

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:

402080753

(RE-SUBMITTED)

Date Received:

04/21/2021

APPLICATION FOR PERMIT TO:

Drill Deepen Re-enter Recomplete and Operate

Amend

Refile

Sidetrack

TYPE OF WELL OIL GAS COALBED OTHER: _____
ZONE TYPE SINGLE ZONE MULTIPLE ZONES COMMINGLE ZONES

Well Name: Raindance FC Well Number: 26-129HC
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: 902 Feet FNL 305 Feet FEL
Latitude: 40.462511 Longitude: -104.927558
GPS Data: GPS Quality Value: 1.4 Type of GPS Quality Value: PDOP Date of Measurement: 10/14/2016
Ground Elevation: 4782
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: 29 Twp: 6N Rng: 67W Footage at TPZ: 1807 FNL 310 FWL
Measured Depth of TPZ: 7829 True Vertical Depth of TPZ: 7134 FNL/FSL FEL/FWL

Base of Productive Zone (BPZ)
Sec: 26 Twp: 6N Rng: 68W Footage at TPZ: 1807 FNL 2178 FEL
Measured Depth of TPZ: 20558 True Vertical Depth of TPZ: 7134 FNL/FSL FEL/FWL

Bottom Hole Location (BHL)
Sec: 26 Twp: 6N Rng: 68W Footage at BHL: 1807 FNL 2178 FEL
FNL/FSL FEL/FWL

LOCAL GOVERNMENT PERMITTING INFORMATION

County: WELD

Municipality: 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: 06/12/2017

Comments:

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 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: 324 Feet
Building Unit: 1058 Feet
Public Road: 2840 Feet
Above Ground Utility: 375 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: 305 Feet

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	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: 20558 Feet

TVD at Proposed Total Measured Depth 7134 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: 34 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

Casing Type	Size of Hole	Size of Casing	Grade	Wt/Ft	Csg/Liner Top	Setting Depth	Sacks Cmt	Cmt Btm	Cmt Top
SURF	13+1/2	9+5/8	J-55	36	0	2000	844	2000	0
1ST	8+1/2	5+1/2	HCP-110	20	0	20558	2863	20558	3300

Conductor Casing is NOT planned

POTENTIAL FLOW AND CONFINING FORMATIONS

Zone Type	Formation /Hazard	Top M.D.	Top T.V.D.	Bottom M.D.	Bottom T.V.D.	TDS (mg/L)	Data Source	Comment
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	3353	3353			
Hydrocarbon	Parkman	3353	3353	3677	3677			
Confining Layer	Pierre Formation	3677	3677	3889	3888			
Hydrocarbon	Sussex	3889	3888	4181	4171			
Confining Layer	Pierre Formation	4181	4171	4474	4441			
Hydrocarbon	Shannon	4474	4441	4568	4523			
Confining Layer	Pierre Formation	4568	4523	7037	6687			
Confining Layer	Sharon Springs	7037	6687	7130	6772			
Hydrocarbon	Niobrara	7130	6772	7619	7096			
Confining Layer	Fort Hayes	7619	7096	7683	7115			
Hydrocarbon	Codell	7683	7115	20558	7134			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.

Best Management Practices

No	BMP/COA Type	Description
1	Drilling/Completion Operations	Drill stem tests Rule 603.g 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.
2	Drilling/Completion Operations	Wellbore Collision Prevention – Rule 408.t 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.
3	Drilling/Completion Operations	Stimulation Setback – Rule 408.u 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.
4	Drilling/Completion Operations	Multi Well Open-Hole Logging – Rule 408.r 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.
5	Drilling/Completion Operations	Bradenhead Monitoring – Rule 419 Great Western will comply with Rule 419 and Order 1-232 for all Bradenhead compliance, as applicable.

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

Attachment List

Att Doc Num	Name
402497952	FORM 2 REJECTED
402504729	WELL LOCATION PLAT
402505641	MINERAL LEASE MAP
402508010	DIRECTIONAL DATA
402598339	OffsetWellEvaluations Data
402608064	DEVIATED DRILLING PLAN

Total Attach: 6 Files

General Comments

User Group	Comment	Comment Date
Permit	Returned to Draft: •Distance from the Completed Zone of this Well to the Completed Zone of an offset Well is incorrect.	04/13/2021
Permit	The Surface Location of this Well is not in an area designated as one of State interest and is not subject to the requirements of § 24-65.1-108 C.R.S. This Answer should be No. Requesting concurrence for this change. •Corrected with concurrence from the operator.	04/02/2021
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: •Remove "See Above" and list sections in unit configuration field on the Spacing & Formations 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 APD has not been reviewed.	09/25/2020
OGLA	COGCC staff reviewed and considered all public comments received for this Form 2.	09/03/2020
LGD	DECISION OF THE WINDSOR PLANNING COMMISSION AND THE WINDSOR TOWN BOARD ZONING CERTIFICATE This certificate is evidence that on May 17, 2017, the Windsor Planning Commission and on June 12, 2017, the Windsor Town Board granted to: Great Western Oil Gas Company Applicant and Martin Lind Raindance Aquatic Investments, LLC owner(s) of property interests described as follows: Water Valley West Subdivision, Lot 5 Windsor, Colorado 80550 A Conditional Use Grant for oil and gas facilities for fifty-nine (59) oil and gas wells	10/24/2019

on Lot 5, Water Valley West Subdivision, approximately one mile west of 7th Street and approximately ¾ mile north of New Liberty Road in the Residential Mixed Use (RMU) zoning district.

Approval of the Conditional Use Grant is subject to the following conditions:

1. All Planning Commission and staff comments are addressed.
2. The truck hauling route shall remain in accordance with Exhibit A attached hereto, unless otherwise approved by the Town.
3. Truck hauling periods shall avoid before and after school traffic (7:30 a.m. – 8:15 a.m. and 2:45 p.m. - 3:30 p.m.), and avoid peak times of commuter traffic (7:00 a.m. – 8:30 a.m. and 4:30 – 6:00 p.m.).
4. All landscape screening shown on plan shall be completed no later than 60 days after the initial drilling phase and shall not be postponed until development of the golf course. Irrigation shall be included to ensure establishment of all plant materials.
5. Sound walls shall be setback a minimum of 30 feet from the Poudre Trail temporary and permanent trails.
6. The Town's standard conditions of approval for oil and gas facilities, with amendments, as noted:
 1. Prior to the commencement of drilling, the applicant shall submit comprehensive "Drilling and Site Improvement Plans" for review and approval by the Town. Such plans shall address initial drilling activities, initial installation of site improvements and details, and on-going perpetual maintenance of the subject site including, but not limited to, the following:
 - a. Site access plan. The Drilling and Site Improvement Plans and supplemental information shall address site access points and haul routes for review and approval.
 - b. Public street clean-up and tracking prevention. The Drilling and Site Improvement Plans and supplemental information shall include a tracking pad for review and approval.
 - c. Site grading. The Drilling and Site Improvement Plans and supplemental information shall address site grading, including any earth berms for emergency containment.
 - d. Site lighting. The Drilling and Site Improvement Plans and supplemental information shall include details regarding site lighting fixtures and locations. Security and other site lighting shall utilize full cutoff light fixtures to mitigate light pollution.
 - e. Temporary screening. The applicant shall install a buffer to screen the initial drilling activities and installation of site improvements from surrounding neighborhoods and streets. The temporary buffer/sound walls shall enclose the drilling operations to provide screening and noise mitigation barriers in the direction of nearby homes, as appropriate.
 - f. Permanent screening. Given the close proximity to residential neighbors, the Drilling and Site Improvement Plans shall depict proposed long-term screening materials including landscaping, earth berms and any other screening methods to mitigate visual impacts.
 - g. Fencing. The Drilling and Site Improvement Plans shall depict fencing of the perimeter of the site. Fencing materials shall be reviewed for approval by the Town based upon the character of the surrounding neighborhood.
 - h. Oil and gas equipment.
 - (1) The applicant shall utilize electric motors in order to mitigate the noise impacts to the neighboring properties. The applicant shall utilize noise dampening methods consistent with the best management practices (BMPs) utilized in the basin. Such methods include, but are not limited to, sound walls, blankets, and other noise mitigation installed at the source of any equipment creating such noise. Noise mitigation methods known as "Quite

Fleet Technology," utilized by Liberty Oilfield Services, shall be used as examples of BMPs to be replicated.

(2)The applicant shall ensure that the wells and tanks are of the minimum size required to satisfy present and future functional requirements to mitigate visual impacts.

(3)Low profile tanks shall be utilized and shall be installed in the least visible manner possible.

(4)All tanks and equipment shall be painted to blend-in with the surrounding landscape.

i. Air quality.

(1)The applicant shall participate in any required Environmental Protection Agency (EPA) air quality monitoring and/or testing by allowing EPA to install equipment on site for said monitoring and testing.

(2)The applicant shall install and operate an emissions control device (ECD) capable of reducing Volatile Organic Compound (VOC) emissions on the subject oil and gas equipment in accordance with Colorado Oil and Gas Conservation Commission (COGCC) and/or the Colorado Department of Public Health and Environment (CDPHE) rules and regulations.

(3)The applicant shall submit to the Town copies of all air emissions reporting as required by the COGCC and/or the CDPHE's Air Pollution Control Division.

j. Water quality.

(1)The applicant shall ensure that any hydrocarbon discharges from the site comply with all state and federal water quality requirements. Any hydrocarbon discharges shall be properly reported to COGCC, and remediated according to COGCC requirements in all cases. Reportable hydrocarbon discharges shall also be reported to the Windsor Local Government Designee (LGD).

(2)The applicant shall provide test results from Groundwater Baseline Sampling and Monitoring required by COGCC Rule 318A.e(4) to the Town. (condition updated 10/28/13 to reflect updated COGCC rule)

k. Emergency containment. The secondary containment berm surrounding all storage vessels shall be designed and constructed to contain a minimum of 110% of the volume of the largest vessel located within the containment area or to State of Colorado standards, whichever requirements are more stringent.

l. Waste disposal. The applicant shall submit to the Town copies of all waste management reports as required by the COGCC and/or the CDPHE rules and regulations.

m. The following certification blocks shall be included on the Drilling and Site Improvement Plans:

(1)A signed owner's acknowledgement certification block.

(2)A signed drilling operator's acknowledgement certification block.

n. The following notes shall be included on the Drilling and Site Improvement Plans:

(1)The applicant shall comply with all rules and regulations of the Colorado Oil and Gas Conservation Commission (COGCC).

(2)The applicant shall comply with all rules and regulations of the Colorado Department of Public Health and Environment (CDPHE).

(3)The applicant shall maintain on-going compliance with all conditions of the Town and Windsor-Severance Fire Rescue.

(4)The facilities shall be kept clean and otherwise properly maintained at all times.

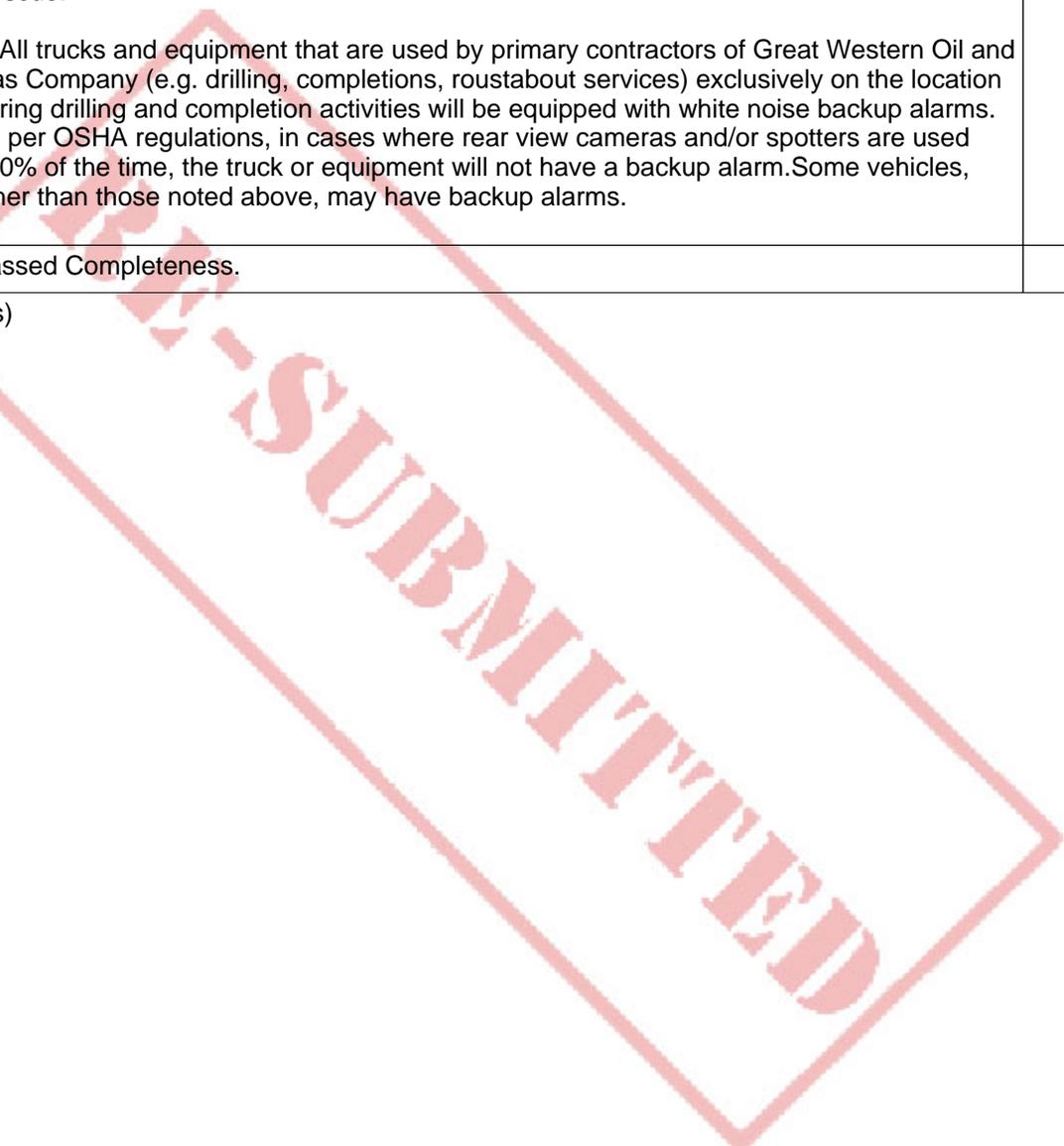
(5)If access to the site is proposed from a Town of Windsor street, such access point(s) shall require approval from the Town of Windsor Engineering Department and any required access improvements, street clean-up, tracking pads, etc., shall be addressed accordingly.

2. The applicant shall address and comply with the conditions of Windsor-Severance Fire Rescue.

3. All trucks and equipment that are used by primary contractors of Great Western Oil and Gas Company (e.g. drilling, completions, roustabout services) exclusively on the location during drilling and completion activities will be equipped with white noise backup alarms. As per OSHA regulations, in cases where rear view cameras and/or spotters are used 100% of the time, the truck or equipment will not have a backup alarm. Some vehicles, other than those noted above, may have backup alarms.

Permit	Passed Completeness.	10/17/2019
--------	----------------------	------------

Total: 8 comment(s)



Public Comments

The following comments were provided by members of the public and were considered during the technical review of this application.

<u>No.</u>	<u>Comment</u>	<u>Comment Date</u>
1	https://wfpl.org/orphan-wells-states-wrestle-with-soaring-costs-for-oil-gas-industry-mess/	11/05/2019

Total: 1 comment(s)

