

LEASE INFORMATION

Using standard QtrQtr, Sec, Twp, Rng format, describe one entire mineral lease that will be produced by this well (Describe lease beneath surface location if produced. Attach separate description page or map if necessary.)

TOWNSHIP 7 NORTH, RANGE 67 WEST, 6th P.M.
Section 28: Part of the Northwest Quarter (NW/4) in Section 28, Township 7 North, Range 67 West, estimated to contain 101.8 acres more or less.

Total Acres in Described Lease: 102 Described Mineral Lease is: Fee State Federal Indian

Federal or State Lease # _____

Distance from Completed Portion of Wellbore to Nearest Lease Line of described lease: 0 Feet

CULTURAL DISTANCE INFORMATION

Distance to nearest:

Building: 713 Feet

Building Unit: 713 Feet

High Occupancy Building Unit: 5280 Feet

Designated Outside Activity Area: 5280 Feet

Public Road: 390 Feet

Above Ground Utility: 342 Feet

Railroad: 5280 Feet

Property Line: 449 Feet

INSTRUCTIONS:

- All measurements shall be provided from center of the Proposed Well to nearest of each cultural feature as described in Rule 303.a.(5).
- Enter 5280 for distance greater than 1 mile.
- Building - nearest building of any type. If nearest Building is a Building Unit, enter same distance for both.
- Building Unit, High Occupancy Building Unit, and Designated Outside Activity Area - as defined in 100-Series Rules.

DESIGNATED SETBACK LOCATION INFORMATION

Check all that apply. This location is within a: Buffer Zone
 Exception Zone
 Urban Mitigation Area

- Buffer Zone – as described in Rule 604.a.(2), within 1,000' of a Building Unit
- Exception Zone - as described in Rule 604.a.(1), within 500' of a Building Unit.
- Urban Mitigation Area - as defined in 100-Series Rules.

Pre-application Notifications (required if location is within 1,000 feet of a building unit):

Date of Rule 305.a.(1) Urban Mitigation Area Notification to Local Government: _____

Date of Rule 305.a.(2) Buffer Zone Notification to Building Unit Owners: 05/13/2014

SPACING and UNIT INFORMATION

Distance from Completed Portion of Wellbore to Nearest Wellbore Permitted or Completed in the same formation: 330 Feet

Distance from Completed Portion of Wellbore to Nearest Unit Boundary 409 Feet (Enter 5280 for distance greater than 1 mile.)

Federal or State Unit Name (if appl): _____ Unit Number: _____

SPACING & FORMATIONS COMMENTS

Distance from Completed portion of wellbore to nearest wellbore permitted or completed in the same formation is Nelson Farm 5. NIOBRARA: Proposed Spacing Unit is described as the N2 Section 28 and NW4, W2NE4 of Section 27.

OBJECTIVE FORMATIONS

Objective Formation(s)	Formation Code	Spacing Order Number(s)	Unit Acreage Assigned to Well	Unit Configuration (N/2, SE/4, etc.)
NIOBRARA	NBRR		560	GWA

DRILLING PROGRAM

Proposed Total Measured Depth: 14874 Feet

Distance to nearest permitted or existing wellbore penetrating objective formation: 160 Feet (Including plugged wells)

Will a closed-loop drilling system be used? Yes

Is H2S gas reasonably expected to be encountered during drilling operations at concentrations greater than or equal to 100 ppm? No (If Yes, attach an H2S Drilling Operations Plan)

Will salt sections be encountered during drilling? No

Will salt based (>15,000 ppm Cl) drilling fluids be used? No

Will oil based drilling fluids be used? No

BOP Equipment Type: Annular Preventor Double Ram Rotating Head None

GROUNDWATER BASELINE SAMPLING AND MONITORING AND WATER WELL SAMPLING

Water well sampling required per Rule 318A

DRILLING WASTE MANAGEMENT PROGRAM

Drilling Fluids Disposal: OFFSITE Drilling Fluids Disposal Methods: Commercial Disposal

Cuttings Disposal: OFFSITE Cuttings Disposal Method: Other

Other Disposal Description:

Cuttings will be disposed of by land spreading.

Beneficial reuse or land application plan submitted? No

Reuse Facility ID: _____ or Document Number: _____

CASING PROGRAM

Casing Type	Size of Hole	Size of Casing	Wt/Ft	Csg/Liner Top	Setting Depth	Sacks Cmt	Cmt Btm	Cmt Top
SURF	12+1/4	9+5/8	36	0	750	360	750	0
1ST	8+3/4	7+0/0	26	0	7600	925	7600	0
1ST LINER	6+1/8	4+1/2	13.5	7500	14874			

Conductor Casing is NOT planned

DESIGNATED SETBACK LOCATION EXCEPTIONS

Check all that apply:

- Rule 604.a.(1)A. Exception Zone (within 500' of Building Unit)
- Rule 604.b.(1)A. Exception Location (existing or approved Oil & Gas Location now within a Designated Setback as a result of Rule 604.a.)
- Rule 604.b.(1)B. Exception Location (existing or approved Oil & Gas Location is within a Designated Setback due to Building Unit construction after Location approval)
- Rule 604.b.(2) Exception Location (SUA or site-specific development plan executed on or before August 1, 2013)
- Rule 604.b.(3) Exception Location (Building Units constructed after August 1, 2013 within setback per an SUA or site-specific development plan)

GREATER WATTENBERG AREA LOCATION EXCEPTIONS

Check all that apply:

- Rule 318A.a. Exception Location (GWA Windows).
- Rule 318A.c. Exception Location (GWA Twinning).

RULE 502.b VARIANCE REQUEST

- Rule 502.b. Variance Request from COGCC Rule or Spacing Order Number _____

OTHER LOCATION EXCEPTIONS

Check all that apply:

- Rule 318.c. Exception Location from Rule or Spacing Order Number _____
- Rule 603.a.(2) Exception Location (Property Line Setback).

ALL exceptions and variances require attached Request Letter(s). Refer to applicable rule for additional required attachments (e.g. waivers, certifications, SUAs).

OPERATOR COMMENTS AND SUBMITTAL

Comments

The Operator proposes to drill a well in Section 28, Township 7 North, Range 67 West, in Weld County, Colorado, as follows:

SHL: 844' FNL 409' FWL - falls outside a legal GWA Drilling Window

Top of Production: 1140' FNL 460' FWL

BHL: 1153' FNL 2556' FWL - falls outside a legal GWA Drilling Window

Operator intends to drill the well to the Niobrara formation at 14,874' MD and 7,094' TVD.

Letter to the Director for COGCC Rule 318A.m. Minimum Intrawell Distance is not necessary for this well location, no wells lie within 150' of the proposed horizontal lateral of the proposed well.

Letter to the Director for COGCC Rule 318A.a. Exception Location Request, attached as Exception Loc Request.

Letter to Director for COGCC Rule 318A.e. Proposed Spacing Unit, attached as Proposed Spacing Unit.

This application is in a Comprehensive Drilling Plan _____ CDP #: _____

Location ID: _____

Is this application being submitted with an Oil and Gas Location Assessment application? Yes

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

Signed: _____ Print Name: Jennifer Grosshans

Title: Regulatory Analyst Date: 6/25/2014 Email: regulatory@petro-fs.com

Operator must have a valid water right or permit allowing for industrial use or purchased water from a seller that has a valid water right or permit allowing for industrial use, otherwise an application for a change in type of use is required under Colorado law. Operator must also use the water in the location set forth in the water right decree or well permit, otherwise an application for a change in place of use is required under Colorado law. Section 37-92-103(5), C.R.S. (2011).

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: *Matthew Lee* Director of COGCC Date: 7/31/2014

Expiration Date: 07/30/2016

API NUMBER

05 123 39955 00

Conditions Of Approval

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.

<u>COA Type</u>	<u>Description</u>
	Operator shall comply with Buffer Zone Move-In, Rig-Up Notice Policy dated 12-16-2013.
	Open hole resistivity and gamma logs shall be run to describe the stratigraphy of the entire well bore and to adequately verify the setting depth of surface casing and aquifer coverage. On a multi-well pad, these open hole logs are only required on one of the first wells drilled on the pad and the Drilling Completion Report - Form 5 for every well on the pad shall identify which well was logged.
	1) Submit Form 42 electronically to COGCC 48 hours prior to MIRU. 2) Comply with Rule 317.i and provide cement coverage from end of 7" casing to a minimum of 200' above Niobrara. Verify coverage with cement bond log. 3) Comply with Rule 321. Run and submit Directional Survey from TD to base of surface casing. Ensure that the wellbore complies with setback requirements in commission orders or rules prior to producing the well.

Best Management Practices

<u>No</u> <u>BMP/COA Type</u>	<u>Description</u>
1 Planning	<p>Multi-well Pads are located in a manner which allows for resource extraction while maintaining the highest distances possible from the offsetting residential areas and complies with the wishes of the surface owner.</p> <p>A meeting with the surface owner will determine the fencing plan.</p> <p>Tanks will be designed, constructed and maintained in accordance with NFPA Code 30. The tanks are visually inspected once a day for issues, and recorded inspections are conducted once a month.</p> <p>Identification of plugged and abandoned wells will be identified pursuant to 319.a (5).</p>
2 Pre-Construction	<p>Anti-Collision BMP: Prior to drilling operations, Operator will perform an anti-collision scan of existing offset wells that have the potential of being within close proximity of the proposed wells. The anti-collision scan may include definitive MWD or gyro surveys of the offset wells with included error of uncertainty per survey instrument, and compared against the proposed wellpath with its respective error of uncertainty. If current surveys do not exist for the offset wells, operators may have gyro surveys conducted to verify bottomhole location. The proposed well may only be drilled if the anti-collision review results indicate that the risk of collision is sufficiently low as defined by the anti-collision plan, with separation factors greater than 1.5, or if the risk of collision has been mitigated through other means including shutting in wells, plugging wells, increased drilling fluid in the event of lost returns or as is appropriate for the specific situation. In the event of an increased risk of collision, that risk will be mitigated to prevent harm to people, the environment or property. For the proposed well, upon conclusion of drilling operations, an as-constructed directional survey will be submitted to the COGCC with the Form 5.</p>
3 Traffic control	<p>Access Roads - The access road will be constructed to accommodate local emergency vehicles. This road will be maintained for access at all times.</p> <p>Traffic will be routed to minimize local interruption.</p>

4	General Housekeeping	<p>All long term facility structures will be painted a color that enables the facilities to blend in with the natural background color of the landscape, as seen from a viewing distance and location typically used by the public. Maintain appearance with garbage clean-up; a trash bin will be located on site to accumulate waste by the personnel drilling the wells. Site will remove unused equipment, trash and junk immediately.</p> <p>Removal of trash- All trash, debris and material not intrinsic to the operation of the oil and gas facility shall be removed and legally disposed of as applicable.</p>
5	Material Handling and Spill Prevention	<p>Control of fire hazards- All material which is considered fire hazards shall be a minimum of 25' from the wellhead tanks or separators. Electrical equipment shall comply with API IRP 500 and will comply with the current national electrical code.</p> <p>Leak Detention Plan- Pumper will visit the location daily and visually inspect all tanks and fittings for leaks. Additionally, monthly documented SPCCP inspections are conducted pursuant to 40 CFR 112.</p>
6	Dust control	<p>Fugitive dust will be controlled by speed restrictions on all neighboring roads, regular road maintenance and repair, and avoiding construction activity during high wind days. If technologically and economically feasible, additional management practices may also be required to minimize fugitive dust, as well as to control silica dust while handling sand during frac'ing operations.</p>
7	Construction	<p>Berm Construction- Tanks berms shall be constructed of steel rings with a synthetic or engineered liner and designed to contain 150% of the capacity of the largest tank. All berms will be visually checked periodically to ensure proper working condition.</p>
8	Noise mitigation	<p>The drilling site will be powered by electricity, mitigating the majority of noise from drilling operations. Sound walls and/or hay bales will be used to surround the well site during drilling operations.</p>
9	Emissions mitigation	<p>Green Completions; Emission Control System. Test separators and associated flow lines and sand traps shall be installed on-site to accommodate green completions techniques pursuant to COGCC Rules. In the anticipated absence of a viable gas sales line, the flowback gas shall be thermally oxidized in an emissions control device (ECD), which will be installed and kept in operable condition for least the first 90-days of production pursuant to CDPHE rules. This ECD shall have an adequate capacity for 1.5 times the largest flowback within a 10 mile radius, will be flanged to route gas to other or permanent oxidizing equipment and shall be provided with the equipment needed to maintain combustions where non-combustible gases are present.</p>
10	Odor mitigation	<p>Operator will regulate odors in accordance with COGCC Rule 805. The production facilities will have VOC Combustors with emission control devices to comply with the Department of Public Health and Environment, Air Quality Control Commission.</p>
11	Drilling/Completion Operations	<p>Closed Loop Drilling Systems- Pit restrictions, not applicable; a closed-loop system will be used for drilling.</p> <p>Blowout Preventer Equipment ("BOPE"). A double ram will be used during drilling. At least the drilling company shall have a valid well blowout.</p> <p>BOPE- Well servicing operations. Adequate BOP equipment shall be used. Stabbing valves shall be installed in the event of reverse circulation and shall be prior tested with low and high pressure fluid.</p> <p>Bradenhead Monitoring BMP: Operator acknowledges and will comply with COGCC Policy for Bradenhead Monitoring during Hydraulic Fracturing Treatments in the Greater Wattenberg Area dated May 29, 2012.</p> <p>Light sources during all phases of operations will be directed downwards and away from occupied structures where possible. Once the drilling and completion rigs leave the site, there will be no permanently installed lighting on site.</p>
12	Final Reclamation	<p>Well site cleared- Within 90-day subsequent to the time of plugging and abandonment of the entire site, superfluous debris and equipment shall be removed from the site.</p>

Total: 12 comment(s)

Applicable Policies and Notices to Operators

Notice Concerning Operating Requirements for Wildlife Protection.

Policy for Bradenhead Monitoring During Hydraulic Fracturing Treatments in the Greater Wattenberg Area.

Attachment Check List

<u>Att Doc Num</u>	<u>Name</u>
400631504	FORM 2 SUBMITTED
400632718	OffsetWellEvaluations Data
400632966	DIRECTIONAL DATA
400632986	WELL LOCATION PLAT
400633018	DEVIATED DRILLING PLAN
400633021	DEVIATED DRILLING PLAN
400633135	PROPOSED SPACING UNIT
400633172	EXCEPTION LOC REQUEST

Total Attach: 8 Files

General Comments

<u>User Group</u>	<u>Comment</u>	<u>Comment Date</u>
Permit	Final Review Completed. No LGD or public comment received.	7/30/2014 2:58:43 PM
Permit	The Certification of Compliance with Rule 305.a is under other on form 2A. ok to pass.	7/25/2014 10:45:51 AM
Permit	Per operator changed Distance from Completed Portion of Wellbore to Nearest Wellbore Permitted or Completed in same formation" Should read 330'. "Distance to nearest permitted or existing wellbore penetrating object formation". Should read 160' (Nelson Farm 7)	7/25/2014 10:45:50 AM
Permit	ON HOLD: requesting corrected "Distance from Completed Portion of Wellbore to Nearest Wellbore Permitted or Completed in same formation" and "Distance to nearest permitted or existing wellbore penetrating object formation".	7/24/2014 1:56:56 PM
Engineer	Evaluated offset wells.	7/18/2014 2:09:19 PM
Permit	Passed completeness.	6/26/2014 9:56:41 AM

Total: 6 comment(s)