

State of Colorado Oil and Gas Conservation Commission

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402613165

Receive Date:

04/06/2021

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 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.

Refer to Rules 340, 905, 906, 907, 908, 909, and 910

OPERATOR INFORMATION

Name of Operator: CAERUS PICEANCE LLC	Operator No: 10456	Phone Numbers
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 #: 18610

Initial Form 27 Document #: 402613165

PURPOSE INFORMATION

- | | |
|--|--|
| <input type="checkbox"/> 901.e. Sensitive Area Determination | <input type="checkbox"/> 909.c.(5), Rule 910.b.(4): Remediation of impacted ground water |
| <input type="checkbox"/> 909.c.(1), Rule 905: Pit or PW vessel closure | <input type="checkbox"/> Rule 909.e.(2)A.: Notice completion of remediation in accordance with Rule 909.b. |
| <input checked="" type="checkbox"/> 909.c.(2), Rule 906: Spill/Release Remediation | <input type="checkbox"/> Rule 909.e.(2)B.: Closure of remediation project |
| <input type="checkbox"/> 909.c.(3), Rule 907.e.: Land treatment of oily waste | <input type="checkbox"/> Rule 906.c.: Director request |
| <input type="checkbox"/> 909.c.(4), Rule 908.g.: Centralized E&P Waste Management Facility closure | <input type="checkbox"/> Other _____ |

SITE INFORMATION

N Multiple Facilities (in accordance with Rule 909.c.)

Facility Type: PIT	Facility ID: 277960	API #: _____	County Name: GARFIELD
Facility Name: N. PARACHUTE EF06D J27	Latitude: 39.584384	Longitude: -108.037119	
** correct Lat/Long if needed: Latitude: _____		Longitude: _____	
QtrQtr: NWSE	Sec: 27	Twp: 5S	Range: 95W Meridian: 6 Sensitive Area? Yes

SITE CONDITIONS

General soil type - USCS Classifications SM

Most Sensitive Adjacent Land Use Riparian

Is domestic water well within 1/4 mile? No

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

East Fork Parachute Creek is approximately 280 feet to the west.

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
UNDETERMINED	SOILS	To be determined	To be determined through on-site investigation

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 COGCC document number 2221846 for immediate actions taken to abate, investigate, and remediate impacts associated with the historical spill.

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):

Please see the attached Spill Investigation Site Diagram for proposed sample locations. These were selected to characterize the approximate spill area from the reported spill. Caerus will collect soil samples from each identified location at two depths: one between six (6) and 12 inches below ground surface (bgs), and one between 24 and 30 inches bgs. Based on laboratory results presented in COGCC document number 2221846 (attached), Caerus requests a reduced analyte suite of SAR and arsenic.

Proposed Groundwater Sampling

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

If groundwater is encountered at any of the proposed sampling locations Caerus will attempt to collect a representative groundwater sample for laboratory analysis with findings reported in a supplemental Form 27.

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 requests to utilize COGCC Rule 915.f. for the project to be completed prior to January 15, 2022. Based on sample analytical results collected during the time of the incident and provided to the COGCC within Document Number 2221846, Caerus requests a reduced analyte suite for the project to include arsenic and SAR.

SITE INVESTIGATION REPORT

SAMPLE SUMMARY

Soil

Number of soil samples collected 0
Number of soil samples exceeding 910-1
Was the areal and vertical extent of soil contamination delineated?
Approximate areal extent (square feet)

NA / ND

 Highest concentration of TPH (mg/kg)
 Highest concentration of SAR
 BTEX > 910-1
 Vertical Extent > 910-1 (in feet)

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 910-1

 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 910-1
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?

Based on internal document review and proposed spill investigation results, background soil samples may be collected at the location. Background data will be presented in a supplemental Form 27.

☐ 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?

This Remediation Workplan includes a proposed sampling plan. Once approved and weather allows, Caerus will conduct the sampling activities and provide the information to the COGCC in a supplemental Form 27

REMEDIAL ACTION PLAN

SOURCE REMOVAL SUMMARY

Describe how source is to be removed.

With approval of COGCC Rule 915.f. allowing clearance under Table 910-1, if site investigation activities identify concentrations of analytes exceeding COGCC Table 910-1 Concentration Levels, additional site investigation activities and remedial actions will be proposed in a supplemental Form 27.

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.

With approval of COGCC Rule 915.f. allowing clearance under Table 910-1, if site investigation activities identify concentrations of analytes exceeding COGCC Table 910-1 Concentration Levels, additional site investigation activities and remedial actions will be proposed in a supplemental Form 27.

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.

REMEDATION PROGRESS UPDATE

PERIODIC REPORTING

Frequency: ☐ Quarterly ☐ Semi-Annually ☐ Annually ☐ Other _____

Report Type: ☐ Groundwater Monitoring ☐ Land Treatment Progress Report ☐ O&M Report
☐ Other _____

WASTE DISPOSAL INFORMATION

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

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: _____

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.

If the proposed site investigation identifies impacts requiring surface disturbance and remedial operations, additional reclamation details will be provided in the supplemental Form 27.

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 approve the seed mix? _____

If NO, does the seed mix comply with local soil conservation district recommendations? _____

IMPLEMENTATION SCHEDULE

PRIOR DATES

Date of Surface Owner notification/consultation, if required. _____

Actual Spill or Release date, if known. 11/21/2011 _____

SITE INVESTIGATION DATES

Date of Initial Actions described in Site Investigation Plan (start date). 03/02/2021 _____

Date of commencement of Site Investigation. _____

Date of completion of Site Investigation. _____

REMEDIAL ACTION DATES

Date of commencement of Remediation. _____

Date of completion of Remediation. _____

SITE RECLAMATION DATES

Date of commencement of Reclamation. _____

Date of completion of Reclamation. _____

OPERATOR COMMENT

Under COGCC Rule 915.f., Caerus requests Director approval to comply with COGCC Table 910-1 which was in effect during the time of the release. The number and location of spill investigation points may vary based on onsite conditions.

With Form 27 approval and remediation project number assignment, Caerus requests closure of COGCC Spill Document Number 2221846 as subsequent site investigation and remediation work will proceed under the assigned remediation project number.

As part of the historic spill project review and document preparation, Caerus will be implementing a phased approach to prioritize sampling and investigation.

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

Signed: Chris McKisson

Title: Senior Project Manager

Submit Date: 04/06/2021

Email: chris.mckisson@confluence-cc.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: 06/16/2021

Remediation Project Number: 18610

Condition of Approval

COA Type

Description

	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.
	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 complete Table 915-1 list and shall delineate the extent of impacts using the Table 915-1 Protection of Groundwater Soil Screening Level Concentrations.
	Operator shall collect an appropriate number of representative soil samples to delineate the horizontal and vertical extents of contamination, per Rule 915.e.(2).B.
	The Operator's requests for a reduced analyte suite (SAR and arsenic only) and to proceed under Table 910-1 per Rule 915.f cannot be approved at this time. Additional information is required via a Supplemental Form 27: 1) A sample location diagram depicting the locations of Cowpit 1, Cowpit 2, and Creek Sediment samples collected on 11/22/2011. 2) Sample results for pH, EC, and SAR collected from nearby non-impacted native soil per Rule 915.e.(2).D. 3) A comprehensive summary of surface and groundwater monitoring results for procedures described in doc #2221846. 4) Baseline analytical data for source fluids or complete historical Table 910-1 baseline analytical results for soil sample(s) representative of the point of release for the subject spill. The Operator shall submit a Supplemental Form 27 to provide the missing information above. This Supplemental Form 27 may include another request for a reduced analyte suite and/or to proceed under Table 910-1.

4 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.

<u>Att Doc Num</u>	<u>Name</u>
402613165	FORM 27-INITIAL-SUBMITTED
402613195	MAP
402613197	MAP
402613210	OTHER

Total Attach: 4 Files

General Comments

<u>User Group</u>	<u>Comment</u>	<u>Comment Date</u>
Environmental	<p>Under Proposed Soil Sampling, Operator includes a request for a reduced analyte suite of SAR and arsenic only, based on analytical results provided on the Initial Spill/Release Report for this historical spill, COGCC doc #2221846. The Operator also includes a request to proceed under Table 910-1, pursuant to Rule 915.f.</p> <p>Doc #2221846 documents Table 910-1 exceedances for SAR and arsenic at samples labelled Cowpit 1, Cowpit 2, and Creek Sediment. There is no sample location diagram or other indication of these sample locations in relation to the approximately 1/4-mile flow path depicted in attached doc #402613197 aside from this statement in the narrative report "water and soil samples were collected to establish a baseline for initial impacts to identify the need for additional remediation." This spill is located in a sensitive area due to its proximity to East Fork Parachute Creek.</p> <p>The Operator's requests for a reduced analyte suite and to proceed under Table 910-1 cannot be approved without additional information. See above for COAs.</p>	06/16/2021

Total: 1 comment(s)