

**APPLICATION FOR PERMIT TO:**

**Drill**       Deepen       Re-enter       Recomplete and Operate

TYPE OF WELL    OIL <input type="checkbox"/> GAS <input checked="" type="checkbox"/> COALBED <input type="checkbox"/> OTHER _____ ZONE TYPE       SINGLE ZONE <input checked="" type="checkbox"/> MULTIPLE ZONES <input type="checkbox"/> COMMINGLE ZONES <input type="checkbox"/>	Refiling <input checked="" type="checkbox"/> Sidetrack <input type="checkbox"/>
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Date Received:  
01/23/2019

Well Name: SG      Well Number: 12B-28-496  
 Name of Operator: CAERUS PICEANCE LLC      COGCC Operator Number: 10456  
 Address: 1001 17TH STREET #1600  
 City: DENVER      State: CO      Zip: 80202  
 Contact Name: Reed Haddock      Phone: (720)880-6369      Fax: (303)565-4606  
 Email: rhaddock@caerusoilandgas.com

**RECLAMATION FINANCIAL ASSURANCE**  
 Plugging and Abandonment Bond Surety ID: 20130021

**WELL LOCATION INFORMATION**  
 QtrQtr: NWSW      Sec: 27      Twp: 4S      Rng: 96W      Meridian: 6  
 Latitude: 39.671352      Longitude: -108.160183  
 Footage at Surface: 1927 Feet      FNL/FSL FSL 1112 Feet      FEL/FWL FWL  
 Field Name: GRAND VALLEY      Field Number: 31290  
 Ground Elevation: 8106      County: GARFIELD  
 GPS Data:  
 Date of Measurement: 08/17/2018      PDOP Reading: 1.3      Instrument Operator's Name: TLL  
 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  
    856      FNL      476      FEL      916      FNL      642      FEL  
    Sec: 28      Twp: 4S      Rng: 96W      Sec: 28      Twp: 4S      Rng: 96W

**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: applicant is owner  
 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.)

E2, Sec. 28, 4S-96W and other lands.

Total Acres in Described Lease: 2290 Described Mineral Lease is:  Fee  State  Federal  Indian

Federal or State Lease # COC065555

Distance from Completed Portion of Wellbore to Nearest Lease Line of described lease: 476 Feet

**CULTURAL DISTANCE INFORMATION**

Distance to nearest:

Building: 5280 Feet

Building Unit: 5280 Feet

High Occupancy Building Unit: 5280 Feet

Designated Outside Activity Area: 5280 Feet

Public Road: 5280 Feet

Above Ground Utility: 5280 Feet

Railroad: 5280 Feet

Property Line: 3536 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: 447 Feet

Distance from Completed Portion of Wellbore to Nearest Unit Boundary 4584 Feet (Enter 5280 for distance greater than 1 mile.)

Federal or State Unit Name (if appl): Big Jimmy Unit Unit Number: COC074105X

**SPACING & FORMATIONS COMMENTS**

This well is subject to Order 1-229.

**OBJECTIVE FORMATIONS**

Objective Formation(s)	Formation Code	Spacing Order Number(s)	Unit Acreage Assigned to Well	Unit Configuration (N/2, SE/4, etc.)
WILLIAMS FORK	WMFK	1-229		

## DRILLING PROGRAM

Proposed Total Measured Depth: 12129 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 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 Operations Plan)

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? 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 609

## DRILLING WASTE MANAGEMENT PROGRAM

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

Cuttings Disposal: ONSITE Cuttings Disposal Method: Beneficial reuse

Other Disposal Description:

Waste Management Plan attached to Form 2A.

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
CONDUCTOR	30	20	54#	0	100	218	100	0
SURF	14+3/4	9+5/8	36#	0	3000	994	3000	0
1ST	8+3/4	4+1/2	11.6#	0	12129	1055	12129	6061

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

This application is in a Comprehensive Drilling Plan \_\_\_\_\_ CDP #: \_\_\_\_\_

Location ID: 335939

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: Reed Haddock

Title: Sr. Regulatory Specialist Date: 1/23/2019 Email: rhaddock@caerusoilandgas.co

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: 3/29/2019

Expiration Date: 03/28/2021

<b>API NUMBER</b>
05 045 21872 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**

	1. If conductors are preset, Operator shall comply with Notice to Operators: Procedures for Preset Conductors (dated September 1, 2016, revised October 6, 2016). 2. Operator shall comply with Notice to Operators: Interim Reclamation Procedures for Delayed Operation (dated January 5, 2017).
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	<p>Drilling / Completion Operations: The operator has indicated in the 'DRILLING WASTE MANAGEMENT PROGRAM SECTION' of the Form 2 that 'Cuttings Disposal' will be "ONSITE" and that the 'Cuttings Disposal Method' will be "Beneficial reuse", 'Other Disposal Description' as "Waste Management Plan attached to Form 2A." However, there is no Waste Management Plan associated with any Form 2As submitted and approved (2A #400194205, 10-06-11; 2A #400360273, 02-08-13; 2A #400441503, 10-06-13; and 2A #400495725, 11-23-13) and there is no definitive disposal method mentioned on the Form 2As, except for 'Recycle and Bury. Due to these is discrepancies between the Form 2As and Form 2 refiles, the following COA will apply:</p> <ul style="list-style-type: none"> <li>•Water/Bentonite-Based Drilling Mud (WBM) Generated Solids / Cuttings Management and Onsite Disposal or Beneficial Reuse: a) A closed loop system must be implemented during drilling (as indicated on the the Form 2 and Form 2A). b) All cuttings generated during drilling must be kept in a bermed portion of the well pad prior to disposition (all cuttings containment areas shall be sufficiently impervious); c) The moisture content of WBM-generated drill cuttings managed onsite shall be kept as low as practicable to prevent accumulation of liquids greater than de minimis amounts; d) A Form 4 Sundry Notice must be submitted for any of the WBM-generated drill cuttings that will remain on the well pad location; e) after drilling and completion operations have been completed, any WBM-generated drill cuttings that will remain on the well pad location must be sampled and meet the applicable levels of Table 910-1. In the event that a certain volume of drill cuttings analytically demonstrate constituents above Table 910-1 levels, the cuttings will be remediated. After the drill cuttings have been amended (if necessary), they will be treated as soil and beneficially reused on location (cuttings management area, the cut portion of the pad, cuttings trench, dry cuttings drilling pit, or utilized in onsite interim reclamation activities); f) All liners (if used) associated with WBM-generated drill cuttings must be disposed of offsite per CDPHE rules and regulations; g) Commercial disposal of drill cuttings will require notification (no prior approval) to COGCC via a Form 4 Sundry Notice; h) The operator will implement measures (covers, misting, etc.) in trucks used for offsite disposal to reduce dust and PM emissions during transport of WBM-generated solids and cuttings materials from the well pad location.</li> </ul>
	<ol style="list-style-type: none"> <li>1) Operator shall comply with the most current revision of the Northwest Notification Policy.</li> <li>2) Operator shall comply with the most current revision of the Garfield County Rulison Field Notice to Operators, with the following exception: All field notice requirements specified in that Notice to Operators are superseded by the requirements of the most current revision of the Northwest Colorado Notification Policy (see Condition of Approval #1).</li> <li>3) Operator shall provide cement coverage from the production casing shoe (4+1/2" FIRST STRING) to a minimum of 200' above all Mesaverde Group (and Ohio Creek Formation, if present) oil, gas, and water-bearing sandstone and coalbed formations. Verify production casing cement coverage with a cement bond log.</li> <li>4) The Operator shall monitor the bradenhead pressure of the proposed well and all offset wells under Operator's control which penetrate the stimulated formation and have a treated interval separation of 300 feet or less. Monitoring shall occur from 24 hours prior to stimulation and shall continue until 24 hours after stimulation is complete. Recording shall be at a frequency of at least once per 24 hours with the capability of recording the maximum pressure observed during each 24 hour period. Operator shall notify COGCC Engineering staff if bradenhead pressures increase by more than 200 psig.</li> <li>5) 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.</li> </ol>

## Best Management Practices

<b>No BMP/COA Type</b>	<b>Description</b>
1 Planning	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 TD 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 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 will state "Alternative Logging Program - No open-hole logs were run" and will clearly identify the type of log and the well (by API#) in which open-hole logs were run.
2 Drilling/Completion Operations	Closed loop system will be used. No pits will be built. Caerus will ensure 110 percent secondary containment for any potential volume of fluids that may be released.

Total: 2 comment(s)

### Applicable Policies and Notices to Operators

Piceance Rulison Field - Notice to Operators.

<http://cogcc.state.co.us/documents/reg/Policies/NoticeToOp-20060623-2.pdf>

NW Colorado Notification Policy.

[http://cogcc.state.co.us/documents/reg/Policies/nw\\_notification\\_procedures.pdf](http://cogcc.state.co.us/documents/reg/Policies/nw_notification_procedures.pdf)

Notice Concerning Operating Requirements for Wildlife Protection.

[http://cogcc.state.co.us/documents/reg/Policies/Wildlife\\_Notice.pdf](http://cogcc.state.co.us/documents/reg/Policies/Wildlife_Notice.pdf)

### Attachment Check List

<b>Att Doc Num</b>	<b>Name</b>
401560864	FORM 2 SUBMITTED
401560879	DEVIATED DRILLING PLAN
401560880	DIRECTIONAL DATA
401753007	OIL & GAS LEASE
401761513	WELL LOCATION PLAT
401908373	FED. DRILLING PERMIT

Total Attach: 6 Files

### General Comments

<b>User Group</b>	<b>Comment</b>	<b>Comment Date</b>
Permit	-Corrected RTC, Federal lease #, Federal unit # -Corrected BMP to new language -All corrections made with operator concurrence	03/29/2019
Engineer	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. There are no noncommercial water wells within 1 mile of the well surface hole locations on this pad.  Offset Well Evaluation: Planned wells are less than 300' apart. Added bradenhead monitoring COA. Wellbores on pad cross path of existing wells (API#045-15032) and (API#045-15030) in plan view. Added anti-collision COA.	01/29/2019
Permit	Passed completeness.	01/28/2019

Total: 3 comment(s)