

APPLICATION FOR PERMIT TO:

Drill Deepen Re-enter Recomplete and Operate

TYPE OF WELL	OIL <input type="checkbox"/>	GAS <input type="checkbox"/>	COALBED <input checked="" type="checkbox"/>	OTHER <u>Pilot Hole</u>	Refiling <input checked="" type="checkbox"/>	Date Received: 05/23/2017
ZONE TYPE	SINGLE ZONE <input checked="" type="checkbox"/>	MULTIPLE ZONES <input type="checkbox"/>	COMMINGLE ZONES <input type="checkbox"/>	Sidetrack <input type="checkbox"/>		

Well Name: North Carracas 32-5 Well Number: 9C-3

Name of Operator: RED WILLOW PRODUCTION COMPANY COGCC Operator Number: 81295

Address: P O BOX 369

City: IGNACIO State: CO Zip: 81137

Contact Name: Marvin Seale Phone: (970)563-5167 Fax: ()

Email: mseale@rwpc.us

RECLAMATION FINANCIAL ASSURANCE

Plugging and Abandonment Bond Surety ID: 12643

WELL LOCATION INFORMATION

QtrQtr: SWNE Sec: 9 Twp: 32N Rng: 5W Meridian: N

Latitude: 37.034513 Longitude: -107.393392

Footage at Surface:	<u>1860</u>	Feet	FNL/FSL	<u>1428</u>	Feet	FEL/FWL
			FNL			FEL

Field Name: IGNACIO BLANCO Field Number: 38300

Ground Elevation: 6150 County: ARCHULETA

GPS Data:

Date of Measurement: 10/13/2016 PDOP Reading: 2.0 Instrument Operator's Name: Kenneth E. Rea

If well is Directional Horizontal (highly deviated) **submit deviated drilling plan.**

Footage at Top of Prod Zone:	FNL/FSL	FEL/FWL	Bottom Hole:	FNL/FSL	FEL/FWL
<u>1498</u>	FNL	<u>1082</u>	<u>1498</u>	FNL	<u>1082</u>
		FEL			FEL

Sec: 9 Twp: 32N Rng: 5W Sec: 9 Twp: 32N Rng: 5W

LOCATION SURFACE & MINERALS & RIGHT TO CONSTRUCT

Surface Ownership: Fee State Federal Indian

The 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: Surface Use Agreement

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.)

T32N-R5W, N.M.P.M., Sec. 9: SENE, N2NESWNE, SENESWNE, NESESWNE; Sec. 10 SWNW

Total Acres in Described Lease: 90 Described Mineral Lease is: Fee State Federal Indian

Federal or State Lease # N/A, Fee Lease

Distance from Completed Portion of Wellbore to Nearest Lease Line of described lease: _____ Feet

CULTURAL DISTANCE INFORMATION

Distance to nearest:

Building: 385 Feet
 Building Unit: 590 Feet
 High Occupancy Building Unit: 5280 Feet
 Designated Outside Activity Area: 5280 Feet
 Public Road: 750 Feet
 Above Ground Utility: 5280 Feet
 Railroad: 5280 Feet
 Property Line: 250 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: _____

SPACING and UNIT INFORMATION

Distance from completed portion of proposed wellbore to nearest completed portion of offset wellbore permitted or completed in the same formation: 300 Feet

Distance from Completed Portion of Wellbore to Nearest Unit Boundary 1082 Feet (Enter 5280 for distance greater than 1 mile.)

Federal or State Unit Name (if appl): _____ Unit Number: _____

SPACING & FORMATIONS COMMENTS

OBJECTIVE FORMATIONS

Objective Formation(s)	Formation Code	Spacing Order Number(s)	Unit Acreage Assigned to Well	Unit Configuration (N/2, SE/4, etc.)
FRUITLAND COAL	FRLDC	112-272	640	All Section 9

DRILLING PROGRAM

Proposed Total Measured Depth: 2502 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: _____ 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 Operations Plan)

Will salt sections be encountered during drilling? No

Will salt based (>15,000 ppm Cl) drilling fluids be used? Yes

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 608

DRILLING WASTE MANAGEMENT PROGRAM

Drilling Fluids Disposal: OFFSITE Drilling Fluids Disposal Methods: Recycle/reuse

Cuttings Disposal: OFFSITE Cuttings Disposal Method: Commercial Disposal

Other Disposal Description:

Beneficial reuse or land application plan submitted? _____

Reuse Facility ID: _____ 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	860	460	860	0
1ST	8+3/4	7+0/0	23	0	2502	270	2502	0

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

1. Insofar as this Application For Permit to Drill concerns lands within the jurisdiction of the Southern Ute Indian Tribe, it is submitted to the Colorado Oil and Gas Conservation Commission ("COGCC") in accordance with the terms of the Memorandum of Understanding dated Aug. 22, 1991 between the Bureau of Land Management ("BLM") and the Commission and the separate Memorandum of Understanding dated Aug. 22, 1991 between the Bureau of Indian Affairs ("BIA"), the BLM and the Southern Ute Indian Tribe.
2. The trajectory of the wellbore will be as follows:
 - a. This Form 2 is for the pilot hole, see attached Doc Num 401288256, Directional Data.
 - b. The completed interval will be within the authorized setbacks.
3. Applicant has a pending application before the COGCC, Docket No. 170500505 seeking an order to reduce the unit boundary setbacks of the drilling and spacing unit to which this well is being drilled from 990 feet to 660 feet.
4. Upon approval of the application to reduce the unit boundary setbacks of this drilling and spacing unit, Applicant will file a Form 4 Sundry Notice to amend the planned completed interval of this well.

This application is in a Comprehensive Drilling Plan _____ CDP #: _____

Location ID: 419857

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: Marvin Seale

Title: Petroleum Engineer Date: 5/23/2017 Email: mseale@rwpc.us

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: 8/20/2017

Expiration Date: 08/19/2019

API NUMBER

05 007 06296 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

	<p>1) The two closest water wells within 1/4 mile radius of the proposed bottom hole shall be sampled (Cause 112 Orders 156-157, 180-181 and rule 608 if not done previously.</p> <p>2) If borehole problems occur while drilling and an unplanned sidetrack is required, the following shall apply:</p> <p>a.) Before proceeding, contact the COGCC Regional Engineer for SW Colorado for verbal approval and provide an explanation as to what happened to the original borehole and what the plan is for the sidetrack.</p> <p>Contact Information: Mark Weems – Regional Engineer-SW Colorado 970-259-4587 off 970-749-0624 cell mark.weems@state.co.us</p> <p>b.) Adhere to the instructions provided in the “UNPLANNED Sidetrack While Drilling: Approval and Reporting Process – Southwestern Colorado San Juan Basing ONLY” that can be found on the COGCC website at:</p> <p>Go to COGCC Web Site for more details if necessary Forms Form 2-Permit to Drill Instructions</p> <p>3) Contact COGCC Regional Engineer – Mark Weems when encountering kicks requiring a mud weight increase of 0.5 ppg to control the kick, unexpected water flows, and unexpected Hydrogen Sulfide.</p>
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Best Management Practices

No BMP/COA Type

Description

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Applicable Policies and Notices to Operators

Policy

Notice Concerning Operating Requirements for Wildlife Protection.
http://cogcc.state.co.us/documents/reg/Policies/Wildlife_Notice.pdf

Attachment Check List

Att Doc Num

Name

901611	WELL LOCATION PLAT
901612	SURFACE AGRMT/SURETY
1857806	SELECTED ITEMS REPORT
401257489	FORM 2 SUBMITTED
401288256	DIRECTIONAL DATA

Total Attach: 5 Files

General Comments

<u>User Group</u>	<u>Comment</u>	<u>Comment Date</u>
Permit	Added well location plat and SUA attachments, per operator.	08/15/2017
Permit	Final Review Completed. No LGD or public comment received.	08/14/2017
Permit	Per operator, deselected "surface owner is committed to an oil and gas lease" as right to construct is through a Surface Use Agreement.	08/14/2017
Engineer	<p>This is a re-filed permit.</p> <p>This pilot well bore will be an S-shaped directional well.</p> <p>The proposed gas well is located within an area where fresh water aquifers are mostly developed in an alluvial deposit of gravel and sandstone commonly found in river, stream, and ephemeral creek valleys. Water wells found in these locations can vary in depth from 10' to 200'. These aquifers are commonly identified as the San Jose and Nacimiento formations.</p> <p>The proposed gas well is located within an area where unconfined fresh water aquifers are mostly developed in bedrock formations consisting mainly of shale with intermittent sandstone stringers with limited areal extent or having pockets of isolated water reservoirs. Water wells found in these locations can vary in depth from 100' to 800'. These aquifers are commonly identified as the Animas formation.</p> <p>Respective to the proposed gas well, a one (1) mile radius of investigation of all offsetting fresh water wells has determined that the deepest surface casing required to protect the aquifers is a depth of 493' (includes a 50' margin of additional protection). The operator proposed a depth of 860' which is 367' deeper than the minimal requirement. The surface casing on the proposed well will be cemented from total depth to surface. The production casing on the proposed gas well will also be cemented from total depth to surface. This will serve two purposes (1) it will isolate and confine all hydrocarbon and brackish waters to their respective zones and (2) it will provide double protection for the fresh water aquifers which includes two concentric (2) steel casing strings and two concentric external (2) cement sheaths extending from total depth to surface (see attached SELECTED ITEMS REPORT).</p> <p>There are no resistivity and porosity logs from offset wells within 1500' of this proposed well.</p> <p>Distance from completed portion of proposed wellbore to nearest completed portion of offset wellbore permitted or completed in the same formation is greater than 300 feet.</p> <p>The operator reports having no plans to fracture stimulate this well.</p> <p>The directional data indicates a measured total depth (MTD) of 2501.64'; so, this depth was substituted into the casing matrix.</p>	07/19/2017
Permit	Updated Order is 112-272. Corrected 8/14/2017 per operator.	07/07/2017
Permit	Passed Completeness.	06/01/2017

Total: 6 comment(s)