

State of Colorado  
Energy & Carbon Management Commission1120 Lincoln Street, Suite 801, Denver, Colorado 80203  
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Document Number:

403804499

Receive Date:

07/02/2024

Report taken by:

Steven Arauza

## Site Investigation and Remediation Workplan (Initial 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	Phone Numbers
Address: 1001 17TH STREET #1600		Phone: (970) 640-6919
City: DENVER	State: CO	Zip: 80202
Contact Person: Blair Rollins	Email: brollins@caerusoilandgas.com	Mobile: (970) 640-6919

## PROJECT, PURPOSE &amp; SITE INFORMATION

## PROJECT INFORMATION

Remediation Project #: 36196 Initial Form 27 Document #: 403804499

## 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

Yes Multiple Facilities

Facility Type: TANK BATTERY	Facility ID: 486170	API #: _____	County Name: GARFIELD
Facility Name: Railsback Water Facility	Latitude: 39.487561	Longitude: -107.690850	
** correct Lat/Long if needed: Latitude: _____		Longitude: _____	
QtrQtr: NENW	Sec: 32	Twp: 6S	Range: 92W Meridian: 6 Sensitive Area? No

Facility Type: SPILL OR RELEASE	Facility ID: 486172	API #: _____	County Name: GARFIELD
Facility Name: Railsback Water Facility Release	Latitude: 39.487655	Longitude: -107.690884	
** correct Lat/Long if needed: Latitude: _____		Longitude: _____	
QtrQtr: NENW	Sec: 32	Twp: 6S	Range: 92W Meridian: 6 Sensitive Area? Yes

## **SITE CONDITIONS**

General soil type - USCS Classifications CL

Most Sensitive Adjacent Land Use Non Crop land

Is domestic water well within 1/4 mile? Yes

Is surface water within 1/4 mile? Yes

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
Yes	SOILS	1000'x5'x5' Approximately	Visual inspection, field screening, analytical results

### INITIAL ACTION SUMMARY

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

Caerus operations control center received a low-liquid level alarm on March 1st from the tank battery at the Railsback produced water offload facility. Upon inspection it was determined that a release of produced water and parafin occurred around the tank battery area of the facility. Emergency response procedures were implemented and proper notifications were completed. The release surfaced at and around the tank battery and flowed along the perimeter ditch and north along the ditch on the west side of CR 315. Recovery efforts were completed on March 1st to control and recover standing liquid using hydrovac truck equipment. Additional hydrovac cleaning activities were completed on March 2nd to ensure standing liquid or impacted soil was not inadvertently overlooked during the cleanup activity.

### 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 ):

Soil samples were collected from the point of release (POR) near the tank battery, both from surface and from advancement of one characterization soil boring. Soil samples also collected from the spill path as it traveled north paralleling CR 315. Details of site investigation including all field screening and analytical results are included in the attached report of work completed.

#### 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 ):

Out of an abundance of caution during initial spill response activities, surface water samples were collected from Mamm Creek (up and down gradient) and from two surface water / stormwater collection ponds. Sample results are included in the attached report of work completed.

### Additional Investigative Actions

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

Additional impacted soil removal at the POR and along the spill path to take place in 2024.

## SITE INVESTIGATION REPORT

### SAMPLE SUMMARY

#### Soil

Number of soil samples collected      43

Number of soil samples exceeding 915-1      20

#### NA / ND

-- Highest concentration of TPH (mg/kg)      11850

-- Highest concentration of SAR      42.1

Was the areal and vertical extent of soil contamination delineated? No

BTEX > 915-1 Yes

Approximate areal extent (square feet) 5000

Vertical Extent > 915-1 (in feet) 18

#### Groundwater

Number of groundwater samples collected 0

Highest concentration of Benzene (µg/l) \_\_\_\_\_

Was extent of groundwater contaminated delineated? No

Highest concentration of Toluene (µg/l) \_\_\_\_\_

Depth to groundwater (below ground surface, in feet) \_\_\_\_\_

Highest concentration of Ethylbenzene (µg/l) \_\_\_\_\_

Number of groundwater monitoring wells installed \_\_\_\_\_

Highest concentration of Xylene (µg/l) \_\_\_\_\_

Number of groundwater samples exceeding 915-1 \_\_\_\_\_

Highest concentration of Methane (mg/l) \_\_\_\_\_

#### Surface Water

4 Number of surface water samples collected

0 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?

Three (3) background soil samples were collected from 2 to 3 ft-bgs in undisturbed native soil to the northwest, west, and southwest of the release area. The locations of these samples are shown in Figure 1 of the attached report of work completed.

☐ 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?

Additional impacted soil removal at the POR and along the spill path to take place in 2024.

## REMEDIAL ACTION PLAN

### SOURCE REMOVAL SUMMARY

Describe how source is to be removed.

Impacted source soil was and will be excavated and/or hydro-excavated until ECMC standards have been achieved. Impacted soil will be staged on location for characterization, or hauled to Greenleaf Environmental Services for disposal depending on field screening and sampling results.

### REMEDIATION 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.

Impacted source soil was and will be excavated and/or hydro-excavated until ECMC standards have been achieved. Impacted soil will be staged on location for characterization, or hauled to Greenleaf Environmental Services for disposal depending on field screening and sampling results. If additional remediation strategies are required, Caerus will submit a supplemental Form 27 with proposed actions.

### Soil Remediation Summary

☐ In Situ

☒ Ex Situ

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

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

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

If Yes: Estimated Volume (Cubic Yards) 1000

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

Name of Licensed Disposal Facility or ECMC Facility ID # \_\_\_\_\_

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

Yes \_\_\_\_\_ Excavate and onsite remediation

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

No \_\_\_\_\_ Land Treatment

No \_\_\_\_\_ Bioremediation (or enhanced bioremediation)

No	Chemical oxidation
Yes	Other      Staging and Table 915-1 sampling

**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.

In the event that groundwater is encountered during release investigation, the CECMC will be notified and a representative sample will be collected for laboratory analysis.

## 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 2024 Initial Remediation 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: \$ 50000

### WASTE DISPOSAL INFORMATION

Was E&P waste generated as part of this remediation? Yes

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

None

Volume of E&P Waste (solid) in cubic yards 300

E&P waste (solid) description Hydrocarbon Impacted Soil

ECMC Disposal Facility ID #, if applicable:

Non-ECMC Disposal Facility: Greenleaf Environmental Services

Volume of E&P Waste (liquid) in barrels 0

E&P waste (liquid) description

ECMC Disposal Facility ID #, if applicable:

Non-ECMC Disposal Facility:

# 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.

The working surface of the location will be active once cleanup is completed. The non working portions of the impacted surface will be reclaimed following ECMC 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. 03/01/2024

Actual Spill or Release date, or date of discovery. 03/01/2024

## SITE INVESTIGATION DATES

Date of Initial Actions described in Site Investigation Plan (start date). 03/01/2024

Proposed site investigation commencement. 03/01/2024

Proposed completion of site investigation. 06/30/2024

## REMEDIAL ACTION DATES

Proposed start date of Remediation. 03/01/2024

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

Initial Remediation update for CECMC Release #486172.

Based on analytical results presented in the attached report of work completed, Caerus is requesting:

1. Approval to apply CECMC Table 915-1 Footnote 1 to adjust the threshold for pH to the background value of 9.64, based on background sampling outlined in the attached report of work completed.
2. Approval to apply CECMC Table 915-1 Footnote 11 to adjust the threshold for arsenic to 11 mg/kg (8.8 mg/kg background x 1.25), based on background sampling outlined in the attached report of work completed.
3. Approval to proceed under a reduced analyte suite including TPH (GRO, DRO, ORO), BTEX, 1,2,4-trimethylbenzene, 1,3,5-trimethylbenzene, PAHs, SAR, EC, and pH.

Caerus proposes to excavate the impacted spill path that went off the location surface. Caerus will excavate the material and stage the material to allow for adequate characterization sampling. Caerus will collect soil samples from the excavated spill path to demonstrate vertical and horizontal compliance along the off-location spill path with CECMC Table 915-1 Residential soil standards.

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

Signed: Blair Rollins

Title: Environmental Specialist

Submit Date: 07/02/2024

Email: brollins@caerusoilandgas.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: 07/18/2024

Remediation Project Number: 36196

## COA Type

## Description

	Operator shall collect soil samples from areas most likely to be impacted and shall collect an appropriate number of representative soil samples to delineate the horizontal and vertical extents of contamination, per Rule 915.e.(2).B.
	Submit Supplemental eForm 19 to request closure of Spill/Release ID #486172. Supplemental report shall comply with outstanding COAs, indicate that work is proceeding under an approved eForm 27 and shall reference the Remediation Project number assigned upon approval of this report.
	Per Rule 913.b.(2), the Operator will conduct sampling and analysis of soil, and groundwater--if encountered, to determine the horizontal and vertical extent of any contamination in excess of the cleanup concentrations in Table 915-1 for soil and groundwater. The Operator shall analyze samples for the approved analyte list and shall compare analytical results for site investigation samples to the Table 915-1 Residential Soil Screening Level Concentrations.
3 COAs	

## 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

403804499	FORM 27-INITIAL-SUBMITTED
403842742	SITE INVESTIGATION REPORT

Total Attach: 2 Files

## General Comments

### User Group

### Comment

### Comment Date

Environmental	Based on the information provided, the Operator's request to apply CECMC Table 915-1 Footnote 1 to adjust the threshold for pH to the background value of 9.64, based on background sampling outlined in the attached report of work completed is conditionally approved.	07/18/2024
Environmental	Based on the information provided, the Operator's request for a reduced analyte suite of TPH (GRO, DRO, ORO), BTEX, 1,2,4-trimethylbenzene, 1,3,5-trimethylbenzene, PAHs, SAR, EC, and pH is conditionally approved.	07/18/2024

Environmental	<p>The attached report (doc #403805276) contains a misinterpretation of the Table 915-1 concentration level for TPH throughout. The Table 915-1 cleanup concentration level for TPH refers to total soil TPH (total volatile and extractable hydrocarbons). This means that the TPH level for comparison to Table 915-1 for any given sample is the total of the concentrations for GRO, DRO, and ORO. The attached report treats GRO, DRO, and ORO individually. Furthermore, Table 1 represents GRO, DRO, and ORO individually, yet any exceedance of Table 915-1 TPH for a specific sample should have all three constituents highlighted. For example, the sample reported for the DITCH-SS12@3 location has GRO highlighted but not DRO and ORO.</p> <p>For future submittals, Operator will ensure that TPH is treated as the total soil TPH, not as individual GRO, DRO, and ORO components for purposes of reporting exceedances in reports and associated tables.</p>	06/24/2024
Environmental	ECMC updated Site Information to capture ECMC Spill/Release Facility ID referenced under Operator Comment.	06/24/2024

Total: 4 comment(s)