

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:

403296059

Date Received:

02/07/2023

### APPLICATION FOR PERMIT TO

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

Amend ☐

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

Refill ☐

ZONE TYPE SINGLE ZONE ☒ MULTIPLE ZONES ☐ COMMINGLE ZONES ☐

Sidetrack ☐

Well Name: SU 0680

Well Number: 2-4H

Name of Operator: FULCRUM ENERGY OPERATING LLC

COGCC Operator Number: 10805

Address: 240 SAINT PAUL STREET SUITE 502

City: DENVER

State: CO

Zip: 80206

Contact Name: Heidi Kaczor

Phone: (303)981 5409

Fax: ( )

Email: Heidi.Kaczor@fulcrumeo.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): 20220114

#### 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: NENW Sec: 9 Twp: 6N Rng: 80W Meridian: 6

Footage at Surface: 623 Feet FNL/FSL 1621 Feet FNL/FWL

Latitude: 40.510005 Longitude: -106.384683

GPS Data: GPS Quality Value: 1.3 Type of GPS Quality Value: PDOP

Date of Measurement: 09/29/2022

Ground Elevation: 8267

Field Name: NORTH PARK HORIZONTAL  
NIOBRARA

Field Number: 60120

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: 9 Twp: 6N Rng: 80W Footage at TPZ: 117 FNL 687 FWL  
Measured Depth of TPZ: 8004 True Vertical Depth of TPZ: 7500 FNL/FSL FEL/FWL

**Base of Productive Zone (BPZ)**

Sec: 4 Twp: 6N Rng: 80W Footage at BPZ: 100 FNL 30 FWL  
Measured Depth of BPZ: 13438 True Vertical Depth of BPZ: 7500 FNL/FSL FEL/FWL

**Bottom Hole Location (BHL)**

Sec: 4 Twp: 6N Rng: 80W Footage at BHL: 100 FNL 30 FWL  
FNL/FSL FEL/FWL

**LOCAL GOVERNMENT PERMITTING INFORMATION**

County: JACKSON 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.? No

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? ☐ Yes ☒ No

☐ 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: \_\_\_\_\_ Date of Final Disposition: 05/23/2019

Comments: Jackson County does not regulate oil & gas per letter 5/23/19.

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

Surface Owner of the land at this Well's Oil and Gas Location: ☒ Fee ☐ State ☐ Federal ☐ Indian

Mineral Owner beneath this Well's Oil and Gas Location: ☒ 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):

- ☒ Fee  
☐ 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.)

Township 6 North, Range 80 West, 6th P.M.

Section 4: S2NW4, SW4

section 5: Lots 2, 3, SENW, E2SW4

Section 6: Lots 2 & 3

Section 8: SESE

Section 9: NW4, N2SW4, SESW

Section 17: NW4, W2NE4, NENE

Township 7 North, Range 80 West, 6th P.M.

Section 29: S2SW4

Section 31: NENE, S2NE4, N2SE4, SWSE

Section 32: NW4, N2SW4, NESE, S2SE4

Total Acres in Described Lease: 1804

Described Mineral Lease is: ☒ Fee ☐ State ☐ Federal ☐ Indian

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

## SAFETY SETBACK INFORMATION

Distance from Well to nearest:

Building: 4138 Feet  
Building Unit: 4138 Feet  
Public Road: 489 Feet  
Above Ground Utility: 260 Feet  
Railroad: 5280 Feet  
Property Line: 1044 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	531-66	28087	

Federal or State Unit Name (if appl): Surprise Unit

Unit Number: COC075017X

## 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: 100 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: 303 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: 13438 Feet

TVD at Proposed Total Measured Depth 7500 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: 960 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 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? No

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

Beneficial reuse or land application plan submitted? \_\_\_\_\_

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>
CONDUCTOR	26	16	J55	75	0	120	120	120	0
SURF	13+1/2	9+5/8	L80	40	0	4500	2003	4500	0
1ST	8+1/2	5+1/2	P110	20	0	13438	1657	13438	3500

☐ 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	Coalmont Sand	0	0	2117	2115	0-500	USGS	Site Name: SB00608003ABD1 TD@640' TDS@466
Confining Layer	Coalmont Shale	2117	2115	4189	4155			
Confining Layer	Upper Pierre	4189	4155	4964	4915			
Hydrocarbon	Sussex	4964	4915	5366	5310			
Confining Layer	Pierre	5366	5310	5468	5410			
Hydrocarbon	Shannon	5468	5410	5533	5475			
Confining Layer	Pierre	5533	5475	7036	6950			
Hydrocarbon	Niobrara	7036	6950	13438	7500			Bottom TVD is bottom of the well and not bottom of the formation; The formation is not planned to be exited.

**OPERATOR COMMENTS AND SUBMITTAL****Comments**

PFZ Comment: The upper shallow section of the North Park is not well defined. We used the depth and lithology components to define two separate sections; one being sand (as North Park FM) which is most likely a possible source of groundwater and the second being a shale (as Coalmont FM) which should not be a source of groundwater. The shale should not be a source of groundwater and has not been found to be a source of groundwater in the USGS dataset.

This Form 2 is part of a plan to submit permits to fill 7 of the remaining 13 well slots of the 16-well location. The SU 0680 3-9H16 (API: 05-123-06551), SU 0680 6-4H (API: 05-123-06552), SU 0680 12-9H16 (API: 05-123-06611) are existing producing wells. The location has been constructed. There have been no new buildings constructed and no changes to the surrounding land use.

Nearest well in unit per 2-D calculation is the proposed SU 0680 3-4H @ 303.  
Nearest outside-operated well per anti-collision is the Rich 21 (API: 05-057-05012) DA Status @ 960'.

This application is in a Comprehensive Area Plan No CAP #: \_\_\_\_\_

Oil and Gas Development Plan Name \_\_\_\_\_ OGDID ID#: \_\_\_\_\_

Location ID: 445005

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

Signed: \_\_\_\_\_ Print Name: Justin Garrett

Title: Sr. Regulatory Analyst Date: 2/7/2023 Email: regulatory@ascentgeomatics.c

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: 6/5/2023

Expiration Date: 06/04/2026

**API NUMBER**

05 057 06631 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>
Construction	If conductors are preset, operator shall comply with Notice to Operators: Procedures for Preset Conductors (dated September 1, 2016).
Drilling/Completion Operations	Operator will log two (2) wells during the first rig occupation with open-hole resistivity log with gamma-ray log from the kick-off point into the surface casing for the two stratigraphically deepest wells on each side of the pad.
Interim Reclamation	Operator shall comply with Notice to Operators: Interim Reclamation Procedures for Delayed Operations (dated January 5, 2017).
Drilling/Completion Operations	<p>Operator acknowledges the proximity of the listed wells. Operator assures that this offset will be remediated per the Offset Well Evaluation and Hydraulic Fracturing Operator Guidance Document (option 4). 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. A Bradenhead test will be performed on the offset wells listed below within 30 days prior to the beginning of stimulation of this well. Surface and production casing pressures of this offset well list will be actively monitored during stimulation of all wells on this pad. Operator will assure that the offset well's bradenhead is open and actively monitored during the entire stimulation treatment of this pad– a person will monitor for any evidence of fluid. If there is indication of communication between the stimulation treatment and an offset well, treatment will be stopped and COGCC Engineering notified.</p> <p>SURPRISE UNIT 2-08H (API 05-057-06526)  SU 0680 *3-9H16 (API 05-057-06551)  SU 0680 *6-4H (API 05-057-06552)  SU 0680 *12-9H16 (API 05-057-06611)</p>
Drilling/Completion Operations	<p>Bradenhead tests shall be performed 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 is observed or if there is continuous flow, Operator must contact COGCC engineering for approval prior to stimulation.</p> <p>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.</p> <p>3) A post-production test within 60 days after first sales, as reported on the Form 10, Certificate of Clearance.</p>
Drilling/Completion Operations	<p>1) Submit Form 42 electronically to COGCC 2 business days prior to MIRU (spud notice) for the first well activity with a rig on the pad and provide 2 business day spud notice via Form 42 for all subsequent wells drilled on the pad.</p> <p>2) The Coalmont Formation is considered a potential freshwater resource in the North Park Basin (CGS Ground Water Atlas of Colorado, 2003). Operator shall provide cement coverage from the production casing shoe (5 1/2" First String) to a minimum of 200' above the surface casing shoe to provide full isolation of the Coalmont Formation. Verify production casing cement coverage with a cement bond log.</p> <p>3) The first 3 wells drilled on this pad, or any additional well in which the surface casing cement does not circulate to surface, will be logged from the shoe to the surface to verify cement coverage. Contact COGCC Area Engineer before proceeding if there is any indication of incomplete cement coverage.</p>
6 COAs	

## Best Management Practices

<u>No</u>	<u>BMP/COA Type</u>	<u>Description</u>
1	Drilling/Completion Operations	Alternative Logging Program: One of the first wells drilled on the pad will be logged with open-hole resistivity 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 and have those logs attached. The Form 5 for a well without open-hole logs shall state "Alternative Logging Program - 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.
2	Drilling/Completion Operations	Blowout Prevention Equipment ("BOPE"): A double ram annular preventer will be used during drilling.

Total: 2 comment(s)

## Attachment List

<u>Att Doc Num</u>	<u>Name</u>
403296059	FORM 2 SUBMITTED
403312841	OffsetWellEvaluations Data
403312848	WELL LOCATION PLAT
403312851	DEVIATED DRILLING PLAN
403312855	DIRECTIONAL DATA
403422668	OFFSET WELL EVALUATION

Total Attach: 6 Files

## General Comments

<u>User Group</u>	<u>Comment</u>	<u>Comment Date</u>
Permit	Final Review Completed.	06/01/2023
Permit	-Corrected spacing order to 531-66 which includes the expanded lands in the surprise unit -Unchecked state and federal minerals to be developed.	04/12/2023
Engineer	•Surface Casing Check complete 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 two miles is 251 feet. •Offset well review complete 408.t - No wells 408.u - No wells •Engineering review complete	03/29/2023
OGLA	This Location (ID #445005) and its associated Form 2A materials were fully reviewed during the OGLA review of this APD in accordance with current Rules. This APD complies with all COGCC Rules and is adequately protective of public health, safety, welfare, the environment, and wildlife resources.	02/09/2023

Total: 4 comment(s)