

State of Colorado
Oil and Gas Conservation Commission

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402976640
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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
Address: 1001 17TH STREET #1600		Phone: (970) 285-2739
City: DENVER State: CO Zip: 80202		Mobile: (970) 987-4650
Contact Person: Brett Middleton	Email: bmiddleton@caerusoilandgas.com	

PROJECT, PURPOSE & SITE INFORMATION

PROJECT INFORMATION

Remediation Project #: 8900 Initial Form 27 Document #: 2313856

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: Fed 36-1 pit remediation update

SITE INFORMATION

No Multiple Facilities

Facility Type: PIT	Facility ID: 112427	API #: _____	County Name: MESA
Facility Name: FEDERAL 36-1	Latitude: 39.234842	Longitude: -108.172560	
** correct Lat/Long if needed: Latitude: _____		Longitude: _____	
QtrQtr: NWNW	Sec: 36	Twp: 9S	Range: 97W Meridian: 6 Sensitive Area? Yes

SITE CONDITIONS

General soil type - USCS Classifications CH Most Sensitive Adjacent Land Use RANGELAND
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

An ephemeral drainage is located approximately 915 feet north of the remediation project. Three groundwater wells are located approximately 860 to 1215 feet south of the remediation project. These three monitoring wells indicate a total depth ranging from 60 to 70 feet below ground surface but based on conversations with the owner, these wells are dry. Depth to groundwater is estimated to be greater than 60 feet below ground surface. A domestic water well located to the east indicates static water level to be approximately 260 feet below ground surface.

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 borings 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.

This Form is being submitted as the 1st Quarter 2022 status update to COGCC Remediation Project Number 8900. Caerus is coordinating with the landowner, engineer, and contractors for additional assessment and remediation. Proposed assessment activities are included in the attached Report of Work Completed (ROWC).

Please refer to COGCC document numbers 2313856, 400971468, and 401012094 for initial actions taken in response to the historic pit investigation and remediation.

In May 2015, 11 soil borings were installed to delineate the extent of contamination at the site, see attached report of work completed by Olsson Associates. Following the completion of 11 soil borings, four were converted to soil vapor extraction (SVE) wells for continued SVE remediation. Results of the 2015 investigation determined that the full extent of contamination was not defined and additional sampling was required.

In December 2016, 13 soil borings were installed to delineate the outer extents of contamination associated with the historic pit closure, see attached report of work completed by Apex Companies.

In September 2020 Caerus install 7 additional soil boring to achieve vertical and horizontal definition of impacts. see Doc # 402493884

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 ROWC detailing proposed sampling and analysis.

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 excavation activities. In the event that groundwater is encountered, Caerus will attempt to collect a sample for analysis of COGCC 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):

SITE INVESTIGATION REPORT

SAMPLE SUMMARY

Soil

Number of soil samples collected 38
Number of soil samples exceeding 915-1 6
Was the areal and vertical extent of soil contamination delineated? No
Approximate areal extent (square feet) 1200

NA / ND

-- Highest concentration of TPH (mg/kg) 8700
-- Highest concentration of SAR 55.5
BTEX > 915-1 No
Vertical Extent > 915-1 (in feet) 38

Groundwater

Number of groundwater samples collected 0
Was extent of groundwater contaminated delineated? Yes
Depth to groundwater (below ground surface, in feet) 60'
Number of groundwater monitoring wells installed 0
Number of groundwater samples exceeding 915-1 0

NA Highest concentration of Benzene (µg/l) _____
NA Highest concentration of Toluene (µg/l) _____
NA Highest concentration of Ethylbenzene (µg/l) _____
NA Highest concentration of Xylene (µg/l) _____
NA Highest concentration of Methane (mg/l) _____

Surface Water

0 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?

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?

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.

Please find the attached ROWC detailing proposed assessment and sampling activities.

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.

Please find the attached ROWC detailing proposed assessment and sampling activities.

Soil Remediation Summary

In Situ

Ex Situ

_____ Bioremediation (or enhanced bioremediation)

_____ Yes _____ Excavate and offsite disposal

Chemical oxidation
 Air sparge / Soil vapor extraction
 Natural Attenuation
 Other _____

If Yes: Estimated Volume (Cubic Yards) 1000
 Name of Licensed Disposal Facility or COGCC Facility ID # _____
 Yes Excavate and onsite remediation
 No Land Treatment
 Yes Bioremediation (or enhanced bioremediation)
 No Chemical oxidation
 No Other _____

Groundwater Remediation Summary

No Bioremediation (or enhanced bioremediation)
 No Chemical oxidation
 No Air sparge / Soil vapor extraction
 No Natural Attenuation
 No 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.

Groundwater has not been encountered at the site. In the event that groundwater is encountered during soil boring installation, Caerus will attempt to collect a representative sample for COGCC Table 915-1 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 1st Quarter 2022 Status Update

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: _____

REMEDATION COMPLETION REPORT

REMEDATION 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.

The reclamation plan will be generated upon complete of onsite remediation.

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? _____

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). _____

Proposed site investigation commencement. 06/01/2020

Proposed completion of site investigation. 09/21/2020

REMEDIAL ACTION DATES

Proposed start date of Remediation. _____

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 is being submitted as the 1st Quarter 2022 status update to COGCC Remediation Project Number 8900. Caerus is coordinating with the landowner, engineer, and contractors for additional assessment and remediation. Proposed assessment activities are included in the attached Report of Work Completed (ROWC).

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

Signed: Chris McKisson _____

Title: Sr. Project Manager _____

Submit Date: 03/17/2022 _____

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: 03/17/2022 _____

Remediation Project Number: 8900 _____

Condition of Approval

COA Type

Description

	Provide additional information via a Supplemental Form 27 to determine a site-specific background value for SAR.
	Based on the information provided in the attached report (doc #402987849, under Analysis and Recommendations), the Operator's request for a reduced analyte suite of SAR, pH, TPH (GRO, DRO, ORO), 1,2,4-trimethylbenzene, 1,3,5-trimethylbenzene, and boron is approved under the following conditions: 1) Analyze soil samples for total xylenes, based on exceedance for Sample ID (AW-06)@28-30'. 2) RDL for chromium (VI) (<2.00 mg/kg) exceeds Table 915-1 RSSL (0.3 mg/kg) and MDL is not provided for samples collected in 2020. Operator shall provide revised laboratory reports that include the MDL or analyze soil samples for chromium (VI) with appropriate laboratory detection limits, per Rule 915.e.(1).C.
	Based on the information provided by the Operator in the attached report (doc #402987849) under Lithology and Hydrology as well as 2020 Investigation Results, the Operator's request to proceed under Table 915-1 Residential SSLs is conditionally approved. If groundwater is encountered during additional site investigation and remediation work, the Operator will provide notification to the COGCC and the project will proceed under the Table 915-1 Protection of Groundwater SSLs.
3 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>
402976640	FORM 27-SUPPLEMENTAL-SUBMITTED
402987849	SITE INVESTIGATION PLAN

Total Attach: 2 Files

General Comments

<u>User Group</u>	<u>Comment</u>	<u>Comment Date</u>
Environmental	Note to Operator: for future Form 27s, be sure to describe proposed next steps or modifications into the appropriate sections of the Form 27 as opposed to stating "Please see attached" in relevant sections.	03/17/2022
Environmental	<p>The COGCC does not concur with the interpretation that background data for samples* collected from the Federal 36-2 (Location ID #312421) indicates a background SAR value of 25.8, as stated in the attached report (doc #402987849) under Analysis and Recommendations. The range and distribution of SAR measurements (6.91, 8.38, 9.29, 13.6, 15.3, 16.3, and 25.8) for the seven background samples* suggests that a measurement representative of background would fall in the 13-15 range, based on the average of the measurements rather than the maximum observed value.</p> <p>The COGCC does concur, based on the referenced background samples*, that site-specific background conditions for SAR, pH, and arsenic are in exceedance Table 915-1 criteria. Though additional information or analysis is required to establish a specific background SAR level. See COAs above.</p> <p>*See doc #402921514 and REM #9448 for additional information on Federal 36-2 background sample locations, boring logs, and analytical results.</p>	03/17/2022

Total: 2 comment(s)