

FORM
2

Rev
08/16

State of Colorado

Oil and Gas Conservation Commission

1120 Lincoln Street, Suite 801, Denver, Colorado 80203
Phone: (303) 894-2100 Fax: (303) 894-2109



Document Number:

401115858

APPLICATION FOR PERMIT TO:

☒ Drill ☐ Deepen ☐ Re-enter ☐ Recomplete and Operate

TYPE OF WELL OIL ☒ GAS ☐ COALBED ☐ OTHER _____

Refilling ☐

ZONE TYPE SINGLE ZONE ☒ MULTIPLE ZONES ☐ COMMINGLE ZONES ☐

Sidetrack ☐

Date Received:

12/19/2016

Well Name: Ag

Well Number: 31N-31B-L

Name of Operator: SYNERGY RESOURCES CORPORATION

COGCC Operator Number: 10311

Address: 1675 BROADWAY SUITE 2600

City: DENVER State: CO Zip: 80202

Contact Name: Erin Ekblad

Phone: (720)616.4319

Fax: (720)616.4301

Email: eekblad@syrginfo.com

RECLAMATION FINANCIAL ASSURANCE

Plugging and Abandonment Bond Surety ID: 20090043

WELL LOCATION INFORMATION

QtrQtr: NENE Sec: 32 Twp: 6N Rng: 66W Meridian: 6

Latitude: 40.449236

Longitude: -104.794362

Footage at Surface: 979 Feet FNL/FSL FNL 545 Feet FEL/FWL FEL

Field Name: WATTENBERG

Field Number: 90750

Ground Elevation: 4706

County: WELD

GPS Data:

Date of Measurement: 07/25/2016 PDOP Reading: 1.2 Instrument Operator's Name: Rob Wilson

If well is ☐ Directional ☒ Horizontal (highly deviated) submit deviated drilling plan.

Footage at Top of Prod Zone: FNL/FSL FNL/FWL Bottom Hole: FNL/FSL FNL/FWL
1627 FNL 75 FEL 1611 FNL 75 FWL
Sec: 32 Twp: 6N Rng: 66W Sec: 31 Twp: 6N Rng: 66W

LOCATION SURFACE & MINERALS & RIGHT TO CONSTRUCT

Surface Ownership: ☒ Fee ☐ State ☐ Federal ☐ Indian

The Surface Owner is: ☒ is the mineral owner beneath the location.

(check all that apply)

☒ is committed to an Oil and Gas Lease.

☐ has signed the Oil and Gas Lease.

☐ is the applicant.

The Mineral Owner beneath this Oil and Gas Location is: ☒ Fee ☐ State ☐ Federal ☐ Indian

The Minerals beneath this Oil and Gas Location will be developed by this Well: Yes

The right to construct the Oil and Gas Location is granted by: oil and gas lease

Surface damage assurance if no agreement is in place:

Surface Surety ID:

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.)

32: NE4, N2SE4, 33: SW4NW4, NW4SE4 6NR66W

Total Acres in Described Lease: 320 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: 528 Feet
Building Unit: 528 Feet
High Occupancy Building Unit: 4694 Feet
Designated Outside Activity Area: 3050 Feet
Public Road: 971 Feet
Above Ground Utility: 858 Feet
Railroad: 1947 Feet
Property Line: 409 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: 08/29/2016

SPACING and UNIT INFORMATION

Distance from completed portion of proposed wellbore to nearest completed portion of offset wellbore permitted or completed in the same formation: 217 Feet

Distance from Completed Portion of Wellbore to Nearest Unit Boundary 950 Feet (Enter 5280 for distance greater than 1 mile.)

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

SPACING & FORMATIONS COMMENTS

Spacing Unit: 31: N2, 32: N2, 33: W2NW, 6N66W; 36: E2NE, 6N67W

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 | | 811 | GWA |

DRILLING PROGRAM

Proposed Total Measured Depth: 18422 Feet

Distance from the proposed wellbore to nearest existing or proposed wellbore belonging to another operator, including plugged wells:

Enter distance if less than or equal to 1,500 feet: 869 Feet ☐ No well belonging to another operator within 1,500 feet

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? Yes

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: Commercial Disposal

Other Disposal Description:

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 |
|-------------|--------------|----------------|-------|---------------|---------------|-----------|---------|---------|
| CONDUCTOR | 24 | 16 | 65 | 0 | 40 | 70 | 40 | 0 |
| SURF | 13+1/2 | 9+5/8 | 36 | 0 | 1700 | 464 | 1700 | 0 |
| 1ST | 8+1/2 | 5+1/2 | 17 | 0 | 18422 | 2247 | 18422 | 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 Surface Use Agreement has waivers for Rule 318A.a. and 318A.c. See page 4, Section 8.

Drilling Tab, distance proposed wellbore to another operator. 869 feet to Hall 31-12.

Spacing Tab, distance proposed wellbore to offset same formation 217 feet to Ag 31C-31-L using Plan View Map Measurement.

The unit acreage was calculated using Title Opinions from our Attorneys. They take into account all official surveys that become record which may add or, in some cases, reduce a quarter/quarter from the standard 40.00 acres. Aggregate Industries-WCR, Inc. did not actually sign the Oil and Gas Lease themselves. They are subject to the oil and gas lease that was signed by a predecessor in interest to them.

This application is in a Comprehensive Drilling Plan No 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: Erin Ekblad

Title: Manager Regulatory Affair Date: 12/19/2016 Email: EEKBLAD@SYRGINFO.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:  Director of COGCC Date: 5/22/2017

Expiration Date: 05/21/2019

API NUMBER

05 123 44875 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.

COA Type

Description

| | |
|--|---|
| | This Permit to Drill is approved subject to all the BMPs and COAs on the most recently approved Form 2A and any subsequently approved Form 4 for the Oil and Gas Location. The most recently approved Form 2A and any subsequent Form 4s containing applicable COAs for this location shall be posted onsite during construction, drilling, and completions operations. |
| | Operator agrees to comply with the DJ Basin Horizontal Offset Policy to mitigate the situation, ensure all applicable documentation is submitted based on the selected mitigation option chosen, submit Form 42(s) ("OFFSET MITIGATION COMPLETED") for the remediated well(s), referencing the API Number of the proposed horizontal well, to report that appropriate mitigation was completed prior to the hydraulic stimulation of the proposed horizontal well. Operator acknowledges the proximity of the following offset well(s) of concern: 05-123-05203, Von Trotha Bros Inc #1 |
| | Bradenhead tests shall be performed and reported according to the following schedule and Form 17 submitted within 10 days of each test.: 1) All: Within 60 days of rig release, prior to stimulation. 2) Delayed completion: 6 months after rig release, prior to stimulation. 3) All: Within 30 days of first production, as reported on Form 5A. |
| | 1) Submit Form 42 electronically to COGCC 48 hours prior to MIRU (spud notice) for the first well activity with a rig on the pad and provide 48 hour spud notice via Form 42 for all subsequent wells drilled on the pad. 2) Provide cement coverage to a minimum of 200' above Niobrara, and from 200' below Shannon to 200' above Sussex. Verify coverage with cement bond log. |

Best Management Practices

| No | BMP/COA Type | Description |
|----|--------------------------------|---|
| 1 | Planning | 604.c.(2)J.i Blowout Prevention Equipment ("BOPE"): A double ram and annular preventer will be used during drilling. Stabbing valves shall be installed in the event of reverse circulation and shall be prior tested with low and high pressure fluid. |
| 2 | Planning | 604.c.(2)J.ii Backup stabbing valves be required on well servicing operations during reverse circulation. Valves shall be pressure tested before each well servicing operation using both low-pressure air and high-pressure fluid. |
| 3 | Emissions mitigation | 604.c.(2)C.i. 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. The flowback gas shall be sold or shall be captured and combusted with 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, and will be piped to other or permanent equipment and shall be provided with the equipment needed to maintain combustions where non-combustible gases are present. There is a sales line available, Synergy plans to turns to sales as soon as possible. |
| 4 | Drilling/Completion Operations | RULE 604.c.I: Upon initial rig-up and at least once every thirty (30) days during drilling operations thereafter, pressure testing of the casing string and each component of the blowout prevention equipment including flange connections shall be performed to seventy percent (70%) of working pressure or seventy percent (70%) of the internal yield of casing, whichever is less. Pressure testing shall be conducted and the documented results shall be retained by the operator for inspection by the Director for a period of one (1) year. Activation of the pipe rams for function testing shall be conducted on a daily basis when practicable. |
| 5 | Drilling/Completion Operations | 604.c.(2)L. Closed chamber drill stem tests shall be allowed. All other drill stem tests shall require approval by the Director. None planned for this well. |
| 6 | Drilling/Completion Operations | 604.c.(2).O. Drilling and Completion-All loadlines shall be bullplugged or capped. |
| 7 | Drilling/Completion Operations | 604.c.(2)B.i Operator will be utilizing a closed loop system. |
| 8 | Drilling/Completion Operations | Operator will comply with COGCC policy for Bradenhead Monitoring During Hydraulic Fracturing Treatments in the Greater Wattenberg area dated May 29, 2012. |
| 9 | Drilling/Completion Operations | Anti-collision: Operator will perform an anti-collision evaluation of all active (producing, shut in, or temporarily abandoned) offset wellbores that have the potential of being within 150 feet of a proposed well prior to drilling operations for the proposed well. Notice shall be given to all offset operators prior to drilling. |
| 10 | Drilling/Completion Operations | One of the first wells drilled on the pad will be logged with Cased hole Pulsed Neutron Log with Gamma Ray Log from the kick-off point to into the surface casing. All wells on the pad will have a cement bond log with gamma-ray run on production casing (or on intermediate casing if production liner is run) into the surface casing. The horizontal portion of every well will be logged with a measured while-drilling gamma-ray log. The Form 5, Completion Report, for each well on the pad will list all logs run in that well and have those logs attached. The Form 5 for each well shall clearly state "No open-hole logs were run" and shall reference the Rule 317.p Exception granted for the well. |

Total: 10 comment(s)

Applicable Policies and Notices to Operators

| |
|--|
| Policy |
| Notice Concerning Operating Requirements for Wildlife Protection. http://cogcc.state.co.us/documents/reg/Policies/Wildlife_Notice.pdf |
| Policy for Bradenhead Monitoring During Hydraulic Fracturing Treatments in the Greater Wattenberg Area. http://cogcc.state.co.us/documents/reg/Policies/PolicyGwaBradenheadMonitoringFinal.pdf |

Attachment Check List

| Att Doc Num | Name |
|--------------------|-----------------------------|
| 1696805 | CORRESPONDENCE |
| 401115858 | FORM 2 SUBMITTED |
| 401118864 | WELL LOCATION PLAT |
| 401170010 | SURFACE AGRMT/SURETY |
| 401170015 | DIRECTIONAL DATA |
| 401170017 | OffsetWellEvaluations Data |
| 401170020 | EXCEPTION LOC REQUEST |
| 401170022 | OPEN HOLE LOGGING EXCEPTION |
| 401170023 | PROPOSED SPACING UNIT |
| 401170026 | MINERAL LEASE MAP |
| 401170028 | DEVIATED DRILLING PLAN |
| 401288750 | OFFSET WELL EVALUATION |

Total Attach: 12 Files

General Comments

| User Group | Comment | Comment Date |
|-------------------|--|---------------------|
| Permit | Per operator the distance to the Unit Boundary was measured at the 1 mile mark. A list of distances was provided by the operator and is attached under correspondence. Final Review Completed. | 05/18/2017 |
| Permit | Surface Use Agreement has waivers for Rule 318A.a. and 318A.c. See page 4, Section 8. Operator requested Exception to Open Hole Logging Rule 317.p. See attached. Per operator added operator comments about Oil and Gas lease and how acres were calculated. Permitting Review Complete. | 05/16/2017 |
| Permit | Passed completeness. | 12/28/2016 |

Total: 3 comment(s)