

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:

401142001

## APPLICATION FOR PERMIT TO:

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

Date Received:

11/17/2016

TYPE OF WELL OIL ☐ GAS ☒ COALBED ☐ OTHER \_\_\_\_\_Refiling ☐ZONE TYPE SINGLE ZONE ☒ MULTIPLE ZONES ☐ COMMINGLE ZONES ☐Sidetrack ☐

Well Name: Gunderson

Well Number: 20-07E

Name of Operator: LARAMIE ENERGY LLC

COGCC Operator Number: 10433

Address: 1401 SEVENTEENTH STREET #1400

City: DENVER State: CO Zip: 80202

Contact Name: Joan Proulx

Phone: (970)263-3641

Fax: ( )

Email: jproulx@laramie-energy.com

## RECLAMATION FINANCIAL ASSURANCE

Plugging and Abandonment Bond Surety ID: 20120081

## WELL LOCATION INFORMATION

QtrQtr: NENW Sec: 20 Twp: 9S Rng: 93W Meridian: 6

Latitude: 39.266783

Longitude: -107.795281

Footage at Surface: 1022 Feet FNL/FSL FNL 1985 Feet FEL/FWL FWL

Field Name: BUZZARD CREEK

Field Number: 9500

Ground Elevation: 7145

County: MESA

GPS Data:

Date of Measurement: 08/19/2015 PDOP Reading: 1.4 Instrument Operator's Name: Braden Box

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 FEL/FWL

1369	FNL	1290	FEL	1369	FNL	1290	FEL
Sec: 20	Twp: 9S	Rng: 93W	Sec: 20	Twp: 9S	Rng: 93W		

## LOCATION SURFACE &amp; MINERALS &amp; RIGHT TO CONSTRUCT

Surface Ownership: ☒ Fee ☐ State ☐ Federal ☐ IndianThe 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.)

Twn. 9S Rng. 93W 6th PM Mesa County, CO  
Sec 20: NE, SE, NENW

Total Acres in Described Lease: 360 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: 1290 Feet

## CULTURAL DISTANCE INFORMATION

Distance to nearest:

Building: 1141 Feet  
Building Unit: 1143 Feet  
High Occupancy Building Unit: 5280 Feet  
Designated Outside Activity Area: 5280 Feet  
Public Road: 1209 Feet  
Above Ground Utility: 1222 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: \_\_\_\_\_

## 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: 200 Feet

Distance from Completed Portion of Wellbore to Nearest Unit Boundary 1221 Feet (Enter 5280 for distance greater than 1 mile.)

Federal or State Unit Name (if appl): Buzzard Creek Unit Number: COC47597A

## SPACING & FORMATIONS COMMENTS

This Well is inside the Buzzard Creek Unit Participating Area.

## OBJECTIVE FORMATIONS

Objective Formation(s)	Formation Code	Spacing Order Number(s)	Unit Acreage Assigned to Well	Unit Configuration (N/2, SE/4, etc.)
WILLIAMS FORK-ILES	WFILS	369-5		

## DRILLING PROGRAM

Proposed Total Measured Depth: 7993 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: 992 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? 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: OFFSITE Drilling Fluids Disposal Methods: Recycle/reuse

Cuttings Disposal: ONSITE Cuttings Disposal Method: Other

Other Disposal Description:

Cuttings will be stacked on location. Once sufficiently dried, cuttings will be tested to 910 standards and once acceptable be covered with soil.  
Drilling mud will be Recycled/Reused in other drilling operations.

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	260	16	112	0	60	120	60	0
SURF	11	8+5/8	24.0	0	1530	296	1530	0
1ST	7+7/8	4+1/2	11.6	0	7993	1270	7993	1022

☐ 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

Location Drawing  
Production Layout  
Access Road Map  
Hydrology Map  
Stormwater  
Wildlife BMP's  
Submitted as part of Location Assessment Doc No: 401141886

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: Joan Proulx

Title: Regulatory Analyst Date: 11/17/2016 Email: jproulx@laramie-energy.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: 1/31/2017

Expiration Date: 01/30/2019

API NUMBER

05 077 10357 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**

	<p>1)Operator shall comply with the most current revision of the Northwest Colorado Notification Policy.</p> <p>2)Operator shall comply with the Notice to Operators Drilling Wells in the Buzzard, Mamm Creek, and Rulison fields, Garfield County and Mesa County – Procedures and Submittal Requirements for Compliance with COGCC Order Nos. 1-107, 139-56, 191-22, and 369-2 (July 8, 2010).</p> <p>3)Operator shall provide cement coverage from the production casing shoe (4+1/2" FIRST STRING) to a minimum of 200' above the Lower Wasatch (as defined by COGCC in the report "Casing and Cement Standards for Geologic Isolation Piceance Basin Bradenhead Monitoring Area and Nearby Fields," dated April 18, 2016, COGCC Document No. 2056199, Appendix A Field Scout Cards and Annotated Type Logs) to provide isolation of the Lower Wasatch, all Mesaverde Group formations including the Ohio Creek Formation, and underlying formations, if penetrated. Verify production casing cement coverage with a cement bond log. This requirement shall supersede the top of cement requirements in the Mamm Creek Field Notice to Operators.</p> <p>4)The Operator shall monitor the bradenhead pressure of the proposed well and all offset wells under Operator's control which penetrate the stimulated formation and have a treated interval separation of 300 feet or less. Monitoring shall occur from 24 hours prior to stimulation and shall continue until 24 hours after stimulation is complete. Recording shall be at a frequency of at least once per 24 hours with the capability of recording the maximum pressure observed during each 24 hour period. Operator shall notify COGCC Engineering staff if bradenhead pressures increase by more than 200 psig.</p>
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## **Best Management Practices**

### **No BMP/COA Type**

### **Description**

1	Drilling/Completion Operations	<p>One of the first wells drilled on the pad will be logged open-hole with a triple combo log (HRI w/ SP,GR, CAL and Spectral Density/Dual Spaced Neutron) from TD into the surface casing. All wells on the pad will have a radial analysis bond log with gamma ray run on production casing from TD to surface after rig moves off pad. All wells not logged with an open hole log will have a cased hole NEO neutron emulated open hole log run from TD to surface. 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 &amp; number) the well in which open-hole logs were run.</p>
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Total: 1 comment(s)

## **Applicable Policies and Notices to Operators**

Policy
NW Colorado Notification Policy. <a href="http://cogcc.state.co.us/documents/reg/Policies/nw_notification_procedures.pdf">http://cogcc.state.co.us/documents/reg/Policies/nw_notification_procedures.pdf</a>
Bradenhead Pressure Reporting-Garfield County (Mamm Creek & Rulison Fields) Mesa County (Buzzard Field). <a href="http://cogcc.state.co.us/documents/reg/Policies/NT0_07082010.pdf">http://cogcc.state.co.us/documents/reg/Policies/NT0_07082010.pdf</a>
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>

## **Attachment Check List**

<u>Att Doc Num</u>	<u>Name</u>
401142001	FORM 2 SUBMITTED
401150528	DIRECTIONAL DATA
401150529	DEVIATED DRILLING PLAN
401150668	DRILLING PLAN
401151454	WELL LOCATION PLAT

Total Attach: 5 Files

### General Comments

<u>User Group</u>	<u>Comment</u>	<u>Comment Date</u>
Permit	Final review complete.	01/31/2017
Permit	Added spacing order 369-5 to the spacing order box as per operator. Corrected drilling and waste plans comments to match the 2A and deleted comment from operator comments regarding same. Operator approved of this change. Preliminary review complete.	01/18/2017
Engineer	<p>Offset water well check: COGCC evaluated offset water wells within one mile of this proposed well's surface hole location. This information was used in addition to locally-available geophysical logs and hydrogeologic information to evaluate the adequacy of the operator's proposed surface casing setting depth. The deepest water well within one mile is 185 feet.</p> <p>Distance to nearest wellbore belonging to another operator changed to 992 ft per operator.</p> <p>Evaluated offset well Gunderson #1 (API# 077-05085) drilled to a TMD of 7335'. Well plugged in 1978 with sand to 7775', 22' of cement from 7775' to 7753', 25 sacks cement from 5310' to 5110' (30' in 3.5" liner and 170' in 5 1/2" casing). Cut and pulled 5 1/2" at 492' and 220 sacks cement from 550' to surface. Perforations from 5506' to 6734' squeezed with 350 sacks cement. No cement bond log in well file. Calculated top of cement at 4320' with Mesaverde top reported at 3910' (may be Ohio Creek).</p> <p>Operator responded on 11/30/2016 and secured an agreement with COGCC Engineering Staff that mitigation of the Gunderson #1 well is unnecessary during stimulation of the proposed wells on this pad. The expected primary hydraulic fracture lengths are very elliptical due a high degree of anisotropy that results in short north-south fracture growth and much longer east-west fracture growth.</p>	12/02/2016
Permit	Passed completeness.	11/23/2016
Permit	Corrected Date of Measurement with Operator's approval.	11/23/2016

Total: 5 comment(s)