

# State of Colorado Oil and Gas Conservation Commission

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FOR OGCC USE ONLY

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06/30/2016

## UNDERGROUND INJECTION FORMATION PERMIT APPLICATION

Per Rule 325, this form shall be submitted with all required attachments.

A Form 31 – Intent shall be submitted and approved prior to completing an injection zone.

A Form 31 – Subsequent shall be submitted following collection of water samples and injectivity test (if performed) and must be approved prior to injection in any new injection facility.

NOTE: Per Rule 324B, an aquifer exemption is required for any injection formation with water quality less than 10,000 mg/L total dissolved solids (TDS). Contact the Commission for further requirements if the TDS as determined by water analysis for the injection zone is less than 10,000 mg/L.

Form 31 Type

☒ Intent☐ Subsequent

UIC Facility ID 159995

UIC Facility ID Required for Subsequent Form 31

### UIC FACILITY INFORMATION

Facility Name and Number: Puckett SWD

H2-797

County: GARFIELD

Facility Location: 66 / 2 / 7S / 97W / 6

Field Name and Number:

WILDCAT

99999

Facility Type: ☐ Enhanced Recovery☒ Disposal☐ Simultaneous Disposal

Single or Multiple Well Facility?

☒ Single☐ Multiple

Proposed Injection Program (Required):

Caerus proposes to inject Class II waste fluid into the Ohio Creek Formation at approximately 5829 ftMD with perforations at depths of 6045 feet to 6053 feet. Caerus will perforate and swab test the proposed interval to collect formation fluid samples to show the Ohio Creek interval in this part of field has TDS values >10,000ppm. An extended injection test will then be performed to determine the fracture gradient and a maximum allowable injection pressure. The permeability listed on the enclosed Form 31 is an educated estimate based on other UIC wells in the area. The Ohio Creek Formation comprises conglomerates, sandstones and shales. Due to the depth of the injection zones, no underground sources of drinking water will be affected by this operation. Water samples from the Ohio Creek Formation in this well indicate a TDS above 10,000 ppm TDS. Since the Puckett H2-797 SWD is located on a multi-well pad, a resistivity log will be run on one of the producing wellbores, with data gathered through the Ohio Creek section. Caerus plans to evaluate the data gathered from that log for use in the analysis of the proposed UIC well. The injection skid for the Puckett SWD H2-797 will be placed on the pad location. Fluid will be delivered to the well by pipeline and water truck. The Surface Facility Diagram shows the proposed surface facility outlining all pipelines, tanks and associated facilities. A listing of all sources of water will be submitted via Form 26 at a later date. An estimated total of 170 currently producing wells may potentially use this facility for disposal. Future development could bring that well count to over 200 wellbores, which would all be gathered via the existing pipeline, additional pipelines for future pads or trucks. The UIC well would help in minimizing truck traffic in the Rulison area.

### OPERATOR INFORMATION

OGCC Operator Number: 10456

Name of Operator: CAERUS PICEANCE LLC

Address: 1001 17TH STREET #1600

City: DENVER

State: CO

Zip: 80202

Contact Name and Telephone:

Name: Reed Haddock

Phone: (720) 880-6369

Fax: (303) 565-4606

Email: rhaddock@caerusoilandgas.com

### INJECTED FLUID TYPE

All injected fluids must be Exempt E&P waste per RCRA Subpart C.

(Check all that apply.)

☒ Produced Water☐ Natural Gas☐ CO2☐ Drilling Fluids☐ Exempt Gas Plant Waste☐ Used Workover Fluids☐ Flowback Fluids☐ Other Fluids (describe):

Commercial Disposal Facility

☐ Yes☒ No

Commercial UIC Bond Surety ID:

Commercial Facility Description: Describe the physical region of the facility, the details of the operations, and the type of fluids to be injected.

### PROPOSED INJECTION FORMATIONS

FORMATION (Name): OHIO CREEK Porosity: 12 %  
Formation TDS: 15000 mg/L Frac Gradient: 0.7 psi/ft Permeability: 350 mD  
Proposed Stimulation Program: ☐ Acid ☐ Frac Treatment ☒ None

### ANTICIPATED FACILITY OPERATIONS CONDITIONS

Under normal operating conditions, estimated TOTAL fluid injection rates and pressures for this facility:

FOR WATER: Daily Injection Rate Range From 100 to 8000 bbls/day  
Surface Injection Pressure Range From 850 to 2500 psi  
FOR GAS: Daily Injection Rate Range From \_\_\_\_\_ to \_\_\_\_\_ mcf/day  
Surface Injection Pressure Range From \_\_\_\_\_ to \_\_\_\_\_ psi

Estimated Initial Injection Date: 12/1/2016

### AREA OF REVIEW OIL and GAS WELL EVALUATION SUMMARY

Review all existing wells within 1/2 mile for injection formation isolation.

Area Review Date: 6/27/2016

Total number of Oil & Gas Wells within Area of Review: 35

ABANDONED WELLS (All wells that have been plugged: PA and DA status))

Total within Area of Review	<u>0</u>
Number To Be Re-Plugged	<u>0</u>

ACTIVE WELLS (All wells that have not been plugged: AC, DG, DM, IJ, PR, SU, SI, TA, WO, XX, UN status)

Total within Area of Review	<u>35</u>
Number Requiring Casing Repair	<u>0</u>
Number To Be Plugged	<u>0</u>

Operator's Area of Review Contact Email: nnaeve@caerusoilandgas.com

☐ No Wells within 2,640'

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

Print Name: Reed Haddock Signed: \_\_\_\_\_  
Title: Sr. Regulatory Specialist Date: 6/30/2016 4:17:13 PM

COGCC Approved:  Date: 09/01/2016

Form 31 - Intent Expiration Date: 03/01/2017

Per Rule 325.o, a 90 day extension of the Expiration Date may be requested via a Sundry Notice, Form 4 submitted prior to Form 31- Intent expiration

Order Number: \_\_\_\_\_ UIC FACILITY ID: 159995

CONDITIONS OF APPROVAL, IF ANY:

Date Run: 9/1/2016 Doc [#401067216]

<b>COA Type</b>	<b>Description</b>
	Retrieve water sample(s) from injection zone(s) before stimulating formation. Samples must be analyzed for Total Dissolved Solids at a minimum.
	Prior approval of Form 4 is required for further or additional step rate and injectivity tests. Note that some pressure and injectivity data has been collected. Any new attempts to collect additional data will require an Approved Sundry for an Intent to Do Work including discussion of proposed activities with COGCC Staff.
	Injection is not authorized until approval of Subsequent Forms 31 and 33.
	Operator is required to perform additional Mechanical Integrity Tests ("MITs") at five (5) year intervals from the first test date reported here. If the downhole well configuration is changed at any time an MIT must be performed before the well is returned to injection.
	One year after the initial injection date Operator is required to file a Form 4-Sundry Notice with injected water analysis. Minimum analyses are TDS, major cations, and major anions. Data must also be submitted to COGCC Database in Electronic Data Deliverable (EDD) format. After the initial 1-year analysis, the analysis shall be repeated at five (5) year intervals.

### **Attachment Check List**

<b>Att Doc Num</b>	<b>Name</b>
400883287	COMBINATION OPEN HOLE-PDF
400883690	CEMENT BOND-PDF
400883693	CEMENT BOND-TIF
400884247	COMBINATION OPEN HOLE-PDF
400886579	COMBINATION OPEN HOLE-LAS
400886584	COMBINATION OPEN HOLE-LAS
401067216	FORM 31-INTENT-SUBMITTED
401067256	SURFACE USE AGREEMENT FOR SALT WATER DISPOSAL
401067257	CERTIFIED MAIL RECEIPT(S)
401067259	MAP OF SURFACE OWNERS ¼-MILE
401067260	MAP OF MINERAL OWNERS ¼-MILE
401067285	LIST OF MINERAL OWNERS ¼-MILE
401067286	LIST OF SURFACE OWNERS ¼-MILE
401067287	WELLBORE DIAGRAM-PROPOSED
401067295	OIL & GAS WELL PLAT
401067296	SURFACE FACILITY DIAGRAM
401067297	NOTICE TO SURFACE & MINERAL OWNERS
401067298	MAP OF O&G WELLS IN AREA OF REVIEW
401069483	OFFSET WELL EVALUATION

Total Attach: 19 Files

### **General Comments**

<b>User Group</b>	<b>Comment</b>	<b>Comment Date</b>
UIC	Open hole TCombo logs from Puckett 42D-2 (API: 045-22618-closest) and Puckett 42B-2 (045-22626) used for this well. Ohio Creek interval adequately covered and wells go much deeper into section.	9/1/2016 4:37:39 PM

Total: 1 comment(s)