

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:
401475503

APPLICATION FOR PERMIT TO:

Drill Deepen Re-enter Recomplete and Operate

Date Received:
01/16/2018

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

Refiling
Sidetrack

Well Name: Livingston Well Number: S20-25-4N
Name of Operator: EXTRACTION OIL & GAS INC COGCC Operator Number: 10459
Address: 370 17TH STREET SUITE 5300
City: DENVER State: CO Zip: 80202
Contact Name: Alyssa Andrews Phone: (720)481-2379 Fax: ()
Email: aandrews@extractionoil.com

RECLAMATION FINANCIAL ASSURANCE

Plugging and Abandonment Bond Surety ID: 20130028

WELL LOCATION INFORMATION

QtrQtr: NESE Sec: 7 Twp: 1S Rng: 68W Meridian: 6
Latitude: 39.978560 Longitude: -105.039030

Footage at Surface: 2330 Feet FNL/FSL FSL 1222 Feet FEL/FWL FEL

Field Name: WATTENBERG Field Number: 90750
Ground Elevation: 5330 County: BROOMFIELD

GPS Data:
Date of Measurement: 11/10/2017 PDOP Reading: 1.3 Instrument Operator's Name: T. WINNICKI

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

Footage at Top of Prod Zone: FNL/FSL FEL/FWL Bottom Hole: FNL/FSL FEL/FWL
480 FNL 888 FWL 2186 FNL 842 FWL
Sec: 8 Twp: 1S Rng: 68W Sec: 20 Twp: 1S Rng: 68W

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: No

The right to construct the Oil and Gas Location is granted by: Surface Use Agreement

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.)

Section 8-1S-68W: N/2

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: 961 Feet

Building Unit: 1350 Feet

High Occupancy Building Unit: 5280 Feet

Designated Outside Activity Area: 5280 Feet

Public Road: 461 Feet

Above Ground Utility: 1284 Feet

Railroad: 5280 Feet

Property Line: 291 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: 290 Feet

Distance from Completed Portion of Wellbore to Nearest Unit Boundary 460 Feet (Enter 5280 for distance greater than 1 mile.)

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

SPACING & FORMATIONS COMMENTS

Spacing Order Numbers: #407-2219 & #407-2222

Unit Configuration:

Section 8-1S-68W: ALL

Section 17-1S-68W: ALL

Section 20-1S-68W: N/2

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 | 407-2222 | 1600 | 8 & 17: ALL, 20: N/2 |

DRILLING PROGRAM

Proposed Total Measured Depth: 21546 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: 83 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? _____

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 | 42 | 0 | 80 | 100 | 80 | 0 |
| SURF | 12+1/4 | 9+5/8 | 36 | 0 | 1500 | 400 | 1500 | 0 |
| 1ST | 8+1/2 | 5+1/2 | 20 | 0 | 21546 | 2921 | 21546 | 1500 |

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 Anti-Collision report used to determine distances. Please find the report attached as "Other".
Distance from completed portion to nearest completed portion of wellbore permitted/completed in the same formation: 290' (Ref. well: Livingston S20-25-3N)
Distance to nearest wellbore belonging to another operator: 83' (Ref. well: BROZOVICH #MA 8-4, Status PA, PATINA OIL & GAS CORPORATION)

All BMPs on the related Form 2A for the Livingston pad are applicable to this well.

Exception Location Requested for Rules 318A.a. & 318A.c. The SUA waives all Exception Locations. Please see the attached SUA including Section 13 and the relevant highlighted portions on page 8.

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

Location ID: 455317

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: Alyssa Andrews

Title: Regulatory Analyst Date: 1/16/2018 Email: aandrews@extractionog.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: 9/12/2018

Expiration Date: 09/11/2020

API NUMBER

05 014 20799 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>NW pad(all) and including Livingston wells S20-25-3N, S20-25-4N and S20-25-5C</p> <p>Operator acknowledges the proximity of the listed wells. Operator agrees to: provide mitigation option 1 or 2 (per the DJ Basin Horizontal Offset Policy) to mitigate the situation, ensure all applicable documentation is submitted based on the selected mitigation option chosen, and submit a Form 42 ("OFFSET MITIGATION COMPLETED") stating that appropriate mitigation occurred and that it has been completed, prior to the hydraulic stimulation of this well. Aquifer isolation to be verified or provided.</p> <p>014-08793, NORDSTROM 2-4 ; 014-08812, BROZOVICH MA 8-8J;</p> <p>014-08928, BROZOVICH MA 8-16J; 014-08929, NORDSTROM 3-9</p> <p>Operator acknowledges the proximity of the listed wells. Operator agrees to: provide mitigation option 1 or 2 (per the DJ Basin Horizontal Offset Policy) to mitigate the situation, ensure all applicable documentation is submitted based on the selected mitigation option chosen, and submit a Form 42 ("OFFSET MITIGATION COMPLETED") stating that appropriate mitigation occurred and that it has been completed, prior to the hydraulic stimulation of this well. Wells have demonstrated potential integrity issues.</p> <p>014-09029, FEDOROWICZ 1-17; 014-09075, FEDOROWICZ 2-17;</p> <p>014-09166, GREEN MA 17-2; 014-09168, GREEN MA 17-1</p> |
| | <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 via Form 42 for all subsequent wells drilled on the pad.</p> <p>2) Comply with Rule 317.j. and provide cement coverage from TD to a minimum of 200' above Niobrara. Verify coverage with cement bond log.</p> <p>3) Oil-based drilling fluid is to be used only after setting surface casing.</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, prior to stimulation. If any pressure greater than 200 psi, must contact COGCC engineer prior to stimulation.</p> <p>2) 6 months after rig release, prior to stimulation (delayed completions).</p> <p>3) Within 30 days of first production, as reported on Form 5A.</p> |

Best Management Practices

| No | <u>BMP/COA Type</u> | <u>Description</u> |
|----|--------------------------------|--|
| 1 | Drilling/Completion Operations | 317.p 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 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. |
| 2 | Drilling/Completion Operations | Operator acknowledges and will comply with COGCC policy for Bradenhead Monitoring during Hydraulic Fracturing treatments in the Greater Wattenberg Area dated May 29, 2012. |
| 3 | 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: 3 comment(s)

Applicable Policies and Notices to Operators

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

| <u>Att Doc Num</u> | <u>Name</u> |
|--------------------|----------------------------|
| 401475503 | FORM 2 SUBMITTED |
| 401482718 | DIRECTIONAL DATA |
| 401482719 | DEVIATED DRILLING PLAN |
| 401487973 | OffsetWellEvaluations Data |
| 401510544 | OTHER |
| 401510727 | WELL LOCATION PLAT |
| 401514976 | EXCEPTION LOC REQUEST |
| 401514978 | SURFACE AGRMT/SURETY |
| 401760182 | OFFSET WELL EVALUATION |

Total Attach: 9 Files

General Comments

| <u>User Group</u> | <u>Comment</u> | <u>Comment Date</u> |
|-------------------|--|---------------------|
| Agency | public comments received and reviewed. addressed through Form 2A process. | 09/12/2018 |
| Permit | Final Review Completed | 09/11/2018 |
| Permit | Status Active - with Operator concurrence, changed spacing order number from 407-2219 to 407-2222. Permitting review complete. | 04/26/2018 |
| Permit | Status Pending - contacted Operator for corrections: - revise spacing order from 407-2219 (which only allows a single horizontal well) to 407-2222 (which authorizes 20 horizontal wells). | 04/25/2018 |
| Permit | Added public comment mistakenly entered on APD 401478788 on 2/18/2018: COGCC must delay approval of Extraction permit application since the Comprehensive Drilling Plan is not meeting the approved MOU with Broomfield, thus, they have not approved it. There are many areas that Broomfield have asked to be reviewed, changed, or redone. For example, Broomfield has asked Extraction to provide a table of the required BMPs from the agreement with a brief overview of how each BMP was addressed or cross referenced to the portion of the application describing how the BMP was addressed. | 03/15/2018 |
| LGD | "Broomfield will be submitting comments with respect to the applicable Form 2A for this well, and incorporates those comments by this reference." | 02/23/2018 |
| Permit | Per Rule 305.d.(1)A. , the comment period has been extended from 20 days to 30 days at the request of the Broomfield County LGD; the comment period will end February 24, 2018. | 01/26/2018 |
| Permit | Passed Completeness. | 01/25/2018 |

Total: 8 comment(s)