

State of Colorado
Oil and Gas Conservation Commission

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402762707
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07/30/2021

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) 285-2925
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 #: 8255 Initial Form 27 Document #: 2147922

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: LINED EARTHEN PIT CLOSURE

SITE INFORMATION

Yes Multiple Facilities

Facility Type: PIT	Facility ID: 278619	API #: _____	County Name: GARFIELD
Facility Name: NP EF C27 595	Latitude: 39.589010	Longitude: -108.043950	
** correct Lat/Long if needed: Latitude: _____		Longitude: _____	
QtrQtr: NENW	Sec: 27	Twp: 5S	Range: 95W Meridian: 6 Sensitive Area? No

SITE CONDITIONS

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

ACCORDING TO COGCC GIS ONLINE MAPPING THERE ARE 2 STREAMS, AND 1 WATER WELL WITHIN 1/4 MILE OF PAD.

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
	SOILS	IMPACTS WILL BE DETAILED IN FORM 19	Soil sampling

INITIAL ACTION SUMMARY

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

The following activities have been, or will be carried out in support of pit closure activities conducted in support of this project: 905.b(2) & 905.b(4) ? Above‐liner fluids and solids will be removed from the pit and will be reused or disposed‐of at an approved disposal facility with appropriate receipts and manifests.

905.b(3) ? Liner will be removed and reused/recycled or disposed of at an approved disposal facility with appropriate receipts and manifests. 905.b(4) ? Representative grab samples will be collected from the pit bottom following removal of the pit liner and will be analyzed for compliance with COGCC Table 910‐1. 905.c ? In the event the constituents of concern found below the liner are in excess of Table 910‐1 allowable concentrations and above background concentrations, a Form 19 (Spill/Release Report) will be submitted to document the failure of the pit liner.

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 attached

Proposed Groundwater Sampling

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

Ground water is not expected since it was not discovered during the initial rounds of drilling.

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):

please see attached

SITE INVESTIGATION REPORT

SAMPLE SUMMARY

Soil

Number of soil samples collected 11

Number of soil samples exceeding 915-1 8

Was the areal and vertical extent of soil contamination delineated? Yes

Approximate areal extent (square feet) 10000

NA / ND

-- Highest concentration of TPH (mg/kg) 1320

-- Highest concentration of SAR 37.8

BTEX > 915-1 No

Vertical Extent > 915-1 (in feet) 32

Groundwater

Number of groundwater samples collected 0

Was extent of groundwater contaminated delineated? Yes

Depth to groundwater (below ground surface, in feet) 80'

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?

Caerus will confirm compliance with COGCC Table 915-1 through soil sample and analysis prior to closure of the remediation project.

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.

Based on the continued success of this remediation demonstrated through reduced TPH concentrations in the soil boring results included in Table 2 of the attached ROWC, SVE air flow increasing over the life of the remediation project, and continued PID readings from the SVE trailer exhaust, Caerus plans to continue to utilize the bio-vent wells for remediation with quarterly enhanced SVE events using the powered SVE trailer.

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.

Based on the continued success of this remediation demonstrated through reduced TPH concentrations in the soil boring results included in Table 2 of the attached ROWC, SVE air flow increasing over the life of the remediation project, and continued PID readings from the SVE trailer exhaust, Caerus plans to continue to utilize the bio-vent wells for remediation with quarterly enhanced SVE events using the powered SVE trailer.

Soil Remediation Summary

In Situ

Yes Bioremediation (or enhanced bioremediation)

No Chemical oxidation

Yes Air sparge / Soil vapor extraction

Yes Natural Attenuation

No 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

No Land Treatment

No 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.

In the event that impacts to groundwater are identified, a vertical and lateral extent would be determined and an appropriate insitu remediation and monitoring plan would be prepared and submitted to the COGCC.

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 Q2 2021 REM 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: _____

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.

The pit will be backfilled to grade. Pad reclamation will be carried out when appropriate, based on well productivity and plans for future development.

Is the described reclamation complete? _____

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. _____

Actual Spill or Release date, or date of discovery. _____

SITE INVESTIGATION DATES

Date of Initial Actions described in Site Investigation Plan (start date). 04/07/2014

Proposed site investigation commencement. 09/19/2014

Proposed completion of site investigation. _____

REMEDIAL ACTION DATES

Proposed start date of Remediation. 09/19/2014

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

Caerus is providing this Form 27 as the Q2 2021 project update to include the powered SVE trailer report of work completed.

Based on COGCC Rule 915.e.(2).C. and the laboratory analytical results provided in Table 1 included in COGCC Doc # 402584046, Caerus is requesting a reduced analyte suite for future samples associated with the project to include DRO, GRO, ORO, BTEX, 1,2,4-trimethylbenzene, 1,3,5-trimethylbenzene, 1-methylnaphthalene, 2-methylnaphthalene, EC, SAR, pH, arsenic, and barium.

COGCC Caerus is in the process of prioritizing the field assessment activities required to comply with COAs associated with COGCC Doc # 402583401.

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: 07/30/2021 _____

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: 09/17/2021 _____

Remediation Project Number: 8255 _____

Condition of Approval**COA Type****Description**

	<p>Operator's request for a reduced analyte suite is not approved at this time. Operator shall comply with COA #1 listed on doc #402583401 and address issues of horizontal and vertical delineation of impacts, potential for groundwater impacts, and explicit comparison of soil sample analytical results to Table 915-1 using the Protection of Groundwater Screening Level Concentrations.</p> <p>The Operator shall submit the required information via a Supplemental Form 27. The Operator may request a subsequent Rule 915.e.(2).C request based on the results of the required assessment.</p>
1 COA	

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**

402762707	FORM 27-SUPPLEMENTAL-SUBMITTED
402762966	REMEDATION PROGRESS REPORT
402762967	MAP

Total Attach: 3 Files

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

Environmental	F27 doc #402583401 included COA (#2) requirement for Operator to comply with Table 915-1 using the Protection of Groundwater Soil Screening Level Concentration. This COA remains in effect.	09/17/2021
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Total: 1 comment(s)