

---

# **TOPICAL REPORT: CCS PROJECT PERMIT ACQUISITION PROTOCOLS**

**Type of Report:** Topical Report

**Reporting Period Start Date:** December 8, 2009

**Reporting Period End Date:** September 30, 2013

**Principal Authors of this report:**

Si-Yong Lee, University of Utah

Wade Zaluski, Schlumberger Carbon Services

Vince Matthews, Colorado Geological Survey

Brian McPherson, University of Utah

**Date Report was Issued:** December 31, 2013

**DOE Award Number** DE-FE0001812

**Submitting Organization:**

University of Utah

Department of Civil and Environmental Engineering

Salt Lake City, Utah 84112 USA

**DISCLAIMER**

This report was prepared as an account of work sponsored by an agency of the United States Government. Neither the United States Government nor any agency thereof, nor any of their employees, makes any warranty, express or implied, or assumes any legal liability or responsibility for the accuracy, completeness, or usefulness of any information, apparatus, product, or process disclosed, or represents that its use would not infringe privately owned rights. Reference herein to any specific commercial product, process, or service by trade name, trademark, manufacturer, or otherwise does not necessarily constitute or imply its endorsement, recommendation, or favoring by the United States Government or any agency thereof. The views and opinions of authors expressed herein do not necessarily reflect those of the United States Government or any agency thereof.

## **Abstract**

Geologic carbon storage projects require a vast range of permits prior to deployment. These include land-access permits, drilling permits, seismic survey permits, underground injection control permits, and any number of local and state permits, depending on the location of the project. For the “Characterization of Most Promising Sequestration Formations in the Rocky Mountain Region” (RMCCS) project in particular, critical permits included site access permits, seismic survey permits, and drilling permits for the characterization well. Permits for these and other activities were acquired either prior to or during the project.

## Table of Contents

Abstract.....	1
Table of Contents.....	2
Executive summary.....	3
Narrative .....	5
Introduction.....	5
Trapper Mining Site Access Permits .....	5
Surface Owners and Mineral Rights Owners Seismic Acquisition Permits.....	6
Characterization Well Permits .....	6
Conclusions.....	7
Appendix A: Seismic Survey Map, Land Ownership Details and Permit Example.....	8
Appendix B: Drilling Permits Compliance Plan.....	13
Appendix C: Copies of All Non-Proprietary Permits and Associated Forms .....	18

## Executive summary

Federal, state and local regulators require CCS project to obtain permits from landowners, mineral right owners and various state and local agencies to conduct critical activities required by a CCS project. These permits typically include general site access permits, extended area access permits for seismic surveys, well-drilling permits, construction permits, and underground injection control permits (if injection is planned).

Jurisdiction for these permits include federal and state authorities. Specific federal considerations include the National Environmental Policy Act (NEPA), the National Historic Preservation Act of 1966 (NHPA), and Federal Land Owning Agencies including the Bureau of Land Management (BLM), the United States Forest Service (USFS), the United States Fish and Wildlife Service (USFWS), the National Park Service (NPS), and the United States Bureau of Reclamation (USBR). Additional jurisdiction may be tribal, with additional coordination possibly facilitated by the Bureau of Indian Affairs (BIA). State Considerations include State Trust Lands, or those lands owned and managed by a state for revenue or other purposes. Some localities may require consideration by City, County, and Other Municipality concerns, especially with respect to site access agreements.

Initial permitting activities that follow site access permits include construction. Construction and building permits will depend upon jurisdiction of the site. For the case of federal lands, federal agencies have primacy to issue right of way or building permits upon their land. With respect to state lands, each county, city, and/or municipality has a process for issuing construction and building permits. All construction, regardless of federal or state ownership, requires inspection upon completion.

Water rights and mineral rights must also be addressed. Most field activity for the “Characterization of Most Promising Sequestration Formations in the Rocky Mountain Region” (RMCCS) project was conducted in Colorado. In that state, the Administration Act of 1969 determined that water rights would be established through a water court system. Following a 45-day public notice period, initial ruling, and public protest period, a water right may be granted and is then considered a decreed water right. Water rights may be absolute or conditional (6-year time frame). Only after water rights are obtained, permits for drilling wells and/or diverting groundwater must be obtained from the State Engineer. Given the limited application of a characterization well, the permits required are relatively easy to obtain. However, for injection or production or even monitoring groundwater, required permits are more extensive. Specifically, wells drilled for the purpose of producing oil and gas are permitted and issued an API number through the State of Colorado Oil and Gas Conservation Commission, and groundwater monitoring wells are permitted through the Colorado Division of Water Resources.

Zoning rights must be established as well. Within each state of the RMCCS region, each county, city, and/or municipality has specific zoning requirements. In general, each

county, city, and municipality has a Planning and Zoning Department that is responsible for zoning compliance and issuance of regulations.

For the “Characterization of Most Promising Sequestration Formations in the Rocky Mountain Region” (RMCCS) project in particular, critical aspects included gaining access to the project site, conducting the surface seismic survey and the drilling of the RMCCS State No. 1 site characterization well. Permits for these and other activities were acquired either in advance or during the project, as described in the following sections. Copies of all non-proprietary permits and/or associated documentation are included within the appendices of this report.

## Narrative

### *Introduction*

State and local regulators require permission from landowners, mineral right owners and various state and local agencies, to conduct many of the activities required by a CCS project. Specific requirements vary greatly from state to state and location, time of year and the nature of the work being done. It is highly recommended to identify sub-contractors familiar with the permitting requirements in the specific area.

For the RMCCS project, many specific permits were required. These were needed for many critical activities, including gaining access to the drill site within the Trapper Mine, conducting the surface seismic survey and drilling the RMCCS State No. 1 site characterization well. The objective of the characterization well was to obtain valuable data from the subsurface and was classified as a “Stratigraphic Test”. Since there would be no production or injection in the RMCCS well, the permitting process was more straightforward and relatively faster than what a full CCS project well would require. In the RMCCS project, no individual permit took longer than 60 days from the time of submission to approval. Drilling wells for the purpose of CO<sub>2</sub> injection will invariably require considerably longer time and more effort. Even in projects where the ultimate purpose for a well is for injection, it may be more expedient to initially permit the well as a stratigraphic test, allowing drilling to proceed while the injection permits are being processed separately.

RMCCS project permitting involved three different components, including Trapper Mining Site Access, Surface Owners and Mineral Rights Owners seismic acquisition permits, and characterization well permits.

### *Trapper Mining Site Access Permits*

The first permitting component consisted of obtaining permission from Trapper Mining for access to the site for drilling the well. Selecting a site within the boundaries of an operating mine added some complication, effectively an “additional layer” of permitting. However, the drill pad was located within an area previously designated as an ash disposal pit, consequently reducing reclamation expenses and mitigating much of the specific (or additional) environmental risk associated with well drilling. Because Schlumberger Carbon Services (SCS) was the organization primarily responsible for drilling the characterization well, SCS conducted associated permitting activities. The access permit from Trapper Mining specifies or required that: (1) liability for any financial damages due to the drilling process be assumed by the RMCCS project, (2) insurance for SCS and all major sub-contractors to SCS be arranged and acquired by SCS, and (3) time limits for access be stipulated by the access agreement. The access agreement required approval by the mine general manager and also by the mine insurance provider. For the RMCCS project, two separate agreements were struck, one for access to conduct the seismic survey and a second for site access for drilling the well. The process took roughly six weeks from initial discussions to final approval for each agreement. Similar types of agreements will be required for projects that need access to any commercial industrial property.

*Surface Owners and Mineral Rights Owners Seismic Acquisition Permits*

The second permitting component involved acquisition of permits from surface owners and from mineral rights owners for the project surface seismic survey. For general background, a seismic survey is an operation to perform detailed imaging of the subsurface using reflection of acoustic energy. Specifically, a network of sensors, or “geophones,” are spread along the ground in either a grid, or, as in the case of the RMCCS survey, along a straight line. Large trucks equipped with heavy plates traverse the survey area and periodically lower a vibrating plate that produces the energy that “reflects” off of deep rock layers or other subsurface features, and these reflected signals are recorded and processed to interpret an “image” of the subsurface. The RMCCS survey involved three survey lines, each approximately 5 miles in length, and each intersecting (over) the drill site. One line ran north to south, one line east to west and one line southeast to northwest. Permits were required by each owner (of surface rights or mineral rights) whose land the survey impinged. The permits included permission to access the property and a pre-negotiated damage fee and terms for compensation if additional damage occurred. For mineral right owners, the permits were to allow data to be acquired, stipulated any restrictions on the type of data acquired, and specified who would be allowed to receive data including what data, if any, would be given to the mineral rights owner. St. Croix Environmental, an agency specializing in seismic permitting, managed many of the practical activities of seismic survey permit acquisition. A map of the seismic survey, a map detailing ownership of the land impacted by the survey, and a table surface and mineral ownership is included in Appendix A.

*Characterization Well Permits*

The third and most extensive permitting component was associated with drilling of the RMCCS State No. 1 characterization well. Although permits to drill a stratigraphic test well are among the easiest drilling permits to obtain, the number of permits and number of entities that need to be contacted is still quite large. The primary agency regulating well drilling for Colorado, and therefore for the RMCCS project, is the Colorado Oil and Gas Conservation Commission. The land that the well was drilled on is owned by the State of Colorado and an exploration permit was required by the State Board of Land Commissioners. Additionally, the Colorado Division of Wildlife, the Colorado Health Department and the Mining Safety and Health Administration also had jurisdiction over various aspects of the operation. In order to assure all applicable requirements and jurisdictions were identified and fulfilled, Northwest Corporation, based in Grand Junction, Colorado, was employed as the project well-drilling permitting agent. A forty-eight-point compliance plan (Appendix B) was developed summarizing all forms, notices and other requirements detailed. The primary permitting requirement for well drilling is the Application for Permission to Drill (APD). Prior to submitting the APD the drill pad site had to be surveyed and a layout of the site construction prepared. Detailed information on the drilling rig, drilling fluid system, drilling plan and well completion plan was developed prior to filing the application.

After the engineering plan for the well drilling was complete, the drilling rig selected and the exact site located, a series of forms were completed and submitted to the Colorado Oil and Gas Conservation Commission for approval. The forms included: Form 1 – Operator Application, Form 2 – Application for Permit to Drill, Form 2A – Oil and Gas Location



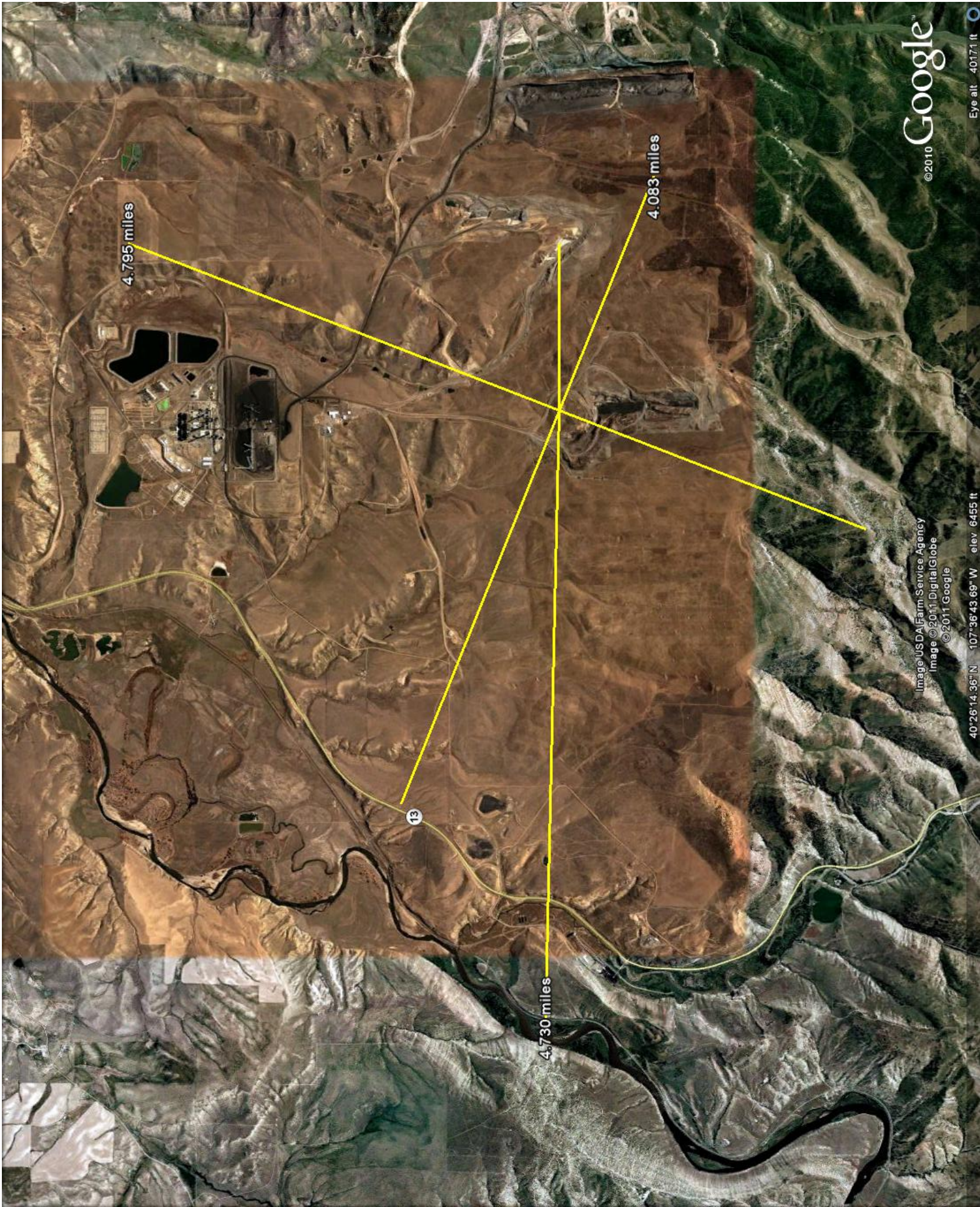
Assessment, Form 3 – Performance Bond, Form 4 – Sundry Notice, Form 15 – Earthen Pit Permit. In addition to COGCC requirements, The CO Division of Wildlife provided a waiver of Wildlife stipulations which restrict drilling during winter months in certain areas in Moffat County. A mitigation plan was developed to limit impact on elk, common in the area of the drill site. A Storm Water/ Erosion Control plan was submitted and approved by the Colorado Department of Public Health. The COGCC requested acknowledgement of drilling fluid containment, spill/release mitigation plans, and drill cuttings low moisture content requirements. Approval to drill was granted on October 27, 2011 and copies of all non-proprietary associated documents are included in Appendix C. After approval was received, a letter of intent to drill was submitted to each land owner and to Moffat County. During the drilling operations a weekly storm water inspection was performed and sundry notices of key drilling operations provided to the COGCC. Since the project site was primarily within the boundaries of the Trapper Mine, the Mining Safety and Health Administration (MSHA) held jurisdiction over all field activities in regards to health and safety.

After the well was cored, drilled to total depth of 9,700’, and geophysical well logs obtained, additional COGCC forms were required for plugging the well, restoring the drill pad and well abandonment. Form 6 – the Well Abandonment form was submitted and approved. Along with Form 6, a letter from the Director of the Board of Land Commissioners Craig Region provided a letter stating the restoration of the site met the approval of the land board. Although the well has been abandoned in accordance to all state requirements, the well was engineered in such a way that it could be re-entered and brought back into service with minimal cost.

## Conclusions

Compliance with all various permitting and access requirements is an important component of successful completion of a CCS project. For the “Characterization of Most Promising Sequestration Formations in the Rocky Mountain Region” (RMCCS) project, effective permit acquisition was imperative. Permitting activity was required in all phases of the field activity, from planning and execution through completion. The project team confirmed that requirements vary greatly from state to state, and many special rules apply based on the type of operation, time of year and exact location. For this reason, it is highly recommended that CCS projects engage sub-contractors experienced in permitting for the specific requirements of a given project. Diligence, compliance organization and effective communication protocols are critical for successfully completing a project of such complexity in full compliance with all Federal, State and local regulations.

## **Appendix A: Seismic Survey Map, Land Ownership Details and Permit Example**



4.795 miles

4.083 miles

13

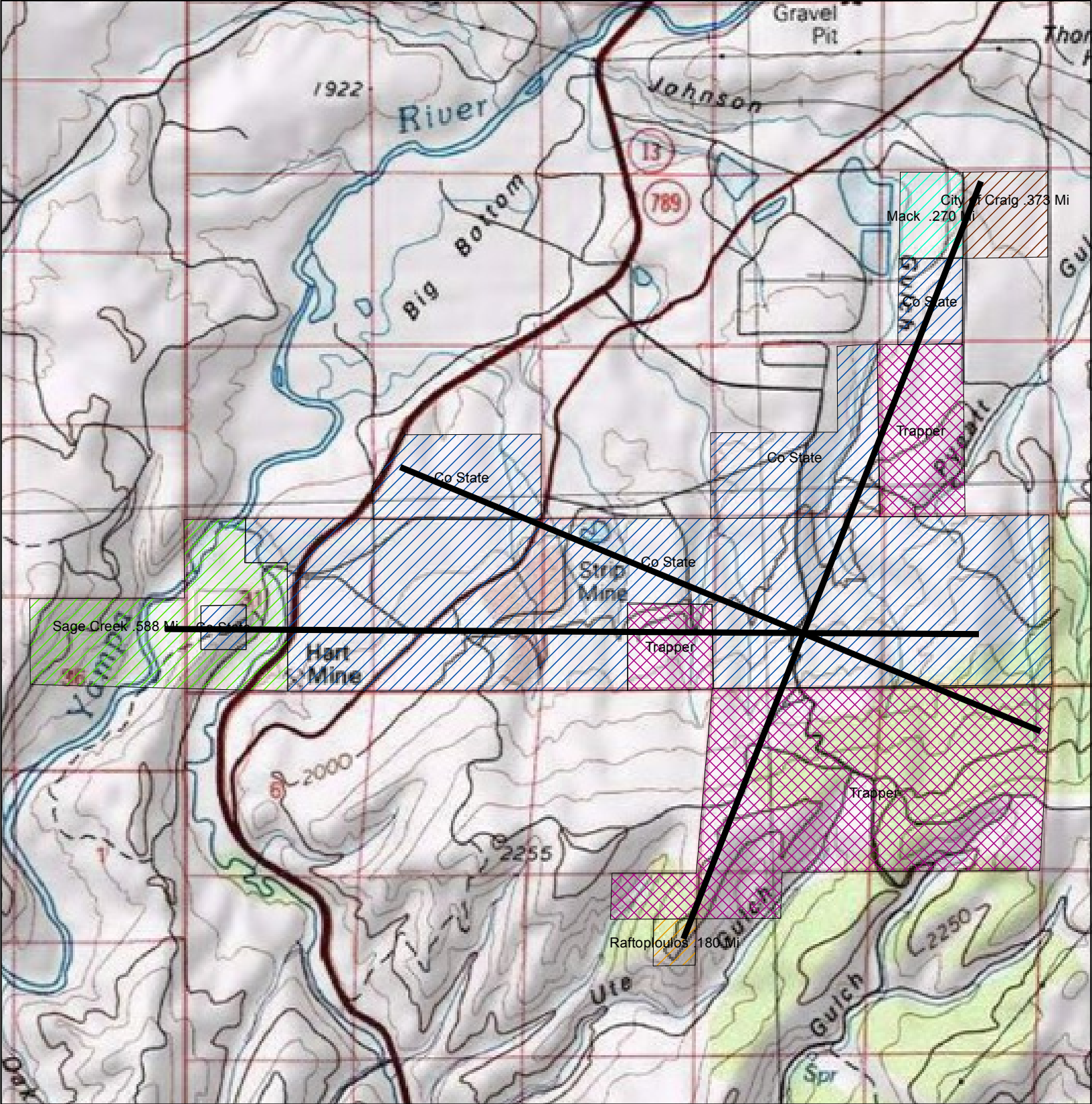
4.730 miles

Google  
©2010

Image US D A Farm Service Agency  
Image ©2011 DigitalGlobe  
©2011 Google

40°28'14.36"N 107°36'43.69"W elev 6455 ft







Eye alt 40177 ft



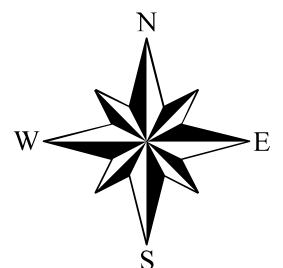
**Legend**

**Ownership**

**Name, Lin\_Mi**

-  City of Craig .373 Mi,
-  Co State,
-  Mack .270 Mi,
-  Raftoploulos .180 Mi,
-  Sage Creek .588 Mi,
-  Trapper,

# Colorado Trapper Mine Project



SW - NE Line (5 miles)										
Twonship	Range	Sec	Description	Code	Tract #	Surface Owner	Mineral Owner	Min bk/pg	Surafce Status	Surface Conditions
05N	91W	9	N2NE (lots 1,2 171.51 ac)	R002267	21A	Trapper Mining Inc PO Box 187 Craig, CO 81626-0187	USA		Pending	signed permit
05N	91W	3	SE	R002583	22A	Trapper Mining Inc PO Box 187 Craig, CO 81626-0187	Leslie M. Farrar	434/884	Pending	signed permit
05N	91W	3	E2NE	R002583	9	Trapper Mining Inc PO Box 187 Craig, CO 81626-0187	Walter C. Kruger	314/301	Pending	signed permit
05N	91W	3	W2NE, SENW, NESW	R002583	23	Trapper Mining Inc PO Box 187 Craig, CO 81626-0187	Trapper		Pending	signed permit
05N	91W	3	W2NW, NWSW	R002583	25	Trapper Mining Inc PO Box 187 Craig, CO 81626-0187	Moffat County	102/129	Pending	signed permit
05N	91W	3	SWSW	R002584	26	Trapper Mining Inc PO Box 187 Craig, CO 81626-0187	John G Raftpoulos and Steve G. Raftopoulos	#355615	Pending	signed permit
05N	91W	3	SESW	R002583	21A	Trapper Mining Inc PO Box 187 Craig, CO 81626-0187	USA		pending	signed permit
05N	91W	3	NENW	R002583	24	Trapper Mining Inc PO Box 187 Craig, CO 81626-0187	Trapper		Pending	signed permit
06N	91W	26	NW	R005676	66	Trapper Mining Inc PO Box 187 Craig, CO 81626-0187	State of Co		Pending	signed permit
05N	91W	16	All	R002273	66	State of Colorado Craig, CO 81625	State of Co		Approved	Verbal approval from Lane Osborne, Colorado State Board of Land Commisioners. Met with Lane at his office 11:00 am 2011-02-11
05N	91W	9	NW, NWSW, SWNE, NWSE			USA	USA			
05N	91W	9	E2SW, SWSW (Lots 11/13/14 127.63 ac)	R002268	79	Raftopoulos, John and Steve DBA Raftopoulos Bros Livestock 893 Stout ST Craig, CO 81625	Lynetter A Smith and Rick E Charlesworth	1996L4497 98	Signed	call before entry. Talked on the phone 11:30 2/11. Met at 10:30 am on 2/12.
05N	91W	9	SENE, NESE (Lots 8,9,)	R002591	21	Raftoploulos, John and Steve DBA Raftopoulos Bros Livestock 893 Stout ST Craig, CO 81625	USA		Signed	call before entry
05N	91W	9	S2SE (lots 15,16)	R002591	20	Raftoploulos, John and Steve DBA Raftopoulos Bros Livestock 893 Stout ST Craig, CO 81625	BHP Minerals International	666/431	Signed	call before entry
06N	91W	34	All	R005678	S	State of Colorado Craig, CO 81625	State of Co		Approved	Verbal approval from Lane Osborne, Colorado State Board of Land Commisioners
06N	91W	27		R005678	S	State of Colorado Craig, CO 81625	State of Co		Approved	Verbal approval from Lane Osborne, Colorado State Board of Land Commisioners
06N	91W	23	NW	R005673	68	Billy and Barbara Mack 80 S Mack Ln Craig, CO 81625	State of Co		Signed	Cattle, Call before entry. Voice message 11:26 2/11. voice message at 8 am 2/23.
06N	91W	23	SW	R005678	S	State of Colorado Craig, CO 81625	State of Co		Approved	Verbal approval from Lane Osborne, Colorado State Board of Land Commisioners
06N	91W	23	ptn NE	R005671	69	City of Craig 400 4th St Craig, CO 81625	State of Co		Signed	notify surface tenant Jerry Thompson before entry. He is aware of survey but has crops in the area and wants crew to use caution
06N	91W	23	ptn NE	R005671	69A	Jerry & Sue Thompson, City of Craig 400 4th St Craig, CO 81625 970-824-5835	State of Co		Signed	notify surface tenant Jerry Thompson before entry. He is aware of survey but has crops in the area and wants crew to use caution. Voice message 11:30 2/11. Talked to Sue 9:00 am 2/12. Talked to Jerry 2/23.

NW-SW Lines (4 miles)										
Twship	Range	Sec	Description	Code	Tract #	Surface Owner	Mineral Owner	bk/pg		
05N	91W	2	W2NE, E2NW	R002583	8	Trapper Mining Inc PO Box 187 Craig, CO 81626-0187	Trapper Mines 50%		Pending	signed permit
05N	91W	2	W2NW, N2SW, NWSE	R002583	9	Trapper Mining Inc PO Box 187 Craig, CO 81626-0187	Trapper Mines 50%		Pending	signed permit
06N	91W	32	NE	R005678	S	State of Colorado Craig, CO 81625	State of Co		Approved	Verbal approval from Lane Osborne, Colorado State Board of Land Commisioners
06N	91W	33	N2, SW	R005678	S	State of Colorado Craig, CO 81625	State of Co		Approved	Verbal approval from Lane Osborne, Colorado State Board of Land Commisioners
06N	91W	34	All	R005678	S	State of Colorado Craig, CO 81625	State of Co		Approved	Verbal approval from Lane Osborne, Colorado State Board of Land Commisioners
06N	91W	35	SW		S	State of Colorado Craig, CO 81625	State of Co		Approved	Verbal approval from Lane Osborne, Colorado State Board of Land Commisioners
06N	91W	29	S2		S	State of Colorado Craig, CO 81625	State of Co		Approved	Verbal approval from Lane Osborne, Colorado State Board of Land Commisioners
W-E Lines (4.73 miles)										
Twship	Range	Sec	Description	Code	Tract #	Surface Owner	Mineral Owner	bk/pg		
06N	91W	31-35		R005678		State of Colorado Craig, CO 81625	State of Co		Approved	Verbal approval from Lane Osborne, Colorado State Board of Land Commisioners
06N	91W	33		R005676		Trapper Mining Inc				
06N	91W	31		R005303		State of Colorado Craig, CO 81625	State of Co		Approved	Verbal approval from Lane Osborne, Colorado State Board of Land Commisioners
06N	91W	31		R005301	37	Sage Creek Holding, Inc 701 Market St. St, Louis, MO 63101			Pending	signed permit. Meeting Ted Kelly 1:00 pm 2/12 for Site Safety training.
06N	92W	25,36	Lots 1 & 3	R004718		Sage Creek Holding, Inc 701 Market St. St, Louis, MO 63101			Pending	signed permit

## **Appendix B: Drilling Permits Compliance Plan**

Item No.	Agency / Permit	Requirement	Submittal / Action Required? Y/N or OIN (Only If Necessary)	Record Keeping Only Required?	Timeframe Requirement	Action by	Date Completed	Action Required
<b>grey highlights: Rules Not Applicable to Schlumberger's Project</b>								
<b>blue highlights: completed tasks (line will turn blue when "Date Completed" column is filled in</b>								
1	CDPHE Stormwater Permit	Permit: CDPHE Certification, CDPS Permit	Y		10 Days prior to construction	W.Rowe	10/25/11	Submit application to CDPHE
2	CDPHE Stormwater Permit	Inspections - During Construction & Operations	N	Y	Every 14 Days & w/in 24 hours of precipitation events that may cause erosion. If no activity occurs following a storm event, the post-storm inspection can be done w/in 72 or prior to resuming onsite activity			1) Fill out stormwater inspection form (Section 9 of Stormwater Plan) 2) Remedy any problems discovered during inspection
3	COGCC Rules	Signage: Posting Concurrent with Advance Notice	Y		from time of 30 day Advance Notice (of construction) until completion operations are concluded	K.Anderson	Oct-11	at intersection of lease road & public road providing access to well site $\geq 2' \times 2'$ with: 1) name of well 2) legal location 3) estimated date of commencement
4	COGCC Rules	Signage: Post Permit at Rig	Y		During Operations			Post approved APD in a conspicuous place on the rig.
5	CDPHE Stormwater Permit	Keep Stormwater Plan Onsite Update Stormwater Plan (SWMP) as Needed	N	Y	1) Ongoing - SWMP and Site Map will be revised prior to changes in site conditions or w/in 72 hours of the change if necessary. 2) Records must be kept for 3 years once permit coverage ends			SWMP must be onsite. Update SWMP AND THE SITE MAP (Section 2 in SWMP): 1) When any change in design, construction, operation, or maintenance requiring modification of the BMPs or new BMPs 2) If the SWMP is ineffective in any way 3) When BMPs are no longer necessary and are removed <b>Time &amp; date of any changes in field must be noted in SWMP</b> The site map (section 2 of SWMP) must always reflect conditions onsite - hand drawn sketches on the map are acceptable
6	COGCC Rules	Signage: Drilling & Recompletion Operations	Y		From time of Initial Drilling until Final Abandonment			Directional Signs, $\geq 3'$ and $< 6'$ and no higher than 6' shall be placed to advise emergency crew where drilling is at a minimum at: 1) first point of intersection of a public road & the rig access road 2) thereafter @ each intersection of the rig access route, except where the route to the rig is clearly obvious Vandalized signs to be replaced w/in 60 days
7	CDPHE Stormwater Permit	Reporting Noncompliance for: 1) a noncompliance that could endanger health or environment 2) spill or discharge that may cause pollution to waters of the state 3) discharge of stormwater which may cause an exceedance of a water quality standard	OIN		Oral notification to CDPHE spill reporting line within 24 hours from the time permittee is aware of problem. Written submission within 5 days.			Oral notification to CDPHE spill reporting line within 24 hours (1-877-518-5608)
8	COGCC / NW CO Notification Policy	NOI: Construct Well Pad	Y		Prior to construction	K.Anderson	11/15/11	Email Kris.Neidel@state.co.us cc: shaun.kellerby@state.co.us
9	COGCC / NW CO Notification Policy	NOI: Set Conductor Pipe	Y		Prior to setting conductor pipe	W.Rowe	11/22/11	Email Kris.Neidel@state.co.us cc: shaun.kellerby@state.co.us
10	COGCC / NW CO Notification Policy	NOI: Spud Surface Casing	Y		Prior to spud	W.Rowe	1/7/12	Email Kris.Neidel@state.co.us cc: shaun.kellerby@state.co.us
11	COGCC Rules	Notice: Spud	Y		5 days or less after spudding the well			submit Form 4, Sundry Notice to Director
12	COGCC Rules	Notice: Flaring	OIN		prior to flaring if possible, ASAP after the event but no more than 2 hours after flaring			must notify local emergency dispatch as provided by the LGD of any flaring
13	COGCC / NW CO Notification Policy	NOI: Run & Cement Casing (all casing strings)	Y		Prior to cementing casing (ALL STRINGS)			Email Kris.Neidel@state.co.us cc: shaun.kellerby@state.co.us

COGCC  
Rule

317c

317c

317f



14	COGCC Rules	Reports & Notices - General	OIN	Y	Immediate notice if public health or safety is in jeopardy; notice of any other significant downhole problem or mechanical failure w/in 10 days		retain onsite or at the owner's headquarters in the filed accurate and complete records of drilling, redrilling, deepening, repairing, P&A of all wells, of all other well operations, and of all alterations to casing. To include: 1) formations penetrated 2) content & quality of oil, gas or water in each formation tested 3) grade, weight and size & landed depth of casing 4) any other information obtained in the course of well operation
15	COGCC Rules	Notice: Technical Changes	OIN				Submit Form 4, Sundry Notice for changes in drilling, casing, general or technical engineering/ environmental notices & changes in wellbore configuration
16	COGCC Rules	Confidentiality	OIN		at same time as submittal of well completion reports, completed interval reports, mechanical logs		submit Form 4, Sundry Notice to Director to keep completion reports, Completed Interval Reports & mechanical logs of exploratory or wildcat wells confidential for 6 months after the date of completion
17	COGCC / NW CO Notification Policy	Report: Gas Kicks or Loss of Well Control	OIN		Email reports w/in 24 hrs for gas kicks or loss of well control & a follow-up Form 23 (Loss of Well Control Report) emailed to David Andrews w/in 15 days		Email David.Andrews@state.co.us
18	COGCC Rules	Report: Drilling Completion Must include copies of ALL logs run: 1) minimum of a resistivity log with gamma-ray or other petrophysical logs that describe the stratigraphy of the wellbore 2) cement bond log when casing strings are run for all production casing or (for production liner) the intermediate casing	Y		w/in 30 days of setting the production casing, plugging a dry hole, or deepening or sidetracking a well, suspension of drilling prior to reaching TD, or anytime the wellbore configuration is changed		submit to the Director: 1) Form 5 2) 2 copies of all logs run (mechanical, mud, or other) as: 1 paper copy and as available 1 digital LAS (log ASCII) formatted copy 3) if drill stem tests, core analyses or directional surveys are run, they should be submitted <b>SEE ALSO ITEM # 29</b> <b>from Jane Stanczyk: Please prepare &amp; submit a Form 5 w/in 30 days of reaching TD. See Rule 308A for required attachments (12-19-11)</b>
19	COGCC / NW CO Notification Policy	Form 22: Accident Report 1) injury that requires medical treatment 2) significant damage to equipment or well site	OIN		Email notice w/in 24 hours of accident & follow-up with Form 22 w/in 10 days of accident		Email shaun.kellerby@state.co.us
20	COGCC Rules	Report: Spill & Release Report includes spills contained within lined or unlined berms	OIN		1) for releases > 5 barrels of E&P waste w/in 10 days of reportable discovery 2) for releases > 20 barrels of E&P waste ASAP but not more than 24 hours after discovery 3) Affected surface owner to be notified of reportable spills ASAP, but not more than 24 hours after discovery		1) submit Form 19, Spill/Release Report to Director 2) Verbally report to Director & submit Form 19, Spill/Release Report 3) Notify affected surface owner
21	COGCC / NW CO Notification Policy	Other Downhole Operations Notices & Requests 1) verbal approval to sidetrack 2) dry hole plugging orders 3) any significant downhole problem 4) high Brandenhead pressures during stimulation 5) casing repairs 6) gas venting 7) hydrogen sulfide detection	OIN		Email or call ASAP		Email David.Andrews@state.co.us and/or call David Andrews Office Phone: (970) 625-2497 Ext. 1 Cell Phone: (970) 456-5262
22	COGCC Rules	Reporting: Loss of Well Control	OIN		ASAP but no > 24 hrs following the incident w/in 15 days after all occurrences written report must be submitted		submit to Director if loss of control occurs
23	COGCC Rules	Recording: MSDS Sheets For any Chemical Products onsite for downhole use	N	Y	During Operations		MSDS sheets to be retained onsite
24	COGCC Rules	Recording: Chemical Inventory by Well Site 1) for Chemical Products used downhole or stored for use downhole in an amount exceeding 500 lbs during any quarterly reporting period. 2) for fuel stored at well site in an amount exceeding 500 lbs during any quarterly reporting period.	N	Y	During Operations Must retain for 5 years after well is P&A'd		Chemical inventories to be retained in a readily retrievable format at the operator's local field office.
25	COGCC Rules	Labeling Tanks & Containers	N		During Operations		Tanks with capacity of ≥ 10 barrels to be labeled with: 1) Name of Operator 2) Emergency Contact phone # 3) Tank capacity 4) Tank contents 5) NFPA label All HazMat labels to be retained if applicable
26	COGCC / NW CO Notification Policy	NOI: Commence Completion Operations	Y		Prior to completion operations		Email Kris.Neidel@state.co.us cc: shaun.kellerby@state.co.us

27	CDPHE Stormwater Permit	Inspections - Post-Operations	N	Y	Every month & w/in 72 hours of precipitation events that may cause erosion. Inspections not required if there is no onsite activity & snow covers site for an extended period & no melting conditions that could cause surface erosion exist			1) Fill out stormwater inspection form (Section 9 of Stormwater Plan) 2) Remedy any problems discovered during inspection 3) if Winter Conditions Exemption is used: document dates of snow cover, dates when onsite activity ceased & date melting conditions began on inspection form	
28	COGCC Rules	Report: Operator's Monthly Production Report - Also must include complete Form 7 for all fluids produced during initial testing & completion	Not Applicable		w/in 45 days after the month in which production or testing and completion occurs			Form 7, Operator's Monthly Production Report	309
29	COGCC Rules	Report: Completed Interval	Y		w/in 30 days of completing a formation (successful or not), when a formation is temporarily abandoned or permanently abandoned, for a recompletion, reperforation or restimulation or when a formation is commingled			submit Form 5A, Completed Interval Report <b>SEE ALSO ITEM # 18</b>	
30	COGCC Rules	Notice: Landowner Notice of Subsequent Well Operations	OIN		at least 7 days advance notice of subsequent well operations			notice required to landowner for activities with heavy equipment that will materially impact surface areas beyond existing access road or well site (i.e., recompletion, fracturing)	
31	COGCC Rules	Notice: Well Abandonment, prior to abandoning	NOT REQUIRED BY COGCC		Notice & approval attained in advance of the time the operator expects to abandon a well. Well must be abandoned within 6 months of submittal of the Form 6 Notice.		12/19/11	submit Form 6 to COGCC PRIOR to plugging Approval will take ~ 1 week <b>As per email from Kevin King (12-19-11), Schlumberger will not be required to submit a separate Form 6 NOI to plug the well since plugging procedures were included with the APD, but WILL submit the Form 6 Subsequent Report of Abandonment as per COGCC rules</b>	311
32	COGCC Rules	Notice: Well Abandonment, after abandoning	Y		w/in 30 days after abandonment			submit form 6 plugging verification reports also required - to be submitted from each person or contractor actually setting the plugs	311
33	COGCC Rules	Interim Reclamation Revegetation	OIN		must be to 80% of pre-drilling cover weed control measures must be taken SCHLUMBERGER'S RECLAMATION MAY LIKELY BE CONSIDERED "FINAL" RECLAMATION (if so, see final reclamation requirements below). MUST CHECK WITH SORAYA BAROUMAND TO DETERMINE 970-876-9910			Form 4, Sundry Notice - describing interim reclamation procedures & any associated mitigation - 4 photos taken during the growing season facing each cardinal direction (include date, well name, GPS location, direction of view) - 1 photo documenting the total cover of live perennial vegetation	
34	COGCC Rules	Notice: Final Reclamation Notice	Y		at least 30 days before any final reclamation operations are to take place			notice required to landowner Notice only required when final reclamation occurs > 30 days after completion of a well	
35	COGCC Rules	Final Reclamation & release of Financial Assurance	Y		Reclamation complete when: 1) disturbed areas have been built on, compacted, covered, or otherwise stabilized to minimize erosion, or revegetated to 80% of pre-disturbance levels 2) disturbances from flow line installations are adequately reclaimed 3) Sundry Form 4 submitted describing final reclamation procedures 4) Final Reclamation Inspection Completed by Director (weed control to be implemented in compliance with Colorado Noxious Weed Act CRS 35-5.5-115)			Submit Form 4, Sundry Notice, describing final reclamation procedures Conduct final reclamation inspection with COGCC	1004
36	CDPHE Stormwater Permit	Final Stabilization & Inactivation Notice	Y		Once Final Stabilization is achieved.			Submit signed Inactivation Notice to CDPHE. A copy of the inactivation notice will be mailed to the permittee along with the permit certification.	
37	COGCC / NW CO Notification Policy & COGCC Rules	NOI: Perform BOP Test BOP tests required every 30 days for high density drilling areas	Not Applicable		Only required in high density drilling areas Prior to performing BOP test			Email Kris.Neidel@state.co.us cc: shaun.kellerby@state.co.us	
38	COGCC / NW CO Notification Policy & COGCC Rules	NOI: Perform Mechanical Integrity Test (MIT) Required of all injection & shut in wells	Not Applicable		Prior to performing MIT			Email Kris.Neidel@state.co.us cc: shaun.kellerby@state.co.us Must be performed on shut-in wells within 2 years of shut-in date to retain shut-in or temporarily abandoned status	326
39	COGCC / NW CO Notification Policy & COGCC Rules	NOI: Perform Bradenhead Test Required in bradenhead test areas	Not Applicable		Prior to performing a bradenhead test COGCC rules indicate w/in 10 days of completion			Email Kris.Neidel@state.co.us cc: shaun.kellerby@state.co.us	207b, 314, 341
40	COGCC Rules	Report: Monthly Report of Fluids Injected For dedicated injection wells.	Not Applicable					submit Form 14, Monthly Report of Fluids Injected (Fluids involved with fracturing, acidizing or other similar treatment is to be reported on Form 5A)	316A

41	COGCC / NW CO Notification Policy	Report: Subsequent Reports of Cement Jobs	Not Applicable		If cementing occurs after initial cement casing is set			Email David.Andrews@state.co.us cc: Kris.Neidel@state.co.us & shaun.kellerby@state.co.us
42	COGCC / NW CO Notification Policy	Report: Lost Circulation	OIN		All lost circulation zones, gas kicks, and water flows reported ASAP within 24 hours of occurrence Significant lost circulation: mud loss > 100 barrels requiring shut down of operations for 1 hour or longer to pump lost circulation material & rebuild pit volume. Data required: 1) depth 2) mud volume lost 3) whether or not a kick ensued 4) mud weights before and after lost circulation 5) procedures used to regain circulation			Email David.Andrews@state.co.us cc: Kris.Neidel@state.co.us & shaun.kellerby@state.co.us
43	COGCC / NW CO Notification Policy	Report: Water Flows	OIN		All lost circulation zones, gas kicks, and water flows reported ASAP within 24 hours of occurrence			Email David.Andrews@state.co.us
44	COGCC Rules	Recording: Waste Generator Requirements	N	Y				Generators of E&P waste that is transported off-site shall maintain, for not less than five (5) years, copies of each invoice, bill, or ticket and other records necessary to document the following: A. The date of the transport; B. The identity of the waste generator; C. The identity of the waste transporter; D. The location of the waste pickup site; E. The type and volume of waste; and F. The name and location of the treatment or disposal site. Such records shall be signed by the transporter, made available for inspection by the Director during normal business hours, and copies thereof shall be furnished to the Director upon request.
45	COGCC Rules	Recording: COGCC Stormwater Mngmnt	Not Applicable		Since site will be completely closed once the CDPHE stormwater plan permit is terminated, this requirement should not apply			
46	COGCC Rules	Signage: Permanent Designations	Not Applicable		Within 60 days after completion of well As the well will be immediately closed, this should not apply			Permanent sign located no higher than 6' at the wellhead identifying the well & including: 1) legal location including 1/4 1/4 section 2) if a battery is present, a permanent sign must be located at the battery Vandalized signs to be replaced w/in 60 days
47	COGCC Rules	PITS E&P Waste Requirements	N		1) Any accumulation of oil or condensate in a pit shall be removed within 24 hours of discovery. 2) Netting/fencing to be used to prevent significant adverse impacts to wildlife, migratory birds, domestic animals			
48	COGCC Rules	PITS Closure, non crop land	N		1) Soils must meet concentration levels of Table 910-1 (see "Table 910-1 Max Levels" tab in this workbook 2) After the pit is sufficiently dry, it shall be backfilled - materials removed from the pit for drying shall be returned to the pit prior to backfilling. No more than de minimis amounts may be incorporated into the surface materials.			Pit closure to occur < 6 months after drilling & completion activities

## **Appendix C: Copies of All Non-Proprietary Permits and Associated Forms**

FORM  
2  
Rev  
12/05

State of Colorado  
Oil and Gas Conservation Commission

1120 Lincoln Street, Suite 801, Denver, Colorado 80205 Phone: (303) 894-2100 Fax: (303) 894-2109



DE	ET	OE	ES
----	----	----	----

Document Number:

400205316

PluggingBond SuretyID

20110167

APPLICATION FOR PERMIT TO:

1.  Drill,  Deepen,  Re-enter,  Recomplete and Operate

2. TYPE OF WELL

OIL  GAS  COALBED  OTHER test well, CO2  
SINGLE ZONE  MULTIPLE  COMMINGLE

Refiling   
Sidetrack

3. Name of Operator: SCHLUMBERGER CARBON SERVICES 4. COGCC Operator Number: 10382  
 5. Address: 1875 LAWRENCE ST., SUITE 500  
 City: DENVER State: CO Zip: 80202  
 6. Contact Name: Wayne Rowe Phone: (303)297-9005 Fax: (303)297-9007  
 Email: rowe5@slb.com  
 7. Well Name: RMCCS State Well Number: No. 1  
 8. Unit Name (if appl): N/A Unit Number: N/A  
 9. Proposed Total Measured Depth: 10000

WELL LOCATION INFORMATION

10. QtrQtr: SWSE Sec: 34 Twp: 6N Rng: 91W Meridian: 6  
Latitude: 40.427476 Longitude: -107.589754

Footage at Surface: 210 feet FNL/FSL 2416 feet FEL/FWL  
FSL FEL

11. Field Name: N/A Field Number: \_\_\_\_\_  
12. Ground Elevation: 6832 13. County: MOFFAT

14. GPS Data:  
Date of Measurement: 07/16/2011 PDOP Reading: 1.4 Instrument Operator's Name: P.Epp

15. If well is  Directional  Horizontal (highly deviated) **submit deviated drilling plan.**  
 Footage at Top of Prod Zone: FNL/FSL \_\_\_\_\_ FEL/FWL \_\_\_\_\_ Bottom Hole: FNL/FSL \_\_\_\_\_ FEL/FWL \_\_\_\_\_  
 \_\_\_\_\_  
 Sec: \_\_\_\_\_ Twp: \_\_\_\_\_ Rng: \_\_\_\_\_ Sec: \_\_\_\_\_ Twp: \_\_\_\_\_ Rng: \_\_\_\_\_

16. Is location in a high density area? (Rule 603b)?  Yes  No  
 17. Distance to the nearest building, public road, above ground utility or railroad: 5000 ft  
 18. Distance to nearest property line: 220 ft 19. Distance to nearest well permitted/completed in the same formation(BHL): 15425 ft

LEASE, SPACING AND POOLING INFORMATION

Objective Formation(s)	Formation Code	Spacing Order Number(s)	Unit Acreage Assigned to Well	Unit Configuration (N/2, SE/4, etc.)
Weber Sandstone	WEBR			

21. Mineral Ownership:  Fee  State  Federal  Indian Lease #: N/A  
 22. Surface Ownership:  Fee  State  Federal  Indian  
 23. Is the Surface Owner also the Mineral Owner?  Yes  No Surface Surety ID#: \_\_\_\_\_  
 23a. If 23 is Yes: Is the Surface Owner(s) signature on the lease?  Yes  No  
 23b. If 23 is No:  Surface Owners Agreement Attached or  \$25,000 Blanket Surface Bond  \$2,000 Surface Bond  \$5,000 Surface Bond

24. Using standard QtrQtr, Sec, Twp, Rng format enter entire mineral lease description upon which this proposed wellsite is located (attach separate sheet/map if you prefer):

This is a stratigraphic test well for CO2 sequestration, no oil or gas will be extracted or produced. No lease information is therefore required.

25. Distance to Nearest Mineral Lease Line: \_\_\_\_\_ 26. Total Acres in Lease: \_\_\_\_\_

### DRILLING PLANS AND PROCEDURES

27. Is H2S anticipated?  Yes  No If Yes, attach contingency plan.

28. Will salt sections be encountered during drilling?  Yes  No

29. Will salt (>15,000 ppm TDS CL) or oil based muds be used during drilling?  Yes  No

30. If questions 28 or 29 are yes, is this location in a sensitive area (Rule 901.e)?  Yes  No

31. Mud disposal:  Offsite  Onsite

If 28, 29, or 30 are "Yes" a pit permit may be required.

Method:  Land Farming  Land Spreading  Disposal Facility Other: pit

Note: The use of an earthen pit for Recompletion fluids requires a pit permit (Rule 905b). If air/gas drilling, notify local fire officials.

Casing Type	Size of Hole	Size of Casing	Wt/Ft	Csg/Liner Top	Setting Depth	Sacks Cmt	Cmt Btm	Cmt Top
CONDUCTOR		20	94	0	100		100	
SURF	17+1/2	13+3/8	54.5	0	1,500	926	1,500	100
1ST	12+1/4	9+5/8	43.5	0	5,500	960	5,500	1,500
2ND	8+1/2			0	9,700	0		

32. BOP Equipment Type:  Annular Preventer  Double Ram  Rotating Head  None

33. Comments This APD is for a stratigraphic test well for CO2 sequestration. This is a Department of Energy funded project with the University of Utah, Colorado Geologic Survey & Tri-State partnering to conduct the work at the Trapper Mine, located on state surface. Attached is a letter from the state of Colorado Land Board as to surface use. No oil or gas will be extracted or produced. No lease information is therefore required. A Form 15 pit permit is being submitted concurrently with this location assessment. RMCCS State #1 plugging procedure: Plug 1 Covers a minimum of 100' above tops of Entrada, and Chinle/Moenkopi 35 bbls or 195 ft3 of Class H 15.1 ppg Yield 1.15 cf/sx set from 8300 ft to 7800 ft. MD (Depth adjusted for actual formation tops) Plug 2 Covers a minimum of 100' above top of Dakota and the Morrison 35 bbls or 195 ft3 of Class H 15.1 ppg Yield 1.15 cf/sx set from 7400 to 6900 ft MD (Depth adjusted for actual formation tops) Plug 3 50 ft in and 50 ft outside 9 5/8" casing shoe from 5550 ft to 5450 ft, 7 bbls or 41 ft3 of Class H 15.1 ppg Yield 1.15 cf/sx Plug 4 Across surface casing shoe 100'(50' in, 50' out) from 1450 to 1550 feet 7 bbls or 41 ft3 of Class H 15.1 ppg Yield 1.15 cf/sx Plug 5 Surface Plug 50 feet from 55 to 5 ft (Cellar cutoff depth) 3.5 bbls 20ft3 of class H 15.1 ppg yeild 1.15 cf/sx

34. Location ID: \_\_\_\_\_

35. Is this application in a Comprehensive Drilling Plan ?  Yes  No

36. Is this application part of submitted Oil and Gas Location Assessment ?  Yes  No

I hereby certify all statements made in this form are, to the best of my knowledge, true, correct, and complete.

Signed: \_\_\_\_\_ Print Name: Wayne Rowe

Title: Project Manager Date: 9/23/2011 Email: rowe5@slb.com

Based on the information provided herein, this Application for Permit-to-Drill complies with COGCC Rules and applicable orders and is hereby approved.

COGCC Approved: David S. Neslin Director of COGCC Date: 10/27/2011

**API NUMBER**  
05 081 07694 00

Permit Number: \_\_\_\_\_ Expiration Date: 10/26/2013

**CONDITIONS OF APPROVAL, IF ANY:**

All representations, stipulations and conditions of approval stated in the Form 2A for this location shall constitute representations, stipulations and conditions of approval for this Form 2 Permit-to-Drill and are enforceable to the same extent as all other representations, stipulations and conditions of approval stated in this Permit-to-Drill.

COMPLIANCE WITH THE MOST CURRENT REVISION OF THE NORTHWEST COLORADO NOTIFICATION POLICY IS REQUIRED.

THE PROPOSED SURFACE CASING IS MORE THAN 50' BELOW THE DEPTH OF THE DEEPEST WATER WELL WITHIN 1MILE OF THE SURFACE LOCATION WHEN CORRECTED FOR ELEVATION DIFFERENCES. THE DEEPEST WATER WELL WITHIN 1 MILE IS 000 FEET DEEP.

NOTIFY KRIS NEIDEL (Kris.Neidel@state.co.us) AT LEAST 24-HOURS PRIOR TO COMMENCING PLUGGING OPERATIONS.

### Attachment Check List

Att Doc Num	Name
400205316	FORM 2 SUBMITTED
400205326	WELL LOCATION PLAT
400205328	TOPO MAP
400205372	SURFACE OWNER CONSENT

Total Attach: 4 Files

### General Comments

<u>User Group</u>	<u>Comment</u>	<u>Comment Date</u>
Permit	LGD/pub. comm. waived. CPW comments addressed on 2A. Final comprehensive review status--passed.	10/25/2011 2:11:48 PM
Permit	Krista Anderson with Norwest Corp. req'd expedited approval to get construction crew in last week of Oct.	10/12/2011 10:04:44 AM
Permit	READY TO APPROVE IN PERMITTING WHEN LGD/PUB. EXP. 10/13 NEED OGLA APPROVAL ON 2A.	10/3/2011 10:32:34 AM

Total: 3 comment(s)

### BMP

<u>Type</u>	<u>Comment</u>
Material Handling and Spill Prevention	Secondary containments will be constructed in accordance with COGCC E&P Waste Management Rules 906.e.(1). Good housekeeping measures will be implemented for appropriate waste disposal.
Storm Water/Erosion Control	Stormwater BMPs will be developed and implemented consistent with COGCC Reclamation Rules 1002.f.(2) and as required by the Colorado Department of Public Health. The project will occur in an unreclaimed pit that has not been revegetated. BMPs will include but are not limited to secondary containment berms and wattles.
Wildlife	Schlumberger has been in contact with the Colorado Division of Parks and Wildlife and is consulting with them as to appropriate BMPs for this location and project.

Total: 3 comment(s)

## NORTHWEST COLORADO NOTIFICATION POLICY

EFFECTIVE FOR NOTICES RECEIVED ON OR AFTER JANUARY 1, 2010

REVISED SEPTEMBER 21, 2010\*

### NOTICES OF INTENT

**Notices of Intent to: 1) construct a well pad, 2) set conductor pipe, 3) spud surface casing, 4) run and cement casing (all casing strings), 5) perform a formation integrity test (East Mamm Creek Area), 6) perform a BOP test, 7) perform a mechanical integrity test, 8) perform a bradenhead test, and 9) commence completions operations.**

Email these notices to the appropriate field inspector, based on their geographic area of responsibility. A copy to [David.Andrews@state.co.us](mailto:David.Andrews@state.co.us) is not necessary, unless you require COGCC approval for a change of procedure. Currently, COGCC's northwest area field inspectors are responsible for the following geographic areas:

- Kris Neidel ([Kris.Neidel@state.co.us](mailto:Kris.Neidel@state.co.us)) – Eagle, Grand, Jackson, Moffat, Routt, and Summit Counties
- Chuck Browning ([Chuck.Browning@state.co.us](mailto:Chuck.Browning@state.co.us)) – Chaffee, Delta, Gunnison, Lake, Mesa, Montrose (north of the 48N/49N township line), and Pitkin Counties
- Mike Longworth ([Mike.Longworth@state.co.us](mailto:Mike.Longworth@state.co.us)) – Garfield and Rio Blanco Counties

Shaun Kellerby is COGCC's Northwest Field Inspection Supervisor. Shaun assists other field inspectors throughout northwest Colorado, and he should be copied on the notices of intent shown above for all northwest Colorado counties. A current map showing areas of responsibility is provided at the bottom of this policy. Periodically, field inspectors and their areas of responsibility may change. An up-to-date map is maintained on COGCC's website at <http://www.colorado.gov/cogcc>. Click CONTACTS on the left-hand side of the web page. Then click MAP OF STAFF AREAS OF RESPONSIBILITY. Then click MAP OF INSPECTORS STAFF AREAS OF RESPONSIBILITY.

### SUBSEQUENT REPORTS

**Subsequent Reports of: 1) cement jobs, 2) annular fluid loss (Mamm Creek Field), 3) lost circulation, 4) gas kicks or loss of well control, 5) water flows.**

Email these subsequent reports to [David.Andrews@state.co.us](mailto:David.Andrews@state.co.us). Copy the appropriate field inspector and [Shaun.Kellerby@state.co.us](mailto:Shaun.Kellerby@state.co.us) on subsequent reports of cement jobs and lost circulation.

Email reports should be submitted within 24 hours for gas kicks or loss of well control, and a follow-up Form 23 (Loss of Well Control Report) should be emailed to [David.Andrews@state.co.us](mailto:David.Andrews@state.co.us) within 15 days.

### **Subsequent Reports of Accidents:**

A Form 22 (Accident Report) must be submitted for: 1) an injury to wellsite personnel or to a member of the general public which requires medical treatment; or 2) significant damage to equipment or the wellsite. An email notice of an accident should be submitted to [Shaun.Kellerby@state.co.us](mailto:Shaun.Kellerby@state.co.us) within 24 hours of the accident, and a follow-up Form 22 should be emailed to [Shaun.Kellerby@state.co.us](mailto:Shaun.Kellerby@state.co.us) within 10 days of the accident.



---

**OTHER DOWNHOLE OPERATIONS**

**Other Downhole Operations, including: 1) verbal approval to sidetrack, 2) dry hole plugging orders, 3) any significant downhole problem, 4) high bradenhead pressures during stimulation, 5) casing repairs, 6) gas venting, and 7) hydrogen sulfide detection.**

Email requests and notices to [David.Andrews@state.co.us](mailto:David.Andrews@state.co.us) and/or call David Andrews' office or cell phone numbers shown below.

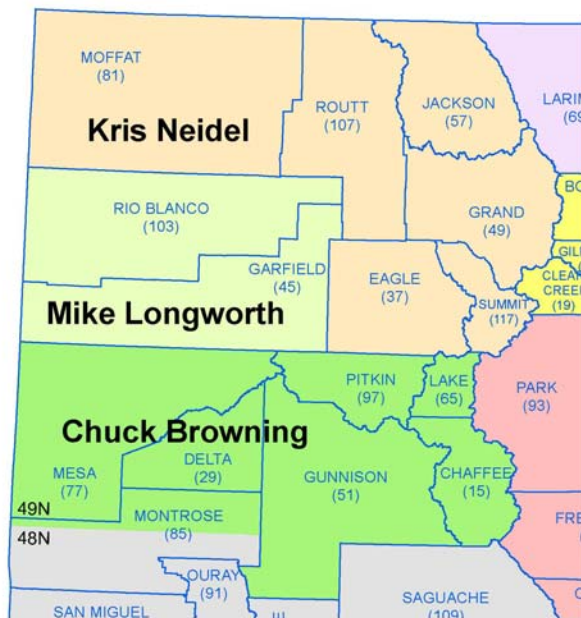
**QUESTIONS**

Please direct any questions regarding these notification procedures to:

**David D. Andrews, P.E., P.G.**  
Engineering Supervisor - Western Colorado

**State of Colorado  
Oil and Gas Conservation Commission**

707 Wapiti Court, Suite 204  
Rifle, Colorado 81650  
Office Phone: (970) 625-2497 Ext. 1  
Cell Phone: (970) 456-5262  
Fax: (970) 625-5682  
E-mail: [David.Andrews@state.co.us](mailto:David.Andrews@state.co.us)  
Website: <http://www.colorado.gov/cogcc>



**\* Policy Revisions**

Revision No. 1, January 21, 2010: Shaun Kellerby added as a point-of-contact to Chuck Browning and Mike Longworth notification areas for Notices of Intent and Subsequent Reports. Other minor format and editorial changes.

Revision No. 2, September 21, 2010: Added “perform mechanical integrity test,” “perform bradenhead test,” and “commence completion operations,” to Notices of Intent. Changed “spud a conductor” to “set conductor pipe” to eliminate any confusion concerning the formal (surface casing) spud of a well. Shaun Kellerby was replaced with Kris Neidel as primary point-of-contact for Eagle, Grand, Jackson, Moffat, Routt, and Summit Counties. Changed primary point-of-contact for accident reports from David Andrews to Shaun Kellerby. Other minor format and editorial changes.

## Notice Concerning Operating Requirements for Wildlife Protection

In December 2008 the COGCC adopted several new and amended rules intended to minimize adverse impacts to wildlife resources in Colorado from oil and gas activities. Beginning July 1, 2009 on federal land and April 1, 2009 on all other land, these rules will apply to all oil and gas exploration and development operations in the state.

This notice is intended to inform operators of these wildlife protection rules and to provide a reminder so company staff and contractors may become familiar with certain new and existing operating requirements. While some of these practices were required under conditions of approval attached to permits submitted between January 5, 2009 and June 2009, operators should be aware that they will apply automatically to all permits and operations going forward.

If you have any questions about the following rules, please contact the COGCC at 303-894-2100 or [dnr.ogcc@state.co.us](mailto:dnr.ogcc@state.co.us).

### PITS AND WASTE MANAGEMENT

The COGCC Rules have long had waste management requirements to protect wildlife, and the rules in this regard have not changed significantly.

Pits pose a hazard to people and animals because they are difficult to exit if one falls in. Accordingly, COGCC Rule 604.c.(3) continues to require pits to be fenced in order to prevent accidental entry when the site is easily accessible and poses a hazard. The most common and significant problem with pits and wildlife arises when waterfowl land in a pit, get oil on their wings, and are unable to fly or otherwise get out of the pit. This is likely a violation of COGCC Rule 902.c and may also violate the federal Migratory Bird Treaty Act (MBTA). While the U.S. Fish and Wildlife Service (USF&WS) may enforce for the loss of life by migratory birds under the MBTA, operators should be aware that the COGCC will enforce where pits are not maintained to be free of oil and condensate, unless the pit is permitted as a skim pit and is properly lined, fenced, and netted. Additionally, COGCC Rule 902.d. continues to require operators to install appropriate netting or fencing where necessary to prevent significant adverse environmental impacts resulting from access to a pit by wildlife, including migratory birds. Failure to comply with COGCC Rules could result in penalties or revocation of the pit permit, Form 15.

The text of these provisions regarding waste management for wildlife protection follows:

#### ***COGCC Rule 902. PITS - GENERAL AND SPECIAL RULES (Excerpt)***

- c. *Any accumulation of oil or condensate in a pit shall be removed within twenty-four (24) hours of discovery. Operators shall use skimming, steam cleaning of exposed liners, or other safe and legal methods as necessary to maintain pits in clean condition and to control hydrocarbon odors. Only de minimis amounts of hydrocarbons may be present unless the pit is specifically permitted for oil or condensate recovery or disposal use. A Form 15 pit permit may be revoked by*

*the Director and the Director may require that the pit be closed if an operator repeatedly allows more than de minimis amounts of oil or condensate to accumulate in a pit. This requirement is not applicable to properly permitted and properly fenced, lined, and netted skim pits that are designed, constructed, and operated to prevent impacts to wildlife, including migratory birds.*

- d. *Where necessary to protect public health, safety and welfare or to prevent significant adverse environmental impacts resulting from access to a pit by wildlife, migratory birds, domestic animals, or members of the general public, operators shall install appropriate netting or fencing.*

### **Fired Vessel, Heater Treater**

Other oil field hazards for migratory birds are fired vessels, including heater treaters. On March 1, 2007 the COGCC adopted a policy that required all oil and gas operators to install screening or other devices on the stacks and on other openings of heater treaters or fired vessels to prevent entry by migratory birds. This policy was adopted after inspection by USFWS personnel found that many heater treaters contained the remains of dead birds. As a result of these inspections, the USFWS determined that heater treaters on oil and gas properties create a widespread hazard for migratory birds and that parties responsible for bird deaths from these devices may be subject to prosecution and fines. The COGCC's March 2007 policy regarding fired vessels for wildlife protection was codified as a rule in the December 2008 rulemaking. The text of the rule follows:

#### ***COGCC Rule 604. OIL AND GAS FACILITIES (Excerpt)***

##### ***b. Fired Vessel, Heater-Treater***

- (7) All stacks, vents, or other openings shall be equipped with screens or other appropriate equipment to prevent entry by wildlife, including migratory birds.*

### **GENERAL OPERATING REQUIREMENTS**

In response to direction from the General Assembly, the COGCC Rules now include operating requirements to minimize adverse impacts to wildlife resources -- many of which are already being implemented by operators in Colorado.

COGCC Rule 1204 contains five operating standards that will apply statewide where certain circumstances exist, such as utilizing bear-proof containers for food related trash at operations in black bear habitat, disinfecting certain equipment before using it in designated cutthroat trout habitat, planning transportation networks to minimize the number and length of oil and gas roads, and establishing refueling and chemical storage areas outside of riparian zones and floodplains.

The sixteen operating standards in Rule 1203, on the other hand, will only apply in areas designated in the rules as sensitive wildlife habitat, such as constructing escape ramps for certain pipeline trenches during installation, consolidating new facilities, minimizing rig mobilization where practicable, using boring instead of trenching across critical fish streams, and treating certain wastewater pits to prevent the spread of West Nile Virus.

Certain of these Rule 1203 operating standards will apply only with the consent of the surface owner, such as using wildlife-appropriate fencing or seed mixes during reclamation, limiting access to oil and gas roads, and using topographic features and vegetative screening to create seclusion areas.

Operators are advised to review the requirements of the new 1200-Series Rules closely to ensure that their operations and procedures are in compliance. The text of rules containing operating requirements for wildlife protection follows:

**COGCC Rule 1204. OTHER GENERAL OPERATING REQUIREMENTS**

a. *The operating requirements identified below shall apply in all areas.*

(1) *In black bear habitat west of Interstate 25 and on Raton Mesa east of Interstate 25, operators shall install and utilize bear-proof dumpsters and trash receptacles for food-related trash at all facilities that generate such trash.*

(2) *In designated Cutthroat Trout habitat, as identified on the Colorado Division of Wildlife Species Activity Mapping (SAM) system, operators shall disinfect water suction hoses and water transportation tanks withdrawing from or discharging into surface waters (other than contained pits) used previously in another river, lake, pond, or wetland and discard rinse water in an approved disposal facility. Disinfection practices shall be repeated after completing work or before moving to the next water body. Disinfection may be performed by removing mud and debris and then implementing one of the following practices:*

A. *Spray/soak equipment with a disinfectant solution capable of killing whirling disease spores; or*

B. *Spray/soak equipment with water greater than 140 degrees Fahrenheit for at least 10 minutes.*

(3) *To minimize adverse impacts to wildlife resources, plan new transportation networks and new oil and gas facilities to minimize surface disturbance and the number and length of oil and gas roads and utilize common roads, rights of way, and access points to the extent practicable, consistent with these rules, an operator's operational requirements, and any requirements imposed by federal and state land management agencies, local government regulations, and surface use agreements and other surface owner requirements, and taking into account cost effectiveness and technical feasibility.*

(4) *Establish new staging, refueling, and chemical storage areas outside of riparian zones and floodplains.*

(5) *Use minimum practical construction widths for new rights-of-way where pipelines cross riparian areas, streams, and critical habitats.*

b. **Exceptions.** *If the operator believes that any of the foregoing operating requirements should be waived for any proposed oil and gas location, it shall so specify in a Form 2A for Director consideration.*

**COGCC Rule 1203. GENERAL OPERATING REQUIREMENTS IN SENSITIVE WILDLIFE HABITAT AND RESTRICTED SURFACE OCCUPANCY AREAS**

a. **General Operating Requirements.** *Within sensitive wildlife habitat and restricted surface occupancy areas, operators shall comply with the operating requirements listed below.*

(1) *During pipeline construction for trenches that are left open for more than five (5) days and are greater than five (5) feet in width, install wildlife crossovers and escape ramps where the trench crosses well-defined*

*game trails and at a minimum of one quarter (1/4) mile intervals where the trench parallels well-defined game trails.*

- (2) Inform and educate employees and contractors on wildlife conservation practices, including no harassment or feeding of wildlife.*
  - (3) Consolidate new facilities to minimize impact to wildlife.*
  - (4) Minimize rig mobilization and demobilization where practicable by completing or recompleting all wells from a given well pad before moving rigs to a new location.*
  - (5) To the extent practicable, share and consolidate new corridors for pipeline rights-of-way and roads to minimize surface disturbance.*
  - (6) Engineer new pipelines to reduce field fitting and reduce excessive right-of-way widths and reclamation.*
  - (7) Use boring instead of trenching across perennial streams considered critical fish habitat.*
  - (8) Treat waste water pits and any associated pit containing water that provides a medium for breeding mosquitoes with Bti (*Bacillus thuringiensis v. israelensis*) or take other effective action to control mosquito larvae that may spread West Nile Virus to wildlife, especially grouse.*
  - (9) Use wildlife appropriate seed mixes wherever allowed by surface owners and regulatory agencies.*
  - (10) Mow or brushhog vegetation where appropriate, leaving root structure intact, instead of scraping the surface, where allowed by the surface owner.*
  - (11) Limit access to oil and gas access roads where approved by surface owners, surface managing agencies, or local government, as appropriate.*
  - (12) Post speed limits and caution signs to the extent allowed by surface owners, Federal and state regulations, local government, and land use policies, as appropriate.*
  - (13) Use wildlife-appropriate fencing where acceptable to the surface owner.*
  - (14) Use topographic features and vegetative screening to create seclusion areas, where acceptable to the surface owner.*
  - (15) Use remote monitoring of well production to the extent practicable.*
  - (16) Reduce traffic associated with transporting drilling water and produced liquids through the use of pipelines, large tanks, or other measures where technically feasible and economically practicable.*
- b. Exceptions.** *If the operator believes that any of the foregoing operating requirements should be waived for any proposed oil and gas location, it shall so specify in a Form 2A for Director consideration.*

Submit original plus one copy. This form is to be used for general, technical and environmental survey information. For proposed or completed operations, describe in full on Technical Information Page (Page 2 of this form.) Identify well or other facility by API Number or by OGCC Facility ID. Operator shall send an informational copy of all sundry notices for wells located in High Density Areas to the Local Government Designee (Rule 603b.)

1. OGCC Operator Number: <u>10382</u>	4. Contact Name Wayne Rowe	Complete the Attachment Checklist  OP OGCC
2. Name of Operator: <u>SCHLUMBERGER CARBON SERVICES</u>	Phone: <u>303 297-9005</u>	
3. Address: <u>1875 LAWRENCE ST., SUITE 500</u> City: <u>Denver</u> State: <u>CO</u> Zip: <u>80202</u>	Fax: <u>303-297-9007</u>	
5. API Number <u>05-081-07694-00</u>	OGCC Facility ID Number <u>426228</u>	Survey Plat
6. Well/Facility Name: <u>RMCCS State</u>	7. Well/Facility Number <u>No. 1</u>	Directional Survey
8. Location (QtrQtr, Sec, Twp, Rng, Meridian): <u>SWSE, Sec.34, T6N, R91W, 6th PM</u>		Surface Eqpmt Diagram
9. County: <u>Moffat</u>	10. Field Name: <u>N/A</u>	Technical Info Page
11. Federal, Indian or State Lease Number: _____		Other

**General Notice**

**CHANGE OF LOCATION:** Attach New Survey Plat (a change of surface qtr/qtr is substantive and requires a new permit)

Change of <b>Surface</b> Footage <b>from</b> Exterior Section Lines:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Change of <b>Surface</b> Footage <b>to</b> Exterior Section Lines:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Change of <b>Bottomhole</b> Footage <b>from</b> Exterior Section Lines:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Change of <b>Bottomhole</b> Footage <b>to</b> Exterior Section Lines:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Bottomhole location Qtr/Qtr, Sec, Twp, Rng, Mer \_\_\_\_\_  
 Latitude \_\_\_\_\_ Distance to nearest property line \_\_\_\_\_ Distance to nearest bldg, public rd, utility or RR \_\_\_\_\_  
 Longitude \_\_\_\_\_ Distance to nearest lease line \_\_\_\_\_ Is location in a High Density Area (rule 603b)? Yes/No   
 Ground Elevation \_\_\_\_\_ Distance to nearest well same formation \_\_\_\_\_ Surface owner consultation date: \_\_\_\_\_

attach directional survey

**GPS DATA:**  
 Date of Measurement \_\_\_\_\_ PDOP Reading \_\_\_\_\_ Instrument Operator's Name \_\_\_\_\_

**CHANGE SPACING UNIT**

Formation	Formation Code	Spacing order number	Unit Acreage	Unit configuration

Remove from surface bond  
Signed surface use agreement attached

**CHANGE OF OPERATOR (prior to drilling):**  
 Effective Date: \_\_\_\_\_  
 Plugging Bond:  Blanket  Individual

**CHANGE WELL NAME** NUMBER  
 From: \_\_\_\_\_  
 To: \_\_\_\_\_  
 Effective Date: \_\_\_\_\_

**ABANDONED LOCATION:**  
 Was location ever built?  Yes  No  
 Is site ready for Inspection?  Yes  No  
 Date Ready for Inspection: \_\_\_\_\_

**NOTICE OF CONTINUED SHUT IN STATUS**  
 Date well shut in or temporarily abandoned: \_\_\_\_\_  
 Has Production Equipment been removed from site?  Yes  No  
 MIT required if shut in longer than two years. Date of last MIT \_\_\_\_\_

**SPUD DATE:** 01-15-2012 05:00

**REQUEST FOR CONFIDENTIAL STATUS** (6 mos from date casing set)

**SUBSEQUENT REPORT OF STAGE, SQUEEZE OR REMEDIAL CEMENT WORK** \*submit cbl and cement job summaries

Method used	Cementing tool setting/perf depth	Cement volume	Cement top	Cement bottom	Date

**RECLAMATION:** Attach technical page describing final reclamation procedures per Rule 1004.  
 Final reclamation will commence on approximately \_\_\_\_\_  Final reclamation is completed and site is ready for inspection.

**Technical Engineering/Environmental Notice**

Notice of Intent Approximate Start Date: \_\_\_\_\_  Report of Work Done Date Work Completed: \_\_\_\_\_

Details of work must be described in full on Technical Information Page (Page 2 must be submitted.)

<input type="checkbox"/> Intent to Recomplete (submit form 2)	<input type="checkbox"/> Request to Vent or Flare	<input type="checkbox"/> E&P Waste Disposal
<input type="checkbox"/> Change Drilling Plans	<input type="checkbox"/> Repair Well	<input type="checkbox"/> Beneficial Reuse of E&P Waste
<input type="checkbox"/> Gross Interval Changed?	<input type="checkbox"/> Rule 502 variance requested	<input type="checkbox"/> Status Update/Change of Remediation Plans
<input type="checkbox"/> Casing/Cementing Program Change	<input type="checkbox"/> Other: _____	for Spills and Releases

I hereby certify that the statements made in this form are, to the best of my knowledge, true, correct and complete.

Signed: \_\_\_\_\_ Date: \_\_\_\_\_ Email: rowe5@slb.com  
 Print Name: Wayne Rowe Title: Project Manager

COGCC Approved: \_\_\_\_\_ Title: \_\_\_\_\_ Date: \_\_\_\_\_

CONDITIONS OF APPROVAL, IF ANY:

# STATE OF COLORADO

---

**Governor**  
John W. Hickenlooper

**Department of Natural Resources**  
Mike King, Executive Director



**Managing  
State Trust Lands  
Since 1876**

**STATE BOARD OF  
LAND COMMISSIONERS**  
William E. Ryan, Division Director  
1127 Sherman Street, Suite 300  
Denver, CO 80203  
Phone: (303) 866-3454  
Fax: (303) 866-3152

March 6<sup>th</sup>, 2012

Wayne Rowe  
Schlumberger Carbon Services  
1875 Lawrence Street, Suite 500  
Denver, CO 80202

Re: Notice of Archaeological Information  
Colorado State Exploration Permit No. EP 2831  
Moffat County

Dear Wayne,

Enclosed is a copy of the information sent to Tim Kelly regarding known archaeological sites located within the boundaries of the above referenced permit. This information is from the State Archaeologist's office. Please have your archaeologist review this information and take appropriate steps to safeguard these sites in accordance with state laws and the requirements of the permit.

Please have your archaeologist send a copy of his findings to me at the letterhead address. This review should be completed before field operations impact the listed sites. Please be advised that Schlumberger Carbon Services will be held responsible should the company fail to take appropriate safeguards on these sites.

I may be contacted at 303-866-3454 extension 3313 if you or your archaeologist have any questions.

Sincerely,

Nick Young  
Minerals Leasing Section

cc Lane Osborn, District Manager



ID	NAME	RESOURCE.TYPE	ADDRESS	ASSESS	ASS.DATE
5MF.5138	SH 13~STATE HIGHWAY 13	Historical Archaeology>Historic		Field eligible	2/6/2002
5MF.946		Archaeological		Officially not eligible>Field not eligible	08/27/1982>07/07/1980
5MF.947		Archaeological		Officially not eligible>Field not eligible	08/27/1982>07/08/1980

ORG	REC.DATE	COND	CON.DATE	DOC ID.
Associated Cultural Resource Experts (ACRE)	2/6/2002	Good	2/6/2002	MC.SHF.R85
Archeological Services	7/7/1980	Tested>Collected	07/07/1980>07/07/1980	MF.LM.R524>MF.LM.R531
Gilbert/Commonwealth, Inc.	7/8/1980	Tested>Collected	07/08/1980>07/08/1980	MF.LM.R524>MF.LM.R531

**TITLE**

FINAL HIGHWAYS TO THE SKY: A CONTEXT AND HISTORY OF COLORADO'S HIGHWAY SYSTEM, MULTIPLE COUNTIES (SHF 2001-01-043)

THE RESULTS OF A CLASS III CULTURAL RESOURCE SURVEY OF THE TRAPPER MINE NEAR CRAIG, MOFFAT COUNTY, COLORADO (#AS 80-CO-14) (4-00-81)>ADDENDUM TO MF.LM.R524, TRAPPER MINE SURVEY OF 07/1981 COMPLETED BY ARCHAEOLOGICAL SERVICES, MOFFAT COUNTY, COLORADO (AS 81-CO-14B) (4-00-81)

THE RESULTS OF A CLASS III CULTURAL RESOURCE SURVEY OF THE TRAPPER MINE NEAR CRAIG, MOFFAT COUNTY, COLORADO (#AS 80-CO-14) (4-00-81)>ADDENDUM TO MF.LM.R524, TRAPPER MINE SURVEY OF 07/1981 COMPLETED BY ARCHAEOLOGICAL SERVICES, MOFFAT COUNTY, COLORADO (AS 81-CO-14B) (4-00-81)

ARCHEO.TYPE	CULTURE	FEATURE	COUNT
HISTORIC, HIGHWAY	EUROAMERICAN	HIGHWAY, SEGMENT	1
OPEN LITHIC	LATE PLAINS ARCHAIC; LATE PREHISTORIC		
OPEN CAMP	LATE PLAINS ARCHAIC; LATE PREHISTORIC		

**ARTIFACT**

PROJECTILE POINT - LATE PREHISTORIC, FRAGMENT, BASE, SIDE-NOTCHED, CHERT>PROJECTILE POINT - LATE PREHISTORIC, FRAGMENT, BASE, CORNER-NOTCHED, CHERT>FLAKE, OBSIDIAN>FLAKES, CHALCEDONY

PROJECTILE POINT - LATE PREHISTORIC, FRAGMENT, BASE, CORNER-NOTCHED; CHERT>HAMMERSTONE, GRINDING STONE, QUARTZITE>FLAKES, QUARTZITE>FLAKES, CHERT>FLAKES, CHALCEDONY>SHATTER, FRAGMENTS>SHELL FRAGMENTS

ART.COUNT	ARCHITEC.SIT	ORIGINAL.USE	PRESENT.USE	ST\FE\AR\N	EARLY.DATE	L
	HIGHWAY	HIGHWAY	HIGHWAY		1916	
1>1>1>SOME						
1>1>>>>>						









<b>S</b> 22>15>14>11>2>18>7>8>13>23>24>32>33>34>35>36>31>32>29>28>21>20>17> 16>8>7>6>31>32>28>21>22>15>14>12>1>36>25>24>19>20>17>16>9>10>3>34> 27>26>23>14>11>10>3>34>33>28>29>30>19>18>7>12>1>36>25>24>13>12>11> 2>3>34>27>22>16>9>4>5>32>29>20>17		34
		34

**QUARTER**

NW>SE>SW NW>SW SE NE>SE NE>SW NW>SW SE>NW>SE>SW SE>SW SE>SW NW NE>SE>NW>SW NW>NE>SE NE NW>W  
SW>SW>SE NE>SW NW NE>SE>SW NW>SW SE>NW>SE>SW NW NE>SW NW>SE NE>SE NE>SW SE NE>NW>SE NE>NW>SW SE NE>NW>SW SE  
NE>SE NE>SE NE>NW>SW NW>SW>SE NE>SE NE NW>SW>SE NE NW>SW>SE NE NW>SW NW>SW>SE NE>SE NE>SE NE>SE NW>SW  
NW>SW>SE NE NW>SW NW>NE>SE NE>SE SW NW>SW NW>SE NE>SE SW NW>SW NW>NW>SE NE>SE SW NW>SW NW

NW SE SW NW

SE NE SW NW

**MAP**

NINEMILE GAP>AXIAL>MONUMENT BUTTE>HAMILTON>CASTOR GULCH>ROUND BOTTOM>CRAIG>RALPH WHITE LAKE>MCINTURF MESA>CRAIG NE>FORTIFICATION>FORTIFICATION NE>POLE GULCH

CASTOR GULCH

CASTOR GULCH

# STATE OF COLORADO

Governor  
John W. Hickenlooper

Department of Natural Resources  
Mike King, Executive Director



Managing  
State Trust Lands  
Since 1876

STATE BOARD OF  
LAND COMMISSIONERS  
William E. Ryan, Division Director  
1127 Sherman Street, Suite 300  
Denver, CO 80203  
Phone: (303) 866-3454  
Fax: (303) 866-3152

DATE: February 22, 2012

Mr. Wayne Rowe  
Schlumberger Carbon Services  
1875 Lawrence Street, Suite 500  
Denver, CO 80202

02-24-2012

RE: Colorado State Exploration Permit No. EP 2831

WE TRANSMIT THE FOLLOWING:

- 1) Permit, in duplicate, for you to sign and return for execution by the Board. The original(s) will then be furnished you for your files...
- 2) Original completed permit for your files .....XX
- 3) Original lease(s) and approved assignment(s) for your files.....
- 4) Extension for secondary term expiring \_\_\_\_\_ .....
- 5) Receipt No. \_\_\_\_\_ .....
- a. Rent, to date of \_\_\_\_\_ .....
- b. Filing fee .....
- c. Bonus .....
- d. Assignment recording fee .....
- e. Other .....
- 6) Remarks:

STATE BOARD OF LAND COMMISSIONERS

A handwritten signature in blue ink, appearing to read "Nick Young", is written over a horizontal line.

Nick Young Minerals Section  
(303) 866-3934

# STATE OF COLORADO

Governor  
John W. Hickenlooper

Department of Natural Resources  
Mike King, Executive Director



Managing  
State Trust Lands  
Since 1876

STATE BOARD OF LAND COMMISSIONERS  
William E. Ryan, Director  
1127 Sherman Street, Suite 300  
Denver, CO 80203  
Phone: (303) 866-3454  
Fax: (303) 866-3152

February 22, 2012

TO: ALL SURFACE OWNERS AND LESSEES OF STATE LANDS  
IN THE FOLLOWING:

Subdivision	Section, Township & Range	County	Patent
See Attached Exhibit A		Moffat	

Schlumberger Carbon Services has been granted permission to conduct carbon sequestration exploration operations on certain State lands in the above Townships, some of which you have under lease, or the surface of which you own.

They will be responsible for any damage or loss to your crops and personal property caused by their activity. Lessees are not entitled to any settlement for damage which may be inflicted on the land itself, because it is owned by the State, and there shall be no payments for nuisance because the minerals lessee has his lease rights and this permit to do what is necessary to develop his leased minerals. Our District Manager will determine the amount of damage, if any, after the work is completed.

Should any problems arise, please contact this office at 303-866-3454 ext 3321. Your cooperation will be appreciated.

Thank you.

Sincerely,

  
Timothy J. Kelly  
Minerals Leasing Manager

cc: Lane Osborn, District Manager  
Permittee: Schlumberger Carbon Services  
Mineral Lessees: SWEPI LP, Trapper  
Surface Lessees: Trapper, Raftopoulos  
State Archaeologist Richard Wilshusen

**EXHIBIT A**

**EXPLORATION PERMIT NUMBER 2831  
Schlumberger Carbon Services & Colo Geologic Survey  
2D Seismic and RMCCS State No. 1 well  
Acreage and Legal Description of Permitted Lands**

<b>Acreage</b>	<b>S-T-R</b>	<b>Mineral Lessee</b>	<b>Surface Lessee</b>
640/ All	16-5N-91W	SWEPI LP	Raftopoulos
400/ W2 less W2W2W2, Frac. Part of NE (LT 221 with Tri-state Generation in force)	23-6N-91W	Trapper	Trapper
150/NW less NWNWNW (LT 221 with Tri State Generation in force)	26-6N-91W	Trapper	Trapper
640/All less N2N2N2 (LT 221 with Tri-State Generation in force)	27-6N-91W	Trapper	Trapper
640/All	34-6N-91W	Trapper	Trapper

STATE OF COLORADO  
STATE BOARD OF LAND COMMISSIONERS  
Department of Natural Resources  
1127 Sherman Street, Suite 300  
Denver, CO 80203

**EXPLORATION PERMIT NO. EP 2831**

This is to certify that Schlumberger Carbon Services, 1875 Lawrence Street, Denver, CO 80202 has permission for a term to expire July 1, 2012 to enter upon the following state-owned mineral lands:

<u>SUBDIVISION</u>	<u>SEC.TWP.RGE.</u>	<u>COUNTY</u>	<u>PATENTS</u>
See attached Exhibit A Well-RMCCS State #1 in SE 34-6N-91W		Moffat	

for the purpose of carrying on the following method of exploration to determine the possibilities of carbon sequestration on said lands:

Method : 2-D Seismic using Vibroseis and one test well named: RMCCS State #1

The permission herein granted is subject to the following conditions:

1. **RESERVATION** - The Board reserves the right to withdraw any or all lands from this permit without prior notice at any time when or if the Board deems it to be in the best interests of the State to do so.
2. **NOTICES** - Permittee shall notify the surface owner or lessee of his intention to enter upon the lands under this permit and will, in every way, respect the rights of such occupants to the end that the least inconvenience and damage may be caused them by the conduct of the exploration. Permittee shall immediately notify the Board of any unusual damages or claims.
3. **CANCELLATION** - In the event of the failure of Permittee to abide by the terms and covenants of this permit, the State Board of Land Commissioners shall have the right to cancel the privileges herein granted. This permit may be cancelled at any time without notice if the Board deems cancellation to be in the best interest of the State.
4. **BOND** - An exploration bond or proof of a Colorado Oil and Gas Conservation Commission permit shall have been filed with the Board before work is commenced on any state-owned land. The amount of the bond, fixed by the board, varies in proportion to the type of land, the size of the area to be worked, and type of exploration. A permanent statewide bond may be filed with this office, but a separate permit shall be required for each exploration area. Bond on file with the Colorado Oil and Gas Conservation Commission.
5. **BOND RELEASE** - Before releasing permittee from bonded liability, the Board may require permittee to show proof that his operations have been conducted satisfactorily and that damage claims have been settled.
6. **DAMAGES** - Permittee shall be responsible for all damages to the lands and personal and private property, including but not limited to livestock, crops, fences, gates, culverts, irrigation systems, stock watering facilities, roads, power lines, buried pipe lines, water lines, etc. Permittee shall settle damage claims within sixty (60) days after completion of the borehole abandonment activities.
7. **OPERATIONS** - All work shall be done in a reasonable manner with the least possible interference



8. **EXPLOSIVES** - No powder charge shall be exploded within one-quarter (1/4) mile of any water well, spring, reservoir, dam, or dwelling, except by special permission of the surface owner or lessee.
9. **PLUGGING** - (a) All holes shall be substantially, safely and completely plugged, from bottom to top. The surface of the land must be restored to its original condition as nearly as practicable. All holes shall be capped at all times when not in use. Uranium exploration holes shall be cemented from bottom to three (3) feet below plow depth. Any other method of plugging exploration holes shall be submitted for Board approval prior to use.
  - (b) Protection of fresh water aquifers is vital. Permittee must take the necessary precautions to protect the fresh water formations penetrated in each hole drilled and also agrees to comply with all state laws as well as the rules and regulations of the State Engineer's Office and other state agencies charged with the protection of same.
  - (c) Water - Permittee shall not establish any water rights and water shall not be used or withdrawn in any amount except by specific permission of the surface owner or lessee and shall be taken only from sources designated by such owner. Any water developed shall be developed in the name of the surface owner unless otherwise agreed.
  - (d) Permittee shall report water sands encountered and an estimated amount of water, if any, and if possible, in each hole drilled on state lands.
10. **DATA** - Upon request the Board shall be entitled to data obtained from each hole drilled, which data may be kept confidential upon request as consistent within the law.
11. **RESTORATION** - (a) All restoration must be completed within sixty (60) days from completion of exploration on any particular tract.
  - (b) All materials brought into any area, such as paper, cans, wire, dynamite boxes and other refuse, shall be removed .
  - (c) When important alterations to the state-owned land surface are necessary, the land shall be returned as nearly as possible to its original condition.
  - (d) All damages shall be reported to the surface owner or lessee within twenty-four (24) hours and shall be repaired immediately as nearly as possible to the condition existing prior to such operation.
  - (e) Any public hazard caused by operations of permittee shall be marked or barricaded until restoration is completed.
12. **ARCHAEOLOGY** - Under no circumstances shall any person destroy, disturb, mar, collect, remove or alter any prehistoric or historic resources of any kind on state lands as provided by law. These resources include all artifacts of stone, wood or metal, pictographs, structures, etc. In the event of discovery of anything of prehistoric or historic nature, the Office of the State Archaeologist should be notified immediately.
13. **HOLD HARMLESS** - Permittee shall at all times conduct all operations in a manner that will assure complete safety against accidents of any kind that may endanger life and limb of anyone, and permittee shall hold harmless the State of Colorado and its Board of Land Commissioners from any and all claims arising from operations conducted by permittee.

STATE BOARD OF LAND COMMISSIONERS

*Timothy J. Kelly*  
 Timothy J. Kelly, Minerals Leasing Manager



The terms and covenants of this exploration permit are accepted by the undersigned Permittee

Date December 27, 2011

Schlumberger Carbon Services

*Wayne Rowe*  
 Wayne Rowe

**EXHIBIT A**

**EXPLORATION PERMIT NUMBER 2831  
Schlumberger Carbon Services & Colo Geologic Survey  
2D Seismic and RMCCS State No. 1 well  
Acreage and Legal Description of Permitted Lands**

<b>Acreage</b>	<b>S-T-R</b>	<b>Mineral Lessee</b>	<b>Surface Lessee</b>
640/ All	16-5N-91W	SWEPI LP	Raftopoulos
400/ W2 less W2W2W2, Frac. Part of NE (LT 221 with Tri-state Generation in force)	23-6N-91W	Trapper	Trapper
150/NW less NWNWNW (LT 221 with Tri State Generation in force)	26-6N-91W	Trapper	Trapper
640/All less N2N2N2 (LT 221 with Tri-State Generation in force)	27-6N-91W	Trapper	Trapper
640/All	34-6N-91W	Trapper	Trapper

# STATE OF COLORADO

John W. Hickenlooper, Governor  
Christopher E. Urbina, MD, MPH  
Executive Director and Chief Medical Officer

Dedicated to protecting and improving the health and environment of the people of Colorado

4300 Cherry Creek Dr. S. Laboratory Services Division  
Denver, Colorado 80246-1530 8100 Lowry Blvd.  
Phone (303) 692-2000 Denver, Colorado 80230-6928  
Located in Glendale, Colorado (303) 692-3090

<http://www.cdphe.state.co.us>



Colorado Department  
of Public Health  
and Environment

October 25, 2011

Wayne Rowe, PM  
Schlumberger Carbon Services  
1875 Lawrence St Ste 500  
Denver, CO 80202

**RE: Certification, Colorado Discharge Permit System  
Permit No., COR030000, Certification Number: COR031335**

Dear Mr./Ms. Rowe;

The Water Quality Control Division (the Division) has reviewed the application submitted for the **Well RMCCS State No 1** facility and determined that it qualifies for coverage under the CDPS General Permit for Stormwater Discharges Associated with Construction Activities (the permit). Enclosed please find a copy of the permit certification, which was issued under the Colorado Water Quality Control Act.

**Facility:** Well RMCCS State No 1

Moffat County

**Construction Activities:** temporary well pad for stratigraphic testing,

**Legal Contact** (*receives all legal documentation pertaining to the permit certification*):

Wayne Rowe, PM  
Schlumberger Carbon Services  
1875 Lawrence St Ste 500  
Denver, CO 80202

Phone number: 303-297-9005  
Email: rowe5@slb.com

**Facility Contact** (*contacted for general inquiries regarding the facility*):

Wayne Rowe, PM

Phone number: 303-297-9005  
Email: rowe5@slb.com

**Billing Contact** (*receives the invoice pertaining to the permit certification*):

Wayne Rowe, PM  
Schlumberger Carbon Services  
1875 Lawrence St Ste 500  
Denver, CO 80202

Phone number: 303-297-9005  
Email: rowe5@slb.com

Any changes to the contacts listed above must be provided to the Division on a Change of Contact form. This form is available on the Division's website at [coloradowaterpermits.com](http://coloradowaterpermits.com).

The Annual Fee for this certification is \$245.00, and is invoiced every July. Do Not Pay This Now. The initial prorated invoice will be sent to the legal contact shortly.

Please read the enclosed permit and certification. If you have any questions please contact Matt Czahor, Environmental Protection Specialist, at (303) 692-3575.

Sincerely,

Debbie Jessop, Program Assistant  
WATER QUALITY CONTROL DIVISION

Enclosures: Certification page; General Permit; Highlight Sheet; Termination form

xc: Regional Council of Government  
Moffat County, Local County Health Department  
D.E., Technical Services Unit, WQCD  
Permit File

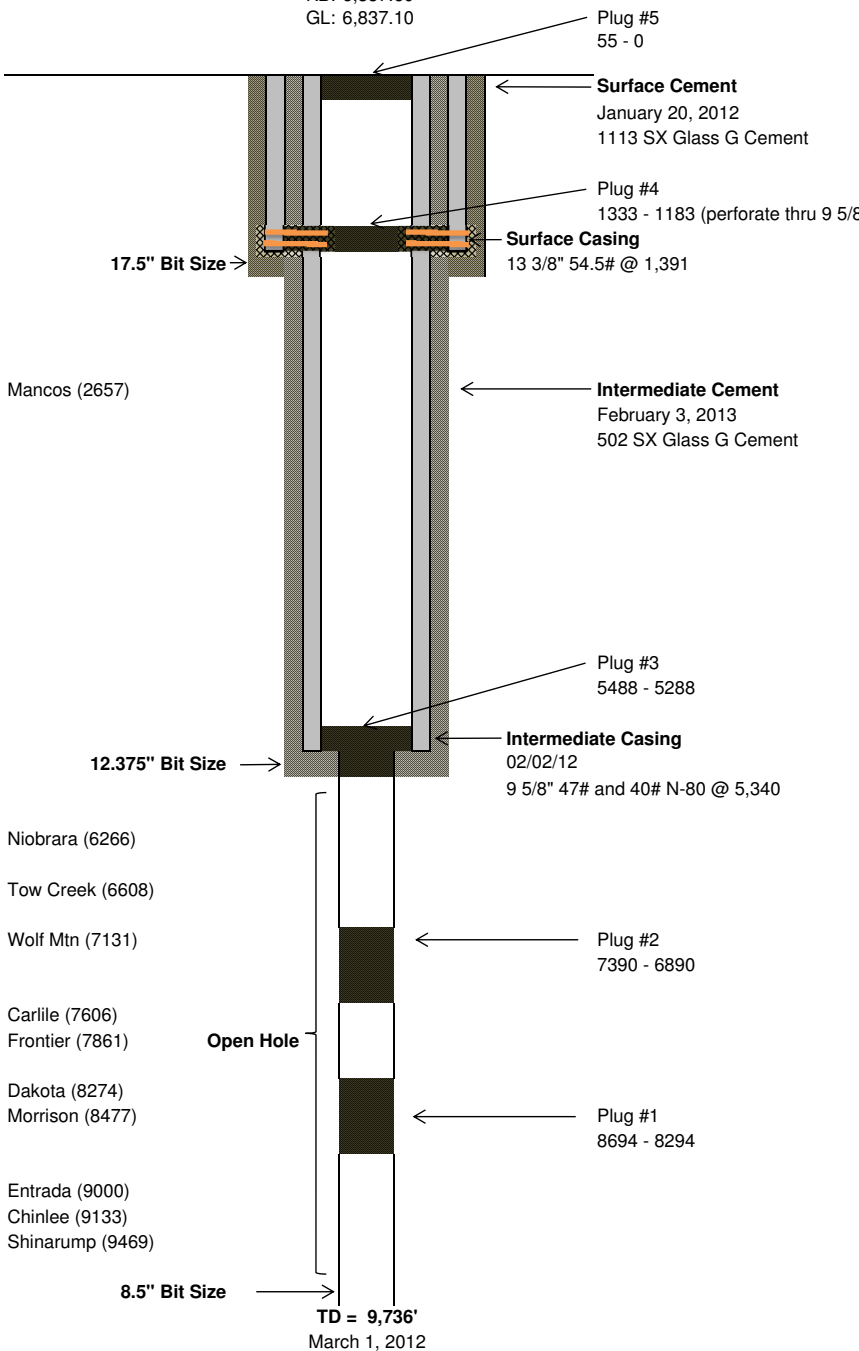
/dkj cert

# WELLBORE DIAGRAM

**OPERATOR: SCHLUMBERGER CARBON SERVICES**  
**WELL: RMCCS ST 1**  
 RIG: PATTERSON 166  
 SPUDDED: January 15, 2012  
 COMPLETION DATE: March 5, 2012  
 API No: 05-081-07694

LOCATION: SEC 34 TWN 6N RNG 91W  
 QTR/QTR: SWSE  
 COUNTY: MOFFAT  
 STATE: COLORADO

KB: 6,857.60  
 GL: 6,837.10



DATE	DESCRIPTION
1/15/12	Spud Patterson 166 @ 05:00
1/19/12	Set Surface Casing X Jts 13 3/8" 54.5#, J-55, 8rd EUE
1/20/12	Surface cement. w/ 575 SX (216 BBL) Lead, 538 SX (112 BBL) Tail
1/20/12	Cement Top Job. 180 SX (38 BBL) 15.8#
2/1/12	Wireline Logs. PEX-CMR-ECS-HNGS-MSIP-FMI (5,400' - 1,350')
2/3/12	Ran 9 5/8" 47 Jts 47# N-80, 65 Jts 40# N-80 set at 5,384 (driller) 5,340 (logger)
2/4/12	Int Cement: Lead 252 SX 12 PPG; Tail 250 SX
	PPG 50 BBL
2/12/12	Core Niobrara 6640' - 6673'
2/13/12	Core Niobrara 6673' - 6700'
2/17/12	Core Mowry 8180' - 8206'
2/19/12	Core Mowry 8216' - 8234'
2/20/12	Core Mowry 8216' - 8260'
2/22/12	Core Morrison 8895' - 8898'
2/23/12	Core Morrison 8898' - 8925'
2/25/12	Core Entrada 9012' - 9024'
2/26/12	Core Entrada 9024' - 9047'
3/1/12	Reach total Depth 9,745' (driller) 9,736' (logger)
3/2/12	Wireline Logs. PEX-CMR-ECS-HNGS-MSIP-FMI (9,736' - 5,388') Rotary Cores
3/4/12	Wireline rotary cores, 100 core samples 9,700' to 7,825'
3/5/12	Cement Plug 1 8694-8294 163 SX 33.4 BBL 15.8#
3/5/12	Cement Plug 2 7390-6890 239 SX 43 BBL 15.6#
3/5/12	Cement Plug 3 5488-5288 174 SX 32 BBL 15.8#
3/6/12	Perforate surface casing shoe for squeeze @
3/6/12	Cement Plug 4 1333-1183 57 SX 11.7 BBL 15.8#
3/6/12	Cement Plug 5 55-0 17 SX 15.8#
3/10/12	Rig move off