

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 4 South Range 49 West Section 17: N2, Section 18: E2, Section 19: N2, Section 28: W2.

Total Acres in Described Lease: 1280 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: 961 Feet

CULTURAL DISTANCE INFORMATION

Distance to nearest:

Building: 880 Feet

Building Unit: 1282 Feet

High Occupancy Building Unit: 5280 Feet

Designated Outside Activity Area: 5280 Feet

Public Road: 958 Feet

Above Ground Utility: 930 Feet

Railroad: 5280 Feet

Property Line: 961 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: _____

SPACING and UNIT INFORMATION

Distance from Completed Portion of Wellbore to Nearest Wellbore Permitted or Completed in the same formation: 5280 Feet

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

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

SPACING & FORMATIONS COMMENTS

JSND/ NBRR

OBJECTIVE FORMATIONS

| Objective Formation(s) | Formation Code | Spacing Order Number(s) | Unit Acreage Assigned to Well | Unit Configuration (N/2, SE/4, etc.) |
|------------------------|----------------|-------------------------|-------------------------------|--------------------------------------|
| J SAND | JSND | | | |
| NIOBRARA | NBRR | | | |

DRILLING PROGRAM

Proposed Total Measured Depth: 3800 Feet

Distance to nearest permitted or existing wellbore penetrating objective formation: 5280 Feet (Including plugged wells)

Will a closed-loop drilling system be used? No

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 609

DRILLING WASTE MANAGEMENT PROGRAM

Drilling Fluids Disposal: ONSITE Drilling Fluids Disposal Methods: Other

Cuttings Disposal: ONSITE Cuttings Disposal Method: Other

Other Disposal Description:

 Drilling reserve pit

Beneficial reuse or land application plan submitted?

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 | 8+5/8 | 24 | 0 | 200 | 100 | 200 | 0 |
| 1ST | 7+7/8 | 5+1/2 | 15.5 | 0 | 3800 | 200 | 3800 | 0 |

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 distance to the nearest building is an unoccupied barn. There are no building units within the exception zone or buffer and there is no changes in the BMP's than what the operator has set and required for this site. The Pre-App notice was sent to Van & Cheri Craig on 11-11-2013.

Distance to the nearest well permitted well or existing wellbore penetrating objective formation the reference is API # 05-121-10709.

Water Well Permit # is 286031

No conductor casing will be set.

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: Sonia Stephens

Title: Regulatory Technician Date: 1/2/2014 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: 2/13/2014

Expiration Date: 02/12/2016

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|--------------------------------------|
| API NUMBER 05 121 11041 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> |
|-----------------|---|
| | 1) Provide 48 hour notice prior to spud via electronic Form 42. 2) Set surface casing at least 50' into Pierre Shale or 200' (as proposed), whichever is deeper. 3) Provide cement coverage from TD to a minimum of 200' above NBRR. Verify coverage with cement bond log. 4) If dry hole, set 40 sks cement at top of J-Sand, 40 sks cement at top of NBRR, 40 sks cement across any DST w/ show, 50 sks cement 1/2 out, 1/2 in surface casing, 15 sks cement top of surface casing, cut 4' below GL, weld on plate, 5 sks cement in rat hole & 5 sks cement in mouse hole. |
| | 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. |
| | Operator shall comply with Buffer Zone Move-In, Rig-Up Notice Policy dated 12-16-2013. |

Best Management Practices

| No | BMP/COA Type | Description |
|----|-----------------------------|---|
| 1 | Planning | <ul style="list-style-type: none"> - When feasible, develop one unified separation/treatment and oil tank storage facility for multiple wells to reduce cumulative impacts, multiple facility footprints and adverse impacts on wildlife resources. - Plan for growth upfront in the design process such that tanks or water handling facilities can be added with minimal ground disturbance later in development or drilling progress. - In terms of production, wells will be brought on-line in a phased approach to utilize existing evaporation ponds and minimize the footprint of new ponds. - Existing wells will be shut-in (SI) while new wells are brought on line to control produced water volumes and over building facilities. |
| 2 | Planning | <ul style="list-style-type: none"> - The facilities, separation and oil storage equipment plus evaporation ponds will be fenced to restrict public and wildlife access. - The well site locations, facilities and the roads will be kept free of noxious weeds, litter and debris. - Spraying for noxious weeds will be applied as needed. - Operator will manage all facilities such that secondary containment berms and evaporation ponds are within the specifications set forth in the COGCC rules. - Gates and fences will be constructed and maintained where necessary. - All lease roads used by operator, its employees, or contractors will be graded and maintained such that water can drain properly. - Mist systems are proposed for the evaporation ponds to aide in the rates of water handling and control of levels in the ponds during summer/peak evaporation months. - Daily visits from field pumpers will record pond levels and make adjustments to production if necessary. |
| 3 | General Housekeeping | <ul style="list-style-type: none"> - Drilling personnel/site supervisor will monitor the earthen drilling pit fluid level to ensure the minimum required two (2) feet of freeboard is maintained at the drill site. - Once drilling operations are completed, Operator personnel & pumper will inspect the evaporation ponds on a daily basis. Adjustments can be made daily if needed to well cycles, shutting in of a well and diverting water to pits that have more freeboard available. Pumpers will also monitor the condition of the fencing, pipeline routes, wells, pumps and facilities in general for observations of abnormal activity and operations. Records will be kept documenting pit monitoring levels and inspection. - When applicable, fluids will be delivered to and/or removed from the pit from a single, designated access point. The access point shall be clearly identified and shall be constructed and utilized to prevent damage to the liner system from operators and contractors placing or removing hoses into or from the pit during fluid transfer. |
| 4 | Storm Water/Erosion Control | <ul style="list-style-type: none"> - Operator will make use of water bars, straw hay bales, gravel and other measures will be used to prevent erosion, storm water run-off and site degradation. - Co-locate gas and water gathering lines whenever feasible, and mitigate any erosion problems that arise due to the construction of any pipeline(s). |
| 5 | Construction | <ul style="list-style-type: none"> - Remove only the minimum amount of vegetation necessary for the construction of roads, drilling pads, facilities and evaporation ponds. - Conserve topsoil during excavation and reuse as cover on disturbed areas to facilitate regrowth of vegetation. - No construction or routine maintenance activities will be performed during periods when the soil and or roads are too wet to adequately support construction equipment. |

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|---|--------------------------------|---|
| 6 | Drilling/Completion Operations | <ul style="list-style-type: none"> - Light sources will be directed downwards and away from occupied structures during drilling operations. - Completion operations will be minimal as fracture stimulation is not necessary for our target formations in the Adams and Washington Co. wells. - Noise and the numbers of days with equipment on site will be minimized due to completion techniques. - Once the drilling and completions rigs leave the site, there will be no permanently installed lighting on site. |
| 7 | Interim Reclamation | <ul style="list-style-type: none"> - Utilize existing pad areas and for temporary storage of equipment when possible such that any new well pads will have a reduced footprint. - Restore well site locations to their original condition within a reasonable time frame after the completion of operations. - All reseeding shall be done with grasses consistent with the Rocky Mountain native mix or other grasses reasonably requested by surface owner and during planting period suggested by surface owner. |
| 8 | Final Reclamation | <ul style="list-style-type: none"> - All surface restoration shall be accomplished to the satisfaction of surface owner. - All final seeding shall be done with grasses consistent with the Rocky Mountain native mix or other grasses reasonably requested by surface owner and during planting period suggested by surface owner. - Drilling pad size will be reclaimed to a simple vehicle turn-around area for daily maintenance of wells and pump jacks. - Final reclamation shall be completed to the reasonable satisfaction of the surface owner as soon as practical after installation (weather permitting) and in accordance with regulatory agency standards (BLM/COGCC). |

Total: 8 comment(s)

Applicable Policies and Notices to Operators

Notice Concerning Operating Requirements for Wildlife Protection.

Attachment Check List

| <u>Att Doc Num</u> | <u>Name</u> |
|---------------------------|----------------------|
| 400506723 | FORM 2 SUBMITTED |
| 400512939 | WELL LOCATION PLAT |
| 400533160 | SURFACE AGRMT/SURETY |

Total Attach: 3 Files

General Comments

| <u>User Group</u> | <u>Comment</u> | <u>Comment Date</u> |
|--------------------------|--|----------------------------|
| Permit | Final review completed; no LGD or public comment received. | 2/12/2014 6:18:08 AM |
| Permit | Passed completeness. | 1/6/2014 7:31:27 AM |

Total: 2 comment(s)