

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:  
401205785

APPLICATION FOR PERMIT TO:

Drill       Deepen       Re-enter       Recomplete and Operate

TYPE OF WELL OIL  GAS  COALBED  OTHER \_\_\_\_\_  
ZONE TYPE SINGLE ZONE  MULTIPLE ZONES  COMMINGLE ZONES

Refiling   
Sidetrack

Date Received:  
03/21/2017

Well Name: Leffler Well Number: 41C-23-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: SENE Sec: 21 Twp: 6N Rng: 66W Meridian: 6  
Latitude: 40.475877 Longitude: -104.774350

Footage at Surface: 1921 Feet <sup>FNL/FSL</sup> FNL 275 Feet <sup>FEL/FWL</sup> FEL

Field Name: WATTENBERG Field Number: 90750  
Ground Elevation: 4748 County: WELD

GPS Data:  
Date of Measurement: 11/29/2016 PDOP Reading: 1.4 Instrument Operator's Name: Rob Wilson

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

Footage at Top of Prod Zone: <sup>FNL/FSL</sup> 1462 FNL 75 FWL <sup>FEL/FWL</sup> 1479 FNL 510 FEL  
Sec: 22 Twp: 6N Rng: 66W Sec: 23 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.)

E/2NE/4 SEC 21, 6N, 66W & W2NW4 SEC 22, 6N, 66W

Mineral Lease Map attached.

Total Acres in Described Lease: 162 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: 882 Feet  
 Building Unit: 882 Feet  
 High Occupancy Building Unit: 3484 Feet  
 Designated Outside Activity Area: 5280 Feet  
 Public Road: 261 Feet  
 Above Ground Utility: 297 Feet  
 Railroad: 5280 Feet  
 Property Line: 275 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: 02/02/2017

**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: 90 Feet

Distance from Completed Portion of Wellbore to Nearest Unit Boundary 510 Feet (Enter 5280 for distance greater than 1 mile.)

Federal or State Unit Name (if appl): \_\_\_\_\_ Unit Number: \_\_\_\_\_

**SPACING & FORMATIONS COMMENTS**

Spacing Unit: 6N 66W SEC 21 E2NE, 6N 66W SEC 22 N2, 6N 66W SEC 23 N2

**OBJECTIVE FORMATIONS**

Objective Formation(s)	Formation Code	Spacing Order Number(s)	Unit Acreage Assigned to Well	Unit Configuration (N/2, SE/4, etc.)
CODELL	CODL		720	GWA

## DRILLING PROGRAM

Proposed Total Measured Depth: 17709 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: 97 Feet  No well belonging to another operator within 1,500 feet

Will a closed-loop drilling system be used? Yes

Is H<sub>2</sub>S gas reasonably expected to be encountered during drilling operations at concentrations greater than or equal to 100 ppm? No (If Yes, attach an H<sub>2</sub>S 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	35	40	0
SURF	13+1/2	9+5/8	36	0	1750	531	1750	0
1ST	8+1/2	5+1/2	20	0	17709	2179	17709	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 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.

In Drilling Tab, distance proposed wellbore to another operator is 97 feet from ELDRIDGE #CNE-23 using anti-collision report. In Spacing Tab, distance proposed wellbore to offset same formation is 90 feet to Synergy's proposed well Leffler 8N-23C-L using Plan View Map Measurement.

The Surface Use Agreement has waivers for Rule 318A.a & 318A.c. See page 5, Section 9 (a).

Synergy has notified HRM regarding their well Eldridge #CNE-23 that is within 150 feet of our proposed well that there will be no treated interval being within 150 feet of an existing wellbore. Synergy recognizes that Leffler FE 20-102HN of Great Western permitted well is close, but by the time the well gets to the TPZ or producing zone Synergy well will be more than 150' away.

Synergy attached a signed waiver to this Form 2 from Noble Energy for their well Adams I 23-19 that is within 150 ft of Synergy's proposed well.

This application is in a Comprehensive Drilling Plan No CDP #: \_\_\_\_\_

Location ID: 450030

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: 3/21/2017 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: *Matthew Lee* Director of COGCC Date: 5/15/2017

Expiration Date: 05/14/2019

**API NUMBER**  
05 123 44828 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>
	<p>1) Submit Form 42 electronically to COGCC 48 hours prior to MIRU for the first well activity with a rig on the pad and provide 48 hour spud notice for each subsequent well drilled on the pad.</p> <p>2) Comply with Rule 317.j and provide cement coverage from TD to a minimum of 200' above the Niobrara. Verify coverage with cement bond log.</p> <p>3) Oil-based drilling fluid is to be used only after all aquifers are covered.</p>
	<p>Bradenhead tests shall be performed and reported according to the following schedule and Form 17 submitted within 10 days of each test:</p> <p>1) Within 60 days of rig release and prior to stimulation and</p> <p>2) If a delayed completion, 6-7 months after rig release and prior to stimulation.</p> <p>3) Within 30 days after first production, as reported on Form 5A.</p>
	<p>Operator acknowledges the proximity of the listed non operated well(s). Operator agrees to provide mitigation Option 1 or 2 (per the DJ Basin Horizontal Offset Policy, ensure all applicable documentation is submitted based on the selected mitigation option chosen, and submit Form 42(s) "OFFSET MITIGATION COMPLETED" for the remediated wells, referencing the API Number of the proposed horizontal well(s) stating what appropriate mitigation occurred and that it has been completed, prior to the hydraulic stimulation of the proposed wells.</p> <p>Leffler 1 21-2 (API #123-23328)            Schaefer 2-22 (API #123-10656)            Rutt-Adams Heirs 1-22 (API #05-123-10657)            L&amp;L Partnership 22-8 (API #123-17240)            Carbody Lake 1-23 (API #123-10730)            Alles 1-23 (API #123-13070)            Alles 2-23 (API #123-13071)            Eldridge 4-23 (API #123-13177)            L&amp;L Partnership 23-4G6 (API #123-18597)            Kent 24-2 (API #123-15817)</p>
	<p>In the operator comment box of the Form 5A, operator must certify that the operator did not stimulate within 150' of an existing wellbore operated by a different operator without a signed waiver from that operator and documentation exists to demonstrate this fact. This will include existing wellbores from a different operator that were not originally within 150' of the planned wellbore, but did end up within 150' of the as-drilled wellbore. Operator agrees to provide this documentation within two business days via email if requested by COGCC staff.</p> <p>Additionally for the wells below, operator must provide in that same operator comment box, the name and API of the well, nearest perforation to that well, and final separation (wellbore to wellbore distance) from that well:</p> <p>Eldridge #CNE-23 (API #123-24183)</p>
	<p>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 (Location ID #450030). 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.</p>

## 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	Drilling/Completions 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	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	One of the first wells drilled on the pad will be logged with Open Hole Resistivity Log and 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 and have those logs attached. The Form 5 for a well without open-hole logs shall clearly state "No open-hole logs were run" and shall clearly identify (by API#, well name & number) the well in which open-hole logs were run.
9	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.
10	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.

Total: 10 comment(s)

### Applicable Policies and Notices to Operators

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

### Attachment Check List

<b>Att Doc Num</b>	<b>Name</b>
401205785	FORM 2 SUBMITTED
401205803	WELL LOCATION PLAT
401233212	SURFACE AGRMT/SURETY
401233851	OTHER
401233862	DEVIATED DRILLING PLAN
401233864	PROPOSED SPACING UNIT
401233868	MINERAL LEASE MAP
401237418	DIRECTIONAL DATA
401237574	OffsetWellEvaluations Data
401238000	EXCEPTION LOC REQUEST
401239563	WAIVERS
401283151	OFFSET WELL EVALUATION

Total Attach: 12 Files

### General Comments

<b>User Group</b>	<b>Comment</b>	<b>Comment Date</b>
Permit	Added Location ID #450030. Final Review Completed.	05/08/2017
Permit	Open Hole Logging BMP submitted by operator. Surface Use Agreement has waivers for Rule 318A.a & 318A.c. See page 5, Section 9 (a). Permitting Review Complete.	05/04/2017
Permit	Passed Completeness	03/24/2017

Total: 3 comment(s)