

State of Colorado  
Energy & Carbon Management Commission

1120 Lincoln Street, Suite 801, Denver, Colorado 80203  
Phone: (303) 894-2100 Fax: (303) 894-2109



Document Number:  
403867948  
Receive Date:  
10/22/2024

Report taken by:  
Steven Arauza

Site Investigation and Remediation Workplan (Supplemental Form)

This form shall be submitted to the Director for approval prior to the initiation of site investigation and remediation activities. However, this shall not preclude the Operator from taking immediate action to protect public health or safety, the environment, wildlife, or livestock.

This Form 27 describes site conditions as currently understood by the Operator; approval of this Form 27 by ECMC is based on the site conditions accurately described herein; any changes in site conditions identified during or subsequent to the performance of the approved workplan may necessitate additional investigation or remediation which shall be described on a supplemental Form 27. This Form 27 is intended to provide basic information regarding the proposed site investigation and remediation actions, but the workplan may be more fully described in attached documentation.

Closure request is not available for an Initial Site Investigation and Remediation Workplan.

OPERATOR INFORMATION

Name of Operator: CAERUS PICEANCE LLC	Operator No: 10456	<b>Phone Numbers</b>
Address: 1001 17TH STREET #1600		Phone: (970) 778-2314
City: DENVER State: CO Zip: 80202		Mobile: (970) 778-2314
Contact Person: Jake Janicek	Email: jjanicek@qb-energy.com	

PROJECT, PURPOSE & SITE INFORMATION

PROJECT INFORMATION

Remediation Project #: 35476 Initial Form 27 Document #: 403770927

PURPOSE INFORMATION

- Rule 913.c.(1): Pit or Cuttings Trench closure.
- Rule 913.c.(2): Buried or partially buried vessel closure, which will be by removal.
- Rule 913.c.(3): Remediation of Spill and Releases pursuant to Rule 912.
- Rule 913.c.(4): Land treatment of Oily Waste pursuant to Rule 905.e.
- Rule 913.c.(5): Closure of Centralized E&P Waste Management Facilities pursuant to Rule 907.h.
- Rule 913.c.(6): Remediation of impacted Groundwater pursuant to Rule 915.e.(3).D, and the contaminant concentrations in Table 915-1.
- Rule 913.c.(7): Investigation and remediation of natural gas in soil or Groundwater.
- Rule 913.c.(8): When requested by the Director due to any potential risk to soil, Groundwater, or surface water.
- Rule 913.c.(9): Decommissioning of Oil and Gas Facilities.
- Rule 913.g: Changes of Operator.
- Rule 915.b: Request to leave elevated inorganics in situ.
- Other: Request for Closure of Remediation Project Number (RPN) 35476

SITE INFORMATION

No Multiple Facilities

Facility Type: LOCATION	Facility ID: 324235	API #: _____	County Name: GARFIELD
Facility Name: PUCKETT-66S97W 25SWSE	Latitude: 39.488379	Longitude: -108.166317	
	** correct Lat/Long if needed: Latitude: 39.488268	Longitude: -108.165945	
QtrQtr: SWSE	Sec: 25	Twp: 6S	Range: 97W Meridian: 6 Sensitive Area? Yes

SITE CONDITIONS

General soil type - USCS Classifications OH Most Sensitive Adjacent Land Use Rangeland  
Is domestic water well within 1/4 mile? No Is surface water within 1/4 mile? No  
Is groundwater less than 20 feet below ground surface? No

**Other Potential Receptors within 1/4 mile**

--

# SITE INVESTIGATION PLAN

## TYPE OF WASTE:

- E&P Waste       Other E&P Waste       Non-E&P Waste
- Produced Water       Workover Fluids
- Oil       Tank Bottoms
- Condensate       Pigging Waste
- Drilling Fluids       Rig Wash
- Drill Cuttings       Spent Filters
- Pit Bottoms
- Other (as described by EPA)

## DESCRIPTION OF IMPACT

Impacted?	Impacted Media	Extent of Impact	How Determined
No	SOILS	NA	Field Observations and Lab Analysis

## INITIAL ACTION SUMMARY

Description of initial action or emergency response measures take to abate, investigate, and/or remediate impacts associated with E&P Waste.

Please see the State of Colorado Energy and Carbon Management Commission (ECMC) Document Number (DN) 403770927 for initial actions.

Following the removal of the partially buried vault (PBV) [Serial Number (SN) 4642] at the PUCKETT-66S97W/25SWSE (Facility ID: 324235) (Puckett 34C-25) pad location (Site) four sidewalls and one base confirmation soil samples were collected from the PBV excavation footprint on June 12, 2024. A minimum of six inches of soil was first scraped back from each sampling surface prior to collection to assure representative samples were collected. All PBV confirmation soil samples were collected from areas that exhibited the greatest degree or potential degree of impact based on field observations. Two 5-point aliquot composite soil samples were collected from the soils removed from the PBV footprint. The headspace of each soil sample was field screened using a photo-ionization detector (PID) to detect for the presence or absence of volatile organic compounds (VOCs). Soils were also field characterized by a geologist for hydrocarbon odors or staining via visual and olfactory senses. A total of seven confirmation soil samples were submitted to Pace Analytical for laboratory analysis of ECMC Table 915-1 constituents.

Please see the attached Report of Work Completed (ROWC) for details regarding soil sampling activities, accompanying figures, and a discussion of the analytical results.

## PROPOSED SAMPLING PLAN

### Proposed Soil Sampling

Will soil samples be collected as part of this investigation? ( Number, type (grab/composite), analyses, and locations of samples ):

### Proposed Groundwater Sampling

Will groundwater samples be collected as part of this investigation? ( Number, analyses, and locations of samples ):

### Proposed Surface Water Sampling

Will surface water samples be collected as part of this investigation? ( Number, analyses, and locations of samples ):

### Additional Investigative Actions

Additional alternative investigative actions described in attached Site Investigation Plan ( summary ):

# SITE INVESTIGATION REPORT

## SAMPLE SUMMARY

**Soil**

Number of soil samples collected 7  
Number of soil samples exceeding 915-1 7  
Was the areal and vertical extent of soil contamination delineated? Yes  
Approximate areal extent (square feet) 650

**NA / ND**

-- Highest concentration of TPH (mg/kg) 244.8  
88  
NA Highest concentration of SAR \_\_\_\_\_  
BTEX > 915-1 No  
Vertical Extent > 915-1 (in feet) 7

**Groundwater**

Number of groundwater samples collected 0  
Was extent of groundwater contaminated delineated? Yes  
Depth to groundwater (below ground surface, in feet) \_\_\_\_\_  
Number of groundwater monitoring wells installed \_\_\_\_\_  
Number of groundwater samples exceeding 915-1 \_\_\_\_\_

Highest concentration of Benzene (µg/l) \_\_\_\_\_  
Highest concentration of Toluene (µg/l) \_\_\_\_\_  
Highest concentration of Ethylbenzene (µg/l) \_\_\_\_\_  
Highest concentration of Xylene (µg/l) \_\_\_\_\_  
Highest concentration of Methane (mg/l) \_\_\_\_\_

**Surface Water**

0 Number of surface water samples collected  
\_\_\_\_\_ Number of surface water samples exceeding 915-1  
If surface water is impacted, other agency notification may be required.

**OTHER INVESTIGATION INFORMATION**

Were impacts to adjacent property or offsite impacts identified?

\_\_\_\_\_

Were background samples collected as part of this site investigation?

A total of four site-specific background soil samples were collected from four native and undisturbed locations in accordance with ECMC Rule 915.e.(2)D. The site-specific background soil samples were collected from representative soils in each cardinal direction of the Puckett 34c-25 pad location. These background samples were submitted for analysis of Electrical Conductivity (EC), Sodium Adsorption Ratio (SAR), pH, water soluble Boron, and ECMC Table 915-1 constituents.

Was investigation derived waste (IDW) generated as part of this investigation?

Volume of solid waste (cubic yards) \_\_\_\_\_ Volume of liquid waste (barrels) \_\_\_\_\_

Is further site investigation required?

\_\_\_\_\_

**REMEDIAL ACTION PLAN**

Does this Supplemental Form 27A include changes to a previously approved Remedial Action Plan? No

**SOURCE REMOVAL SUMMARY**

Describe how source is to be removed.

There is no source associated with the project (RPN 35476).

**REMEDATION SUMMARY**

Describe how remediation of existing impacts to soil and groundwater is to be accomplished (i.e. summarize remedial action plan). Provide a brief narrative description including: technical justification, schedule for implementation, estimated time to attain NFA status, plus plans and specifications for the selected remedial action technology.

In accordance with ECMC Rule 915.e.(2)C., Caerus requests the Director to consider removing arsenic from the list of contaminants of concern (COC) used to evaluate this project for remediation success. The arsenic concentrations observed in the seven confirmation soil samples collected on June 12, 2024 ranged from 2.13 milligrams per kilogram (mg/kg) in soil sample 20240612-PUCKETT 34C-25-(BASE-PBV)@7 to 11.9 mg/kg in soil sample 20240612-PUCKETT 34C-25-(STOCK02-PBV). These arsenic exceedances are well within the arsenic concentrations observed in background soil samples associated with nearby Site, PUCKETT-66S97W 25SESE, also known as the Puckett 44C-25 (Facility ID: 324244). The Puckett 44C-25 is located approximately 0.24 miles east of the Puckett 34C-25 pad and is in the same soil map unit per the ECMC GIS Online Database, Map Unit Symbol 57 - Parachute-Rhone loams (5 - 30% slopes). Arsenic concentrations in Puckett 44C-25 background soil samples 20240612-LMBG-(PUCKETT 44C-25-E) @ 1, 20240612-LMBG-(PUCKETT 44C-25-N) @ 1, and 20240612-LMBG-(PUCKETT 44C-25-S)@1 exhibited an arsenic concentrations of 25.2, 18.8, and 53.0 mg/kg, respectively.

Please see the "Operator Comments" section of this form for a discussion of potential pathways to groundwater at the Site per ECMC Table 915-1, Footnote 7 and a requested relief of documented pH exceedances per ECMC Rule 915.e.(2)C. (E&P Waste profiling).

**Soil Remediation Summary**

In Situ

Ex Situ

- \_\_\_\_\_ Bioremediation ( or enhanced bioremediation )
- \_\_\_\_\_ Chemical oxidation
- \_\_\_\_\_ Air sparge / Soil vapor extraction
- \_\_\_\_\_ Natural Attenuation
- \_\_\_\_\_ Other \_\_\_\_\_

- \_\_\_\_\_ Excavate and offsite disposal
- \_\_\_\_\_ If Yes: Estimated Volume (Cubic Yards) \_\_\_\_\_
- \_\_\_\_\_ Name of Licensed Disposal Facility or ECMC Facility ID # \_\_\_\_\_
- \_\_\_\_\_ Excavate and onsite remediation
- \_\_\_\_\_ Land Treatment
- \_\_\_\_\_ Bioremediation (or enhanced bioremediation)
- \_\_\_\_\_ Chemical oxidation
- \_\_\_\_\_ Other \_\_\_\_\_

**Groundwater Remediation Summary**

- \_\_\_\_\_ Bioremediation ( or enhanced bioremediation )
- \_\_\_\_\_ Chemical oxidation
- \_\_\_\_\_ Air sparge / Soil vapor extraction
- \_\_\_\_\_ Natural Attenuation
- \_\_\_\_\_ Other \_\_\_\_\_

**GROUNDWATER MONITORING**

If groundwater has been impacted, describe proposed monitoring plan, including # of wells or sample points, monitoring schedule, analytical methods, points of compliance. Attach a groundwater monitoring location diagram.

# REMEDIATION PROGRESS UPDATE

## PERIODIC REPORTING

### Approved Reporting Schedule:

Quarterly    Semi-Annually    Annually    Other   Request of Closure for RPN 35476

### Request Alternative Reporting Schedule:

Semi-Annually    Annually    Other

Rule 913.e:

After initial approval of a Form 27, the Operator will provide quarterly update reports in a Supplemental Form 27 to document progress of site investigation and remediation, unless an alternative reporting schedule has been requested by the Operator and approved by the Director. The Director may request a more frequent reporting schedule based on site-specific conditions.

**Report Type:**    Groundwater Monitoring    Land Treatment Progress Report    O&M Report  
 Other \_\_\_\_\_

## Adequacy of Operator's General Liability Insurance and Financial Assurance

Describe the adequacy of the Operator's general liability insurance and Financial Assurance to fully address the anticipated costs of Remediation, including the estimated remaining cost for this project (below).

If this information has been provided on a Form 27 within the last 12 months, provide the Document Number of that form.

Per Rule 705.b, and in line with guidance laid out in the SBAP, Caerus has general liability insurance in the amount of \$1M, and Caerus has umbrella insurance, which sits over the general liability insurance in the amount of \$75M. The umbrella and general liability insurance covers property damage, bodily injury to third parties, and sudden or accidental pollution under a combined \$76M.

Operator anticipates the remaining cost for this project to be: \$ 0 \_\_\_\_\_

## WASTE DISPOSAL INFORMATION

Was E&P waste generated as part of this remediation? No

Describe beneficial use, if any, of E&P Waste derived from this remediation project:

Volume of E&P Waste (solid) in cubic yards \_\_\_\_\_

E&P waste (solid) description \_\_\_\_\_

ECMC Disposal Facility ID #, if applicable: \_\_\_\_\_

Non-ECMC Disposal Facility: \_\_\_\_\_

Volume of E&P Waste (liquid) in barrels \_\_\_\_\_

E&P waste (liquid) description \_\_\_\_\_

ECMC Disposal Facility ID #, if applicable: \_\_\_\_\_

Non-ECMC Disposal Facility: \_\_\_\_\_

# REMEDIATION COMPLETION REPORT

## REMEDIATION COMPLETION SUMMARY

Is this a Final Closure Request for this Remediation Project? Yes

If YES:

Compliant with Rule 913.h.(1).

Compliant with Rule 913.h.(2).

Compliant with Rule 913.h.(3).

Do all soils meet Table 915-1 standards? Yes

Does the previous reply indicate consideration of background concentrations? Yes

Does Groundwater meet Table 915-1 standards? Yes

Is additional groundwater monitoring to be conducted? \_\_\_\_\_

Operator shall comply with the ECMC 1000-Series Reclamation Requirements for all impacted and disturbed areas.

## RECLAMATION PLAN

### RECLAMATION PLANNING

Describe reclamation plan. Discuss existing and new grade recontouring; method and testing of compaction alleviation; and reseeding program, including location of new seed, seed mix and noxious weed prevention. Attach diagram or drawing.

Any excavation associated with this project will be backfilled to match existing pad elevation in accordance with the ECMC 1000-Series Reclamation Requirements.

Is the described reclamation complete? \_\_\_\_\_

Does the reclamation described herein constitute interim or final reclamation of the Oil and Gas Location?

Interim

Final

Did the Surface Owner provide the seed mix? \_\_\_\_\_

If YES, does the seed mix comply with local soil conservation district recommendations? \_\_\_\_\_

Did the local soil conservation district provide the seed mix? \_\_\_\_\_

### SITE RECLAMATION DATES

Proposed date of commencement of Reclamation. \_\_\_\_\_

Proposed date of completion of Reclamation. \_\_\_\_\_

## IMPLEMENTATION SCHEDULE

Per Rule 913.d.(2): Any change from the approved implementation schedule will be requested at least 14 days in advance, and the Operator may not make the change without the Director's approval.

### PRIOR DATES

Date of Surface Owner notification/consultation, if required. \_\_\_\_\_

Actual Spill or Release date, or date of discovery. \_\_\_\_\_

### SITE INVESTIGATION DATES

Date of Initial Actions described in Site Investigation Plan (start date). 05/15/2024

Proposed site investigation commencement. 05/15/2024

Proposed completion of site investigation. 06/12/2024

### REMEDIAL ACTION DATES

Proposed start date of Remediation. \_\_\_\_\_

Proposed date of completion of Remediation. \_\_\_\_\_

Per Rule 913.d.(2): Any change from the approved implementation schedule will be requested at least 14 days in advance, and the Operator may not make the change without the Director's approval.

Change from approved implementation schedule per Rule 913.d.(2).

Basis for change in implementation schedule:

\_\_\_\_\_

## OPERATOR COMMENT

Per ECMC Rule 915.e.(2)C., Caerus requests relief of pH as a COC. Although documented as an exceedance in five out of the seven PBV confirmation soil samples with pH values ranging from 8.46 standard units (SU) in soil sample 20240612-PUCKETT 34C-25-(NW-PBV) @ 6 to 8.88 SU in soil sample 20240612-PUCKETT 34C-25-(BASE-PBV)@7. These values are greater than the produced water sample 20240709-LMSOURCE-(238-25-T) collected from nearby pad location PUCKETT 238-25 -6S97W/25SESW (Facility ID: 264431) on July 9, 2024. The Puckett 34C-25 and Puckett 238-25 locations are located approximately 0.32 miles distance from one another, and both produce from the WILLIAMS FORK – CAMEO geologic formations. As these locations receive fluids from the same geologic formations, the produced water sample from the Puckett 238- location should be considered representative of the produced water at the Puckett 34C-25 location. Figure 6 included in the attached ROWC depicts the geographical proximity of the respective locations to one another.

In accordance with ECMC Table 915-1, Footnote 7, Caerus requests that RPN 35476 be evaluated under ECMC Residential Soil Screening Level Concentrations (RSSLCs) due to the observations and facts provided below as it relates to potential pathways to groundwater associated with the Puckett 34C-25 location.

- 1) No groundwater was/has been observed infiltrating, pooling, or standing within the excavation footprint at any point during the excavation or sample collection activities.
- 2) No hydrocarbon impacts were observed greater than ECMC RSSLCs as confirmed through laboratory analytical results of collected confirmation soil samples.
- 3) Nearby monitoring well (39.483608, -108.166972), Department of Water Resources (DWR) Well Permit Number 271289, is located 0.31 miles south of the Puckett 34C-25 and at a comparable elevation, 8,165 feet amsl. The depth to water documented on the well permit is 310 feet below ground surface (bgs).

All soils represented by the collected PBV decommissioning confirmation soil samples were within ECMC Table 915-1 RSSLCs or within respective background concentrations per ECMC Rule 915.e.(2)C. (E&P Waste profiling and process knowledge) and ECMC Table 915-1, Footnote 1.

Based on the information presented in the attached ROWC and in DN 403867948 Caerus requests the Director to assign a "No Further Action" designation to RPN 35476 which is associated with the removal of PBV (SN 4642) at the Puckett 34C-25 (Facility ID: 324235) pad location.

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

Signed: Jake Janicek

Title: EHS Specialist

Submit Date: 10/22/2024

Email: jjanicek@qb-energy.com

Based on the information provided herein, this Application for Site Investigation and Remediation Workplan complies with ECMC Rules and applicable orders and is hereby approved.

ECMC Approved: Steven Arauza

Date: 12/18/2024

Remediation Project Number: 35476

## COA Type

## Description

COA Type	Description
1 COA	Based on review of information presented it appears that no further action is necessary at this time, and ECMC approves the closure request. However, should future conditions at the site indicate contaminant concentrations in soils exceeding ECMC standards or if surface and/or ground water is found to be impacted, then further investigation and/or remediation activities will be required at the site. In addition, the non-working surface area disturbed by the remediation activity shall be reclaimed in accordance with the 1000 Series Reclamation Rules including the establishment of vegetative cover on non-cropland and successful growth on cropland. Landowner must approve reclamation of cropland.

## ATTACHMENT LIST

Upon approval, the approved Form 27 and all listed attachments will be indexed to the Remediation Project file. Only the approved Form 27 will also be indexed to the related Facilities.

Att Doc Num	Name
403867948	INVESTIGATION/REMEDATION WORKPLAN (SUPPLEMENTAL)
403965869	ANALYTICAL RESULTS
403965871	ANALYTICAL RESULTS
403965873	ANALYTICAL RESULTS
403965874	ANALYTICAL RESULTS
403965875	ANALYTICAL RESULTS
403965877	SITE INVESTIGATION REPORT

Total Attach: 8 Files

### General Comments

<u>User Group</u>	<u>Comment</u>	<u>Comment Date</u>
		Stamp Upon Approval

Total: 0 comment(s)