

FORM  
2

Rev  
05/22

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:

402950130

Date Received:

06/23/2022

APPLICATION FOR PERMIT TO

Drill  Deepen  Re-enter  Recomplete and Operate

Amend

TYPE OF WELL OIL  GAS  COALBED  OTHER: \_\_\_\_\_

Refile

ZONE TYPE SINGLE ZONE  MULTIPLE ZONES  COMMINGLE ZONES

Sidetrack

Well Name: Hen Well Number: 05N  
 Name of Operator: PDC ENERGY INC COGCC Operator Number: 69175  
 Address: 1775 SHERMAN STREET - STE 3000  
 City: DENVER State: CO Zip: 80203  
 Contact Name: Ally Ota Phone: (303)860-5800 Fax: ( )  
 Email: alexandria.ota@pdce.com

FINANCIAL ASSURANCE FOR PLUGGING, ABANDONMENT, AND RECLAMATION

COGCC Financial Assurance

The Operator has provided or will provide Financial Assurance to the COGCC for this Well.

Surety ID Number (if applicable): 20160047

Federal Financial Assurance

In checking this box, the Operator certifies that it has provided or will provide at least this amount of Financial Assurance to the federal government for this Well. (Per Rule702.a.)

Amount of Federal Financial Assurance \$ \_\_\_\_\_

WELL LOCATION INFORMATION

Surface Location

QtrQtr: SWNE Sec: 8 Twp: 4N Rng: 64W Meridian: 6

Footage at Surface: 2144 Feet FNL 2044 Feet FEL

Latitude: 40.328250 Longitude: -104.572340

GPS Data: GPS Quality Value: 1.5 Type of GPS Quality Value: PDOP Date of Measurement: 10/14/2020

Ground Elevation: 4779

Field Name: WATTENBERG Field Number: 90750

Well Plan: is  Directional  Horizontal (highly deviated)  Vertical

If Well plan is Directional or Horizontal attach Deviated Drilling Plan and Directional Data.

Subsurface Locations

Top of Productive Zone (TPZ)

Sec: 8 Twp: 4N Rng: 64W Footage at TPZ: 1079 FNL 2440 FEL

Measured Depth of TPZ: 7244 True Vertical Depth of TPZ: 6793 FNL/FSL FEL/FWL

Base of Productive Zone (BPZ)

Sec: 9 Twp: 4N Rng: 64W Footage at BPZ: 1079 FNL 200 FEL

Measured Depth of BPZ: 14768 True Vertical Depth of BPZ: 6767 FNL/FSL FEL/FWL

Bottom Hole Location (BHL)

Sec: 9 Twp: 4N Rng: 64W Footage at BHL: 1079 FNL 200 FEL

FNL/FSL FEL/FWL

LOCAL GOVERNMENT PERMITTING INFORMATION

County: WELD Municipality: N/A

Is the Surface Location of this Well in an area designated as one of State interest and subject to the requirements of § 24-65.1-108 C.R.S.? Yes

Per § 34-60-106(1)(f)(I)(A) C.R.S., the following questions pertain to the Relevant Local Government approval of the siting of the proposed Oil and Gas Location.

SB 19-181 provides that when "applying for a permit to drill," operators must include proof that they sought a local government siting permit and the disposition of that permit application, or that the local government does not have siting regulations. § 34-60-106(1)(f)(I)(A) C.R.S.

Does the Relevant Local Government regulate the siting of Oil and Gas Locations, with respect to this Location? [X] Yes [ ] No

[X] If yes, in checking this box, I hereby certify that an application has been filed with the local government with jurisdiction to approve the siting of the proposed oil and gas location.

The disposition of the application filed with the Relevant Local Government is: Approved Date of Final Disposition: 03/17/2022

Comments: 1041WOGLA21-0007 CDP is approved

SURFACE AND MINERAL OWNERSHIP AT WELL'S OIL & GAS LOCATION

Surface Owner of the land at this Well's Oil and Gas Location: [X] Fee [ ] State [ ] Federal [ ] Indian

Mineral Owner beneath this Well's Oil and Gas Location: [X] Fee [ ] State [ ] Federal [ ] Indian

Surface Owner Protection Bond (if applicable): Surety ID Number (if applicable):

MINERALS DEVELOPED BY WELL

The ownership of all the minerals that will be developed by this Well is (check all that apply):

- [X] Fee
[X] State
[ ] Federal
[ ] Indian
[ ] N/A

## LEASE INFORMATION

Using standard QtrQtr, Section, Township, Range format describe one entire mineral lease as follows:

\* If this Well is within a unit, describe a lease that will be developed by the Well.

\* If this Well is not subject to a unit, describe the lease that will be produced by the Well.

(Attach a Lease Map or Lease Description or Lease if necessary.)

T4N-R64W Section 8: NE1/4

Total Acres in Described Lease: 160 Described Mineral Lease is:  Fee  State  Federal  Indian

Federal or State Lease # \_\_\_\_\_

## SAFETY SETBACK INFORMATION

Distance from Well to nearest:

Building: 879 Feet  
Building Unit: 1323 Feet  
Public Road: 2034 Feet  
Above Ground Utility: 1475 Feet  
Railroad: 5280 Feet  
Property Line: 495 Feet

### INSTRUCTIONS:

- Specify all distances per Rule 308.b.(1).
- 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 – as defined in 100 Series Rules.

## 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           | 407-3328                | 3770                          | S.4: S2S2S2, S.5: S2S2SE, S.7: SESESE, S.8: E2, S2S2SW, S.9: All, S.16: All, S.17: All, S.18: E2E2E2, S.20: All, S.21: All |

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

## SUBSURFACE MINERAL SETBACKS

Enter 5280 for distance greater than 1 mile.

Is this Well within a unit? Yes

If YES:

Enter the minimum distance from the Completed Zone of this Well to the Unit Boundary: 200 Feet

Enter the minimum distance from the Completed Zone of this Well to the Completed Zone of an offset Well within the same unit permitted or completed in the same formation: 248 Feet

If NO:

Enter the minimum distance from the Completed Zone of this Well to the Lease Line of the described lease: \_\_\_\_\_ Feet

Enter the minimum distance from the Completed Zone of this Well to the Completed Zone of an offset Well producing from the same lease and permitted or completed in the same formation: \_\_\_\_\_ Feet

## Exception Location

If this Well requires the approval of a Rule 401.c Exception Location, enter the Rule or spacing order number and attach the Exception Location Request and Waivers. \_\_\_\_\_

## SPACING & FORMATIONS COMMENTS

\_\_\_\_\_

**DRILLING PROGRAM**Proposed Total Measured Depth: 14768 Feet TVD at Proposed Total Measured Depth 6767 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: 77 Feet  No well belonging to another operator within 1,500 feetWill a closed-loop drilling system be used? YesIs 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 Plan unless a plan was already submitted with the Form 2A per Rule 304.c.(10).Will there be hydraulic fracture treatment at a depth less than 2,000 feet in this well? NoWill salt sections be encountered during drilling? NoWill salt based (>15,000 ppm Cl) drilling fluids be used? NoWill oil based drilling fluids be used? YesBOP Equipment Type:  Annular Preventor  Double Ram  Rotating Head  NoneBeneficial reuse or land application plan submitted? No

Reuse Facility ID: \_\_\_\_\_ or Document Number: \_\_\_\_\_

**CASING PROGRAM**

| <u>Casing Type</u> | <u>Size of Hole</u> | <u>Size of Casing</u> | <u>Grade</u> | <u>Wt/Ft</u> | <u>Csg/Liner Top</u> | <u>Setting Depth</u> | <u>Sacks Cmt</u> | <u>Cmt Btm</u> | <u>Cmt Top</u> |
|--------------------|---------------------|-----------------------|--------------|--------------|----------------------|----------------------|------------------|----------------|----------------|
| SURF               | 13+1/2              | 9+5/8                 | J-55         | 36           | 0                    | 1600                 | 920              | 1600           | 0              |
| 1ST                | 8+1/2               | 5+1/2                 | P-110        | 20           | 0                    | 14768                | 2035             | 14768          |                |

 Conductor Casing is NOT planned**POTENTIAL FLOW AND CONFINING FORMATIONS**

| <u>Zone Type</u>  | <u>Formation /Hazard</u> | <u>Top M.D.</u> | <u>Top T.V.D.</u> | <u>Bottom M.D.</u> | <u>Bottom T.V.D.</u> | <u>TDS (mg/L)</u> | <u>Data Source</u> | <u>Comment</u>   |
|-------------------|--------------------------|-----------------|-------------------|--------------------|----------------------|-------------------|--------------------|------------------|
| Groundwater       | Fox Hills Sandstone      | 490             | 490               | 878                | 878                  | 1001-10000        | Other              | COGCC UPWQ Study |
| Confining Layer   | Pierre Shale             | 928             | 928               | 975                | 975                  |                   |                    |                  |
| Groundwater       | UPIR/Pawnee Aquifer      | 975             | 975               | 1490               | 1490                 | 1001-10000        | Other              | COGCC UPWQ Study |
| Confining Layer   | Pierre Shale             | 1490            | 1490              | 3680               | 3680                 |                   |                    |                  |
| Hydrocarbon       | Parkman                  | 3680            | 3680              | 3980               | 3980                 |                   |                    |                  |
| Confining Layer   | Pierre Shale             | 3980            | 3980              | 4095               | 4095                 |                   |                    |                  |
| Hydrocarbon       | Sussex                   | 4095            | 4095              | 4498               | 4498                 |                   |                    |                  |
| Confining Layer   | Pierre Shale             | 4498            | 4498              | 4930               | 4930                 |                   |                    |                  |
| Hydrocarbon       | Shannon                  | 4930            | 4930              | 5002               | 5002                 |                   |                    |                  |
| Confining Layer   | Pierre Shale             | 5002            | 5002              | 6949               | 6663                 |                   |                    |                  |
| Subsurface Hazard | Sharon Springs Shale     | 6949            | 6663              | 6983               | 6684                 |                   |                    |                  |
| Hydrocarbon       | Niobrara                 | 7054            | 6722              | 14768              | 6767                 |                   |                    |                  |

**OPERATOR COMMENTS AND SUBMITTAL**

Comments

The distance to the completed portion of the nearest well on the "Spacing and Formations" tab was measured to the Hen 04N (Doc 402950127). The distance to the nearest wellbore belonging to another operator on the "Drilling Plan" tab was measured to the Northrup C 08-73HN (05-123-34287). Both distances were measured via the anti-collision report attached in the deviated drilling plan.

The subject well will have a treated interval less than 175' from the treated interval of the below listed wells owned by Noble. All wells are plugged and abandoned so no stimulation setback consent is required. All distances were measured using the attached anti-collision report.

Northrup C 08-73HN (05-123-34287), 77', P&A  
Northrup C 08-75HN (05-123-34263), 155', P&A  
Ruff 8-114 (05-123-18371), 118', P&A  
Smith C 9-19 (05-123-21929), 124', P&A

This application is in a Comprehensive Area Plan No CAP #: \_\_\_\_\_  
Oil and Gas Development Plan Name Kenosha OGDP ID#: 481580  
Location ID: 482393

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

Signed: \_\_\_\_\_ Print Name: Ally Ota

Title: Regulatory Analyst Date: 6/23/2022 Email: alexandria.ota@pdce.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, applicable orders, and SB 19-181 and is hereby approved.

COGCC Approved:  Director of COGCC Date: 8/16/2022

Expiration Date: 08/15/2025

**API NUMBER**

05 123 51799 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.

### Condition of Approval

| <b>COA Type</b>                | <b>Description</b>   |
|--------------------------------|--|
| Drilling/Completion Operations | <p>Operator acknowledges the proximity of the listed wells. Operator agrees to: provide mitigation option 1 or 2 (per the Offset Well Evaluation and Hydraulic Fracturing Operator Guidance Document) 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.</p> <p>Noble Energy Inc. 123-10565 State A *41-16<br/>Noble Energy Inc. 123-12441 CPC-Harless *17-1</p> <p>Operator acknowledges the proximity of the listed wells. Operator agrees to: provide mitigation option 4 (per the Offset Well Evaluation and Hydraulic Fracturing Operator Guidance Document). Operator will submit a Form 42 (“OTHER – AS SPECIFIED BY PERMIT CONDITION”) stating that appropriate mitigation will be completed, during the hydraulic stimulation of this well. This Form 42 shall be filed 48 hours prior to stimulation. Surface and production casing pressures of this offset well list will be actively monitored during stimulation of this well. Records shall be retained and provided to COGCC engineering upon request. If there is indication of communication between the stimulation treatment and an offset well, treatment will be stopped and COGCC Engineering notified.</p> <p>PDC ENERGY INC 123-44052 Popham *1C<br/>PDC ENERGY INC 123-45747 Harold *6X-202<br/>PDC ENERGY INC 123-45749 Harold *6X-302<br/>PDC ENERGY INC 123-45752 Harold *6Y-312<br/>PDC ENERGY INC 123-45756 Harold *6X-232<br/>PDC ENERGY INC 123-45757 Harold *6Y-202<br/>PDC ENERGY INC 123-45878 Jagged *1N<br/>PDC ENERGY INC 123-45879 Jagged *2N<br/>PDC ENERGY INC 123-45881 Jagged *5N<br/>PDC ENERGY INC 123-45882 Jagged *10N<br/>PDC ENERGY INC 123-45883 Jagged *4N<br/>PDC ENERGY INC 123-45884 Jagged *8N<br/>PDC ENERGY INC 123-45885 Jagged *7N<br/>PDC ENERGY INC 123-45886 Jagged *9N<br/>PDC ENERGY INC 123-45887 Jagged *6N<br/>PDC ENERGY INC 123-45892 Challenger *9N<br/>PDC ENERGY INC 123-45895 Challenger *5N<br/>PDC ENERGY INC 123-45897 Challenger *7N<br/>PDC ENERGY INC 123-48736 Jagged *12N<br/>PDC ENERGY INC 123-48737 Jagged *11N</p> |
| Drilling/Completion Operations | <p>Per COGCC Order 1-232, Bradenhead tests shall be performed according to the following schedule and Form 17 submitted within 10 days of each test:</p> <ol style="list-style-type: none"> <li>1) Within 60 days of rig release, prior to stimulation. If any pressure greater than 200 psi is observed or if there is continuous flow, Operator must contact COGCC engineering for approval prior to stimulation.</li> <li>2) If a delayed completion, a second test is required between 6-9 months after rig release and must be conducted prior to stimulation. If any pressure greater than 200 psi is observed or if there is continuous flow, Operator must contact COGCC engineering for approval prior to stimulation.</li> <li>3) A post-production test within 60 days after first sales, as reported on the Form 10, Certificate of Clearance.</li> </ol>  |
| Drilling/Completion Operations | <ol style="list-style-type: none"> <li>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.</li> <li>2) Comply with Rule 408.j. and provide cement coverage from TD to a minimum of 500' above Niobrara and from 500' below Sussex to 500' above Sussex. Verify coverage with a cement bond log.</li> <li>3) Oil-based drilling fluid is to be used only after all fresh water aquifers are covered.</li> </ol>   |
| 3 COAs                         |  |

## Best Management Practices

| <u>No</u> | <u>BMP/COA Type</u>            | <u>Description</u>  |
|-----------|--------------------------------|---|
| 1         | Drilling/Completion Operations | 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.   |
| 2         | Drilling/Completion Operations | OPEN HOLE LOGGING EXCEPTION: One of the first wells drilled on the pad will be logged with cased-hole neutron log with 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 in that well and have those logs attached. The Form 5 for each well shall state "Open Hole Logging Exception - No open-hole logs were run" and shall clearly identify the type of log and the well (by API #) in which open-hole logs were run. |

Total: 2 comment(s)

## Attachment List

| <u>Att Doc Num</u> | <u>Name</u>                 |
|--------------------|-----------------------------|
| 402950130          | FORM 2 SUBMITTED            |
| 403030865          | OPEN HOLE LOGGING EXCEPTION |
| 403065098          | OffsetWellEvaluations Data  |
| 403085718          | DEVIATED DRILLING PLAN      |
| 403085719          | DIRECTIONAL DATA            |
| 403087785          | WELL LOCATION PLAT          |
| 403137265          | OFFSET WELL EVALUATION      |

Total Attach: 7 Files

## General Comments

| <u>User Group</u> | <u>Comment</u>   | <u>Comment Date</u> |
|-------------------|--|---------------------|
| Permit            | Final Review Completed.  | 08/10/2022          |
| Permit            | Open: Emailed the SLB to notify them of this pending application.<br>Close: SLB has no concerns with this application<br>Per Operator email/permission - under Surface Mineral Tab, selected State | 08/09/2022          |
| Permit            | Initial permitting review complete and task passed.  | 08/04/2022          |
| OGLA              | The Commission approved OGDGP #481580 on 06/08/2022 for the Oil and Gas Location related to this Form 2. OGLA task passed.   | 06/27/2022          |

Total: 4 comment(s)