

State of Colorado  
Energy & Carbon Management Commission

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Document Number:

403522213

Receive Date:

02/13/2024

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 COGCC 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	Phone Numbers Phone: (970) 778-2314 Mobile: (970) 778-2314
Address: 1001 17TH STREET #1600		
City: DENVER State: CO Zip: 80202		
Contact Person: Jake Janicek	Email: jjanicek@caerusoilandgas.com	

### PROJECT, PURPOSE & SITE INFORMATION

#### PROJECT INFORMATION

Remediation Project #: 30180 Initial Form 27 Document #: 403424964

#### 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: \_\_\_\_\_

#### SITE INFORMATION

No Multiple Facilities

Facility Type: LOCATION	Facility ID: 324200	API #: _____	County Name: GARFIELD
Facility Name: PUCKETT-66S97W 25SESW	Latitude: 39.488343	Longitude: -108.172061	
** correct Lat/Long if needed: Latitude: _____		Longitude: _____	
QtrQtr: SESW	Sec: 25	Twp: 6S	Range: 97W Meridian: 6 Sensitive Area? No

#### SITE CONDITIONS

General soil type - USCS Classifications OL 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**

Unnamed seasonal drainage located 400 feet north.

## 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
Yes	SOILS	Undetermined	Soil sampling and laboratory 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.

On June 27, 2023, Energy & Carbon Management Commission (ECMC) Form 27 Document 403424964 was submitted as notification to remove the partially buried vessel (PBV) and to open Remediation Project 30180.

On August 7, 2023, initial sampling was conducted to characterize the excavation following the removal of the PBV. Five soil samples were collected: one from the base of the excavation at 8 feet below ground surface (bgs) and one from each sidewall at 5 feet bgs. Analytical results of excavation soil samples indicate compliance with ECMC Table 915-1 Residential Soil Screening Levels (RSSLs) except for pH, arsenic, and hexavalent chromium.

As part of the investigation, produced water tank samples obtained from the Mesa 17 (Location ID 335527) and the Starkey 7 (Location ID 335093) well pads were referenced for source characterization. The Mesa 17 and Starkey 7 are located 1.2 miles north and 1.25 miles southeast, respectively, and produce from the same formation (Williams Fork-Cameo) as the Location. Analytical results indicate pH levels of 6.70 and 6.99, and did not detect arsenic. See attached Report of Work Completed (ROWC) for additional details.

### 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 ):

Additional sampling is proposed to delineate the extent of hexavalent chromium impacts north of the PBV excavation. Background samples may be collected to characterize native concentrations of inorganics at the Location. Prior to additional sampling, Caerus requests a reduced analyte suite that includes only those analytes (hexavalent chromium) that soil sample 20230807-PUCKETT 238-25-(NW)@5 exhibited exceedances for. Proposed sample locations are illustrated on the Initial Investigation diagram associated with the attached ROWC.

Please see the "Remediation Summary" Section of this form for plans on how Caerus plans to address pH and arsenic exceedances.

#### 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 5  
Number of soil samples exceeding 915-1 5  
Was the areal and vertical extent of soil contamination delineated? No  
Approximate areal extent (square feet) 100

### **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         

### **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.

### **NA / ND**

-- Highest concentration of TPH (mg/kg) 169  
-- Highest concentration of SAR 0.43  
BTEX > 915-1 No  
Vertical Extent > 915-1 (in feet) 8

         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)         

## **OTHER INVESTIGATION INFORMATION**

☐ Were impacts to adjacent property or offsite impacts identified?

☐ Were background samples collected as part of this site investigation?

☐ 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?

See Proposed Sampling section and the attached ROWC for additional site investigation details.

## **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.

The PBV was decommissioned and removed from the Location.

### **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.

Although pH and arsenic concentrations exceeding Table 915-1 RSSLs are present in the investigation area, source water characterization data indicates these levels are not reasonably attributed to oil and gas production at the Location. Considering the common production zone and consistent data derived from the Williams Fork-Cameo formation north and southeast of the Location, it is reasonable to assume the results are representative of source characterization at the Location. Based on this information, Caerus requests consideration of Rule 915.e.(2).C to remove pH and arsenic as constituents of concern.

Although hexavalent chromium concentrations exceeding Table 915-1 RSSLs are present in the investigation area, all but one exceedance at the north sidewall (1.02 mg/kg) is below the laboratory Reported Detection Limit (RDL), or Practical Quantitation Limit (PQL), of 1.0 mg/kg. Therefore, Caerus requests use of Table 915-1 Footnote 9 to substitute the laboratory RDL of 1.0 mg/kg as an alternative screening level for hexavalent chromium.

Assuming the proposed requests are approved, hexavalent chromium remains undelineated north of the investigation area. Caerus proposes to conduct additional investigation to delineate horizontal impacts. Prior to additional investigation, Caerus requests a reduced analyte list of hexavalent chromium. See Proposed Sampling section and attached ROWC for additional details.

## Soil Remediation Summary

☐ In Situ

\_\_\_\_\_ Bioremediation ( or enhanced bioremediation )

\_\_\_\_\_ Chemical oxidation

\_\_\_\_\_ Air sparge / Soil vapor extraction

\_\_\_\_\_ Natural Attenuation

\_\_\_\_\_ Other \_\_\_\_\_

☐ Ex Situ

\_\_\_\_\_ Excavate and offsite disposal

\_\_\_\_\_ If Yes: Estimated Volume (Cubic Yards) \_\_\_\_\_

\_\_\_\_\_ Name of Licensed Disposal Facility or COGCC 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 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 Q3 Status Update

### 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: \$ 5000

### 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

COGCC Disposal Facility ID #, if applicable:

Non-COGCC Disposal Facility:

Volume of E&P Waste (liquid) in barrels

E&P waste (liquid) description

COGCC Disposal Facility ID #, if applicable:

Non-COGCC Disposal Facility:

## REMEDIATION COMPLETION REPORT

### REMEDIATION COMPLETION SUMMARY

Is this a Final Closure Request for this Remediation Project? No

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?

Does the previous reply indicate consideration of background concentrations?

Does Groundwater meet Table 915-1 standards?

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

Operator shall comply with the COGCC 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 disturbance will be returned to the active working surface of the well pad for continued operation. When the site is decommissioned at a later date, it will be reclaimed in accordance with 1000 Series regulations.

Is the described reclamation complete? No

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). 08/07/2023

Proposed site investigation commencement. 08/07/2023

Proposed completion of site investigation. \_\_\_\_\_

### **REMEDIAL ACTION DATES**

Proposed start date of Remediation. 08/07/2023

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**

Division of Water Resources (DWR) Well Permit 271290, located approximately 0.3 miles northeast of the Location, lists depth to groundwater at 260 feet bgs. The well sits approximately 100 feet lower in elevation than the Location. Based on this information, it is estimated that depth to groundwater at the Location is greater than 100 feet bgs.

Due to winter conditions at the location that are expected to last through the first and second quarters of 2024, Caerus requests a reduced reporting frequency of semi-annual.

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: 02/13/2024

Email: jjanicek@caerusoilandgas.com

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

COGCC Approved: Steven Arauza

Date: 03/01/2024

Remediation Project Number: 30180

## **COA Type**

## **Description**

	The Operator's request to utilize the laboratory RDL (1.0 mg/kg) instead of the Table 915-1 value of (0.3 mg/kg) for hexavalent chromium per Table 915-1 Footnote 9 is NOT approved at this time due to the fact that background conditions for hexavalent chromium have not been established.
	Collect additional background samples from native, undisturbed soils to establish appropriate background levels for hexavalent chromium.
1 COA	

## **Attachment Check 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**

403522213	INVESTIGATION/REMEDIATION WORKPLAN (SUPPLEMENTAL)
403663465	SITE INVESTIGATION REPORT
403704853	FORM 27-SUPPLEMENTAL-SUBMITTED

Total Attach: 3 Files

## **General Comments**

## **User Group**

## **Comment**

## **Comment Date**

Environmental	Based on the information provided under Operator Comment, the Operator's request for a semi-annual reporting frequency is conditionally approved.	03/01/2024
Environmental	Based on the information provided for soil samples (doc #403663465), the Operator's request for a reduced analyte suite of hexavalent chromium only is conditionally approved.	03/01/2024

Total: 2 comment(s)