050

Price Code: 9K N

Data Turnaround: 45 Days

POSSIBLE SAMPLE HAZARDS/REMARKS

N/A

Special Handling and/or Storage

FREEZE. TISSUE COMPOSITED BY FISH

0520000

		Preservation	None	None	None	None	None	Cool 4C	Cool 4C
		Type of Container	G/P	G/P	G	G/P	G/P	G/P	aG
		No. of Container(s)	1	0	0	0	0	0	0
		Volume	250g	5g	25g	5g	5g	15g	50g
SAMPLE ANALYSIS	3094	K1839	Gamma Spec (1) Special Instructions	Carbon-14	Tritium - H3	Strontium (2) Special Instructions	Technetium-99	Metals (3) Special Instructions	[illegible]
Sample No.	Matrix *	Sample Date	Sample Time							
J19GH0	OTHER SOLID	11/18/09	1600	X	X	X	X	X	X	X

CHAIN OF POSSESSION	Date/Time	Sign/Print Names	Date/Time
Relinquished By/Removed From: WENDY WEST	11/18/09 1600	Received By/Stored In: EAS LOCKED STORAGE	11/18/09 1600
Relinquished By/Removed From: EAS LOCKED STORAGE	11/20/09 1250	Received By/Stored In: SHANNAN JOHNSON	11/20/09 1250
Relinquished By/Removed From: SHANNAN JOHNSON	11/20/09 1250	Received By/Stored In: FEDX	
Relinquished By/Removed From: FED EX		Received By/Stored In:	11/23/09 0930
Relinquished By/Removed From: ICE CHAMBER		Received By/Stored In: FC-DEX	
Relinquished By/Removed From:	1-14-10 0930	Received By/Stored In:	1-14-10 0930

SPECIAL INSTRUCTIONS

(1) Gamma Spec - GEA (Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Thorium-228, Thorium-232)
(2) Strontium-89,90 - Total Sr; Isotopic Thorium; Isotopic Uranium; Isotopic Plutonium
(3) ICP Metals - 6010 (Full List) {Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Titanium, Vanadium, Zinc}; Mercury - 7471 (6.5.1)

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab

Matrix *
S = Soil
SE = Sediment
SO = Solid
SL = Sludge
W = Water
O = Oil
A = Air
DS = Drum Solids
DL = Drum Liquids
T = Tissue
WI = Wipe
L = Liquid
V = Vegetation
X = Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Appendix 5

Data Validation Supporting Documentation

INORGANIC ANALYSIS DATA VALIDATION CHECKLIST

VALIDATION LEVEL	A	B	[✓ C]	D	E

PROJECT: RCBRA

DATA PACKAGE: K1939

VALIDATOR: FLR

LAB: LLI

DATE: 2/24/10

SDG: K1939

ANALYSES PERFORMED

[✓ SW-846/ICP]	SW-846/GFAA	[✓ SW-846/Hg]	SW-846 Cyanide		

SAMPLES/MATRIX

J19WV5 J19WX0 J19WV4 J19WX5 J190R1 J190V2 J190R2

J190V3 J190R3 J190V4 J19607 J19608 ~~J19608~~ J19632

J19633 J19CK8 J19649 J19672 J19671 J18WW4

J19WX0 J190T7 J190T8 J190T9 J19642 J19643 J19647

J19648 solid

1. **DATA PACKAGE COMPLETENESS AND CASE NARRATIVE**

Technical verification documentation present? .... Yes [✓ No] N/A

Comments:

2. **INSTRUMENT PERFORMANCE AND CALIBRATIONS (Levels D and E)**

Initial calibrations performed on all instruments? .... Yes No [✓ N/A]

Initial calibrations acceptable? .... Yes No [✓ N/A]

ICP interference checks acceptable? .... Yes No [✓ N/A]

ICV and CCV checks performed on all instruments? .... Yes No [✓ N/A]

ICV and CCV checks acceptable? .... Yes No [✓ N/A]

Standards traceable? .... Yes No [✓ N/A]

Standards expired? .... Yes No [✓ N/A]

Calculation check acceptable? .... Yes No [✓ N/A]

Comments:

INORGANIC ANALYSIS DATA VALIDATION CHECKLIST

3. BLANKS (Levels B, C, D, and E)

ICB and CCB checks performed for all applicable analyses? (Levels D, E)........ Yes No [✓ N/A]

ICB and CCB results acceptable? (Levels D, E)........ Yes No [✓ N/A]

Laboratory blanks analyzed?........ [✓ Yes] No N/A

Laboratory blank results acceptable?........ Yes [✓ No] N/A

Field blanks analyzed? (Levels C, D, E)........ Yes [✓ No] N/A

Field blank results acceptable? (Levels C, D, E)........ Yes No [✓ N/A]

Transcription/calculation errors? (Levels D, E)........ Yes No [✓ N/A]

Comments: 63 - Tin - V3, V4. X5, B1, V2, B2, V3, V4 - tin - 05

no FB

4. ACCURACY (Levels C, D, and E)

MS/MSD samples analyzed?........ Yes No N/A

MS/MSD results acceptable?........ Yes No N/A

MS/MSD standards NIST traceable? (Levels D, E)........ Yes No N/A

MS/MSD standards expired? (Levels D, E)........ Yes No N/A

LCS/BSS samples analyzed?........ Yes No N/A

LCS/BSS results acceptable?........ Yes No N/A

Standards traceable? (Levels D, E)........ Yes No N/A

Standards expired? (Levels D, E)........ Yes No N/A

Transcription/calculation errors? (Levels D, E)........ Yes No N/A

Performance audit sample(s) analyzed?........ Yes No N/A

Performance audit sample results acceptable?........ Yes No N/A

Comments: MS - tl - 67% (63) - J all Hg (20) - 143% - J
MS - potassium - 53% (63) - J all
MS - tin - 67% (63) - J all
MS - zinc - 67% (63) - J all
LCS - silver - 56% (63) - J all LCS - silver - 56% (20) - J

INORGANIC ANALYSIS DATA VALIDATION CHECKLIST

5. PRECISION (Levels C, D, and E)

Duplicate RPD values acceptable? .... Yes No N/A

Duplicate results acceptable? .... Yes No N/A

MS/MSD standards NIST traceable? (Levels D, E) .... Yes No N/A

MS/MSD standards expired? (Levels D, E) .... Yes No N/A

Field duplicate RPD values acceptable? .... Yes No N/A

Field split RPD values acceptable? .... Yes No N/A

Transcription/calculation errors? (Levels D, E) .... Yes No N/A

Comments: Calcium (6520) (20) - J
phosphorus (4112) (20) - J
strontium (6570) (20) - J

6. ICP QUALITY CONTROL (Levels D and E)

ICP serial dilution samples analyzed? .... Yes No [✓ N/A]

ICP serial dilution %D values acceptable? .... Yes No [✓ N/A]

ICP post digestion spike required? .... Yes No [✓ N/A]

ICP post digestion spike values acceptable? .... Yes No [✓ N/A]

Standards traceable? .... Yes No [✓ N/A]

Standards expired? .... Yes No [✓ N/A]

Transcription/calculation errors? .... Yes No [✓ N/A]

Comments: ~~Hg (<3) < 2h~~ 2/

INORGANIC ANALYSIS DATA VALIDATION CHECKLIST

7. FURNACE AA QUALITY CONTROL (Levels D and E)

Duplicate injections performed as required? .... Yes No [✓ N/A]

Duplicate injection %RSD values acceptable? .... Yes No [✓ N/A]

Analytical spikes performed as required? .... Yes No [✓ N/A]

Analytical spike recoveries acceptable? .... Yes No [✓ N/A]

Standards traceable? .... Yes No [✓ N/A]

Standards expired? .... Yes No [✓ N/A]

MSA performed as required? .... Yes No [✓ N/A]

MSA results acceptable? .... Yes No [✓ N/A]

Transcription/calculation errors? .... Yes No [✓ N/A]

Comments: ____________________

8. HOLDING TIMES (all levels)

Samples properly preserved? .... [✓ Yes] No N/A

Sample holding times acceptable? .... Yes [✓ No] N/A

Comments (C7) < 2× HT - HG - 1

INORGANIC ANALYSIS DATA VALIDATION CHECKLIST

9. RESULT QUANTITATION AND DETECTION LIMITS (all levels)

Results reported for all requested analyses? .... [✓ Yes] No N/A

Results supported in the raw data? (Levels D, E) .... Yes No [✓ N/A]

Samples properly prepared? (Levels D, E) .... Yes No [✓ N/A]

Detection limits meet RDL? .... Yes [✓ No] N/A

Transcription/calculation errors? (Levels D, E) .... Yes No [✓ N/A]

Comments: Beryllium - all non

Appendix 6

Additional Documentation Requested by Client

WCH Hanford, Inc 2620 Fermi Avenue Richland WA, 99354	Project: RCT-118 Project Number: [none] Project Manager: Joan Kessner	**Reported:** 12/10/2009 15:21

Metals by SW846 6000/7000 series - Quality Control

Lionville Laboratory

Analyte	Result and Qualifiers	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch L911220 - SW 3050B									
Blank (L911220-BLK1)			Prepared & Analyzed: 11/24/2009						
Aluminum	3.33 U	3.33	mg/kg						
Antimony	0.400 U	0.400	mg/kg						
Arsenic	0.667 U	0.667	mg/kg						
Barium	0.333 U	0.333	mg/kg						
Beryllium	0.133 U	0.133	mg/kg						
Bismuth	6.67 U	6.67	mg/kg						
Boron	1.33 U	1.33	mg/kg						
Cadmium	0.133 U	0.133	mg/kg						
Calcium	66.7 U	66.7	mg/kg						
Chromium	0.133 U	0.133	mg/kg						
Cobalt	1.33 U	1.33	mg/kg						
Copper	0.667 U	0.667	mg/kg						
Iron	13.3 U	13.3	mg/kg						
Lead	0.333 U	0.333	mg/kg						
Lithium	1.67 U	1.67	mg/kg						
Magnesium	50.0 U	50.0	mg/kg						
Manganese	1.33 U	1.33	mg/kg						
Molybdenum	1.33 U	1.33	mg/kg						
Nickel	2.67 U	2.67	mg/kg						
Phosphorus	33.3 U	33.3	mg/kg						
Potassium	267 U	267	mg/kg						
Selenium	0.667 U	0.667	mg/kg						
Silicon	1.33 U	1.33	mg/kg						
Silver	0.133 U	0.133	mg/kg						
Sodium	33.3 U	33.3	mg/kg						
Strontium	0.667 U	0.667	mg/kg						
Thallium	0.333 U	0.333	mg/kg						
Tin	0.916 U	6.67	mg/kg						
Uranium	13.3 U	13.3	mg/kg						
Vanadium	1.67 U	1.67	mg/kg						
Zinc	6.67 U	6.67	mg/kg						

Metals by SW846 6000/7000 series - Quality Control

Lionville Laboratory

Analyte	Result and Qualifiers		Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch L911220 - SW 3050B										
Duplicate (L911220-DUP1)			**Source: 0911072-01**		**Prepared & Analyzed: 11/24/2009**					
Aluminum	1.57	U	1.57	mg/kg		1.53 U				20
Antimony	0.429	U	0.429	mg/kg		0.417 U				20
Arsenic	0.714	U	0.714	mg/kg		0.694 U				20
Barium	0.281	B	0.357	mg/kg		0.628			76*	20
Beryllium	0.143	U	0.143	mg/kg		0.139 U				20
Bismuth	7.14	U	7.14	mg/kg		6.94 U				20
Boron	1.43	U	1.43	mg/kg		1.39 U				20
Cadmium	0.143	U	0.143	mg/kg		0.139 U				20
Calcium	4940		71.4	mg/kg		9510			63*	20
Chromium	0.765		0.143	mg/kg		0.928			19	20
Cobalt	1.07	B	1.43	mg/kg		1.30			19	20
Copper	0.528	B	0.714	mg/kg		0.694 U				20
Iron	6.27	B	14.3	mg/kg		5.60			11	20
Lead	0.357	U	0.357	mg/kg		0.347 U				20
Lithium	0.380	B	1.79	mg/kg		0.539			35*	20
Magnesium	122		35.6	mg/kg		143			16	20
Manganese	0.283	B	1.57	mg/kg		0.480			52*	20
Molybdenum	1.43	U	1.43	mg/kg		1.39 U				20
Nickel	2.86	U	2.86	mg/kg		2.78 U				20
Phosphorus	4430		429	mg/kg		6730			41*	20
Potassium	3740		286	mg/kg		3540			5	20
Selenium	0.751		0.714	mg/kg		0.689			9	20
Silicon	2.42		1.43	mg/kg		2.22			8	20
Silver	0.143	U	0.143	mg/kg		0.139 U				20
Sodium	709		35.7	mg/kg		748			5	20
Strontium	3.84		0.714	mg/kg		7.51			65*	20
Thallium	0.357	U	0.357	mg/kg		0.347 U				20
Tin	6.82	B	7.14	mg/kg		7.18			5	20
Uranium	14.3	U	14.3	mg/kg		13.9 U				20
Vanadium	0.362	B	1.79	mg/kg		0.399			10	20
Zinc	8.84		7.14	mg/kg		11.9			30*	20

Metals by SW846 6000/7000 series - Quality Control

Lionville Laboratory

Analyte	Result and Qualifiers	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch L911220 - SW 3050B									
Matrix Spike (L911220-MS1)	**Source: 0911072-01**	**Prepared & Analyzed: 11/24/2009**							
Aluminum	150	3.79	mg/kg	151.52	1.47 U	99	75-125		
Antimony	36.7	0.455	mg/kg	37.879	0.417 U	97	75-125		
Arsenic	152	0.758	mg/kg	151.52	0.694 U	101	75-125		
Barium	155	0.379	mg/kg	151.52	0.628	102	75-125		
Beryllium	3.66	0.152	mg/kg	3.7879	0.119 U	97	75-125		
Bismuth	375	7.58	mg/kg	378.79	6.94 U	99	75-125		
Boron	71.5	1.52	mg/kg	75.758	1.19 U	94	75-125		
Cadmium	3.49	0.152	mg/kg	3.7879	0.119 U	92	75-125		
Calcium	10100	75.8	mg/kg	1893.9	9510	31*	75-125		
Chromium	16.0	0.152	mg/kg	15.152	0.928	100	75-125		
Cobalt	38.0	1.52	mg/kg	37.879	1.10	97	75-125		
Copper	18.0	0.758	mg/kg	18.939	0.694 U	95	75-125		
Iron	82.5	15.2	mg/kg	75.758	5.60	102	75-125		
Lead	36.2	0.379	mg/kg	37.879	0.347 U	95	75-125		
Lithium	77.9	1.89	mg/kg	75.758	0.519	102	75-125		
Magnesium	2250	56.8	mg/kg	1893.9	378	99	75-125		
Manganese	18.4	1.79	mg/kg	17.879	0.380	100	75-125		
Molybdenum	76.0	1.52	mg/kg	75.758	1.19 U	100	75-125		
Nickel	37.1	3.03	mg/kg	37.879	2.78 U	99	75-125		
Phosphorus	6390	455	mg/kg	378.79	6730	-90*	75-125		
Potassium	5530	303	mg/kg	1893.9	3540	105	75-125		
Selenium	153	0.758	mg/kg	151.52	0.689	101	75-125		
Silicon	76.2	1.52	mg/kg	75.758	2.22	98	75-125		
Silver	3.71	0.152	mg/kg	3.7879	0.139 U	98	75-125		
Sodium	2710	37.9	mg/kg	1893.9	748	104	75-125		
Strontium	84.4	0.758	mg/kg	75.758	7.51	101	75-125		
Thallium	141	0.379	mg/kg	151.52	0.147 U	93	75-125		
Tin	77.6	7.58	mg/kg	75.758	7.18	93	75-125		
Uranium	370	15.2	mg/kg	378.79	13.9 U	98	75-125		
Vanadium	40.4	1.89	mg/kg	37.879	0.399	106	75-125		
Zinc	45.3	7.58	mg/kg	37.879	11.9	88	75-125		

WCH-Hanford, Inc	Project: RC-118	
2620 Fermi Avenue	Project Number: [none]	**Reported:**
Richland WA, 99354	Project Manager: Joan Kessner	11/30/2009 15:21

Metals by SW846 6000/7000 series - Quality Control

Lionville Laboratory

Analyte	Result and Qualifiers	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch L911220 - SW 3050B									
Reference (L911220-SRM1)			Prepared & Analyzed: 11/24/2009						
Aluminum	8640	12.7	mg/kg	6766.6		128	0-225.5		
Antimony	49.6	3.81	mg/kg	56.630		87	0-223.6		
Arsenic	115	2.54	mg/kg	113.85		101	85-115		
Barium	298	1.27	mg/kg	298.35		100	75.7-124.3		
Beryllium	107	0.508	mg/kg	108.32		99	85.2-114.8		
Boron	79.1	5.08	mg/kg	86.580		91	68.5-131.6		
Cadmium	218	0.508	mg/kg	224.09		97	84.9-115.1		
Calcium	3360	254	mg/kg	3305.9		102	82.8-117.2		
Chromium	82.7	0.508	mg/kg	77.590		107	76.8-123.2		
Cobalt	161	5.08	mg/kg	163.19		99	79.4-120.6		
Copper	262	2.54	mg/kg	265.65		99	82.4-117.6		
Iron	8590	50.8	mg/kg	8202.8		105	78.9-121.1		
Lead	189	1.27	mg/kg	187.62		101	81.5-118.5		
Lithium	115	6.36	mg/kg	113.01		102	33.8-166.2		
Magnesium	9020	191	mg/kg	8352.3		108	84.2-115.8		
Manganese	937	12.7	mg/kg	951.35		98	89-111		
Molybdenum	234	5.08	mg/kg	234.78		100	80.1-119.9		
Nickel	222	10.2	mg/kg	220.85		101	81.4-118.6		
Potassium	14400	1020	mg/kg	14177		102	85.7-114.3		
Selenium	186	2.54	mg/kg	187.99		99	78.8-121.2		
Silicon	527	5.08	mg/kg	939.78		56	0-272.3		
Silver	80.8	0.508	mg/kg	83.960		96	81.9-118.1		
Sodium	9130	127	mg/kg	9587.1		95	83.5-116.5		
Strontium	176	2.54	mg/kg	171.65		102	67.5-132.5		
Thallium	84.9	1.27	mg/kg	85.410		99	77.1-122.9		
Tin	100	25.4	mg/kg	101.60		98	86.7-113.2		
Vanadium	108	6.36	mg/kg	97.430		111	75.8-124.2		
Zinc	191	25.4	mg/kg	196.32		97	78.9-121.1		

264 Welsh Pool Road
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Fax: 610-280-3041

WC Hanford, Inc.	Project: RC-118	
2620 Fermi Avenue	Project Number: [none]	**Reported:**
Richland WA, 99354	Project Manager: Joan Kessner	11/30/2009 15:21

Metals by SW846 6000/7000 series - Quality Control

Lionville Laboratory

Analyte	Result and Qualifiers		Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch L911237 - SW 7471A Prep										
Blank (L911237-BLK1)				Prepared & Analyzed: 11/25/2009						
Mercury	0.0300	U	0.0300	mg/kg						
Duplicate (L911237-DUP1)		**Source: 0911072-01**		Prepared & Analyzed: 11/25/2009						
Mercury	0.281		0.0290	mg/kg		0.230			19.7	20
Matrix Spike (L911237-MS1)		**Source: 0911072-01**		Prepared & Analyzed: 11/25/2009						
Mercury	0.426		0.0237	mg/kg	0.1318	0.230	149*	75-125		
Reference (L911237-SRM1)				Prepared & Analyzed: 11/25/2009						
Mercury	1.25		0.0290	mg/kg	1.2600		99.5	65.9-134.3		

Metals by SW846 6000/7000 series - Quality Control

Lionville Laboratory

Analyte	Result and Qualifiers		Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch L001063 - SW 3050B										
Blank (L001063-BLK1)					Prepared: 01/12/2010 Analyzed: 01/13/2010					
Aluminum	3.79	U	3.79	mg/kg						
Antimony	0.455	U	0.455	mg/kg						
Arsenic	0.758	U	0.758	mg/kg						
Barium	0.379	U	0.379	mg/kg						
Beryllium	0.152	U	0.152	mg/kg						
Bismuth	7.58	U	7.58	mg/kg						
Boron	1.52	U	1.52	mg/kg						
Cadmium	0.152	U	0.152	mg/kg						
Calcium	75.8	U	75.8	mg/kg						
Chromium	0.152	U	0.152	mg/kg						
Cobalt	1.52	U	1.52	mg/kg						
Copper	0.758	U	0.758	mg/kg						
Iron	15.2	U	15.2	mg/kg						
Lead	0.379	U	0.379	mg/kg						
Lithium	1.89	U	1.89	mg/kg						
Magnesium	2.37	B	36.8	mg/kg						
Manganese	3.79	U	3.79	mg/kg						
Molybdenum	1.52	U	1.52	mg/kg						
Nickel	3.03	U	3.03	mg/kg						
Phosphorus	37.9	U	37.9	mg/kg						
Potassium	303	U	303	mg/kg						
Selenium	0.758	U	0.758	mg/kg						
Silicon	1.52	U	1.52	mg/kg						
Silver	0.152	U	0.152	mg/kg						
Sodium	17.9	U	17.9	mg/kg						
Strontium	0.758	U	0.758	mg/kg						
Thallium	0.379	U	0.379	mg/kg						
Tin	0.842	B	7.58	mg/kg						
Uranium	15.2	U	15.2	mg/kg						
Vanadium	1.89	U	1.89	mg/kg						
Zinc	7.58	U	7.58	mg/kg						

WC Hanford, Inc	Project: RC-118	
2620 Fermi Avenue	Project Number: K1839	Reported:
Richland WA, 99354	Project Manager: Joan Kessner	01/13/2010 17:15

Metals by SW846 6000/7000 series - Quality Control

Lionville Laboratory

Analyte	Result and Qualifiers		Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch L001063 - SW 3050B										
Duplicate (L001063-DUP1)			Source: 1001022-01	Prepared: 01/12/2010	Analyzed: 01/13/2010					
Aluminum	4.10	U	4.10	mg/kg		4.90 U				20
Antimony	0.492	U	0.492	mg/kg		0.588 U				20
Arsenic	0.820	U	0.820	mg/kg		0.980 U				20
Barium	0.410	U	0.410	mg/kg		0.490 U				20
Beryllium	0.164	U	0.164	mg/kg		0.196 U				20
Bismuth	8.20	U	8.20	mg/kg		9.80 U				20
Boron	1.64	U	1.64	mg/kg		1.96 U				20
Cadmium	0.152	B	0.164	mg/kg		0.159			4	20
Calcium	133		82.0	mg/kg		139			4	20
Chromium	0.164	U	0.164	mg/kg		0.196 U				20
Cobalt	1.64	U	1.64	mg/kg		1.96 U				20
Copper	3.30		0.820	mg/kg		4.04			20	20
Iron	121		16.4	mg/kg		122			0.5	20
Lead	0.410	U	0.410	mg/kg		0.490 U				20
Lithium	2.05	U	2.05	mg/kg		2.45 U				20
Magnesium	151		61.5	mg/kg		159			5	20
Manganese	0.898	B	1.10	mg/kg		0.921			3	20
Molybdenum	1.64	U	1.64	mg/kg		1.96 U				20
Nickel	3.28	U	3.28	mg/kg		3.92 U				20
Phosphorus	2230		41.0	mg/kg		2300			3	20
Potassium	2450		328	mg/kg		2520			3	20
Selenium	1.31		0.820	mg/kg		1.23			6	20
Silicon	3.54		1.64	mg/kg		3.59			1	20
Silver	0.164	U	0.164	mg/kg		0.196 U				20
Sodium	1300		41.0	mg/kg		1340			3	20
Strontium	0.171	B	0.820	mg/kg		0.175			2	20
Thallium	0.410	U	0.410	mg/kg		0.490 U				20
Tin	0.980	B	8.20	mg/kg		1.21			20	20
Uranium	16.4	U	16.4	mg/kg		19.6 U				20
Vanadium	0.187	B	2.05	mg/kg		0.212			12	20
Zinc	20.9		8.20	mg/kg		21.5			3	20

Metals by SW846 6000/7000 series - Quality Control

Lionville Laboratory

Analyte	Result and Qualifiers	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch L001063 - SW 3050B									
Matrix Spike (L001063-MS1)		Source: L001022-01	Prepared: 01/12/2010 Analyzed: 01/13/2010						
Aluminum	109	1.25	mg/kg	129.87	1.99 U	84	75-125		
Antimony	26.1	0.190	mg/kg	32.468	0.388 U	80	75-125		
Arsenic	106	0.649	mg/kg	129.87	0.980 U	81	75-125		
Barium	112	0.125	mg/kg	129.87	0.490 U	86	75-125		
Beryllium	2.66	0.130	mg/kg	3.2468	0.196 U	82	75-125		
Bismuth	266	6.49	mg/kg	324.68	9.80 U	82	75-125		
Boron	50.6	1.30	mg/kg	64.935	1.96 U	78	75-125		
Cadmium	2.90	0.130	mg/kg	3.2468	0.159	84	75-125		
Calcium	1170	64.9	mg/kg	1623.4	149	81	75-125		
Chromium	10.4	0.330	mg/kg	12.987	0.196 U	80	75-125		
Cobalt	26.1	1.30	mg/kg	32.468	1.96 U	80	75-125		
Copper	16.3	0.649	mg/kg	16.234	4.04	75	75-125		
Iron	167	1.30	mg/kg	64.935	122	69*	75-125		
Lead	25.6	0.325	mg/kg	32.468	0.490 U	79	75-125		
Lithium	55.3	3.62	mg/kg	64.935	2.45 U	85	75-125		
Magnesium	1470	48.7	mg/kg	1623.4	159	81	75-125		
Manganese	27.9	3.25	mg/kg	32.468	0.921	83	75-125		
Molybdenum	53.6	1.30	mg/kg	64.935	1.96 U	83	75-125		
Nickel	26.3	2.60	mg/kg	32.468	3.92 U	81	75-125		
Phosphorus	2230	32.5	mg/kg	324.68	2300	-21*	75-125		
Potassium	3420	260	mg/kg	1623.4	2520	55*	75-125		
Selenium	106	0.649	mg/kg	129.87	1.23	81	75-125		
Silicon	54.5	1.30	mg/kg	64.935	3.39	78	75-125		
Silver	2.61	0.130	mg/kg	3.2468	0.196 U	80	75-125		
Sodium	2510	32.5	mg/kg	1623.4	1340	72*	75-125		
Strontium	56.9	0.649	mg/kg	64.935	0.171	87	75-125		
Thallium	104	0.325	mg/kg	129.87	0.490 U	80	75-125		
Tin	45.0	6.49	mg/kg	64.935	1.21	67*	75-125		
Uranium	264	13.0	mg/kg	324.68	19.6 U	81	75-125		
Vanadium	25.7	1.62	mg/kg	32.468	0.212	79	75-125		
Zinc	33.9	6.49	mg/kg	32.468	21.5	37*	75-125		

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WCH-Hanford, Inc 2620 Fermi Avenue Richland WA, 99354	Project: RC-118 Project Number: K1839 Project Manager: Joan Kessner	Reported: 01/15/2010 12:15

Metals by SW846 6000/7000 series - Quality Control

Lionville Laboratory

Analyte	Result and Qualifiers	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch L001063 - SW 3050B									
Reference (L001063-SRM1)				Prepared: 01/12/2010 Analyzed: 01/13/2010					
Aluminum	8740	9.62	mg/kg	6766.6		129	0-225.5		
Antimony	61.3	1.15	mg/kg	56.630		108	0-223.6		
Arsenic	114	1.92	mg/kg	113.83		100	83-115		
Barium	308	0.962	mg/kg	298.35		101	75.7-124.1		
Beryllium	107	0.385	mg/kg	108.12		99	85.2-114.8		
Boron	79.9	1.85	mg/kg	86.580		92	68.5-131.6		
Cadmium	221	0.385	mg/kg	224.09		99	84.9-115.1		
Calcium	1280	192	mg/kg	1303.9		99	82.8-117.2		
Chromium	78.4	0.385	mg/kg	77.590		101	76.8-123.2		
Cobalt	159	3.85	mg/kg	163.19		98	79.4-120.6		
Copper	270	1.92	mg/kg	265.65		102	82.4-117.6		
Iron	8310	98.3	mg/kg	8202.8		101	78.9-121.1		
Lead	182	0.962	mg/kg	187.62		97	81.5-118.5		
Lithium	119	4.81	mg/kg	113.01		105	33.8-166.2		
Magnesium	8440	114	mg/kg	8352.3		101	86.2-113.8		
Manganese	1050	9.62	mg/kg	951.35		110	69-131		
Molybdenum	241	1.85	mg/kg	234.74		103	80.1-119.9		
Nickel	220	7.69	mg/kg	220.95		100	81.4-118.6		
Potassium	13900	769	mg/kg	14172		98	85.7-114.3		
Selenium	184	1.92	mg/kg	187.99		98	78.8-121.2		
Silicon	529	1.85	mg/kg	939.76		56	0-272.1		
Silver	82.1	0.385	mg/kg	83.960		98	81.9-118.1		
Sodium	9560	96.2	mg/kg	9587.1		100	83.6-116.4		
Strontium	190	1.92	mg/kg	171.65		111	67.5-132.5		
Thallium	84.2	0.962	mg/kg	85.410		99	77.1-122.9		
Tin	95.2	19.2	mg/kg	101.60		94	86.7-113.3		
Vanadium	102	4.81	mg/kg	97.430		105	75.8-124.2		
Zinc	194	19.2	mg/kg	196.52		99	78.9-121.1		

WC Hanford, Inc 2620 Fermi Avenue Richland WA, 99354	Project: RC-118 Project Number: K1819 Project Manager: Joan Kessner	Reported: 01/13/2010 17:15

Metals by SW846 6000/7000 series - Quality Control

Lionville Laboratory

Analyte	Result and Qualifiers	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch L001073 - SW 7471A Prep									
Blank (L001073-BLK1)			**Prepared & Analyzed: 01/13/2010**						
Mercury	0.0300 U	0.0300	mg/kg						
Duplicate (L001073-DUP1)		**Source: 1001022-01**	**Prepared & Analyzed: 01/13/2010**						
Mercury	0.136	0.0290	mg/kg		0.136			0.408	20
Matrix Spike (L001073-MS1)		**Source: 1001022-01**	**Prepared & Analyzed: 01/13/2010**						
Mercury	0.266	0.0265	mg/kg	0.146	0.136	88.7	75-125		
Reference (L001073-SRM1)			**Prepared & Analyzed: 01/13/2010**						
Mercury	1.30	0.0290	mg/kg	1.2500		104	65.9-133.3		

Date: 1 March 2010
To: Washington Closure Hanford Inc (technical representative)
From: ELR Consulting
Project: Columbia River Component of the RCBRA - Tissues
Subject: Radiochemistry - Data Package No K1839-EB

INTRODUCTION

This memo presents the results of data validation on Data Package No. K1839 prepared by Eberline Services (EB). A list of samples validated along with the analyses reported and the method of analysis is provided in the following table.

Sample ID	Sample Date	Media	Validation	Date
J18WW9	11/18/09	Solid	C	See note 1
J18WX0	11/18/09	Solid	C	See note 1
J190T7	11/18/09	Solid	C	See note 1
J190T8	11/18/09	Solid	C	See note 1
J190T9	11/18/09	Solid	C	See note 1
J196H2	11/18/09	Solid	C	See note 1
J196H3	11/18/09	Solid	C	See note 1
J196H7	11/18/09	Solid	C	See note 1
J196H8	11/18/09	Solid	C	See note 1
J18WV4	11/17/09	Solid	C	See note 1
J18WV5	11/17/09	Solid	C	See note 1
J18WX5	11/17/09	Solid	C	See note 1
J18WX6	11/17/09	Solid	C	See note 1
J190R1	11/17/09	Solid	C	See note 1
J190R2	11/17/09	Solid	C	See note 1
J190R3	11/17/09	Solid	C	See note 1
J190V2	11/17/09	Solid	C	See note 1
J190V3	11/17/09	Solid	C	See note 1
J190V4	11/17/09	Solid	C	See note 1
J196D7	11/18/09	Solid	C	See note 1
J196D8	11/18/09	Solid	C	See note 1
J196J2	11/18/09	Solid	C	See note 1
J196J3	11/18/09	Solid	C	See note 1
J196K8	11/18/09	Solid	C	See note 1
J196K9	11/18/09	Solid	C	See note 1
J196Y1	11/18/09	Solid	C	See note 1
J196Y2	11/18/09	Solid	C	See note 1

1 - Tritium, carbon-14, total strontium, technetium-99, alpha spectroscopy and gamma spectroscopy

Data validation was conducted in accordance with the Washington Closure Hanford (WCH) validation statement of work and the Remedial Investigation Work Plan for Hanford Site Releases to the Columbia River (DOE/RL-2008, Rev. 0, September 2006). Appendices 1 through 6 provide the following information as indicated below.

Appendix 1. Glossary of Data Reporting Qualifiers
Appendix 2. Summary of Data Qualification
Appendix 3. Qualified Data Summary and Annotated Laboratory Reports
Appendix 4. Laboratory Narrative and Chain-of-Custody Documentation
Appendix 5. Data Validation Supporting Documentation
Appendix 6. Additional Data Requested by Client

DATA QUALITY PARAMETERS

· Holding Times

Holding times are calculated from Chain-of-Custody forms to determine the validity of the results. The maximum holding time for radiochemical analysis is 6 months

All holding times were acceptable.

· Preparation (Method) Blanks

Laboratory Blanks

Blank samples are analyzed to determine if positive results are due to laboratory reagent, sample container, or detector contamination. If blank analysis results indicate the presence of an analyte above the minimum detectable activity (MDA), the following qualifiers are applied: All positive sample results less than five times the highest blank concentration are qualified as estimates and flagged "J"; sample results below the MDA are qualified as undetected and flagged "U"; sample results above the MDA and greater than five times the highest blank concentration are not qualified.

All blank results were acceptable.

Field (Equipment) Blank

No field blanks were submitted for analysis.

· Accuracy

Accuracy is evaluated from laboratory control sample (LCS) or blank spike sample (BSS) batch samples and spiked samples from the analytical batch. Measured activities are compared to the known added amounts. The acceptable LCS or BSS and matrix spike (MS) recovery range is 70-130%. In addition, samples may be spiked with a radiochemical tracer to assist in isolating the radioisotope of interest with the yield of 8/25/09the tracer being used in calculating sample activity. The acceptable range for tracer recovery is 20% to 105%. Spike sample results outside the above ranges result in associated sample results being qualified as estimates, or not qualified, depending on the activity of the individual sample. Results are rejected for LCS/BSS recoveries of less than 30% and tracer recoveries of less than 20%, and tracer recoveries of greater than 115% for detected results

Due to the lack of an LCS analysis, all thorium-228 (aspec) and thorium-232 (aspec) results were qualified as estimates and flagged "J".

Due to the lack of a matrix spike analysis, all tritium and carbon-14 results were qualified as estimates and flagged "J".

All other accuracy results were acceptable

- **Laboratory Duplicates**

Analytical precision is expressed by the relative percent differences (RPD) between the recoveries of duplicate matrix spike analyses performed on a sample in the analytical batch. Precision may alternatively be assessed using unspiked duplicate analyses performed on a sample in the analytical batch. If both sample and replicate activities (concentrations) are greater than five times the contract required detection limit (CRDL) and the RPD is less than 30%, no qualification is required. If either activity (concentration) is less than five times the CRDL, the RPD control limit is less than or equal to two times the CRDL. If the RPD is outside the applicable control limit, associated results are qualified as estimated detects or estimated non-detects.

All duplicate results were acceptable.

Field Duplicates

No field duplicates were submitted for analysis.

- **Detection Levels**

Reported analytical detection levels for undetected analytes are compared against the RCBRA tissue RQLs to ensure that laboratory detection levels meet the required criteria. Seventy-two analytes exceeded the RQL. Under the WCH statement of work, no qualification is required. All other analytes met the RQL.

- **Completeness**

Data package No. K1839 was submitted for validation and verified for completeness. Completeness is based on the percentage of data determined to be valid (i.e., not rejected). The completion percentage was 100%.

MAJOR DEFICIENCIES

None found.

MINOR DEFICIENCIES

The following minor deficiencies were noted:

- Due to the lack of an LCS analysis, all thorium-228 (aspec) and thorium 232 (aspec) results were qualified as estimates and flagged "J".
- Due to the lack of a matrix spike analysis, all tritium and carbon-14 results were qualified as estimates and flagged "J".

Data flagged "J" indicates that the associated concentration is an estimate, but under the WCH statement of work, the data may be usable for decision-making purposes. All other validated results are considered accurate within the standard error associated with the methods.

Seventy-two analytes exceeded the RQL. Under the WCH statement of work, no qualification is required.

REFERENCES

Washington Closure Hanford Contract #S00W307A00 (March 2008), *Data Validation Services*.

DOE/RL-2008-11, Rev. 0, September 2008, *Remedial Investigation Work Plan for Hanford Site Releases to the Columbia River*.

Appendix 1

Glossary of Data Reporting Qualifiers

Qualifiers which may be applied by data validators in compliance with the WCH statement of work are as follows:

U - Indicates the compound or analyte was analyzed for and not detected above the minimum detectable activity (MDA) in the sample. The value reported is the sample result corrected for sample dilution and moisture content by the laboratory. The data is usable for decision making purposes

UJ Indicates the compound or analyte was analyzed for and not detected at concentrations above the minimum detectable activity (MDA) in the sample Due to a minor QC deficiency identified during the data validation, the associated quantitation limit is an estimate, but is usable for decision making purposes.

J - Indicates the compound or analyte was analyzed for and detected. Due to a minor QC deficiency identified during the data validation, the associated concentration is an estimate, but the data are usable for decision-making purposes.

R - Indicates the compound or analyte was analyzed for, detected, and due to an identified major QC deficiency, the data are unusable.

UR - Indicates the compound or analyte was analyzed for and not detected in the sample. Additionally, the data is unusable due to an identified major QC deficiency.

Appendix 2

Summary of Data Qualification

RADIOCHEMISTRY DATA QUALIFICATION SUMMARY*

SDG: K1839	**REVIEWER: ELR**	**Project: RCBRA**	**PAGE 1 OF 1**
COMPOUND	QUALIFIER	SAMPLES AFFECTED	REASON
Thorium-228 (aspec) Thorium-232 (aspec)	J	All	No LCS analysis
Tritium Carbon-14	J	All	No MS analysis

* - The Qualified Data Summary Table includes laboratory applied "U" qualifiers not specifically identified here. The laboratory applied "U" qualifiers are included to minimize misinterpretation of results contained in the table.

Appendix 3

Qualified Data Summary and Annotated Laboratory Reports

EBERLINE ANALYTICAL/RICHMOND

SAMPLE DELIVERY GROUP K1039

7519-001

J18WV4

DATA SHEET

SDG 7519
Contact N. Joseph Verville
Client/Case no Hanford SDG_K1039
Contract No. 00W415A00

Lab sample id R911090-01
Dept sample id 7519-001
Received 11/24/09
% solids 100.0

Client sample id J18WV4
Location/Matrix UPRIVER SA WAL_1,FILLET SOLID
Collected/Weight 11/17/09 11:15 1549.0
Custody/SAF No RC-118 191 RC-118

✓ 2/28/10

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Tritium	10028-17-8	0.812	4.6	7.81	400	U J	H
Carbon 14	14762-75-5	0.755	1.1	5.26	50.0	U J	C
Total Strontium	SR-RAD	0.062	0.14	0.306	1.00	U	SR
Technetium 99	14133-76-7	0.065	0.25	0.165	15.0	U	TC
Thorium 228	14274-82-9	-0.032	0.11	0.404	1.00	U J	TH
Thorium 230	14269-63-7	0.698	0.45	0.606	1.00		TH
Thorium 232	TH-232	0	0.064	0.241	1.00	U J	TH
Uranium 233/234	U-233/234	0.024	0.049	0.187	1.00	U	U
Uranium 235	15117-96-1	0	0.059	0.226	1.00	U	U
Uranium 238	U-238	0	0.049	0.187	1.00	U	U
Plutonium 238	13981-16-3	0.029	0.12	0.278	1.00	U	PU
Plutonium 239/240	PU-239/240	0.079	0.058	0.222	1.00	U	PU
Potassium 40	13966-00-2	5.64	0.43	0.304			GAM
Cobalt 60	10198-40-0	U		0.011	0.050	U	GAM
Cesium 137	10045-97-3	U		0.032	0.100	U	GAM
Radium 226	13982-63-3	U		0.066	0.100	U	GAM
Radium 228	15262-20-1	U		0.136	0.200	U	GAM
Europium 152	14683-23-9	U		0.080	0.100	U	GAM
Europium 154	15585-10-1	U		0.089	0.100	U	GAM
Europium 155	14391-16-3	U		0.056	0.100	U	GAM
Thorium 228	14274-82-9	U		0.048		U	GAM
Thorium 232	TH-232	U		0.136		U	GAM
Uranium 235	15117-96-1	U		0.142		U	GAM
Uranium 238	U-238	U		1.75		U	GAM
Americium 241	14596-10-2	U		0.027		U	GAM
Beryllium 7	13966-02-4	U		0.277		U	GAM
Ruthenium 106	13967-48-1	U		0.274		U	GAM
Antimony 125	14234-35-6	U		0.073		U	GAM

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-DS
Version 3.06
Report date 12/15/09

DATA SHEET, cont

SDG 7519
Contact M. Joseph Verville

Client/Case no Hanford SDG K1039
Contract No. 600W235A00

Lab sample id R911090-01
Dept sample id 7519-001
Received 11/23/09
% solids 100.0

Client sample id J18WV4
Location/Matrix UPRIVER, 3A-WAL 1, FILLET SOLID
Collected/Weight 11/17/09 11:15 1549 g
Custody/SAF No RC-118-151 RC-118

JL 2/28/10

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Cesium 134	13967-70-9	U		0.016		U	GAM

Columbia River Component of the RCBRA Tissues

Lab id EBERLINE
Protocol Hanford
Version Ver 1.0
Form DVD-DS
Version 4.06
Report date 12/15/09

EBERLINE ANALYTICAL/RICHMOND

SAMPLE DELIVERY GROUP R1839

7519-002

J18HV5

DATA SHEET

SDG 7519
Contact N. Joseph Verville
Client/Case no Hanford SDG F1839
Contract No. 00W2?5A00

Lab sample id R911090-02
Dept sample id 7519-002
Received 11/23/09
% solids 100.0

Client sample id J18HV5
Location/Matrix 100RIVER SA WAS ?.FILLET SOLID
Collected/Weight 11/17/09 10:15 1029 g
Custody/SAP No RC-118 152 RC 118

2/25/10

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Tritium	10028-17-8	3.38	5.9	9.90	400	U J	H
Carbon 14	14762-75-5	4.19	4.0	6.50	50.0	U J	C
Total Strontium	SR RAD	-0.097	0.16	0.149	1.00	U	SR
Technetium 99	14133-76-7	0.004	0.22	0.184	15.0	U	TC
Thorium 228	14274-82-9	-0.032	0.064	0.241	1.00	U J	TH
Thorium 230	14269-63-7	0.012	0.32	0.606	1.00	U	TH
Thorium 232	TH-232	0.032	0.064	0.243	1.00	U J	TH
Uranium 233/234	U-233/234	0	0.044	0.148	1.00	U	U
Uranium 235	15117-96-1	0	0.053	0.203	1.00	U	U
Uranium 238	U-238	0.022	0.044	0.168	1.00	U	U
Plutonium 238	13981-16-3	0.057	0.052	0.249	1.00	U	PU
Plutonium 239/240	PU-239/240	0.026	0.052	0.199	1.00	U	PU
Potassium 40	13966-00-2	3.08	0.58	0.350			GAM
Cobalt 60	10198-40-0	U		0.036	0.050	U	GAM
Cesium 137	10045-97-3	U		0.047	0.100	U	GAM
Radium 226	13982-63-3	U		0.107	0.100	U	GAM
Radium 228	15262-20-1	U		0.147	0.200	U	GAM
Europium 152	14683-23-9	U		0.090	0.100	U	GAM
Europium 154	15585-10-1	U		0.106	0.100	U	GAM
Europium 155	14391-16-3	U		0.072	0.100	U	GAM
Thorium 228	14274-82-9	U		0.099		U	GAM
Thorium 232	TH-232	U		0.147		U	GAM
Uranium 235	15117-96-1	U		0.167		U	GAM
Uranium 238	U-238	U		4.53		U	GAM
Americium 241	14596-10-2	U		0.123		U	GAM
Beryllium 7	13966-02-4	U		0.201		U	GAM
Ruthenium 106	13967-48-1	U		0.309		U	GAM
Antimony 125	14234-35-6	U		0.080		U	GAM

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD DS
Version 3.06
Report date 12/15/09

DATA SHEET, cont

SDG	7519	Client/Case no	Hanford SDG K1839
Contact	N. Joseph Verville	Contract	No. 600W235A00
Lab sample id	R911090 02	Client sample id	J18WV5
Umpl sample id	7519-002	Location/Matrix	UPRIVER SA-WAL 2,FILLET COLD
Received	11/23/02	Collected/Weight	11/17/02 10:15 1622 g
% solids	100.0	Custody/SAF No	RC 118-152 RC 118

V 7/29/10

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALIFIERS	TEST
Indium 114	13967-70-9	U		0.041		U	GAM

Columbia River Component of the RCBRA Tissues

Lab id	EBRLNE
Protocol	Hanford1
Version	Ver 1.0
Form	DVD DS
Version	1.06
Report date	12/15/02

EBERLINE ANALYTICAL/RICHMOND

SAMPLE DELIVERY GROUP K1839

7519-003

J18WX5

DATA SHEET

SDG 7519
Client/Case no Hanford SDG_K1839
Contact N. Joseph Verville
Contract No. 500W235A00

Lab sample id E811090-01
Dept sample id 7519-003
Received 11/21/08
% solids 100.0
Client sample id J18WX5
Location/Matrix UPRIVER SA-WAL 1 CARCASS SOLID
Collected/Weight 11/17/08 11:45 1560 g
Custody/SAF No RC 110 171 RC 118

K 2/28/10

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALIFIERS	TEST
Tritium	10028-17-8	4.14	5.0	8.20	400	U J	H
Carbon 14	14762-75-5	1.80	4.2	5.42	50.0	U J	C
Total Strontium	SR RAD	0.150	0.35	0.277	1.00	U	SR
Technetium 99	14133-76-7	0.030	0.17	0.456	15.0	U	TC
Thorium 228	14274-82-9	0.019	0.35	0.371	1.00	U J	TH
Thorium 230	14269-63-7	0.426	0.39	0.605	1.00	U	TH
Thorium 232	TH-232	0	0.077	0.296	1.00	U J	TH
Uranium 233/234	U-233/234	0.021	0.046	0.174	1.00	U	U
Uranium 235	15117-96-1	0	0.055	0.211	1.00	U	U
Uranium 238	U-238	0.021	0.046	0.174	1.00	U	U
Plutonium 238	13981-16-3	-0.028	0.11	0.313	1.00	U	PU
Plutonium 239/240	PU-239/240	0	0.057	0.217	1.00	U	PU
Potassium 40	13966-00-2	3.41	0.61	0.493			GAM
Cobalt 60	10198-40-0	U		0.044	0.050	U	GAM
Cesium 137	10045-97-3	U		0.043	0.100	U	GAM
Radium 226	13982-63-3	U		0.080	0.100	U	GAM
Radium 228	15262-20-1	U		0.164	0.200	U	GAM
Europium 152	14683-23-9	U		0.096	0.100	U	GAM
Europium 154	15585-10-1	U		0.107	0.100	U	GAM
Europium 155	14391-16-3	U		0.077	0.100	U	GAM
Thorium 228	14274-82-9	U		0.058		U	GAM
Thorium 232	TH-232	U		0.164		U	GAM
Uranium 235	15117-96-1	U		0.174		U	GAM
Uranium 238	U-238	U		4.69		U	GAM
Americium 241	14596-10-2	U		0.044		U	GAM
Beryllium 7	13966-02-4	U		0.427		U	GAM
Ruthenium 106	13967-48-1	U		0.331		U	GAM
Antimony 125	14234-35-6	U		0.085		U	GAM

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD DS
Version 1.06
Report date 12/15/08

E B E R L I N E   A N A L Y T I C A L / R I C H M O N D

SAMPLE DELIVERY GROUP K1819

7519-003 J18WX5

DATA SHEET, cont

SDG	7519	Client/Case no	Hanford SDG K1819
Contact	N. Joseph Verville	Contract	No. [illegible]
Lab sample id	S911090-01	Client sample id	J18WX5
Dept sample id	7519-003	Location/Matrix	UPRIVER SA WAL 1 CARCASS SOLID
Received	11/23/09	Collected/Weight	11/17/09 11:35 1560 g
% solids	100.0	Custody/SAP No	RC-100-171 RC-118

VC 2/25/10

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Cesium 134	13967-70-9	U		0.050		U	GAM

Columbia River Component of the RCBRA - Tissues

DATA SHEETS
Page 6
SUMMARY DATA SECTION
Page 22

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-LC
Version 1.06
Report date 12/15/09

EBERLINE ANALYTICAL/RICHMOND

SAMPLE DELIVERY GROUP E1839

7519 004

J18WX6

DATA SHEET

SDG	7519	Client/Case no	Hanford SDG_E1839
Contact	N. Joseph Verville	Contract	No 500W235A00
Lab sample id	E911090 04	Client sample id	J18WX6
Dept sample id	7519-004	Location/Matrix	UPRIVER SA WAL 2 CARCASS SOLID
Received	11/23/09	Collected/Weight	11/17/09 10:45 1500 g
% solids	100.0	Custody/SAP No	RC-118-172 RC-118

2/24/10

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALIFIERS	TEST
Tritium	10028-17-8	1.11	4.9	8.29	400	U J	H
Carbon 14	14762-75-5	-0.280	3.2	5.47	50.0	U J	C
Total Strontium	SR RAD	0.051	0.16	0.336	1.00	U	SR
Technetium 99	14133-76-7	0.102	0.29	0.391	15.0	U	TC
Thorium 228	14274-82-9	0.080	0.16	0.107	1.00	U J	TH
Thorium 230	14269-63-7	0	0.40	0.738	1.00	U	TH
Thorium 232	TH-232	0.080	0.080	0.106	1.00	U J	TH
Uranium 233/234	U-233/234	0.028	0.056	0.213	1.00	U	U
Uranium 235	15117-96-1	0	0.067	0.258	1.00	U	U
Uranium 238	U-238	0	0.056	0.213	1.00	U	U
Plutonium 238	13981-16-3	-0.012	0.015	0.089	1.00	U	PU
Plutonium 239/240	PU-239/240	0.006	0.023	0.064	1.00	U	PU
Potassium 40	13966-00-2	2.56	0.92	0.397			GAM
Cobalt 60	10198-40-0	U		0.048	0.050	U	GAM
Cesium 137	10045-97-3	U		0.044	0.100	U	GAM
Radium 226	13982-63-3	U		0.094	0.100	U	GAM
Radium 228	15262-20-1	U		0.183	0.200	U	GAM
Europium 152	14683-23-9	U		0.112	0.100	U	GAM
Europium 154	15585-10-1	U		0.126	0.100	U	GAM
Europium 155	14391-16-3	U		0.079	0.100	U	GAM
Thorium 228	14274-82-9	U		0.066		U	GAM
Thorium 232	TH-232	U		0.183		U	GAM
Uranium 235	15117-96-1	U		0.202		U	GAM
Uranium 238	U-238	U		4.94		U	GAM
Americium 241	14596-10-2	U		0.049		U	GAM
Beryllium 7	13966-02-4	U		0.371		U	GAM
Ruthenium 106	13967-48-1	U		0.460		U	GAM
Antimony 125	14234-35-6	U		0.104		U	GAM

Lab id	EBERLINE
Protocol	Hanford
Version	Ver 1.0
Form	DVD DS
Version	3.06
Report date	12/16/09

DATA SHEET, cont

SDG 7519
Contact Mr. Joseph Verville
Client/Case no Hanford [illegible]
Contract No. 650W23SA00

Lab sample id R911090-04
Dept sample id 7519-004
Received 11/23/99
% solids 100.0

Client sample id J18WX6
Location/Matrix UPRIVER SA-WAL-? CARCASS SOLID
Collected/Weight 11/02/99 10:45 1588 g
Custody/SAF No RC 118 [illegible] RC 118

2/28/[illegible]

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Cesium 134	13967-70-9	U		0.0?3		U	GAM

Columbia River Component of the RCBRA Tissues

Lab id EBERLINE
Protocol Hanford
Version Ver 1.0
Form DVD-DS
Version 1.06
Report date 12/[illegible]/99

7519-005

J19081

DATA SHEET

SDG	7519	Client/Case no	Hanford SDG K1839
Contact	N. Joseph Verville	Contract No.	00W235A00
Lab sample id	K911090-05	Client sample id	J19081
Dept sample id	7519-005	Location/Matrix	URSA SUCKERI FILLET SOLID
Received	11/21/09	Collected/Weight	11/17/09 11:05 1481 g
% solids	100.0	Custody/SAF No	RC 118 448 RC-118

2/28/10

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Tritium	10028-17-8	1.73	5.6	9.71	400	U J	H
Carbon 14	14762-75-5	1.11	3.9	6.49	50.0	U J	C
Total Strontium	SR-RAD	0.118	0.16	0.297	1.00	U	SR
Technetium 99	14133-76-7	0.159	0.30	0.476	15.0	U	TC
Thorium 228	14274-82-9	0.016	0.21	0.394	1.00	U J	TH
Thorium 230	14269-63-7	0.071	0.16	0.480	1.00	U	TH
Thorium 232	TH-232	0	0.071	0.272	1.00	U J	TH
Uranium 233/234	U-233/234	0.030	0.19	0.226	1.00	U	U
Uranium 235	15117-96-1	0	0.072	0.274	1.00	U	U
Uranium 238	U-238	0	0.059	0.235	1.00	U	U
Plutonium 238	13981-16-3	0.006	0.044	0.080	1.00	U	PU
Plutonium 239/240	PU-239/240	-0.006	0.022	0.061	1.00	U	PU
Potassium 40	13966-00-2	3.33	0.80	0.576			GAM
Cobalt 60	10198-40-0	U		0.051	0.050	U	GAM
Cesium 137	10045-97-3	U		0.051	0.100	U	GAM
Radium 226	13982-63-3	U		0.091	0.100	U	GAM
Radium 228	15262-20-1	U		0.211	0.200	U	GAM
Europium 152	14683-23-9	U		0.127	0.100	U	GAM
Europium 154	15585-10-1	U		0.150	0.100	U	GAM
Europium 155	14391-16-3	U		0.101	0.100	U	GAM
Thorium 228	14274-82-9	U		0.069		U	GAM
Thorium 232	TH-232	U		0.211		U	GAM
Uranium 235	15117-96-1	U		0.238		U	GAM
Uranium 238	U-238	U		4.44		U	GAM
Americium 241	14596-10-2	U		0.176		U	GAM
Beryllium 7	13966-02-4	U		0.427		U	GAM
Ruthenium 106	13967-48-1	U		0.470		U	GAM
Antimony 125	14234-35-6	U		0.109		U	GAM

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Lab id EBERLINE
Protocol Hanford
Version Ver 1.0
Form DVD DS
Version 4.06
Report date 12/15/09

EBERLINE ANALYTICAL/RICHMOND

SAMPLE DELIVERY GROUP K1839

7519-005

J190R1

DATA SHEET, cont

SDG	7519	Client/Case no	Hanford SDG K1839
Contact	N. Joseph Verville	Contract	No. 500W235A00
Lab sample id	8911020-05	Client sample id	J190R1
Dept sample id	7519-005	Location/Matrix	VRGA-SUCKER1 FILLET SOLID
Received	11/23/09	Collected/Weight	11/17/09 11:15 1481 g
% solids	100.0	Custody/SAF No	RC-118-440 RC-118

2/28/10

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Cesium 134	13967-70-9	0		0.054		U	GAM

Columbia River Component of the RCBRA - Tissues

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Lab id EBERLINE
Protocol Hanford1
Version Ver 1.0
Form DVD DS
Version 3.06
Report date 12/15/09

DATA SHEET

SDG 7519
Contact N. Joseph Verville
Client/Case no Hanford
[illegible]
Contract No [illegible]

Lab sample id R911090-06
Dept sample id 7519-006
Received 11/23/09
% solids 100.0
Client sample id J190R2
Location/Matrix [illegible] SOLID
Collected/Weight 11/17/09 14:00 [illegible] g
Custody/SAF No RC-138-449 RC-118

2/28/10

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Tritium	10028-17-8	2.81	4.7	8.28	400	UJ	H
Carbon 14	14762-75-5	1.88	3.4	5.56	50.0	UJ	[illegible]
Total Strontium	SR-RAD	0.004	0.14	0.284	1.00	U	SR
Technetium 99	14133-76-7	-0.064	0.14	0.411	15.0	U	TC
Thorium 228	14274-82-9	0.089	0.18	0.494	1.00	UJ	TH
Thorium 230	14269-63-7	0.491	0.45	0.756	1.00	U	TH
Thorium 232	TH-232	0.045	0.089	0.141	1.00	UJ	TH
Uranium 233/234	U-233/234	0.026	0.052	0.199	1.00	U	U
Uranium 235	15117-96-1	0	0.063	0.241	1.00	U	U
Uranium 238	U-238	0.026	0.052	0.199	1.00	U	U
Plutonium 238	13981-16-3	0.016	0.078	0.139	1.00	U	PU
Plutonium 239/240	PU-239/240	0	0.047	0.096	1.00	U	PU
Potassium 40	13966-00-2	3.54	1.1	0.397			GAM
Cobalt 60	10198-40-0	U		0.041	0.050	U	GAM
Cesium 137	10045-97-3	U		0.038	0.100	U	GAM
Radium 226	13982-63-3	U		0.084	0.100	U	GAM
Radium 228	15262-20-1	U		0.176	0.200	U	GAM
Europium 152	14683-23-9	U		0.128	0.100	U	GAM
Europium 154	15585-10-1	U		0.112	0.100	U	GAM
Europium 155	14391-16-3	U		0.112	0.100	U	GAM
Thorium 228	14274-82-9	U		0.118		U	GAM
Thorium 232	TH-232	U		0.176		U	GAM
Uranium 235	15117-96-1	U		0.250		U	GAM
Uranium 238	U-238	U		4.88		U	GAM
Americium 241	14596-10-2	U		0.103		U	GAM
Beryllium 7	13966-02-4	U		0.376		U	GAM
Ruthenium 106	13967-48-1	U		0.353		U	GAM
Antimony 125	14234-35-6	U		0.104		U	GAM

Lab id EBERLINE
Protocol Hanford
Version Ver 1.0
Form DVD DS
Version 3.06
Report date 12/15/09

EBERLINE ANALYTICAL/RICHMOND

SAMPLE DELIVERY GROUP K1839

7519-006 J190E2

DATA SHEET, cont

SDG 7519	Client/Case no Hanford		SDG K1839
Contact N. Joseph Verville	Contract No. 600W235A00		
Lab sample id R211090-06	Client sample id J190E2		
Dept sample id 7519-006	Location/Matrix USSA-SUCKERS-FILLET		SOLID
Received 11/20/02	Collected/Weight 11/17/02 14:00	.1333 g	
% solids 100.0	Custody/SAF No RC-118-449	RC-118	

2/28/10

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Cesium 134	13967-70-9	0		0.046		U	GAM

Columbia River Component of the RCBRA - Tissues

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Lab id EBERLINE
Protocol Hanford
Version Ver 1.0
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Version 1.06
Report date 12/15/02

EBERLINE ANALYTICAL/RICHMOND

SAMPLE DELIVERY GROUP E1839

7519-007

J190R3

DATA SHEET

SDG 7519
Contact N. Joseph Verville

Client/Case no Hanford
SDG E1839
Contract No. 500W[illegible]

Lab sample id E911020.07
Dept sample id 7519-007
Received 11/24/09
% solids 100.0

Client sample id J190R3
Location/Matrix URSA-SUCKER FILLET
SOLID
Collected/Weight 11/17/09 14:45
1199 g
Custody/SAF No RC 118-050
RC 118

[illegible] 7/28/10

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Tritium	10028-17-8	1.47	5.9	10.0	400	UJ	H
Carbon 14	14762-75-5	2.06	3.9	6.48	50.0	UJ	C
Total Strontium	SR-RAD	0.022	0.14	0.275	1.00	U	SR
Technetium 99	14133-76-7	0.043	0.26	0.408	15.0	U	TC
Thorium 228	14274-82-9	0.102	0.20	0.488	1.00	UJ	TH
Thorium 230	14269-63-7	0.153	0.41	0.822	1.00	U	TH
Thorium 232	TH-232	0.051	0.10	0.189	1.00	UJ	TH
Uranium 233/234	U-233/234	0.029	0.058	0.223	1.00	U	U
Uranium 235	15117-96-1	0.015	0.071	0.270	1.00	U	U
Uranium 238	U-238	0	0.058	0.223	1.00	U	U
Plutonium 238	13981-16-3	0.058	0.064	0.109	1.00	U	PU
Plutonium 239/240	PU-239/240	0.006	0.013	0.049	1.00	U	PU
Potassium 40	13966-00-2	2.35	0.46	0.344			GAM
Cobalt 60	10198-40-0	U		0.031	0.050	U	GAM
Cesium 137	10045-97-3	U		0.029	0.100	U	GAM
Radium 226	13982-63-3	U		0.063	0.100	U	GAM
Radium 228	15262-20-1	U		0.114	0.200	U	GAM
Europium 152	14683-23-9	U		0.075	0.100	U	GAM
Europium 154	15585-10-1	U		0.088	0.100	U	GAM
Europium 155	14391-16-3	U		0.049	0.100	U	GAM
Thorium 228	14274-82-9	U		0.045		U	GAM
Thorium 232	TH-232	U		0.114		U	GAM
Uranium 235	15117-96-1	U		0.134		U	GAM
Uranium 238	U-238	U		3.56		U	GAM
Americium 241	14596-10-2	U		0.026		U	GAM
Beryllium 7	13966-02-4	U		0.240		U	GAM
Ruthenium 106	13967-48-1	U		0.261		U	GAM
Antimony 125	14234-35-6	U		0.068		U	GAM

Lab id EBERLINE
Protocol Hanford
Version Ver 1.0
Form DVD-DS
Version 1.06
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EBERLINE ANALYTICAL/RICHMOND
SAMPLE DELIVERY GROUP E1839

7519-007

J190R3

DATA SHEET, cont

SDG	7519	Client/Case no	Hanford SDG_E1839
Contact	N. Joseph Verville	Contract	No. 000W245A00
Lab sample id	E911090-07	Client sample id	J190R3
Dept sample id	7519-007	Location/Matrix	URSA SUCKER1 FILLET SOLID
Received	11/24/09	Collected/Weight	11/12/09 14:45 1.198 g
% solids	100.0	Custody/SAF No	RC-118-450 RC-118

2/24/10

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	MDL pCi/g	QUALI-FIERS	TEST
Cesium-134	13967-70-9	U		0.033		U	GAM

Columbia River Component of the RCBRA Tissues

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Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD_DS
Version 1.06
Report date 12/15/09

EBERLINE ANALYTICAL/RICHMOND

SAMPLE DELIVERY GROUP K1839

7519-008

J190V2

DATA SHEET

SDG	7519	Client/Case no	Hanford SDG K1839
Contact	N. Joseph Verville	Contract	NO. 500W235A00
Lab sample id	R911090-08	Client sample id	J190V2
Dept sample id	7519 008	Location/Matrix	URSA-SUCKPR1-CARCASS SOLID
Received	11/23/09	Collected/Weight	11/17/09 13:45 [illegible] g.
% solids	100.0	Custody/SAF No	RC 118 468 RC 118

lu 2/28/10

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALIFIERS	TEST
Tritium	10028-17-8	5.12	4.9	8.83	400	UJ	H
Carbon 14	14762-75-5	5.77	3.7	5.93	50.0	UJ	C
Total Strontium	SR-RAD	0.003	0.15	0.104	1.00	U	SR
Technetium 99	14133-76-7	0.096	0.34	0.444	15.0	U	TC
Thorium 228	14274-82-9	0	0.25	0.566	1.00	UJ	TH
Thorium 230	14269-63-7	0.253	0.42	0.747	1.00	U	TH
Thorium 232	TH-232	0	0.084	0.321	1.00	UJ	TH
Uranium 233/234	U-233/234	0	0.061	0.217	1.00	U	U
Uranium 235	15117-96-1	0.037	0.073	0.280	1.00	U	U
Uranium 238	U-238	0.030	0.061	0.217	1.00	U	U
Plutonium 238	13981-16-3	0	0.065	0.248	1.00	U	PU
Plutonium 239/240	PU-239/240	0.017	0.065	0.248	1.00	U	PU
Potassium 40	13966-00-2	2.26	0.53	0.341			GAM
Cobalt 60	10198-40-0	U		0.033	0.050	U	GAM
Cesium 137	10045-97-3	U		0.014	0.100	U	GAM
Radium 226	13982-63-3	U		0.063	0.100	U	GAM
Radium 228	15262-20-1	U		0.140	0.200	U	GAM
Europium 152	14683-23-9	U		0.007	0.100	U	GAM
Europium 154	15585-10-1	U		0.108	0.100	U	GAM
Europium 155	14391-16-3	U		0.067	0.100	U	GAM
Thorium 228	14274-82-9	U		0.045		U	GAM
Thorium 232	TH-232	U		0.140		U	GAM
Uranium 235	15117-96-1	U		0.156		U	GAM
Uranium 238	U-238	U		3.91		U	GAM
Americium 241	14596-10-2	U		0.099		U	GAM
Beryllium 7	13966-02-4	U		0.271		U	GAM
Ruthenium 106	13967-48-1	U		0.256		U	GAM
Antimony 125	14234-35-6	U		0.073		U	GAM

Lab id EBERLINE
Protocol Hanford
Version Ver 1.8
Form DVD-DS
Version 3.06
Report date 12/15/09

7519-008

J190V2

DATA SHEET, cont

SDG	7519	Client/Case no	Hanford
			SDG K1839
Contact	N. Joseph Verville	Contract No	000W235A00
Lab sample id	R911039-08	Client sample id	J190V2
Dept sample id	7519-008	Location/Matrix	URSA [illegible] CARCASS SOLID
Received	11/23/09	Collected/Weight	11/17/09 11:45 1435 g
% solids	100.0	Custody/SAF No	RC-110-460 RC-110

V 2/28/10

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Cesium 134	13967-70-9	U		0.015		U	GAM

Columbia River Component of the RCBRA Tissues

Lab id EBRLNE
Protocol Hanford11
Version Ver 1.0
Form DVD DS
Version 1.06
Report date 12/15/09

EBERLINE ANALYTICAL/RICHMOND

SAMPLE DELIVERY GROUP K1839

7519-009

J190V3

DATA SHEET

SDG	7519	Client/Case no	Hanford	SDG_K1839
Contact	N. Joseph Verville	Contract	No 500W2??A00	
Lab sample id	R911020-09	Client sample id	J190V3	
Dept. sample id	7519-009	Location/Matrix	UPSA SUCKERS CARCASS	SOLID
Received	11/23/09	Collected/Weight	10/12/09 14:30	1536 g
% solids	100.0	Custody/SAP No	RC-108-469	RC-178

2/24/10

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Tritium	10028-17-8	-0.389	5.0	8.61	400	U J	H
Carbon 14	14762-75-5	0.120	3.4	5.84	50.0	U J	C
Total Strontium	SR-RAD	0.047	0.12	0.273	1.00	U	SR
Technetium 99	14133-76-7	0.058	0.25	0.433	15.0	U	TC
Thorium 228	14274-82-9	0.136	0.20	0.175	1.00	U J	TH
Thorium 230	14269-63-7	0.508	0.41	0.648	1.00	U	TH
Thorium 232	TH-232	0.034	0.068	0.259	1.00	U J	TH
Uranium 233/234	U-233/234	0	0.051	0.197	1.00	U	U
Uranium 235	15117-96-1	0	0.067	0.238	1.00	U	U
Uranium 238	U-238	0.026	0.051	0.197	1.00	U	U
Plutonium 238	13981-16-3	0.019	0.16	0.374	1.00	U	PU
Plutonium 239/240	PU-239/240	-0.039	0.078	0.298	1.00	U	PU
Potassium 40	13966-00-2	3.20	1.2	0.261			GAM
Cobalt 60	10198-40-0	U		0.028	0.050	U	GAM
Cesium 137	10045-97-3	U		0.038	0.100	U	GAM
Radium 226	13982-63-3	U		0.060	0.100	U	GAM
Radium 228	15262-20-1	U		0.129	0.200	U	GAM
Europium 152	14683-23-9	U		0.083	0.100	U	GAM
Europium 154	15585-10-1	U		0.090	0.100	U	GAM
Europium 155	14391-16-3	U		0.071	0.100	U	GAM
Thorium 228	14274-82-9	U		0.051		U	GAM
Thorium 232	TH-232	U		0.129		U	GAM
Uranium 235	15117-96-1	U		0.160		U	GAM
Uranium 238	U-238	U		1.12		U	GAM
Americium 241	14596-10-2	U		0.057		U	GAM
Beryllium 7	13966-02-4	U		0.254		U	GAM
Ruthenium 106	13967-48-1	U		0.254		U	GAM
Antimony 125	14234-35-6	U		0.070		U	GAM

Lab id	EBERLINE
Protocol	Hanford
Version	Ver 1.0
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DATA SHEET, cont

SDG 7519
Client/Case no Hanford
SDG K1839
Contact N. Joseph Vervalle
Contract No. 00092155A00

Lab sample id R911090-09
Client sample id J190V3
Dept sample id 7519-009
Location/Matrix USGA-SUCKERS CARCASS
SOLID
Received 11/24/09
Collected/Weight 11/12/09 14:10
150 g
% solids 100.0
Custody/SAF No RC-110-469
RC 110

VL 2/18/10

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Cesium 134	13967-70-9	U		0.034		U	GAM

Columbia River Component of the RCBRA Tissues

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Lab id EBRLNE
Protocol Hanford1
Version Ver 1.0
Form DVD-DS
Version 1.06
Report date 12/15/09

EBERLINE ANALYTICAL/RICHMOND

SAMPLE DELIVERY GROUP K1839

7519-010

J19DV4

DATA SHEET

SDG 7519

Contact N. Joseph Verville

Client/Case no Hanford

SDG K1839

Contract No. S00872SA00

Lab sample id R211090-10

Dept sample id 7519-010

Received 11/21/02

% solids 100.0

Client sample id J19DV4

Location/Matrix URUA SUCKERS-CARCASS SOLID

Collected/Weight 11/17/02 15:00 1602 g

Custody/SAF No RC 118-470 RC-118

✓ 7/28/04

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Tritium	10028-17-8	3.45	4.3	7.70	400	UJ	H
Carbon 14	14762-75-5	1.32	3.1	5.13	50.0	UJ	C
Total Strontium	SR RAD	0.098	0.15	0.284	1.00	U	SR
Technetium 99	14133-76-7	0.084	0.24	0.387	15.0	U	TC
Thorium 228	14274-82-9	0.062	0.12	0.298	1.00	UJ	TH
Thorium 230	14269-63-7	0.404	0.37	0.594	1.00	U	TH
Thorium 232	TH-232	0	0.062	0.238	1.00	UJ	TH
Uranium 233/234	U 233/234	0.060	0.060	0.228	1.00	U	U
Uranium 235	15117-96-1	0	0.072	0.277	1.00	U	U
Uranium 238	U 238	0.060	0.060	0.220	1.00	U	U
Plutonium 238	13981-16-3	0	0.084	0.122	1.00	U	PU
Plutonium 239/240	PU 239/240	0	0.084	0.122	1.00	U	PU
Potassium 40	13966-00-2	1.84	0.39	0.283			GAM
Cobalt 60	10198-40-0	U		0.035	0.050	U	GAM
Cesium 137	10045-97-3	U		0.032	0.100	U	GAM
Radium 226	13982-63-3	U		0.059	0.100	U	GAM
Radium 228	15262-20-1	U		0.110	0.200	U	GAM
Europium 152	14683-23-9	U		0.078	0.100	U	GAM
Europium 154	15585-10-1	U		0.095	0.100	U	GAM
Europium 155	14391-16-3	U		0.056	0.100	U	GAM
Thorium 228	14274-82-9	U		0.049		U	GAM
Thorium 232	TH 232	U		0.110		U	GAM
Uranium 235	15117-96-1	U		0.150		U	GAM
Uranium 238	U 238	U		1.99		U	GAM
Americium 241	14596-10-2	U		0.033		U	GAM
Beryllium 7	13966-02-4	U		0.252		U	GAM
Ruthenium 106	13967-48-1	U		0.258		U	GAM
Antimony 125	14234-35-6	U		0.075		U	GAM

Lab id EBRLNE

Protocol Hanford

Version Ver 1.0

Form DVD DS

Version 3.06

Report date 12/15/02

EBERLINE ANALYTICAL/RICHMOND

SAMPLE DELIVERY GROUP K1839

7519-010

J190V4

DATA SHEET, cont

SDG	7519	Client/Case no	Hanford SDG K1839
Contact	N. Joseph Verville	Contract No.	990W24505
Lab sample id	R911090-10	Client sample id	J190V4
Dept sample id	7519-010	Location/Matrix	URSA SUCKER CARCASS SOLID
Received	11/23/02	Collected/Weight	11/17/02 15:00 1002 g
% solids	100.0	Custody/SAF No	RC 118-470 RC 118

12/28/10

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALIFIERS	TEST
Cesium 134	13967-70-9	U		0.034		U	GAM

Columbia River Component of the RCBRA Tissues

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Lab id EBERLN
Protocol Hanford
Version Ver 1.0
Form DVD-DS
Version 1.06
Report date 12/19/02

E B E R L I N E   A N A L Y T I C A L / R I C H M O N D

SAMPLE DELIVERY GROUP K1839

7519-011

J196D7

D A T A   S H E E T

SDG	7519	Client/Case no	Hanford SDG K1839
Contact	N. Joseph Verville	Contract No.	50GW215A00
Lab sample id	E911090-11	Client sample id	J196D7
Dept sample id	7519-011	Location/Matrix	100SA CARP 1 ... SOLID
Received	11/21/09	Collected/Weight	11/18/09 09:00 3510 g
% solids	100.0	Custody/SAF No	RC 110 ... RC 118

2/28/10

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Tritium	10028-17-8	7.10	5.0	9.29	400	U J	H
Carbon 14	14762-75-5	2.32	1.7	6.12	50.0	U J	C
Total Strontium	SR RAD	0.050	0.13	0.286	1.00	U	SR
Technetium 99	14133-76-7	0.110	0.24	0.596	15.0	U	TC
Thorium 228	14274-82-9	0	0.069	0.265	1.00	U J	TH
Thorium 230	14269-63-7	0.180	0.12	0.617	1.00	U	TH
Thorium 232	TH-232	0.035	0.069	0.264	1.00	U J	TH
Uranium 233/234	U-233/234	0.027	0.054	0.200	1.00	U	U
Uranium 235	15117-96-1	0	0.066	0.252	1.00	U	U
Uranium 238	U-238	0	0.054	0.208	1.00	U	U
Plutonium 238	13981-16-3	0.036	0.12	0.212	1.00	U	PU
Plutonium 239/240	PU-239/240	-0.012	0.049	0.116	1.00	U	PU
Potassium 40	13966-00-2	2.68	0.78	0.536			GAM
Cobalt 60	10198-40-0	U		0.058	0.050	U	GAM
Cesium 137	10045-97-3	U		0.052	0.100	U	GAM
Radium 226	13982-63-3	U		0.104	0.100	U	GAM
Radium 228	15262-20-1	U		0.224	0.200	U	GAM
Europium 152	14683-23-9	U		0.142	0.100	U	GAM
Europium 154	15585-10-1	U		0.172	0.100	U	GAM
Europium 155	14391-16-3	U		0.111	0.100	U	GAM
Thorium 228	14274-82-9	U		0.076		U	GAM
Thorium 232	TH-232	U		0.224		U	GAM
Uranium 235	15117-96-1	U		0.257		U	GAM
Uranium 238	U-238	U		6.30		U	GAM
Americium 241	14596-10-2	U		0.155		U	GAM
Beryllium 7	13966-02-4	U		0.450		U	GAM
Ruthenium 106	13967-48-1	U		0.192		U	GAM
Antimony 125	14234-35-6	U		0.110		U	GAM

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Lab id	EBERLINE
Protocol	Hanford
Version	Ver 1.0
Form	DVD DS
Version	3.06
Report date	12/1?/09

EBERLINE ANALYTICAL/RICHMOND

SAMPLE DELIVERY GROUP K1839

7519-011

J196D7

DATA SHEET, cont

SDG	7519	Client/Case no	Hanford	SDG K1839
Contact	N. Joseph Verville	Contract	No. 00082355A00
Lab sample id	R211090-11	Client sample id	J196D7
Dept sample id	7519-011	Location/Matrix	100KA-CARP-3-FILLET	SOLID
Received	11/24/09	Collected/Weight	11/18/09 09:00	1510 g
% solids	100.0	Custody/SAF No	RC-118-995	RC-118

2/28/10

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Cesium 134	13967-70-9	U		0.051		U	GAM

Columbia River Component of the RCBRA Tissues

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Lab id EBERLINE
Protocol Hanford
Version Ver 1.0
Form DVD-DS
Version 3.06
Report date 12/15/09

EBERLINE ANALYTICAL/RICHMOND

SAMPLE DELIVERY GROUP K1839

7519-012

J196D8

DATA SHEET

SDG	7519	Client/Case no	Hanford	SDG K1839
Contact	N. Joseph Verville	Contract	No. 3008WZ5A00	
Lab sample id	R911090-12	Client sample id	J196D8	
Dept sample id	7519.012	Location/Matrix	100CA-CARP 4 EJ...	SOLID
Received	11/21/09	Collected/Weight	11/18/09 09:45	1570 g
% solids	100.0	Custody/SAF No	RC-118 996	RC-118

VL 2/24/10

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Tritium	10028-17-8	1.27	4.5	8.04	400	U J	H
Carbon 14	14762-75-5	0.661	3.2	5.39	50.0	U J	C
Total Strontium	SR RAD	0.032	0.15	0.298	1.00	U	SR
Technetium 99	14133-76-7	-0.042	0.31	0.450	15.0	U	TC
Thorium 228	14274-82-9	0.039	0.21	0.470	1.00	U J	TH
Thorium 230	14269-63-7	0.621	0.47	0.687	1.00	U	PU
Thorium 232	TH-232	0.049	0.078	0.297	1.00	U J	TH
Uranium 233/234	U 233/234	0.058	0.059	0.224	1.00	U	U
Uranium 235	15117-96-1	0	0.071	0.271	1.00	U	U
Uranium 238	U 238	0	0.058	0.224	1.00	U	U
Plutonium 238	13981-16-3	0	0.17	0.400	1.00	U	PU
Plutonium 239/240	PU 239/240	0.047	0.084	0.120	1.00	U	PU
Potassium 40	13966-00-2	2.13	1.3	0.388			GAM
Cobalt 60	10198-40-0	U		0.047	0.050	U	GAM
Cesium 137	10045-97-3	U		0.040	0.100	U	GAM
Radium 226	13982-63-3	U		0.089	0.100	U	GAM
Radium 228	15262-20-1	U		0.188	0.200	U	GAM
Europium 152	14683-23-9	U		0.111	0.100	U	GAM
Europium 154	15585-10-1	U		0.106	0.100	U	GAM
Europium 155	14391-16-3	U		0.096	0.100	U	GAM
Thorium 228	14274-82-9	U		0.070		U	GAM
Thorium 232	TH 232	U		0.180		U	GAM
Uranium 235	15117-96-1	U		0.227		U	GAM
Uranium 238	U 238	U		4.88		U	GAM
Americium 241	14596-10-2	U		0.078		U	GAM
Beryllium 7	13966-02-4	U		0.339		U	GAM
Ruthenium 106	13967-48-1	U		0.341		U	GAM
Antimony 125	14234-35-6	U		0.097		U	GAM

Lab id EBRLNE
Protocol Hanford1
Version Ver 1.0
Form DVD-DS
Version 1.06
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DATA SHEET, cont

SDG: 7519
Contact: N. Joseph Verville
Client/Case no: Hanford
SDG_K1839
Contract No. 500MP35A00

Lab sample id: R911090-12
Dept sample id: 7519-012
Received: 11/21/09
% solids: 100.0
Client sample id: J19AD8
Location/Matrix: 300A-CARP-4 FILLET SOLID
Collected/Weight: 11/18/09 09:45 1970 g
Custody/SAF No: RC-118-096 RC-118

Ve 2/24/10

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Cesium 134	13967-70-9	U		0.046		U	GAM

Columbia River Component of the RCBRA - Tissues

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Lab id EBERLINE
Protocol Hanford
Version Ver 1.0
Form DVD-DC
Version 1.06
Report date 12/15/09

7519-013

J196J2

DATA SHEET

SDG 7519
Contact N. Joseph Verville
Client/Case no Hanford SDG K1839
Contract No. 500W235A00

Lab sample id R911090-13
Dept sample id 7519-013
Received 11/23/09
% solids 100.0

Client sample id J196J2
Location/Matrix 100SA CARR 3 CARTAGE SOLID
Collected/weight 11/18/09 09:15 1620.g
Custody/SAF No RC-118-1020 RC 118

2/28/10

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALIFIERS	TEST
Tritium	10028-17-8	4.57	4.5	8.09	400	U J	H
Carbon 14	14762-75-5	0.917	3.2	5.18	50.0	U J	C
Total Strontium	SR RAD	0.084	0.13	0.293	1.00	U	SR
Technetium 99	14133-76-7	0.017	0.31	0.487	15.0	U	TC
Thorium 228	14274-82-9	U	0.17	0.408	1.00	U J	TH
Thorium 230	14269-63-7	0.341	0.43	0.754	1.00	U	TH
Thorium 232	TH 232	U	0.085	0.326	1.00	U J	TH
Uranium 233/234	U 233/234	0.078	0.10	0.199	1.00	U	U
Uranium 235	15117-96-1	0.011	0.061	0.240	1.00	U	U
Uranium 238	U 238	U	0.052	0.199	1.00	U	U
Plutonium 238	13981-16-3	0.184	0.21	0.424	1.00	U	PU
Plutonium 239/240	PU-239/240	U	0.042	0.200	1.00	U	PU
Potassium 40	13966-00-2	1.59	0.49	0.407			GAM
Cobalt 60	10198-40-0	U		0.040	0.050	U	GAM
Cesium 137	10045-97-3	U		0.036	0.100	U	GAM
Radium 226	13982-63-3	U		0.079	0.100	U	GAM
Radium 228	15262-20-1	U		0.148	0.200	U	GAM
Europium 152	14683-23-9	U		0.094	0.100	U	GAM
Europium 154	15585-10-1	U		0.121	0.100	U	GAM
Europium 155	14391-16-3	U		0.074	0.100	U	GAM
Thorium 228	14274-82-9	U		0.060		U	GAM
Thorium 232	TH-232	U		0.148		U	GAM
Uranium 235	15117-96-1	U		0.176		U	GAM
Uranium 238	U 238	U		4.79		U	GAM
Americium 241	14596-10-2	U		0.043		U	GAM
Beryllium 7	13966-02-4	U		0.329		U	GAM
Ruthenium 106	13967-48-1	U		0.141		U	GAM
Antimony 125	14234-35-6	U		0.092		U	GAM

Lab id EBERLINE
Protocol Hanford
Version Ver 1.0
Form DVD DS
Version 3.06
Report date 12/18/09

EBERLINE ANALYTICAL/RICHMOND

SAMPLE DELIVERY GROUP K1819

7519-013

J19652

DATA SHEET, cont

SDG 7519 Client/Case no Hanford SDG K1819

Contact N. Joseph Verville Contract No. 500WF15A08

Lab sample id R911090-13 Client sample id J19652

Dept sample id 7519-013 Location/Matrix [illegible] CARP, CARCASS SOLID

Received 11/23/09 Collected/Weight 11/18/09 09:15 1629 g

% solids 100.0 Custody/SAF No RC-118 1020, RC-118

V 7/28/10

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALIFIERS	TEST
Cesium 134	13967-70-9	U		0.044		U	GAM

Columbia River Component of the RCBRA - Tissues

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Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
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Report date 12/15/09

EBERLINE ANALYTICAL/RICHMOND
SAMPLE DELIVERY GROUP K1839

7519-014

J19633

DATA SHEET

SDG	7519	Client/Case no	Hanford
Contact	N. Joseph Verville	Contract	No. 600W215A00
			SDG K1839
Lab sample id	R911090-14	Client sample id	J19633
Dept sample id	7519-014	Location/Matrix	100BA CARP A CARCASS SOLID
Received	11/23/09	Collected/Weight	11/18/09 10:00 1629 g
% solids	100.0	Custody/SAP No	RC-119-1021 RC-119

2/28/10

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Tritium	10028-17-8	4.06	4.9	8.81	400	U J	H
Carbon 14	14762-75-5	6.18	3.8	6.03	50.0	J	C
Total Strontium	SR-RAD	0.012	0.13	0.269	1.00	U	SR
Technetium 99	14133-76-7	0.028	0.22	0.479	15.0	U	TC
Thorium 228	14274-82-9	0.018	0.15	0.162	1.00	U J	TH
Thorium 230	14269-63-7	0.227	0.48	0.696	1.00	U	TH
Thorium 232	TH-232	-0.038	0.076	0.289	1.00	U J	TH
Uranium 233/234	U-233/234	0.113	0.15	0.208	1.00	U	U
Uranium 235	15117-96-1	0	0.091	0.149	1.00	U	U
Uranium 238	U-238	0	0.075	0.288	1.00	U	U
Plutonium 238	13981-16-3	0.039	0.16	0.417	1.00	U	PU
Plutonium 239/240	PU-239/240	0.039	0.078	0.290	1.00	U	PU
Potassium 40	13966-00-2	1.68	0.41	0.158			GAM
Cobalt 60	10198-40-0	U		0.042	0.050	U	GAM
Cesium 137	10045-97-3	U		0.042	0.100	U	GAM
Radium 226	13982-63-3	U		0.086	0.100	U	GAM
Radium 228	15262-20-1	U		0.177	0.200	U	GAM
Europium 152	14683-23-9	U		0.104	0.100	U	GAM
Europium 154	15585-10-1	U		0.112	0.100	U	GAM
Europium 155	14391-16-3	U		0.068	0.100	U	GAM
Thorium 228	14274-82-9	U		0.061		U	GAM
Thorium 232	TH-232	U		0.177		U	GAM
Uranium 235	15117-96-1	U		0.188		U	GAM
Uranium 238	U-238	U		0.07		U	GAM
Americium 241	14596-10-2	U		0.035		U	GAM
Beryllium 7	13966-02-4	U		0.120		U	GAM
Ruthenium 106	13967-48-1	U		0.349		U	GAM
Antimony 125	14234-35-6	U		0.094		U	GAM

Lab id	EBERLINE
Protocol	Hanford
Version	Ver 1.0
Form	DVD-DS
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7519-014

J19633

DATA SHEET, cont

SDG 7519		Client/Case no Hanford	SDG K1839
Contact R. Joseph Verville		Contract No 00047155A000	
Lab sample id R911090-14		Client sample id J19633	
Dept sample id 7519-014		Location/Matrix 300GA CARP 4 CARCASS	SOLID
Received 11/23/09		Collected/Weight 11/18/09 10:00	1649 g
% solids 100.0		Custody/SAF No RC 118-102A	RC-118

V 2/28/10

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Cesium 134	13967-70-9	U		0.047		U	GAM

Columbia River Component of the RCBRA Tissues

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Protocol Hanford
Version Ver 1.0
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Version 3.06
Report date 12/15/09

7519-015

J196K8

DATA SHEET

SDG	7519	Client/Case no	Hanford SDG E1839
Contact	N. Joseph Verville	Contract	No. 00M23-A00
Lab sample id	R911090-05	Client sample id	J196K8
Dept sample id	7519-015	Location/Matrix	JMSA CARP 4 F... SOLID
Received	11/23/09	Collected/Weight	11/18/09 11:30 1527 g
% solids	100.0	Custody/SAF No	RC-118-1016 RC-118

2/24/10

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALIFIERS	TEST
Tritium	10028-17-8	-2.97	4.5	7.98	400	U J	H
Carbon 14	14762-75-5	3.48	3.3	5.39	50.0	U J	C
Total Strontium	SR-RAD	0.029	0.16	0.311	1.00	U	SR
Technetium 99	14133-76-7	0.238	0.26	0.415	15.0	U	TC
Thorium 228	14274-82-9	0.057	0.11	0.275	1.00	U J	TH
Thorium 230	14269-63-7	0.286	0.14	0.566	1.00	U	TH
Thorium 232	TH-232	0	0.057	0.219	1.00	U J	TH
Uranium 233/234	U-233/234	0.065	0.065	0.249	1.00	U	U
Uranium 235	15117-96-1	0	0.079	0.301	1.00	U	U
Uranium 238	U-238	0.011	0.065	0.249	1.00	U	U
Plutonium 238	13981-16-3	0.044	0.17	0.418	1.00	U	PU
Plutonium 239/240	PU-239/240	0.087	0.088	0.334	1.00	U	PU
Potassium 40	13966-00-2	2.78	0.42	0.117			GAM
Cobalt 60	10198-40-0	U		0.033	0.050	U	GAM
Cesium 137	10045-97-3	U		0.025	0.100	U	GAM
Radium 226	13982-63-3	U		0.053	0.150	U	GAM
Radium 228	15262-20-1	U		0.110	0.200	U	GAM
Europium 152	14683-23-9	U		0.068	0.100	U	GAM
Europium 154	15585-10-1	U		0.080	0.100	U	GAM
Europium 155	14391-16-3	U		0.045	0.100	U	GAM
Thorium 228	14274-82-9	U		0.044		U	GAM
Thorium 232	TH-232	U		0.110		U	GAM
Uranium 235	15117-96-1	U		0.119		U	GAM
Uranium 238	U-238	U		3.95		U	GAM
Americium 241	14596-10-2	U		0.030		U	GAM
Beryllium 7	13966-02-4	U		0.221		U	GAM
Ruthenium 106	13967-48-1	U		0.227		U	GAM
Antimony 125	14234-35-6	U		0.053		U	GAM

Lab id	EBERLINE
Protocol	Hanford1
Version	Ver 1.6
Form	DVD_DS
Version	3.06
Report date	12/15/09

7519-015

J196K8

DATA SHEET, cont

SDG 7519
Contact N. Joseph Verville
Client/Case no Hanford SDG K1839
Contract No. 00WZ15A00

Lab sample id R911030-15
Dept sample id 7519-015
Received 11/23/09
% solids 100.0
Client sample id J196K8
Location/Matrix LWSA:CORP 4 FILLET SOLID
Collected/Weight 11/18/09 11:30 1527 g
Custody/SAP No RC-118-1036 RC 118

2/28/10

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALIFIERS	TEST
Cesium 134	13967-70-9	0		0.033		U	GAM

Columbia River Component of the RCBRA Tissues

Lab id EBERLINE
Protocol Hanford
Version Ver 1.0
Form DVD DS
Version 3.86
Report date 12/15/09

EBERLINE ANALYTICAL/RICHMOND

SAMPLE DELIVERY GROUP K1839

7519-016

J196K9

DATA SHEET

SDG	7519	Client/Case no	Hanford SDG K1839
Contact	N. Joseph Verville	Contract	No. 200W215A00
Lab sample id	K911090-16	Client sample id	J196K9
Dept sample id	7519-016	Location/Matrix	WSA-CARP 5 FILLET SOLID
Received	11/21/09	Collected/Weight	11/18/09 14:00 1500 g
% solids	100.0	Custody/CAP No	RC 118-1042 RC 118

VL 2/24/10

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALIFIERS	TEST
Tritium	10028-17-8	1.95	5.3	9.37	400	UJ	H
Carbon 14	14762-75-5	2.80	3.8	6.20	50.0	UJ	C
Total Strontium	SR RAD	0.050	0.13	0.285	1.00	U	SR
Technetium 99	14133-76-7	-0.063	0.18	0.416	15.0	U	TC
Thorium 228	14274-82-9	0.092	0.18	0.177	1.00	UJ	TH
Thorium 230	14269-63-7	0.367	0.37	0.606	1.00	U	TH
Thorium 232	TH-232	0	0.061	0.214	1.00	UJ	TH
Uranium 233/234	U 233/234	0.117	0.32	0.224	1.00	U	U
Uranium 235	15117-96-1	0	0.073	0.271	1.00	U	U
Uranium 238	U 238	0	0.059	0.224	1.00	U	U
Plutonium 238	13981-16-3	0.010	0.12	0.287	1.00	U	PU
Plutonium 239/240	PU 239/240	0	0.060	0.229	1.00	U	PU
Potassium 40	13966-00-2	2.08	0.52	0.317			GAM
Cobalt 60	10198-40-0	U		0.041	0.050	U	GAM
Cesium 137	10045-97-3	U		0.032	0.100	U	GAM
Radium 226	13982-63-3	U		0.063	0.100	U	GAM
Radium 228	15262-20-1	U		0.132	0.200	U	GAM
Europium 152	14683-23-9	U		0.083	0.100	U	GAM
Europium 154	15585-10-1	U		0.105	0.100	U	GAM
Europium 155	14391-16-3	U		0.067	0.100	U	GAM
Thorium 228	14274-82-9	U		0.082		U	GAM
Thorium 232	TH 232	U		0.132		U	GAM
Uranium 235	15117-96-1	U		0.154		U	GAM
Uranium 238	U 238	U		1.80		U	GAM
Americium 241	14596-10-2	U		0.111		U	GAM
Beryllium 7	13966-02-4	U		0.266		U	GAM
Ruthenium 106	13967-48-1	U		0.270		U	GAM
Antimony 125	14234-35-6	U		0.072		U	GAM

Lab id	EBERLN
Protocol	Hanford
Version	Ver 1.0
Form	DVD DS
Version	4.06
Report date	12/15/09

EBERLINE ANALYTICAL/RICHMOND

SAMPLE DELIVERY GROUP K1839

7519-016

DATA SHEET, cont

J196K9

SDG	7519	Client/Case no	Hanford
			SDG K1839
Contact	N. Joseph Verville	Contract	NO. 00093 QA00
Lab sample id	K911079-16	Client sample id	J196K9
Dept sample id	7519-016	Location/Matrix	WPSA CARP 5 FILLET SOLID
Received	11/21/09	Collected/Weight	11/19/09 14:00 1561 g
% moisture	100.0	Custody/SAF No	RC 110-1037 RC, HH

2/28/10

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Cesium 134	13967-70-9	U		0.016		U	GAM

Columbia River Component of the RCBRA - Tissues

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Lab id EBRLNE
Protocol Hanford
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EBERLINE ANALYTICAL/RICHMOND

SAMPLE DELIVERY GROUP X1839

7519-017

J196Y1

DATA SHEET

SDG	7519	Client/Case no	Hanford SDG_X1839
Contact	N. Joseph Verville	Contract No	00082354A022
Lab sample id	S911090-17	Client sample id	J196Y1
Dept sample id	7519-017	Location/Matrix	LMSA/CARP A CARCASS SOLID
Received	11/21/09	Collected/Weight	11/18/09 12:00 1636.0
% solids	100.0	Custody/SAF No	RC-110-106 RC-118

2/7/10

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Tritium	10028-17-8	4.59	4.1	7.53	400	U J	H
Carbon 14	14762-75-5	0.627	3.0	5.10	50.0	U J	C
Total Strontium	SR RAD	0.066	0.17	0.324	1.00	U	SR
Technetium 99	14133-76-7	0.019	0.10	0.437	15.0	U	TC
Thorium 228	14274-82-9	0	0.20	0.400	1.00	U J	TH
Thorium 230	14269-63-7	0.098	0.39	0.621	1.00	U	TH
Thorium 232	TH-232	0.065	0.065	0.249	1.00	U J	TH
Uranium 233/234	U-233/234	0.066	0.066	0.250	1.00	U	U
Uranium 235	15117-96-1	0	0.079	0.403	1.00	U	U
Uranium 238	U-238	0	0.065	0.250	1.00	U	U
Plutonium 238	13981-16-3	0.125	0.19	0.300	1.00	U	PU
Plutonium 239/240	PU-239/240	0	0.061	0.212	1.00	U	PU
Potassium 40	13966-00-2	3.67	1.2	0.354			GAM
Cobalt 60	10198-40-0	U		0.034	0.050	U	GAM
Cesium 137	10045-97-3	U		0.034	0.100	U	GAM
Radium 226	13982-63-3	U		0.071	0.100	U	GAM
Radium 228	15262-20-1	U		0.149	0.200	U	GAM
Europium 152	14683-23-9	U		0.093	0.100	U	GAM
Europium 154	15585-10-1	U		0.105	0.100	U	GAM
Europium 155	14391-16-3	U		0.069	0.100	U	GAM
Thorium 228	14274-82-9	U		0.056		U	GAM
Thorium 232	TH-232	U		0.149		U	GAM
Uranium 235	15117-96-1	U		0.174		U	GAM
Uranium 238	U-238	U		3.95		U	GAM
Americium 241	14596-10-2	U		0.057		U	GAM
Beryllium 7	13966-02-4	U		0.304		U	GAM
Ruthenium 106	13967-48-1	U		0.296		U	GAM
Antimony 125	14234-35-6	U		0.080		U	GAM

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Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
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EBERLINE ANALYTICAL/RICHMOND

SAMPLE DELIVERY GROUP K1839

7519-017

J196Y1

DATA SHEET, cont

SDG	7519	Client/Case no	Hanford	SDG K1839
Contact	N. Joseph Verville	Contract	No. 50082PA00	
Lab sample id	E911090-17	Client sample id	J196Y1	
Dept sample id	7519-017	Location/Matrix	LWSA-CARB 6 CARCASS	SOLID
Received	11/23/09	Collected/Weight	11/10/09 12:00	162n g
% solids	100.0	Custody/SAF No	RC-118 1061	RC-118

V 2/24/10

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Cesium 134	13967-70-9	U		0.039		U	GAM

Columbia River Component of the RCBRA Tissues

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000043

Lab id EBERLINE
Protocol Hanford
Version Ver 1.0
Form DVD DS
Version 1.06
Report date 12/15/09

EBERLINE ANALYTICAL/RICHMOND

SAMPLE DELIVERY GROUP K1839

7519 018

J196Y2

DATA SHEET

SDG	7519	Client/Case no	Hanford SDG K1839
Contact	N. Joseph Verville	Contract	No. 5000W25A00
Lab sample id	K911090-10	Client sample id	J196Y2
Dept sample id	7519-018	Location/Matrix	LWSA-CARP S CARCASS SOLID
Received	11/24/09	Collected/Weight	11/18/09 14:30 1594 G
% solids	100.0	Custody/SAF No	RC-118-1062 RC-118

2-26-10

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALIFIERS	TEST
Tritium	10028-17-8	2.40	4.7	9.03	400	U J	H
Carbon 14	14762-75-5	1.70	3.7	6.14	50.0	U J	C
Total Strontium	SR-RAD	0.008	0.14	0.292	1.00	U	SR
Technetium 99	14133-76-7	0.090	0.24	0.392	15.0	U	TC
Thorium 228	14274-82-9	0.122	0.12	0.176	1.00	U J	TH
Thorium 230	14269-63-7	-0.031	0.31	0.603	1.00	U	TH
Thorium 232	TH-232	0	0.061	0.211	1.00	U J	TH
Uranium 233/234	U-233/234	0.026	0.051	0.196	1.00	U	U
Uranium 235	15117-96-1	0	0.062	0.237	1.00	U	U
Uranium 238	U-238	0.051	0.051	0.196	1.00	U	U
Plutonium 238	13981-16-3	0.073	0.15	0.348	1.00	U	PU
Plutonium 239/240	PU-239/240	0	0.071	0.278	1.00	U	PU
Potassium 40	13966-00-2	1.87	0.57	0.540			GAM
Cobalt 60	10198-40-0	U		0.046	0.050	U	GAM
Cesium 137	10045-97-3	U		0.048	0.100	U	GAM
Radium 226	13982-63-3	U		0.094	0.100	U	GAM
Radium 228	15262-20-1	U		0.175	0.200	U	GAM
Europium 152	14683-23-9	U		0.115	0.100	U	GAM
Europium 154	15585-10-1	U		0.145	0.100	U	GAM
Europium 155	14391-16-3	U		0.077	0.100	U	GAM
Thorium 228	14274-82-9	U		0.067		U	GAM
Thorium 232	TH-232	U		0.175		U	GAM
Uranium 235	15117-96-1	U		0.207		U	GAM
Uranium 238	U-238	U		0.34		U	GAM
Americium 241	14596-10-2	U		0.039		U	GAM
Beryllium 7	13966-02-4	U		0.360		U	GAM
Ruthenium 106	13967-48-1	U		0.381		U	GAM
Antimony 125	14234-35-6	U		0.117		U	GAM

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-DS
Version 3.06
Report date 12/15/09

EBERLINE ANALYTICAL/RICHMOND

SAMPLE DELIVERY GROUP K1879

7519-018

J19KY2

DATA SHEET, cont

SDG 7519
Contact N. Joseph Verville
Client/Case no Hanford
SDG K1879
Contract No. C00W27HA00

Lab sample id E911090-10
Dept sample id 7519-018
Received 11/23/09
% solids 100.0
Client sample id J19KY2
Location/Matrix LWSA-CARP 5 CARCASS SOLID
Collected/Weight 11/18/09 14:10 1594 g
Custody/SAF No RC-118-1062 RC-118

2/28/10

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALIFIERS	TEST
Cesium 134	13967-70-9	U		0.057		U	GAM

Columbia River Component of the RCBRA - Tissues

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Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-DS
Version 3.06
Report date 12/15/09

EBERLINE ANALYTICAL/RICHMOND

SAMPLE DELIVERY GROUP K1839

7520-001

J18WW9

DATA SHEET

SDG	7520	Client/Case no	Hanford SDG K1839
Contact	N. Joseph Verville	Contract	No. 500W1345A00
Lab sample id	K911091-01	Client sample id	J18WW9
Dept sample id	7520-001	Location/Matrix	UPRIVER 3A.WAL C14V/KID SOLID
Received	11/23/09	Collected/Weight	11/18/09 15:45 43.1 g
% solids	100.0	Custody/SAF No	RC 118-166 RC 118

2/24/10

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Tritium	10028-17-8	1.63	4.2	7.04	400	U J	T
Carbon 14	14762-75-5	1.76	3.1	5.13	50.0	U J	C
Total Strontium	SR RAD	0.111	0.15	0.326	1.00	U	SR
Technetium 99	14133-76-7	0.070	0.13	0.193	15.0	U	TC
Thorium 228	14274-82-9	0.062	0.19	0.238	1.00	U J	TH
Thorium 230	14269-63-7	-0.062	0.31	0.593	1.00	U	TH
Thorium 232	TH-232	0	0.062	0.217	1.00	U J	TH
Uranium 233/234	U-233/234	0.015	0.060	0.264	1.00	U	U
Uranium 235	15117-96-1	0.042	0.084	0.320	1.00	U	U
Uranium 238	U-238	0	0.069	0.264	1.00	U	U
Plutonium 238	13981-16-3	0.017	0.028	0.047	1.00	U	PU
Plutonium 239/240	PU-239/240	0.008	0.017	0.031	1.00	U	PU
Potassium 40	13966-00-2	2.17	0.80	0.724			GAM
Cobalt 60	10198-40-0	U		0.076	0.050	U	GAM
Cesium 137	10045-97-3	U		0.064	0.100	U	GAM
Radium 226	13982-63-3	U		0.116	0.100	U	GAM
Radium 228	15262-20-1	U		0.256	0.200	U	GAM
Europium 152	14683-23-9	U		0.151	0.100	U	GAM
Europium 154	15585-10-1	U		0.225	0.100	U	GAM
Europium 155	14391-16-3	U		0.104	0.100	U	GAM
Thorium 228	14274-82-9	U		0.096		U	GAM
Thorium 232	TH-232	U		0.256		U	GAM
Uranium 235	15117-96-1	U		0.261		U	GAM
Uranium 238	U-238	U		8.40		U	GAM
Americium 241	14596-10-2	U		0.057		U	GAM
Beryllium 7	13966-02-4	U		0.455		U	GAM
Ruthenium 106	13967-48-1	U		0.509		U	GAM
Antimony 125	14234-35-6	U		0.110		U	GAM

Lab id	00028
Protocol	Hanford
Version	Ver 1.0
Form	DVD LG
Version	3.06
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DATA SHEET, cont

SDG	7520	Client/Case no	Hanford SDG K1839
Contact	N. Joseph Verville	Contract No.	800W435A00
Lab sample id	S911091-01	Client sample id	J18WW9
Dept sample id	7520-001	Location/Matrix	UPRIVER SA-WAL 1,LIV/KID SOLID
Received	11/23/09	Collected/Weight	11/18/09 15:45 101.1 g
% solids	100.0	Custody/SAP No	RC-118 166 RC-119

Vc 2/28/10

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Cesium 134	13967-70-9	U		0.074		U	GAM

Columbia River Component of the RCBRA - Tissues

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Lab id	EBRINE
Protocol	Hanford
Version	Ver 1.0
Form	DVD DS
Version	3.06
Report date	12/17/09

EBERLINE ANALYTICAL/RICHMOND

SAMPLE DELIVERY GROUP K1839

7520-002 J18WX0

DATA SHEET

SDG	7520	Client/Case no	Hanford HAS K1839
Contact	N. Joseph Verville	Contract	No. 200W235A00
Lab sample id	S911091-02	Client sample id	J18WX0
Dept sample id	7520-002	Location/Matrix	UPRIVER CA WAL 2.LIV/RIV SOLID
Received	11/23/09	Collected/Weight	11/18/09 15:50 74.7 g
% solids	100.0	Custody/SAF No	RC 110 167 RC 118

2/28/10

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Tritium	10028-17-8	2.98	4.5	7.41	400	U J	H
Carbon 14	14762-75-5	1.52	3.1	5.16	50.0	U J	C
Total Strontium	SR RAD	0.075	0.14	0.105	1.00	U	SR
Technetium 99	14133-76-7	0.008	0.14	0.300	15.0	U	TC
Thorium 228	14274-82-9	0.034	0.14	0.259	1.00	U J	TH
Thorium 230	14269-63-7	0.507	0.41	0.672	1.00	U	TH
Thorium 232	TH 232	0.034	0.068	0.258	1.00	U J	TH
Uranium 233/234	U 233/234	0.033	0.066	0.250	1.00	U	U
Uranium 235	15117-96-1	0	0.079	0.303	1.00	U	U
Uranium 238	U 238	0.011	0.066	0.250	1.00	U	U
Plutonium 238	13981-16-3	0.005	0.013	0.036	1.00	U	PU
Plutonium 239/240	PU 239/240	0.014	0.014	0.026	1.00	U	PU
Potassium 40	13966-00-2	1.75	0.85	0.479			GAM
Cobalt 60	10198-40-0	0		0.075	0.050	U	GAM
Cesium 137	10045-97-3	0		0.079	0.100	U	GAM
Radium 226	13982-63-3	0		0.336	0.100	U	GAM
Radium 228	15262-20-1	0		0.291	0.200	U	GAM
Europium 152	14683-23-9	0		0.191	0.100	U	GAM
Europium 154	15585-10-1	0		0.226	0.100	U	GAM
Europium 155	14391-16-3	0		0.120	0.100	U	GAM
Thorium 228	14274-82-9	0		0.096		U	GAM
Thorium 232	TH 232	0		0.291		U	GAM
Uranium 235	15117-96-1	0		0.328		U	GAM
Uranium 238	U 238	0		7.76		U	GAM
Americium 241	14596-10-2	0		0.071		U	GAM
Beryllium 7	13966-02-4	0		0.524		U	GAM
Ruthenium 106	13967-48-1	0		0.581		U	GAM
Antimony 125	14234-35-6	0		0.140		U	GAM

Lab id	EBRLAB
Protocol	Hanford
Version	Ver 1.0
Form	DVD-DS
Version	3.06
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DATA SHEET, cont

SDG	7520	Client/Case no	Hanford SDG_K1839
Contact	N. Joseph Verville	Contract	No. 500WZ35A00
Lab sample id	R911093-02	Client sample id	J18WX0
Dept sample id	7520-002	Location/Matrix	UPRIVER SA WAL 7 LIV/KID SOLID
Received	11/20/09	Collected/Weight	11/18/09 15:50 24.2 g
% solids	100.0	Custody/SAP No	RC-118 167 RC 118

2/28/10

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Cesium 134	13967-70-9	U		0.099		U	GAM

Columbia River Component of the RCBRA Tissues

Lab id EBRLNE
Protocol Hanford1
Version Ver 1.0
Form DVD DS
Version 4.06
Report date 12/11/09

EBERLINE ANALYTICAL/RICHMOND

SAMPLE DELIVERY GROUP K1839

7520-003

J190T7

DATA SHEET

SDG 7520
Contact N. Joseph Verville
Client/Case no Hanford SDG_K1839
Contract No 500W415A00

Lab sample id E911091-03
Dept sample id 7520 003
Received 11/23/09
% solids 100.0

Client sample id J190T7
Location/Matrix URSA-SUCKER1-LIV/KID SOLID
Collected/Weight 11/18/09 15:00 81.8 g
Custody/SAF No RC-118-060 RC-118

JK 2/24/10

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Tritium	10028-17-8	2.29	4.0	7.09	400	U J	H
Carbon 14	14762-75-5	0.208	4.0	5.15	50.0	U J	C
Total Strontium	SR-RAD	0.004	0.15	0.298	1.00	U	SR
Technetium 99	14133-76-7	0.061	0.11	0.178	15.0	U	TC
Thorium 228	14274-82-9	0	0.14	0.341	1.00	U J	TH
Thorium 230	14269-63-7	0.577	0.41	0.658	1.00	U	TH
Thorium 232	TH-232	0.036	0.072	0.273	1.00	U J	TH
Uranium 233/234	U-233/234	0.081	0.11	0.206	1.00	U	U
Uranium 235	15117-96-1	0	0.065	0.250	1.00	U	U
Uranium 238	U-238	0	0.054	0.204	1.00	U	U
Plutonium 238	13981-16-3	0	0.025	0.046	1.00	U	PU
Plutonium 239/240	PU-239/240	0.002	0.010	0.028	1.00	U	PU
Potassium 40	13966-00-2	2.12	1.2	0.760			GAM
Cobalt 60	10198-40-0	U		0.103	0.050	U	GAM
Cesium 137	10045-97-3	U		0.088	0.100	U	GAM
Radium 226	13982-63-3	U		0.171	0.100	U	GAM
Radium 228	15262-20-1	U		0.338	0.200	U	GAM
Europium 152	14683-23-9	U		0.237	0.100	U	GAM
Europium 154	15585-10-1	U		0.300	0.100	U	GAM
Europium 155	14391-16-3	U		0.176	0.100	U	GAM
Thorium 228	14274-82-9	U		0.119		U	GAM
Thorium 232	TH-232	U		0.338		U	GAM
Uranium 235	15117-96-1	U		0.431		U	GAM
Uranium 238	U-238	U		9.71		U	GAM
Americium 241	14596-10-2	U		0.369		U	GAM
Beryllium 7	13966-02-4	U		0.611		U	GAM
Ruthenium 106	13967-48-1	U		0.703		U	GAM
Antimony 125	14234-35-6	U		0.203		U	GAM

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Lab id EBRLAK
Protocol Hanford
Version Ver 1.0
Form DVD-DS
Version 3.06
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E B E R L I N E   A N A L Y T I C A L / R I C H M O N D

SAMPLE DELIVERY GROUP K1839

7520-001 J1V0T7

DATA SHEET, cont

SDG	7520	Client/Case no	Hanford SDG_K1839
Contact	N. Joseph Verville	Contract	No. 0000W2115A00
Lab sample id	K911091-01	Client sample id	J1V0T7
Dept sample id	7520 001	Location/Matrix	ORSA SUCKER1 C/V/RIS SOLID
Received	11/23/09	Collected/Weight	11/18/09 15:00 81.8 g
% solids	100.0	Custody/SAF No	RC-118-463 RC-118

2/28/10

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Cesium 134	13967-70-9	U		0.036		U	GAM

Columbia River Component of the RCBRA - Tissues

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Lab id EBRLNG
Protocol Hanford
Version Ver 1.0
Form DVD DS
Version 1.05
Report date 12/11/09

EBERLINE ANALYTICAL/RICHMOND

SAMPLE DELIVERY GROUP K1839

7520-004

J190T8

DATA SHEET

SDG 7520	Client/Case no Hanford	SDG K1839
Contact N. Joseph Verville	Contract No. 800W23SA00	
Lab sample id R911021-04	Client sample id J190T8	
Dept sample id 7520-004	Location/Matrix URCA SECKNEZ LIV/KID	SOLID
Received 11/23/09	Collected/Weight 11/18/09 15:15 22.2 g	
% solids 100.0	Custody/SAF No RC-118-464	RC-118

2/28/10

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Tritium	10028-17-8	1.07	4.2	7.34	400	U J	H
Carbon 14	14762-75-5	0.573	3.0	5.19	50.0	U J	C
Total Strontium	SR RAD	0.030	0.16	0.330	1.00	U	SR
Technetium 99	14133-76-7	0.046	0.15	0.188	15.0	U	TC
Thorium 228	14274-82-9	0.083	0.082	0.193	1.00	U J	TH
Thorium 230	14269-63-7	0.168	0.41	0.725	1.00	U	TH
Thorium 232	TH 232	0	0.082	0.111	1.00	U J	TH
Uranium 233/234	U-233/234	0	0.069	0.262	1.00	U	U
Uranium 235	15117-96-1	0	0.084	0.118	1.00	U	U
Uranium 238	U 238	0.034	0.060	0.262	1.00	U	U
Plutonium 238	13981-16-3	0.025	0.041	0.054	1.00	U	PU
Plutonium 239/240	PU 239/240	0.015	0.018	0.047	1.00	U	PU
Potassium 40	13966-00-2	3.11	2.1	0.539			GAM
Cobalt 60	10198-40-0	U		0.070	0.050	U	GAM
Cesium 137	10045-97-3	U		0.062	0.100	U	GAM
Radium 226	13982-63-3	U		0.156	0.100	U	GAM
Radium 228	15262-20-1	U		0.238	0.200	U	GAM
Europium 152	14683-23-9	U		0.172	0.100	U	GAM
Europium 154	15585-10-1	U		0.202	0.100	U	GAM
Europium 155	14391-16-3	U		0.175	0.100	U	GAM
Thorium 228	14274-82-9	U		0.124		U	GAM
Thorium 232	TH 232	U		0.298		U	GAM
Uranium 235	15117-96-1	U		0.176		U	GAM
Uranium 238	U 238	U		7.78		U	GAM
Americium 241	14596-10-2	U		0.103		U	GAM
Beryllium 7	13966-02-4	U		0.528		U	GAM
Ruthenium 106	13967-48-1	U		0.586		U	GAM
Antimony 125	14234-35-6	U		0.165		U	GAM

Lab id EARICH
Protocol Hanford
Version Ver 1.0
Form DVD DS
Version 3.06
Report date 12/11/09

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EBERLINE ANALYTICAL/RICHMOND

SAMPLE DELIVERY GROUP K1839

7520-004 J190T8

DATA SHEET, cont

SDG 7520 Client/Case no Hanford SDG_K1839

Contact N. Joseph Verville Contract No. 0008235A00

Lab sample id 9911091-04 Client sample id J190T8

Dept sample id 7520-004 Location/Matrix UKSA-CHICKEN-LIV/KID SOLID

Received 11/21/09 Collected/Weight 11/18/09 14:15 .92 g

% solids 100.0 Custody/SAF No RC-110-464 RC-110

2/24/10

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALIFIERS	TEST
Cesium 134	13967-70-9	U		0.089		U	GAM

Columbia River Component of the RCBRA - Tissues

Lab id EBRLNG
Protocol Hanford
Version Ver 1.0
Form DVD DS
Version 3.04
Report date 12/21/09

7520-005 J190T9

DATA SHEET

SDG	7520	Client/Case no	Hanford SDG K1839
Contact	N. Joseph Verville	Contract	No. 00082335A00
Lab sample id	0911091-05	Client sample id	J190T9
Dept sample id	7520-005	Location/Matrix	UPRA-[illegible] SOLID
Received	11/23/09	Collected/Weight	11/18/09 15:30 50.7 g
% solids	100.0	Custody/SAF No	RC-[illegible] RC 110

M 2/28/10

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Tritium	10028-17-8	-0.330	4.1	7.13	400	U J	H
Carbon 14	14762-75-5	0.315	3.1	5.20	50.0	U J	C
Total Strontium	SR-RAD	0.041	0.16	0.331	1.00	U	SR
Technetium 99	14133-76-7	0.039	0.18	0.458	15.0	U	TC
Thorium 228	14274-82-9	0	0.20	0.476	1.00	U J	TH
Thorium 230	14269-63-7	0.050	0.40	0.440	1.00	U	TH
Thorium 232	TH-232	0	0.099	0.329	1.00	U J	TH
Uranium 233/234	U-233/234	0.034	0.068	0.261	1.00	U	U
Uranium 235	15117-96-1	0	0.081	0.316	1.00	U	U
Uranium 238	U-238	0.034	0.068	0.361	1.00	U	U
Plutonium 238	13981-16-3	0.036	0.043	0.071	1.00	U	PU
Plutonium 239/240	PU-239/240	0.004	0.029	0.058	1.00	U	PU
Potassium 40	13966-00-2	2.30	0.64	0.598			GAM
Cobalt 60	10198-40-0	U		0.054	0.050	U	GAM
Cesium 137	10045-97-3	U		0.054	0.100	U	GAM
Radium 226	13982-63-3	U		0.110	0.100	U	GAM
Radium 228	15262-20-1	U		0.211	0.200	U	GAM
Europium 152	14683-23-9	U		0.114	0.100	U	GAM
Europium 154	15585-10-1	U		0.159	0.100	U	GAM
Europium 155	14391-16-3	U		0.088	0.100	U	GAM
Thorium 228	14274-82-9	U		0.068		U	GAM
Thorium 232	TH-232	U		0.211		U	GAM
Uranium 235	15117-96-1	U		0.212		U	GAM
Uranium 238	U-238	U		6.10		U	GAM
Americium 241	14596-10-2	U		0.044		U	GAM
Beryllium 7	13966-02-4	U		0.382		U	GAM
Ruthenium 106	13967-48-1	U		0.416		U	GAM
Antimony 125	14234-35-6	U		0.109		U	GAM

Lab id EBRLNE
Protocol Hanford
Version Ver 1.2
Form DVD DS
Version 1.0A
Report date 12/11/09

DATA SHEET, cont

SDG 7520 Client/Case no Hanford SDG K1839
Contact N. Joseph Verville Contract No. 00W235A00

Lab sample id S911091-05 Client sample id J190T9
Dept sample id 7520-005 Location/Matrix URSA-SUCKER3-LIV/KID SOLID
Received 11/23/09 Collected/weight 11/18/09 15:10 50.7 g
% solids 100.0 Custody/SAF No RC-118-465 RC-118

2/24/10

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Cesium 134	13967-70-9	U		0.065		U	GAM

Columbia River Component of the RCBRA Tissues

Lab id EBERLINE
Protocol Hanford1
Version Ver 1.0
Form DVD DS
Version 1.06
Report date 12/11/09

EBERLINE ANALYTICAL/RICHMOND

SAMPLE DELIVERY GROUP E1039

7520-006 J196H2

DATA SHEET

SDG 7520		Client/Case no Hanford	SDG E1039
Contact N. Joseph Verville		Contract No. 500W2P5A00	
Lab sample id R911091-06		Client sample id J196H2	
Dept sample id 7520-006		Location/Matrix 100SA CARP LIVER	SOLID
Received 11/24/09		Collected/Weight 11/18/09 10:50	213.4 g
% solids 100.0		Custody/SAF No RC 118 1010	RC 118

VW 2/28/10

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Tritium	10028-17-8	5.16	5.0	9.05	400	U J	H
Carbon 14	14762-75-5	0.382	3.7	6.10	50.0	U J	C
Total Strontium	SR-RAD	0.010	0.15	0.317	1.00	U	SR
Technetium 99	14133-76-7	0.113	0.17	0.412	15.0	U	TC
Thorium 228	14274-82-9	0.116	0.23	0.470	1.00	U J	TH
Thorium 230	14269-63-7	0.540	0.46	0.682	1.00	U	TH
Thorium 232	TH-232	0.039	0.077	0.295	1.00	U J	TH
Uranium 233/234	U-233/234	0	0.077	0.296	1.00	U	U
Uranium 235	15117-96-1	0	0.094	0.458	1.00	U	U
Uranium 238	U-238	0	0.077	0.296	1.00	U	U
Plutonium 238	13981-16-3	0.016	0.044	0.073	1.00	U	PU
Plutonium 239/240	PU-239/240	0.003	0.012	0.024	1.00	U	PU
Potassium 40	13966-00-2	2.41	3.2	0.266			GAM
Cobalt 60	10198-40-0	U		0.022	0.050	U	GAM
Cesium 137	10045-97-3	U		0.034	0.100	U	GAM
Radium 226	13982-63-3	U		0.056	0.100	U	GAM
Radium 228	15262-20-1	U		0.120	0.200	U	GAM
Europium 152	14683-23-9	U		0.078	0.100	U	GAM
Europium 154	15585-10-1	U		0.072	0.100	U	GAM
Europium 155	14391-16-3	U		0.071	0.100	U	GAM
Thorium 228	14274-82-9	U		0.048		U	GAM
Thorium 232	TH-232	U		0.120		U	GAM
Uranium 235	15117-96-1	U		0.152		U	GAM
Uranium 238	U-238	U		2.83		U	GAM
Americium 241	14596-10-2	U		0.061		U	GAM
Beryllium 7	13966-02-4	U		0.197		U	GAM
Ruthenium 106	13967-48-1	U		0.322		U	GAM
Antimony 125	14234-35-6	U		0.063		U	GAM

Lab id EBERLINE
Protocol Hanford
Version Ver 1.0
Form DVD-DS
Version 3.06
Report date 12/21/09

DATA SHEETS
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SUMMARY DATA SECTION
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DATA SHEET, cont

SDG	7520	Client/Case no	Hanford SDG_E1034
Contact	R. Joseph Verville	Contract	No. [illegible]
Lab sample id	E911091-06	Client sample id	J196K2
Dept sample id	7520-006	Location/Matrix	300SA_CARP_1_LIVER SOLID
Received	11/21/09	Collected/Weight	11/18/09 11:50 211 g
% solids	100.0	Custody/SAF No	RC_118_1010 RC 118

✓ 2/28/10

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALIFIERS	TEST
Cesium 134	13967-70-9	U		0.010		U	GAM

Columbia River Component of the RCBRA - Tissues

Lab id EBERLINE
Protocol Hanford1
Version Ver 1.0
Form DVD-DS
Version 3.06
Report date 12/11/09

7520-007 J196H3

DATA SHEET

SDG 7520	Client/Case no Hanford	SDG K1839	
Contact N. Joseph Verville	Contract No. S00W316A00		
Lab sample id 8911021-07	Client sample id J196H3		
Dept sample id 7520-007	Location/Matrix 100GA-CARP & LIVER	SOLID	
Received 11/21/09	Collected/Weight 11/18/09 16:05 504.3 g		
% solids 100.0	Custody/SAF No RQ-118-1011	RC-118	

Lv 2/28/10

ANALYTE	CAS NO	RESULT pCi/g	3σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Tritium	10028-17-8	3.47	4.5	8.01	400	U J	H
Carbon 14	14762-75-5	0.512	3.5	5.86	50.0	U J	C
Total Strontium	SR RAD	0.014	0.15	0.300	1.00	U	SR
Technetium 99	14133-76-7	0.099	0.14	0.429	15.0	U	TC
Thorium 228	14274-82-9	0.054	0.21	0.514	1.00	U J	TH
Thorium 230	14269-63-7	0.123	0.41	0.820	1.00	U	TH
Thorium 232	TH-232	0	0.11	0.410	1.00	U J	TH
Uranium 233/234	U-233/234	0.025	0.050	0.190	1.00	U	U
Uranium 235	15117-96-1	0	0.060	0.230	1.00	U	U
Uranium 238	U-238	0	0.050	0.190	1.00	U	U
Plutonium 238	13981-16-3	0	0.046	0.091	1.00	U	PU
Plutonium 239/240	PU-239/240	0.008	0.023	0.051	1.00	U	PU
Potassium 40	13966-00-2	3.49	0.47	0.346			GAM
Cobalt 60	10198-40-0	U		0.010	0.050	U	GAM
Cesium 137	10045-97-3	U		0.028	0.100	U	GAM
Radium 226	13982-63-3	U		0.055	0.100	U	GAM
Radium 228	15262-20-1	U		0.109	0.200	U	GAM
Europium 152	14683-23-9	U		0.067	0.100	U	GAM
Europium 154	15585-10-1	U		0.091	0.100	U	GAM
Europium 155	14391-16-3	U		0.053	0.100	U	GAM
Thorium 228	14274-82-9	U		0.042		U	GAM
Thorium 232	TH-232	U		0.109		U	GAM
Uranium 235	15117-96-1	U		0.124		U	GAM
Uranium 238	U-238	U		3.14		U	GAM
Americium 241	14596-10-2	U		0.030		U	GAM
Beryllium 7	13966-02-4	U		0.229		U	GAM
Ruthenium 106	13967-48-1	U		0.221		U	GAM
Antimony 125	14234-35-6	U		0.061		U	GAM

Lab id EBERLR
Protocol Hanford
Version Ver 1.0
Form DVD-DS
Version 3.06
Report date 12/11/09

DATA SHEET, cont

SDG 7520	Client/Case no Hanford SDG K1039
Contact M. Joseph Verville	Contract No. 300W235A09
Lab sample id R911001-07	Client sample id J196H3
Dept sample id 7520-007	Location/Matrix 100-A CARP 4 LIVER SOLID
Received 11/21/09	Collected/Weight 11/10/09 16:05 504.9 g
% solids 100.0	Custody/SAF No RC-119-1031 WC 119

2/24/10

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Cesium 134	13967-70-9	U		0.030		U	GAM

Columbia River Component of the RCBRA - Tissues

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Lab id EBERLINE
Protocol Hanford
Version Ver 1.0
Form DVD DS
Version 3.06
Report date 12/11/09

EBERLINE ANALYTICAL/RICHMOND

SAMPLE DELIVERY GROUP K1837

7520-008 J196H7

DATA SHEET

SDG 7520	Client/Case no Hanford SDG K1837
Contact N. Joseph Verville	Contract No. 000WX15A00
Lab sample id R911021-08	Client sample id J196H7
Dept. sample id 7520-008	Location/Matrix 100SA-CARP 1 KIDNEY SOLID
Received 11/21/02	Collected/Weight 11/18/02 15:55 1116 g
% solids 100.0	Custody/SAF No RC-119-1215 RC-119

LC 2/26/10

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Tritium	10028-17-8	-1.10	4.9	8.74	400	U J	H
Carbon 14	14762-75-5	1.67	3.8	6.17	50.0	U J	C
Total Strontium	SR-RAD	0.135	0.14	0.322	1.00	U	SR
Technetium 99	14133-76-7	0.064	0.14	0.406	15.0	U	TC
Thorium 228	14274-82-9	0.044	0.26	0.539	1.00	U J	TH
Thorium 230	14269-63-7	0.196	0.44	0.743	1.00	U	TH
Thorium 232	TH-232	0	0.088	0.115	1.00	U J	TH
Uranium 233/234	U-233/234	0	0.073	0.280	1.00	U	U
Uranium 235	15117-96-1	0	0.089	0.119	1.00	U	U
Uranium 238	U-238	0.073	0.071	0.280	1.00	U	U
Plutonium 238	13981-16-3	0.019	0.056	0.095	1.00	U	PU
Plutonium 239/240	PU-239/240	0.009	0.019	0.041	1.00	U	PU
Potassium 40	13966-00-2	2.16	0.48	0.366			GAM
Cobalt 60	10198-40-0	U		0.030	0.050	U	GAM
Cesium 137	10045-97-3	U		0.030	0.100	U	GAM
Radium 226	13982-63-3	U		0.051	0.100	U	GAM
Radium 228	15262-20-1	U		0.112	0.200	U	GAM
Europium 152	14683-23-9	U		0.074	0.100	U	GAM
Europium 154	15585-10-1	U		0.091	0.100	U	GAM
Europium 155	14391-16-3	U		0.048	0.100	U	GAM
Thorium 228	14274-82-9	U		0.044		U	GAM
Thorium 232	TH-232	U		0.112		U	GAM
Uranium 235	15117-96-1	U		0.127		U	GAM
Uranium 238	U-238	U		3.24		U	GAM
Americium 241	14596-10-2	U		0.042		U	GAM
Beryllium 7	13966-02-4	U		0.232		U	GAM
Ruthenium 106	13967-48-1	U		0.217		U	GAM
Antimony 125	14234-35-6	U		0.066		U	GAM

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SUMMARY DATA SECTION
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Lab id EBRLNR
Protocol Hanford1
Version Ver 1.5
Form DVD_DS
Version 1.06
Report date 12/11/02

2520-008

J19687

DATA SHEET, cont

SDG	2520	Client/Case no	Hanford SDG K1839
Contact	N. Joseph Verville	Contract	No 500W215A00
Lab sample id	S911091-08	Client sample id	J19687
Dept. sample id	2520-008	Location/Matrix	100BA CARP 1 KIDNEY SOLID
Received	11/23/09	Collected/weight	11/19/09 15:55 111.6 g
% solids	100.0	Custody/SAF No	RC-118-1015 RC-118

Vr 2/26/10

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Cesium 134	13967-70-9	U		0.031		U	GAM

Columbia River Component of the RCBRA - Tissues

DATA SHEETS
Page 16
SUMMARY DATA SECTION
Page 40

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD DS
Version 1.32
Report date 12/11/09

EBERLINE ANALYTICAL/RICHMOND

SAMPLE DELIVERY GROUP K1839

7520-009 J19688

DATA SHEET

SDG 7520 Client/Case no Hanford SDG K1839
Contact N. Joseph Verville Contract No 500WZ35A00

Lab sample id 8911091-09 Client sample id J19688
Dept sample id 7520.009 Location/Matrix 100SA-CARP 4 KIDNEY SOLID
Received 11/23/09 Collected/Weight 11/18/09 16:00 ___ g
% solids 100.0 Custody/SAF No RC-118 1016 SC 118

2/28/10

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Tritium	10028-17-8	-4.40	4.0	7.34	400	UJ	H
Carbon 14	14762-75-5	1.14	1.1	5.16	50.0	UJ	C
Total Strontium	SR-RAD	0.053	0.18	0.348	1.00	U	SR
Technetium 99	14133-76-7	-0.078	0.15	0.454	15.0	U	TC
Thorium 228	14274-82-9	0.067	0.20	0.452	1.00	UJ	TH
Thorium 230	14269-63-7	0.606	0.41	0.644	1.00	U	TH
Thorium 232	TH-232	0.034	0.067	0.258	1.00	UJ	TH
Uranium 233/234	U-233/234	0.107	0.11	0.204	1.00	U	U
Uranium 235	15117-96-1	0	0.065	0.247	1.00	U	U
Uranium 238	U-238	0.027	0.053	0.204	1.00	U	U
Plutonium 238	13981-16-3	-0.005	0.017	0.067	1.00	U	PU
Plutonium 239/240	PU-239/240	0.009	0.018	0.039	1.00	U	PU
Potassium 40	13966-00-2	1.62	0.89	0.570			GAM
Cobalt 60	10198-40-0	U		0.061	0.050	U	GAM
Cesium 137	10045-97-3	U		0.055	0.100	U	GAM
Radium 226	13982-63-3	U		0.108	0.100	U	GAM
Radium 228	15262-20-1	U		0.228	0.200	U	GAM
Europium 152	14683-23-9	U		0.147	0.100	U	GAM
Europium 154	15585-10-1	U		0.127	0.100	U	GAM
Europium 155	14391-16-3	U		0.110	0.100	U	GAM
Thorium 228	14274-82-9	U		0.074		U	GAM
Thorium 232	TH-232	U		0.228		U	GAM
Uranium 235	15117-96-1	U		0.255		U	GAM
Uranium 238	U-238	U		6.36		U	GAM
Americium 241	14596-10-2	U		0.186		U	GAM
Beryllium 7	13966-02-4	U		0.451		U	GAM
Ruthenium 106	13967-48-1	U		0.482		U	GAM
Antimony 125	14234-35-6	U		0.123		U	GAM

Lab id EBERLINE
Protocol Hanford
Version Ver 1.0
Form DVD DS
Version 1.06
Report date 12/11/09

DATA SHEET, cont

SDG	7520	Client/Case no	Hanford SDG_K1839
Contact	M. Joseph Verville	Contract	No 00087335A00
Lab sample id	0911091-09	Client sample id	J196H8
Dept sample id	7520-009	Location/Matrix	100-A CARP 4 KIDNEY SOLID
Received	11/23/09	Collected/Weight	11/10/09 16:00 86.1 g
% solids	100.0	Custody/SAF No	RC-118-1016 RC-118

K 2/24/10

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALIFIERS	TEST
Cesium 134	13967-70-9	0		0.062		U	GAM

Columbia River Component of the RCBRA - Tissues

Lab id EBRICHG
Protocol Hanford
Version Ver 1.0
Form DVD-DS
Version 1.06
Report date 12/11/09

Appendix 4

Laboratory Narrative and Chain-of-Custody Documentation

1.0 GENERAL

Washington Closure Hanford (WCH) Sample Delivery Group K1839 was composed of 27 solid (other solid) samples designated under SAF No. RC-118 with a Project Designation of: Columbia River Component of the RCBRA Tissues. The 27 samples were segregated by sample type, this report contains the results for the 18 fillet/carcass samples. Results for the 9 liver/kidney samples are reported in FAC report R911090-7520.

The samples were received as stated on the Chain-of-Custody documents. Any discrepancies are noted on the Eberline Analytical Sample Receipt Checklist. The results were sent to WCH via e-mail December 15, 2009.

2.0 ANALYSIS NOTES

2.1 Carbon-14 Analysis

No problems were encountered during the course of the analyses.

2.2 Tritium Analysis

No problems were encountered during the course of the analyses.

2.3 Strontium-90 Analysis

No problems were encountered during the course of the analyses.

2.4 Technetium-99 Analysis

No problems were encountered during the course of the analyses.

2.5 Isotopic Thorium Analysis

No problems were encountered during the course of the analyses.

2.6 Isotopic Uranium Analysis

Chemistry for the samples was started and finished as a single batch however the final electrodesposition onto stainless steel discs was performed over two successive days, as indicated by the prep dates. No problems were encountered during the course of the analyses.

2.7 Isotopic Plutonium Analysis

The initial yield for sample J196D7 was 20%; the sample was replated from the original plating solution and recounted. The yield was improved to 26% and is reported. Chemistry for the samples was started and finished as a single batch however the final electrodesposition onto stainless steel discs was performed over two successive days, as indicated by the prep dates. No other problems were encountered during the course of the analyses.

2.8 Gamma Spectroscopy

No problems were encountered during the course of the analyses.

3.0 Case Narrative Certification Statement

"I certify that this data package is in compliance with the SOW, both technically and for completeness, for other than the conditions detailed above. Release of the data obtained in this hard copy data package has been authorized by the Laboratory Manager or a designee, as verified by the following signature."

N. Joseph Verville
Client Services Manager

[illegible]
Date

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST		RC-118-151	Page 1 of 1
Collector **WENDY WEST**	Company Contact JOAN KESSNER	Telephone No. 375-4684	Project Coordinator KESSNER, JH	Price Code 9K N 11/5/09 · Data Turnaround 45 Days
Project Designation Columbia River Component of the RI/FS/RA - Tissues	Sampling Location UPRIVER SA - WALL, FILLET · K1834 (7599)		SAF No. RC-118	
Ice Chest No. AES-04 006	Field Logbook No. 1633	COA BGSCRC0520	Method of Shipment FED EX	
Shipped To EBERLINE SERVICES RICHMOND	Offsite Property No. N/A		Bill of Lading/Air Bill No. 793158140059	

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage
FREEZE. MATRIX COMPOSED OF FISH.

240007

Preservation	None	None	None	None	Cool 4C	Cool 4C	None			
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	G/P			
No. of Container(s)	1	1	1	1	1	1	1			
Volume	1500g	100g	10g	10g	250g	120g	15g			
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Tritium - H3	See item (2) in Special Instructions	See item (3) in Special Instructions	Pesticides 8081	Technetium-99			

Sample No.	Matrix *	Sample Date	Sample Time										
J18WY4	OTHER SOLID	11/17/09	1115	X	X	X	X			X			

CHAIN OF POSSESSION		Sign/Print Names	
Relinquished By/Removed From **WENDY WEST**	Date/Time 11/5 11/17/09	Received By/Stored In FAS LOCKED STORAGE 9	Date/Time 11/5 11/17/09
Relinquished By/Removed From FAS LOCKED STORAGE 9	Date/Time 11/20/09 1030	Received By/Stored In SHANNAN JOHNSON	Date/Time 11/20/09 0830
Relinquished By/Removed From SHANNAN JOHNSON	Date/Time 11/20/09 1030	Received By/Stored In FEDX	Date/Time
Relinquished By/Removed From FED EX	Date/Time	Received By/Stored In F. HEATHWAITE	Date/Time 11-25-09
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) {Americium-241, Antimony-125, Beryllium-7, Cerium-144, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238};
(2) Strontium-89,90 -- Total Sr; Isotopic Thorium {Thorium-232}; Isotopic Uranium {Uranium-233/234, Uranium-235, Uranium-238}; Isotopic Plutonium
(3) ICP Metals - 6010 (Full List) {Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Titanium, Vanadium, Zinc}; Mercury - 7471 - (CV)

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab.

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-118-152

Page 1 of 1

Collector: WENDY WEST	Company Contact: JOAN KESSNER	Telephone No.: 375-4688	Project Coordinator: KESSNER, JH
Project Designation: Columbia River Component of the RCBRA - Transect	Sampling Location: UPRIVER SA- WAL 2, FILLET R1827 / 7579		SAF No.: RC-118
Ice Chest No.: APS-09-006	Field Logbook No.: 1633	COA: BESCRC6520	Method of Shipment: FED EX
Shipped To: EBERLINE SERVICES [illegible]	Offsite Property No.: N/A		Bill of Lading/Air Bill No.: [illegible]799150140059

Price Code: 8K N

Data Turnaround: 45 Days

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

FREEZE. MATRIX COMPOSED OF FISH

8900000

Preservation	None	None	None	None	Cool 4C	Cool 4C	None
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	G/P
No. of Container(s)	1	1	1	1	1	1	1
Volume	500g	200g	10g	40g	250g	170g	10g
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Tritium - H3	See item (2) in Special Instructions	See item (3) in Special Instructions	Pesticides 8081	Technetium-99

Sample No.	Matrix *	Sample Date	Sample Time							
J18WV5	OTHER SOLID	11/17/09	1015	X	X	X	X			X

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From: WENDY WEST	Date/Time: 11/17/09 1015	Received By/Stored In: EAS LOCKED STORAGE 4 WENDY WEST	Date/Time: 11/17/09 1015
Relinquished By/Removed From: EAS LOCKED STORAGE 4	Date/Time: 11/20/09 1025	Received By/Stored In: SHANNAN JOHNSON	Date/Time: 11/20/09 1030
Relinquished By/Removed From: SHANNAN JOHNSON	Date/Time: 11/20/09 1530	Received By/Stored In: FDX	Date/Time:
Relinquished By/Removed From: FED EX	Date/Time:	Received By/Stored In: M. MATTHEWS	Date/Time: 11/23/09 0925
Relinquished By/Removed From:	Date/Time:	Received By/Stored In:	Date/Time:
Relinquished By/Removed From:	Date/Time:	Received By/Stored In:	Date/Time:

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) {Americium-241, Antimony-125, Beryllium-7, Cerium-144, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238}

(2) Strontium-89,90 -- Total Sr; Isotopic Thorium {Thorium-232}; Isotopic Uranium {Uranium-233/234, Uranium-235, Uranium-238}; Isotopic Plutonium

(3) ICP Metals - 6010 (Full List) {Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc}; Mercury - 7471 - (CV)

Sampler unavailable to relinquish samples from controlled storage. Shipper removed samples from storage location taking custody.

Matrix *

S = Soil
SE = Sediment
SO = Solid
SL = Sludge
W = Water
O = Oil
A = Air
DS = Drum Solids
DL = Drum Liquids
T = Tissue
WI = Wipe
L = Liquid
V = Vegetation
X = Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-118-171 Page 1 of 1

Collector WENDY WEST	Company Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator KESSNER, JH
Project Designation Columbia River Component of the RCBRA - Tissues	Sampling Location UPRIVER SA - WALL CARCASS A18-37 (759)		SAF No. RC-118
Ice Chest No. DFS-04-006	Field Logbook No. 1633	COA BESCRC6526	Method of Shipment FED EX
Shipped To LIBERTY LSE SERVICES LIONVILLE	Offsite Property No. N/A		Bill of Lading/Air Bill No. FD. 798150140058

Price Code ~~9H~~ N 11/12/09

Data Turnaround 45 Days

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage
FREEZE - MATRIX COMPOSED OF FISH

690000

Preservation	None	None	None	None	Cool 4C	Cool 4C	None
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	G/P
No. of Container(s)	1	1	1	1	1	1	1
Volume	1300g	100g	100g	10g	250g	120g	10g
SAMPLE ANALYSIS	See attached (1) Special Instructions	Carbon-14	Tritium - H3	See attached (2) Special Instructions	See attached (3) Special Instructions	Percent lipid	Technetium-99

Sample No.	Matrix *	Sample Date	Sample Time							
J18WX5	OTHER SOLID	11/17/09	1145	X	X	X	X			X

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From WENDY WEST	Date/Time 1145 11/17/09	Received By/Stored In EAS LOCKED STORAGE	Date/Time 1145 11/17/09
Relinquished By/Removed From EAS LOCKED STORAGE	Date/Time 11/20/09 1631	Received By/Stored In SHANNAN JOHNSON	Date/Time 11/20/09 1631
Relinquished By/Removed From SHANNAN JOHNSON	Date/Time 11/20/09 1821	Received By/Stored In FEDX	Date/Time
Relinquished By/Removed From FED EX	Date/Time	Received By/Stored In T. ULATA	Date/Time 11/21/09 0945
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time

SPECIAL INSTRUCTIONS
Perform gamma spec then contact Joan Kessner for additional analysis. Maintain [illegible] as practical

(1) Gamma Spec - (Full List) {Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238}
(2) Strontium-89,90 - Total Sr, Isotopic Thorium {Thorium-232}, Isotopic Uranium {Uranium-233/234, Uranium-235, Uranium-238}, Isotopic Plutonium
(3) ICP Metals - 6010 (Full List) {Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc}, Mercury - 7471 - (CV)

Sampler unavailable to remove samples from controlled storage. Shannan removed samples from storage location taking custody [illegible] for shipment to lab.

Matrix *

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-118-172	Page 1 of 1
Collector **WENDY WEST**	Company Contact JOAN KESSNER Telephone No. 375-4688	Project Coordinator KESSNER, JH	Price Code ~~9K~~ N 4/15/2009 Data Turnaround 45 Days
Project Designation Columbia River Component of the RCBRA - Aquatic	Sampling Location UPRIVER SA- WAL 2, CARCASS K18571 (7519)	SAF No. RC-118	
Ice Chest No. AFS-04-226	Field Logbook No. 1633 COA BESCRCE520	Method of Shipment FED EX	
Shipped To EBERLINE SERVICES [illegible]	Offsite Property No. N/A	Bill of Lading/Air Bill No. 7981 5814 0058	

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage
FREEZE, MATRIX COMPOSED OF FISH

020000

Preservation	None	None	None	None	Cool 4C	Cool 4C	None
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	G/P
No. of Container(s)	2	1	1	1	1	1	1
Volume	1500g	100g	100g	10g	25g	20g	10g
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Tritium - H3	See item (2) in Special Instructions	See item (3) in Special Instructions	Pesticides - 8081	Technetium-99

Sample No.	Matrix *	Sample Date	Sample Time							
J18WX8	OTHER SOLID	11/17/09	1045	X	X	X	X			X

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From WENDY WEST Wendy West	Date/Time 11/17/09 1045	Received By/Stored In FAS LOCKED STORAGE Wendy West	Date/Time 11/17/09 1045
Relinquished By/Removed From FAS LOCKED STORAGE	Date/Time 11/20/09 1030	Received By/Stored In SHANNAN JOHNSON	Date/Time 11/20/09 1030
Relinquished By/Removed From SHANNAN JOHNSON	Date/Time 11/20/09 1030	Received By/Stored In FedEx	Date/Time
Relinquished By/Removed From Fed Ex	Date/Time	Received By/Stored In E-[illegible]	Date/Time 11/23/09
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time

SPECIAL INSTRUCTIONS
Perform gamma spec then contact Joan Kessner for additional analyses. Maintain FREEZE conditions as practical.

(1) Gamma Spec - Full List (Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238)
(2) Strontium-89,90 -- Total Sr; Isotopic Thorium (Thorium-232); Isotopic Uranium (Uranium-233/234, Uranium-235, Uranium-238); Isotopic Plutonium
(3) ICP Metals - 6010 (Full List) (Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc), Mercury - 7471 - (CV)
[illegible]

Sampler unavailable to remove samples from controlled storage. Shannan removed samples from storage location taking custody [illegible]

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method Disposed By	Date/Time

CH-EE-011

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-118-448 | Page 1 of 1

Collector WENDY WEST	Company Contact JOAN KESSNER	Telephone No. 375-4688
Project Designation Columbia River Component of the RCBRA - Tissues	Sampling Location URSA-SUCKER1-FILLET K7819 (7517)	Project Coordinator KESSNER, JH
Ice Chest No. ARS-CU-076	Field Logbook No. EL-1638	SAF No. RC-118
	COA BESCRC652u	Method of Shipment FED EX
Shipped To EBERLINE SERVICES LIONVILLE	Offsite Property No. N/A	Bill of Lading/Air Bill No. FDX # 790158140059

Price Code 9K U 08/01/05

Data Turnaround 45 Days

POSSIBLE SAMPLE HAZARDS/REMARKS

N/A

Special Handling and/or Storage

FREEZE MATRIX COMPOSED OF FISH

1200071

Preservation				None	None	None	None	Cool 4C	Cool 4C	None	
Type of Container				G/P	G/P	G/P	G/P	G/P	aG	G/P	
No. of Container(s)				1	1	1	1	1	1	1	
Volume				1500g	100g	100g	10g	250g	120g	10g	
SAMPLE ANALYSIS				See item (1) in Special Instructions	Carbon-14	Tritium - H3	See item (2) in Special Instructions	See item (3) in Special Instructions	Percent - Lipid	Technetium-99	
Sample No.	Matrix *	Sample Date	Sample Time								
J190R1	OTHER SOLID	11/17/05	1315	X	X	X	X			X	

CHAIN OF POSSESSION

Sign/Print Names

Relinquished By/Removed From WENDY WEST	Date/Time 1315 11/17/05	Received By/Stored In FAS LOCKED STORAGE4	Date/Time 1315 11/17/05
Relinquished By/Removed From FAS LOCKED STORAGE4	Date/Time 12/1/05 1020	Received By/Stored In SHANNAN JOHNSON	Date/Time 12/01/05 1020
Relinquished By/Removed From SHANNAN JOHNSON	Date/Time 12/1/05 1020	Received By/Stored In FEDX	Date/Time
Relinquished By/Removed From FED EX	Date/Time	Received By/Stored In E. KENTAU	Date/Time 12/2/05 0930
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) {Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238}
(2) Strontium-89,90 - Total Sr; Isotopic Thorium {Thorium-232}; Isotopic Uranium {Uranium-233/234, Uranium-235, Uranium-238}; Isotopic Plutonium
(3) ICP Metals - 6010 (Full List) {Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc}; Mercury - 7471 - (CV)

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH EE-011

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-118-449	Page 1 of 1		
Collector WENDY WEST	Company Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator KESSNER, JH
Project Designation Columbia River Component of the RCBRA - Tissues	Sampling Location URSA-SUCKER2-FILLET	/5/33g (79.5g)	SAF No. RC-118
Ice Chest No. AES-04-006	Field Logbook No. EL-1638	COA HESCRC6525	Method of Shipment FED EX
Shipped To EBERLINE SERVICES KNOXVILLE	Offsite Property No. N/A		Bill of Lading/Air Bill No. FF 7931 5614 [illegible]
Price Code ~~9K~~ 8 [illegible] 11/17/09	Data Turnaround 45 Days		

POSSIBLE SAMPLE HAZARDS/REMARKS

N/A

Special Handling and/or Storage

FREEZE - MATRIX COMPOSED OF FISH

000024

Preservation	None	None	None	None	Cool 4C	Cool 4C	None
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	G/P
No. of Container(s)	1	1	1	1	1	1	1
Volume	1500g	100g	100g	70g	75g	120g	10g
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Tritium - H3	See item (2) in Special Instructions	See item (3) in Special Instructions	Pesticides 8081	Technetium-99

Sample No.	Matrix *	Sample Date	Sample Time							
J190R2	OTHER SOLID	11/17/09	1400	X	X	X	X			X

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From WENDY WEST	Date/Time 1400 11/17/09	Received By/Stored In EAS LOCKED STORAGE	Date/Time 1400 11/17/09
Relinquished By/Removed From EAS LOCKED STORAGE	Date/Time 11/23/09 1030	Received By/Stored In SHANNAN JOHNSON	Date/Time 11/23/09 1030
Relinquished By/Removed From SHANNAN JOHNSON	Date/Time 11/23/09 1530	Received By/Stored In FEDX	Date/Time
Relinquished By/Removed From FED EX	Date/Time	Received By/Stored In F. KATINAS	Date/Time 11/24/09 0930
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) {Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238}; (2) Strontium-89,90 - Total Sr; Isotopic Thorium {Thorium-232}; Isotopic Uranium {Uranium-233/234, Uranium-235, Uranium-238}; Isotopic Plutonium; (3) ICP Metals - 6010 (Full List) {Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc}; Mercury - 7471 - (CV)

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location using custody, & samples for shipment to lab.

Matrix *

S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-118-450 Page 1 of 1

Collector: WENDY WEST

Company Contact: JOAN KESSNER Telephone No: 375-4688

Project Coordinator: KESSNER, JH

Price Code: 9~~K~~ N 11/16/05

Data Turnaround: 45 Days

Project Designation: Columbia River Component of the RCBRA - Tissues

Sampling Location: UNSA-SUCKER3-FILLET K1589 (7519)

SAF No.: RC-118

Ice Chest No.: APS-04-069

Field Logbook No.: EL-1618

COA: BESCRC6520

Method of Shipment: FED EX

Shipped To: EBERLINE SERVICES OAK RIDGE

Offsite Property No.: N/A

Bill of Lading/Air Bill No.: FDX 793037556247

POSSIBLE SAMPLE HAZARDS/REMARKS

N/A

Special Handling and/or Storage

FREEZE "MATRIX COMPOSED OF FISH"

Preservation	None	None	None	None	Cool 4C	Cool 4C	None
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	G/P
No. of Container(s)	1	1	1	1	1	1	-
Volume	1500g	100g	100g	10g	250g	120g	10g
SAMPLE ANALYSIS	See note (1) in Special Instructions	Carbon-14	Tritium - H3	See note (2) in Special Instructions	See note (3) in Special Instructions	[illegible]	Technetium-99

Sample No.	Matrix *	Sample Date	Sample Time							
J190R3	OTHER SOLID	11/17/04	1445	X	X	X	X			X

CHAIN OF POSSESSION

Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
WENDY WEST	11/17/04 1445	FAS LOCKED STORAGE #4	11/17/04 1445
FAS LOCKED STORAGE #4	11/23/04 1030	SHANNAN JOHNSON	11/23/04 1030
SHANNAN JOHNSON	11/23/04 1030	FDX	
FED EX		[illegible]	11/23/04 0930

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) (Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238)
(2) Strontium-89,90 - Total Sr; Isotopic Thorium (Thorium-232); Isotopic Uranium (Uranium-233/234, Uranium-235, Uranium-238); Isotopic Plutonium
(3) ICP Metals - 6010 (Full List) (Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Titanium, Vanadium, Zinc); Mercury - 7471 - (CV)

Sampler unavailable to remove samples from temporary storage. Shipper removed samples from storage location using custody of samples for shipment to lab.

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION: Received By | Title | Date/Time

FINAL SAMPLE DISPOSITION: Disposal Method | Disposed By | Date/Time

WCH-EE-011

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-118-468 | Page 1 of 1

Collector **WENDY WEST**	Company Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator KESSNER, JH
Project Designation Columbia River Component of the RCBRA - Tissues	Sampling Location URSA-SUCKER 1-CARCASS RK 339 (7579)		SAF No. RC-118
Ice Chest No. AFS-04-C09	Field Logbook No. EL-1638	COA BESCRC4520	Method of Shipment FED EX
Shipped To EBERLINE SERVICES, RICHMOND [illegible]	Offsite Property No. N/A		Bill of Lading/Air Bill No. FDX 7930 3757 6247

Price Code 9K A

Data Turnaround 45 Days

POSSIBLE SAMPLE HAZARDS/REMARKS

N/A

Special Handling and/or Storage

FREEZE MATRIX COMPOSED OF FISH

Preservation	None	None	None	None	Cool 4C	Cool 4C	None
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	G/P
No. of Container(s)	1	1	1	1	1	1	1
Volume	1500g	100g	100g	40g	250g	120g	10g
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Technetium-99	See item (2) in Special Instructions	See item (4) in Special Instructions	Pesticides 8081	[illegible]

Sample No.	Matrix *	Sample Date	Sample Time							
J190V2	OTHER SOLID	11/17/09	1345	X	X	X	X			X

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
WENDY WEST	11/17/09 1345	FAS LOCKED STORAGE 4	11/17/09 1345
FAS LOCKED STORAGE 4	11/20/09 1030	SHANNAN JOHNSON	11/20/09 1030
SHANNAN JOHNSON	11/20/09 1030	FED EX	
FED EX		F. [illegible]	11/23/09 0920

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) (Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238);
(2) Strontium-89/90 -- Total Sr; Isotopic Thorium (Thorium-232); Isotopic Uranium (Uranium-233/234, Uranium-235, Uranium-238); Isotopic Plutonium
(4) ICP Metals - 6010 (Full List) (Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Titanium, Vanadium, Zinc); Mercury - 7471 - (CV)

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location using custody samples for shipment to lab

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By Title Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method Disposed By Date/Time

WCH EE-011

Washington Closure Hanford	**CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST**	RC-118-469	Page 1 of 1

Collector: WENDY WEST

Company Contact: JOAN KESSNER

Telephone No.: 375-4685

Project Coordinator: KESSNER, JH

Price Code: 9K N JJS 11/5/09

Data Turnaround: 45 Days

Project Designation: Columbia River Component of the RCBRA - Tissues

Sampling Location: URSA-SUCKER2-CARCASS K1539 (2579)

SAF No.: RC 118

Ice Chest No.: ARS-09-006

Field Logbook No.: EL-1638

COA: BESCRC6520

Method of Shipment: FED EX

Shipped To: [✓ FREELINE SERVICES] LIONVILLE

Offsite Property No.: N/A

Bill of Lading/Air Bill No.: FE 790150140028

POSSIBLE SAMPLE HAZARDS/REMARKS

N/A

Special Handling and/or Storage

FREEZE MATRIX COMPOSED OF FISH

S20000

			Preservation	None	None	None	None	Cool 4C	Cool 4C	None
			Type of Container	G/P	G/P	G/P	G/P	G/P	aG	G/P
			No. of Container(s)	1	1	1	1	1	1	1
			Volume	1500g	150g	100g	12g	250g	120g	10g
SAMPLE ANALYSIS				See item (1) in Special Instructions	Carbon-14	Tritium - H3	See item (2) in Special Instructions	See item (3) in Special Instructions	Percent Lipid	Technetium-99
Sample No.	Matrix *	Sample Date	Sample Time							
J190V3	OTHER SOLID	11/17/09	1420	X	X	X	X			X

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From: WENDY WEST Wendy West — Date/Time 11/17/09 1430
Received By/Stored In: EAS LOCKED STORAGE 4 Wendy West — Date/Time 11/17/09 1430

Relinquished By/Removed From: EAS LOCKED STORAGE 4 — Date/Time 11/20/09 1035
Received By/Stored In: SHANNAN JOHNSON — Date/Time 11/20/09 1035

Relinquished By/Removed From: SHANNAN JOHNSON — Date/Time 11/20/09 1220
Received By/Stored In: FDX — Date/Time

Relinquished By/Removed From: FED EX — Date/Time
Received By/Stored In: — Date/Time 11/23/09 1120

Relinquished By/Removed From — Date/Time
Received By/Stored In — Date/Time

Relinquished By/Removed From — Date/Time
Received By/Stored In — Date/Time

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) [Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238]
(2) Strontium-89,90 - Total Sr; Isotopic Thorium {Thorium-232}; Isotopic Uranium {Uranium-233/234, Uranium-235, Uranium-238}; Isotopic Plutonium
(3) ICP Metals - 6010 (Full List) [Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc]; Mercury - 7471 - (CV)

Samples unavailable to remove from
non-controlled storage. Shipper removed
samples from storage location using custody
& removal for shipment to lab

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION — Received By — Title — Date/Time

FINAL SAMPLE DISPOSITION — Disposal Method — Disposed By — Date/Time

WCH-EE-011

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-118-470

Page 1 of 1

Collector WENDY WEST	Company Contact JOAN KESSNER	Telephone No. 375-4680	Project Coordinator KESSNER, JH
Project Designation Columbia River Component of the RCBRA - Tissues	Sampling Location UBSA-SUCKER3-CARCASS K1539 (7519)		SAF No. RC-118
Ice Chest No. AFS-04 006	Field Logbook No. EL-1638	COA BESCRC6520	Method of Shipment FED EX
Shipped To EBERLINE SERVICES/[illegible]	Offsite Property No. N/A		Bill of Lading/Air Bill No. FED EX 793150150058

Price Code 9K N JS 7-30

Data Turnaround 45 Days

POSSIBLE SAMPLE HAZARDS/REMARKS
N/A

Special Handling and/or Storage
FREEZE / MATRIX COMPOSITE OF FISH

9200076

Preservation	None	None	None	None	Cool 4C	Cool 4C	None
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	G/P
No. of Container(s)	1	1	1	1	1	-	1
Volume	1500g	100g	100g	10g	250g	30g	10g
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Tritium - H3	See item (2) in Special Instructions	See item (3) in Special Instructions	[illegible]	[illegible]

Sample No.	Matrix *	Sample Date	Sample Time							
J190V4	OTHER SOLID	11/11/09	1500	X	X	X	X			X

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
WENDY WEST Wendy West	11/11/09 1500	EAS LOCKED STORAGE 4 Wendy West Wendy West	11/11/09 1500
EAS LOCKED STORAGE 4	11/20/09 1621	SHANNAN JOHNSON	11/20/09 1621
SHANNAN JOHNSON	11/20/09 1621	FDX	
FED EX		F. QUATKE	11-23-09 0930

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) (Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238)

(2) Strontium-89,90 -- Total Sr; Isotopic Thorium (Thorium-232); Isotopic Uranium (Uranium-233/234, Uranium-235, Uranium-238); Isotopic Plutonium

(3) ICP Metals - 6010 (Full List) (Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Titanium, Vanadium, Zinc); Mercury - 7471 - (CV)

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody 4 samples by shipper [illegible]

Matrix *
S = Soil
SE = Sediment
SO = Solid
SL = Sludge
W = Water
O = Oil
A = Air
DS = Drum Solids
DL = Drum Liquids
T = Tissue
WI = Wipe
L = Liquid
V = Vegetation
X = Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Washington Closure Hanford	**CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST**	RC-118-995	Page 1 of 1
Collector WENDY WEST	Company Contact JOAN KESSNER Telephone No. 375-4688	Project Coordinator KESSNER, JJ	Price Code 9K Data Turnaround 45 Days
Project Designation Columbia River Component of the RCBRA - Tissues	Sampling Location 300SA-CARP 3 FILLET A7553 (7379)	SAF No. RC-118	11/19/09
Ice Chest No. AR-04-009	Field Logbook No. EL-1638 COA BESCRC6520	Method of Shipment FED EX	
Shipped To (EBERLINE SERVICES) LIONVILLE	Offsite Property No. N/A	Bill of Lading/Air Bill No. FT 793037536247	

POSSIBLE SAMPLE HAZARDS/REMARKS
N/A

Special Handling and/or Storage
FREEZE - MATRIX COMPOSED OF FISH

000022

Preservation	None	None	None	None	Cool 4C	Cool 4C	None			
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	G/P			
No. of Container(s)	1	1	1	1	1	1	1			
Volume	1500g	500g	500g	10g	250g	120g	10g			
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Tritium - H3	See item (2) in Special Instructions	See item (3) in Special Instructions	Percent solids	Technetium-99			

Sample No.	Matrix *	Sample Date	Sample Time										
J19657	OTHER SOLID	11/18/09	0900	X	X	X	X			X			

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From WENDY WEST	Date/Time 11/18/09 [illegible]	Received By/Stored In EAS LOCKED STORAGE	Date/Time 11/18/09 [illegible]
Relinquished By/Removed From EAS LOCKED STORAGE	Date/Time 11/20/09 [illegible]	Received By/Stored In SHANNAN JOHNSON	Date/Time 11/20/09 [illegible]
Relinquished By/Removed From SHANNAN JOHNSON	Date/Time 11/20/09 [illegible]	Received By/Stored In FedEx	Date/Time
Relinquished By/Removed From FedEx	Date/Time	Received By/Stored In F. [illegible]	Date/Time 11/23/09 0923
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) (Americium-241, Antimony-125, Beryllium-7, Cerium-144, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238).
(2) Strontium-89,90 -- Total Sr, Isotopic Thorium (Thorium-232), Isotopic Uranium (Uranium-233/234, Uranium-235, Uranium-238), Isotopic Plutonium
(3) ICP Metals - 6010 (Full List) (Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc) Mercury - 7471 (CV)

Sampler unavailable to remove samples from custody storage. Shipper removed samples from storage location [illegible] for samples for shipment to lab

Matrix *
[illegible]

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Washington Closure Hanford	**CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST**	RC-118-996	Page 1 of 1
Collector WENDY WEST	Company Contact JOAN KESSNER	Telephone No. 375-4686	Project Coordinator KESSNER, JH
Project Designation Columbia River Component of the RCBRA - Tissues	Sampling Location 100-SA-CARP-[illegible] K1359 (75m)	SAF No. RC-118	Price Code 9K N [illegible] Data Turnaround 45 Days
Ice Chest No. AFS-04-009	Field Logbook No. EL-1658	COA HESCRD6330	Method of Shipment FEDEX
Shipped To EBERLINE SERVICES, [illegible]ONVILLE	Offsite Property No. N/A		Bill of Lading/Air Bill No. 793037526247

POSSIBLE SAMPLE HAZARDS/REMARKS

N/A

Special Handling and/or Storage

FREEZE [illegible] COMPOSITE [illegible] FIRST

RECEIVED

			Preservation	None	None	None	None	Cool 4C	Cool 4C	None
			Type of Container	G/P	G/P	G/P	G/P	G/P	aG	G/P
			No. of Container(s)	1	1	1	1	1	1	
			Volume	1550g	50g	100g	10g	25g	150g	15g
SAMPLE ANALYSIS				See item (1) in Special Instructions	Carbon-14	Tritium - H3	See item (2) in Special Instructions	See item (3) in Special Instructions	Pesticides [illegible]	Technetium-99
Sample No.	Matrix *	Sample Date	Sample Time							
J19C08	OTHER SOLID	11/5/09	0945	X	X	X	X			X

CHAIN OF POSSESSION		Sign/Print Names	
Relinquished By/Removed From WENDY WEST Wendy West	Date/Time 0945 11/5/09	Received By/Stored In Wendy West [illegible] EAS LOCKED STORAGE 4	Date/Time 0945 11/5/09
Relinquished By/Removed From EAS LOCKED STORAGE 4	Date/Time 11/20/09 1023	Received By/Stored In SHANNAH JOHNSON	Date/Time 11/20/09 1030
Relinquished By/Removed From SHANNAH JOHNSON	Date/Time 11/20/09 1130	Received By/Stored In FDX	Date/Time
Relinquished By/Removed From FedEx	Date/Time	Received By/Stored In [illegible]	Date/Time 11/23/09 0920
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) (Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238)
(2) Strontium-89,90 -- Total Sr; Isotopic Thorium (Thorium-232); Isotopic Uranium (Uranium-233/234, Uranium-235, Uranium-238); Isotopic Plutonium
(3) ICP Metals - 6010 (Full List) (Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc); Mercury - 7471 (CV);

Samples [illegible] to [illegible] samples
[illegible] controlled storage. Shipper removed
samples from storage location using custody
[illegible]

Matrix *
[illegible]

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE 011

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-118-1020 Page 1 of 1

Collector WENDY WEST	Company Contact JOAN KESSNER	Telephone No. 375-4688
Project Designation Columbia River Component of the RCBRA - [illegible]	Sampling Location 300SA-CAMP 3 CARCASS K1839 (7519)	
Ice Chest No. APS-04 009	Field Logbook No. EL-1638	COA BESCRC6530
Shipped To EBERLINE SERVICES RICHMOND	Offsite Property No. N/A	

Project Coordinator
KESSNER, JH

SAF No. RC-118

Price Code 9K N

Data Turnaround 45 Days

Method of Shipment FED EX

Bill of Lading/Air Bill No. FT 9303 7526 2 47

POSSIBLE SAMPLE HAZARDS/REMARKS

N/A

Special Handling and/or Storage

FREEZE "MATRIX COMPOSED OF FISH"

6200000

Preservation	None	None	None	None	Cool 4C	Cool 4C	None			
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	G/P			
No. of Container(s)	1	1	1	1	1	1	1			
Volume	1500g	500g	100g	50g	250g	125g	10g			
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Tritium - H3	See item (2) in Special Instructions	See item (3) in Special Instructions	Pesticides 8081	Technetium-99			

Sample No.	Matrix *	Sample Date	Sample Time										
J196J2	OTHER SOLID	11/18/09	0915	X	X	X	X			X			

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
WENDY WEST	11/18/09 0915	EAS LOCKED STORAGE	11/18/09 0915
EAS LOCKED STORAGE	11/20/09 1030	SHANNAN JOHNSON	11/20/09 1030
SHANNAN JOHNSON	11/20/09 1030	FDX	
FED EX		[illegible]	11/21/09 0920

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) {Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238};
(2) Strontium-89,90 - Total Sr; Isotopic Thorium {Thorium-232}; Isotopic Uranium {Uranium-233/234, Uranium-235, Uranium-238}; Isotopic Plutonium;
(3) ICP Metals - 6010 (Full List) {Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc}; Mercury - 7471 - (TV);

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location, taking custody of samples for shipment to lab.

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

ACH-EE-011

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-118-1021	Page 1 of 1

ollector WENDY WEST	Company Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator KESSNER, JH
roject Designation Columbia River Component of the RCBRA - Tissues	Sampling Location 300SA-CARP 4 CARCASS K1859 (7559)		SAF No. RC-118
e Chest No. AFS-64-005	Field Logbook No. EL-1636	COA BESCRC6520	Method of Shipment FED EX
hipped To EBERLINE SERVICES LIONVILLE	Offsite Property No. N/A		Bill of Lading/Air Bill No. 793037556247

Price Code 9K N 11/19/09

Data Turnaround 45 Days

POSSIBLE SAMPLE HAZARDS/REMARKS

N/A

Special Handling and/or Storage

FREEZE WHOLE COMPOSITE OF FISH

Preservation	None	None	None	None	Cool 4C	Cool 4C	None
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	G/P
No. of Container(s)	1	1	1	1	1	1	1
Volume	150g	100g	100g	10g	250g	100g	50g
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Tritium-H3	See item (2) in Special Instructions	See item (3) in Special Instructions	[illegible]	Technetium-99

Sample No.	Matrix *	Sample Date	Sample Time							
J19633	OTHER SOLID	11/18/09	1000	X	X	X	X			X

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
WENDY WEST	11/18/09 1000	FAS LOCKED STORAGE	11/18/09 1009
FAS LOCKED STORAGE	11/18/09 1030	SHAN TATE JOHNSON	11/18/09 1030
SHAUNTAE JOHNSON	11/18/09 1030	FEDEX	
FED EX		[illegible]	[illegible]

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) (Americium-241, Antimony-125, Beryllium-7, Cerium-144, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238)
(2) Strontium-89,90 -- Total Sr, Isotopic Thorium (Thorium-232), Isotopic Uranium (Uranium-233/234, Uranium-235, Uranium-238), Isotopic Plutonium
(3) ICP Metals - 6010 (Full List) (Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc); Mercury - 7471 - (CV)

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab.

Matrix *

S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Washington Closure Hanford	**CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST**	RC-118-1036	Page 1 of 1

Collector: WENDY WEST

Company Contact: JOAN KESSNER

Telephone No.: 375-4653

Project Coordinator: KESSNER, JH

Price Code: 9B 4/\[illegible\] 4601

Data Turnaround: 45 Days

Project Designation: Columbia River Component of the RCBRA - Erosion

Sampling Location: LWSA-CARP 4 FILLET K1544 (7574)

SAF No.: RC-118

Ice Chest No.: AFS-09-2809

Field Logbook No.: EL-1658

COA: RESCRC6520

Method of Shipment: FED EX

Shipped To: EBERLINE SERVICES RICHMOND/ANDERSONVILLE

Offsite Property No.: N/A

Bill of Lading/Airbill No.: FE # 793037526247

POSSIBLE SAMPLE HAZARDS/REMARKS

[illegible]

Special Handling and/or Storage

[illegible]

180000

Preservation	None	None	None	None	Cool 4C	Cool 4C	None			
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	G/P			
No. of Container(s)	[illegible]	1	1	1	1	1	1			
Volume	1500g	100g	100g	10g	250g	10g	10g			
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Tritium - H3	See item (2) in Special Instructions	See item (3) in Special Instructions	[illegible]	[illegible]			

Sample No.	Matrix *	Sample Date	Sample Time										
J196K8	OTHER SOLID	11/13/09	1130	X	X	X	X			X			

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
WENDY WEST	11/13/09 1130	EAS LOCKED STORAGE 4	11/13/09 1130
EAS LOCKED STORAGE 4	11/24/09 1030	SHANNAH JOHNSON	11/24/09 1030
SHANNAH JOHNSON	11/24/09 1230	FEDX	
FEDEX		F-CATHRO	11/25/09 0935

SPECIAL INSTRUCTIONS

(1) Gamma Spec - {Full List} [Americium-241, Antimony-125, Beryllium-7, Cerium-144, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238]

(2) Strontium-89,90 - Total Sr; Isotopic Thorium {Thorium-232}; Isotopic Uranium {Uranium-233/234, Uranium-235, Uranium-238}; Isotopic Plutonium

(3) ICP Metals - 6010 {Full List} [Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc]; Mercury - 7471 - (CV)

Sampler unavailable to remove samples from controlled storage. Shipper removes samples from storage location taking custody. [illegible] for shipment to lab.

Matrix *

S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION — Received By / Title / Date/Time

FINAL SAMPLE DISPOSITION — Disposal Method / Disposed By / Date/Time

WCH-EE-011

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-118-1032 | Page 1 of 1

Collector	WENDY WEST
Company Contact	JUAN KESSNER
Telephone No.	375-4686
Project Coordinator	KESSNER, JH
Price Code	~~9N~~ N JJS 5/4/09
Data Turnaround	45 Days
Project Designation	Columbia River Component of the RCBRA - Tissues
Sampling Location	LWSA CARP FILLET K0339 (7519)
SAF No.	RC-118
Ice Chest No.	AFS-04-229
Field Logbook No.	EL-1618
COA	BESCRC0570
Method of Shipment	FED EX
Shipped To	EBERLINE SERVICES LIONVILLE
Offsite Property No.	N/A
Bill of Lading/Air Bill No.	FED EX 7930375[illegible]6247

POSSIBLE SAMPLE HAZARDS/REMARKS

N/A

Special Handling and/or Storage

FREEZE MATRIX COMPOSITE [illegible]

7580000

Preservation	None	None	None	Cool	Cool 4C	Cool 4C	None
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	G/P
No. of Container(s)	1	1	1	1	1	1	1
Volume	1500g	100g	100g	10g	250g	120g	30g
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Tritium - H3	See item (2) in Special Instructions	See item (3) in Special Instructions	Percent moisture	Technetium-99

Sample No.	Matrix *	Sample Date	Sample Time							
J19SK9	OTHER SOLID	11/18/09	1400	X	X	X	X			X

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
WENDY WEST	11/18/09 1400	FAS LOCKED STORAGE 9	11/18/09 1400
FAS LOCKED STORAGE 9	12/2/09 1033	SHANNAN JOHNSON	12/2/09 1035
SHANNAN JOHNSON	12/2/09 1230	FDX	
FED EX		[illegible]	12/3/09 0940

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) {Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238};
(2) Strontium-89,90 - Total Sr, Isotopic Thorium {Thorium-232}, Isotopic Uranium {Uranium-233/234, Uranium-235, Uranium-238}, Isotopic Plutonium;
(3) ICP Metals - 6010 (Full List) {Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc}; Mercury - 7471 - (CV)

Shipper is allowed to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab.

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By / Title / Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method / Disposed By / Date/Time

WCH EE-011

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-118-1061 Page 1 of 1

Collector WENDY WEST	Company Contact JOAN KESSNER	Telephone No. 375-4686	Project Coordinator KESSNER, JH
Project Designation Columbia River Component of the RCBRA - Tissues	Sampling Location LWSA-CARP 4 CARCASS [illegible]		SAF No. RC-118
Ice Chest No. AES-04-005	Field Logbook No. EL-1698	COA BESCRC6520	Method of Shipment FED EX
Shipped To EBERLINE SERVICES / LIONVILLE	Offsite Property No. N/A		Bill of Lading/Air Bill No. 793037526247

Price Code 9K N 9/1/09

Data Turnaround 45 Days

POSSIBLE SAMPLE HAZARDS/REMARKS
N/A

Special Handling and/or Storage
FREEZE MATRIX COMPOSED OF FISH

Preservation	None	None	None	None	Cool 4C	Cool 4C	None
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	G/P
No. of Container(s)	1	1	1	1	1	1	1
Volume	1500g	100g	100g	50g	250g	120g	10g
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Tritium - H3	See item (2) in Special Instructions	See item (3) in Special Instructions	[illegible]	[illegible]

Sample No.	Matrix *	Sample Date	Sample Time							
J196Y1	OTHER SOLID	11/18/09	1200	X	X	X	X			X

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From WENDY WEST	Date/Time 1200 11/18/09	Received By/Stored In FAS LOCKED STORAGE-4	Date/Time 1200 11/18/09
Relinquished By/Removed From FAS LOCKED STORAGE-4	Date/Time 11/24/09 1030	Received By/Stored In SHANNAN JOHNSON	Date/Time 11/24/09 1030
Relinquished By/Removed From SHANNAN JOHNSON	Date/Time 12/1/09 1234	Received By/Stored In FDX	Date/Time
Relinquished By/Removed From FEDEX	Date/Time	Received By/Stored In	Date/Time 12-2-09 0920
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) [Americium-241, Antimony-125, Beryllium-7, Cerium-144, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238]
(2) Strontium-89,90 -- Total Sr, Isotopic Thorium (Thorium-232), Isotopic Uranium (Uranium-233/234, Uranium-235, Uranium-238), Isotopic Plutonium
(3) ICP Metals - 6020 (Full List) [Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc]; Mercury - 7471 - (CV)

Sampler was unable to remove samples from controlled storage. Shipper removed samples from storage location using custody [illegible] for shipment to lab

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH EE-011

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-118-1062 Page 1 of 1

Collector WENDY WEST	Company Contact JOAN KESSNER	Telephone No. 375-4688
Project Designation Columbia River Component of the RCBRA - Tissues	Sampling Location LWSA-CARP 5 CARCASS K1839 (7314)	Project Coordinator KESSNER, JH
Ice Chest No. HPS-04-009	Field Logbook No. EL-1618	COA BESCRC6520
Shipped To EBERLINE SERVICES RICHMOND	Offsite Property No. N/A	SAF No. RC-118
		Method of Shipment FED EX
		Bill of Lading/Air Bill No. FDX 793037 5 6247

Price Code 9K N

Data Turnaround 45 Days

POSSIBLE SAMPLE HAZARDS/REMARKS

N/A

Special Handling and/or Storage

FREEZE MATRIX COMPOSED OF FISH

E80000

Preservation	None	None	None	None	Cool 4C	Cool 4C	None
Type of Container	G/P	G/P	G/P	G/P	G/P	aG	G/P
No. of Container(s)	1	1	1	1	1	1	1
Volume	1500g	100g	100g	40g	250g	120g	10g
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Tritium - H3	See item (2) in Special Instructions	See item (3) in Special Instructions	Plutonium [illegible]	Technetium-99

Sample No.	Matrix *	Sample Date	Sample Time							
J196Y2	OTHER SOLID	11/18/09	1430	X	X	X	X			X

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From WENDY WEST	Date/Time 1430 11/18/09	Received By/Stored In FAS LOCKED STORAGE	Date/Time 1430 11/18/09
Relinquished By/Removed From FAS LOCKED STORAGE	Date/Time 11/20/09 1020	Received By/Stored In SHANNAH JOHNSON	Date/Time 11/20/09 1020
Relinquished By/Removed From SHANNAH JOHNSON	Date/Time 11/20/09 1030	Received By/Stored In FDX	Date/Time
Relinquished By/Removed From FED EX	Date/Time	Received By/Stored In J. Durkee	Date/Time 11/23/09 0945
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) {Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238};
(2) Strontium-89,90 - Total Sr; Isotopic Thorium {Thorium-232}; Isotopic Uranium {Uranium-233/234, Uranium-235, Uranium-238}; Isotopic Plutonium
(3) ICP Metals - 6010 (Full List) {Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Titanium, Vanadium, Zinc}; Mercury - 7471 - (CV)

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location (only custody) all samples for shipment to lab

Matrix *
[illegible]

LABORATORY SECTION — Received By — Title — Date/Time

FINAL SAMPLE DISPOSITION — Disposal Method — Disposed By — Date/Time

WCH-EE-011

Case Narrative

1.0 GENERAL

Washington Closure Hanford (WCH) Sample Delivery Group K1839 was composed of 27 solid (other solid) samples designated under SAF No. RC-118 with a Project Designation of: Columbia River Component of the RCBRA – tissues. The 27 samples were segregated by sample type; this report contains the results for the nine liver/kidney samples. Results for the 18 fillet/carcass samples are reported in EAC report R911090-7519.

The samples were received as stated on the Chain-of-Custody documents. Any discrepancies are noted on the Eberline Analytical Sample Receipt Checklist. The results were sent to WCH via e-mail December 15, 2009.

2.0 ANALYSIS NOTES

2.1 Carbon-14 Analysis

No problems were encountered during the course of the analyses.

2.2 Tritium Analysis

No problems were encountered during the course of the analyses.

2.3 Strontium-90 Analysis

No problems were encountered during the course of the analyses.

2.4 Technetium-99 Analysis

No problems were encountered during the course of the analyses

2.5 Isotopic Thorium Analysis

No problems were encountered during the course of the analyses.

2.6 Isotopic Uranium Analysis

No problems were encountered during the course of the analyses.

2.7 Isotopic Plutonium Analysis

No problems were encountered during the course of the analyses.

2.8 Gamma Spectroscopy

No problems were encountered during the course of the analyses.

3.0 Case Narrative Certification Statement

"I certify that this data package is in compliance with the SOW, both technically and for completeness, for other than the conditions detailed above. Release of the data obtained in this hard copy data package has been authorized by the Laboratory Manager or a designee, as verified by the following signature."

N. Joseph Verville
Client Services Manager

Date

Washington Closure Hanford	**CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST**	RC-118-166	Page 1 of 1
Collector WENDY WEST	Company Contact JOAN KESSNER	Telephone No. 373-4686	Project Coordinator KESSNER, JH
Project Designation Columbia River Component of the RC BRA - Tissues	Sampling Location UPRIVER SA: WAL I, LIV KID K/B 39 (7520)	SAF No. RC-118	Price Code 9K N 448 51209 Data Turnaround 45 Days
Ice Chest No. AFS-04-006	Field Logbook No. 1613	COA BESCRL6530	Method of Shipment FED EX
Shipped To EBERLINE SERVICES LIONVILLE	Offsite Property No. N/A		Bill of Lading/Air Bill No. FD. 7931501400 53

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage
FREEZE TISSUE COMPOSED OF FISH

Preservation	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]			
Type of Container	G/P	G/P	G	G/P	G/P	G/P	G			
No. of Container(s)	1	0	0	0	0	0	0			
Volume	750g	2g	25g	5g	5g	12g	50g			
SAMPLE ANALYSIS	Gamma Spec (See Special Instructions)	Carbon-14	Tritium - H3	Sr-90 (See Special Instructions)	Technetium-99	ICP Metals (See Special Instructions)	[illegible]			

Sample No.	Matrix *	Sample Date	Sample Time										
J18WW9	OTHER SOLID	11/18/09	1515	X	X	X	X	X	X	X			

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From WENDY WEST	Date/Time 1515 11/18/09	Received By/Stored In EAS LOCKED STORAGE 4	Date/Time 1515 11/18/09
Relinquished By/Removed From EAS LOCKED STORAGE 4	Date/Time 11/20/09 1030	Received By/Stored In SHANNAN JOHNSON	Date/Time 11/20/09 1030
Relinquished By/Removed From SHANNAN JOHNSON	Date/Time 11/20/09 1030	Received By/Stored In FDX	Date/Time
Relinquished By/Removed From FED EX	Date/Time	Received By/Stored In	Date/Time 12-3-09 0920
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time

SPECIAL INSTRUCTIONS
Perform gamma spec then contact Joan Kessner for additional analysis. Maintain FREEZE cooling as practical.

(1) Gamma Spec - (Ge/Li,as) {Americium-241, Antimony-125, Beryllium-7, Cerium-144, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238}
(2) Strontium-89,90 - Total Sr; Isotopic Thorium; Isotopic Uranium; Isotopic Plutonium
(3) ICP Metals - 6010 (Fed Conc) {Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc}, Mercury - 7471 - (CV)

Samples transferred to locked storage compound
from controlled storage. Shipper retrieved
samples from storage location using custody
2 samples for shipment to lab

Matrix *
S = Soil
SE = Sediment
SO = Solid
SL = Sludge
W = Water
O = Oil
A = Air
DS = Drum Solids
DL = Drum Liquids
T = Tissue
WI = Wipe
L = Liquid
V = Vegetation
X = Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Washington Closure Hanford	**CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST**	RC-118-167	Page 1 of 1
Collector **WENDY WEST**	Company Contact JOAN KESSNER Telephone No. 375-4688	Project Coordinator KESSNER, JH	Price Code ~~9K~~ N 4/45124 Data Turnaround 45 Days
Project Designation Columbia River Component of the RCBRA - Tissues	Sampling Location UPRIVER SA- WAL-2 -LIV-SID K1539 (7520)	SAF No. RC-118	
Ice Chest No. AFS-EV-006	Field Logbook No. 1633 COA BFSCRC6520	Method of Shipment FED EX	
Shipped To EBERLINE SERVICES OAK RIDGE	Offsite Property No. N/A	Bill of Lading/Air Bill No. FDX 790158140090	

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage
FREEZE *MATRIX COMPOSED OF FISH*

Preservation	None	None	None	None	None	Cool 4C	Cool 4C
Type of Container	G/P	G/P	G	G/P	G/P	G/P	aG
No. of Container(s)	1	0	0	0	0	0	0
Volume	250g	5g	25g	5g	5g	15g	50g
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Tritium - (C)	See item (2) in Special Instructions	Technetium-99	See item (3) in Special Instructions	Percent Moist

Sample No.	Matrix *	Sample Date	Sample Time							
J18WX0	OTHER SOLID	11/18/09	1550	X	X	X	X	X	X	X

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
WENDY WEST	11/18/09 1550	EAS LOCKED STORAGE 4	11/18/09 1550
EAS LOCKED STORAGE 4	11/20/09 1030	SHANNAN JOHNSON	11/20/09 1030
SHANNAN JOHNSON	11/20/09 1050	FDX	
FED EX		R.E. HATHORN	11/21/09 0920

SPECIAL INSTRUCTIONS
Perform gamma spec then contact Joan Kessner for additional analyses. Maintain FREEZE condition to practice.

(1) Gamma Spec - {Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238};
(2) Strontium-89,90 - Total Sr; Isotopic Thorium; Isotopic Uranium; Isotopic Plutonium
(3) ICP Metals - 6010 (Full List) {Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc}, Mercury - 7471 - (CV)

Sampler unavailable to remove samples from controlled storage. Shipper retrieved samples from storage location during custody.

Matrix *
[illegible]

LABORATORY SECTION	Received By — Title — Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method — Disposed By — Date/Time

WCH EE 011

Washington Closure Hanford | **CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST** | RC-118-463 | Page 1 of 1

Collector WENDY WEST	Company Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator KESSNER, JH
Project Designation Columbia River Component of the RCBRA - Tissues	Sampling Location URSA-SUCKER FLUV KID	K1859 (7520)	SAF No. RC-138
Ice Chest No. AFS-14-066	Field Logbook No. EL-1638	COA BESCRC0520	Method of Shipment FED EX
Shipped To EBERLINE SERVICES LIONVILLE	Offsite Property No. N/A		Bill of Lading/Air Bill No. FP 799158[illegible]

Price Code: ~~8K~~ N | Data Turnaround: 45 Days

POSSIBLE SAMPLE HAZARDS/REMARKS
N/A

Special Handling and/or Storage
FREEZE MATRIX COMPOSED OF FISH

Preservation	None	None	None	None	None	Cool 4C	Cool 4C
Type of Container	G/P	G/P	G	G/P	G/P	G/P	[illegible]
No. of Container(s)	1	0	0	0	0	0	0
Volume	250g	2g	25g	5g	5g	15g	50g
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Tritium - H3	See item (2) in Special Instructions	Technetium-99	See item (3) in Special Instructions	[illegible]

Sample No.	Matrix *	Sample Date	Sample Time							
J19037	OTHER SOLID	7/18/09	1500	X	X	X	X	X	X	X

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
WENDY WEST	7/18/09 1500	EAS LOCKED STORAGE	7/18/09 1500
EAS LOCKED STORAGE	11/24/09 [illegible]	SHANNAN JOHNSON	11/24/09 [illegible]
SHANNAN JOHNSON	11/24/09 [illegible]	FDX	
FDX		F. KURTAGH	11/23/09 0940

SPECIAL INSTRUCTIONS
TRANSSHIPPING REQUIRED. Perform gamma spec then [illegible] freezer for [illegible] Maintain FREEZE cooling as practical.

(1) Gamma Spec - Full List (Americium-241, Antimony-125, Beryllium-7, Cerium-144, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238)
(2) Strontium-89,90 - Total Sr; Isotopic Thorium; Isotopic Uranium; Isotopic Plutonium
(3) ICP Metals - 6010 (Full List) (Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc); Mercury - 7471 - (CV)

Samples [illegible] to [illegible]
for controlled storage. Shipper retrieved
samples from storage location [illegible]
X samples for shipment to lab

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-118-464

Page 1 of 1

Collector WENDY WEST	Company Contact JOAN KESSNER	Telephone No. 375-4665	Project Coordinator KESSNER, JH
Project Designation Columbia River Component of the RCBRA - Tissues	Sampling Location HRSA-SUCKER2-LIV/KID K1839 (7526)		SAF No. RC-118
Ice Chest No. AR-04-006	Field Logbook No. EL-1658	COA BFSCRC6520	Method of Shipment FED EX
Shipped To EBERLINE SERVICES [illegible]	Offsite Property No. NA		Bill of Lading/Air Bill No. FDX 795156140093

Price Code N 11/21/07

Data Turnaround 45 Days

POSSIBLE SAMPLE HAZARDS/REMARKS
NA

Special Handling and/or Storage
FREEZE. MATRIX COMPOSED OF FISH

Preservation	None	None	None	None	None	Cool 4C	Cool 4C
Type of Container	G/P	G/P	G	G/P	G/P	G/P	aG
No. of Container(s)	1	0	0	0	0	0	0
Volume	750g	3g	15g	5g	5g	15g	50g
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	[illegible] H3	See item (2) in Special Instructions	Technetium-99	See item (3) in Special Instructions	Percent solids

Sample No.	Matrix *	Sample Date	Sample Time							
J19GT8	OTHER SOLID	11/18/07	1515	X	X	X	X	X	X	X

CHAIN OF POSSESSION

Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
WENDY WEST	1515 11/19/07	EAS LOCKED STORAGE	1515 [illegible]
EAS LOCKED STORAGE	11/21/07 1220	SHANNAN JOHNSON	11/21/07 1220
SHANNAN JOHNSON	11/21/07 1320	FDX	
FED EX		H. KHATAMKHAN	11/23/07 [illegible]

SPECIAL INSTRUCTIONS

TRANSSHIPPING REQUIRED. Perform gamma spec then contact Joan Kessner for additional analyses. Maintain FREEZE cooling as practical.

(1) Gamma Spec - (Add-On) (Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238)
(2) Strontium-89,90 - Total Sr, Isotopic Thorium, Isotopic Uranium, Isotopic Plutonium
(3) ICP Metals - 6010 (Full List) (Aluminum, Antimony), Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc), Mercury - 7471 - (CV)

Sampler [illegible] to remove samples from controlled storage. Shipper removing samples from storage location leaving custody

Matrix *
[illegible]

LABORATORY SECTION	Received By	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By Date/Time

WCH-EE-011

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-118-465	Page 1 of 1

Collector WENDY WEST	Company Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator KESSNER, JH	Price Code ~~9K~~ N Data Turnaround 45 Days
Project Designation Columbia River Component of the RCBRA - Tissues	Sampling Location URSA-SUCKERS LIV-KID K1859 (1520)		SAF No. RC-118	
Ice Chest No. ABS-09-006	Field Logbook No. EL-1638	COA [illegible]	Method of Shipment FEDEX	
Shipped To EBERLINE SERVICES LIONVILLE	Offsite Property No. N/A		Bill of Lading/Air Bill No. 798155120053	

POSSIBLE SAMPLE HAZARDS/REMARKS
None

Special Handling and/or Storage
FREEZE *MATRIX COMPOSED OF FISH*

0600000

		Preservation	None	None	None	None	None	Cool 4C	Cool 4C	
		Type of Container	G/P	G/P	G	G/P	G/P	G/P	aG	
		No. of Container(s)	1	0	0	0	0	0	0	
		Volume	150g	2g	15g	5g	5g	15g	50g	
SAMPLE ANALYSIS			See item (1) in Special Instructions	Carbon-14	Tritium - H3	See item (2) in Special Instructions	Technetium-99	See item (3) in Special Instructions	[illegible]	
Sample No.	Matrix *	Sample Date	Sample Time							
J190T9	OTHER SOLID	11/18/07	1520	X	X	X	X	X	X	X

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
	1530	FAS LOCKED STORAGE	1530
FAS LOCKED STORAGE	1025	SHANNAN JOHNSON	1025
SHANNAN JOHNSON	1530	FEDX	
FED EX		[illegible]	09

SPECIAL INSTRUCTIONS
TRANSSHIPPING REQUIRED. Perform gamma spec [illegible] for additional analyses. Maintain [illegible] according to protocol.

(1) Gamma Spec - (Full List) (Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238)
(2) Strontium-89,90 - Total Sr, Isotopic Thorium, Isotopic Uranium, Isotopic Plutonium
(3) ICP Metals - 6010 (Full List) (Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc), Mercury - 7471 - (CV)

Samples unavailable [illegible] from controlled storage. Shipped [illegible] samples from storage location [illegible]

Matrix *
[illegible]

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-118-1010 Page 1 of 1

Collector WENDY WEST	Company Contact JOAN KESSNER	Telephone No. 375-4688
Project Designation Columbia River Component of the RCBRA - Tissues	Sampling Location 300SA-CARP 3 LIVER	K1559 (7526)
Ice Chest No. AFS-04-006	Field Logbook No. EL-1634	COA BESCRC6320
Shipped To (EBERLINE SERVICES) RICHMOND/ONVILLE	Offsite Property No. N/A	

Project Coordinator KESSNER, JH	Price Code 9K	Data Turnaround 45 Days
SAF No. RC-118	AB 9/2009	
Method of Shipment FED EX		
Bill of Lading/Air Bill No. FDX 79615014 0058		

POSSIBLE SAMPLE HAZARDS/REMARKS

N/A

Special Handling and/or Storage

FREEZE "MATRIX COMPOSED OF FISH"

[illegible]

Preservation	None	None	None	None	None	Cool 4C	Cool 4C			
Type of Container	G/P	G/P	G	G/P	G/P	G/P	aG			
No. of Container(s)	1	0	0	0	0	0	0			
Volume	250g	2g	25g	5g	5g	15g	50g			
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Tritium - H3	See item (2) in Special Instructions	Technetium-99	See item (3) in Special Instructions	Percent Solids - 4081			

Sample No.	Matrix *	Sample Date	Sample Time										
J196H2	OTHER SOLID	11/18/03	1558	X	X	X	X	X	X	X			

CHAIN OF POSSESSION Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
WENDY WEST	11/18/03 1558	EAS LOCKED STORAGE	11/18/03 1558
EAS LOCKED STORAGE	11/24/04 1030	SHANNAN JOHNSON	11/24/04 1030
SHANNAN JOHNSON	11/24/04 1030	FDX	
FED EX		F. [illegible]	11/25/ 0930

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) (Americium-241, Antimony-125, Beryllium-7, Cerium-144, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238)
(2) Strontium-89,90 - Total Sr, Isotopic Thorium, Isotopic Uranium, Isotopic Plutonium
(3) ICP Metals - 6010 (Full List) (Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Titanium, Vanadium, Zinc), Mercury - 7471 - (CV)

Sampled [illegible] to secured storage
on continued storage. Shipper [illegible]
samples from storage [illegible] (using custody)
& samples for shipment to lab

Matrix *

S = Soil
SE = Sediment
SO = Solid
SL = Sludge
W = Water
O = Oil
A = Air
DS = Drum Solids
DL = Drum Liquids
T = Tissue
WI = Wipe
L = Liquid
V = Vegetation
X = Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Washington Closure Hanford	**CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST**	**RC-118-1011**	Page 1 of 1

Collector **WENDY WEST**	Company Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator KESSNER, JH	Price Code 9K N Data Turnaround **45 Days**
Project Designation Columbia River Component of the RCBRA - Tissues	Sampling Location 300SA-CARP 4 LIVER K18.39 (7526)		SAF No. RC-118	
Ice Chest No. AFS-04-006	Field Logbook No. EL-1638	COA BESKRC6520	Method of Shipment FED EX	
Shipped To EBERLINE SERVICES LIONVILLE	Offsite Property No. N/A		Bill of Lading/Air Bill No. FDX 799158140053	

POSSIBLE SAMPLE HAZARDS/REMARKS

[illegible]

Special Handling and/or Storage

FREEZE MATRIX COMPOSED OF FISH

760000

	Preservation	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	Cool 4C	Cool 4C			
	Type of Container	G/P	G/P	G	G/P	G/P	G/P	aG			
	No. of Container(s)	1	5	6	0	0	6	0			
	Volume	250g	1g	15g	1g	5g	15g	50g			
SAMPLE ANALYSIS		[illegible] (1) - Special Instructions	Carbon-14	Tritium - H3	[illegible] (2) - Special Instructions	Technetium-99	[illegible] (3) - Special Instructions	[illegible]			

Sample No.	Matrix *	Sample Date	Sample Time										
J19643	OTHER SOLID	11/18/09	1105	X	X	X	X	X	X	X			

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From WENDY WEST	Date/Time 1105 11/18/09	Received By/Stored In EAS LOCKED STORAGE 4	Date/Time 1105 11/18/09
Relinquished By/Removed From EAS LOCKED STORAGE 4	Date/Time 11/20/09 1030	Received By/Stored In SHANNAN JOHNSON	Date/Time 11/20/09 1030
Relinquished By/Removed From SHANNAN JOHNSON	Date/Time 11/20/09 1520	Received By/Stored In FDX	Date/Time
Relinquished By/Removed From FED EX	Date/Time	Received By/Stored In [illegible]	Date/Time [illegible] 0730
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) (Americium-241, Antimony-125, Beryllium-7, Cerium-144, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238)

(2) Strontium-89,90 - Total Sr, Isotopic Thorium, Isotopic Uranium, Isotopic Plutonium

(3) ICP Metals - 6010 (Full List) (Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc), Mercury - 7471 - (CV)

[illegible] unavailable to remove [illegible] [illegible] storage. Shipper removed [illegible] from storage location taking custody [illegible] samples for shipment to [illegible]

Matrix *

[illegible]

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Washington Closure Hanford	**CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST**	RC-118-1015	Page 1 of 1
Collector **WENDY WEST**	Company Contact JOAN KESSNER Telephone No. 375-4688	Project Coordinator KESSNER, Jill	Price Code [illegible] Data Turnaround 45 Days
Project Designation Columbia River Component of the RCBRA - Tissues	Sampling Location 300GA-CARP 3 KIDNEY K1834 (7520)	SAF No. RC-118	
Ice Chest No. APS-04-004	Field Logbook No. EL-1638 COA BESCRC652d	Method of Shipment FED EX	
Shipped To (EBERLINE SERVICES) [illegible]	Offsite Property No. N/A	Bill of Lading/Air Bill No. FDX # 790158140029	

POSSIBLE SAMPLE HAZARDS/REMARKS

[illegible]

Special Handling and/or Storage

FREEZE MATRIX COMPOSED OF FISH

0000093

Preservation	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Type of Container	G/P	G/P	G	G/P	G/P	G/P	G/P
No. of Container(s)	1	0	0	0	0	0	0
Volume	750g	2g	25g	5g	5g	15g	50g
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Tritium - H3	See item (2) in Special Instructions	Technetium-99	See item (3) in Special Instructions	Percent Moist

Sample No.	Matrix *	Sample Date	Sample Time							
J196H7	OTHER SOLID	11/18/09	1555	X	X	X	X	X	X	X

CHAIN OF POSSESSION Sign/Print Names

Relinquished By/Removed From WENDY WEST	Date/Time 1555 11/18/09	Received By/Stored In EAS LOCKED STORAGE 4	Date/Time 1555 11/18/09
Relinquished By/Removed From EAS LOCKED STORAGE 4	Date/Time 11/20/09 1235	Received By/Stored In SHANNAN JOHNSON	Date/Time 11/20/09 1235
Relinquished By/Removed From SHANNAN JOHNSON	Date/Time 11/20/09 1241	Received By/Stored In FDX	Date/Time
Relinquished By/Removed From FED EX	Date/Time	Received By/Stored In	Date/Time 11/23/09 0920
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) {Americium-241, Antimony-125, Beryllium-7, Cerium-144, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238}
(2) Strontium-89,90 – Total Sr, Isotopic Thorium, Isotopic Uranium, Isotopic Plutonium
(3) ICP Metals - 6010 (Full List) {Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc}, Mercury - 7471 - (CV)

Sampler [illegible] samples
to controlled storage. Shipper removed
samples from storage location taking custody.
Samples to be shipped to lab.

Matrix *
S = Soil
SE = Sediment
SO = Solid
SL = Sludge
W = Water
O = Oil
A = Air
DS = Drum Solids
DL = Drum Liquids
T = Tissue
WI = Wipe
L = Liquid
V = Vegetation
X = Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-118-1016 Page 1 of 1

Collector: WENDY WEST

Company Contact: JOAN KESSNER

Telephone No.: 373-4060

Project Coordinator: KESSNER, JH

Price Code: ~~9K~~ N

Data Turnaround: 45 Days

Project Designation: Columbia River Component of the RCBRA - Tissues

Sampling Location: 300SA-CARP 4 KIDNEY K18.39 (7526)

SAF No.: RC-118

Ice Chest No.: AFS-04-006

Field Logbook No.: EL 1638

COA: WESCRC5576

Method of Shipment: FED EX

Shipped To: EBERLINE SERVICES LIONVILLE

Offsite Property No.: N/A

Bill of Lading/Air Bill No.: FDX5 790150140058

POSSIBLE SAMPLE HAZARDS/REMARKS

N/A

Special Handling and/or Storage

FREEZE *MATRIX COMPOSED OF FISH*

450000

Preservation	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]			
Type of Container	G/P	G/P	G	G/P	G/P	G/P	aG			
No. of Container(s)	1	0	0	0	0	0	0			
Volume	750g	1g	25g	5g	5g	15g	5g			
SAMPLE ANALYSIS	See item (1) in Special Instructions	Carbon-14	Tritium-H3	See item (2) in Special Instructions	Technetium-99	See item (3) in Special Instructions	Percent Lipid			

Sample No.	Matrix *	Sample Date	Sample Time										
J19RH8	OTHER SOLID	11/18/09	1600	X	X	X	X	X	X	X			

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From: WENDY WEST	Date/Time: 11/18/09 1600	Received By/Stored In: EAS LOCKED STORAGE	Date/Time: 11/18/09 1600
Relinquished By/Removed From: EAS LOCKED STORAGE	Date/Time: 11/20/09 1050	Received By/Stored In: SHANNAN JOHNSON	Date/Time: 11/20/09 1050
Relinquished By/Removed From: SHANNAN JOHNSON	Date/Time: 11/20/09 1150	Received By/Stored In: FDX	Date/Time:
Relinquished By/Removed From: FED EX	Date/Time:	Received By/Stored In:	Date/Time: 11/23/09 0930
Relinquished By/Removed From:	Date/Time:	Received By/Stored In:	Date/Time:
Relinquished By/Removed From:	Date/Time:	Received By/Stored In:	Date/Time:

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) {Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238}
(2) Strontium-89,90 - Total Sr; Isotopic Thorium, Isotopic Uranium, Isotopic Plutonium
(3) ICP Metals - 6010 (Full List) {Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Titanium, Vanadium, Zinc}; Mercury - 7471 - (CV)}

Sampler relinquishes to temporary storage
on controlled storage. Shipper removes
samples from storage location taking custody
of samples for shipment to lab.

Matrix *

S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION — Received By: Title: Date/Time:

FINAL SAMPLE DISPOSITION — Disposal Method: Disposed By: Date/Time:

WCH-EE-011

Appendix 5

Data Validation Supporting Documentation

APPENDIX A
RADIOCHEMICAL DATA VALIDATION CHECKLIST

VALIDATION LEVEL:	A	B	[✓ C]	D	E
PROJECT:	RCBRA		DATA PACKAGE:	K1W39	
VALIDATOR:	GLR	LAB: EB		DATE: 2/24/10	
			SDG	K1V39	

ANALYSES PERFORMED					
Gross Alpha/Beta	X Strontium-90	Isotopic U	X Alpha Spectroscopy	X Gamma Spectroscopy	
Total Uranium	Radium-22	X Tritium	X C-14	X Tc-99	

SAMPLES/MATRIX

J18WV4 J18WV5 J18WX5 J18WX6 J190R1 J190R2 J190R3

J190V2 J190V3 J190V4 J18607 J18608 J18672 J18673

J18CK8 J18LK9 J18Y1 J18YZ2 J18WW9 J18WY0 J190T7

J190T8 J190T9 J18GH2 J190Y3 J18LH7 J18CH4

Solid

1. Completeness .... ☐ N/A

Technical verification forms present?.. Yes [✓ No] N/A

Comments: ____

2. Initial Calibration (Levels D, E) .... ☒ N/A

Instruments/detectors calibrated?.. Yes No N/A

Initial calibration acceptable? .... Yes No N/A

Standards NIST traceable?... Yes No N/A

Standards Expired? .... Yes No N/A

Calculation check acceptable? .... Yes No N/A

Comments: ____

3. Continuing Calibration (Levels D, E) ☒ N/A

Calibration checked within required frequency? .... Yes No N/A

Calibration check acceptable? .... Yes No N/A

Calibration check standards traceable? .... Yes No N/A

Calibration check standards expired? .... Yes No N/A

Calculation check acceptable? .... Yes No N/A

Comments:

4. Background Counts (Levels D, E) .... ☒ N/A

Background Counts checked within required frequency? .... Yes No N/A

Background Counts acceptable? .... Yes No N/A

Calculation check acceptable? .... Yes No N/A

Comments.

5. Blanks (Levels B, C, D, E) ☐ N/A

Method blank analyzed within required frequency? [✓ Yes] No N/A

Method blank results acceptable? [✓ Yes] No N/A

Analytes detected in method blank? Yes [✓ No] N/A

Field blank(s) analyzed? Yes [✓ No] N/A

Field blank results acceptable? Yes No [✓ N/A]

Analytes detected in field blank(s)? Yes No [✓ N/A]

Transcription/Calculation Errors? (Levels D, E) Yes No [✓ N/A]

Comments: 7 over RQL -

6. Laboratory Control Samples or Blank Spike Samples (Levels C, D, E) ☐ N/A

LCS /BSS analyzed within required frequency? [✓ Yes] No N/A

LCS/BSS recoveries acceptable? [✓ Yes] No N/A

LCS/BSS traceable? (Levels D,E) Yes No [✓ N/A]

LCS/BSS expired? (Levels D,E) Yes No [✓ N/A]

LCS/BSS levels correct? (Levels D,E) Yes No [✓ N/A]

Transcription/Calculation Errors? (Levels D, E) Yes No [✓ N/A]

Comments: no Pu 238 or 232 LCS – [illegible]

7. Chemical Carrier Recovery (Levels C, D, E) ☒ N/A

Chemical carrier added? Yes No N/A

Chemical recovery acceptable? Yes No N/A

Chemical carrier traceable? (Levels D, E) Yes No N/A

Chemical carrier expired? (Levels D, E) .... Yes No N/A

Transcription/Calculation errors? (Levels D, E) .... Yes No N/A

Comments:

8. Tracer Recovery (Levels C, D, E) .... ☐ N/A

Tracer added? .... [✓ Yes] No N/A

Tracer recovery acceptable? .... [✓ Yes] No N/A

Tracer traceable? (Levels D, E) .... Yes No [✓ N/A]

Tracer expired? (Levels D, E) .... Yes No [✓ N/A]

Transcription/Calculation errors? (Levels D, E) .... Yes No [✓ N/A]

Comments:

9. Matrix Spikes (Levels C, D, E) .... ☐ N/A

Matrix spike analyzed? .... Yes [✓ No] N/A

Spike recoveries acceptable? .... Yes No [✓ N/A]

Spike source traceable? (Levels D, E) .... Yes No [✓ N/A]

Spike source expired? Levels D, E) .... Yes No [✓ N/A]

Transcription/Calculation Errors? (Levels D, E) .... Yes No [✓ N/A]

Comments: No MS - 3H + C-14 - I all

10. Duplicates (Levels C, D, E) ☐ N/A

Duplicates Analyzed at required frequency? [✓ Yes] No N/A

RPD Values Acceptable? [✓ Yes] No N/A

Transcription/Calculation Errors? (Levels D, E) Yes No [✓ N/A]

Comments:

11. Field QC Samples (Levels C, D E) ☐ N/A

Field duplicate sample(s) analyzed? Yes [✓ No] N/A

Field duplicate RPD values acceptable? Yes No [✓ N/A]

Field split sample(s) analyzed? Yes [✓ No] N/A

Field split RPD values acceptable? Yes No [✓ N/A]

Performance audit sample(s) analyzed? Yes [✓ No] N/A

Performance audit sample results acceptable? Yes No [✓ N/A]

Comments: no field QC

12. Holding Times (All levels)

Are sample holding times acceptable? [✓ Yes] No N/A

Comments:

13 Results and Detection Limits (All Levels).. ☐ N/A

Results reported for all required sample analyses?... [✓ Yes] No N/A

Results supported in raw data?(Levels D, E).. Yes No [✓ N/A]

Results Acceptable? (Levels D, E).. Yes No [✓ N/A]

Transcription/Calculation errors? (Levels D, E)... Yes No [✓ N/A]

MDA's meet required detection limits?... Yes [✓ No] N/A

Transcription/calculation errors? (Levels D, E).. Yes No [✓ N/A]

Comments: 72 out

Appendix 6

Additional Documentation Requested by Client

E B E R L I N E   A N A L Y T I C A L / R I C H M O N D

SAMPLE DELIVERY GROUP K1839

7520-011

Method Blank

M E T H O D   B L A N K

SDG 7520
Contact N. Joseph Verville
Client/Case no Hanford
SDG K1839
Contract No. 500W33AA00

Lab sample id R911091-11
Dept sample id 7520-011
Client sample id Method Blank
Material/Matrix SOLID
SAF No RC-118

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Tritium	10028-17-8	1.20	3.3	5.42	400	U	H
Carbon 14	14762-75-5	1.29	4.0	6.64	50.0	U	C
Total Strontium	SR-RAD	-0.004	0.17	0.337	1.00	U	SR
Technetium 99	14133-76-7	0.092	0.14	0.429	15.0	U	TC
Thorium 228	14274-82-9	0.035	0.21	0.432	1.00	U	TH
Thorium 230	14269-63-7	0.115	0.42	0.670	1.00	U	TH
Thorium 232	TH-232	0	0.075	0.268	1.00	U	TH
Uranium 233/234	U-233/234	0	0.053	0.201	1.00	U	U
Uranium 235	15117-96-1	0	0.064	0.246	1.00	U	U
Uranium 238	U-238	0	0.053	0.201	1.00	U	U
Plutonium 238	13981-16-3	0.002	0.018	0.069	1.00	U	PU
Plutonium 239/240	PU-239/240	0.005	0.010	0.018	1.00	U	PU
Potassium 40	13966-00-2	U		1.49		U	GAM
Cobalt 60	10198-40-0	U		0.065	0.050	U	GAM
Cesium 137	10045-97-3	U		0.064	0.100	U	GAM
Radium 226	13982-63-3	U		0.293	0.100	U	GAM
Radium 228	15262-20-1	U		0.312	0.200	U	GAM
Europium 152	14683-23-9	U		0.204	0.100	U	GAM
Europium 154	15585-10-1	U		0.190	0.100	U	GAM
Europium 155	14391-16-3	U		0.204	0.100	U	GAM
Thorium 228	14274-82-9	U		0.268		U	GAM
Thorium 232	TH-232	U		0.449		U	GAM
Uranium 235	15117-96-1	U		0.304		U	GAM
Uranium 238	U-238	U		8.11		U	GAM
Americium 241	14596-10-2	U		0.187		U	GAM
Beryllium 7	13966-02-4	U		0.401		U	GAM
Ruthenium 106	13967-48-1	U		0.632		U	GAM
Antimony 125	14234-35-6	U		0.165		U	GAM
Cesium 134	13967-70-9	U		0.086		U	GAM

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Lab id EBRLNK
Protocol Hanford
Version Ver 1.0
Form DVD DS
Version 3.06
Report date 12/11/91

EBERLINE ANALYTICAL/RICHMOND

SAMPLE DELIVERY GROUP [illegible]

LAB CONTROL SAMPLE

Lab Control Sample

ANALYTE	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	PQL pCi/g	QUAL FLAGS	TEST	ADDED pCi/g	2σ ERR pCi/g	REC %	QC LIMITS (UPPER)	PROTOCOL LIMITS
Tritium	[illegible]	[illegible]	[illegible]	[illegible]		[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Carbon 14	[illegible]	[illegible]	[illegible]	[illegible]		[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Total Uranium	[illegible]	[illegible]	[illegible]	[illegible]		[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Technetium 99	[illegible]	[illegible]	[illegible]	[illegible]		[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]		[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Uranium 233/234	[illegible]	[illegible]	[illegible]	[illegible]		[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Uranium 235	[illegible]	[illegible]	[illegible]	[illegible]		[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Uranium 238	[illegible]	[illegible]	[illegible]	[illegible]		[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Plutonium 238	[illegible]	[illegible]	[illegible]	[illegible]		[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Plutonium 239/240	[illegible]	[illegible]	[illegible]	[illegible]		[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Cobalt 60	[illegible]	[illegible]	[illegible]	[illegible]		GAM	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Cesium 137	[illegible]	[illegible]	[illegible]	[illegible]		GAM	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

LAB CONTROL SAMPLES

Page 1

SUMMARY DATA SECTION

Page [illegible]

EBERLINE ANALYTICAL/RICHMOND

SAMPLE DELIVERY GROUP [illegible]

[illegible] [illegible]

DUPLICATE

SDG [illegible]

Contract [illegible]

Client [illegible]

Lab Sample ID [illegible]

DUPLICATE

ORIGINAL

Lab Sample ID [illegible]

Client Sample ID [illegible]

Dept Sample ID [illegible]

Dept Sample ID [illegible]

Location/Matrix [illegible]

Received [illegible]

Collected/Volume [illegible]

Aliquot [illegible]

Aliquot [illegible]

Chain of Custody No [illegible]

ANALYTE	DUPLICATE pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI FIERS	TEST	ORIGINAL pCi/g	2σ ERR (COUNT)	MDA pCi/g	QUALI FIERS	RPD %	3σ TOT	[illegible]
Tritium	[illegible]	[illegible]	[illegible]	400	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]		[illegible]
Carbon 14	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]		[illegible]	[illegible]	[illegible]	[illegible]			[illegible]
Total Strontium	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]			[illegible]
Technetium 99	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]			[illegible]
Uranium 238	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]			[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]			[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]			[illegible]
Uranium 233/234	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]			[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]			[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]			[illegible]
Plutonium 238	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]			[illegible]
Plutonium 239/240	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]			[illegible]
Potassium 40	[illegible]	[illegible]	[illegible]			GAM	[illegible]	[illegible]	[illegible]		[illegible]	[illegible]	[illegible]
Cobalt 60	[illegible]		[illegible]	[illegible]	[illegible]	GAM	[illegible]		[illegible]	[illegible]			[illegible]
Cesium 137	[illegible]		[illegible]	[illegible]	[illegible]	GAM	[illegible]		[illegible]	[illegible]			[illegible]
Radium 226	[illegible]		[illegible]	[illegible]	[illegible]	GAM	[illegible]		[illegible]	[illegible]			[illegible]
Radium 228	[illegible]		[illegible]	[illegible]	[illegible]	GAM	[illegible]		[illegible]	[illegible]			[illegible]
Europium 152	[illegible]		[illegible]	[illegible]	[illegible]	GAM	[illegible]		[illegible]	[illegible]			[illegible]
Europium 154	[illegible]		[illegible]	[illegible]	[illegible]	GAM	[illegible]		[illegible]	[illegible]			[illegible]
Europium 155	[illegible]		[illegible]	[illegible]	[illegible]	GAM	[illegible]		[illegible]	[illegible]			[illegible]
Thorium 228	[illegible]		[illegible]		[illegible]	GAM	[illegible]		[illegible]	[illegible]			[illegible]
Thorium 232	[illegible]		[illegible]		[illegible]	GAM	[illegible]		[illegible]	[illegible]			[illegible]
Uranium 235	[illegible]		[illegible]		[illegible]	GAM	[illegible]		[illegible]	[illegible]			[illegible]
Uranium 238	[illegible]		[illegible]		[illegible]	GAM	[illegible]		[illegible]	[illegible]			[illegible]
Americium 241	[illegible]		[illegible]		[illegible]	GAM	[illegible]		[illegible]	[illegible]			[illegible]
Beryllium 7	[illegible]		[illegible]		[illegible]	GAM	[illegible]		[illegible]	[illegible]			[illegible]
Ruthenium 106	[illegible]		[illegible]		[illegible]	GAM	[illegible]		[illegible]	[illegible]			[illegible]
Antimony 125	[illegible]		[illegible]		[illegible]	GAM	[illegible]		[illegible]	[illegible]			[illegible]

[illegible]
Page [illegible]
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Page [illegible]

[illegible]
[illegible]
[illegible]
[illegible]
[illegible]
[illegible]

EBERLINE ANALYTICAL/RICHMOND

SAMPLE DELIVERY GROUP [illegible]

[illegible]

DUPLICATE, cont.

[illegible]

DUPLICATE

ORIGINAL

ANALYTE	DUPLICATE pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI FIERS	TEST	ORIGINAL pCi/g	2σ ERR (COUNT)	MDA pCi/g	QUALI FIERS	RPD %	3σ TOT	DER σ
[illegible]	0		[illegible]		U	[illegible]	0		[illegible]	U			[illegible]

[illegible]

[illegible]

SUMMARY DATA SECTION

Page [illegible]

000106

EBERLINE ANALYTICAL/RICHMOND

SAMPLE DELIVERY GROUP E1839

7519-020

Method Blank

METHOD BLANK

SDG 7519
Contact N. Joseph Verville
Client/Case no Hanford
SDG_E1839
Contract No. 800W2?5A00

Lab sample id R911090-30
Dept sample id 7519-020
Client sample id Method Blank
Material/Matrix SOLID
SAF No PC 138

ANALYTE	CAS NO	RESULT pCi/g	3σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Tritium	10028-17-8	1.88	5.6	9.74	400	U	H
Carbon 14	14762-75-5	2.54	3.9	6.51	50.0	U	C
Total Strontium	SR-RAD	0.066	0.13	0.282	1.00	U	SR
Technetium 99	14133-76-7	0.093	0.32	0.415	15.0	U	TC
Thorium 228	14274-82-9	0.044	0.26	0.482	1.00	U	TH
Thorium 230	14269-63-7	0.218	0.44	0.772	1.00	U	TH
Thorium 232	TH-232	0.044	0.087	0.113	1.00	U	TH
Uranium 233/234	U-233/234	0	0.057	0.216	1.00	U	U
Uranium 235	15117-96-1	0	0.068	0.249	1.00	U	U
Uranium 238	U-238	0	0.057	0.216	1.00	U	U
Plutonium 238	13981-16-3	0.053	0.093	0.155	1.00	U	PU
Plutonium 239/240	PU-239/240	0.020	0.040	0.073	1.00	U	PU
Potassium 40	13966-00-2	U		0.536		U	GAM
Cobalt 60	10198-40-0	U		0.049	0.050	U	GAM
Cesium 137	10045-97-3	U		0.038	0.100	U	GAM
Radium 226	13982-63-3	U		0.080	0.100	U	GAM
Radium 228	15262-20-1	U		0.179	0.200	U	GAM
Europium 152	14683-23-9	U		0.112	0.100	U	GAM
Europium 154	15585-10-1	U		0.126	0.100	U	GAM
Europium 155	14391-16-3	U		0.068	0.100	U	GAM
Thorium 228	14274-82-9	U		0.066		U	GAM
Thorium 232	TH-232	U		0.179		U	GAM
Uranium 235	15117-96-1	U		0.185		U	GAM
Uranium 238	U-238	U		5.26		U	GAM
Americium 241	14596-10-2	U		0.045		U	GAM
Beryllium 7	13966-02-4	U		0.285		U	GAM
Ruthenium 106	13967-48-1	U		0.331		U	GAM
Antimony 125	14234-35-6	U		0.099		U	GAM
Cesium 134	13967-70-9	U		0.047		U	GAM

Lab id EBRLNE
Protocol Hanford1
Version Ver 1.0
Form DVD DS
Version 4.06
Report date 12/15/99

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EBERLINE ANALYTICAL/RICHMOND

SAMPLE DELIVERY GROUP [illegible]

[illegible]

Lab Control Sample

LAB CONTROL SAMPLE

SDG [illegible]

Client N. Joseph Verville

Lab sample id [illegible]

Dept sample id [illegible]

Client/Case no [illegible]

Contract No. [illegible]

Client sample id Lab Control Sample

Material/Matrix [illegible]

SAF No. [illegible]

ANALYTE	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALIFIERS	TEST	ADDED pCi/g	2σ ERR pCi/g	REC %	3σ LIMITS CONTROL	DEFAULT LIMITS
Tritium	360	25	[illegible]	400		H	[illegible]	25	96	84-116	80-120
Carbon 14	1120	30	4.44	50.0		C	[illegible]	115	104	93-112	80-120
Total Strontium	5.05	0.55	0.335	1.00		SR	6.44	0.16	94	81-119	80-120
Technetium 99	118	6.6	0.181	15.0		TC	109	4.4	108	70-125	80-120
Thorium 230	16.7	2.2	0.224	1.00		TH	19.4	2.94	86	75-123	80-120
Uranium 233/234	8.15	1.2	0.574	1.00		U	9.29	5.87	90	72-122	80-120
Uranium 235	6.95	1.1	0.210	1.00		U	7.54	0.60	92	74-125	80-120
Uranium 238	10.2	1.4	0.049	1.00		U	10.1	0.40	[illegible]	75-125	80-120
Plutonium 238	5.74	0.52	0.126	1.00		PU	5.74	0.25	100	85-114	80-120
Plutonium 239/240	6.06	0.55	0.264	1.00		PU	6.13	0.26	99	87-114	80-120
Cobalt 60	3.45	0.241	[illegible]	0.050		GAM	3.56	0.062	97	84-116	80-120
Cesium 137	2.15	0.104	[illegible]	0.100		GAM	1.97	0.079	109	86-111	80-120

QC-BATCH [illegible]

LAB CONTROL SAMPLES

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Lab id EBRLNE

Protocol Hanford

Version Ver 1.0

Form DVD-LCS

Version [illegible]

Report date [illegible]

EBERLINE ANALYTICAL/RICHMOND

SAMPLE DELIVERY GROUP [illegible]

[illegible]

DUPLICATE

[illegible]

DUPLICATE

ORIGINAL

ANALYTE	DUPLICATE pCi/g	2σ ERR (COUNTS)	MDA pCi/g	RDL pCi/g	QUALIFIERS	TEST	ORIGINAL pCi/g	2σ ERR (COUNTS)	MDA pCi/g	QUALIFIERS	RPD %	[illegible] TEST	[illegible] %
Tritium	[illegible]	[illegible]	[illegible]	400	[illegible]	H	[illegible]	[illegible]	[illegible]	[illegible]			[illegible]
Carbon 14	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]			[illegible]
Total Strontium	[illegible]	[illegible]	[illegible]	1.00	[illegible]	SR	[illegible]	[illegible]	[illegible]	[illegible]			[illegible]
Technetium 99	[illegible]	[illegible]	[illegible]	15.0	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]			[illegible]
Thorium 228	[illegible]	[illegible]	[illegible]	1.00	[illegible]	TH	[illegible]	[illegible]	[illegible]	[illegible]			[illegible]
Thorium 230	[illegible]	[illegible]	[illegible]	1.00	[illegible]	TH	[illegible]	[illegible]	[illegible]	[illegible]			[illegible]
Thorium 232	0	[illegible]	[illegible]	1.00	[illegible]	TH	[illegible]	[illegible]	[illegible]		[illegible]	[illegible]	[illegible]
Uranium 233/234	0	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	0	[illegible]	[illegible]	[illegible]	[illegible]		[illegible]
Uranium 235	[illegible]	[illegible]	[illegible]	1.00	[illegible]	U	[illegible]	[illegible]	[illegible]	[illegible]			[illegible]
Uranium 238	0	[illegible]	[illegible]	1.00	[illegible]	U	0	[illegible]	[illegible]	[illegible]			[illegible]
Plutonium 238	[illegible]	[illegible]	[illegible]	1.00	[illegible]	PU	[illegible]	[illegible]	[illegible]	[illegible]			[illegible]
Plutonium 239/240	[illegible]	[illegible]	[illegible]	1.00	[illegible]	PU	[illegible]	[illegible]	[illegible]	[illegible]			[illegible]
Potassium 40	[illegible]	[illegible]	[illegible]			GAM	[illegible]	[illegible]	[illegible]		[illegible]	[illegible]	[illegible]
Cobalt 60	0		[illegible]	[illegible]	[illegible]	GAM	0		[illegible]	[illegible]	[illegible]		[illegible]
Cesium 137	0		[illegible]	[illegible]	[illegible]	GAM	0		[illegible]	[illegible]			[illegible]
Radium 226	0		[illegible]	[illegible]	[illegible]	GAM	0		[illegible]	[illegible]			[illegible]
Radium 228	0		[illegible]	[illegible]	[illegible]	GAM	0		[illegible]	[illegible]			[illegible]
Europium 152	0		[illegible]	[illegible]	[illegible]	GAM	0		[illegible]	[illegible]			[illegible]
Europium 154	0		[illegible]	[illegible]	[illegible]	GAM	0		[illegible]	[illegible]			[illegible]
Europium 155	0		[illegible]	[illegible]	[illegible]	GAM	0		[illegible]	[illegible]			[illegible]
Thorium 228	0		[illegible]		[illegible]	GAM	0		[illegible]	[illegible]			[illegible]
Thorium 232	0		[illegible]		[illegible]	GAM	0		[illegible]	[illegible]			[illegible]
Uranium 235	0		[illegible]		[illegible]	GAM	0		[illegible]	[illegible]			[illegible]
Uranium 238	0		[illegible]		[illegible]	GAM	[illegible]		[illegible]				[illegible]
Americium 241	0		[illegible]		[illegible]	GAM	[illegible]		[illegible]				[illegible]
Beryllium 7	0		[illegible]		[illegible]	GAM			[illegible]	[illegible]			[illegible]
Ruthenium 106	0		[illegible]		[illegible]	GAM			[illegible]	[illegible]			[illegible]
Antimony 125	0		[illegible]		[illegible]	GAM	0		[illegible]	[illegible]			[illegible]

DUPLICATES

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EBERLINE ANALYTICAL/RICHMOND

[illegible]

DUPLICATE, cont.

DUPLICATE

ORIGINAL

ANALYTE	DUPLICATE pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI FIERS	PROT	ORIGINAL pCi/g	2σ ERR (COUNT)	MDA pCi/g	QUALI FIERS	RPD %	3σ Tot	DER σ
[illegible] 134	0		[illegible]		U	[illegible]	0		[illegible]	U			[illegible]

DUPLICATES

Page 1

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APPENDIX G

THIRD-PARTY DATA VALIDATION PACKAGES COMPLETED FOR PCB CONGENERS, SPECIATED ARSENIC, METHYL MERCURY, AND HEXAVALENT CHROMIUM

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APPENDIX G
THIRD-PARTY DATA VALIDATION PACKAGES COMPLETED FOR PCB CONGENERS, SPECIATED ARSENIC, METHYL MERCURY, AND HEXAVALENT CHROMIUM

COMMITMENT & INTEGRITY
DRIVE RESULTS

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Portland, Maine 04102
www.woodardcurran.com

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T 207.774.2112
F 207.774.6635

WOODARD
&CURRAN

MEMORANDUM

TO: Karl Kasper
FROM: David Dinsmore
DATE: April 27, 2010
RE: AMEC Earth & Environmental Validation Review

Data validation of the results associated with the fish tissue analyses for PCB congeners using Method 1668A, inorganic arsenic using Method 1632A, hexavalent chromium using Method 6800 and methyl mercury using Method 1630 was recently performed by AMEC Earth & Environmental of Portland, OR. In addition to the fish tissue analyses, surface water, sediment, and soil data were also evaluated. Criteria contained in the *Region 10 Standard Operating Procedure for the Validation of Method 1668 Toxic, Dioxin-Like, PCB Data* (EPA, 1995) and method specific guidelines from EPA Methods 1668B, 1632A, 6800 and 1630 were primarily used in the validation process. When criteria in these references were not available, the *United States Department of Energy (DOE) Remedial Investigation Work Plan for Hanford Site Releases to the Columbia River, Appendix A, Sampling and Analysis Plan (SAP)* (DOE, 2008) was used as guidance. The report containing the validation results, *Data Validation Report for the Woodard & Curran Hanford Samples,* was originally issued on March 12, 2010. A revised report was subsequently prepared and submitted later on April 12, 2010. Qualifiers were applied to the data during validation to indicate estimated or rejected concentrations based on non-compliant quality control parameter results. The purpose of this memorandum is to summarize the findings contained in the validation report, identify rejected results and to evaluate the overall usability of the data. The results are discussed by chemical parameter in the following sections.

PCB Congeners

For the PCB congener analyses, qualifiers were applied to at least one congener of the 209 included in the analyses for each of the 27 fish tissue, surface water, sediment and soil samples that were validated. The majority of the qualifiers applied to the data were due to minor deficiencies resulting in concentrations being considered estimated. However, non-detect results for the congener PCB 3 were qualified as rejected, and therefore unusable, for five fish tissue samples including J19037, J19276, J19289, J19464 and J18K87. The samples were rejected due to the low recoveries of internal standards.

All of the samples were extracted and/or analyzed prior to expiration of the method-specified holding time limit of one year. In the professional opinion of the data validators at AMEC, since the samples were stored at temperatures below -10 degrees centigrade, there was no impact on data usability from this delay.

Congeners reported as positive results in several samples were qualified as non-detect (U) based on blank detections. These samples included J18K87, J18K69, J19276, J19289, J19300, J19037, J19464, J19075, J190F3, J194C5, J19625, J18XD8, J19749, J19750, J19242, J18WY1, J196Y6, J19227, J191T2, J17T02, J17RY8, J18689, J18694, J17W23, J18692, J18HW9 and J18HW7.

As described in the first paragraph of this section, due to low recoveries of carbon-labeled isotopes below 10%, several non-detect sample results of PCB 3 were qualified as rejected. Other non-compliant recoveries outside of the Region 10 specifications of 25 – 200% resulted in sample results being qualified as estimated. The majority of these recoveries were below the lower control limit indicating a potential low bias to sample concentrations.

Several positive congener results were qualified as non-detect (U) at specified detection limits due to non-compliant ion abundance ratio criteria. These are low concentrations with a signal to noise ratio that is insufficient to adequately determine that a congener was absent at a particular concentration.

The data validation results identified a few rejected PCB results associated with the fish tissue analyses due to major quality control deficiencies. However, the majority of the results are generally acceptable to characterize concentrations of the PCB congeners in these samples.

Inorganic Arsenic

The validation of the inorganic arsenic results did not reveal any major quality control deficiencies. Inorganic arsenic was not detected in any blanks. Matrix spike results were compliant indicating that there was not likely any interference from the matrix that would impact reported concentrations. The recoveries of the standard reference material used to assess analytical accuracy were below the lower control limit indicating a potential low bias. Several fish tissue sample concentrations were qualified as estimated based on this finding. Duplicate results had acceptable relative percent differences (RPDs) indicating that the amount of variability within the fish matrix was limited. Laboratory control sample recoveries were also compliant providing additional supporting evidence that the analytical accuracy was acceptable. There were no sample data rejected based on the quality control results, indicating that the inorganic arsenic data are acceptable for the purposes of making project –related decisions.

Hexavalent Chromium

The majority of the quality control sample results from the validation procedure associated with the hexavalent chromium analyses were in compliance. Hexavalent chromium concentrations were not detected in any of the associated laboratory blanks. Laboratory control sample results were compliant suggesting that the accuracy of the analyses was acceptable. Matrix spike analysis was performed to identify potential interferences that may be inherent in the matrix. The matrix spike recovery of hexavalent chromium was slightly below the lower control limit indicating a potential low bias. One fish tissue sample, J193L2, which did not have a detection of hexavalent chromium, was qualified as estimated (0.127 µg/g UJ wet weight) based on these results. There were no rejected results for any of the samples. The findings from the validation of the hexavalent chromium analyses were generally compliant indicating that the data are acceptable for the intended project end uses.

Methyl Mercury

All of the quality control results, including holding times, method blanks, matrix spikes, and laboratory control samples had compliant results. There were no qualifiers applied to any samples associated with the methyl mercury analyses. The methyl mercury data the data are acceptable for the intended project end uses.

Summary

The validation results provided by AMEC were used to evaluate the quality of the data for a subset of fish tissue, surface water, sediment and soil samples. Samples were analyzed for PCB congeners, inorganic arsenic, hexavalent chromium, and methyl mercury. Five sample results of PCB 3 were qualified as rejected based on low internal standard recoveries. Other PCB congener results were determined to be acceptable for project uses although some included limitations since the data for several samples were qualified as estimated due to non-compliant quality control results. None of the samples analyzed for inorganic arsenic, hexavalent chromium and methyl mercury had any major deficiencies and, based on this assessment, none of the associated data were rejected. The review of the data validation results indicated that the majority of the results in the data set are suitable for project uses and that only a limited amount were identified as unusable.

DATA VALIDATION REPORT FOR THE WOODARD & CURRAN HANFORD SAMPLES

April 12, 2010

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0-61M-121450

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ACRONYMS AND ABBREVIATIONS

°C	degrees Celsius
%D	percent difference
AMEC	AMEC Earth & Environmental, Inc.
COC	chain of custody
DOE	United States Department of Energy
EPA	United States Environmental Protection Agency
EMPC	estimated maximum possible concentration
GC/MS	gas chromatograph/mass spectrometer
ICAL	initial calibration
ID	identification
IS	internal standard
LCS	laboratory control sample
LIIS	labeled injection internal standard
MDL	method detection limit
MRL	method reporting limit
MS	matrix spike
ng/g	nanograms per gram
ng/L	nanograms per liter
ng/mL	nanograms per milliliter
OPR	ongoing precision and recovery
PCB	polychlorinated biphenyl
QC	quality control
RL	reporting limit
RPD	relative percent difference
SAP	sampling and analysis plan
SDG	sample delivery group
SOP	standard operating procedure
SRM	standard reference material
TA	TestAmerica Laboratories, Inc.

1.0 INTRODUCTION

Fish tissue samples were submitted to TestAmerica Laboratories, Inc. (TA), located in Knoxville, Tennessee, where they were analyzed for polychlorinated biphenyls (PCBs) by United States Environmental Protection Agency (EPA) Method 1668A. A list of tissue samples undergoing validation by species, tissue type, location, sample identification (ID), TA sample delivery group (SDG), TA sample ID is presented below in Table 1. A list of surface water, sediment, and soil samples is presented in Table 2.

Table 1: Tissue Samples Undergoing Data Validation at TA

Species	Tissue Type	Location	Sample ID	TA SDG	TA Laboratory ID
Bass	Fillet	Upriver	J19037	J00564	H9H280167-001
Bass	Fillet	100 Area	J19075	J00568	H9I090171-004
Sucker	Carcass	Lake Wallula	J19227	J00643	H9L080482-004
Carp	Fillet	Upriver	J19242	J00623	H9J280148-004
Sturgeon	Fillet	100/300/Wallula	J19276	J00558	H9H060299-004
Carp	Fillet	100 Area	J19289	J00558	H9H060299-009
Sturgeon	Fillet	100/300/Wallula	J19300	J00559	H9H140183-008
Sturgeon	Liver	100/300/Wallula	J19464	J00564	H9H280167-017
Sturgeon	Carcass	Wanapum	J19625	J00581	H9I240133-005
Walleye	Fillet	100 Area	J19749	J00588	H9I300196-015
Walleye	Carcass	100 Area	J19750	J00588	H9I300196-016
Whitefish	Carcass	300 Area	J18K69	J00486	H9D280182-003
Whitefish	Fillet	Lake Wallula	J18K87	J00469	H9D210156-007
Walleye	Carcass	Upriver	J18WY1	J00641	H9K210408-017
Walleye	Fillet	300 Area	J18XD8	J00588	H9I300196-013
Bass	Carcass	100 Area	J190F3	J00568	H9I090171-010
Sucker	Fillet	300 Area	J191T2	J00643	H9L080482-017
Sturgeon	Carcass	100/300/Wallula	J194C5	J00569	H9I110162-014
Carp	Carcass	Lake Wallula	J196Y6	J00641	H9K210408-007

Table 2: Surface Water, Sediment, and Soil Samples Undergoing Data Validation at TA

Sample Type	Sample ID	TA SDG	TA Laboratory ID
Surface Water	J17T02	J00255	H8K190297-003
Surface Water	J17RY8	J00255	H8K190297-004
Sediment	J18689	J00364	H9C040205-002
Sediment	J18694	J00364	H9C040205-009
Sediment	J17W23	J00367	H9C050298-001
Sediment	J18692	J00367	H9C050298-005
Soil	J18HW9	J00419	H9C260271-005
Soil	J18HW7	J00419	H9C260271-003

Fish tissue samples were also submitted to Pacific Northwest National Laboratory (Pacific NW), located in Sequim, Washington, where they were analyzed for inorganic arsenic by EPA SW-846 Method 1632A, hexavalent chromium by EPA SW-846 Method 6800, and methyl mercury by EPA SW-846 Method 1630M. A list of tissue samples undergoing validation by species, analyte, tissue type, location, sample ID, and Pacific NW SDG is presented below in Table 3.

Table 3: Tissue Samples Undergoing Data Validation at Pacific NW

Species	Analyte	Tissue Type	Location	Sample ID	Pacific NW SDG
Bass	Arsenic	carcass	Upriver	J19062	SEQ082809
Bass	Arsenic	fillet	100 Area	J19078	SEQ090909
Bass	Arsenic	fillet	100 Area	J19080	SEQ090909
Bass	Arsenic	fillet	Lake Wallula	J190N0	SEQ082809
Carp	Arsenic	fillet	Upriver	J19246	SEQ102809
Carp	Arsenic	fillet	300 Area	J196F7	SEQ112309
Carp	Arsenic	carcass	Wallula	J196Y9	SEQ102809
Sturgeon	Arsenic	fillet	Upriver	J19628	SEQ092309
Sturgeon	Arsenic	fillet	100/300/Wallula	J19267	SEQ080609
Sturgeon	Arsenic	fillet	100/300/Wallula	J195T2	SEQ091809
Sturgeon	Arsenic	carcass	100/300/Wallula	J19504	SEQ091809
Sturgeon	Arsenic	carcass	100/300/Wallula	J195T3	SEQ091809
Sturgeon	Arsenic	carcass	100/300/Wallula	J19447	SEQ082009
Sturgeon	Hexavalent Chromium	fillet	Upriver	J19628	SEQ092309
Sturgeon	Hexavalent Chromium	fillet	100/300/Wallula	J19267	SEQ080609
Sturgeon	Hexavalent Chromium	fillet	100/300/Wallula	J19503	SEQ091809
Sturgeon	Hexavalent Chromium	carcass	100/300/Wallula	J195T3	SEQ091809
Sturgeon	Hexavalent Chromium	carcass	100/300/Wallula	J193L2	SEQ081409

Species	Analyte	Tissue Type	Location	Sample ID	Pacific NW SDG
Sturgeon	Methyl Mercury	fillet	100/300/Wallula	J195T9	SEQ091109
Sturgeon	Methyl Mercury	fillet	100/300/Wallula	J195V1	SEQ091109
Sturgeon	Methyl Mercury	fillet	100/300/Wallula	J195V3	SEQ091109
Sturgeon	Methyl Mercury	carcass	100/300/Wallula	J195V4	SEQ091109
Sucker	Arsenic	fillet	300 Area	J191T4	SEQ120809
Sucker	Arsenic	carcass	300 Area	J191W7	SEQ120809
Walleye	Arsenic	fillet	Upriver	J18WW4	SEQ112309
Walleye	Arsenic	carcass	Upriver	J18WY6	SEQ112309
Walleye	Arsenic	fillet	100 Area	J18X99	SEQ093009
Walleye	Arsenic	fillet	100 Area	J19751	SEQ093009
Walleye	Arsenic	fillet	300 Area	J18XF3	SEQ093009
Walleye	Arsenic	fillet	300 Area	J18XF5	SEQ093009
Walleye	Arsenic	carcass	300 Area	J18XJ5	SEQ093009
Whitefish	Arsenic	fillet	Upriver	J18J17	SEQ042309
Whitefish	Arsenic	carcass	Upriver	J18J83	SEQ042309
Carp	Arsenic	fillet	Lake Wallula	J196L9	SEQ112309
Carp	Arsenic	carcass	300 area	J196K2	SEQ112309
Carp	Arsenic	carcass	Lake Wallula	J19702	SEQ112309
Carp	Arsenic	carcass	Lake Wallula	J19700	SEQ102809
Carp	Arsenic	fillet	100 Area	J19692	SEQ102809
Carp	Arsenic	carcass	100 Area	J196D0	SEQ102809
Carp	Arsenic	carcass	100 Area	J196D1	SEQ102809
Carp	Arsenic	fillet	100 Area	J19693	SEQ102809
Carp	Arsenic	carcass	100 Area	J196D2	SEQ102809

2.0 DATA VALIDATION METHODOLOGY

AMEC Earth & Environmental, Inc. (AMEC) validated these data following the EPA Region 10 standard operating procedure (SOP) for the Validation of Method 1668 Toxic, Dioxin-Like, PCB Data (EPA, 1995), EPA Method 1668B (EPA, 2008), EPA Method 1632A (EPA, 2001a), EPA Method 6800 (EPA, 2007), and EPA Method 1630 (EPA, 2001b) Quality Control (QC) requirements, and the United States Department of Energy (DOE) Remedial Investigation Work Plan for Hanford Site Releases to the Columbia River, Appendix A, Sampling and Analysis Plan (SAP) (DOE, 2008).

It is important to recognize that no analytical data are guaranteed to be correct, even if all QC audits are passed. Strict QC serves to increase confidence in data, but reported values may potentially contain error.

3.0 DEFINITIONS OF QUALIFIERS THAT MAY BE ADDED DURING DATA VALIDATION

- The **U** qualifier indicates that the associated analyte is considered not detected at or greater than the concentration listed. U qualifiers added during validation are typically a result of detection of target analytes in laboratory or rinsate blanks.
- The **J** qualifier indicates that the associated result is quantitatively uncertain. J qualifiers added during validation may indicate a concentration between the method detection limit (MDL) and the reporting limit (RL), or a data limitation related to a QC element that exceeds required limits.
- The **UJ** qualifier indicates that the associated analyte is considered not detected at or greater than the estimated concentration listed. UJ qualifiers added during validation may indicate either a high or low bias related to a QC element that exceeds required limits.
- The **N** qualifier indicates an analyte is tentatively identified. Tentative identification means that a chromatographic peak was detected at the correct retention time for an analyte, but that not all required identification criteria were met. The associated result is both qualitatively and quantitatively uncertain.
- The **NJ** qualifier indicates that an analyte is tentatively identified and the associated numerical value represents an approximate concentration.
- The **R** qualifier indicates that a result has been rejected due to serious QC problems. It is not possible to definitively determine whether the analyte is present or absent in the sample.

4.0 DEFINITIONS OF QUALIFICATION RATIONALE ABBREVIATIONS USED IN THIS REPORT

AS	Labeled injection internal standard (LIIS) recoveries were outside the EPA Region 10-recommended 25% to 200% limits for unqualified data.
BC	The initial calibration (ICAL) did not meet method-specified QC criteria.
DL	The analyte was detected at a concentration between the MDL and RL.
EM	The analyte did not meet all method-specified identification criteria.
IC	Low standard reference material (SRM) recovery.
LI	Low internal standard (IS) recovery. Analytical results may be biased.

LM Low matrix spike recovery.

MB The analyte was detected in the sample at a concentration less than five times the concentration detected in the associated laboratory blank.

MI There is chromatographic evidence of matrix interference.

RT Sample receipt temperature was higher than the SAP-specified target temperature.

5.0 CHAIN OF CUSTODY AND SAMPLE RECEIPT CONDITION DOCUMENTATION

Samples were received intact and with acceptable chain of custody (COC) documentation, except as described below:

- Sample times and dates were not listed on the COCs for the samples associated with SDG J00469, except for sample J18K83, which had a sample date and time listed on its COC. According to the laboratory's sample receipt documentation, the samples' dates and times were identified on the sample labels.
- The sample collection date from the COC, of July 3, 2009, did not match the collection date listed on the label, of July 30, 2009, for sample J19289. The other samples in this SDG were collected between July 28, 2009 and August 4, 2009, and the sampler's signature on the COC is dated July 30, 2009. The laboratory logged in the sample per the sample label, and in AMEC's professional opinion, data usability is not adversely affected.
- According to the sample receipt documentation, sample J18WWO was dropped on the counter in the laboratory and the jar's lid cracked. The sample was not compromised, the lid was replaced, and data usability is not adversely affected.
- According to the sample receipt documentation, the samples in SDG J00367 were received by the laboratory at the elevated temperature of 14 degrees Celsius (°C), exceeding the SAP-specified 4°C target temperature. PCBs are thermally stable and not subject to rapid biodegradation, and it is highly unlikely that the samples degraded at the elevated temperature. In compliance with EPA Region 10 validation guidelines, AMEC J qualified detected results and UJ qualified nondetected results from samples in this SDG. (**J**/**UJ**-RT).
- According to the sample receipt documentation, the samples in SDG J00419 were received by the laboratory at the elevated temperature of 8°C, exceeding the SAP-specified 4°C target temperature. PCBs are thermally stable and not subject to rapid biodegradation, and it is highly unlikely that the samples degraded at the

elevated temperature. In compliance with EPA Region 10 validation guidelines, AMEC J qualified detected results and UJ qualified nondetected results from samples in this SDG. (**J**/**UJ**-RT).

6.0 POLYCHLORINATED BIPHENYL CONGENERS BY EPA METHOD 1668A

Qualifiers added to the data during PCB validation are presented in Table 4, qualifier definitions are provided in Section 3.0, and qualification rationale abbreviations are provided in Section 4.0.

Table 4: Summary of Data Qualifiers for PCBs

Analytes	J19037	J19075	J19227	J19242	J19276	J19289
PCB 1	none	none	none	none	none	**UJ**-AS
PCB 2	none	none	none	none	none	**UJ**-AS
PCB 3	**R**-LI	none	none	none	**R**-LI	**R**-LI
PCB 4	**U**-EM	**U**-EM	**U**-MB	**U**-MB	**U**-MB	**UJ**-AS
PCB 5	none	none	none	none	none	**UJ**-AS
PCB 6	**U**-EM	**U**-EM	**UJ**-MB, MI	**U**-EM	none	**UJ**-AS
PCB 7	none	none	None	none	none	**UJ**-AS
PCB 8	**U**-MB	**U**-MB	**UJ**-MB, MI	**U**-MB	**U**-MB	**UJ**-AS
PCB 9	**UJ**-BC	**UJ**-BC	**UJ**-BC	**UJ**-BC	**UJ**-BC	**UJ**-AS, BC
PCB 10	**UJ**-BC	**UJ**-BC	**UJ**-BC	**UJ**-EM, BC	**UJ**-BC	**UJ**-AS, BC
PCB 11	**U**-MB	**U**-MB	**U**-MB	**J**-DL	**U**-MB	**UJ**-MB, AS
PCB 12/13	none	none	none	none	none	**UJ**-AS
PCB 14	none	none	none	none	none	**UJ**-AS
PCB 15	none	none	**U**-MB	**U**-MB	none	**UJ**-AS
PCB 16	**U**-EM	none	none	**U**-MB	none	**UJ**-AS
PCB 17	**J**-DL	**U**-MB	none	**U**-MB	none	**UJ**-AS
PCB 18/30	**J**-DL	**U**-MB	**U**-MB	none	**U**-MB	**UJ**-MB, AS
PCB 19	none	none	none	none	none	**UJ**-AS
PCB 20/28	none	none	none	none	**U**-MB	**UJ**-MB, AS
PCB 21/33	none	**J**-DL	**U**-MB	none	**U**-MB	**UJ**-AS
PCB 22	**J**-DL	**J**-DL	none	none	**U**-MB	**UJ**-MB, AS
PCB 23	none	none	none	none	none	**UJ**-AS
PCB 24	**UJ**-BC	**UJ**-BC	**UJ**-BC	**J**-DL, BC	**UJ**-BC	**UJ**-AS, BC
PCB 25	**U**-EM	**U**-EM	**U**-MB	**U**-EM	none	**UJ**-AS

Analytes	J19037	J19075	J19227	J19242	J19276	J19289
PCB 26/29	**U**-EM	none	none	none	none	**UJ**-AS
PCB 27	none	none	**U**-EM	**J**-DL	none	**UJ**-AS
PCB 31	none	**J**-DL	none	none	**J**-DL	**UJ**-MB, AS
PCB 32	**U**-EM	none	**U**-MB	**U**-MB	**U**-MB	**UJ**-AS
PCB 34	**UJ**-BC	**UJ**-BC	**UJ**-BC	**UJ**-BC	**UJ**-BC	**UJ**-AS, BC
PCB 35	none	none	none	none	none	**UJ**-AS
PCB 36	none	none	none	none	none	**UJ**-AS
PCB 37	**U**-EM	**U**-MB	**U**-MB	none	**U**-EM	**UJ**-AS
PCB 38	none	none	none	none	none	**UJ**-AS
PCB 39	none	none	**U**-EM	none	none	**UJ**-AS
PCB 40/41/71	none	none	none	none	**U**-MB	**UJ**-MB, AS
PCB 42	none	none	none	none	**J**-DL	**UJ**-AS
PCB 43/73	**J**-DL	**J**-DL	**J**-DL	**J**-DL	**J**-DL	**UJ**-EM, AS
PCB 44/47/65	none	none	none	none	none	**J**-AS
PCB 45/51	**J**-DL	none	**U**-EM	none	none	**UJ**-AS
PCB 46	**UJ**-BC	**UJ**-BC	**J**-DL, BC	**UJ**-EM, BC	**UJ**-BC	**UJ**-AS, BC
PCB 48	**U**-EM	none	none	none	**U**-EM	**UJ**-AS
PCB 49/69	none	none	none	none	none	**J**-AS
PCB 50/53	none	**J**-DL	none	**U**-EM	**J**-DL	**J**-DL, AS
PCB 52	none	none	none	none	none	**J**-AS
PCB 54	none	none	none	none	none	**UJ**-AS
PCB 55	**U**-EM	**J**-DL	**U**-EM	**U**-EM	**U**-EM	**UJ**-AS
PCB 56	none	none	none	none	**UJ**-BC	**UJ**-AS, BC
PCB 57	none	none	none	**U**-EM	none	**UJ**-AS
PCB 58	none	none	**U**-EM	**J**-DL	none	**UJ**-AS
PCB 59/62/75	none	**J**-DL	none	none	**J**-DL	**J**-DL, AS
PCB 60	none	none	none	none	none	**J**-AS
PCB 61/70/74/76	none	none	none	none	none	**J**-AS
PCB 63	none	**J**-DL, BC	none	none	none	**J**-DL, AS, BC
PCB 64	none	none	none	none	none	**J**-AS
PCB 66	none	none	none	none	none	**J**-AS
PCB 67	**J**-DL	**J**-DL	**U**-EM	**J**-DL		**UJ**-AS
PCB 68	**J**-DL, BC	**UJ**-BC	**J**-DL, BC	**UJ**-EM, BC	**J**-DL, BC	**UJ**-AS, BC
PCB 72	**J**-DL	**J**-DL	**U**-EM	**J**-DL	**J**-DL	**UJ**-AS

Analytes	J19037	J19075	J19227	J19242	J19276	J19289
PCB 77	none	none	none	none	**U**-EM	**UJ**-AS
PCB 78	**UJ**-BC	**UJ**-BC	**UJ**-BC	**UJ**-BC	**UJ**-BC	**UJ**-AS, BC
PCB 79	**UJ**-EM, BC	**J**-BC	**UJ**-EM, BC	**UJ**-EM, BC	**J**-DL, BC	**J**-DL, AS, BC
PCB 80	**UJ**-BC	**UJ**-BC	**UJ**-BC	**UJ**-BC	**UJ**-BC	**UJ**-AS, BC
PCB 81	**U**-EM	**J**-DL	**U**-EM	**U**-MB	none	**UJ**-AS
PCB 82	none	none	none	none	**U**-EM	**UJ**-AS
PCB 83/99	none	none	none	none	none	**J**-AS
PCB 84	none	none	none	none	**J**-BC	**UJ**-EM, AS, BC
PCB 85/116/117	none	none	none	none	none	**J**-AS
PCB 86/87/97/109/119/125	none	none	none	**U**-EM	none	**J**-AS
PCB 88/91	none	none	none	none	none	**J**-AS
PCB 89	**J**-DL, BC	**UJ**-EM, BC	**J**-DL, BC	**J**-DL, BC	**UJ**-BC	**UJ**-AS, BC
PCB 90/101/113	none	none	none	none	none	**J**-AS
PCB 92	none	none	none	none	none	**J**-AS
PCB 93/100	**UJ**-EM, BC	**UJ**-EM, BC	**UJ**-EM, BC	**UJ**-EM, BC	**UJ**-BC	**UJ**-AS, BC
PCB 94	none	none	none	none	none	**UJ**-AS
PCB 95	none	none	none	none	none	**J**-AS
PCB 96	none	none	**J**-DL	none	none	**UJ**-AS
PCB 98/102	**J**-BC	**J**-BC	**J**-BC	**J**-BC	**J**-DL, BC	**UJ**-AS, BC
PCB 103	**J**-DL, BC	**UJ**-EM, BC	**J**-DL, BC	**J**-DL, BC	**UJ**-BC	**UJ**-AS, BC
PCB 104	none	none	none	none	none	**UJ**-AS
PCB 105	none	none	none	none	none	**J**-AS
PCB 106	**UJ**-BC	**UJ**-BC	**UJ**-BC	**UJ**-EM, BC	**UJ**-BC	**UJ**-AS, BC
PCB 107	none	none	**U**-EM	none	none	**J**-AS
PCB 108/124	none	none	none	none	**J**-DL	**UJ**-EM, AS
PCB 110/115	none	none	none	none	none	**J**-AS
PCB 111	**UJ**-BC	**UJ**-EM, BC	**UJ**-EM, BC	**UJ**-EM, BC	**J**-DL, BC	**UJ**-AS, BC
PCB 112	**UJ**-BC	**UJ**-BC	**UJ**-BC	**UJ**-BC	**UJ**-BC	**UJ**-AS, BC
PCB 114	none	none	none	none	none	**UJ**-EM, AS
PCB 118	none	none	none	none	none	**J**-AS
PCB 120	**U**-EM	**U**-EM	**J**-DL	**J**-DL	**U**-EM	**UJ**-AS
PCB 121	none	none	none	none	none	**UJ**-AS

Analytes	J19037	J19075	J19227	J19242	J19276	J19289
PCB 122	none	**U**-EM	**U**-EM	**U**-EM	none	**UJ**-EM, AS
PCB 123	none	none	none	none	**U**-EM	**UJ**-EM, AS
PCB 126	none	none	**U**-EM	none	**U**-EM	**UJ**-EM, AS
PCB 127	**U**-EM	**U**-EM	**U**-EM	**U**-EM	**U**-EM	**UJ**-AS
PCB 128/166	none	none	none	none	none	**J**-AS
PCB 129/138/160/163	none	none	none	none	none	**J**-AS
PCB 130	none	none	none	none	none	**J**-AS
PCB 131	none	none	none	none	none	**UJ**-AS
PCB 132	none	none	none	none	none	**J**-AS
PCB 133	none	none	none	none	none	**J**-AS
PCB 134/143	none	none	none	none	**U**-EM	**J**-DL, AS, BC
PCB 135/151	none	**U**-EM	none	none	none	**J**-AS
PCB 136	none	none	none	none	none	**J**-DL, AS
PCB 137	none	none	none	**J**-BC	none	**J**-AS, BC
PCB 139/140	none	none	none	none	none	**J**-DL, AS, BC
PCB 141	none	none	none	none	none	**J**-AS
PCB 142	none	none	none	none	none	**UJ**-AS
PCB 144	none	none	none	none	none	**UJ**-EM, AS, BC
PCB 145	**UJ**-BC	**UJ**-BC	**UJ**-BC	**UJ**-BC	**UJ**-BC	**UJ**-AS, BC
PCB 146	none	none	none	none	none	**J**-AS
PCB 147/149	none	none	none	none	none	**J**-AS
PCB 148	**UJ**-BC	**UJ**-BC	**UJ**-BC	**UJ**-BC	**UJ**-EM, BC	**UJ**-AS, BC
PCB 150	**UJ**-BC	**UJ**-BC	**UJ**-BC	**UJ**-BC	**UJ**-BC	**UJ**-AS, BC
PCB 152	none	none	none	none	none	**UJ**-AS
PCB 153/168	none	none	none	none	none	**J**-AS
PCB 154	**UJ**-EM, BC	**UJ**-EM, BC	**UJ**-EM, BC	**J**-BC	**J**-BC	**J**-DL, AS, BC
PCB 155	none	none	none	none	none	**UJ**-AS
PCB 156/157	none	none	none	none	none	**J**-AS
PCB 158	none	none	none	none	none	**J**-AS
PCB 159	**J**-DL	**J**-DL	**U**-EM	**U**-EM	**U**-EM	**J**-DL, AS
PCB 161	**UJ**-BC	**UJ**-BC	**UJ**-BC	**UJ**-BC	**UJ**-BC	**UJ**-AS, BC
PCB 162	none	**J**-DL	**J**-DL	**U**-EM	**U**-EM	**UJ**-EM, AS

Analytes	**J19037**	**J19075**	**J19227**	**J19242**	**J19276**	**J19289**
PCB 164	none	none	none	none	none	**J**-AS
PCB 165	none	none	none	none	none	**UJ**-AS
PCB 167	none	none	none	none	**J**-DL	**J**-DL, AS
PCB 169	none	none	none	**U**-MB	**U**-EM	**UJ**-EM, AS
PCB 170	none	none	none	none	none	**J**-AS
PCB 171/173	none	none	none	none	none	**J**-AS
PCB 172	none	none	none	none	none	**J**-AS
PCB 174	none	none	none	none	none	**J**-AS
PCB 175	**UJ**-EM, BC	**UJ**-EM, BC	**J**-DL, BC	**J**-DL, BC	**J**-BC	**UJ**-EM, AS, BC
PCB 176	none	**J**-DL	none	none	**U**-EM	**J**-DL, AS
PCB 177	none	none	none	none	none	**J**-AS
PCB 178	none	**J**-BC	none	none	none	**J**-AS, BC
PCB 179	none	none	none	none	none	**J**-AS
PCB 180/193	none	none	none	none	none	**J**-AS
PCB 181	**J**-DL, BC	**J**-DL, BC	**J**-DL, BC	**J**-DL, BC	**UJ**-EM, BC	**UJ**-AS, BC
PCB 182	**UJ**-BC	**UJ**-BC	**UJ**-BC	**UJ**-BC	**UJ**-BC	**UJ**-AS, BC
PCB 183/185	none	none	none	none	none	**J**-AS
PCB 184	none	none	**J**-DL	none	**U**-EM	**UJ**-AS
PCB 186	none	none	none	none	none	**UJ**-AS
PCB 187	none	none	none	none	none	**J**-AS
PCB 188	none	none	none	none	none	**UJ**-AS
PCB 189	**U**-EM	**J**-DL	**J**-DL	**U**-MB	none	**UJ**-EM, AS
PCB 190	none	**J**-BC	none	**J**-BC	none	**J**-AS, BC
PCB 191	**J**-DL	**U**-EM	none	**J**-DL	none	**UJ**-EM, AS
PCB 192	**UJ**-BC	**UJ**-BC	**UJ**-BC	**UJ**-BC	**UJ**-BC	**UJ**-AS, BC
PCB 194	none	**J**-BC	none	none	none	**J**-AS, BC
PCB 195	none	**J**-DL	none	none	none	**UJ**-EM, AS
PCB 196	**J**-BC	**J**-DL, BC	**J**-BC	**J**-BC	none	**UJ**-EM, AS, BC
PCB 197	**U**-EM	none	**U**-EM	**J**-DL	**U**-EM	**UJ**-AS
PCB 198/201		**U**-EM	none	none	none	**J**-AS
PCB 199	**J**-DL, BC	**UJ**-EM, BC	**J**-DL, BC	**J**-DL, BC	**UJ**-EM, BC	**UJ**-AS, BC
PCB 200	**J**-DL, BC	**J**-DL, BC	**J**-BC	**J**-BC	**J**-BC	**UJ**-EM, AS, BC

Analytes	J19037	J19075	J19227	J19242	J19276	J19289
PCB 202	none	**J**-DL	none	none	none	**J**-DL, AS
PCB 203	none	none	none	none	none	**J**-AS
PCB 204	none	none	none	none	none	**UJ**-AS
PCB 205	none	none	**J**-DL	**J**-DL	none	**UJ**-AS
PCB 206	**U**-EM	**U**-EM	none	none	none	**UJ**-EM, AS
PCB 207	**J**-DL	none	**J**-DL	**U**-EM	none	**UJ**-AS
PCB 208	**U**-EM	**U**-EM	none	none	none	**J**-DL, AS
PCB 209	**U**-EM	**J**-DL	none	none	none	**UJ**-EM, AS

Analytes	J19300	J19464	J19625	J19749	J19750	J18K69
PCB 1	none	none	none	none	none	none
PCB 2	none	none	none	none	none	none
PCB 3	none	**R**-LI	none	none	none	none
PCB 4	none	none	**U**-EM	none	none	none
PCB 5	none	none	none	none	none	none
PCB 6	none	none	none	none	none	none
PCB 7	none	none	none	none	none	none
PCB 8	**U**-MB	none	**U**-MB	**U**-MB	**U**-MB	**U**-MB
PCB 9	**UJ**-BC	**UJ**-BC	**UJ**-EM, BC	**UJ**-BC	**UJ**-BC	**UJ**-BC
PCB 10	**UJ**-BC	**UJ**-BC	**UJ**-BC	**UJ**-BC	**UJ**-BC	**UJ**-BC
PCB 11	**U**-MB	none	**U**-MB	**U**-MB	none	**J**-DL
PCB 12/13	none	none	none	none	none	none
PCB 14	none	none	none	none	none	none
PCB 15	none	none	**U**-MB	none	none	none
PCB 16	none	none	none	**J**-DL	none	none
PCB 17	none	none	**U**-EM	**U**-EM	none	**U**-EM
PCB 18/30	**J**-DL	**U**-MB	**U**-EM	**J**-DL	**J**-DL	**U**-EM
PCB 19	none	none	none	none	none	none
PCB 20/28	none	none	none	none	**U**-MB	none
PCB 21/33	**U**-MB	**U**-MB	**U**-MB	none	**U**-MB	**U**-MB
PCB 22	**U**-EM	**U**-MB	none	**J**-DL	**J**-DL	**J**-DL
PCB 23	none	none	none	none	none	none
PCB 24	**UJ**-BC	**UJ**-BC	**UJ**-BC	**UJ**-BC	**UJ**-BC	**UJ**-BC
PCB 25	none	none	**U**-MB	**J**-DL	**U**-EM	none

Analytes	**J19300**	**J19464**	**J19625**	**J19749**	**J19750**	**J18K69**
PCB 26/29	**J**-DL	**U**-EM	none	**J**-DL	**U**-MB	**J**-DL
PCB 27	none	none	**J**-DL	none	none	none
PCB 31	none	**J**-DL	none	none	none	**J**-DL
PCB 32	**U**-MB	none	**U**-MB	**J**-DL	none	none
PCB 34	**UJ**-BC	**UJ**-BC	**UJ**-MB, BC	**UJ**-BC	**UJ**-BC	**UJ**-BC
PCB 35	none	none	none	none	none	none
PCB 36	**J**-DL	none	none	none	**J**-DL	none
PCB 37	none	none	**U**-MB	**J**-DL	none	none
PCB 38	none	none	none	none	none	none
PCB 39	none	none	**U**-MB	none	none	none
PCB 40/41/71	none	**J**-DL	none	none	none	**J**-DL
PCB 42	**J**-DL	**J**-DL	none	none	none	**J**-DL
PCB 43/73	**U**-EM	**U**-EM	**J**-DL	**U**-EM	none	none
PCB 44/47/65	none	none	none	none	none	none
PCB 45/51	**J**-DL	none	none	none	none	none
PCB 46	**UJ**-BC	**UJ**-BC	**J**-DL, BC	**UJ**-BC	**UJ**-BC	**UJ**-BC
PCB 48	**J**-DL	**J**-DL	none	none	**J**-DL	**J**-DL
PCB 49/69	none	none	none	none	none	none
PCB 50/53	**J**-DL	**J**-DL	none	**U**-EM	**J**-DL	**U**-EM
PCB 52	none	none	none	none	none	none
PCB 54	none	none	none	none	none	none
PCB 55	**U**-EM	**U**-EM	**U**-EM	**U**-EM	**J**-DL	**U**-EM
PCB 56	**UJ**-EM, BC	**UJ**-EM, BC	none	none	none	none
PCB 57	none	none	**U**-EM	**J**-DL	none	none
PCB 58	none	none	**J**-DL	none	none	none
PCB 59/62/75	**J**-DL	**J**-DL	none	none	**U**-EM	**J**-DL
PCB 60	none	none	none	none	none	none
PCB 61/70/74/76	none	none	none	none	none	none
PCB 63	**J**-BC	**J**-DL, BC	none	none	**J**-DL, BC	**J**-DL
PCB 64	none	none	none	none	none	none
PCB 66	none	none	none	none	none	none
PCB 67	none	none	**U**-EM	**J**-DL	**J**-DL	**J**-DL
PCB 68	**J**-DL, BC	**UJ**-EM, BC	**J**-DL, BC	**UJ**-EM, BC	**UJ**-BC	**UJ**-BC
PCB 72	**J**-DL	**U**-EM	**U**-EM	**U**-EM	none	U-EM

Analytes	**J19300**	**J19464**	**J19625**	**J19749**	**J19750**	**J18K69**
PCB 77	**U**-EM	**U**-EM	**J**-DL	none	none	**J**-DL
PCB 78	**UJ**-BC	**UJ**-BC	**UJ**-BC	**UJ**-BC	**UJ**-BC	**UJ**-BC
PCB 79	**UJ**-EM, BC	**UJ**-EM, BC	**UJ**-EM, BC	**J**-BC	**UJ**-EM, BC	**UJ**-EM, BC
PCB 80	**UJ**-EM, BC	**UJ**-BC	**UJ**-BC	**UJ**-BC	**UJ**-BC	**UJ**-BC
PCB 81	none		none	**U**-EM	none	none
PCB 82	none	**U**-EM	none	none	none	none
PCB 83/99	none		none	none	none	none
PCB 84	**J**-BC	**J**-BC	none	none	none	none
PCB 85/116/117	none	none	none	none	none	none
PCB 86/87/97/109/119/125	none	none	none	none	none	none
PCB 88/91	none	none	none	none	none	**U**-EM
PCB 89	**UJ**-BC	**UJ**-BC	**J**-DL, BC	**J**-DL, BC	**UJ**-BC	**UJ**-BC
PCB 90/101/113	none	none	none	none	none	none
PCB 92	none	none	none	none	none	none
PCB 93/100	**UJ**-BC	**UJ**-BC	**UJ**-EM, BC	**UJ**-EM, BC	**J**-BC	**UJ**-BC
PCB 94	none	none	none	none	none	none
PCB 95	none	none	none	none	none	none
PCB 96	none	none	none	none	none	none
PCB 98/102	**UJ**-EM, BC	**UJ**-EM, BC	**UJ**-EM, BC	**J**-BC	**UJ**-EM, BC	**UJ**-EM, BC
PCB 103	**UJ**-EM, BC	**UJ**-BC	**J**-DL, BC	**UJ**-EM, BC	**UJ**-BC	**UJ**-BC
PCB 104	none	none	none	none	**UJ**-AS	none
PCB 105	none	none	none	none	none	none
PCB 106	**UJ**-BC	**UJ**-BC	**UJ**-BC	**UJ**-BC	**UJ**-BC	**UJ**-BC
PCB 107	none	none	none	**U**-EM	none	none
PCB 108/124	**U**-EM	**J**-DL	**J**-DL	none	none	none
PCB 110/115	none	none	none	none	none	none
PCB 111	**J**-DL, BC	**UJ**-BC	**UJ**-BC	**UJ**-BC	**J**-DL, BC	**UJ**-BC
PCB 112	**UJ**-BC	**UJ**-BC	**UJ**-BC	**UJ**-BC	**UJ**-BC	**UJ**-BC
PCB 114	none	none	none	none	none	none
PCB 118	none	none	none	none	none	none
PCB 120	**J**-DL	**U**-EM	**J**-DL	**U**-EM	**U**-EM	**U**-EM
PCB 121	none	none	none	none	none	none
PCB 122	none	**J**-DL	none	none	**U**-EM	**U**-EM
PCB 123	none	**U**-EM	**U**-EM	**U**-EM	none	**U**-EM

Analytes	**J19300**	**J19464**	**J19625**	**J19749**	**J19750**	**J18K69**
PCB 126	**U**-EM	**U**-EM	**U**-EM	none	**U**-EM	**U**-EM
PCB 127	**J**-DL	**J**-DL	**J**-DL	none	**U**-EM	**U**-EM
PCB 128/166	none	none	none	none	none	none
PCB 129/138/160/163	none	none	none	none	none	none
PCB 130	none	none	none	none	none	none
PCB 131	**U**-EM	none	**J**-DL	none	**U**-EM	**U**-EM
PCB 132	none	none	none	none	none	none
PCB 133	none	none	none	none	none	none
PCB 134/143	none	none	none	none	none	none
PCB 135/151	none	none	none	none	none	none
PCB 136	none	none	none	none	none	none
PCB 137	none	**J**-BC	**J**-BC	none	none	**U**-EM
PCB 139/140	none	**U**-EM	none	none	**U**-EM	none
PCB 141	none	none	none	none	none	none
PCB 142	none	none	none	none	none	none
PCB 144	none	none	none	none	none	**U**-EM
PCB 145	**UJ**-BC	**UJ**-BC	**UJ**-BC	**UJ**-BC	**UJ**-BC	**UJ**-BC
PCB 146	none	none	none	none	none	none
PCB 147/149	none	none	none	none	none	none
PCB 148	**UJ**-BC	**UJ**-BC	**UJ**-BC	**UJ**-BC	**UJ**-BC	**UJ**-BC
PCB 150	**UJ**-BC	**UJ**-BC	**UJ**-BC	**UJ**-BC	**UJ**-BC	**UJ**-BC
PCB 152	none	none	none	none	none	none
PCB 153/168	none	none	none	none	none	none
PCB 154	**UJ**-EM, BC	**J**-DL, BC	**J**-BC	**UJ**-BC	**UJ**-EM, BC	**UJ**-BC
PCB 155	none	none	none	none	none	none
PCB 156/157	none	none	none	none	none	none
PCB 158	none	none	none	none	none	none
PCB 159	**U**-EM	none	**U**-EM	**U**-EM	**U**-EM	**J**-DL
PCB 161	**UJ**-BC	**UJ**-BC	**UJ**-BC	**UJ**-BC	**UJ**-BC	**UJ**-BC
PCB 162	**U**-EM	**J**-DL	**U**-EM	none	**U**-EM	none
PCB 164	none	none	none	none	none	none
PCB 165	none	none	none	none	none	none
PCB 167	**U**-EM	**J**-DL	**J**-DL	none	none	none
PCB 169	**U**-EM	none	none	**U**-EM	none	**U**-EM

Analytes	**J19300**	**J19464**	**J19625**	**J19749**	**J19750**	**J18K69**
PCB 170	none	none	none	none	**J**-AS	none
PCB 171/173	none	none	none	none	**J**-AS	none
PCB 172	none	none	**U**-EM	none	**J**-AS	none
PCB 174	none	none	none	none	**J**-AS	none
PCB 175	**J**-BC	**J**-DL, BC	**UJ**-EM, BC	**J**-BC	**J**-DL, AS, BC	**J**-BC
PCB 176	**J**-DL	**J**-DL	none	none	**J**-AS	none
PCB 177	none	none	none	none	**J**-AS	none
PCB 178	none	**J**-BC	none	none	**J**-AS	none
PCB 179	none	none	none	none	**J**-AS	none
PCB 180/193	none	none	none	none	**J**-AS	none
PCB 181	**J**-DL, BC	**UJ-EM, BC**	**UJ**-BC	**UJ**-EM, BC	**J**-DL, AS, BC	**UJ**-EM, BC
PCB 182	**UJ**-BC	**UJ**-EM, BC	**UJ**-BC	**UJ**-BC	**UJ**-AS, BC	**UJ**-BC
PCB 183/185	none	none	none	none	**J**-AS	none
PCB 184	none	**U**-EM	none	none	**UJ**-AS	none
PCB 186	none	none	none	none	**UJ**-AS	none
PCB 187	none	none	none	none	**J**-AS	none
PCB 188	none	none	none	none	**UJ**-AS	none
PCB 189	none	**U**-EM	**J**-DL	none	**J**-DL, AS	none
PCB 190	none	**J**-BC	**J**-BC	none	**J**-AS	none
PCB 191	**U**-EM	**J**-DL	**U**-EM	none	**J**-DL, AS	none
PCB 192	**UJ**-BC	**UJ**-BC	**UJ**-BC	**UJ**-BC	**UJ**-AS, BC	**UJ**-BC
PCB 194	none	**J**-BC	**J**-BC	none	none	none
PCB 195	none	none	none	none	none	none
PCB 196	none	**J**-BC	**J**-BC	none	**UJ**-EM, BC	none
PCB 197	**J**-DL	**J**-DL	**J**-DL	**J**-DL	**U**-EM	**J**-DL
PCB 198/201	none	none	none	none	none	none
PCB 199	**UJ**-EM, BC	**UJ**-EM, BC	**J**-DL, BC	**UJ**-EM, BC	**UJ**-BC	**UJ**-EM, BC
PCB 200	**UJ**-EM, BC	**J**-DL, BC	**J**-BC	**J**-BC	**J**-DL, BC	**J**-BC
PCB 202	none	none	none	none	none	none
PCB 203	none	none	none	none	none	none
PCB 204	none	none	none	none	none	none
PCB 205	none	**U**-EM	**J**-DL	**J**-DL	**J**-DL	**U**-EM
PCB 206	none	none	none	none	none	none

Analytes	**J19300**	**J19464**	**J19625**	**J19749**	**J19750**	**J18K69**
PCB 207	**J**-DL	**J**-DL	**U**-EM	**J**-DL	none	**U**-EM
PCB 208	none	**U**-EM	**U**-EM	none	**J**-DL	**J**-DL
PCB 209	**U**-EM	**J**-DL	none	**J**-DL	none	**U**-EM

Analytes	**J18K87**	**J18WY1**	**J18XD8**	**J190F3**	**J191T2**	**J194C5**
PCB 1	**UJ**-AS	none	none	none	none	none
PCB 2	**UJ**-AS	none	none	none	none	none
PCB 3	**R**-LI	none	none	none	none	none
PCB 4	**UJ**-AS	**U**-EM	none	**U**-EM	**U**-MB	none
PCB 5	**UJ**-AS	none	none	none	none	none
PCB 6	**UJ**-AS	**U**-MB	none	**U**-EM	**U**-MB	none
PCB 7	**UJ**-AS	none	none	none	none	none
PCB 8	**UJ**-EM, AS	**U**-EM	**U**-MB	**U**-MB	**UJ**-MB, MI	**U**-MB
PCB 9	**UJ**-AS, BC	**UJ**-BC	**UJ**-BC	**UJ**-BC	**UJ**-BC	**UJ**-BC
PCB 10	**UJ**-AS, BC	**UJ**-BC	**UJ**-BC	**UJ**-BC	**UJ**-BC	**UJ**-BC
PCB 11	**UJ**-MB, AS	**U**-MB	**U**-MB	**U**-MB	**U**-MB	**U**-MB
PCB 12/13	**UJ**-EM, AS	none	none	none	none	none
PCB 14	**UJ**-AS	none	none	none	none	none
PCB 15	**UJ**-EM, AS	**U**-MB	none	none	**U**-MB	none
PCB 16	**UJ**-AS	**UJ**-EM, AS	none	**U**-EM	**J**-DL	none
PCB 17	**UJ**-AS	**UJ**-MB, AS	**J**-DL	**J**-DL	**U**-MB	**J**-DL
PCB 18/30	**UJ**-EM, AS	**J**-AS	**J**-DL	**J**-DL	**U**-MB	none
PCB 19	**UJ**-AS	**UJ**-AS	none	none	none	none
PCB 20/28	**J**-AS	**J**-AS	none	none	none	none
PCB 21/33	**J**-DL, AS	**UJ**-MB, AS	**U**-MB	none	**U**-MB	**U**-MB
PCB 22	**J**-DL, AS	**UJ**-MB, AS	**U**-MB	none	none	none
PCB 23	**UJ**-AS	**UJ**-AS	none	none	none	none
PCB 24	**UJ**-AS, BC	**UJ**-AS, BC	**UJ**-BC	**UJ**-BC	**UJ**-BC	**UJ**-BC
PCB 25	**UJ**-AS	**UJ**-MB, AS	none	**J**-DL	**U**-MB	**J**-DL
PCB 26/29	**J**-DL, AS	**J**-AS	**J**-DL	none	none	**U**-EM
PCB 27	**UJ**-AS	**UJ**-EM, AS	none	none	**J**-DL	**U**-EM
PCB 31	**J**-DL, AS	**J**-AS	none	none	none	none
PCB 32	**UJ**-AS	**J**-DL, AS	none	**U**-MB	**U**-EM	none
PCB 34	**UJ**-AS, BC	**UJ**-AS, BC	**UJ**-BC	**UJ**-BC	**UJ**-BC	**UJ**-BC

Analytes	**J18K87**	**J18WY1**	**J18XD8**	**J190F3**	**J191T2**	**J194C5**
PCB 35	**UJ**-AS	**UJ**-AS	none	none	none	none
PCB 36	**UJ**-AS	**UJ**-AS	none	none	none	none
PCB 37	**UJ**-AS	**UJ**-MB, AS	**U**-MB	**J**-DL	**U**-MB	**U**-EM
PCB 38	**UJ**-AS	**UJ**-AS	none	none	none	none
PCB 39	**UJ**-AS	**UJ**-AS	none	**U**-EM	none	none
PCB 40/41/71	**UJ**-EM, AS	none	none	none	none	none
PCB 42	**UJ**-EM, AS	none	none	none	none	none
PCB 43/73	**UJ**-AS	none	none	**U**-EM	**U**-EM	**J**-DL
PCB 44/47/65	**J**-AS	none	none	none	none	none
PCB 45/51	**UJ**-AS	**U**-MB	**U**-EM	none	none	none
PCB 46	**UJ**-AS, BC	**UJ**-BC	**UJ**-BC	**J**-DL, BC	**J**-DL, BC	**UJ**-BC
PCB 48	**J**-DL, AS	none	**U**-EM	none	none	**U**-EM
PCB 49/69	**J**-AS	none	none	none	none	none
PCB 50/53	**UJ**-AS	none	**J**-DL	none	none	none
PCB 52	**J**-AS	none	none	none	none	none
PCB 54	**UJ**-AS	none	none	none	none	none
PCB 55	**UJ**-EM, AS	**U**-EM	**J**-DL	**U**-EM	**U**-EM	**U**-EM
PCB 56	**J**-AS	none	none	none	none	**UJ**-BC
PCB 57	**UJ**-AS	**U**-EM	none	none	none	none
PCB 58	**UJ**-AS	**U**-EM	none	**U**-EM	none	none
PCB 59/62/75	**J**-DL, AS	none	**J**-DL	**U**-EM	none	none
PCB 60	**J**-AS	none	none	none	none	none
PCB 61/70/74/76	**J**-AS	none	none	none	none	none
PCB 63	**UJ**-EM, AS, BC	none	**J**-DL, BC	none	none	none
PCB 64	**UJ**-EM, AS	none	none	none	none	none
PCB 66	**J**-AS	none	none	none	none	none
PCB 67	**UJ**-AS	**U**-EM	**U**-EM	none	**U**-EM	**J**-DL
PCB 68	**UJ**-AS, BC	**J**-DL, BC	**J**-DL, BC	**J**-DL, BC	**J**-DL, BC	**J**-DL, BC
PCB 72	**UJ**-AS	none	**J**-DL	**U**-EM	**J**-DL	**J**-DL
PCB 77	**J**-AS	**U**-EM	**J**-DL	none	none	none
PCB 78	**UJ**-AS, BC	**UJ**-BC	**UJ**-BC	**UJ**-BC	**UJ**-BC	**UJ**-BC
PCB 79	**UJ**-EM, AS, BC	**UJ**-EM, BC	**J**-DL, BC	**J**-BC	**UJ**-EM, BC	**J**-DL, BC
PCB 80	**UJ**-AS, BC	**UJ**-BC	**UJ**-BC	**UJ**-EM, BC	**UJ**-BC	**UJ**-BC

Analytes	J18K87	J18WY1	J18XD8	J190F3	J191T2	J194C5
PCB 81	**UJ**-AS	**U**-EM	none	**U**-EM	**J**-DL	none
PCB 82	**UJ**-EM, AS	**J**-AS	none	none	none	**U**-EM
PCB 83/99	**J**-AS	**J**-AS	none	none	none	none
PCB 84	**UJ**-EM, AS, BC	**J**-AS	none	none	none	none
PCB 85/116/117	**J**-AS	**J**-AS	none	none	none	none
PCB 86/87/97/109/119/125	**J**-AS	**J**-AS	none	none	none	none
PCB 88/91	**J**-AS	**J**-AS	none	none	none	none
PCB 89	**UJ**-AS, BC	**UJ**-AS, BC	**UJ**-BC	none	**UJ**-BC	**UJ**-BC
PCB 90/101/113	**J**-AS	**J**-AS	none	none	none	none
PCB 92	**J**-AS, BC	**J**-AS	none	none	none	none
PCB 93/100	**UJ**-AS, BC	**UJ**-EM, AS, BC	**J**-DL, BC	**J**-BC	**UJ**-EM, BC	**UJ**-EM, BC
PCB 94	**UJ**-AS	**UJ**-AS	none	**J**-DL	none	none
PCB 95	**J**-AS	**J**-AS	none	none	none	none
PCB 96	**UJ**-AS	**UJ**-AS	none	**J**-DL	none	none
PCB 98/102	**UJ**-AS, BC	**UJ**-AS, BC	**UJ**-EM, BC	none	**J**-BC	**J**-BC
PCB 103	**UJ**-AS	**J**-AS	**UJ**-BC	**U**-EM	**UJ**-BC	**J**-BC
PCB 104	**UJ**-AS	**UJ**-AS	none	none	none	none
PCB 105	**J**-AS	**J**-AS	none	none	none	none
PCB 106	**UJ**-AS, BC	**UJ**-AS, BC	**UJ**-BC	**UJ**-BC	**UJ**-BC	**UJ**-BC
PCB 107	**J**-AS	**J**-AS	none	none	none	none
PCB 108/124	**J**-AS	**J**-AS	none	none	none	none
PCB 110/115	**J**-AS	**J**-AS	none	none	none	none
PCB 111	**UJ**-AS, BC	**UJ**-EM, AS, BC	**UJ**-BC	**UJ**-BC	**UJ**-BC	**UJ**-EM, BC
PCB 112	**UJ**-AS, BC	**UJ**-AS, BC	**UJ**-BC	**UJ**-BC	**UJ**-BC	**UJ**-BC
PCB 114	**UJ**-EM, AS	**J**-AS	none	none	none	none
PCB 118	**J**-AS	**J**-AS	none	none	none	none
PCB 120	**UJ**-AS	**J**-AS	**J**-DL	none	**U**-EM	**J**-DL
PCB 121	**UJ**-AS	**UJ**-AS	none	none	none	none
PCB 122	**UJ**-AS	**J**-AS	**U**-EM	none	**U**-EM	**U**-EM
PCB 123	**UJ**-EM, AS	**J**-AS	none	none	none	none
PCB 126	**UJ**-EM, AS	**J**-AS	**U**-EM	none	**U**-EM	**U**-EM
PCB 127	**J**-DL, AS	**UJ**-EM, AS	**J**-DL	none	**U**-EM	**J**-DL

Analytes	**J18K87**	**J18WY1**	**J18XD8**	**J190F3**	**J191T2**	**J194C5**
PCB 128/166	**J**-AS	none	none	none	none	none
PCB 129/138/160/163	**J**-AS	none	none	none	none	none
PCB 130	**UJ**-EM, AS	none	none	none	none	none
PCB 131	**UJ**-AS	none	**U**-EM	none	none	**U**-EM
PCB 132	**J**-AS	none	none	none	none	none
PCB 133	**UJ**-EM, AS	none	none	none	none	none
PCB 134/143	**UJ**-EM, AS	**U**-EM	none	none	none	none
PCB 135/151	**J**-AS	none	none	none	none	none
PCB 136	**J**-DL, AS	none	none	none	none	none
PCB 137	**J**-AS	none	**J**-BC	none	none	**J**-BC
PCB 139/140	**J**-AS	none	**U-EM**	none	none	none
PCB 141	**J**-AS	none	none	none	none	none
PCB 142	**UJ**-AS	none	none	none	none	none
PCB 144	**UJ**-AS, BC	none	none	none	none	none
PCB 145	**UJ**-AS, BC	**UJ**-BC	**UJ**-BC	**UJ**-BC	**UJ**-BC	**UJ**-BC
PCB 146	**J**-AS	none	none	none	none	none
PCB 147/149	**J**-AS	none	none	none	none	none
PCB 148	**UJ**-AS, BC	**UJ**-BC	**UJ**-BC	**UJ**-BC	**UJ**-BC	**UJ**-EM, BC
PCB 150	**UJ**-AS, BC	**UJ**-BC	**UJ**-BC	**UJ**-BC	**UJ**-BC	**UJ**-BC
PCB 152	**UJ**-AS	none	none	none	none	none
PCB 153/168	**J**-AS	none	none	none	none	none
PCB 154	**J**-DL, AS, BC	**UJ**-EM, BC	**J**-DL, BC	**J**-BC	**UJ**-EM, BC	**UJ**-EM, BC
PCB 155	**UJ**-AS	none	none	none	none	**J**-DL
PCB 156/157	**J**-AS	none	none	none	none	none
PCB 158	**J**-AS	none	none	none	none	none
PCB 159	**UJ**-AS	none	**U**-EM	**U**-EM	**J**-DL	**U**-EM
PCB 161	**UJ**-AS, BC	**UJ**-BC	**UJ**-BC	**UJ**-BC	**UJ**-BC	**UJ**-BC
PCB 162	**J**-DL, AS	**U**-EM	**J**-DL	none	**J**-DL	**U**-EM
PCB 164	**J**-AS	none	none	none	none	none
PCB 165	**UJ**-AS	none	none	none	none	none
PCB 167	**J**-AS	none	none	none	none	none
PCB 169	**UJ**-AS	**U**-EM	none	none	none	**U**-EM
PCB 170	**J**-AS	**J**-AS	none	**J**-AS	none	**J**-AS
PCB 171/173	**J**-AS	**J**-AS	none	**J**-AS	none	**J**-AS

Analytes	J18K87	J18WY1	J18XD8	J190F3	J191T2	J194C5
PCB 172	**J**-AS	**J**-AS	none	**J**-AS	none	**J**-AS
PCB 174	**J**-AS	**J**-AS	none	**J**-AS	none	**J**-AS
PCB 175	**UJ**-AS, BC	**UJ**-AS, BC	**UJ**-EM, BC	**J**-AS, BC	**J**-DL, BC	**J**-AS, BC
PCB 176	**J**-DL, AS	**J**-AS	**J**-DL	**J**-AS	none	**J**-AS
PCB 177	**J**-AS	**J**-AS	none	**J**-AS	none	**J**-AS
PCB 178	**J**-AS	**J**-AS	**J**-BC	**J**-AS	none	**J**-AS
PCB 179	**J**-AS	**J**-AS	none	**J**-AS	none	**J**-AS
PCB 180/193	**J**-AS	**J**-AS	none	**J**-AS	none	**J**-AS
PCB 181	**UJ**-AS, BC	**UJ**-EM, AS, BC	**J**-DL, BC	**J**-AS, BC	**UJ**-BC	**J**-DL, AS, BC
PCB 182	**UJ**-AS, BC	**UJ**-AS, BC	**UJ**-BC	**UJ**-AS, BC	**UJ**-BC	**UJ**-AS, BC
PCB 183/185	**J**-AS	**J**-AS	none	**J**-AS	none	**J**-AS
PCB 184	**UJ**-AS	**UJ**-EM, AS	none	**UJ**-AS	**U**-EM	**J**-DL, AS
PCB 186	**UJ**-AS	**UJ**-AS	none	**UJ**-AS	none	**UJ**-AS
PCB 187	**J**-AS	**J**-AS	none	**J**-AS	none	**J**-AS
PCB 188	**UJ**-AS	**UJ**-AS	none	**UJ**-AS	none	**UJ**-AS
PCB 189	**J**-DL, AS	**UJ**-EM, AS	**J**-DL	**J**-AS	**U**-EM	**J**-AS
PCB 190	**J**-AS	**J**-AS	**J**-BC	**J**-AS	none	**J**-AS, BC
PCB 191	**J**-DL, AS	**J**-AS	**J**-DL	**J**-AS	**J**-DL	**J**-AS
PCB 192	**UJ**-AS, BC	**UJ**-AS, BC	**UJ**-BC	**UJ**-AS, BC	**UJ**-BC	**UJ**-AS, BC
PCB 194	**J**-AS	**J**-AS	**J**-BC	**J**-AS	**J**-BC	**J**-AS, BC
PCB 195	**J**-AS	**J**-AS	**J**-DL	**J**-AS	none	**J**-AS
PCB 196	**J**-AS, BC	**J**-AS	**J**-BC	**J**-AS, BC	**UJ**-EM, BC	**J**-AS, BC
PCB 197	**J**-DL, AS	**J**-DL, AS	none	**UJ**-EM, AS	**J**-DL	**UJ**-EM, AS
PCB 198/201	**J**-AS	**J**-AS	none	**J**-AS	none	**J**-AS
PCB 199	**UJ**-EM, AS, BC	**J**-AS, BC	**J**-DL, BC	**J**-DL, AS, BC	**J**-DL, BC	**J**-AS, BC
PCB 200	**J**-DL, AS, BC	**UJ**-EM, AS, BC	**J**-DL, BC	**J**-DL, AS, BC	**J**-DL, BC	**J**-AS, BC
PCB 202	**J**-AS	**J**-AS	**U**-EM	**J**-AS	none	**J**-AS
PCB 203	**J**-AS	**J**-AS	none	**J**-AS	none	**J**-AS
PCB 204	**UJ**-AS	**UJ**-AS	none	**UJ**-AS	none	**UJ**-AS
PCB 205	**J**-DL, AS	**J**-AS	none	**J**-DL, AS	**J**-DL	**J**-DL, AS
PCB 206	**J**-AS	**J**-AS	**J**-DL	**J**-AS	none	**J**-AS
PCB 207	**J**-DL, AS	**UJ**-EM, AS	none	**UJ**-EM, AS	**J**-DL	**J**-DL, AS

Analytes	**J18K87**	**J18WY1**	**J18XD8**	**J190F3**	**J191T2**	**J194C5**
PCB 208	**J**-DL, AS	**J**-AS	**J**-DL	**J**-DL, AS	**J**-DL	**UJ**-EM, AS
PCB 209	**UJ**-EM, AS	**J**-AS	**U**-EM	**UJ**-EM, AS	**U**-EM	**J**-AS

Analytes	**J196Y6**	**J17T02**	**J17RY8**	**J18689**	**J18694**	**J17W23**
PCB 1	none	**U**-EM	none	none	none	**UJ**-RT
PCB 2	none	none	none	**J**-DL	none	**UJ**-RT
PCB 3	none	none	none	none	none	**UJ**-RT
PCB 4	none	**U**-MB	**U**-MB	none	**J**-DL	**UJ**-RT
PCB 5	none	none	none	none	**U**-EM	**UJ**-RT
PCB 6	none	none	none	none	**U**-EM	**UJ**-RT
PCB 7	none	none	none	none	**U**-EM	**UJ**-RT
PCB 8	**U**-MB	**U**-MB	**U**-MB	**U**-MB	**J**-DL	**UJ**-EM, RT
PCB 9	**UJ**-BC	**UJ**-BC	**UJ**-BC	**UJ**-BC	**UJ**-EM, BC	**UJ**-BC, RT
PCB 10	**UJ**-BC	**UJ**-BC	**UJ**-BC	**UJ**-BC	**UJ**-BC	**UJ**-BC, RT
PCB 11	**U**-MB	**U**-MB	**U**-MB	**U**-MB	**U**-MB	**UJ**-MB, RT
PCB 12/13	none	none	none	**U**-EM	**U**-EM	**UJ**-RT
PCB 14	none	none	none	none	none	**UJ**-RT
PCB 15	none	**U**-MB	**U**-MB	none	**U**-EM	**UJ**-EM, RT
PCB 16	**U**-EM	none	none	none	none	**UJ**-AS, RT
PCB 17	**U**-MB	**U**-MB	none	none	none	**UJ**-AS, RT
PCB 18/30	**J**-DL	**J**-DL	**U**-MB	none	none	**UJ**-AS, RT
PCB 19	none	none	none	none	**J**-DL	**UJ**-AS, RT
PCB 20/28	**U**-MB	**J**-DL	**J**-DL	**U**-MB	none	**UJ**-AS, RT
PCB 21/33	**U**-MB	**U**-MB	**U**-MB	**U**-MB	none	**UJ**-MB, AS, RT
PCB 22	**U**-MB	**U**-MB	**U**-MB	**J**-DL	none	**UJ**-AS, RT
PCB 23	none	none	none	none	none	**UJ**-AS, RT
PCB 24	**UJ**-BC	**UJ**-BC	**UJ**-BC	**UJ**-BC	**UJ**-BC	**UJ**-AS, BC, RT
PCB 25	**U**-MB	none	none	none	**J**-DL	**UJ**-AS, RT
PCB 26/29	**J**-DL	none	none	none	**J**-DL	**UJ**-AS, RT
PCB 27	none	none	none	none	**U**-EM	**UJ**-AS, RT
PCB 31	**U**-MB	**U**-MB	**U**-MB	**J**-DL	none	**UJ**-MB, AS, RT
PCB 32	**J**-DL	none	none	none	**J**-DL	**UJ**-AS, RT

Analytes	**J196Y6**	**J17T02**	**J17RY8**	**J18689**	**J18694**	**J17W23**
PCB 34	**UJ**-BC	**UJ**-BC	**UJ**-BC	**UJ**-BC	**UJ**-BC	**UJ**-AS, BC, RT
PCB 35	none	none	none	none	none	**UJ**-AS, RT
PCB 36	none	none	none	none	none	**UJ**-AS, RT
PCB 37	**U**-MB	**J**-DL	none	**U**-EM	none	**UJ**-AS, RT
PCB 38	none	none	none	none	none	**UJ**-AS, RT
PCB 39	none	none	none	none	none	**UJ**-AS, RT
PCB 40/41/71	**U**-MB	none	none	none	none	**UJ**-RT
PCB 42	**U**-MB	none	none	none	**J**-DL	**UJ**-RT
PCB 43/73	**U**-EM	none	none	none	**U**-EM	**UJ**-RT
PCB 44/47/65	**U**-MB	**U**-MB	**U**-MB	**J**-DL	none	**UJ**-RT
PCB 45/51	**U**-MB	none	none	none	**J**-DL	**UJ**-RT
PCB 46	**UJ**-BC	**UJ**-BC	**UJ**-BC	**UJ**-BC	**UJ**-EM, BC	**UJ**-BC, RT
PCB 48	**U**-MB	none	none	none	**U**-EM	**UJ**-RT
PCB 49/69	none	**U**-MB	**U**-MB	**U**-MB	none	**UJ**-RT
PCB 50/53	**J**-DL	none	none	none	**J**-DL	**UJ**-RT
PCB 52	none	**U**-MB	**U**-MB	**U**-MB	none	**UJ**-EM, RT
PCB 54	none	none	none	none	none	**UJ**-RT
PCB 55	**J**-DL	none	none	none	**U**-EM	**UJ**-RT
PCB 56	**U**-MB	**UJ**-EM, BC	**UJ**-BC	**UJ**-BC	none	**UJ**-BC, RT
PCB 57	none	none	none	none	none	**UJ**-RT
PCB 58	none	none	none	none	none	**UJ**-RT
PCB 59/62/75	**U**-MB	none	none	none	**J**-DL	**UJ**-RT
PCB 60	**U**-MB	none	none	none	none	**UJ**-RT
PCB 61/70/74/76	**U**-MB	**U**-MB	**U**-MB	**U**-MB	none	**UJ**-MB, RT
PCB 63	**UJ**-EM, BC	**UJ**-BC	**UJ**-BC	**UJ**-BC	**J**-DL, BC	**UJ**-BC, RT
PCB 64	**U**-MB	**J**-DL	**U**-MB	**J**-DL	none	**UJ**-RT
PCB 66	none	**U**-MB	**U**-MB	**J**-DL	none	**UJ**-RT
PCB 67	**J**-DL	none	none	none	**U**-EM	**UJ**-RT
PCB 68	**UJ**-BC	**J**-DL, BC	**UJ**-BC	**UJ**-BC	**UJ**-BC	**UJ**-BC, RT
PCB 72	none	none	none	none	none	**UJ**-RT
PCB 77	**U**-EM	none	none	none	**J**-DL	**UJ**-RT
PCB 78	**UJ**-BC	**UJ**-BC	**UJ**-BC	**UJ**-BC	**UJ**-BC	**UJ**-BC, RT
PCB 79	**UJ**-EM, BC	**UJ**-BC	**UJ**-BC	**UJ**-BC	**J**-DL, BC	**UJ**-BC, RT
PCB 80	**UJ**-BC	**UJ**-BC	**UJ**-BC	**UJ**-BC	**UJ**-BC	**UJ**-BC, RT

Analytes	**J196Y6**	**J17T02**	**J17RY8**	**J18689**	**J18694**	**J17W23**
PCB 81	none	none	none	none	none	**UJ**-RT
PCB 82	none	none	none	none	none	**UJ**-AS, RT
PCB 83/99	none	**U**-EM	none	**J**-DL	**U**-EM	**UJ**-AS, RT
PCB 84	**UJ**-MB, BC	**UJ**-BC	**UJ**-BC	**UJ**-BC	none	**UJ**-AS, BC, RT
PCB 85/116/117	none	none	none	**U**-EM	none	**UJ**-AS, RT
PCB 86/87/97/109/119/125	**U**-EM	**J**-DL	none	**U**-EM	none	**UJ**-AS, RT
PCB 88/91	**U**-EM	none	none	none	none	**UJ**-AS, RT
PCB 89	**UJ**-BC	**UJ**-BC	**UJ**-BC	**UJ**-BC	**UJ**-BC	**UJ**-AS, BC, RT
PCB 90/101/113	none	**U**-EM	**U**-EM	**U**-EM	none	**UJ**-AS, RT
PCB 92	**J**-BC	**UJ**-BC	**UJ**-BC	**UJ**-EM, BC	**UJ**-EM, BC	**UJ**-AS, BC, RT
PCB 93/100	**J**-DL, BC	**UJ**-BC	**UJ**-BC	**UJ**-BC	**UJ**-BC	**UJ**-AS, BC, RT
PCB 94	none	none	none	none	none	**UJ**-AS, RT
PCB 95	none	**J**-DL	**J**-DL	**J**-DL	none	**UJ**-AS, RT
PCB 96	none	none	none	none	none	**UJ**-AS, RT
PCB 98/102	**UJ**-EM, BC	**UJ**-BC	**UJ**-BC	**UJ**-BC	**UJ**-EM, BC	**UJ**-AS, BC, RT
PCB 103	**UJ**-BC	**UJ**-BC	**UJ**-BC	**UJ**-BC	**UJ**-BC	**UJ**-AS, BC, RT
PCB 104	none	none	none	none	none	**UJ**-AS, RT
PCB 105	none	**U**-EM	**J**-DL	none	none	**UJ**-AS, RT
PCB 106	**UJ**-BC	**UJ**-BC	**UJ**-BC	**UJ**-BC	**UJ**-BC	**UJ**-AS, BC, RT
PCB 107	**U**-EM	none	none	**J**-DL	none	**UJ**-AS, RT
PCB 108/124	none	none	none	**J**-DL	**J**-DL	**UJ**-AS, RT
PCB 110/115	none	**U**-MB	**U**-MB	**U**-EM	none	**UJ**-AS, RT
PCB 111	**UJ**-BC	**UJ**-BC	**UJ**-BC	**UJ**-BC	**UJ**-BC	**UJ**-AS, BC, RT
PCB 112	**UJ**-BC	**UJ**-BC	**UJ**-BC	**UJ**-BC	**UJ**-BC	**UJ**-AS, BC, RT
PCB 114	none	none	none	none	**U**-EM	**UJ**-AS, RT
PCB 118	none	**U**-MB	**U**-MB	**U**-EM	none	**UJ**-AS, RT
PCB 120	**U**-EM	none	none	none	none	**UJ**-AS, RT
PCB 121	none	none	none	none	none	**UJ**-AS, RT
PCB 122	**U**-EM	none	none	none	**U**-EM	**UJ**-AS, RT

Analytes	**J196Y6**	**J17T02**	**J17RY8**	**J18689**	**J18694**	**J17W23**
PCB 123	**U**-EM	none	none	**U**-EM	**J**-DL	**UJ**-AS, RT
PCB 126	**U**-EM	none	none	none	**J**-DL	**UJ**-AS, RT
PCB 127	none	none	none	none	none	**UJ**-AS, RT
PCB 128/166	none	none	none	**J**-DL	none	**UJ**-AS, RT
PCB 129/138/160/163	none	**J**-DL	**U**-MB	none	none	**UJ**-AS, RT
PCB 130	none	none	none	**J**-DL	none	**UJ**-AS, RT
PCB 131	**J**-DL	none	none	none	**J**-DL	**UJ**-AS, RT
PCB 132	none	**J**-DL	none	**U**-EM	none	**UJ**-AS, RT
PCB 133	none	none	none	none	**J**-DL	**UJ**-AS, RT
PCB 134/143	none	**UJ**-BC	**UJ**-BC	**UJ**-BC	none	**UJ**-AS, BC, RT
PCB 135/151	none	none	none	**U**-EM	none	**UJ**-AS, RT
PCB 136	**U**-MB	none	none	none	none	**UJ**-AS, RT
PCB 137	**J**-BC	**UJ**-BC	**UJ**-BC	**UJ**-EM, BC	**J**-BC	**UJ**-AS, BC, RT
PCB 139/140	**UJ**-EM, BC	**UJ**-BC	**UJ**-BC	**UJ**-BC	**J**-DL, BC	**UJ**-AS, BC, RT
PCB 141	none	**UJ**-BC	**UJ**-BC	**J**-DL, BC	none	**UJ**-AS, BC, RT
PCB 142	none	none	none	none	none	**UJ**-AS, RT
PCB 144	none	**UJ**-BC	**UJ**-BC	**UJ**-BC	**UJ**-EM, BC	**UJ**-AS, BC, RT
PCB 145	**UJ**-BC	**UJ**-BC	**UJ**-BC	**UJ**-BC	**UJ**-BC	**UJ**-AS, BC, RT
PCB 146	none	none	none	**U**-EM	none	**UJ**-AS, RT
PCB 147/149	none	**U**-MB	**U**-MB	none	none	**UJ**-AS, RT
PCB 148	**UJ**-BC	**UJ**-BC	**UJ**-BC	**UJ**-BC	**UJ**-BC	**UJ**-AS, BC, RT
PCB 150	**UJ**-BC	**UJ**-BC	**UJ**-BC	**UJ**-BC	**UJ**-BC	**UJ**-AS, BC, RT
PCB 152	none	none	none	none	none	**UJ**-AS, RT
PCB 153/168	none	**U**-MB	**U**-MB	none	none	**UJ**-AS, RT
PCB 154	**J**-DL, BC	**UJ**-BC	**UJ**-BC	**UJ**-BC	**UJ**-BC	**UJ**-AS, BC, RT
PCB 155	none	none	none	none	none	**UJ**-AS, RT
PCB 156/157	none	none	none	**U**-EM	none	**UJ**-AS, RT
PCB 158	none	none	none	**U**-EM	none	**UJ**-AS, RT
PCB 159	**J**-DL	none	none	none	none	**UJ**-AS, RT

Analytes	J196Y6	J17T02	J17RY8	J18689	J18694	J17W23
PCB 161	**UJ**-BC	**UJ**-BC	**UJ**-BC	**UJ**-BC	**UJ**-BC	**UJ**-AS, BC, RT
PCB 162	**U**-EM	none	none	none	none	**UJ**-AS, RT
PCB 164	none	none	none	**J**-DL	none	**UJ**-AS, RT
PCB 165	none	none	none	none	none	**UJ**-AS, RT
PCB 167	none	none	none	**J**-DL	**J**-DL	**UJ**-AS, RT
PCB 169	none	none	none	none	none	**UJ**-AS, RT
PCB 170	none	**UJ**-BC	**UJ**-EM, BC	**UJ**-EM, BC	**J**-BC	**UJ**-BC, RT
PCB 171/173	none	none	none	none	**J**-DL	**UJ**-RT
PCB 172	**U**-EM	none	none	none	**U**-EM	**UJ**-RT
PCB 174	none	**UJ**-BC	**UJ**-EM, BC	**J**-DL, BC	none	**UJ**-BC, RT
PCB 175	**UJ**-EM, BC	**UJ**-BC	**UJ**-BC	**UJ**-BC	**UJ**-BC	**UJ**-BC, RT
PCB 176	**U**-MB	none	none	none	**U**-EM	**UJ**-RT
PCB 177	none	none	none	**J**-DL	none	**UJ**-RT
PCB 178	**J**-BC	**UJ**-BC	**UJ**-BC	**UJ**-BC	**UJ**-EM, BC	**UJ**-BC, RT
PCB 179	none	none	**U**-EM	**J**-DL	**U**-EM	**UJ**-RT
PCB 180/193	none	**U**-MB	**U**-MB	**J**-DL	none	**UJ**-RT
PCB 181	**UJ**-BC	**UJ**-BC	**UJ**-BC	**UJ**-BC	**UJ**-BC	**UJ**-BC, RT
PCB 182	**UJ**-BC	**UJ**-BC	**UJ**-BC	**UJ**-BC	**UJ**-BC	**UJ**-BC, RT
PCB 183/185	none	none	none	none	none	**UJ**-RT
PCB 184	none	none	none	none	none	**UJ**-RT
PCB 186	none	none	none	none	none	**UJ**-RT
PCB 187	none	**J**-DL	**U**-EM	**J**-DL	none	**UJ**-RT
PCB 188	none	none	none	none	none	**UJ**-RT
PCB 189	**J**-DL	none	none	none	**U**-EM	**UJ**-RT
PCB 190	**J**-BC	**UJ**-BC	**UJ**-BC	**UJ**-BC	**J**-DL, BC	**UJ**-BC, RT
PCB 191	**J**-DL	none	none	none	none	**UJ**-RT
PCB 192	**UJ**-BC	**UJ**-BC	**UJ**-BC	**UJ**-BC	**UJ**-BC	**UJ**-BC, RT
PCB 194	**J**-BC	**UJ**-BC	**UJ**-BC	**UJ**-BC	**UJ**-EM, BC	**UJ**-BC, RT
PCB 195	none	none	none	none	**J**-DL	**UJ**-RT
PCB 196	**J**-BC	**UJ**-BC	**UJ**-BC	**UJ**-BC	**J**-DL, BC	**UJ**-BC, RT
PCB 197	**U**-EM	none	none	none	none	**UJ**-RT
PCB 198/201	**U**-EM	none	none	none	none	**UJ**-RT
PCB 199	**UJ**-EM, BC	**UJ**-BC	**UJ**-BC	**UJ**-BC	**UJ**-EM, BC	**UJ**-BC, RT
PCB 200	**J**-DL, BC	**UJ**-BC	**UJ**-BC	**UJ**-BC	**UJ**-EM, BC	**UJ**-BC, RT

Analytes	**J196Y6**	**J17T02**	**J17RY8**	**J18689**	**J18694**	**J17W23**
PCB 202	none	none	none	none	**J**-DL	**UJ**-RT
PCB 203	none	**UJ**-BC	**UJ**-BC	**UJ**-BC	none	**UJ**-BC, RT
PCB 204	none	none	none	none	none	**UJ**-RT
PCB 205	**U**-EM	none	none	none	none	**UJ**-RT
PCB 206	none	none	none	none	**U**-EM	**UJ**-RT
PCB 207	**U**-EM	none	none	none	**U**-EM	**UJ**-RT
PCB 208	**J**-DL	none	none	none	none	**UJ**-RT
PCB 209	**J**-DL	none	none	none	**U**-EM	**UJ**-RT

Analytes	**J18692**	**J18HW9**	**J18HW7**
PCB 1	**UJ**-RT	**UJ**-RT	**UJ**-RT
PCB 2	**UJ**-RT	**UJ**-RT	**UJ**-RT
PCB 3	**UJ**-RT	**UJ**-RT	**UJ**-RT
PCB 4	**UJ**-RT	**UJ**-RT	**UJ**-RT
PCB 5	**UJ**-RT	**UJ**-RT	**UJ**-RT
PCB 6	**UJ**-RT	**UJ**-EM, RT	**UJ**-RT
PCB 7	**UJ**-RT	**UJ**-EM, RT	**UJ**-EM, RT
PCB 8	**UJ**-EM, RT	**UJ**-MB, RT	**UJ**-MB, RT
PCB 9	**UJ**-BC, RT	**UJ**-BC, RT	**UJ**-BC, RT
PCB 10	**UJ**-BC, RT	**UJ**-BC, RT	**UJ**-BC, RT
PCB 11	**UJ**-MB, RT	**UJ**-MB, RT	**UJ**-MB, RT
PCB 12/13	**UJ**-RT	**UJ**-RT	**UJ**-RT
PCB 14	**UJ**-RT	**UJ**-RT	**UJ**-RT
PCB 15	**UJ**-EM, RT	**UJ**-EM, RT	**UJ**-RT
PCB 16	**UJ**-RT	**UJ**-RT	**UJ**-RT
PCB 17	**UJ**-RT	**UJ**-RT	**UJ**-RT
PCB 18/30	**UJ**-RT	**UJ**-RT	**UJ**-MB, RT
PCB 19	**UJ**-RT	**UJ**-RT	**UJ**-RT
PCB 20/28	**UJ**-MB, RT	**UJ**-MB, RT	**UJ**-MB, RT
PCB 21/33	**UJ**-MB, RT	**J**-DL, RT	**UJ**-MB, RT
PCB 22	**J**-DL, RT	**UJ**-EM, RT	**UJ**-EM, RT
PCB 23	**UJ**-RT	**UJ**-RT	**UJ**-RT
PCB 24	**UJ**-BC, RT	**UJ**-BC, RT	**UJ**-BC
PCB 25	**UJ**-RT	**UJ**-RT	**UJ**-RT

Analytes	**J18692**	**J18HW9**	**J18HW7**
PCB 26/29	**UJ**-RT	**UJ**-RT	**UJ**-RT
PCB 27	**UJ**-RT	**UJ**-RT	**UJ**-RT
PCB 31	**UJ**-MB, RT	**UJ**-EM, RT	**J**-DL, RT
PCB 32	**UJ**-EM, RT	**UJ**-RT	**UJ**-RT
PCB 34	**UJ**-BC, RT	**UJ**-BC, RT	**UJ**-BC, RT
PCB 35	**UJ**-RT	**UJ**-RT	**UJ**-RT
PCB 36	**UJ**-RT	**UJ**-RT	**UJ**-RT
PCB 37	**J**-DL, RT	**UJ**-RT	**UJ**-RT
PCB 38	**UJ**-RT	**UJ**-RT	**UJ**-RT
PCB 39	**UJ**-RT	**UJ**-RT	**UJ**-RT
PCB 40/41/71	**UJ**-EM, RT	**UJ**-RT	**J**-DL, RT
PCB 42	**UJ**-RT	**UJ**-RT	**UJ**-RT
PCB 43/73	**UJ**-RT	**UJ**-RT	**UJ**-RT
PCB 44/47/65	**J**-DL, RT	**UJ**-MB, RT	**UJ**-MB, RT
PCB 45/51	**UJ**-RT	**UJ**-RT	**UJ**-RT
PCB 46	**UJ**-BC, RT	**UJ**-BC, RT	**UJ**-BC, RT
PCB 48	**UJ**-EM, RT	**UJ**-RT	**UJ**-RT
PCB 49/69	**J**-DL, RT	**UJ**-RT	**UJ**-MB, RT
PCB 50/53	**UJ**-RT	**UJ**-RT	**UJ**-RT
PCB 52	**UJ**-EM, RT	**UJ**-MB, RT	**UJ**-MB, RT
PCB 54	**UJ**-RT	**UJ**-RT	**UJ**-RT
PCB 55	**UJ**-RT	**UJ**-RT	**UJ**-RT
PCB 56	**UJ**-EM, BC, RT	**UJ**-BC, RT	**UJ**-EM, BC, RT
PCB 57	**UJ**-RT	**UJ**-RT	**UJ**-RT
PCB 58	**UJ**-RT	**UJ**-RT	**UJ**-RT
PCB 59/62/75	**UJ**-RT	**UJ**-RT	**UJ**-RT
PCB 60	**UJ**-EM, RT	**UJ**-RT	**UJ**-RT
PCB 61/70/74/76	**J**-DL, RT	**UJ**-MB, RT	**UJ**-MB, RT
PCB 63	**UJ**-BC, RT	**UJ**-BC, RT	**UJ**-BC, RT
PCB 64	**J**-DL, RT	**UJ**-RT	**UJ**-EM, RT
PCB 66	**J**-DL, RT	**UJ**-RT	**UJ**-EM, RT
PCB 67	**UJ**-RT	**UJ**-RT	**UJ**-RT
PCB 68	**UJ**-BC, RT	**UJ**-BC, RT	**UJ**-BC, RT
PCB 72	**UJ**-RT	**UJ**-RT	**UJ**-RT

Analytes	**J18692**	**J18HW9**	**J18HW7**
PCB 77	**UJ**-EM, RT	**UJ**-RT	**UJ**-RT
PCB 78	**UJ**-BC, RT	**UJ**-BC, RT	**UJ**-BC, RT
PCB 79	**UJ**-BC, RT	**UJ**-BC, RT	**UJ**-BC, RT
PCB 80	**UJ**-BC, RT	**UJ**-BC, RT	**UJ**-BC, RT
PCB 81	**UJ**-RT	**UJ**-RT	**UJ**-RT
PCB 82	**UJ**-RT	**UJ**-RT	**UJ**-RT
PCB 83/99	**J**-RT	**UJ**-RT	**UJ**-EM, RT
PCB 84	**UJ**-BC, RT	**UJ**-BC, RT	**UJ**-BC, RT
PCB 85/116/117	**UJ**-EM, RT	**UJ**-RT	**UJ**-RT
PCB 86/87/97/109/119/125	**J**-RT	**UJ**-RT	**UJ**-RT
PCB 88/91	**J**-DL, RT	**UJ**-RT	**UJ**-RT
PCB 89	**UJ**-BC, RT	**UJ**-BC, RT	**UJ**-BC, RT
PCB 90/101/113	**J**-RT	**UJ**-EM, RT	**UJ**-EM, RT
PCB 92	**J**-DL, BC, RT	**UJ**-BC, RT	**UJ**-BC, RT
PCB 93/100	**UJ**-BC, RT	**UJ**-BC, RT	**UJ**-BC, RT
PCB 94	**UJ**-RT	**UJ**-RT	**UJ**-RT
PCB 95	**J**-RT	**UJ**-RT	**UJ**-EM, RT
PCB 96	**UJ**-RT	**UJ**-RT	**UJ**-RT
PCB 98/102	**UJ**-BC, RT	**UJ**-BC, RT	**UJ**-BC, RT
PCB 103	**UJ**-BC, RT	**UJ**-BC, RT	**UJ**-BC, RT
PCB 104	**UJ**-RT	**UJ**-RT	**UJ**-RT
PCB 105	**UJ**-RT	**UJ**-EM, RT	**UJ**-EM, RT
PCB 106	**UJ**-BC, RT	**UJ**-BC, RT	**UJ**-BC, RT
PCB 107	**UJ**-EM, RT	**UJ**-RT	**UJ**-RT
PCB 108/124	**UJ**-EM, RT	**UJ**-RT	**UJ**-RT
PCB 110/115	**J**-RT	**UJ**-EM, RT	**UJ**-EM, RT
PCB 111	**UJ**-BC, RT	**UJ**-BC, RT	**UJ**-BC, RT
PCB 112	**UJ**-BC, RT	**UJ**-BC, RT	**UJ**-BC, RT
PCB 114	**UJ**-RT	**UJ**-RT	**UJ**-RT
PCB 118	**J**-RT	**J**-DL, RT	**UJ**-EM, RT
PCB 120	**UJ**-RT	**UJ**-RT	**UJ**-RT
PCB 121	**UJ**-RT	**UJ**-RT	**UJ**-RT
PCB 122	**UJ**-RT	**UJ**-RT	**UJ**-RT
PCB 123	**J**-DL, RT	**UJ**-RT	**UJ**-RT

Analytes	**J18692**	**J18HW9**	**J18HW7**
PCB 126	**UJ**-RT	**UJ**-RT	**UJ**-RT
PCB 127	**UJ**-RT	**UJ**-RT	**UJ**-RT
PCB 128/166	**J**-RT	**UJ**-RT	**UJ**-EM, RT
PCB 129/138/160/163	**J**-RT	**UJ**-EM, RT	**UJ**-EM, RT
PCB 130	**UJ**-EM, RT	**UJ**-RT	**UJ**-RT
PCB 131	**UJ**-RT	**UJ**-RT	**UJ**-RT
PCB 132	**J**-RT	**J**-DL, RT	**UJ**-EM, RT
PCB 133	**UJ**-RT	**UJ**-RT	**UJ**-RT
PCB 134/143	**UJ**-EM, BC, RT	**UJ**-BC, RT	**UJ**-BC, RT
PCB 135/151	**UJ**-EM, RT	**UJ**-RT	**UJ**-EM, RT
PCB 136	**UJ**-RT	**UJ**-RT	**UJ**-EM, RT
PCB 137	**UJ**-EM, BC, RT	**UJ**-BC, RT	**UJ**-BC, RT
PCB 139/140	**UJ**-BC, RT	**UJ**-BC, RT	**UJ**-BC, RT
PCB 141	**J**-DL, BC, RT	**UJ**-BC, RT	**UJ**-BC, RT
PCB 142	**UJ**-RT	**UJ**-RT	**UJ**-RT
PCB 144	**UJ**-BC, RT	**UJ**-BC, RT	**UJ**-BC, RT
PCB 145	**UJ**-BC, RT	**UJ**-BC, RT	**UJ**-BC, RT
PCB 146	**J**-DL, RT	**UJ**-RT	**UJ**-EM, RT
PCB 147/149	**J**-RT	**UJ**-EM, RT	**J**-DL, RT
PCB 148	**UJ**-BC, RT	**UJ**-BC, RT	**UJ**-BC, RT
PCB 150	**UJ**-BC, RT	**UJ**-BC, RT	**UJ**-BC, RT
PCB 152	**UJ**-RT	**UJ**-RT	**UJ**-RT
PCB 153/168	**J**-RT	**J**-DL, RT	**UJ**-EM, RT
PCB 154	**UJ**-BC, RT	**UJ**-BC, RT	**UJ**-BC, RT
PCB 155	**UJ**-RT	**UJ**-RT	**UJ**-RT
PCB 156/157	**J**-RT	**UJ**-EM, RT	**UJ**-RT
PCB 158	**J**-DL, RT	**UJ**-RT	**UJ**-RT
PCB 159	**UJ**-RT	**UJ**-RT	**UJ**-RT
PCB 161	**UJ**-BC, RT	**UJ**-BC, RT	**UJ**-BC, RT
PCB 162	**UJ**-RT	**UJ**-RT	**UJ**-RT
PCB 164	**UJ**-EM, RT	**UJ**-RT	**UJ**-RT
PCB 165	**UJ**-RT	**UJ**-RT	**UJ**-RT
PCB 167	**J**-DL, RT	**UJ**-RT	**UJ**-RT
PCB 169	**UJ**-RT	**UJ**-RT	**UJ**-RT

Analytes	J18692	J18HW9	J18HW7
PCB 170	**J**-BC, RT	**UJ**-EM, BC, RT	**J**-DL, BC, RT
PCB 171/173	**UJ**-EM, RT	**UJ**-RT	**UJ**-RT
PCB 172	**UJ**-RT	**UJ**-RT	**UJ**-RT
PCB 174	**UJ**-EM, BC, RT	**J**-DL, BC, RT	**UJ**-EM, BC, RT
PCB 175	**UJ**-BC, RT	**UJ**-BC, RT	**UJ**-BC, RT
PCB 176	**UJ**-RT	**UJ**-RT	**UJ**-RT
PCB 177	**UJ**-EM, RT	**UJ**-EM, RT	**UJ**-RT
PCB 178	**UJ**-BC, RT	**UJ**-BC, RT	**UJ**-BC, RT
PCB 179	**UJ**-EM, RT	**UJ**-EM, RT	**UJ**-RT
PCB 180/193	**J**-RT	**UJ**-EM, RT	**UJ**-EM, RT
PCB 181	**UJ**-BC, RT	**UJ**-BC, RT	**UJ**-BC, RT
PCB 182	**UJ**-BC, RT	**UJ**-BC, RT	**UJ**-BC, RT
PCB 183/185	**UJ**-EM, RT	**UJ**-RT	**UJ**-RT
PCB 184	**UJ**-RT	**UJ**-RT	**UJ**-RT
PCB 186	**UJ**-RT	**UJ**-RT	**UJ**-RT
PCB 187	**UJ**-EM, RT	**J**-DL, RT	**J**-DL, RT
PCB 188	**UJ**-RT	**UJ**-RT	**UJ**-RT
PCB 189	**UJ**-RT	**UJ**-RT	**UJ**-RT
PCB 190	**UJ**-EM, BC, RT	**UJ**-BC, RT	**UJ**-BC, RT
PCB 191	**UJ**-RT	**UJ**-RT	**UJ**-RT
PCB 192	**UJ**-BC, RT	**UJ**-BC, RT	**UJ**-BC, RT
PCB 194	**J**-DL, BC, RT	**UJ**-EM, BC, RT	**J**-DL, BC, RT
PCB 195	**J**-DL, RT	**UJ**-RT	**UJ**-RT
PCB 196	**UJ**-BC, RT	**UJ**-BC, RT	**UJ**-BC, RT
PCB 197	**UJ**-RT	**UJ**-RT	**UJ**-RT
PCB 198/201	**J**-DL, RT	**J**-DL, RT	**J**-DL, RT
PCB 199	**UJ**-BC, RT	**UJ**-BC, RT	**UJ**-BC, RT
PCB 200	**UJ**-BC, RT	**UJ**-BC, RT	**UJ**-BC, RT
PCB 202	**UJ**-RT	**UJ**-RT	**UJ**-RT
PCB 203	**UJ**-EM, BC, RT	**UJ**-EM, BC, RT	**UJ**-EM, BC, RT
PCB 204	**UJ**-RT	**UJ**-RT	**UJ**-RT
PCB 205	**UJ**-RT	**UJ**-RT	**UJ**-RT
PCB 206	**UJ**-EM, RT	**UJ**-EM, RT	**J**-DL, RT
PCB 207	**UJ**-RT	**UJ**-RT	**UJ**-RT

Analytes	**J18692**	**J18HW9**	**J18HW7**
PCB 208	**UJ**-EM, RT	**UJ**-RT	**J**-DL, RT
PCB 209	**UJ**-EM, RT	**UJ**-RT	**UJ**-EM, RT

6.1 Holding Time

The project sampling and analysis plan (SAP) specifies a maximum holding time of 14 days from sample collection until extraction and 40 days maximum from extraction until analysis. However, EPA Method 1668B specifies a maximum holding time of one year from sample collection until extraction and a maximum of one year from extraction until analysis if solid, semi-solid, multi-phase, and tissue samples and extracts are stored at a temperature less than -10°C. Similarly, aqueous samples may be stored up to a year if they are stored in the dark at a temperature less than 6°C.

None of the samples were extracted within the SAP-specified maximum holding times, of 14 days for solids and 7 days for aqueous samples, from sample collection until extraction. However; all samples were extracted within the EPA-recommended maximum holding time of one year from sample collection until extraction, and in AMEC's professional opinion, data usability is not adversely affected.

6.2 GC/MS Performance Checks and Initial Calibration

TA performed an initial five-point calibration on June 24, 2008. Data limitations associated with this ICAL are summarized below:

- Ion abundance ratios were outside method-specified QC limits for PCB 9, PCB 10, PCB 24, PCB 34, PCB 46, PCB 56, PCB 63, PCB 68, PCB 78, PCB 79, PCB 80, PCB 89, PCB 103, PCB 106, PCB 111, PCB 134/143, PCB 137, PCB 139/140, PCB 141, PCB 144, PCB 145, PCB 148, PCB 150, PCB 174, PCB 181, PCB 182, PCB 190, PCB 192, PCB 194, and PCB 203 in the 0.5 nanograms per milliliter (ng/mL) calibration level. AMEC J qualified all detected solid results less than 0.01 nanograms per gram (ng/g) and aqueous results less than 0.02 nanograms per liter (ng/L), which correspond to the lowest calibration level where ion abundance ratios for these analytes were within method-specified limits for unqualified data. AMEC adjusted these concentrations on a sample-specific basis to correct for varying sample weights, sample volumes, and dilution factors. AMEC also UJ qualified all nondetected results for the affected analytes because the technical ICAL criteria were not met, possibly indicating that the laboratory detection limits have been established at too low a level to allow unambiguous qualitative evaluation of constituent identification. (**J**/**UJ**-BC)

- Ion abundance ratios for PCB 79, PCB 84, PCB 92, PCB 93/100, PCB 98/102, PCB 112, PCB 137, PCB 145, PCB 148, PCB 154, PCB 161, PCB 170, PCB 175, PCB 178, PCB 181, PCB 190, PCB 194, PCB 196, PCB 199, and PCB 200 were also outside method-specified QC limits for unqualified data in the 1.0 ng/mL calibration level. AMEC J qualified all detected solid results less than 0.05 ng/g and aqueous results less than 0.1 ng/L, which correspond to the lowest calibration level where ion abundance ratios for all analytes were within method-specified limits for unqualified data. AMEC adjusted these concentrations on a sample-specific basis to correct for varying sample weights, sample volumes, and dilution factors. AMEC also UJ qualified all nondetected results for the affected analytes because the technical ICAL criteria were not met, possibly indicating that the laboratory detection limits have been established at too low a level to allow unambiguous qualitative evaluation of constituent identification. (**J**/**UJ**-BC)
- TA eliminated the 2,000 ng/mL calibration point for PCB 3 because of a high ion abundance ratio. There were sufficient data points for an acceptable curve, and no PCB 3 detections were at concentrations greater than 4.0 ng/g, which corresponds to the highest valid calibration point for PCB 3. In AMEC's professional opinion, data usability is not adversely affected.

6.3 Calibration Verification

All compounds in the calibration verification standards met method-specified limits for unqualified data for percent difference (%D) and ion abundance ratios. It should be noted that standards data were not provided in SDGs J00364, J00367, and J00419, and AMEC was unable to check calibration verification standards for these SDGs.

6.4 Laboratory Blanks

Detections in the laboratory blanks associated with the analysis of these samples and results qualified because of those detections are summarized below. It should be noted that when the blank detection was an estimated maximum possible concentration (EMPC), AMEC only U qualified EMPC detections in the associated samples based on that blank detection. When the blank detection was not an EMPC, AMEC U qualified both EMPC data and non-EMPC data in the associated samples based on the blank detection.

Table 5a: Analyte Detections in the Laboratory Blank associated with Sample J18K87

Detected Analyte	Detected Concentration (ng/g)	U Qualify Detections Less Than: (5x Rule, corrected for the sample's 1:5 dilution) (ng/g)	U Qualified Results from Sample J18K87 (ng/g) (**U**-MB)

PCB 11	0.0024 EMPC	0.060 EMPC	0.011
PCB 61/70/74/76	0.0032 EMPC	0.080 EMPC	
PCB 66	0.0013 EMPC	0.032 EMPC	
PCB 118	0.0025 EMPC	0.062 EMPC	

Table 5b: Analyte Detections in the Laboratory Blank associated with Sample J18K69

Detected Analyte	**Detected Concentration (ng/g)**	**U Qualify Detections Less Than: (5x Rule, corrected for the sample's 1:40 dilution) (ng/g)**	**U Qualified Results from Sample J18K69 (ng/g) (U-MB)**
PCB 8	0.0010 EMPC	0.20 EMPC	0.023
PCB 11	0.0022 EMPC	0.44 EMPC	
PCB 20/28	0.0015	0.30	
PCB 21/33	0.00083 EMPC	0.17 EMPC	0.085
PCB 22	0.00061 EMPC	0.12 EMPC	
PCB 31	0.000758 EMPC	0.15 EMPC	
PCB 44/47/65	0.00063 EMPC	0.13 EMPC	
PCB 52	0.0012	0.24	
PCB 61/70/74/76	0.0018 EMPC	0.36 EMPC	
PCB 66	0.0010 EMPC	0.20 EMPC	
PCB 90/101/113	0.0018 EMPC	0.32 EMPC	
PCB 95	0.0012 EMPC	0.24 EMPC	
PCB 105	0.0015	0.30	
PCB 118	0.0022	0.44	
PCB 129/138/160/163	0.0035	0.70	
PCB 147/149	0.0015 EMPC	0.30 EMPC	
PCB 153/168	0.0031	0.62	
PCB 180/193	0.0012 EMPC	0.24 EMPC	

Table 5c: Analyte Detections in the Laboratory Blank associated with Samples J19276 and J19289

Detected Analyte	**Detected Concentration (ng/g)**	**U Qualify Detections Less Than: (5x Rule) (ng/g)**	**U Qualified Results (ng/g) (U-MB)**	
			Sample J19276 (1:5 dilution)	**Sample J19289 (1:38.5 dilution)**
PCB 4	0.0012 EMPC	0.060 EMPC	0.0039	
PCB 8	0.0027 EMPC	0.014 EMPC	0.0075	
PCB 11	0.017	0.085	0.0098	0.045
PCB 18/30	0.0022	0.011	0.0096	0.13
PCB 20/28	0.0036	0.018	0.26	0.67
PCB 21/33	0.0023	0.012	0.0098	
PCB 22	0.0010	0.0050	0.0064	0.038
PCB 31	0.0027	0.014		0.26
PCB 32	0.0011 EMPC	0.0055 EMPC	0.0026	
PCB 40/41/71	0.00083 EMPC	0.0042 EMPC	0.016	0.086
PCB 44/47/65	0.0030	0.0150		
PCB 52	0.0017 EMPC	0.0085 EMPC		
PCB 56	0.00074 EMPC	0.0037 EMPC		
PCB 61/70/74/76	0.0020 EMPC	0.010 EMPC		
PCB 64	0.00069 EMPC	0.0034 EMPC		
PCB 66	0.0011	0.0055		
PCB 90/101/113	0.0015 EMPC	0.0075 EMPC		
PCB 110/115	0.0018 EMPC	0.090 EMPC		
PCB 118	0.0015	0.0075		
PCB 129/138/160/163	0.0029 EMPC	0.014 EMPC		
PCB 147/149	0.0025	0.012		
PCB 153/168	0.0027 EMPC	0.014 EMPC		
PCB 170	0.00091 EMPC	0.0046 EMPC		
PCB 174	0.0015 EMPC	0.0075 EMPC		
PCB 180/193	0.0034	0.017		
PCB 187	0.0011 EMPC	0.0055 EMPC		
PCB 198/201	0.00086 EMPC	0.0043 EMPC		

Table 5d: Analyte Detections in the Laboratory Blank associated with Sample J19300

Detected Analyte	**Detected Concentration (ng/g)**	**U Qualify Detections Less Than: (5x Rule, corrected for the sample's 1:5 dilution) (ng/g)**	**U Qualified Results from Sample J19300 (ng/g) (U-MB)**
PCB 3	0.00066 EMPC	0.016 EMPC	
PCB 4	0.0015 EMPC	0.038 EMPC	
PCB 7	0.00090 EMPC	0.022 EMPC	
PCB 8	0.0022 EMPC	0.055 EMPC	0.0092
PCB 11	0.0046 EMPC	0.12 EMPC	0.013
PCB 15	0.00087 EMPC	0.022 EMPC	
PCB 17	0.0014	0.035	
PCB 20/28	0.0027 EMPC	0.068 EMPC	
PCB 21/33	0.0018	0.045	0.0085
PCB 31	0.0023	0.058	
PCB 32	0.0012	0.030	0.0079
PCB 44/47/65	0.0025	0.062	
PCB 52	0.0014 EMPC	0.035 EMPC	
PCB 61/70/74/76	0.0019 EMPC	0.048 EMPC	
PCB 90/101/113	0.00091 EMPC	0.023 EMPC	
PCB 110	0.0011 EMPC	0.028 EMPC	
PCB 118	0.0011	0.028	
PCB 129/138/160/163	0.0020 EMPC	0.050 EMPC	
PCB 147/149	0.0013 EMPC	0.032 EMPC	
PCB 153/168	0.0020	0.050	
PCB 180/193	0.0014 EMPC	0.035 EMPC	

Table 5e: Analyte Detections in the Laboratory Blank associated with Samples J19037 and J19464

Detected Analyte	**Detected Concentration (ng/g)**	**U Qualify Detections Less Than: (5x Rule) (ng/g)**	**U Qualified Results (ng/g) (U-MB)**	
			Sample J19037	**Sample J19464 (1:25 dilution)**
PCB 8	0.0021 EMPC	0.010 EMPC	0.0043	
PCB 11	0.0060 EMPC	0.030 EMPC	0.0064	
PCB 15	0.00080 EMPC	0.0040 EMPC		
PCB 18/30	0.0016	0.0080		0.096
PCB 20/28	0.0030	0.015		
PCB 21/33	0.0014	0.0070		0.027
PCB 22	0.0010	0.0050		0.067
PCB 31	0.0020	0.010		
PCB 44/47/65	0.0037	0.018		
PCB 52	0.0015 EMPC	0.0075 EMPC		
PCB 61/70/74/76	0.0014 EMPC	0.0070 EMPC		
PCB 66	0.00095 EMPC	0.0048 EMPC		
PCB 90/101/113	0.0023 EMPC	0.012 EMPC		
PCB 95	0.0010 EMPC	0.0050 EMPC		
PCB 110/115	0.0013	0.0065		
PCB 118	0.0012 EMPC	0.0060 EMPC		
PCB 129/138/160/163	0.0057	0.028		
PCB 141	0.0014	0.0070		
PCB 147/149	0.0043	0.022		
PCB 153/168	0.0045	0.022		
PCB 170	0.0024 EMPC	0.012 EMPC		
PCB 174	0.0024 EMPC	0.012 EMPC		
PCB 180/193	0.0062	0.031		
PCB 183/185	0.0010 EMPC	0.0050 EMPC		
PCB 187	0.0017 EMPC	0.0085 EMPC		
PCB 190	0.00079	0.0040		
PCB 194	0.0021	0.010		
PCB 198	0.0012	0.0060		

Table 5f: Analyte Detections in the Laboratory Blank associated with Samples J19075 and J190F3

Detected Analyte	**Detected Concentration (ng/g)**	**U Qualify Detections Less Than: (5x Rule, corrected for the samples' 1:5 dilutions) (ng/g)**	**U Qualified Results (ng/g) (U-MB)**	
			Sample J19075	**Sample J190F3**
PCB 8	0.0016 EMPC	0.040 EMPC	0.012	0.016
PCB 11	0.0036 EMPC	0.090 EMPC	0.014	0.021
PCB 15	0.00083 EMPC	0.021 EMPC		
PCB 17	0.00092 EMPC	0.023 EMPC	0.0092	
PCB 18/30	0.0018	0.045	0.026	
PCB 20/28	0.0020 EMPC	0.050 EMPC		
PCB 21/33	0.0011 EMPC	0.028 EMPC		
PCB 22	0.00072 EMPC	0.018 EMPC		
PCB 31	0.0020 EMPC	0.050 EMPC		
PCB 32	0.0010	0.025		0.016
PCB 37	0.00084 EMPC	0.021 EMPC	0.0088	
PCB 44/47/65	0.0021	0.052		
PCB 52	0.0013 EMPC	0.032 EMPC		
PCB 61/70/74/76	0.0019	0.048		
PCB 64	0.00072	0.018		
PCB 66	0.00098 EMPC	0.024 EMPC		
PCB 90/101/113	0.0011 EMPC	0.028 EMPC		
PCB 129/138/160/163	0.0022 EMPC	0.055 EMPC		
PCB 153/168	0.0018 EMPC	0.045 EMPC		
PCB 180/193	0.0018	0.045		

Table 5g: Analyte Detections in the Laboratory Blank associated with Sample J194C5

Detected Analyte	**Detected Concentration (ng/g)**	**U Qualify Detections Less Than: (5x Rule, corrected for the sample's 1:10 dilution) (ng/g)**	**U Qualified Results from Sample J194C5 (ng/g) (U-MB)**
PCB 4	0.00074 EMPC	0.0037 EMPC	
PCB 8	0.0011 EMPC	0.055 EMPC	0.028
PCB 11	0.0026	0.13	0.024
PCB 18/30	0.00081 EMPC	0.040 EMPC	
PCB 20/28	0.0014	0.070	
PCB 21/33	0.0010	0.050	0.031
PCB 31	0.0012 EMPC	0.060 EMPC	
PCB 44/47/65	0.0012 EMPC	0.060 EMPC	
PCB 52	0.00064 EMPC	0.032 EMPC	
PCB 61/70/74/76	0.0010 EMPC	0.050 EMPC	
PCB 66	0.00085	0.042	
PCB 129/138/160/163	0.00080 EMPC	0.040 EMPC	
0.0037PCB 153/168	0.00066 EMPC	0.033 EMPC	

Table 5h: Analyte Detections in the Laboratory Blank associated with Sample J19625

Detected Analyte	**Detected Concentration (ng/g)**	**U Qualify Detections Less Than: (5x Rule, corrected for the sample's 1:5 dilution) (ng/g)**	**U Qualified Results from Sample J19625 (ng/g) (U-MB)**
PCB 4	0.0021 EMPC	0.010 EMPC	
PCB 6	0.0010 EMPC	0.025 EMPC	
PCB 7	0.00076 EMPC	0.019 EMPC	
PCB 8	0.0053 EMPC	0.13 EMPC	0.061
PCB 11	0.013 EMPC	0.32 EMPC	0.023
PCB 12/13	0.0012 EMPC	0.030 EMPC	
PCB 15	0.0018 EMPC	0.045 EMPC	0.0045
PCB 16	0.0042 EMPC	0.10 EMPC	
PCB 17	0.0049	0.12	
PCB 18/30	0.0075 EMPC	0.19 EMPC	
PCB 19	0.0020 EMPC	0.050 EMPC	
PCB 20/28	0.012	0.30	
PCB 21/33	0.0094	0.24	0.17
PCB 22	0.0053	0.13	
PCB 23	0.00049	0.012	
PCB 25	0.0012	0.030	0.016
PCB 26/29	0.0026	0.065	
PCB 31	0.0086	0.22	
PCB 32	0.0034 EMPC	0.085 EMPC	0.075
PCB 34	0.00043 EMPC	0.011 EMPC	0.0047
PCB 37	0.0023	0.058	0.016
PCB 38	0.00051 EMPC	0.013 EMPC	
PCB 39	0.00044 EMPC	0.011 EMPC	0.0051
PCB 40/41/71	0.0066	0.16	
PCB 42	0.0032	0.080	
PCB 44/47/65	0.0090	0.22	
PCB 45/51	0.0019 EMPC	0.048 EMPC	
PCB 48	0.0019 EMPC	0.048 EMPC	
PCB 49/69	0.0041	0.10	
PCB 50/53	0.0017	0.043	
PCB 52	0.0057	0.14	

Detected Analyte	Detected Concentration (ng/g)	U Qualify Detections Less Than: (5x Rule, corrected for the sample's 1:5 dilution) (ng/g)	U Qualified Results from Sample J19625 (ng/g) (U-MB)
PCB 56	0.0038 EMPC	0.095 EMPC	
PCB 59/62/75	0.0017 EMPC	0.043 EMPC	
PCB 60	0.0023	0.058	
PCB 61/70/74/76	0.0085	0.21	
PCB 64	0.0035	0.088	
PCB 66	0.0062	0.16	
PCB 77	0.00066	0.017	
PCB 84	0.0011 EMPC	0.028 EMPC	
PCB 86/87/97/109/119/125	0.0036	0.090	
PCB 90/101/113	0.0024 EMPC	0.060 EMPC	
PCB 95	0.0015 EMPC	0.038 EMPC	
PCB 105	0.0016 EMPC	0.040 EMPC	
PCB 110/115	0.0026	0.065	
PCB 118	0.0025	0.063	
PCB 128/166	0.00062	0.016	
PCB 129/138/160/163	0.0031	0.078	
PCB 147/149	0.0023	0.058	
PCB 153/168	0.0018	0.045	
PCB 180/193	0.0020	0.050	

Table 5i: Analyte Detections in the Laboratory Blank associated with Samples J18XD8, J19749, and J19750

Detected Analyte	**Detected Concentration (ng/g)**	**U Qualify Detections Less Than: (5x Rule) (ng/g)**	**U Qualified Results (ng/g) (U-MB)**		
			Sample J18XD8 (1:5 dilution)	**Sample J19749 (1:5 dilution)**	**Sample J19750 (1:38.5 dilution)**
PCB 8	0.0029 EMPC	0.014 EMPC	0.0071	0.012	0.034
PCB 11	0.0065 EMPC	0.032 EMPC	0.0073	0.015	
PCB 15	0.0013 EMPC	0.0065 EMPC			
PCB 18/30	0.0018 EMPC	0.0090 EMPC			
PCB 20/28	0.0032	0.016			1.2
PCB 21/33	0.0016	0.0080	0.025		0.14
PCB 22	0.00099 EMPC	0.0050 EMPC	0.018		
PCB 26/29	0.00048 EMPC	0.0024 EMPC			0.077
PCB 31	0.0021 EMPC	0.010 EMPC			
PCB 37	0.00074 EMPC	0.0037 EMPC	0.0044		
PCB 44/47/65	0.0023 EMPC	0.012 EMPC			
PCB 49/69	0.00073	0.0036			
PCB 52	0.0019	0.0095			
PCB 61/70/74/76	0.0021 EMPC	0.010 EMPC			
PCB 66	0.0012	0.0060			
PCB 118	0.0010 EMPC	0.0050 EMPC			
PCB 129/138/160/163	0.0032	0.016			
PCB 147/149	0.0020	0.010			
PCB 153/168	0.0023	0.012			
PCB 170	0.0016	0.0080			
PCB 180/193	0.0026 EMPC	0.013 EMPC			

Table 5j: Analyte Detections in the Laboratory Blank associated with Sample J19242

Detected Analyte	Detected Concentration (ng/g)	U Qualify Detections Less Than: (5x Rule, corrected for the sample's 1:5 dilution) (ng/g)	U Qualified Results from Sample J19242 (ng/g) (U-MB)
PCB 4	0.0010 EMPC	0.025 EMPC	0.0097
PCB 8	0.0025 EMPC	0.062 EMPC	0.021
PCB 9	0.00036 EMPC	0.0090 EMPC	
PCB 11	0.015 EMPC	0.38 EMPC	
PCB 15	0.00084 EMPC	0.021 EMPC	0.012
PCB 16	0.0020	0.050	0.038
PCB 17	0.0017	0.042	0.027
PCB 18/30	0.0025 EMPC	0.062 EMPC	
PCB 20/28	0.0054	0.14	
PCB 21/33	0.0033	0.082	
PCB 22	0.0020 EMPC	0.050 EMPC	
PCB 31	0.0035	0.088	
PCB 32	0.0019	0.048	0.022
PCB 37	0.0011 EMPC	0.028 EMPC	
PCB 40/41/71	0.0019	0.048	
PCB 42	0.00093	0.023	
PCB 44/47/65	0.0041	0.10	
PCB 45/51	0.00052 EMPC	0.013 EMPC	
PCB 48	0.00077 EMPC	0.019 EMPC	
PCB 49/69	0.0013 EMPC	0.032 EMPC	
PCB 52	0.0041	0.10	
PCB 56	0.0016	0.040	
PCB 60	0.00076	0.019	
PCB 61/70/74/76	0.0044	0.11	
PCB 64	0.0014	0.035	
PCB 66	0.0024	0.060	
PCB 77	0.0024	0.060	
PCB 81	0.0013	0.032	0.0065
PCB 83/99	0.0011 EMPC	0.028 EMPC	
PCB 86/87/97/109/119/125	0.0028 EMPC	0.070 EMPC	
PCB 90/101/113	0.0048	0.12	

Detected Analyte	**Detected Concentration (ng/g)**	**U Qualify Detections Less Than: (5x Rule, corrected for the sample's 1:5 dilution) (ng/g)**	**U Qualified Results from Sample J19242 (ng/g) (U-MB)**
PCB 95	0.0026 EMPC	0.065 EMPC	
PCB 105	0.0017	0.042	
PCB 110/115	0.0038	0.095	
PCB 114	0.00068 EMPC	0.017 EMPC	
PCB 118	0.0039	0.098	
PCB 123	0.0015	0.038	
PCB 126	0.0018 EMPC	0.045 EMPC	
PCB 129/138/160/163	0.0042 EMPC	0.10 EMPC	
PCB 132	0.0014	0.035	
PCB 135	0.0013 EMPC	0.032 EMPC	
PCB 136	0.00061 EMPC	0.015 EMPC	
PCB 147/149	0.0028	0.070	
PCB 153/168	0.0032	0.080	
PCB 156/157	0.0025 EMPC	0.062 EMPC	
PCB 167	0.0015 EMPC	0.038 EMPC	
PCB 169	0.0019	0.048	0.0067
PCB 170	0.00076	0.019	
PCB 174	0.00088 EMPC	0.022 EMPC	
PCB 177	0.00053	0.013	
PCB 180/193	0.0023	0.058	
PCB 187	0.00070 EMPC	0.018 EMPC	
PCB 189	0.0021	0.052	0.031

Table 5k: Analyte Detections in the Laboratory Blank associated with Samples J18WY1 and J196Y6

Detected Analyte	Detected Concentration (ng/g)	U Qualify Detections Less Than: (5x Rule) (ng/g)	U Qualified Results (ng/g) (U-MB)	
			Sample J18WY1 (1:5 dilution)	**Sample J196Y6 (1:38.5 dilution)**
PCB 6	0.0021 EMPC	0.010 EMPC	0.0058	
PCB 8	0.00081 EMPC	0.0040 EMPC		0.090
PCB 11	0.023 EMPC	0.12 EMPC	0.036	0.16
PCB 12/13	0.0021 EMPC	0.010 EMPC		
PCB 15	0.0044 EMPC	0.022 EMPC	0.0062	
PCB 17	0.0064	0.032	0.049	0.14
PCB 18/30	0.011 EMPC	0.055 EMPC		
PCB 20/28	0.023	0.12		2.1
PCB 21/33	0.015	0.075	0.15	0.53
PCB 22	0.011	0.055	0.12	0.54
PCB 25	0.0012	0.0060	0.023	0.091
PCB 26/29	0.0028 EMPC	0.014 EMPC		
PCB 31	0.017	0.085		1.4
PCB 37	0.0069 EMPC	0.034 EMPC	0.024	0.13
PCB 40/41/71	0.014	0.070		0.88
PCB 42	0.0064	0.032		0.81
PCB 44/47/65	0.023	0.12		2.9
PCB 45/51	0.0038	0.019	0.077	0.27
PCB 48	0.0050	0.025		0.55
PCB 49/69	0.0098	0.049		
PCB 52	0.017	0.085		
PCB 56	0.0068	0.034		0.77
PCB 59/62	0.0020	0.010		0.33
PCB 60	0.0046	0.023		0.66
PCB 61/70/74/76	0.031	0.16		5.7
PCB 64	0.0083	0.042		1.4
PCB 66	0.012 EMPC	0.060 EMPC		
PCB 83/99	0.012	0.060		
PCB 84	0.0077	0.038		1.1
PCB 85/116/117	0.0035 EMPC	0.018 EMPC		

Detected Analyte	Detected Concentration (ng/g)	U Qualify Detections Less Than: (5x Rule) (ng/g)	U Qualified Results (ng/g) (U-MB)	
			Sample J18WY1 (1:5 dilution)	Sample J196Y6 (1:38.5 dilution)
PCB 86/87/97/109/119/125	0.017	0.085		
PCB 90/101/113	0.035	0.18		
PCB 92	0.0036 EMPC	0.018 EMPC		
PCB 95	0.024	0.12		
PCB 105	0.0070	0.035		
PCB 110/115	0.030	0.15		
PCB 118	0.017	0.085		
PCB 128/166	0.0024 EMPC	0.012 EMPC		
PCB 129/138/160/163	0.040	0.20		
PCB 132	0.013 EMPC	0.065 EMPC		
PCB 135/151	0.019 EMPC	0.095 EMPC		
PCB 136	0.0062 EMPC	0.031 EMPC		0.72
PCB 141	0.0098 EMPC	0.049 EMPC		
PCB 146	0.0055 EMPC	0.028 EMPC		
PCB 147/149	0.042	0.21		
PCB 153/168	0.037	0.18		
PCB 156/157	0.0025	0.012		
PCB 158	0.0038	0.019		
PCB 170	0.0062 EMPC	0.031 EMPC		
PCB 174	0.0092 EMPC	0.046 EMPC		
PCB 176	0.0023	0.012		0.41
PCB 177	0.0059	0.030		
PCB 178	0.0026 EMPC	0.013 EMPC		
PCB 179	0.0057 EMPC	0.028 EMPC		
PCB 180/193	0.018	0.090		
PCB 183/185/193	0.0073 EMPC	0.036 EMPC		
PCB 187	0.014	0.070		
PCB 194	0.0015 EMPC	0.0075 EMPC		
PCB 198/201	0.0028	0.014		
PCB 203	0.0023	0.012		

Table 5l: Analyte Detections in the Laboratory Blank associated with Samples J19227 and J191T2

Detected Analyte	**Detected Concentration (ng/g)**	**U Qualify Detections Less Than: (5x Rule, corrected for samples' 1:5 dilutions) (ng/g)**	**U Qualified Results (ng/g) (U-MB)**	
			Sample J19227	**Sample J191T2**
PCB 1	0.0017 EMPC	0.042 EMPC		
PCB 4	0.0019 EMPC	0.048 EMPC	0.013	0.011
PCB 6	0.0016 EMPC	0.040 EMPC	0.0050	0.0092
PCB 8	0.0075 EMPC	0.19 EMPC	0.032	0.026
PCB 9	0.00066 EMPC	0.016 EMPC		
PCB 11	0.014 EMPC	0.35 EMPC	0.032	0.030
PCB 15	0.0026 EMPC	0.065 EMPC	0.0071	0.0068
PCB 16	0.0063 EMPC	0.16 EMPC		
PCB 17	0.0058 EMPC	0.14 EMPC		0.052
PCB 18/30	0.011	0.28	0.13	0.11
PCB 20/28	0.012	0.30		
PCB 21/33	0.010	0.25	0.20	0.15
PCB 22	0.0062	0.16		
PCB 25	0.0012	0.030	0.026	0.021
PCB 26/29	0.0020	0.050		
PCB 31	0.0095	0.24		
PCB 32	0.0049	0.12	0.038	
PCB 37	0.0025	0.062	0.034	0.050
PCB 40/41/71	0.0077	0.19		
PCB 42	0.0033	0.082		
PCB 44/47/65	0.0099	0.25		
PCB 45/51	0.0019 EMPC	0.048 EMPC		
PCB 48	0.0030 EMPC	0.075 EMPC		
PCB 49/69	0.0043	0.11		
PCB 52	0.0087	0.22		
PCB 56	0.0053	0.13		
PCB 60	0.0031	0.078		
PCB 61/70/74/76	0.011	0.28		
PCB 64	0.0043 EMPC	0.11 EMPC		
PCB 66	0.0071 EMPC	0.18 EMPC		

Detected Analyte	Detected Concentration (ng/g)	U Qualify Detections Less Than: (5x Rule, corrected for samples' 1:5 dilutions) (ng/g)	U Qualified Results (ng/g) (U-MB)	
			Sample J19227	Sample J191T2
PCB 83/99	0.0037	0.092		
PCB 85/116/117	0.0011 EMPC	0.028 EMPC		
PCB 86/87/97/109/119/125	0.0045 EMPC	0.11 EMPC		
PCB 90/101/113	0.0061	0.15		
PCB 95	0.0057	0.14		
PCB 105	0.0024 EMPC	0.060 EMPC		
PCB 110/115	0.0081	0.20		
PCB 118	0.0040 EMPC	0.10 EMPC		
PCB 128/166	0.00082 EMPC	0.020 EMPC		
PCB 129/138/160/163	0.0045 EMPC	0.11 EMPC		
PCB 132	0.0020	0.050		
PCB 147/149	0.0033	0.082		
PCB 153/168	0.0031	0.078		
PCB 180/193	0.0019 EMPC	0.048 EMPC		

Table 5m: Analyte Detections in the Laboratory Blank associated with Samples J17T02 and J17RY8

Detected Analyte	Detected Concentration (ng/L)	U Qualify Detections Less Than: (5x Rule) (ng/L)	U Qualified Results (ng/L) (U-MB)	
			Sample J17T02	Sample J17RY8
PCB 4	0.0010 EMPC	0.0050 EMPC	0.0019	0.0028
PCB 8	0.0032 EMPC	0.016 EMPC	0.0045	0.0049
PCB 11	0.0068 EMPC	0.034 EMPC	0.014	0.011
PCB 15	0.0011 EMPC	0.0055 EMPC	0.0021	0.0019
PCB 17	0.0017 EMPC	0.0085 EMPC	0.0017	
PCB 18/30	0.0019 EMPC	0.0095 EMPC		0.0048
PCB 20/28	0.0034 EMPC	0.017 EMPC		
PCB 21/33	0.0022	0.011	0.0035	0.0038
PCB 22	0.0015	0.0075	0.0018	0.0023
PCB 26/29	0.00057	0.0028		
PCB 31	0.0033	0.016	0.0052	0.0047
PCB 40/41/71	0.0011	0.0055 EMPC		
PCB 44/47/65	0.0076	0.038	0.0098	0.0098
PCB 49/69	0.00099 EMPC	0.0050 EMPC	0.0019	0.0019
PCB 52	0.0029	0.014	0.0040	0.0052
PCB 61/70/74/76	0.0028	0.014	0.0046	0.0055
PCB 64	0.0011 EMPC	0.0055 EMPC		0.0017
PCB 66	0.0015	0.0075	0.0026	0.0028
PCB 68	0.00081 EMPC	0.0040 EMPC		
PCB 110/115	0.0018	0.0090	0.0038	0.0036
PCB 118	0.0013	0.0065	0.0022	0.0039
PCB 129/138/160/163	0.0019 EMPC	0.0095 EMPC		0.0043
PCB 147/149	0.0016	0.0080	0.0033	0.0035
PCB 153/168	0.0016	0.0080	0.0022	0.0037
PCB 180/193	0.0017	0.0085	0.0017	0.0037

Table 5n: Analyte Detections in the Laboratory Blank associated with Samples J18689 and J18694

Detected Analyte	**Detected Concentration (ng/g)**	**U Qualify Detections Less Than: (5x Rule) (ng/g)**	**U Qualified Results (ng/g) (U-MB)**	
			Sample J18689	**Sample J18694**
PCB 8	0.0011 EMPC	0.0055 EMPC	0.0013	
PCB 11	0.0029 EMPC	0.014 EMPC	0.0020	0.0096
PCB 15	0.00044 EMPC	0.0022 EMPC		
PCB 17	0.00087	0.0044		
PCB 18/30	0.00094 EMPC	0.0047 EMPC		
PCB 20/28	0.0020	0.010	0.0017	
PCB 21/33	0.0011 EMPC	0.0055 EMPC	0.00081	
PCB 31	0.0011 EMPC	0.0055 EMPC		
PCB 32	0.0012	0.0060		
PCB 40/41/71	0.00041 EMPC	0.0020 EMPC		
PCB 44/47/65	0.0011 EMPC	0.0055 EMPC		
PCB 49/69	0.00052 EMPC	0.0026 EMPC	0.00071	
PCB 52	0.00096 EMPC	0.0048 EMPC	0.0019	
PCB 56	0.00044 EMPC	0.0022 EMPC		
PCB 61/70/74/76	0.00095	0.0048	0.0036	
PCB 66	0.00070 EMPC	0.0035 EMPC		
PCB 86/87/97/109/119/125	0.00044 EMPC	0.0022 EMPC		
PCB 129/138/160/163	0.00096 EMPC	0.0048 EMPC		
PCB 147/149	0.0010 EMPC	0.0050 EMPC		
PCB 180/193	0.00066 EMPC	0.0033 EMPC		

Table 5o: Analyte Detections in the Laboratory Blank associated with Samples J17W23 and J18692

Detected Analyte	Detected Concentration (ng/g)	U Qualify Detections Less Than: (5x Rule) (ng/g)	U Qualified Results (ng/g) (U-MB)	
			Sample J17W23	Sample J18692
PCB 11	0.0058 EMPC	0.029 EMPC	0.0054	0.0051
PCB 20/28	0.0024	0.012		0.0027
PCB 21/33	0.0014	0.0070	0.0024	0.0010
PCB 31	0.0016	0.0080	0.0023	0.0021
PCB 44/47/65	0.0015 EMPC	0.0075 EMPC		
PCB 61/70/74/76	0.0014	0.0070	0.0022	
PCB 66	0.00092	0.0046		
PCB 129/138/160/163	0.0014	0.0070		

Table 5p: Analyte Detections in the Laboratory Blank associated with Samples J18HW9 and J18HW7

Detected Analyte	Detected Concentration (ng/g)	U Qualify Detections Less Than: (5x Rule) (ng/g)	U Qualified Results (ng/g) (U-MB)	
			Sample J18HW9	Sample J18HW7
PCB 8	0.0011 EMPC	0.0055 EMPC	0.0026	0.0012
PCB 11	0.0036 EMPC	0.018 EMPC	0.0026	0.0050
PCB 18/30	0.0013	0.0065		0.0012
PCB 20/28	0.0015	0.0075	0.0013	0.0018
PCB 21/33	0.00080 EMPC	0.0040 EMPC		0.00097
PCB 44/47/65	0.0022	0.011	0.0020	0.0041
PCB 49/69	0.00048 EMPC	0.0024 EMPC		0.00084
PCB 52	0.00075 EMPC	0.0038 EMPC	0.0014	0.0014
PCB 61/70/74/76	0.00090	0.0045	0.0015	0.0022

6.5 Recovery of C-13 Labeled Isotope Dilution Standards Used as Internal Standards

EPA Method 1668A uses an isotope dilution procedure for calculation of analyte concentrations. A total of 39 carbon labeled PCB isomers are added to the sample or extract to monitor different aspects of the procedure, with 27 used as ISs for calculation of analytical results. IS recovery problems affect all analytical results that are calculated using the affected IS, not just the corresponding non-labeled isomer.

Recovery and performance of carbon labeled isotope dilution standards, used as ISs in field and QC samples, outside the method-specified limits for unqualified data are summarized below:

- Recoveries of the IS $^{13}C_{12}$-PCB 3 were extremely low in samples J18K87 (2.8%), J19037 (4.2%), J19276 (8.9%), J19289 (5.8%), and J19464 (5.0%). AMEC R qualified and rejected the nondetected PCB 3 results from these samples because of possible low bias in the analytical results. (**R**-LI)
- IS recoveries were low, ranging between 4.1% and 9.4%, in the ongoing precision and recovery (OPR) sample associated with the analysis of sample J19300. Target analyte recoveries were acceptable, and the low IS recoveries were isolated to the OPR. In AMEC's professional opinion, data usability is not adversely affected.

6.6 Labeled Injection Internal Standards

The LIISs $^{13}C_{12}$-PCB 9, $^{13}C_{12}$-PCB 31, $^{13}C_{12}$-PCB 32, $^{13}C_{12}$-PCB 52, $^{13}C_{12}$-PCB 101, $^{13}C_{12}$-PCB 127, $^{13}C_{12}$-PCB 138, $^{13}C_{12}$-PCB 180, and $^{13}C_{12}$-PCB 194 are added to sample extracts and standards before injection into the gas chromatograph/mass spectrometer (GC/MS). The LIISs are used to determine the recovery efficiency of the extraction and cleanup procedures, to determine if the GC/MS sensitivity and response are stable during the analytical run, and to determine if the same amount of extract was injected into the GC/MS (EPA, 1995).

LIIS area counts in the field samples outside the EPA Region 10 specifications, of 25% to 200% of initial area counts, for unqualified data are summarized below:

- Recoveries of the LIISs $^{13}C_{12}$-PCB 9 (24%), $^{13}C_{12}$-PCB 31 (16%), $^{13}C_{12}$-PCB 52 (19%), $^{13}C_{12}$-PCB 101 (24%), $^{13}C_{12}$-PCB 127 (16%), $^{13}C_{12}$-PCB 138 (18%), $^{13}C_{12}$-PCB 180 (20%), and $^{13}C_{12}$-PCB 194 (20%) were low in sample J18K87. AMEC J qualified all detected analytes and UJ qualified all nondetected analytes in this sample because of possible bias in the analytical results. (**J**/**UJ**-AS)
- Recoveries of the LIISs $^{13}C_{12}$-PCB 31 (22%), $^{13}C_{12}$-PCB 127 (22%), $^{13}C_{12}$-PCB 138 (24%), and $^{13}C_{12}$-PCB 194 (22%) were low in sample J19289. AMEC J qualified all detected analytes and UJ qualified all nondetected analytes in this sample because of possible bias in the analytical results. (**J**/**UJ**-AS)

- Recovery of the LIIS $^{13}C_{12}$-PCB 194 was low at 19% in sample J190F3. AMEC J qualified detected results and UJ qualified nondetected results for the heptachlorobiphenyls (PCB 170 to PCB 193), octachlorobiphenyls (PCB 194 to PCB 205), nonachlorobiphenyls (PCB 206 to PCB 208), and decachlorobiphenyl (PCB 209) in this sample because of possible bias in the analytical results. (**J**/**UJ**-AS)
- Recovery of the LIIS $^{13}C_{12}$-PCB 194 was low at 23% in sample J194C5. AMEC J qualified detected results and UJ qualified nondetected results for the heptachlorobiphenyls, octachlorobiphenyls, nonachlorobiphenyls, and decachlorobiphenyl in this sample because of possible bias in the analytical results. (**J**/**UJ**-AS)
- Recoveries of the LIISs $^{13}C_{12}$-PCB 101 and $^{13}C_{12}$-PCB 180 were low at 24% and 22%, respectively, in sample J19750. Specific limitations are summarized below:
    - $^{13}C_{12}$-PCB 101 is used to quantify $^{13}C_{12}$-PCB 104 only. $^{13}C_{12}$-PCB 104 is used to calculate pentachlorobiphenyls (PCB 82 to PCB 127), but AMEC chose to UJ qualify the nondetected PCB 104 result only. There are four other ISs used to quantify pentachlorobiphenyls, and in AMEC's professional opinion, data usability is not adversely affected. (**UJ**-AS)
    - AMEC J qualified the detected heptachlorobiphenyls and UJ qualified the nondetected heptachlorobiphenyls because of possible bias in the analytical results. (**J**/**UJ**-AS)
- Recoveries of the LIISs $^{13}C_{12}$-PCB 31 (24%), $^{13}C_{12}$-PCB 127 (21%), and $^{13}C_{12}$-PCB 194 (24%) were low in sample J18WY1. AMEC J qualified detected results and UJ qualified nondetected results for trichlorobiphenyls (PCB 16 to PCB 39), pentachlorobiphenyls, heptachlorobiphenyls, octachlorobiphenyls, nonachlorobiphenyls, and decachlorobiphenyl in this sample because of possible bias in the analytical results. (**J**/**UJ**-AS)
- Recoveries of the LIISs $^{13}C_{12}$-PCB 31 (22%), $^{13}C_{12}$-PCB 127 (23%), and $^{13}C_{12}$-PCB 138 (24%) were low in sample J17W23. AMEC J qualified detected results and UJ qualified nondetected results for trichlorobiphenyls, pentachlorobiphenyls, and hexachlorobiphenyls (PCB 128 to PCB 169) in this sample because of possible bias in the analytical results.

6.7 Surrogate Recovery

TA includes additional labeled isomers beyond those used as internal standards in the spiking solution added to samples and the additional isomers can be used in a manner analogous to surrogate compounds in order to monitor extraction and cleanup efficiency. Qualification of data based on recovery of these isomers is more straightforward than qualification based on internal standards. When recovery of one of these isomers falls outside QC limits, only the result from the corresponding non-labeled isomer is qualified.

Cleanup standard recoveries were within the method-specified 30% to 135% QC limits for unqualified data in all field samples.

6.8 Ongoing Precision and Recovery Samples

Analyte recoveries in the PCB OPR samples associated with these samples were within SAP-specified 50% to 150% limits for unqualified data.

6.9 Data Reporting

TA applied a number of qualifiers to data from the PCB analyses in order to describe analytical issues. Definitions of these laboratory qualifiers, resulting validation qualifiers, and a discussion of effect on data usability are presented below.

- TA B qualified data when the associated analytes were detected in the method blank. AMEC did not U qualify data based on TA' B qualifiers unless the analyte concentrations in the sample were less than 5 times the concentration detected in the blank.
- TA C qualified data when there was evidence of coelution. AMEC grouped coeluting congeners together for reporting purposes.
- TA J qualified data when the detected analyte concentration was less than the instrument's lowest calibration level. All of TA' J qualifiers are appropriate and have been applied to the final data. (**J**-DL)
- TA S qualified the detected PCB 6 and PCB 8 results from sample J19227 and the PCB 8 result from sample J191T2 because of ion suppression due to matrix interference. AMEC J qualified these results because of possibly low analytical bias. (**J**-MI)
- TA Q qualified data when a peak was detected and the ion abundance ratio did not meet method-specified acceptance criteria. AMEC U qualified all of TA' Q qualified results, unless previously U qualified because of analyte detections in the associated laboratory blank (Section 6.4), because the peaks did not meet the method-specified identification criteria. According to Section 16.6 of EPA Method 1668B (EPA, 2008):

  > ***"if the criteria for identification in Sections 16.1 - 16.5*** (signals for the two method-specified mass/charge ratios must be present and maximize within the same two scans, the signal to noise ratio must be greater than or equal to 2.5,

> the ratio of the integrated areas of the two mass/charge ratios must be within method-specified limits, relative retention times must be within method-specified limits, and an experienced spectrometrist must determine the absence or presence of the congener when identification is ambiguous) ***are not met, the PCB has not been identified and the result for that congener may not be reported or used for permitting or regulatory compliance purposes***."

Data that do not meet these mandatory identification criteria have been flagged with a **U**-EM qualifier to indicate that the congener is to be considered nondetected at the defined concentration. A summary of TA's EMPC PCB data is presented below in Table 5.

Table 6: EMPC PCB Data

Analytes	J19037	J19075	J19227	J19242	J19276	J19289	J19300
PCB 4	0.0033	0.0043	0.013	0.0097	0.0039		
PCB 6	0.0013	0.0037	0.0050	0.0069			
PCB 8	0.0043	0.012	0.032	0.021	0.0075		0.0092
PCB 10				0.0044			
PCB 11	0.0064	0.014	0.032		0.0098	0.045	0.013
PCB 15			0.0071	0.012			
PCB 16	0.0033						
PCB 17		0.0092		0.027			
PCB 21/33							0.0085
PCB 22							0.014
PCB 25	0.0015	0.0039		0.025			
PCB 26/29	0.0060						
PCB 27			0.0085				
PCB 31						0.26	
PCB 32	0.0020				0.0026		
PCB 37	0.0051	0.0088			0.0042		
PCB 39			0.0030				
PCB 40/41/71						0.086	
PCB 43						0.040	0.016
PCB 45/51			0.085				
PCB 46				0.0097			
PCB 48	0.021				0.0080		
PCB 50/53				0.045			

Analytes	J19037	J19075	J19227	J19242	J19276	J19289	J19300
PCB 55	0.015		0.038	0.036	0.019		0.025
PCB 56							0.0067
PCB 57				0.0046			
PCB 58			0.0047				
PCB 67			0.023				
PCB 68				0.014			
PCB 72			0.022				
PCB 77					0.0054		0.0037
PCB 79	0.016		0.037	0.035			0.0043
PCB 80							0.0040
PCB 81	0.0012		0.0094	0.0065			
PCB 82					0.020		
PCB 84						0.47	
PCB 86/87/97/109/119/125				2.5			
PCB 89		0.024					
PCB 93/100	0.0088	0.026	0.030	0.017			
PCB 98/102							0.018
PCB 106				0.018			
PCB 107			0.50				
PCB 108/124						0.081	0.025
PCB 111		0.0087	0.0087	0.0073			
PCB 114						0.43	
PCB 120	0.0056	0.0093			0.022		
PCB 122		0.12	0.097	0.046		0.075	
PCB 123					0.045	0.067	
PCB 126			0.077		0.12	0.17	0.14
PCB 127	0.0036	0.021	0.027	0.0066	0.031		
PCB 131							0.012
PCB 134/143					0.057		
PCB 135/151		1.4					
PCB 144						0.37	
PCB 148					0.013		
PCB 154	0.022	0.039	0.081				0.12
PCB 159			0.018	0.018	0.020		0.012

Analytes	J19037	J19075	J19227	J19242	J19276	J19289	J19300
PCB 162				0.028	0.12	0.063	0.069
PCB 167							0.037
PCB 169				0.0067	0.020	0.049	0.041
PCB 175	0.0063	0.017				0.10	
PCB 176					0.023		
PCB 181					0.045		
PCB 184					0.0084		
PCB 189	0.0095					0.086	
PCB 191		0.027				0.12	0.12
PCB 195						0.27	
PCB 196						0.43	
PCB 197	0.0018		0.014		0.036		
PCB 198/201		0.089					
PCB 199		0.0066			0.0093		0.024
PCB 200						0.10	0.099
PCB 206	0.014	0.021				0.21	
PCB 207				0.021			
PCB 208	0.0041	0.0080					
PCB 209	0.0052					0.041	0.054

Analytes	J19464	J19625	J19749	J19750	J18K69	J18K87	J18WY1
PCB 4		0.017					0.0099
PCB 6							0.0058
PCB 8		0.061	0.012	0.034	0.023	0.010	0.025
PCB 9		0.0036					
PCB 11		0.023	0.015			0.011	0.036
PCB 12/13						0.0067	
PCB 15		0.0045				0.0068	0.0062
PCB 16							0.035
PCB 17		0.16	0.014		0.071		
PCB 18/30		0.31			0.074	0.014	
PCB 21/33	0.027			0.14	0.085		
PCB 25		0.016		0.018			
PCB 26/29	0.028			0.077			

Analytes	J19464	J19625	J19749	J19750	J18K69	J18K87	J18WY1
PCB 27							0.0099
PCB 32		0.075					
PCB 34		0.0047					
PCB 37		0.016					0.024
PCB 39		0.0051					
PCB 40/41/71						0.018	
PCB 42						0.013	
PCB 43	0.042		0.051				
PCB 50/53			0.041		0.073		
PCB 55	0.0046	0.017	0.063		0.14	0.045	0.14
PCB 56	0.017						
PCB 57		0.0062					0.012
PCB 58							0.010
PCB 59/62/75				0.11			
PCB 63						0.0095	
PCB 64						0.14	
PCB 67		0.0097					0.025
PCB 68	0.041		0.011				
PCB 72	0.032	0.015	0.021		0.040		
PCB 77	0.018						0.10
PCB 79	0.023	0.034		0.47	0.082	0.0059	0.069
PCB 81			0.014				0.019
PCB 82	0.075					0.026	
PCB 84						0.038	
PCB 88/91					1.9		
PCB 93/100		0.024	0.071				0.083
PCB 98/102	0.11	0.086		0.32	0.20		
PCB 103			0.049				
PCB 107			1.5				
PCB 111							0.010
PCB 114						0.15	
PCB 120	0.036		0.032		0.095		
PCB 122				0.69	0.17		
PCB 123	0.15	0.054	0.36		0.39	0.12	

Analytes	J19464	J19625	J19749	J19750	J18K69	J18K87	J18WY1
PCB 126	0.14	0.037		0.86	0.070	0.074	
PCB 127				0.14	0.082		0.032
PCB 130						0.083	
PCB 131				0.59	0.18		
PCB 133						0.068	
PCB 134/143						0.092	0.53
PCB 137					3.5		
PCB 139/140	0.29			1.8			
PCB 144					1.2		
PCB 154				0.75			0.15
PCB 159		0.0079	0.038	0.12			
PCB 162		0.022		0.33			0.075
PCB 169			0.023		0.090		0.020
PCB 172		0.080					
PCB 175		0.025					
PCB 181	0.031		0.046		0.15		0.033
PCB 182	0.025						
PCB 184	0.017						0.011
PCB 189	0.079						0.070
PCB 191		0.024					
PCB 196				0.77			
PCB 197				0.055			
PCB 199	0.014		0.037		0.25	0.012	
PCB 200							0.12
PCB 205	0.042				0.24		
PCB 207		0.0099			0.14		0.039
PCB 208	0.067	0.051					
PCB 209					0.17	0.023	

Analytes	J18XD8	J190F3	J191T2	J194C5	J196Y6	J17T02	J17RY8
PCB 1						0.00056	
PCB 4		0.0075	0.011			0.0019	0.0028
PCB 6		0.0064	0.0092				

Analytes	**J18XD8**	**J190F3**	**J191T2**	**J194C5**	**J196Y6**	**J17T02**	**J17RY8**
PCB 8	0.0071	0.016	0.026	0.028	0.090	0.0045	0.0049
PCB 11	0.0073	0.021	0.030	0.024	0.016	0.014	0.011
PCB 15			0.0068			0.0021	0.0019
PCB 16		0.016			0.14		
PCB 17			0.052		0.14	0.0017	
PCB 18/30							0.0048
PCB 21/33				0.031			
PCB 22	0.018					0.0018	
PCB 25					0.091		
PCB 26/29				0.028			
PCB 27				0.011			
PCB 32		0.016	0.018				
PCB 37	0.0044			0.018	0.13		
PCB 39		0.0050					
PCB 43		0.13	0.016		0.16		
PCB 44/47/65						0.0098	
PCB 45/51	0.011				0.27		
PCB 48	0.029			0.095			
PCB 49/69						0.0019	0.0019
PCB 52						0.0040	
PCB 55		0.12	0.10	0.058			
PCB 56						0.00083	
PCB 58		0.012					
PCB 59/62/75		0.087					
PCB 61/70/74/76						0.0046	0.0055
PCB 63					0.16		
PCB 64							0.0017
PCB 66						0.0026	
PCB 67	0.0073		0.028				
PCB 72		0.041					
PCB 77					0.20		
PCB 79			0.030		0.083		
PCB 80		0.0091					
PCB 81		0.011					

Analytes	J18XD8	J190F3	J191T2	J194C5	J196Y6	J17T02	J17RY8
PCB 82				0.085			
PCB 83/99						0.0017	
PCB 86/87/97/109/119/125					6.0		
PCB 88/91					0.89		
PCB 90/101/113						0.0029	0.0038
PCB 93/100			0.014	0.043			
PCB 98/102	0.019				0.13		
PCB 103		0.064					
PCB 105						0.00076	
PCB 107					1.0		
PCB 110/115						0.0038	0.0036
PCB 111				0.012			
PCB 118						0.0022	
PCB 120			0.020		0.052		
PCB 122	0.052		0.090	0.042	0.12		
PCB 123					0.16		
PCB 126	0.027		0.064	0.16	0.22		
PCB 127			0.0085				
PCB 129/138/160/163							0.0043
PCB 131	0.032			0.10			
PCB 136					0.72		
PCB 139/140	0.064				0.33		
PCB 148				0.026			
PCB 153/168						0.0022	
PCB 154			0.050	0.19			
PCB 159	0.014	0.041		0.027			
PCB 162				0.039	0.081		
PCB 169				0.019			
PCB 170							0.0017
PCB 172					0.72		
PCB 174							0.0011
PCB 175	0.014				0.14		
PCB 179							0.00099
PCB 180/193						0.0017	

Analytes	J18XD8	J190F3	J191T2	J194C5	J196Y6	J17T02	J17RY8
PCB 184			0.0060				
PCB 187							0.0096
PCB 189			0.020				
PCB 196			0.092				
PCB 197		0.012		0.029	0.099		
PCB 198/201					2.1		
PCB 199					0.15		
PCB 202	0.039						
PCB 205					0.098		
PCB 207		0.010			0.073		
PCB 208				0.083			
PCB 209	0.0084	0.018	0.021				

Analytes	J18689	J18694	J17W23	J18692	J18HW9	J18HW7
PCB 5		0.00055				
PCB 6		0.0034			0.00045	
PCB 7		0.00073			0.00064	0.00034
PCB 8	0.0013		0.0028	0.0016	0.00077	0.0012
PCB 9		0.0010				
PCB 11	0.0020	0.0096	0.0054	0.0051	0.0026	0.0050
PCB 12/13	0.00062	0.0017				
PCB 15		0.0081	0.0037	0.0017	0.00051	
PCB 18/30						0.0012
PCB 20/28	0.0017			0.0027	0.0013	0.0018
PCB 21/33	0.00081					0.00097
PCB 22					0.00059	0.00091
PCB 27		0.0011				
PCB 31					0.0011	
PCB 32				0.00062		
PCB 37	0.00076					
PCB 40/41/71				0.00040		
PCB 43		0.0012				
PCB 44/47/65					0.0020	

Analytes	**J18689**	**J18694**	**J17W23**	**J18692**	**J18HW9**	**J18HW7**
PCB 46		0.0017				
PCB 48		0.0059		0.00052		
PCB 49/69	0.00071					0.00084
PCB 52	0.0019		0.0013	0.0039	0.0014	0.0014
PCB 55		0.0014				
PCB 56				0.0021		0.00072
PCB 60				0.0013		
PCB 61/70/74/76	0.0036		0.0022		0.0015	
PCB 64						0.00060
PCB 66						0.00091
PCB 67		0.00078				
PCB 77				0.0015		
PCB 83/99		0.094				0.0010
PCB 85/116/117	0.0024			0.0039		
PCB 86/87/97/109/119/125	0.0072					
PCB 90/101/113	0.012				0.0011	0.0018
PCB 92	0.0025	0.030				
PCB 95						0.0010
PCB 98/102		0.0042				
PCB 105					0.00067	0.0013
PCB 107				0.0022		
PCB 108/124				0.0013		
PCB 110/115	0.014				0.0020	0.0023
PCB 114		0.0046				
PCB 118	0.020					0.0028
PCB 122		0.0040				
PCB 123	0.00032					
PCB 128/166						0.00081
PCB 129/138/160/163					0.0047	0.0044
PCB 130				0.0028		
PCB 132	0.0035					0.0015
PCB 134/143				0.0013		
PCB 135/151	0.0034			0.0059		0.0010
PCB 136						0.00029

Analytes	J18689	J18694	J17W23	J18692	J18HW9	J18HW7
PCB 137	0.0012			0.0019		
PCB 144		0.0063				
PCB 146	0.0021					0.00071
PCB 147/149					0.0039	
PCB 153/168						0.0047
PCB 156/157	0.0030				0.00036	
PCB 158	0.0022					
PCB 164				0.0026		
PCB 170	0.0017				0.0019	
PCB 171/173				0.0022		
PCB 172		0.0038				
PCB 174				0.0043		0.0019
PCB 176		0.0029				
PCB 177				0.0031	0.0012	
PCB 178		0.00478				
PCB 179		0.012		0.0016	0.00095	
PCB 180/193					0.0041	0.0046
PCB 183/185				0.0020		
PCB 187				0.0059		
PCB 189		0.00062				
PCB 190				0.0019		
PCB 194		0.012			0.0019	
PCB 199		0.0023				
PCB 200		0.0017				
PCB 203				0.0018	0.0016	0.0013
PCB 206		0.0039		0.0012	0.0014	
PCB 207		0.00085				
PCB 208				0.00078		
PCB 209		0.0015		0.0012		0.0023

7.0 INORGANIC ARSENIC BY EPA SW-846 METHOD 1632A

The inorganic arsenic data from these samples may be considered usable with the limitations and exceptions described in Sections 7.1 through 7.7. AMEC did not validate the organic arsenic results associated with these samples because the laboratory was only contracted to analyze for inorganic arsenic. Organic species were included purely for the client's information. Qualifiers added to the data during inorganic arsenic validation are presented in Table 7, qualifier definitions are provided in Section 3.0, and qualification rationale abbreviations are provided in Section 4.0.

Table 7: Summary of Data Qualifiers for Inorganic Arsenic

Sample ID	Inorganic Arsenic
J196F7	**UJ**-IC
J196L9	**UJ**-IC
J196K2	**J**-IC
J19702	**J**-IC
J18WW4	**J**-IC
J19700	**J**-IC
J19692	**J**-IC
J196D0	**J**-IC
J196D1	**J**-IC
J19693	**J**-IC
J196D2	**J**-IC

7.1 Holding Times

The laboratory-specified holding time for tissue samples stored between 6 ºC and -18 ºC is 28 days. The method-specified holding time for tissue samples frozen below -18 ºC is 2 years. Tissue samples were received at the laboratory below 6 ºC and within 28 days from sample collection and were immediately frozen below -18 ºC upon laboratory receipt. In AMEC's professional opinion, the samples were frozen below -18 ºC within 28 days from sampling, and all samples were prepared within the method-specified holding time of 2 years; therefore, data usability is not adversely affected.

7.2 Laboratory Blanks

Inorganic arsenic was not detected in the laboratory blanks associated with the analysis of these samples.

7.3 Standard Reference Material

The laboratory was unable to find SRM for inorganic arsenic in tissue. Therefore, AMEC used the arsenobetaine and total arsenic SRM recoveries to monitor analytical batch accuracy and qualify data. Recoveries outside the laboratory-specified 75% to 125% guidance limits for fully usable data are described below.

The arsenobetaine (74%) and total arsenic (69%) recoveries were outside control limits in the SRM analysis associated with batch 121809-LCDRC. Specific limitations include the following:

- AMEC UJ qualified the nondetected inorganic arsenic results from samples J196F7 and J196L9 because of possible low analytical bias. (**UJ**-IC)
- AMEC J qualified the detected inorganic arsenic results from samples J196K2, J19702, J18WW4, J19700, J19692, J196D0, J196D1, J19693, and J196D2 because of possible low analytical bias. (**J**-IC)

7.4 Matrix Spikes

Matrix spike (MS) recoveries were within the method-specified 50% to 150% guidance limits and relative percent differences (RPDs) were less than the 35% guidance limit for fully usable data.

7.5 Duplicates

The RPDs between original analyses and laboratory duplicate analyses for inorganic arsenic were less than the method-specified 35% guidance limits for fully usable data.

7.6 LCS Recovery

There is no method-specified guidance limits for LCS recoveries. Therefore, AMEC compared laboratory control sample (LCS) recoveries to the method-specified 50% to150% guidance limits for ongoing precision and accuracy sample recoveries. All LCS recoveries associated with the inorganic arsenic analyses were within these guidance limits for fully usable data.

7.7 Data Reporting and Analytical Procedures

The laboratory reported results down to the MDL. The MDL is a statistically derived limit which is usually 3 to 5 times smaller than the method reporting limit (MRL) (the lowest calibration point). Results reported between the MDL and MRL are typically considered estimates. The laboratory did not provide the MRL in their data packages; therefore, AMEC could not evaluate the quality of data between the MDL and MRL.

8.0 HEXAVALENT CHROMIUM BY EPA SW-846 METHOD 6800

Hexavalent chromium data from these samples may be considered usable with the limitations and exceptions described in Sections 8.1 through 8.6. Qualifiers added to the data during hexavalent chromium validation are presented in Table 8, qualifier definitions are provided in Section 3.0, and qualification rationale abbreviations are provided in Section 4.0.

Table 8: Summary of Data Qualifiers for Hexavalent Chromium

Sample ID	Hexavalent Chromium
J193L2	UJ-LM

8.1 Holding Times

There is no regulatory holding time for hexavalent chromium in tissue. The laboratory used guidance from EPA method 1632 (Section 8.4) which states, “Tissue samples can be frozen in the sampling containers at -18°C or freeze-dried and stored at room temperature. Holding time has not been evaluated but limited data indicates dry samples are stable for several years without detectable change.” All samples were freeze dried upon laboratory receipt and analyzed within 180 days. In AMEC’s professional opinion, data usability is not adversely affected.

8.2 Laboratory Blanks

Hexavalent chromium was not detected in the laboratory blanks associated with the analysis of these samples.

8.3 Matrix Spikes

Recoveries outside the method-specified 85% to 115% guidance limits and RPDs greater than the default 30% guidance limit for fully usable data are described below.

The hexavalent chromium recovery of 73% was low in the MS analysis of sample J193L2. AMEC UJ qualified the nondetected hexavalent chromium result from this sample because of potentially low analytical bias. (**UJ**-LM)

8.4 Duplicates

The RPDs between original analyses and laboratory duplicate analyses for hexavalent chromium were less than the default 30% guidance limits for fully usable data.

8.5 LCS Recovery

There is no method-specified guidance limits for LCS recoveries. Therefore, AMEC compared LCS recoveries to the method-specified 50% to 150% guidance limits for MS recoveries. All LCS recoveries associated with the hexavalent chromium analyses were within these guidance limits for fully usable data.

8.6 Data Reporting and Analytical Procedures

The laboratory reported results down to the MDL. The MDL is a statistically derived limit which is usually 3 to 5 times smaller than the MRL (the lowest calibration point). Results reported between the MDL and MRL are typically considered estimates. The laboratory did not provide the MRL in their data packages; therefore, AMEC could not evaluate the quality of data between the MDL and MRL.

9.0 METHYL MERCURY BY EPA SW-846 METHOD 1630M

Methyl mercury data from these samples may be considered usable without qualification.

9.1 Holding Times

There is no method-specified holding time for methyl mercury analysis in tissue. However, all samples were analyzed within the 90 day holding time defined by EPA method 1631E for total mercury in water and the 1 year holding time for frozen tissue, sludge, sediment, and soil samples defined in EPA method 1631. In AMEC's professional opinion, data usability is not adversely affected.

9.2 Laboratory Blanks

Methyl mercury was not detected in the laboratory blanks associated with the analysis of these samples.

9.3 Matrix Spikes

Recoveries were within the method-specified 65% to 135% guidance limits and RPDs were greater than the 35% guidance limit for fully usable data.

9.4 Duplicates

The RPDs between original analyses and laboratory duplicate analyses for methyl mercury were less than the method-specified 35% guidance limits for fully usable data.

9.5 LCS Recovery

There is no method-specified guidance limits for LCS recoveries. Therefore, AMEC compared LCS recoveries to the method-specified 67% to 133% guidance limits for ongoing precision and accuracy sample recoveries. All LCS recoveries associated with the inorganic arsenic analyses were within these guidance limits for fully usable data

9.6 Data Reporting and Analytical Procedures

The laboratory reported results down to the MDL. The MDL is a statistically derived limit which is usually 3 to 5 times smaller than the MRL (the lowest calibration point). Results reported between the MDL and MRL are typically considered estimates. The laboratory did not provide the MRL in their data packages; therefore, AMEC could not evaluate the quality of data between the MDL and MRL.

10.0 SUMMARY

AMEC R qualified and rejected the PCB 3 results from samples J18K87, J19037, J19276, J19289, and J19464 because of extremely low IS recoveries. (Section 6.5)

The remainder of the data generated for the Woodard & Curran Hanford Samples are fully usable with the addition of the qualifiers listed in Table 2. Qualified data are summarized below:

- AMEC J qualified detected PCB results and UJ qualified nondetected PCB results from samples J17W23, J18692, J18HW9, and J18HW67 because of elevated sample receipt temperatures. (Section 5.0)
- AMEC J qualified PCB data when ion abundance ratios were outside the method-specified limits in the initial calibration. (Section 6.2)
- AMEC U qualified PCB analytes that were detected in both the laboratory blank and field sample when the concentration detected in the sample was less than five times the concentration detected in the blank. (Section 6.4)

- AMEC J qualified detected PCB results and UJ qualified nondetected PCB results when the LIIS, used to quantify the associated ISs, recoveries were low. (Section 6.6)
- AMEC J qualified PCB results when the analyte concentrations were between the MDL and the RL. (Section 6.9)
- AMEC U qualified PCB analytes that did not meet all method-specified identification criteria. (Section 6.9)
- AMEC J qualified the detected inorganic arsenic results and UJ qualified the nondetected results from samples J196F7, J196L9, J196K2, J19702, J18WW4, J19700, J19692, J196D0, J196D1, J19693, and J196D2 because of low SRM recoveries. (Section 7.3)
- AMEC UJ qualified the nondetected hexavalent chromium result from sample J193L2 because of a low MS recovery. (Section 8.3)

Of the 4,382 results from field samples, 675 (15%) were J qualified, 1328 (30%) were UJ qualified, 412 (9.4%) were U qualified, and 5 (0.12%) were R qualified and rejected.

REFERENCES

EPA, 1995. ***EPA Region 10 SOP for the Validation of Method 1668 Toxic, Dioxin-Like PCB Data***, Revision 1.0, December 8, 1995.

EPA, 2001a. ***Method 1632: Chemical Speciation of Arsenic in Water and Tissue by Hydride Generation Quartz Furnace Atomic Absorption Spectrometry***. Revision A, EPA-821-R-01-006, January 2001.

EPA, 2001b. ***Method 1630: Methyl Mercury in Water by Distillation, Aqueous Ethylation, Purge and Trap, and CVAFS.*** EPA-821-R-01-020, January 2001.

EPA 2007. ***METHOD 6800: ELEMENTAL AND SPECIATED ISOTOPE DILUTION MASS SPECTROMETRY.*** Revision 0, February 2007.

EPA, 2008. ***Method 1668B: Chlorinated Biphenyl Congeners in Water, Soil, Sediment, and Tissue by HRGC/HRMS***. EPA-821-R-08-020, November 2008.

DOE, 2008. ***Remedial Investigation Work Plan for Hanford Site Releases to the Columbia River, Appendix A, SAP***, September 2008.

LIMITATIONS

This report was prepared exclusively for Woodard & Curran by AMEC. The quality of information, conclusions, and estimates contained herein is consistent with the level of effort involved in AMEC services and based on: i) information available at the time of preparation, ii) data supplied by outside sources, and iii) the assumptions, conditions, and qualifications set forth in this report. This data validation report is intended to be used by Woodard & Curran only, subject to the terms and conditions of its contract with AMEC. Any other use of, or reliance on, this report by any third party is at that party's sole risk.

APPENDIX H

PRELIMINARY QC REVIEW WORKSHEETS FOR PCB CONGENER, ARSENIC, MERCURY, AND HEXAVALENT CHROMIUM RESULTS

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APPENDIX H
PRELIMINARY QC REVIEW WORKSHEETS FOR PCB CONGENER, ARSENIC, MERCURY, AND HEXAVALENT CHROMIUM RESULTS

H.1 SURFACE WATER

H.1.1 SDG J00543

SDG J00543 - PCB Congeners QC Review Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** J00543	**W&C Project No.:**222007	
Medium: Surface Water	Data set 1 of 1	**Analytes:** PCB Congeners	
Samples: J18NK7, J18NK8, J18NK9			
Laboratory: Test America	**Date QC Review Completed:** 06/01/2010 **Complete By:** RDD	**Sample Collection Date:** 06/03/2009, 06/04/2009, 6/08/2009	**Sample Analysis Date:** Extr: 06/26/2009 Anal: 07/17/2009

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No action	
Detection Limits	Estimated for each sample		-		
Blanks					
Surrogate Recoveries	Yes	None	-	No action	
Method Blank	No	All ng/L PCB 8 = 0.0037 PCB 11 = 0.006 PCB 15 = 0.0015 PCB 18 = 0.004 PCB 20 = 0.0041 PCB 21 = 0.0024 PCB 28 = 0.0041 PCB 30 = 0.004 PCB 33 = 0.0024 PCB 44 = 0.0054 PCB 47 = 0.0054 PCB 52 = 0.0028 PCB 61 = 0.0028 PCB 65 = 0.0054 PCB 68 = 0.0013 PCB 70 = 0.0028 PCB 74 = 0.0028 PCB 76 = 0.0028 PCB 110 = 0.0023 PCB 115 = 0.0023 PCB 118 = 0.0013 PCB 129 = 0.0028 PCB 138 = 0.0028 PCB 147 = 0.003	U	Qualify positive results < 5x the blank result as non-detect.	All above Impacts: PCB 8 all above PCB 11 all above PCB 15 –J18NK7 PCB 18 - J18NK7 PCB 20 - J18NK7, J18NK8 PCB 28 - J18NK7, J18NK8 PCB 30 - J18NK7 PCB 31 – J18NK7, J18NK8 PCB 44 – all above PCB 47 – all above PCB 52 – J18NK9 PCB 61 – all above PCB 65 – all above PCB 68 – J18NK7 PCB 70 – all above PCB 74 – all above PCB 76 – all above PCB 110 – all above PCB 115 – all above PCB 118 – J18NK8,

SDG J00543 - PCB Congeners QC Review Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** J00543	**W&C Project No.:**222007
Medium: Surface Water	Data set 1 of 1	**Analytes:** PCB Congeners
Samples: J18NK7, J18NK8, J18NK9		

Laboratory: Test America	**Date QC Review Completed:** 06/01/2010 **Complete By:** RDD	**Sample Collection Date:** 06/03/2009, 06/04/2009, 6/08/2009	**Sample Analysis Date:** Extr: 06/26/2009 Anal: 07/17/2009

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
		PCB 149 = 0.003 PCB 160 = 0.0028 PCB 163 = 0.0028			J18NK9 PCB 129 - J18NK8, J18NK9 PCB 138 - J18NK8, J18NK9 PCB 147 - J18NK8, J18NK9 PCB 149 - J18NK8, J18NK9 PCB 160 - J18NK8, J18NK9 PCB 163 - J18NK8, J18NK9
Other QC Results					
LCS Results	Yes	None	-	No action	
Internal Standards	Yes	None	-	No action	
QC Summary					
Additional Notes:					

H.2 SEDIMENT

H.2.1 SDG J00264

SDG J00264. PCB Congeners QC Review Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA		**SDG No.:** J00264	**W&C Project No.:**222007
Medium: Sediment		Data set 1 of 1	**Analytes:** PCB Congeners
Samples: J17W22, J17W24, J17W25, J17W26, J17W27, J17W28, J17W29, J17W30, J17W35, J18088, J18089			
Laboratory: Test America	**Date QC Review Completed:** 06/01/2010 **Complete By:** RDD	**Sample Collection Date:** 12/01/2008, 12/02/2008, 12/03/2008, 12/05/2008, 12/08/2008, 12/10/2008, 12/11/2008	**Sample Analysis Date:** Extr: 01/06/2009 Anal: 01/30/2009, 01/31/2009

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No action	
Detection Limits	Estimated for each sample		-		
Blanks					
Surrogate Recoveries	Yes	None	-	No action	
Method Blank	No	All in ng/g PCB 11 = 0.0016 PCB 52 = 0.00076	U	Qualify positive sample results < 5X the blank concentration as non-detect (U).	All above. Impacts: PCB 11 – all above PCB 52 – J17W24, J17W28, J17W29, J17W30
Other QC Results					
LCS Results	Yes	None	-	No action	
Internal Standards	Yes	None	-	No action	
QC Summary					
Additional Notes:					

H.3 SOIL

H.3.1 SDG J00420

SDG J00420 - PCB Congeners QC Review Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA		**SDG No.:** J00420	**W&C Project No.:**222007
Medium: Soil		Data set 1 of 1	**Analytes:** PCB Congeners
Samples: J189W2, J189W3, J189W4, J189W5			
Laboratory: Test America	**Date QC Review Completed:** 06/03/2010 **Complete By:** RDD	**Sample Collection Date:** 02/26/2009, 02/27/2009, 03/03/2009	**Sample Analysis Date:** Extr: 03/31/2009 Anal: 05/13/2009

QC Parameter	**All in Spec.?**	**Non-Compliant Results**	**Flag**	**Action/ Notes**	**Associated Samples**
Holding Times	Yes	None	-	No action	
Detection Limits	Estimated for each sample		-		
Blanks					
Surrogate Recoveries	Yes	None	-	No action	
Method Blank	Yes	All in ng/g PCB 8 = 0.0011 PCB 11 = 0.0036 PCB 18 = 0.0013 PCB 20 = 0.0015 PCB 21 = 0.0008 PCB 28 = 0.0015 PCB 30 = 0.0013 PCB 33 = 0.0008 PCB 44 = 0.0022 PCB 47 = 0.0022 PCB 49 – 0.00048 PCB 52 = 0.00075 PCB 61 = 0.0009 PCB 65 = 0.0022 PCB 69 = 0.0048 PCB 70 = 0.0009 PCB 74 = 0.0009 PCB 76 = 0.0009	U	Qualify positive sample results < 5X the blank concentration as non-detect (U).	All above. Impacts: PCB 8 all above PCB 11 all above PCB 18 - J189W2, J189W4 PCB 20 – all above PCB 21 – all above PCB 28 – all above PCB 30 - J189W2, J18W4 PCB 33 – all above PCB 44 – all above PCB 47 –all above PCB 49 – J189W3, J189W4 PCB 52 – J189W3 PCB 61 – J189W3 PCB 65 – all above PCB 69 – J189W3, J189W4 PCB 70 – J189W3 PCB 74 – J189W3 PCB 76 – J189W3
Other QC Results					
LCS Results	Yes	None	-	No action	
Internal Standards	Yes	None	-	No action	
QC Summary					
Additional Notes:					

H.4 FISH TISSUE

H.4.1 SDG J00492

SDG J00492 - PCB Congeners QC Review Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** J00492	**W&C Project No.:**222007	
Medium: Fish Tissue **Fish Type:** Various	Data set 1 of 1	**Analytes:** PCB Congeners	
Samples: J18J89, J18J90, J18J91, J18J93, J18K30, J18J11, J18J74, J18J12, J18J75, J18J13, J18J76, J18J14, J18J77, J18J15, J18J78			
Laboratory: Test America	**Date QC Review Completed:** 05/27/2010 **Complete By:** RDD	**Sample Collection Date:** 4/24/2009, 4/27/2009, 4/28/2009, 4/29/2009, 4/30/2009	**Sample Analysis Date:** Extr: 06/16/2009 Anal: 06/27/2009, 6/26/2009

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No action	
Detection Limits	Estimated for each sample		-		
Blanks					
Surrogate Recoveries	Yes	None	-	No action	
Method Blank	No	All in ng/g PCB 7 = 0.0013 PCB 8 = 0.0014 PCB 11 = 0.0031 PCB 20 = 0.0016 PCB 21 = 0.00092 PCB 28 = 0.0016 PCB 31 = 0.00087 PCB 33 = 0.00092 PCB 40 = 0.00096 PCB 41 = 0.00096 PCB 44 = 0.0017 PCB 47 = 0.0017 PCB 61 = 0.0015 PCB 65 = 0.0017 PCB 66 = 0.001 PCB 70 = 0.0028 PCB 71 = 0.00096 PCB 74 = 0.0015 PCB 76 = 0.0015 PCB 90 = 0.0013 PCB 101 = 0.0013 PCB 113 = 0.0013 PCB 118 = 0.0013 PCB 129 = 0.0014 PCB 138 = 0.0014 PCB 153 = 0.002 PCB 160 = 0.0014	U	Qualify positive results < 5x the blank result as non-detect.	All above Impacts: PCB 7 - None PCB 8 –J18J13 PCB 11 - J18J13, J18J14, J18J74 PCB 20 – None PCB 21 - None PCB 28 - None PCB 31 – None PCB 33 – None PCB 40 –None PCB 41 - None PCB 44 – None PCB 47 – None PCB 61 – None PCB 65 – None PCB 66 - None PCB 70 – None PCB 71 - None PCB 74 – None PCB 76 – None PCB 90 – None PCB 101 - None PCB 113 – None PCB 118 – None PCB 129 - None PCB 138 - None PCB 153 - None

SDG J00492 - PCB Congeners QC Review Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** J00492	**W&C Project No.:**222007
Medium: Fish Tissue **Fish Type:** Various	Data set 1 of 1	**Analytes:** PCB Congeners

Samples: J18J89, J18J90, J18J91, J18J93, J18K30, J18J11, J18J74, J18J12, J18J75, J18J13, J18J76, J18J14, J18J77, J18J15, J18J78

Laboratory: Test America	**Date QC Review Completed:** 05/27/2010 **Complete By:** RDD	**Sample Collection Date:** 4/24/2009, 4/27/2009, 4/28/2009, 4/29/2009, 4/30/2009	**Sample Analysis Date:** Extr: 06/16/2009 Anal: 06/27/2009, 6/26/2009

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
		PCB 163 = 0.0014 PCB 168 = 0.002 PCB 180 = 0.0013 PCB 193 = 0.0013			PCB 160 - None PCB 163 - None PCB 180 – None PCB 193 -
Other QC Results					
LCS Results	Yes	None	-	No action	
Internal Standards	No	Recoveries of isotope $^{13}C_{12}$-PCB-3 < 30%	J	Qualify ND concentrations of PCB – 3 as estimated (J).	J18J91, J18J92, J18J93, J18K30
QC Summary					
Additional Notes:					

H.4.2 SDG J00577

SDG J00577 - PCB Congeners QC Review Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** J00577		**W&C Project No.:**222007
Medium: Fish Tissue **Fish Type:** Various	Data set 1 of 1		**Analytes:** PCB Congeners
Samples: J194Y9, J19500, J19501, J195P6, J195P7, J195P8, J195R8, J195R9, J195T0, J19605, J19606, J19607, J195X5, J195X6, J195X7,			
Laboratory: Test America	**Date QC Review Completed:** 05/27/2010 **Complete By:** RDD	**Sample Collection Date:** 9/10/2009, 9/13/2009, 9/14/2009, 9/15/2009	**Sample Analysis Date:** Extr: 10/07/2009 Anal: 11/03/2009, 11/05/2009, 11/06/2009,

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No action	
Detection Limits	Estimated for each sample		-		
Blanks					
Surrogate Recoveries	Yes	None	-	No action	
Method Blank	No	All results ng/g PCB 8 = 0.004 PCB 11 = 0.0058 PCB 15 = 0.0016 PCB 16 = 0.0037 PCB 18 = 0.0037 PCB 20 = 0.0065 PCB 21 = 0.0051 PCB 22 = 0.0034 PCB 26 = 0.0012 PCB 28 = 0.0065 PCB 29 = 0.0012 PCB 30 = 0.0037 PCB 31 = 0.006 PCB 32 = 0.0017 PCB 33 = 0.0051 PCB 37 = 0.0016 PCB 40 = 0.0022 PCB 41 = 0.0022 PCB 42 = 0.0034 PCB 44 = 0.0054 PCB 45 = 0.0024 PCB 47 = 0.0054 PCB 49 = 0.0014 PCB 52 = 0.0023 PCB 56 = 0.0022 PCB 61 = 0.0047 PCB 64 = 0.0019 PCB 65 = 0.0054 PCB 66 = 0.0033 PCB 69 = 0.0014	U	Qualify positive results < 5x the blank result as non-detect	All above. Impacts: PCB 8 –None PCB 11 –19605, J195P6 PCB 15 – J19605, J195X5, J195X6, J195R9, J195R8, J195P7, J19501, J19500, J194Y9 PCB -16 – J194Y9, J195P7, J195X5 PCB 18 – None PCB 20 – None PCB 21 – None PCB 22 – None PCB 26 - None PCB 28 – None PCB 29 – None PCB 30 - None PCB 31 – None PCB 32 – None PCB 33 – None PCB 37 –None PCB 40 –None PCB 41 – None

SDG J00577 - PCB Congeners QC Review Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA		**SDG No.:** J00577	**W&C Project No.:**222007
Medium: Fish Tissue **Fish Type:** Various		Data set 1 of 1	**Analytes:** PCB Congeners
Samples: J194Y9, J19500, J19501, J195P6, J195P7, J195P8, J195R8, J195R9, J195T0, J19605, J19606, J19607, J195X5, J195X6, J195X7,			
Laboratory: Test America	**Date QC Review Completed:** 05/27/2010 **Complete By:** RDD	**Sample Collection Date:** 9/10/2009, 9/13/2009, 9/14/2009, 9/15/2009	**Sample Analysis Date:** Extr: 10/07/2009 Anal: 11/03/2009, 11/05/2009, 11/06/2009,

QC Parameter	**All in Spec.?**	**Non-Compliant Results**	**Flag**	**Action/ Notes**	**Associated Samples**
		PCB 70 = 0.0047 PCB 71 = 0.0022 PCB 74 = 0.0047 PCB 76 = 0.0047 PCB 90 = 0.0023 PCB 101 = 0.0023 PCB 105 = 0.00098 PCB 110 = 0.0023 PCB 113 = 0.0023 PCB 115 = 0.0023 PCB 118 = 0.0012 PCB 129 = 0.0021 PCB 138 = 0.0021 PCB 160 = 0.0021 PCB 163 = 0.0021			PCB 42 - None PCB 44 – None PCB 45 - None PCB 47 – None PCB 49 – None PCB 52 - None PCB 56 – None PCB 61 – None PCB 64 - None PCB 65 – None PCB 66 – None PCB 69 - None PCB 70 – None PCB 71 - None PCB 74 – None PCB 76 – None PCB 90 – None PCB 101 – None PCB 105 – None PCB 110 - None PCB 113 – None PCB 115 – None PCB 118 – None PCB 129 – None PCB 138 – None PCB 160 – None PCB 163 - None
Other QC Results					
LCS Results	Yes	None	-	No action	
Internal Standards	No	Recoveries of isotope $^{13}C_{12}$-PCB-3 < 30%	J	Qualify ND concentrations of PCB – 3 as estimated (J).	J19500, J195R8, J195T0, J19605, J195X6, J195X5, J195X7
QC Summary					
Additional Notes:					

H.4.3 SDG J00649

SDG J00649 - PCB Congeners QC Review Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** J00649	**W&C Project No.:**222007
Medium: Fish Tissue **Fish Type:** Various	Data set 1 of 1	**Analytes:** PCB Congeners
Samples: J191P4, J191P5, J191P6, J191P7, J191P8, J191H8, J191H9, J191J0, J191J1, J191J2, J190J0, J190J1, J190J2, J190R9, J19229, J191X9, J19674, J19243, J196J6, J196F1, J190T0, J190W1, J190W0		

Laboratory: Test America	**Date QC Review Completed:** 05/27/2010 **Complete By:** RDD	**Sample Collection Date:** 12/14/2009, 12/15/2009	**Sample Analysis Date:** Extr: 12/28/2009 Anal: 01/19/2010

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No action	
Detection Limits	Estimated for each sample		-		
Blanks					
Surrogate Recoveries	Yes	None	-	No action	
Method Blank	No	All in ng/g PCB 4 = 0.0022 PCB 6 = 0.0012 PCB 8 = 0.0043 PCB 11 = 0.01 PCB 15 = 0.0015 PCB 16 = 0.0053 PCB 17 = 0.0045 PCB 18 = 0.0074 PCB 20 = 0.013 PCB 21 = 0.0098 PCB 22 = 0.0052 PCB 25 = 0.00094 PCB 26 = 0.0017 PCB 28 = 0.013 PCB 29 = 0.0017 PCB 30 = 0.0074 PCB 31 = 0.010 PCB 32 = 0.0033 PCB 33 = 0.00098 PCB 37 = 0.0018 PCB 40 = 0.007 PCB 41 = 0.007 PCB 42 = 0.0034 PCB 44 = 0.014 PCB 45 = 0.0024 PCB 47 = 0.014 PCB 48 = 0.002 PCB 49 = 0.0061 PCB 50 = 0.00091 PCB 51 = 0.0024	U	Qualify positive results < 5x the blank result as non-detect.	All above Impacts: PCB 4 – J191P4, J191P5, J191P7, J191P8, J191H8, J191X9, J19225, J196F1, J190W1 PCB 6 – J191J1, J191X5, J191P5, J191P7, J191P8, J191H8, J196F1 PCB 8 – all except J19674, J191P6, J191P5, J191P7 PCB 11 – all except J196F1, J191J0, J19229, J190T0, J196J6 PCB 15 – J191P7, J190W1, J19225, J191P4, J190R9, J191J1, J191P8, J191H8, J191J0, J190T0 PCB -16 – J191X5, J191J2, J19243, J190W0, J191X9,

SDG J00649 - PCB Congeners QC Review Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** J00649		**W&C Project No.:**222007
Medium: Fish Tissue **Fish Type:** Various	Data set 1 of 1		**Analytes:** PCB Congeners
Samples: J191P4, J191P5, J191P6, J191P7, J191P8, J191H8, J191H9, J191J0, J191J1, J191J2, J190J0, J190J1, J190J2, J190R9, J19229, J191X9, J19674, J19243, J196J6, J196F1, J190T0, J190W1, J190W0			
Laboratory: Test America	**Date QC Review Completed:** 05/27/2010 **Complete By:** RDD	**Sample Collection Date:** 12/14/2009, 12/15/2009	**Sample Analysis Date:** Extr: 12/28/2009 Anal: 01/19/2010

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
		PCB 52 = 0.015 PCB 53 = 0.00091 PCB 56 = 0.0051 PCB 60 = 0.0025 PCB 61 = 0.021 PCB 64 = 0.0049 PCB 65 = 0.014 PCB 66 = 0.011 PCB 69 = 0.0061 PCB 70 = 0.021 PCB 71 = 0.007 PCB 74 = 0.021 PCB 76 = 0.021 PCB 83 = 0.0066 PCB 84 = 0.0034 PCB 85 = 0.0025 PCB 86 = 0.0086 PCB 87 = 0.0086 PCB 88 = 0.0014 PCB 90 = 0.01 PCB 91 = 0.0014 PCB 95 = 0.0092 PCB 97 = 0.0086 PCB 99 = 0.0066 PCB 101 = 0.010 PCB 105 = 0.0072 PCB 107 = 0.0013 PCB 109 = 0.0086 PCB 110 = 0.018 PCB 113 = 0.01 PCB 115 = 0.018 PCB 116 = 0.0025 PCB 117 = 0.0025 PCB 118 = 0.019 PCB 119 = 0.0086 PCB 125 = 0.0086 PCB 128 = 0.0015 PCB 129 = 0.00898 PCB 132 = 0.0026 PCB 138 = 0.0089 PCB 141 = 0.0012 PCB 147 = 0.0036			J190W0, J190R9, J191J1 PCB 17 – J19243 PCB 18 – J191J2, J190T0 PCB 20 – None PCB 21 – J190T0, J191J2 PCB 22 – None PCB 25 - None PCB 28 – None PCB 29 – None PCB 30 - J190T0, J191J2 PCB 31 – None PCB 32 – J190T0, J191J2, J191J1, J190R9, J190W1, J190W0, J191X9, J191X5, J19243 PCB 33 – None PCB 37 –J191X5 PCB 40 –None PCB 41 – None PCB 42 - None PCB 44 – None PCB 45 - None PCB 47 – None PCB 48 – None PCB 49 – None PCB 50 - None PCB 51 – None PCB 52 - None PCB 53 – None PCB 56 – None

SDG J00649 - PCB Congeners QC Review Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** J00649		**W&C Project No.:**222007
Medium: Fish Tissue **Fish Type:** Various	Data set 1 of 1		**Analytes:** PCB Congeners
Samples: J191P4, J191P5, J191P6, J191P7, J191P8, J191H8, J191H9, J191J0, J191J1, J191J2, J190J0, J190J1, J190J2, J190R9, J19229, J191X9, J19674, J19243, J196J6, J196F1, J190T0, J190W1, J190W0			
Laboratory: Test America	**Date QC Review Completed:** 05/27/2010 **Complete By:** RDD	**Sample Collection Date:** 12/14/2009, 12/15/2009	**Sample Analysis Date:** Extr: 12/28/2009 Anal: 01/19/2010

QC Parameter	**All in Spec.?**	**Non-Compliant Results**	**Flag**	**Action/ Notes**	**Associated Samples**
		PCB 149 = 0.0036 PCB 153 = 0.0043 PCB 156 = 0.0017 PCB 157 = 0.0011 PCB 158 = 0.0011 PCB 160 = 0.0089 PCB 163 = 0.0089 PCB 166 = 0.0015 PCB 168 = 0.0043 PCB 174 = 0.00073 PCB 180 = 0.0014 PCB 193 = 0.0014			PCB 60 - None PCB 61 – None PCB 64 - None PCB 65 – None PCB 66 – None PCB 69 - None PCB 70 – None PCB 71 - None PCB 74 – None PCB 76 – None PCB 83 – None PCB 84 – None PCB 85 – None PCB 86 – None PCB 87 – None PCB 88 - None PCB 90 – None PCB 91 –None PCB 95 – None PCB 97 – None PCB 99 - None PCB 101 – None PCB 105 – None PCB 107 – None PCB 109 – None PCB 110 – None PCB 113 – None PCB 115 – None PCB 116 - None PCB 118 – None PCB 119 – None PCB 125 – None PCB 128 - None PCB 129 – None PCB 132 - None PCB 138 – None PCB 141 – None PCB 147 – None PCB 149 - None PCB 153 – None PCB 156 - None PCB 160 - None

SDG J00649 - PCB Congeners QC Review Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** J00649	**W&C Project No.:**222007
Medium: Fish Tissue **Fish Type:** Various	Data set 1 of 1	**Analytes:** PCB Congeners

Samples: J191P4, J191P5, J191P6, J191P7, J191P8, J191H8, J191H9, J191J0, J191J1, J191J2, J190J0, J190J1, J190J2, J190R9, J19229, J191X9, J19674, J19243, J196J6, J196F1, J190T0, J190W1, J190W0

Laboratory: Test America	**Date QC Review Completed:** 05/27/2010 **Complete By:** RDD	**Sample Collection Date:** 12/14/2009, 12/15/2009	**Sample Analysis Date:** Extr: 12/28/2009 Anal: 01/19/2010

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
					PCB 163 – None PCB 166 – None PCB 168 – None PCB 174 - None PCB 180 – None PCB 193 - None
Other QC Results					
LCS Results	Yes	None	-	No action	
Internal Standards	Yes	None	-	No action	
QC Summary					
Additional Notes:					

H.4.4 SDG J00686

SDG J00686 - PCB Congeners QC Review QC Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** J00686	**W&C Project No.:**222007
Medium: Fish Tissue **Fish Type:** Various	Data set 1 of 1	**Analytes:** PCB Congeners
Samples: J19244, J19675		

Laboratory: Test America	**Date QC Review Completed:** 05/27/2010 **Complete By:** RDD	**Sample Collection Date:** 1/21/2010	**Sample Analysis Date:** Extr: 2/04/2010 Anal: 02/18/2010

QC Parameter	**All in Spec.?**	**Non-Compliant Results**	**Flag**	**Action/ Notes**	**Associated Samples**
Holding Times	Yes	None	-	No action	
Detection Limits	Estimated for each sample		-		
Blanks					
Surrogate Recoveries	Yes	None	-	No action	
Method Blank	No	All ng/g PCB 1 = 0.0065 PCB 3 = 0.0092 PCB 8 = 0.0021 PCB 11 = 0.0039 PCB 20 = 0.0029 PCB 21 = 0.0028 PCB 22 = 0.00075 PCB 28 = 0.0029 PCB 31 = 0.0027 PCB 33 = 0.0028 PCB 61 = 0.0023 PCB 66 = 0.0013 PCB 70 = 0.0023 PCB 74 = 0.0023 PCB 76 = 0.0023 PCB 118 = 0.0011 PCB 129 = 0.0012 PCB 138 = 0.0012 PCB 153 = 0.00099 PCB 160 = 0.0012 PCB 163 = 0.0012 PCB 168 = 0.00099 PCB 209 = 0.013	U	Qualify positive sample results < 5X the blank results as ND.	All above Impacts: PCB 1 – None PCB 3 – None PCB 8 – None PCB 11 – None PCB 20 –None PCB 21 - None PCB 22 – None PCB 28 – None PCB 31 – None PCB 33 – None PCB 61 - None PCB 66 – None PCB 70 – None PCB 74 – None PCB 76 – None PCB 118 – None PCB 129 – None PCB 138 – None PCB 153 – None PCB 160 – None PCB 163 – None PCB 168 – None PCB 209 – J19244
Other QC Results					
LCS Results	Yes	None	-	No action	
Internal Standards	Yes	None	-	No action	
QC Summary					
Additional Notes:					

H.4.5 SEQ081409

SDG SEQ081409 – Arsenic Speciation QC Review Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** SEQ081409	**W&C Project No.:**222007	
Medium: Fish Tissue **Fish Type:** Various	Sheet 1 of 1	**Analytes:** As^{+3}, As^{+5}, ASB, MMA, DMA	
Samples: J192F1, J192F2, J192H2, J192H3, J19304, J19305, J19314, J19315, J19325, J19326, J193L2, J193L3, J193M2, J193M3, J193N4, J193N5			
Laboratory: Battelle	**Date QC Review Completed:** 05/27/2010 **Completed By:** RDD	**Sample Collection Date:** 08/14/2009	**Sample Analysis Date:** 09/17/2009, 09/18/2010

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No action	
Blanks					
Preparation Blank					
09/17/2009	Yes	None	-	No action.	
09/18/2009	Yes	None	-	No action	
Other QC Results					
LCS Results	Yes	None	-	No action	
Matrix Spike Sample ID: J193N4	Yes	None	-	No action	
Lab Duplicate	Yes	None	-	No action	
Field Duplicate Sample ID: J19314	Yes	None	-	No action	
Standard Reference Recovery	Yes	None	-	No action	
QC Summary					
Additional Notes:					

H.4.6 SEQ091109

SDG SEQ091109 – Arsenic Speciation QC Review Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** SEQ091109	**W&C Project No.:**222007
Medium: Fish Tissue **Fish Type:** Various	Sheet 1 of 1	**Analytes:** As^{+3}, As^{+5}, ASB, MMA, DMA
Samples: J19476, J19477, J19487, J19486, J19497, J19496, J194B7, J194B8, J194C8, J194C9		

Laboratory: Battelle	**Date QC Review Completed:** 05/27/2010 **Complete By:** RDD	**Sample Collection Date:** 09/03/2009, 09/08/2009, 09/09/2009	**Sample Analysis Date:** 12/02/2009

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No action	
Blanks					
Preparation Blank	Yes	None	-	No action	
Other QC Results					
LCS Results	Yes	None	-	No action	
Matrix Spike Sample ID: J195W5	No	As^{+5} = 74%/71%	J	Qualify positive and ND results of As^{+5} as estimated (J).	All above.
Lab Duplicate	Yes	None	-	No action	
Field Duplicate Sample ID:	None analyzed	-	-	No action	
Standard Reference Recovery	Yes	None	-	No action	
QC Summary					
Additional Notes:					

SDG SEQ091109 - Hexavalent Chromium QC Review Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** SEQ091109	**W&C Project No.:**222007
Medium: Fish Tissue **Fish Type:** Various	Sheet 1 of 1	**Analytes:** Cr $^{+6}$
Samples: J19476, J19477, J19487, J19486, J19497, J19496, J194B7, J194B8, J194C8, J194C9		

Laboratory: Battelle	**Date QC Review Completed:** 05/27/2010 **Complete By:** RDD	**Sample Collection Date:** 09/11/2009	**Sample Analysis Date:** 01/22/2009**,** 01/25/2010

QC Parameter	**All in Spec.?**	**Non-Compliant Results**	**Flag**	**Action/ Notes**	**Associated Samples**
Holding Times	Yes	None	-	No action	
Blanks					
Preparation Blank	Yes	None	-	No action	
Other QC Results					
LCS Results	Yes	None	-	No action	
Matrix Spike	None analyzed		-	-	
Lab Duplicate	Yes	None	-	No action	
Standard Reference Recovery	Yes	None	-	No action	
QC Summary					
Additional Notes:					

H.4.7 SEQ121809

SDG SEQ121809 – Arsenic Speciation QC Review Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** SEQ121809	**W&C Project No.:**222007	
Medium: Fish Tissue **Fish Type:** Various	Sheet 1 of 1	**Analytes:** As^{+3}, As^{+5}, AsB, MMA, DMA	
Samples: J19679, J19248, J196K1, J196F6, J190T5, J190W6, J190W5, J190T4, J19234, J191Y4, J19230, J191Y0, J191R0, J191R1, J191R2, J191R3, J191J3, J191J4, J191J5, J191J6, J191J7, J191P9			
Laboratory: Battelle	**Date QC Review Completed:** 05/27/2010 **Complete By:** RDD	**Sample Collection Date:** 12/14/2009, 12/15/2009	**Sample Analysis Date:** 01/28/2010, 02/05/2010

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No action	
Blanks					
Preparation Blank 01/28/2010	Yes	None	-	None	
02/05/2010	No	AsB = 0.00302 µg/g	U	Qualify positive AsB sample concentrations < 5x the blank as ND.	J191R2, J191R3, J191J3, J191J4, J191J5, J191J6, J191J7, J191P91T4 Impacts all assoc samples
Other QC Results					
LCS Results	Yes	None	-	No action	
Matrix Spike Sample ID: J19248	Yes	None	-	No action	
J191J3	Yes	None	-	No action	
Lab Duplicate	Yes	None	-	No action	
Field Duplicate Sample ID: J196F6/DUP	Yes	None	-	No action	
J191R3/DUP	Yes	None	-	No action	
Standard Reference Recovery	Yes	None	-	No action	
QC Summary					
Additional Notes: AsB = Arsenobetaine					

H.4.8 SEQ12810A

SDG SEQ12810A – Arsenic Speciation QC Review Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** SEQ12810A	**W&C Project No.:**222007
Medium: Fish Tissue **Fish Type:** Various	Sheet 1 of 1	**Analytes:** As^{+3}, As^{+5}, ASB, MMA, DMA
Samples: J19249, J19680		

Laboratory: Battelle	**Date QC Review Completed:** 05/27/2010 **Complete By:** RDD	**Sample Collection Date:** 01/21/2009	**Sample Analysis Date:** 02/05/2010

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No action	
Blanks					
Preparation Blank 02/05/2010	No	AsB = 0.00302 µg/g	U	Qualify positive AsB sample concentrations < 5x the blank as ND.	J19249, J19680 Impacts both assoc samples
Other QC Results					
LCS Results	Yes	None	-	No action	
Matrix Spike Sample ID:	None analyzed		-		
Lab Duplicate	Yes	None	-	No action	
Field Duplicate Sample ID:	None analyzed				
Standard Reference Recovery	Yes	None	-	No action	
QC Summary					
Additional Notes: AsB = Arsenobetaine					

H.4.9 SEQ092309

SDG SEQ092309 – Methyl Mercury QC Review Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** SEQ092309	**W&C Project No.:**222007
Medium: Fish Tissue **Fish Type:** Various	Sheet 1 of 1	**Analytes:** Methyl mercury
Samples: J19629, J19628, J19698, J19699		

Laboratory: Battelle	**Date QC Review Completed:** 05/28/2010 **Complete By:** RDD	**Sample Collection Date:** 09/16/2009	**Sample Analysis Date:** 11/23/2009

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No action	
Blanks					
Preparation Blank	Yes	None	-	No action	
Other QC Results					
LCS Results	Yes	None	-	No action	
Matrix Spike Sample ID: J19629	Yes	None	-	-	
Lab Duplicate	Yes	None	-	No action	
Standard Reference Recovery	Yes	None	-	No action	
QC Summary					
Additional Notes:					

H.4.10 SEQ070710

SDG SEQ070710. Arsenic Speciation QC Review Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA		**SDG No.:** SEQ070710	**W&C Project No.:**222007
Medium: Fish Tissue **Fish Type:** Walleye		Sheet 1 of 1	**Analytes: :** As+3, As+5, ASB, MMA, DMA
Samples: Walleye Fillet/Carcass J18XK6, J18XM6, J18XK7, J18XM7, J18XK8, J18XK9, J18XM9, J18XL0, J18XN0, J18WW6, J18WY7, J18WW8, J18WY9, J18WW7, J18WY8			
Laboratory: Battelle	**Date QC Review Completed:** 8/31/2010 **Complete By:** RDD	**Sample Collection Date:** 7/01/2010	**Sample Analysis Date:** 7/28/10

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	None	
Detection Limits	None specified in SAP		-		
Blanks					
Preparation Blank	Yes	None	-	No action	
Equipment Blank Sample ID:	Not Analyzed				
Other QC Results					
LCS Results	Yes	None	-	No Action	
Matrix Spike Sample ID: J18XK6	Yes	None	-	No action	
Lab Duplicate Sample ID: J18XM6	Yes	None	-	No action	
Standard Reference Recovery	Yes	None	-	No action	
QC Summary					
Validity of Data	All QC criteria were met.				
Additional Notes:					

H.4.11 SEQ082009

SDG SEQ82009. Hexavalent Chromium QC Review Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** SEQ82009	**W&C Project No.:**222007
Medium: Fish Tissue **Fish Type:** Various	Sheet 1 of 1	**Analytes:** Cr $^{+6}$
Samples: J19446, J19447, J19456, J19457, J19466, J19467		

Laboratory: Battelle	**Date QC Review Completed:** 05/27/2010 **Complete By:** RDD	**Sample Collection Date:** 08/17/2009	**Sample Analysis Date:** 01/25/2010

QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	None	-	No action	
Blanks					
Preparation Blank	Yes	None	-	No action	
Other QC Results					
LCS Results	Yes	None	-	No action	
Matrix Spike	None analyzed		-	-	
Lab Duplicate	Yes	None	-	No action	
Standard Reference Recovery	Yes	None	-	No action	
QC Summary					
Additional Notes:					

H.4.12 SEQ093009

SDG SEQ093009 - Hexavalent Chromium QC Review Summary Sheet

Project: Hanford – Columbia River Component of the RCBRA	**SDG No.:** SEQ093009	**W&C Project No.:**222007
Medium: Fish Tissue **Fish Type:** Various	Sheet 1 of 1	**Analytes:** Cr $^{+6}$
Samples: J195W5, J195W6, J195W7, J195W8, J19497, J19496, J194B7, J194B8, J194C8, J194C9		

Laboratory: Battelle	**Date QC Review Completed:** 05/27/2010 **Complete By:** RDD	**Sample Collection Date:** 09/21/2009, 09/24/2009	**Sample Analysis Date:** 01/26/2010

QC Parameter	**All in Spec.?**	**Non-Compliant Results**	**Flag**	**Action/ Notes**	**Associated Samples**
Holding Times	Yes	None	-	No action	
Blanks					
Preparation Blank	Yes	None	-	No action	
Other QC Results					
LCS Results	Yes	None	-	No action	
Matrix Spike Sample ID: J195W5	Yes	None	-	-	
Lab Duplicate	Yes	None	-	No action	
Field Duplicate Sample ID: J195W8/DUP	Yes	None	-	No action	
Standard Reference Recovery	Yes	None	-	No action	
QC Summary					
Additional Notes:					

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