

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: 403089902 Date Received: 08/16/2022

APPLICATION FOR PERMIT TO

Application type options: Drill (checked), Deepen, Re-enter, Recomplete and Operate, Amend, Refile (checked), Sidetrack. Well type options: OIL, GAS (checked), COALBED, OTHER. Zone type options: SINGLE ZONE (checked), MULTIPLE ZONES, COMMINGLE ZONES.

Well Name: BJU M23A FED Well Number: 23D-22-496 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

FINANCIAL ASSURANCE FOR PLUGGING, ABANDONMENT, AND RECLAMATION

COGCC Financial Assurance section with checkbox for operator assurance and Surety ID Number field.

Federal Financial Assurance section with checked checkbox for federal assurance and Amount of Federal Financial Assurance \$ 10093.

WELL LOCATION INFORMATION

Surface Location details: QtrQtr: Lot 6, Sec: 23, Twp: 4S, Rng: 96W, Meridian: 6. Footage at Surface: 1347 Feet FSL, 1305 Feet FWL. Latitude: 39.684264, Longitude: -108.140775. GPS Data: GPS Quality Value: 1.4, Type of GPS Quality Value: PDOP, Date of Measurement: 07/20/2020. Ground Elevation: 8108. Field Name: GRAND VALLEY, Field Number: 31290. Well Plan: is Directional (checked).

Subsurface Locations details: Top of Productive Zone (TPZ) Sec: 22, Twp: 4S, Rng: 96W, Footage at TPZ: 2446 FSL, 1213 FEL. Measured Depth of TPZ: 8566, True Vertical Depth of TPZ: 8048 FNL/FSL, FEL/FWL.

Base of Productive Zone (BPZ)

Sec: 22 Twp: 4S Rng: 96W Footage at BPZ: 2413 FSL 1307 FEL
Measured Depth of BPZ: 12220 True Vertical Depth of BPZ: 11701 FNL/FSL FEL/FWL

Bottom Hole Location (BHL)

Sec: 22 Twp: 4S Rng: 96W Footage at BHL: 2413 FSL 1307 FEL
FNL/FSL FEL/FWL

LOCAL GOVERNMENT PERMITTING INFORMATION

County: GARFIELD 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:

Comments: Caerus Piceance LLC has contacted Garfield County, the local government with jurisdiction over the siting of this proposed oil and gas location and determined that per the Garfield County Land Use and Development Code, Table 3-403, "Oil and Gas Drilling and Production" and "Hydraulic Fracturing, Remote Surface Location" are a use by right or Exempt from Land Use Regulation at this site. Garfield County's disposition is not required for the purposes of this submittal.

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.)

Sec. 22 T4S-R96W - All and other lands.

Total Acres in Described Lease: 2425 Described Mineral Lease is:  Fee  State  Federal  Indian

Federal or State Lease # COC064814

### SAFETY SETBACK INFORMATION

Distance from Well to nearest:

Building: 5280 Feet  
Building Unit: 5280 Feet  
Public Road: 4765 Feet  
Above Ground Utility: 5280 Feet  
Railroad: 5280 Feet  
Property Line: 4016 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.)
WILLIAMS FORK	WMFK	1-229		

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

Unit Number: COC074105X

### 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: 2866 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: 285 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: 12720 Feet TVD at Proposed Total Measured Depth 12201 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 feetWill a closed-loop drilling system be used? YesIs 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? NoWill salt sections be encountered during drilling? NoWill salt based (>15,000 ppm Cl) drilling fluids be used? NoWill oil based drilling fluids be used? NoBOP 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	30	20	A252	54#	0	100	218	100	0
SURF	14+3/4	9+5/8	J55	36#	0	3000	710	3000	1400
1ST	8+3/4	4+1/2	HCP110	11.6#	0	12720	1458	12720	3500
		9+5/8		Stage Tool		1400	312	1400	0

 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	Green River	0	0	3500	3317	501-1000	CGS	
Confining Layer	Wasatch	3538	3352	6127	5752			
Hydrocarbon	Wasatch G	6127	5752	6451	6052			The Wasatch G is a non-productive zone in the referenced area of the basin.
Confining Layer	Fort Union	6451	6052	8566	8048			
Hydrocarbon	Ohio Creek	8566	8048	8975	8457	>10000	Produced Water Sample	
Hydrocarbon	Williams Fork	8975	8457	11720	11201	>10000	Produced Water Sample	
Hydrocarbon	Cameo	11720	11201	12220	11701	>10000	Produced Water Sample	
Hydrocarbon	Rollins	12220	11701	12720	12201	>10000	Produced Water Sample	

**OPERATOR COMMENTS AND SUBMITTAL**

Comments The M23A-496 Pad is in the process of being built and has a valid Form 2A that expires October 12, 2023. The previously submitted directional plans, location survey plats, and casing design have been revised. The Operator, Caerus Piceance LLC is the surface owner.

This application is in a Comprehensive Area Plan \_\_\_\_\_ CAP #: \_\_\_\_\_

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

Location ID: 478266

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: Regulatory Lead

Date: 8/16/2022

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, applicable orders, and SB 19-181 and is hereby approved.

COGCC Approved:  \_\_\_\_\_

Director of COGCC

Date: 10/17/2022

Expiration Date: 10/16/2025

<b>API NUMBER</b>
05 045 24379 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**

Drilling/Completion Operations	<p>1)Operator shall comply with the most current revision of the Northwest Notification Policy.</p> <p>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).</p> <p>3)Operator shall provide cement coverage from the production casing shoe (4 1/2" FIRST STRING) to a minimum of 200' above the Wasatch G as defined by COGCC in the report "Casing and Cement Standards for Geologic Isolation Piceance Basin Bradenhead Monitoring Area and Nearby Fields," dated April 18, 2016, COGCC Document No. 2056199, Appendix A Field Scout Cards and Annotated Type Logs) to provide isolation of the Lower Wasatch, all Mesaverde Group formations including the Ohio Creek Formation, and underlying formations, if penetrated. Verify production casing cement coverage with a cement bond log.</p> <p>4)During stimulation, operator shall monitor the bradenhead, casing, and tubing 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. Operator shall notify COGCC Engineering staff if bradenhead pressures increase by more than 200 psig.</p>
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1 COA

## 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 and Gamma Ray Log from the kick-off point to 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 clearly state "Alternative Logging Program - No open-hole logs were run" and shall clearly identify (by API#, well name & number) the well in which open-hole logs were run."
2 Planning	The associated well pad Location ID: 478266 was approved on October 13, 2020, by the COGCC. The BLM White River Field Office (WRFO) approved the Application for Permit to Drill (APD) for this well on December 1, 2020, under the land use planning review of the WRFO Record of Decision and Approved Resource Management Plan (ROD/RMP), as amended by the WRFO Oil and Gas Development Plan Approved Resource Management Plan Amendment and the Northwest Colorado Greater Sage-Grouse Approved RMPA. Please reference the attached WRFO Environmental Assessment from November 2020 and the Decision Record approved by the WRFO BLM on November 25, 2020, which specifically addresses the criteria in which the associated well pad was evaluated and approved.
3 Drilling/Completion Operations	<p>Closed loop system will be used.</p> <p><b>DRILL CUTTINGS:</b> The moisture content of all drill cuttings managed onsite shall be kept as low as practicable to prevent accumulation of liquids greater than de minimis amounts. All cuttings generated during drilling will be placed in a bermed portion of the well pad prior to onsite beneficial reuse.</p> <p>Drill cuttings will be put through shakers to minimize moisture and analyzed for Table 915-1 constituents. Cuttings that meet 915-1 levels will be backfilled into the cuttings management area along the northwestern portion of the pad.</p> <p><b>CONTAINMENT:</b> During drilling activities, Caerus utilizes a portable containment liner under the substructure of the drilling rig during drilling activities to protect shallow groundwater from any potential spills surrounding the rig during drilling. A liquid release would simply be vacuumed up from the liner. When drilling activity is completed, the liner is removed and transferred to the next drilling location. For permanent containment at the oil and gas location Caerus will ensure 150% secondary containment of volume in the single largest tank on the oil and gas location in compliance with Rule 603.o. During completions, Caerus may utilize 15-20 temporary tanks to hold frac fluid and flowback water. Tanks would be housed in a compacted earthen bermed area and secondary containment.</p> <p><b>FLOWBACK &amp; STIMULATION:</b> As wells progress from the drilling stage to the completions stage temporary working tanks will be situated on the ELU A18-495 Well Pad. Caerus estimates that there could be 15-20 500-bbl tanks on location for roughly 18-months as the wells progress from the drilling to completions stage during Sim-Ops. The contents of the tanks will contain produced water. The temporary tanks will be placed on a certain portion of the ELU A18-495 Well Pad and laid upon an impervious synthetic or engineered liner which would be underlaid by road base. The liners will be sufficient to hold up to 150% of the largest tank on the location. Note, the entire Oil and Gas Location for the ELU A18-495 will include a compacted earthen berm perimeter around the operational area for ELU A18-495 Well Pad. Once the working tanks are no longer necessary for operations both the tanks and the impervious liner will be removed.</p>

Total: 3 comment(s)

### Attachment List

<b>Att Doc Num</b>	<b>Name</b>
403089902	FORM 2 SUBMITTED
403124310	DEVIATED DRILLING PLAN

403124311	DIRECTIONAL DATA
403124313	WELL LOCATION PLAT
403137804	OffsetWellEvaluations Data
403198431	OFFSET WELL EVALUATION

Total Attach: 6 Files

### General Comments

<b>User Group</b>	<b>Comment</b>	<b>Comment Date</b>
Permit	Final Review Completed.	10/05/2022
Permit	-Corrected footage at surface, lat and long, GPS quality value, date of measurement, ground elevation to reflect well location plat. -Corrected measured and true vertical depth of BPZ -All corrections made with operator concurrence -Permit review complete	09/27/2022
OGLA	This Location (ID #478266) 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.	09/21/2022
Engineer	Offset Well Evaluation: Existing offset oil and gas wells within 1,500 feet of this wellbore meet standards. No mitigation required. Active Wasatch G injection wells owned by Caerus, SGU *CP01B-27 M23 49, SGU *8506B F26 496 are within the offset evaluation areas. The injection well has been taken into consideration for the cement coverage COA#3.  Offset water well check: COGCC evaluated offset water wells within one mile of this proposed well's surface hole location. This information in addition to locally-available geophysical logs and hydrogeologic information was used to evaluate the adequacy of the operator's proposed surface casing setting depth. The deepest water well within one mile is 235 feet. None of the water wells within one mile are for domestic use.  Corrected casing table stage tool line item to meet casing table data specifications  Offset well SGU #CP12D-23 has a primary TOC of 8450 ft. and a TOC of 6910 from remedial cement operations. Area engineer contacted Operator to discuss Offset Well Review data.  The BH pressures in the offset well review table are the most current field measured values	09/13/2022

Total: 4 comment(s)