

FORM
2

Rev
12/20

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:

402080791

Date Received:

04/21/2021

APPLICATION FOR PERMIT TO:

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

Amend ☐

Refill ☐

Sidetrack ☐

TYPE OF WELL OIL ☒ GAS ☐ COALBED ☐ OTHER: _____

ZONE TYPE SINGLE ZONE ☒ MULTIPLE ZONES ☐ COMMINGLE ZONES ☐

Well Name: Raindance FC Well Number: 23-249HN
Name of Operator: GREAT WESTERN OPERATING COMPANY LLC COGCC Operator Number: 10110
Address: 1001 17TH STREET #2000
City: DENVER State: CO Zip: 80202
Contact Name: Linsey Jones Phone: (720)595-2218 Fax: ()
Email: ljones@gwp.com

RECLAMATION FINANCIAL ASSURANCE

Plugging and Abandonment Bond Surety ID: 20160041

WELL LOCATION INFORMATION

Surface Location

QtrQtr: NENE Sec: 30 Twp: 6N Rng: 67W Meridian: 6

Footage at Surface: 703 Feet FNL 227 Feet FEL
FNL/FSL FEL/FWL

Latitude: 40.463059 Longitude: -104.927274

GPS Data: GPS Quality Value: 1.2 Type of GPS Quality Value: PDOP Date of Measurement: 10/14/2016

Ground Elevation: 4783

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: 19 Twp: 6N Rng: 67W Footage at TPZ: 1920 FSL 75 FEL
Measured Depth of TPZ: 7977 True Vertical Depth of TPZ: 6943 FNL/FSL FEL/FWL

Base of Productive Zone (BPZ)

Sec: 23 Twp: 6N Rng: 68W Footage at BPZ: 1920 FSL 2167 FEL
Measured Depth of BPZ: 20296 True Vertical Depth of BPZ: 6943 FNL/FSL FEL/FWL

Bottom Hole Location (BHL)

Sec: 23 Twp: 6N Rng: 68W Footage at BHL: 1920 FSL 2167 FEL
FNL/FSL FEL/FWL

LOCAL GOVERNMENT PERMITTING INFORMATION

County: WELDMunicipality: Windsor

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: Approved Date of Final Disposition: 06/12/2017Comments: **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 ☐ IndianMineral Owner beneath this Well's Oil and Gas Location: ☒ Fee ☐ State ☐ Federal ☐ Indian

Surface Owner Protection Financial Assurance (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.)

Total Acres in Described Lease: 455 Described Mineral Lease is: ☒ Fee ☐ State ☐ Federal ☐ Indian

Federal or State Lease # _____

SAFETY SETBACK INFORMATION

Distance from Well to nearest:

Building: 347 FeetBuilding Unit: 890 FeetPublic Road: 2635 FeetAbove Ground Utility: 316 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.

Railroad: 5280 Feet
Property Line: 227 Feet

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	407-1898	1716	T6N R67W: Sec 19: S2; Sec 20: W2SW4; Sec 29: W2NW4; Sec 30: N2; T6N R68W: Sec 23: SE4; Sec 24: S2; Sec 25: N2, Sec 26: NE4

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: 470 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: 215 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: 20296 Feet TVD at Proposed Total Measured Depth 6943 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: 1092 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 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>
SURF	13+1/2	9+5/8	J-55	36	0	2002	845	2002	0
1ST	8+1/2	5+1/2	HCP-110	20	0	20296	2789	20296	3482

☒ 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	Base Fox Hills	0	0	440	440	501-1000	USGS	USGS WSP 2302
Confining Layer	Pierre Formation	440	440	544	544			
Groundwater	Upper Pierre Aquifer	544	544	922	922	501-1000	Other	COGCC Report, Paper 2141
Confining Layer	Pierre Formation	922	922	3512	3353			
Hydrocarbon	Parkman	3512	3353	3886	3677			
Confining Layer	Pierre Formation	3886	3677	4130	3888			
Hydrocarbon	Sussex	4130	3888	4457	4171			
Confining Layer	Pierre Formation	4457	4171	4769	4441			
Hydrocarbon	Shannon	4769	4441	4863	4523			
Confining Layer	Pierre Formation	4863	4523	7372	6687			
Confining Layer	Sharon Springs	7372	6687	7490	6772			
Hydrocarbon	Niobrara	7490	6772	20296	6943			The TVD of the deepest hydrocarbon zone is the bottom of the well and not the bottom of the formation. The formation is not planned to be exited.

OPERATOR COMMENTS AND SUBMITTAL

Comments

Based on 3D calculation of difference in footages and depths, the nearest well permitted or completed in the same formation is Raindance FC 23-272HC (document #402080793) proposed by Great Western Oil and Gas.

Nearest well belonging to another operator is Merlin 29E-10-2C, 123-47466, operated by Extraction. The distance was measured in 3D.

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

Oil and Gas Development Plan Name _____ OGDID ID#: _____

Location ID: 427917

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

Signed: _____ Print Name: Linsey Jones

Title: Regulatory Analyst Date: 4/21/2021 Email: regulatorypermitting@gwp.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: 5/18/2021
 Expiration Date: 05/17/2024

API NUMBER
 05 123 51582 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

<u>COA Type</u>	<u>Description</u>
Drilling/Completion Operations	COA: Operator will drill and complete this well within 18 months of approval of this Form 2. If conditions beyond the control of the Operator prevent compliance with this COA, then the Operator will meet with the COGCC Director and Staff no less than 90 days prior to the compliance deadline. At that meeting, Operator will provide a timeline to finish drilling and completion, and the Director will determine if additional Best Management Practices or Conditions of Approval are necessary and reasonable to protect and minimize impacts to public health, safety, welfare, the environment and wildlife resources.
Interim Reclamation	Operator shall comply with Notice to Operators: Interim Reclamation Procedures for Delayed Operations (dated January 5, 2017).
Construction	If conductors are preset, operator shall comply with Rule 406.e.
Drilling/Completion Operations	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: 1) Within 60 days of rig release, prior to stimulation. If any pressure greater than 200 psi, must contact COGCC engineer prior to stimulation. 2) If a delayed completion, 6 months after rig release and prior to stimulation. If any pressure greater than 200 psi, must contact COGCC engineer prior to stimulation. 3) A post-production test within 60 days after first sales, as reported on the Form 10, Certificate of Clearance.
Drilling/Completion Operations	1) Submit Form 42 electronically to COGCC 2 business days prior to MIRU (Spud Notice), for the first well/activity on the pad and provide 2 business days spud notice for all subsequent wells drilled on the pad. 2) Comply with Rule 408.j and provide cement coverage from the end of production casing to a minimum of 500' above Niobrara. Verify coverage with cement bond log. 3) Oil-based drilling fluid is to be used only after all aquifers are covered.
5 COAs	

Best Management Practices

No	BMP/COA Type	Description
1	Drilling/Completion Operations	<p>Drill stem tests Rule 603.g</p> <p>Conventional drill stem tests will not be conducted on DJ Basin horizontal wells currently being executed or planned by Great Western. If plans change in the future a well specific drill stem testing plan will be prepared for that particular well. Note that Great Western may elect to use one of several available wireline deployed tools for the purpose of measuring down hole formation pressures and/or collecting down hole fluid samples from the target formation(s) of a particular well.</p>
2	Drilling/Completion Operations	<p>Wellbore Collision Prevention – Rule 408.t</p> <p>Prior to drilling operations, Great Western 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 bottom hole 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. Operator will perform anti-collision evaluation of all active (Producing, Shut In, or Temporarily Abandoned) offset wellbores that have the potential of being within 150' of a proposed well prior to drilling operations for the proposed well. Notice shall be given to all offset operators prior to drilling.</p>
3	Drilling/Completion Operations	<p>Stimulation Setback – Rule 408.u</p> <p>Great Western shall obtain signed written consent for any portion of the proposed wellbore's treated interval within 150' of an existing (producing, Shut-in, or temporarily abandoned) or permitted oil and gas well's treated interval belonging to another operator prior to completion of the well.</p>
4	Drilling/Completion Operations	<p>Multi Well Open-Hole Logging – Rule 408.r</p> <p>Alternative Logging Program: 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 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.</p>
5	Drilling/Completion Operations	<p>Bradenhead Monitoring – Rule 419</p> <p>Great Western will comply with Rule 419 and Order 1-232 for all Bradenhead compliance, as applicable.</p>

Total: 5 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 List

<u>Att Doc Num</u>	<u>Name</u>
402080791	FORM 2 RESUBMITTED
402497915	FORM 2 REJECTED
402505562	MINERAL LEASE MAP
402508030	WELL LOCATION PLAT
402598282	OffsetWellEvaluations Data
402607583	DEVIATED DRILLING PLAN
402619569	DIRECTIONAL DATA
402692304	OFFSET WELL EVALUATION

Total Attach: 8 Files

General Comments

<u>User Group</u>	<u>Comment</u>	<u>Comment Date</u>
Permit	Final Review Completed.	05/17/2021
OGLA	This Location and its associated materials was fully reviewed in the review of this APD in accordance with current Rules. See Sundry doc # 402467665 in Location # 427917 file for additional information. This APD complies with all COGCC Rules and is adequately protective of public health, safety, welfare, the environment, and wildlife resources. OGLA task passed.	05/17/2021
Permit	<ul style="list-style-type: none"> •Per the attached Well Location Plat, corrected the range at BPZ. •Permitting review complete and task passed. 	05/11/2021
Engineer	Offset Wells Evaluated.	05/11/2021
Permit	Returned to Draft: <ul style="list-style-type: none"> •Distance from the Completed Zone of this Well to the Completed Zone of an offset Well is incorrect. 	04/13/2021
Permit	It is unlikely these APDs will be approved before 1/15/2021 when the new rules go into effect. COGCC is recommending that these forms be returned to draft.	12/14/2020
Permit	Returned to Draft: <ul style="list-style-type: none"> •Remove "See Above" and list sections in unit configuration field on the Spacing & Formations tab. •Missing response to Sidetrack question on the Well Name & Contact Info Tab. •Missing response to Refile question on the Well Name & Contact Info Tab. 	10/30/2020
Permit (Rejected)	REJECTION: This APD has been rejected per the COGCC Rejection Process (updated May 21, 2019). The lease acreage and attached lease map are inconsistent across all APDs. This applies to this APD and 36 other APDs on the pad. Other APDs on the pad also had a missing Buffer Zone acknowledgment and missing date of notification to building unit owners. This entire form was not reviewed by permitting staff.	09/25/2020
OGLA	COGCC staff reviewed and considered all public comments received for this Form 2.	09/03/2020
Permit	Changed right to construct to surface use agreement at operator request. Passed Completeness.	10/17/2019

Total: 10 comment(s)