

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:

400886529

## APPLICATION FOR PERMIT TO:

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

Date Received:

08/19/2015

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

Well Name: Becker Ranch

Well Number: 5J-323R

Name of Operator: PDC ENERGY INC

COGCC Operator Number: 69175

Address: 1775 SHERMAN STREET - STE 3000

City: DENVER State: CO Zip: 80203

Contact Name: Venessa Langmacher

Phone: (303)318-6102

Fax: (303)831-3988

Email: venessa.langmacher@pdce.com

## RECLAMATION FINANCIAL ASSURANCE

Plugging and Abandonment Bond Surety ID: 20090078

## WELL LOCATION INFORMATION

QtrQtr: NENW Sec: 5 Twp: 3N Rng: 64W Meridian: 6

Latitude: 40.261020

Longitude: -104.576400

Footage at Surface: 272 feet FNL/FSL FNL 2189 feet FEL/FWL FWL

Field Name: WATTENBERG

Field Number: 90750

Ground Elevation: 4815

County: WELD

GPS Data:

Date of Measurement: 07/17/2013 PDOP Reading: 6.0 Instrument Operator's Name: Adam Kelly

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

 783 FNL 1870 FWL 500 FSL 1775 FWL  
 Sec: 5 Twp: 3N Rng: 64W Sec: 5 Twp: 3N Rng: 64W

## 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.)

T3N-R64W Section 5: Lot 2 (NWNW, NENW, S2NW)

Total Acres in Described Lease: 160 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: 545 Feet  
Building Unit: 545 Feet  
High Occupancy Building Unit: 5280 Feet  
Designated Outside Activity Area: 5280 Feet  
Public Road: 267 Feet  
Above Ground Utility: 615 Feet  
Railroad: 5280 Feet  
Property Line: 272 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: 12/11/2013

## SPACING and UNIT INFORMATION

Distance from Completed Portion of Wellbore to Nearest Wellbore Permitted or Completed in the same formation: 101 Feet

Distance from Completed Portion of Wellbore to Nearest Unit Boundary 500 Feet (Enter 5280 for distance greater than 1 mile.)

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

## SPACING & FORMATIONS COMMENTS

T3N-R64W Section 5: W2

## 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		320	GWA

## DRILLING PROGRAM

Proposed Total Measured Depth: 11454 Feet

Distance to nearest permitted or existing wellbore penetrating objective formation: 101 Feet (Including plugged wells)

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 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:

Drill cuttings will be land applied at PDC spread fields with COGCC Facility ID 429629, 430649, 431183, 434889 or 436033.

Beneficial reuse or land application plan submitted? Yes

Reuse Facility ID: 429629 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
SURF	12+1/4	9+5/8	36	0	875	830	875	0
1ST	8+3/4	7	26	0	7415	650	7415	500
1ST LINER	6+1/8	4+1/2	11.6	6173	11454			

☒ 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 7" casing will be cemented to at least 200' above Niobrara, around 500' from surface. Logging exception attached.

Offset wells were evaluated with original APD.

Lost hole rig skid - surface use agreement and waivers are in well file for API 05-123-39077.

This well will replace the Becker Ranch ABL 5J-323 API 05-123-39077.

- i. Explanation of the situation that has resulted in a lost hole and the need to plug the lost hole
  - a. Reached a TD of 11430', liner was run to depth. The liner top slips were set and commenced cementing the liner, 11 bbl into displacement the cement pump pressure tripped. Pressure was bled down and multiple attempts were made to finish displacement with no success. The drill pipe was stung out of the liner top and the cement was reverse circulated out of the drill pipe along with the wiper dart. The drill pipe was stung back into the liner top in order to circulate cement out of the liner but was unsuccessful.
- ii. Total measured depth reached in the lost hole
  - a. 11430'
- iii. Casing set – size(s) and measured depth(s)
  - a. Surface Casing 9-5/8" 36#/ft J-55 at 925'
  - b. Intermediate Casing 7" 36#/ft P-110 at 7355'
  - c. Liner Casing 4.5" 13.5#/ft P-110 at 11425'
- iv. Description of fish in the hole (if any) – including top and bottom measured depths
  - a. No fish.
- v. Description of proposed plugs: setting measured depths, heights, and cement volumes
 

Type of cement to be used for all plugs, including slurry weight (ppg) and yield (cf/sk)

  - a. Cement plug 1 set at 6349-6146': 36 sx (15.8ppg yield 1.14 cuft/sx)
  - b. Cement plug 2 set at 4550-3610': 168 sx (15.8ppg yield 1.14 cuft/sx)
  - b. Cement plug 3 set at 1000'-surface: 176 sx (15.8ppg yield 1.14 cuft/sx)
- vi. Proposed objective formation(s) for replacement well – new or same as lost hole
  - a. Same formation - Niobrara
- vii. BHL target for replacement well – new or same as lost hole (NOTE: a change in the BHL must be reviewed and approved by COGCC Permitting prior to completing the replacement well. Drilling a well to an unapproved BHL could result in an NOAV, plugging the well, or both)
  - a. Same as lost hole.

Verbal approval of this request was received by Mark Schlagenhauf on 8/14/2015. See attached email correspondence.

This application is in a Comprehensive Drilling Plan \_\_\_\_\_ CDP #: \_\_\_\_\_

Location ID: 436366

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: Venessa Langmacher

Title: Senior Regulatory Tech Date: 8/19/2015 Email: venessa.langmacher@pdce.co

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: 8/24/2015

Expiration Date: 08/23/2017

**API NUMBER**

05 123 42075 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

	Operator acknowledges the proximity of The Becker 5-1 (API NO 123-12297), the Becker 5-2 ( API NO 123-13742), the Becker 5-6 ( API NO 123-13763), the Becker 5-7 ( API NO 123-13764), the Becker 5-3 ( API NO 123-17299), the Becker 5-11 ( API NO 123-17300), the Becker 5-12 ( API NO 123-17301), the Becker 5-13 (API NO 123-17302), the Becker 5-14 (API NO 123-18180), and the Becker 5-15 (API NO 123-18182). 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 ("OTHER – AS SPECIFIED BY PERMIT CONDITION") stating what appropriate mitigation occurred and that it has been completed, prior to the hydraulic stimulation of this well.
	Operator acknowledges the proximity of the non-operated wells: The Ruby Red D 8-2 ( API NO 123-16885), the Howell 1 ( API NO 123-07827), the McGuirk-Howell C 32-14 (API NO 123-15882), and the Pluss 32-43 (API NO 123-15974). Operator assures that these offsets will be remediated per the DJ Basin Horizontal Offset Policy (options 1 or 2) or operator will address this well with mitigation option 4. Operator will submit a Form 42 ("OTHER – AS SPECIFIED BY PERMIT CONDITION") stating what appropriate mitigation occurred and that it has been completed, prior to the hydraulic stimulation of this well.
	1) Submit Form 42 electronically to COGCC 48 hours prior to MIRU. 2) Comply with Rule 317.i and provide cement coverage from the bottom of the production casing to a minimum of 200' above Niobrara and from 200' below the Sussex to 200' above Sussex . Verify coverage with cement bond log. 3) Run and submit Directional Survey from TD to base of surface casing. The operator shall comply with Rule 321, and it shall be the operator's responsibility to ensure that the wellbore complies with setback requirements in commission orders or rules prior to producing the well.

## Best Management Practices

### No BMP/COA Type

### Description

1 Planning	604c.(2).I. BOPE Testing for Drilling Operations: PDC's contractors will supply a double ram-5000' PSI rated BOPE (Blinds and pipes) and always function test BOPE's prior to placement on the well head and inspect and replace all seals and ram block rubbers. After installation of the BOPE, PDCE conducts a pressure test on the BOPE at a low pressure of (200-400 psi) and a high pressure test to the maximum amount of the BOPE rating with a third party tester, all tests are digitally recorded.
2 Planning	604c.(2).J. BOPE for Well Servicing Operations: All valves will also be tested to maximum rating by a third party prior to being delivered to location. Whenever snubbing operations are being used the snubbing stack will be pressure tested at the same time the BOPE is being tested which consist of a single pipe ram and a annular bag.
3 Planning	604.c.(2).W. Site Specific Measures: Dust abatement will be applied and properly maintained on CR 53 to minimize dust. Lights should be turned downward and away from receptors. The building units of concern are located north-west of the proposed pad at a distance of approximately 515 feet and 942 feet.

4	Noise mitigation	604c.(2).A. Noise: PDC has conducted baseline noise surveys for all drilling rigs that are being contracted and has also conducted a baseline noise survey for hydraulic fracture stimulation operations on a representative horizontal well. These baseline surveys are utilized for site specific noise modeling to determine if any mitigation measures are warranted. A natural earthen berm exists between the building units and the production facility. PDC will make use of the natural terrain to provide additional noise abatement. A review will be conducted to identify potential receptors within 1000 feet of the proposed Becker Ranch 5J-HZ pad site. The building units of concern are located north-west of the proposed pad at a distance of approximately 515 feet and 942 feet. Noise modeling will be conducted for the proposed pad. If results exceed the Light Industrial Zone standard of 65 decibels (db) at the receptor location, additional methods of noise mitigation shall include but not be limited to hay bales, noise walls, or customized semi-trailers.
5	Emissions mitigation	604c.(2).C. Green Completions: Flowlines, 48" HLPs, sand traps all capable of supporting green completions as described in rule 805 shall be installed at any Oil and Gas location at which commercial quantities of gas and or oil are reasonable expected to be produced based on existing wells. All green flow back equipment will be able to handle more than 1.5 times the amount of any know volumes in the surrounding field. First sign of salable gas will be put into production equipment and turned down line.
6	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. The Colorado Oil and Gas Conservation Commission (COGCC) has established this Policy Regarding Bradenhead Monitoring During Hydraulic Fracturing Treatments ("Treatment") in the Greater Wattenberg Area ("GWA") pursuant to COGCC 207.a. ("Policy"). This Policy applies to oil and gas operations in the GWA as defined by the COGCC Rules of Practice and Procedure.
7	Drilling/Completion Operations	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 wellpath 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.
8	Drilling/Completion Operations	604c.(2).O. Loadlines: All loadlines shall be bullplugged or capped.
9	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 TD 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: 9 comment(s)

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

Policy for Bradenhead Monitoring During Hydraulic Fracturing Treatments in the Greater Wattenberg Area.

### **Attachment Check List**

<u>Att Doc Num</u>	<u>Name</u>
400886529	FORM 2 SUBMITTED
400886549	OffsetWellEvaluations Data
400886580	DIRECTIONAL DATA
400886581	DEVIATED DRILLING PLAN
400886582	OTHER
400886829	WELL LOCATION PLAT
400887654	OPEN HOLE LOGGING EXCEPTION

Total Attach: 7 Files

### **General Comments**

<u>User Group</u>	<u>Comment</u>	<u>Comment Date</u>
Permit	Final Review Completed. No LGD or public comment received. Corrected Location ID# to 436366 (not 436361).	8/20/2015 3:08:05 PM
Engineer	Offset wells evaluated.	8/20/2015 2:33:34 PM
Engineer	Replacement well to be drilled to same BHL under rig skid procedure. This well will replace the Becker Ranch ABL 5J-323 API 05-123-39077.	8/20/2015 2:19:34 PM
Permit	Operator added Open Hole Logging Request letter and BMP. Exception Location request/waiver letters in original file. Permitting Review Complete.	8/20/2015 1:23:01 PM
Permit	Passes Completeness.	8/20/2015 1:15:23 PM
Permit	Returned to draft. Requesting Open Hole Logging BMP and Exception Location request/waiver letters.	8/20/2015 11:11:37 AM

Total: 6 comment(s)