

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.)

T33N R8W Sec. 21: E/2NE/4, Sec. 22: W/2NW/4

Total Acres in Described Lease: 160 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: 594 Feet

CULTURAL DISTANCE INFORMATION

Distance to nearest:

Building: 525 Feet

Building Unit: 555 Feet

High Occupancy Building Unit: 5280 Feet

Designated Outside Activity Area: 5280 Feet

Public Road: 3140 Feet

Above Ground Utility: 3100 Feet

Railroad: 5280 Feet

Property Line: 365 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: 06/10/2014

SPACING and UNIT INFORMATION

Distance from Completed Portion of Wellbore to Nearest Wellbore Permitted or Completed in the same formation: 1100 Feet

Distance from Completed Portion of Wellbore to Nearest Unit Boundary 720 Feet (Enter 5280 for distance greater than 1 mile.)

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

SPACING & FORMATIONS COMMENTS

OBJECTIVE FORMATIONS

| Objective Formation(s) | Formation Code | Spacing Order Number(s) | Unit Acreage Assigned to Well | Unit Configuration (N/2, SE/4, etc.) |
|------------------------|----------------|-------------------------|-------------------------------|--------------------------------------|
| FRUITLAND COAL | FRLDC | 112-195 | 320 | N/2 |

DRILLING PROGRAM

Proposed Total Measured Depth: 3989 Feet

Distance to nearest permitted or existing wellbore penetrating objective formation: 1100 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 608

DRILLING WASTE MANAGEMENT PROGRAM

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

Cuttings Disposal: OFFSITE Cuttings Disposal Method: Commercial Disposal

Other Disposal Description:

Waste Management Plan attached.

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 | 500 | 400 | 500 | 0 |
| 1ST | 7+7/8 | 5+1/2 | 17 | 0 | 3989 | 710 | 3989 | 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

Closest well completed to IGS 146 BHL is the Elm Ridge IGS 109.

Waste Management Plan attached as supplement to Drilling and Waste Plans tab.

Please copy me on any/all correspondence with the operator.

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

Location ID: 326624

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: Robert D. Joyce

Title: Agent Date: 7/21/2014 Email: jlr@animas.net

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: 9/15/2014

Expiration Date: 09/14/2016

API NUMBER

05 067 09915 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> |
|-----------------|--|
| | casing agreement - HOLD |
| | 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. |
| | <ol style="list-style-type: none"> 1) Provide 48 hour notice of spud to COGCC via form 42 2) Set at least 506' of surface casing per Rule 317 (f) cement to surface 3) Provide cement coverage of production casing from TD to surface. Verify cement coverage with Cement Bond Log. 4) Run and submit Directional Survey from TD to kick-off point 5) The operator shall comply with Rule 321, and it shall be the operator's responsibility to ensure that the well bore complies with setback requirements in Commission orders and/or rules prior to producing the well. 6) Sample and test two closest water wells within 1/4 mile swath of the directional wellbore. 7) Operators are required to obtain a bottom hole pressure utilizing a bottom hole gauge after a minimum 48 hour shut-in period following completion and prior to sales 8) Comply with all applicable provisions of Order 112-195 9) Borehole problems encountered while drilling that require an unplanned sidetrack: Contact, discuss & receive prior approval from COGCC Regional Engineer – Mark Weems 970-259-4587 off 970-749-0624 cell mark.weems@state.co.us |

Best Management Practices

| No | BMP/COA Type | Description |
|----|--|---|
| 1 | Community Outreach and Notification | No buildings or building units within 500'. Surface owner and building unit owner within 1000' notified. |
| 2 | Pre-Construction | Rule 604.c.(2)W-Pre-construction consultation occurred at the time the Surface Damage Agreement was negotiated and surface owner has been continually noticed and updated by written notice, e-mail, phone and numerous onsite meetings. |
| 3 | Traffic control | Rule 604.c.(2)D- Access is off CR 318, approximately 4.7 miles from it's intersection with Hwy 172. Access gate is on the South side of CR 318il. Access is granted by existing Surface Damage Agreement (attached). Elm Ridge agrees to comply with any La Plata County traffic control measures required for this well. |
| 4 | General Housekeeping | Rule 604.c.(2)P- Trash containers will be maintained on site. Trash will be hauled to and disposed at a commercial landfill. |
| 5 | Storm Water/Erosion Control | Please see attached Storm Water Management Plan prepared by Ecosphere Environmental Services. |
| 6 | Material Handling and Spill Prevention | Rule 604.c.(2)F- Wells are monitored daily by the pumpers. Pressure monitoring is not necessary. Maximum reservoir pressure is approximately 1200 psig. These are low pressure gathering lines. All gathering lines are checked yearly for leaks. Per Rule 604.c.(2)G.- Berms will be constructed with corrugated metal sides around water tanks and will will be sufficient in height and area to contain 150% of the volume of the largest single tank. Synthetic liners are being and will be used under tanks on location. Rule 604.c.(2)N-Any materials not in use that might constitute a fire hazard will be removed a minimum distance of twenty five feet from the wellhead, tanks and separator. No electrical equipment installations are planned inside the bermed area. Please see attached Storm Water Management Plan prepared by Ecosphere Environmental Services. |
| 7 | Construction | Rule 604.c.(2)V.- the IGW 146 well will be located in the immediate vicinity of and wholly within the footprint of the existing Crigler Ute FT #1 well pad. Rule 604.c.(2)B.- no fresh water pits are planned. Rule 604.c.(2)E- The existing well access road will be used. No new disturbance is anticipated. Standard specifications for this access road include a driving surface constructed with with 6 inches of 3" minus gravel over a driving surface approximately 12 feet in width, crowned, with ditches and culverts where necessary for drainage. Rule 604.c.(2)M.- The tract of land where the well pad is located is perimeter fenced with an entrance to well access on Blackhawk Trail Rule 604.c.(2)V-The existing well pad for the Crigler Ute FT #1 well is being used for this location. |
| 8 | Noise mitigation | Rule 604.c.(2)ADrilling and Completion: Noise levels will be monoitored by operator and if exceeds acceptable levels operator agrees to install sound walls or, if necessary, provide reasonable motel accommodations for the affected party. Post-production: No necessity for engines or motorized equipment is anticipated. If such equipment becomes necessary, Elm Ridge will first try to electrify the location if it is practical and feasible. If not, they will orient exhaust away from the affected party and will use hospital grade mufflers, buried, in series. Elm Ridge will install sound walls if necessary |
| 9 | Drilling/Completion Operations | 604.c.(2)K.- Pit level indicators will be used. 604.c.(2)L- Drill stem tests are not typically done and none are anticipated. Rule 604.c.(2)O- Load lines will be bullplugged Rule 604.c.(2)Q- Guy line anchors will be identified per COGCC rules and are tested before each use. Rule 604.c.(2)S. – Existing well access road will be used and maintained for all weather use and will meet any safety requirements. |

Total: 9 comment(s)

Applicable Policies and Notices to Operators

Notice Concerning Operating Requirements for Wildlife Protection.

Attachment Check List

| Att Doc Num | Name |
|--------------------|------------------------|
| 1857456 | SELECTED ITEMS REPORT |
| 1857457 | SELECTED ITEMS REPORT |
| 400579473 | FORM 2 SUBMITTED |
| 400647734 | DEVIATED DRILLING PLAN |
| 400647737 | DRILLING PLAN |
| 400647740 | SURFACE AGRMT/SURETY |
| 400647750 | WELL LOCATION PLAT |
| 400647753 | TOPO MAP |
| 400647758 | WASTE MANAGEMENT PLAN |
| 400649670 | DIRECTIONAL DATA |

Total Attach: 10 Files

General Comments

| <u>User Group</u> | <u>Comment</u> | <u>Comment Date</u> |
|-------------------|--|--------------------------|
| Engineer | <p>The following email was sent to the operator:</p> <p>Elm Ridge Exploration IGS 146 NWSE 21 33N 8W Doc #400579473</p> <p>The 5 ½" production casing top was changed from a depth of 500' to surface or zero feet. Please be sure to make note of the change and to inform your drilling engineer and drilling supervisor.</p> | 9/15/2014 10:00:36 AM |
| Permit | Final review completed; no LGD or public comment received. | 9/15/2014 7:01:04 AM |
| Permit | Changed distance to described lease line. | 9/15/2014 6:54:27 AM |
| Permit | Changed distance to public road line to coincide with COGCC GIS and Google Earth. | 9/15/2014 6:53:00 AM |
| Engineer | <p>A one (1) mile radius of investigation of all offsetting and surrounding fresh water wells in relation to the proposed gas well, determined that the deepest surface casing required to protect the aquifers is a depth of 506' (includes a 50' margin of additional protection). The operator has proposed a depth of 500' which six (6) less than the minimal required. The surface casing setting depth of 500' will be revised to a depth of 506'. The surface casing on the proposed well will be cemented from total depth to surface. The production casing on the proposed gas well will also be cemented from total depth to surface. This will serve two purposes (1) it will isolate and confine all hydrocarbon and brackish waters to their respective zones and (2) it will provide double protection for the fresh water aquifers which includes two concentric (2) steel casing strings and two concentric external (2) cement sheaths extending from total depth to surface.</p> <p>A plat map was prepared for the location of the proposed gas which includes a 1500' envelope of investigation that is drawn around the Bottom Hole Location of the proposed S-Shaped directional well bore. A survey of the adjacent gas wells falling within the boundaries of the 1500' envelope was conducted. The cement tops on the production casings in regards to the two offsetting wells are deemed adequate for fracture stimulations in the proposed gas well.</p> | 3/8/2014 5:15:32 PM |
| Permit | Well location is in the buffer zone. | 7/24/2014 6:05:14 AM |
| Permit | Fruitland Units appear to be laydown units rather than standup units. Fruitland coal unit should be N/2. This is the fourth fruitland well in the N/2. | 7/24/2014 5:28:31 AM |
| Permit | Passed completeness. Imported directional data now includes TD. | 7/23/2014 2:07:48 PM |
| Permit | Return to draft. Imported directional data does not include TD. | 7/23/2014 12:33:03 PM |
| Permit | Return to draft. Directional data not imported. | 7/22/2014 9:58:56 AM |

Total: 10 comment(s)