

FORM
2

Rev
08/13

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:

400997328

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:

04/08/2016

Well Name: Woolley Becky

Well Number: 2C-7H-E168

Name of Operator: ENCANA OIL & GAS (USA) INC

COGCC Operator Number: 100185

Address: 370 17TH ST STE 1700

City: DENVER State: CO

Zip: 80202-5632

Contact Name: Toby Sachen

Phone: (720)876-5845

Fax: (720)876-6584

Email: toby.sachen@encana.com

RECLAMATION FINANCIAL ASSURANCE

Plugging and Abandonment Bond Surety ID: 20100017

WELL LOCATION INFORMATION

QtrQtr: SWNW Sec: 7 Twp: 1N Rng: 68W Meridian: 6

Latitude: 40.066854

Longitude: -105.053416

Footage at Surface: 2242 feet FNL/FSL FNL 574 feet FEL/FWL FWL

Field Name: WATTENBERG

Field Number: 90750

Ground Elevation: 4994

County: WELD

GPS Data:

Date of Measurement: 01/21/2015 PDOP Reading: 1.9 Instrument Operator's Name: CHRIS BETTENCOURT

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

Footage at Top of Prod Zone: FNL/FSL FNL 1707 FNL 947 FNL 460 FNL 800 FNL 68W
Sec: 7 Twp: 1N Rng: 68W Sec: 6 Twp: 1N 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: 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.)

T1N R68W SEC 7 N/2

Total Acres in Described Lease: 317 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: 726 Feet
Building Unit: 855 Feet
High Occupancy Building Unit: 2368 Feet
Designated Outside Activity Area: 5280 Feet
Public Road: 381 Feet
Above Ground Utility: 361 Feet
Railroad: 4235 Feet
Property Line: 381 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: 247 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 Unit: T1N R68W: Section 6: W/2; Section 7: NW/4.

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		480	GWA

DRILLING PROGRAM

Proposed Total Measured Depth: 14633 Feet

Distance from proposed wellbore to nearest existing or permitted wellbore belonging to another operator:

158 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 318A

DRILLING WASTE MANAGEMENT PROGRAM

Drilling Fluids Disposal: OFFSITE Drilling Fluids Disposal Methods: Land application

Cuttings Disposal: OFFSITE Cuttings Disposal Method: Beneficial reuse

Other Disposal Description:

MCDONALD FARMS, FACILITY ID 431609 AND BELLA 18, FACILITY ID 431606 WILL BE USED

Beneficial reuse or land application plan submitted? Yes

Reuse Facility ID: 431609 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	22	16	30	0	80	80	80	0
SURF	12+1/4	9+5/8	36	0	800	100	800	0
1ST	8+3/4	7	26	0	8077	459	8077	500
2ND	6+1/8	4+1/2	13.5	0	14633	261	14633	7777

☐ 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 construction of this Location was performed under a valid Form 2A.

No Form 2A required. Town of Erie BMPs included.

Nearest well (from completed portion of the proposed wellbore to offset wellbore completed in the same formation):
Bearden 2-8-6, 123-34943 at 247'.

Nearest existing or permitted wellbore belonging to another operator is Becky 5-6, 123-09814 at 158'.

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

Location ID: 305447

Is this application being submitted with an Oil and Gas Location Assessment application? No

I hereby certify all statements made in this form are, to the best of my knowledge, true, correct, and complete.

Signed: _____ Print Name: Toby Sachen

Title: Regulatory Analyst Date: 4/8/2016 Email: toby.sachen@encana.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: 6/11/2016

Expiration Date: 06/10/2018

API NUMBER

05 123 39241 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>
	Approval of this refile APD does not provide relief from compliance with the COGCC Reclamation Rules.
	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. 05-123-10710, THOMAS "E" UNIT 1
	Bradenhead tests shall be performed and reported according to the following schedule and Form 17 submitted within 10 days of each test. 1) Within 60 days of rig release, prior to stimulation. 2) 6 months after rig release, prior to stimulation. 3) 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) Comply with Rule 317.j. and provide cement coverage from end of 7-inch string to a minimum of 200' above Niobrara. Verify coverage with cement bond log.

Best Management Practices

<u>No</u>	<u>BMP/COA Type</u>	<u>Description</u>
1	Planning	Maximize equipment and wellhead setbacks from occupied buildings and residences to the extent feasible and practicable, as determined by Encana
2	Planning	Distance to Erie Building Units. For the Pad, the minimum distance between a well or surface equipment, and the nearest exterior wall of an existing Erie Building Unit (as of the Effective Date) shall not be less than the following 1,010 feet. Compliance with this requirement shall be determined from the actual asbuilt locations of the well or surface equipment. Nothing herein shall be construed to grant Encana any surface rights on property owned by the Town or another person. No Pad Site will be located on Town property without authorization by the Town Board of Trustees.
3	Planning	Encana shall conduct all operations in accordance with the plans discussed during the Conceptual Review Process as updated from time to time.
4	Community Outreach and Notification	Prior to commencement of any new drilling or completion operations, provide to an Erie designated staff member the following for the well-site for informational purposes only, which Encana may revise from time to time during operations: a) A summary of planned operations, including identified access points and operational timeline, for posting to a local community information web-page b) A site plan for site preparation, mobilization and demobilization c) A plan for interim reclamation and vegetation of the site and final reclamation of the site d) A plan for noise, light and dust mitigation, to the extent feasible e) A traffic management plan f) Updates of this information if any change during operations
5	Community Outreach and Notification	Prior to commencement of any new drilling or completion operations, provide notification to landowners within one-half (1/2) mile of the well-site.

6	Community Outreach and Notification	Encana shall include its contact information on both the mailed notice required by Article III, Section 8 and the posted notice required by Article III, Section 9. This information shall include both a telephone number for Encana and the address and hours of Encana's Erie community office. Members of the public with concerns or complaints regarding the oil and gas development covered by this Agreement may use this information to speak with Encana.
7	Traffic control	Encana will implement the Traffic Management Plan required by Article III, Section 3, Subpart 10.
8	Traffic control	To reduce truck traffic, Erie and Encana will encourage the use of nearby water resources for the drilling and hydraulic fracturing of wells at the pad sites, including the use of Erie municipal water when determined technically feasible and economically practicable by Encana.
9	General Housekeeping	Encana will install down cast lighting or some other form of lighting that mitigates light pollution and spill-over onto adjacent properties; provided, however, that Encana may still use lighting that is necessary for public and occupational safety.
10	General Housekeeping	Access roads to well and production facilities that connect to a street within Erie shall be improved from the point of connection to a street within Erie a minimum distance of two hundred (200) feet on the access road as specified by the then current requirements of the Code.
11	General Housekeeping	Upon the request of either party, the Parties may revise one or more of these BMPs if they mutually agree such revision would better avoid or mitigate impacts the BMP(s) is intended to address.
12	General Housekeeping	Encana will recycle and reuse water at the pad sites and otherwise minimize waste water production to the extent that it determines such recycling, reuse, and waste water minimization is technically and economically feasible.
13	General Housekeeping	Oil and gas well facilities (above ground) within the Erie Town Limits shall be fenced as specified by the then current requirements of the Code.
14	General Housekeeping	Road repairs. (a) Erie and Encana recognize that truck traffic accessing the Identified Well Pads may cause damage to Erie roads and that road repairs may be needed to mitigate such damage. To this end, Encana will arrange for a qualified outside consultant to perform a road impact study for all Erie roads that are used to access an Identified Well Pad during the Term of this Agreement. The consultant will conduct the first part of the study prior to Encana's operations at such Well Pad and the second part of the study after Encana completes all drilling and hydraulic fracturing at such Well Pad. Encana and Erie will use these studies to determine the extent of any damage accruing to the road during the study period. Encana will then promptly pay Erie to repair such damage or else arrange and pay the cost of such repairs itself whichever Erie prefers. (b) Encana shall maintain Financial Assurance to secure its road repair obligations under this Agreement. The amount of such Financial Assurance shall equal Erie's annual road maintenance budget as of the Effective Date multiplied by the percentage yielded by dividing the total number of Erie road miles as of the Effective Date into the number of such road miles that Encana will use to access the Identified Well Pads. Encana shall select the form of such Financial Assurance and shall maintain such Assurance until Encana fulfills its obligation to repair road damage under Subsection (a).
15	Material Handling and Spill Prevention	Utilize steel-rim berms around tanks and separators instead of sand or soil berms.
16	Material Handling and Spill Prevention	Encana shall use steel rim berms or some other state of the art technology that will contain fluids and other material instead of sand or soil berms.

17	Noise mitigation	<p>Encana will comply with the following noise mitigation requirements at all pad sites:</p> <p>(a) For db(A) scale noise, Encana will insure that the noise level from operations subject to the light industrial zone noise standard under COGCC Regulations 802.b and 604.c.(2)(A) does not exceed sixty (60) db(A) and that the noise level from operations subject to the industrial zone noise standard under COGCC Regulations 802.b and 604.c.(2)(A) is reduced at least five (5) db(A) below the maximum level permitted by those Regulations. For this purpose, the noise level shall be measured as set forth in COGCC Regulations 802.b & c, except no measurements shall be taken when traffic is passing the sound level meter, Encana shall be present during all measurements, and building units shall be limited to those units existing as of the Effective Date. As set forth in COGCC Regulation 802.b, the noise levels shall be subject to increase for a period not to exceed fifteen (15) minutes in any one (1) hour period and reduction for periodic, impulsive or shrill noises.</p> <p>(b) For db(C) scale noise, Encana shall comply with the requirements of COGCC Regulation 802, as such requirements may be amended during the term of this Agreement.</p>
18	Emissions mitigation	<p>Well leak detection and repair</p> <p>(a) To identify leaks, Encana will perform audio, visual and olfactory inspections on a monthly basis at all of its new and existing wells and related facilities and equipment within Erie's Town Limits, provided that such related facilities and equipment are located on the pads for such wells, are part of adjacent tanks used for such pad sites, or are part of storage tanks for such pad sites authorized under Article IV, Section 4 of the Operator Agreement. Encana will also inspect each such well with an infra-red camera on a monthly basis. The initial baseline inspections will occur within sixty (60) calendar days after the Effective Date. After a well has produced for twelve (12) months, the frequency of such inspections shall decrease from monthly to quarterly. If Encana determines that any repairs are required based on these inspections, Encana will promptly initiate these repairs.</p> <p>(b) Encana will report to Erie on the inspection results and any associated repairs the month after the inspection or repair occurs. This information will be collectively reported on a monthly basis in the same format that Encana uses for reporting to the Air Pollution Control Division under Regulation 7, but that is specific to wells located within the Erie Town Limits. Erie will make this information publicly available.</p> <p>(c) This BMP will terminate five (5) years after the Effective Date, after which Encana will continue to comply with the leak detection, repair, and reporting requirements of Regulation 7, as such requirements may be amended.</p>
19	Emissions mitigation	<p>In an effort to reduce air emissions, Encana intends to construct a central gathering and storage facility at a location in 1N-68W-Section 21 (the "Hub") to receive liquids from the wells which are the subject of this Agreement. As a result, Encana will not install hydrocarbon storage tanks at these pad sites, which will eliminate potential sources of hydrocarbons from the sites. However, Encana will still install at the pad sites all other equipment and facilities necessary for the production of hydrocarbons, including wellhead equipment, separation equipment, electrical equipment, and temporary flowback equipment (including temporary storage tanks). In addition, this BMP is subject to Article IV, Sections 3 and 4 of the Agreement.</p>
20	Drilling/Completion Operations	<p>Utilize closed-loop systems for drilling and completion operations to minimize the need for earthen pits</p>
21	Drilling/Completion Operations	<p>Prior to drilling operations, Operator will perform an anti-collision scan of existing offset wells that have the potential of being within close proximity of the proposed well. This anti-collision scan will include definitive MWD or gyro surveys of the offset wells with included error of uncertainty per survey instrument, and compared against the proposed well path with its respective error of uncertainty. If current surveys do not exist for the offset wells, Operator may have gyro surveys conducted to verify bottomhole location. The proposed well will only be drilled if the anti-collision scan results indicate that there is not a risk for collision, or harm to people or the environment. For the proposed well, upon conclusion of drilling operations, an asconstructed gyro survey will be submitted to COGCC with the Form 5.</p>
22	Drilling/Completion Operations	<p>Encana will comply with the "COGCC Policy for Bradenhead Monitoring During Hydraulic Fracturing Treatments in the Greater Wattenberg Area", dated May 29, 2012.</p>

23	Drilling/Completion Operations	Utilize a high-low pressure vessel (HLP) and vapor recovery unit (VRU) for new wells drilled. Encana may remove the VRU system at such time Encana determines that the VRU system is no longer necessary due to reduced emission recoveries and/or efficiencies, but no earlier than one (1) year after the new well is drilled.
24	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 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 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."
25	Drilling/Completion Operations	No drill stem tests will be performed.
26	Drilling/Completion Operations	Backup stabbing valves shall 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.
27	Drilling/Completion Operations	Adequate blowout prevention equipment will be used on all well servicing operations.
28	Drilling/Completion Operations	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 will 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 will 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.
29	Drilling/Completion Operations	Encana has developed and implemented a company-wide Responsible Products Program to manage the fluid products used in its hydraulic fracturing operations. This Responsible Products Program helps Encana evaluate the hydraulic fracturing fluid products it uses in its operations for safety, effectiveness and potential public health and environmental impacts. As part of this program, Encana has informed all of its hydraulic fracturing fluid product suppliers that any products containing diesel fuels (as defined by EPA 816-R-12-004), 2-Butoxyethanol (2-BE), benzene or heavy metals (i.e. lead, mercury, arsenic, cadmium and chromium) cannot be used in hydraulic fracturing at Encana operations. Encana will continue to conduct its hydraulic fracturing operations within the Erie town limits in accordance with its Responsible Products Program.
30	Drilling/Completion Operations	Encana shall use closed-loop systems for drilling and completion operations.
31	Underground Injection Control	Encana shall not develop any new Class II underground injection control wells within the Operator Agreement Area during the Term of this Agreement.

Total: 31 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

<u>Att Doc Num</u>	<u>Name</u>
400997328	FORM 2 SUBMITTED
400999877	WELL LOCATION PLAT
401001115	OPEN HOLE LOGGING EXCEPTION
401003035	EXCEPTION LOC REQUEST
401024527	OffsetWellEvaluations Data

Total Attach: 5 Files

General Comments

<u>User Group</u>	<u>Comment</u>	<u>Comment Date</u>
Permit	Operator requests approval of Rule 604.b.(1).A. Request attached. Final Review Completed.	3/7/2016 1:09:01 PM
Permit	Operator requested Exception to Open Hole Logging Rule 317.p. See attached. Permitting Review Complete.	3/6/2016 3:09:18 PM
Engineer	Becky 5-6 (05-123-09814) appears to be within 150' on COGCC maps but the anticollision report shows it at a distance of 158', therefore, a stimulation setback consent is not required.	5/18/2016 9:49:16 AM
Permit	Passed completeness.	4/14/2016 1:57:39 PM
Permit	1. Footage for TPZ lists FEL; should be FWL. 2. BMP #2 has wrong pad name. 3. Rule 317.p has a mistake on the COGCC website. BMP #24 should read "One of the first wells drilled on the pad will be logged with Cased-hole Pulsed Neutron Log with Gamma Ray Log from kick-off point into the surface casing..."	4/14/2016 11:00:05 AM

Total: 5 comment(s)