

State of Colorado  
Energy & Carbon Management Commission

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403566554  
Receive Date:  
10/26/2023  
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	<b>Phone Numbers</b>
Address: 1001 17TH STREET #1600		Phone: (970) 285-2925
City: DENVER State: CO Zip: 80202		Mobile: (970) 640-6919
Contact Person: Blair Rollins	Email: brollins@caerusoilandgas.com	

PROJECT, PURPOSE & SITE INFORMATION

PROJECT INFORMATION

Remediation Project #: 29498 Initial Form 27 Document #: 403377260

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: PIT	Facility ID: 293899	API #: _____	County Name: GARFIELD
Facility Name: CHEVRON 18-44D	Latitude: 39.513890	Longitude: -108.138900	
** correct Lat/Long if needed: Latitude: _____		Longitude: _____	
QtrQtr: NWNW	Sec: 20	Twp: 6S	Range: 96W Meridian: 6 Sensitive Area? No
Facility Type: SPILL OR RELEASE	Facility ID: 483471	API #: _____	County Name: GARFIELD
Facility Name: D20 Gas Lateral	Latitude: 39.513903	Longitude: -108.138574	
** correct Lat/Long if needed: Latitude: _____		Longitude: _____	
QtrQtr: NWNW	Sec: 20	Twp: 6S	Range: 96W Meridian: 6 Sensitive Area? No

## SITE CONDITIONS

General soil type - USCS Classifications SM

Most Sensitive Adjacent Land Use Non-cropland

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:

- |  |  |  |
|--|--|--|
| <input checked="" type="checkbox"/> E&P Waste      | <input type="checkbox"/> Other E&P Waste             | <input type="checkbox"/> Non-E&P Waste |
| <input checked="" type="checkbox"/> Produced Water | <input type="checkbox"/> Workover Fluids             | _____                                  |
| <input type="checkbox"/> Oil                       | <input type="checkbox"/> Tank Bottoms                |  |
| <input type="checkbox"/> Condensate                | <input type="checkbox"/> Pigging Waste               |  |
| <input type="checkbox"/> Drilling Fluids           | <input type="checkbox"/> Rig Wash                    |  |
| <input checked="" type="checkbox"/> Drill Cuttings | <input type="checkbox"/> Spent Filters               |  |
|  | <input type="checkbox"/> Pit Bottoms                 |  |
|  | <input type="checkbox"/> Other (as described by EPA) | _____                                  |

### DESCRIPTION OF IMPACT

Impacted?	Impacted Media	Extent of Impact	How Determined
Yes	SOILS	To be determined	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.

Please refer to ECMC Document Numbers 403263316, 403273091, 403377260, and 403430872 for initial actions taken in support of this project. Additional initial investigation activities can be found within the attached report of work completed included in this submittal document.

### 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 ):

Caerus is in the process of determining the extent of contamination through field investigation and sample collection. Caerus will continue to update the ECMC on future activities through supplemental Form 27 documentation.

#### Proposed Groundwater Sampling

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

In the event that groundwater is encountered, Caerus will immediately notify the ECMC and attempt to collect a representative sample for analysis of the ECMC Table 915-1 standards.

#### 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 ):

Caerus is in the process of determining the extent of contamination for both the spill and pit through field investigation and sample collection. Caerus will continue to update the ECMC on future activities through supplemental Form 27 documentation.

# SITE INVESTIGATION REPORT

## SAMPLE SUMMARY

### Soil

Number of soil samples collected 46

Number of soil samples exceeding 915-1 46

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

Approximate areal extent (square feet) 11000

### NA / ND

-- Highest concentration of TPH (mg/kg) 2401.85

-- Highest concentration of SAR 37.1

BTEX > 915-1 No

Vertical Extent > 915-1 (in feet) 17

### Groundwater

Number of groundwater samples collected 0

Was extent of groundwater contaminated delineated? No

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?

Background soil samples were collected in support of this project and are included in the attached report.

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

Volume of solid waste (cubic yards) 5000

Volume of liquid waste (barrels) 0

Is further site investigation required?

Caerus has determined the extent of hydrocarbon contamination associated with the project. Caerus requests to backfill the excavation using the stockpiled material and imported material to recontour and begin the interim reclamation process of the area. Caerus will delineate the existing extent of contamination for EC, SAR, and pH using an environmental drilling rig once the backfill and contouring has been completed. Once the extent of contamination for EC, SAR, and pH is determined, Caerus will prepare a CECMC 915.b. reclamation plan for the site.

## REMEDIAL ACTION PLAN

Does this Supplemental Form 27A include changes to a previously approved Remedial Action Plan? Yes

### SOURCE REMOVAL SUMMARY

Describe how source is to be removed.

Caerus has determined the extent of hydrocarbon contamination associated with the project. Caerus requests to backfill the excavation using the stockpiled material and imported material to recontour and begin the interim reclamation process of the area. Caerus will delineate the existing extent of contamination for EC, SAR, and pH using an environmental drilling rig once the backfill and contouring has been completed. Once the extent of contamination for EC, SAR, and pH is determined, Caerus will prepare a CECMC 915.b. reclamation plan for the site.

### REMEDICATION 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.

Caerus has determined the extent of hydrocarbon contamination associated with the project. Caerus requests to backfill the excavation using the stockpiled material and imported material to recontour and begin the interim reclamation process of the area. Caerus will delineate the existing extent of contamination for EC, SAR, and pH using an environmental drilling rig once the backfill and contouring has been completed. Once the extent of contamination for EC, SAR, and pH is determined, Caerus will prepare a CECMC 915.b. reclamation plan for the site.

**Soil Remediation Summary**

In Situ

Ex Situ

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

- Yes \_\_\_\_\_ Excavate and offsite disposal
- \_\_\_\_\_ If Yes: Estimated Volume (Cubic Yards) \_\_\_\_\_ 5000
- \_\_\_\_\_ 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.

In the event that groundwater is encountered during this project, the ECMC will be immediately notified and appropriate samples will be collected and analyzed for the ECMC Table 915-1 standards.

# 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 2023 REM 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: \$ 100000

## 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:

Volume of E&P Waste (solid) in cubic yards 5000

E&P waste (solid) description Pit material

COGCC Disposal Facility ID #, if applicable:

Non-COGCC Disposal Facility: Greenleaf Environmental Facility

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

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.

Caerus has determined the extent of hydrocarbon contamination associated with the project. Caerus requests to backfill the excavation using the stockpiled material and imported material to recontour and begin the interim reclamation process of the area. Caerus will delineate the existing extent of contamination for EC, SAR, and pH using an environmental drilling rig once the backfill and contouring has been completed. Once the extent of contamination for EC, SAR, and pH is determined, Caerus will prepare a CECMC 915.b. reclamation plan for the site.

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? Yes

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

Did the local soil conservation district provide the seed mix? No

### SITE RECLAMATION DATES

Proposed date of commencement of Reclamation. 11/01/2023

Proposed date of completion of Reclamation. 01/02/2024

## 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). 02/17/2023

Proposed site investigation commencement. 02/18/2023

Proposed completion of site investigation. 07/01/2023

### REMEDIAL ACTION DATES

Proposed start date of Remediation. 07/01/2023

Proposed date of completion of Remediation. 10/31/2023

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

Caerus has determined the extent of hydrocarbon contamination associated with the project. Caerus requests to backfill the excavation using the stockpiled material and imported material to recontour and begin the interim reclamation process of the area. Caerus will delineate the existing extent of contamination for EC, SAR, and pH using an environmental drilling rig once the backfill and contouring has been completed. Once the extent of contamination for EC, SAR, and pH is determined, Caerus will prepare a CECMC 915.b. reclamation plan for the site.

Caerus requests to utilize a reduced analyte suite for the project to include EC, SAR, and pH following CECMC Rule 915.e.(2).C. as all other Table 915-1 contaminants of concern have been removed from the project area.

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

Signed: Blair Rollins

Title: EHS Specialist

Submit Date: 10/26/2023

Email: brollins@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: 10/26/2023

Remediation Project Number: 29498

## COA Type

## Description

	<p>The attached report (doc #403573163) states that Rule 915.b allows for Operator to leave materials with elevated concentrations of EC, SAR, or pH in situ. This information is not entirely accurate. Rule 915.b allows the Operator to request to leave elevated concentrations of EC, SAR, or pH in situ subject to review by the ECOM Reclamation unit.</p> <p>The Operator will conduct complete horizontal and vertical delineation of remaining EC, SAR, and pH exceedances prior to submitting a Rule 915.b request.</p> <p>Depending on the outcome of the request, additional remediation may be required.</p>
	<p>Based on the information provided for background soil samples (doc #403573163), the Operator's request to backfill the excavation is NOT approved at this time due to documented exceedances of EC, SAR, pH, and benzo(a)pyrene in stockpile samples.</p> <p>Operator shall collect sample(s) from comparable, nearby non-impacted native soil for purposes of establishing background soil conditions including pH, electrical conductivity (EC) and sodium adsorption ratio (SAR), per Rule 915.e.(2).D.</p> <p>The stockpiled material documented in the attached report (doc #403573163) is unsuitable for beneficial reuse until background inorganic conditions are clearly established.</p>
2 COAs	

## 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

403566554	FORM 27-SUPPLEMENTAL-SUBMITTED
403573163	SITE INVESTIGATION REPORT

Total Attach: 2 Files

## General Comments

### User Group

### Comment

### Comment Date

Environmental	Based on the information provided for confirmation soil samples (doc #403573163), the Operator's request for a reduced analyte suite of EC, SAR, and pH is conditionally approved.	10/26/2023
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Total: 1 comment(s)

Date Run: 10/26/2023 Doc [#403566554]

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