

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:
403737654

Receive Date:
04/18/2024

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: <u>CAERUS PICEANCE LLC</u>	Operator No: <u>10456</u>	Phone Numbers
Address: <u>1001 17TH STREET #1600</u>		Phone: <u>(970) 285-2925</u>
City: <u>DENVER</u> State: <u>CO</u> Zip: <u>80202</u>		Mobile: <u>(970) 640-6919</u>
Contact Person: <u>Blair Rollins</u>	Email: <u>brollins@caerusoilandgas.com</u>	

PROJECT, PURPOSE & SITE INFORMATION

PROJECT INFORMATION

Remediation Project #: 29222 Initial Form 27 Document #: 403336688

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: <u>LOCATION</u>	Facility ID: <u>334587</u>	API #: _____	County Name: <u>GARFIELD</u>
Facility Name: <u>GMR-66S93W 33SESE</u>	Latitude: <u>39.478120</u>	Longitude: <u>-107.773690</u>	
** correct Lat/Long if needed: Latitude: _____		Longitude: _____	
QtrQtr: <u>SESE</u>	Sec: <u>33</u>	Twps: <u>6S</u>	Range: <u>93W</u> Meridian: <u>6</u> Sensitive Area? <u>Yes</u>

SITE CONDITIONS

General soil type - USCS Classifications SC Most Sensitive Adjacent Land Use Non-Cropland

Is domestic water well within 1/4 mile? Yes 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

Ramsey Gulch, an intermittent drainage, is located 0.35 miles north of the Location. Multiple occupied structures and domestic wells are present 0.3 miles north, south, southeast, and southwest of the Location.

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	To be determined	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 December 1, 2022, the operator noticed liquids coming to the surface near the dumpline. A pressure test was completed, confirming a line failure. An unknown volume of produced water and condensate was released from the dumpline. The release was reported via ECMC Form 19 Document 403246841 to open Spill/Release Point ID 483402. ECMC Form 27 Document 403336688 was later submitted to open Remediation Project 29222.

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 will be collected as needed to delineate the vertical and horizontal extent of soil impacts. Background samples may be collected to characterize native levels of inorganic constituents at the Location. Soil samples will be analyzed for the approved reduced analyte list of total petroleum hydrocarbons (TPH), xylenes, 1,2,4 trimethylbenzene, 1,3,5 trimethylbenzene, naphthalene, sodium adsorption ratio (SAR), pH, boron, arsenic, and hexavalent chromium. See the attached report of work completed (ROWC) for details.

Proposed Groundwater Sampling

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

Caerus does not anticipate encountering groundwater during site investigation activities. If groundwater is encountered, Caerus will collect a representative sample for analysis.

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 11
Number of soil samples exceeding 915-1 11
Was the areal and vertical extent of soil contamination delineated? No
Approximate areal extent (square feet) 1470

NA / ND

-- Highest concentration of TPH (mg/kg) 8653
-- Highest concentration of SAR 37.4
BTEX > 915-1 Yes
Vertical Extent > 915-1 (in feet) 16

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?

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

Volume of solid waste (cubic yards) 285 Volume of liquid waste (barrels) 0

Is further site investigation required?

Caerus will continue with the approved site investigation at a later date. See the attached ROWC for details.

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 proposes to operate soil vapor extraction (SVE) on the existing wells while the full extent of impacts is in the process of being determined. Caerus will monitor the exhaust coming from the SVE wells to indicate remediation progress. Once extent of impacts are determined, Caerus will provide a remediation strategy for ECMC review and approval on a supplemental Form 27. See the attached ROWC for details

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.

On February 8 and 9, 2023, initial soil sampling was conducted to characterize soil impacts at the point of release (POR). Two separate PORs had been identified on the same dumpline. Four soil samples were collected from the excavation areas. Excavation extents varied from the separator to the tank battery with depths ranging from 5 to 16.5 feet bgs, widths from 5 to 25 feet, and a length of 147 feet. Analytical results of the excavation samples indicate compliance with Table 915-1 RSSLs except for TPH, xylenes, 1,2,4 trimethylbenzene, 1,3,5 trimethylbenzene, naphthalene, SAR, pH, boron, arsenic, and hexavalent chromium.

Caerus removed approximately 285 cubic yards of impacted soil for offsite disposal. Once the excavation extent was determined to be unsafe, Caerus backfilled the excavation with clean imported backfill to allow for vertical and horizontal delineation with the use of an environmental drill rig.

On March 18 through 22, 2024, drilling activities were conducted to delineate vertical extents of soil impacts. Using sonic drill technology, two soil borings (SB02 and SB03) were advanced to depths of 67 feet bgs and 36 feet bgs, respectively. Four soil samples were collected from SB02 while two samples were collected from SB03. Analytical results indicate concentrations of TPH, SAR, pH, and arsenic exceeding Table 915-1 RSSLs. Vertical delineation of organic constituents was achieved in SB02 at 54 feet bgs but was not accomplished within SB03. Values of pH and arsenic were not delineated vertically at either POR.

Both borings were completed as SVE wells, SVE01 and SVE02, respectively. On March 27, 2024, trailer-mounted solar powered SVE system was installed onto the wells to determine the viability of SVE. The SVE system was programmed to activate airflow once every four hours with a duration of 30 minutes for each session, and operations occurring during daylight hours only. See the attached ROWC for additional details.

Soil Remediation Summary

<input type="checkbox"/> In Situ	<input checked="" type="checkbox"/> Ex Situ
_____ Bioremediation (or enhanced bioremediation)	Yes _____ Excavate and offsite disposal
_____ Chemical oxidation	_____ If Yes: Estimated Volume (Cubic Yards) _____ 285
_____ Air sparge / Soil vapor extraction	_____ Name of Licensed Disposal Facility or ECMC Facility ID # _____
_____ Natural Attenuation	_____ Excavate and onsite remediation
_____ Other _____	_____ 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 any phase of the project, Caerus will notify the ECMC and collect a representative sample for analysis.

Does Groundwater meet Table 915-1 standards? _____

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 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. 12/01/2022

Actual Spill or Release date, or date of discovery. 12/01/2022

SITE INVESTIGATION DATES

Date of Initial Actions described in Site Investigation Plan (start date). 02/08/2023

Proposed site investigation commencement. 02/08/2023

Proposed completion of site investigation. _____

REMEDIAL ACTION DATES

Proposed start date of Remediation. 02/08/2023

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

This form has been submitted to provide a 1st Quarter 2024 Status Update to Remediation Project Number 29222. Caerus will continue with the approved site investigation at a later date. See the attached ROWC for additional details.

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: 04/18/2024

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: 05/03/2024

Remediation Project Number: 29222

COA Type**Description**

COA Type	Description
0 COA	

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**

403737654	INVESTIGATION/REMEDATION WORKPLAN (SUPPLEMENTAL)
403760017	SITE INVESTIGATION REPORT
403778009	FORM 27-SUPPLEMENTAL-SUBMITTED

Total Attach: 3 Files

General Comments**User Group****Comment****Comment Date**

Environmental	Comply with outstanding COAs.	05/03/2024
---------------	-------------------------------	------------

Total: 1 comment(s)