

State of Colorado
Oil and Gas Conservation Commission

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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) 285-2925
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 #: 11913 Initial Form 27 Document #: 401784284

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: SPILL OR RELEASE	Facility ID: 457694	API #: _____	County Name: GARFIELD
Facility Name: West Fork 3-Phase Line	Latitude: 39.584419	Longitude: -108.115555	
** correct Lat/Long if needed: Latitude: _____		Longitude: _____	
QtrQtr: NWSE	Sec: 25	Twp: 5S	Range: 96W Meridian: 6 Sensitive Area? Yes

SITE CONDITIONS

General soil type - USCS Classifications GM Most Sensitive Adjacent Land Use Non crop land
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? Yes

Other Potential Receptors within 1/4 mile

Please reference COGCC Documents 401784284 and 401814737 for this information.

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	GROUNDWATER	To be determined	Sample analysis
Yes	SOILS	Less than 25' deep	Sample 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 previously submitted eForms associated with Spill/Release Point ID 457694 and Remediation Number 11913 for this information.

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):

Proposed Groundwater Sampling

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

Per COA #4 listed on COGCC Document 401814737, quarterly groundwater samples will be collected from WFMW1, WFMW2, and WFMW3 for 12 months. These samples will be submitted for analysis of BTEX. Caerus will include the new proposed WFMW17 to this list of quarterly groundwater wells to be sampled.

Proposed Surface Water Sampling

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

Per COA #3 listed on COGCC Document 401814737, quarterly surface water samples will be collected from the irrigation pond (WFPL Pond) adjacent to the impacted area for 12 months. These samples will be submitted for analysis of BTEX.

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 0
Number of soil samples exceeding 915-1 0
Was the areal and vertical extent of soil contamination delineated? Yes
Approximate areal extent (square feet) 100

NA / ND

NA Highest concentration of TPH (mg/kg) _____
NA Highest concentration of SAR _____
BTEX > 915-1 No
Vertical Extent > 915-1 (in feet) 25

Groundwater

Number of groundwater samples collected 4
Was extent of groundwater contaminated delineated? Yes
Depth to groundwater (below ground surface, in feet) 33'
Number of groundwater monitoring wells installed 1
Number of groundwater samples exceeding 915-1 0

ND Highest concentration of Benzene (µg/l) _____
-- Highest concentration of Toluene (µg/l) 1.86
ND Highest concentration of Ethylbenzene (µg/l) _____
ND 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? Yes

SOURCE REMOVAL SUMMARY

Describe how source is to be removed.

Please refer to COGCC Document #402121551 for this information.

REMEDIAL ACTION 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 will continue to utilize soil vapor extraction to remediate impacts to soil within the area. When groundwater elevation rises to accessible levels for air sparge, Caerus will utilize an air sparge trailer to remediate and provide oxygen to the remediation system. Please refer to Figures 2 and 3 attached to this document for reference of groundwater elevation and the well construction in the project area.

Soil Remediation Summary

In Situ

Ex Situ

Yes Bioremediation (or enhanced bioremediation)

Yes Excavate and offsite disposal

 Chemical oxidation

If Yes: Estimated Volume (Cubic Yards) 200

Yes Air sparge / Soil vapor extraction

Name of Licensed Disposal Facility or COGCC Facility ID # _____

Yes Natural Attenuation

_____ Excavate and onsite remediation

Other _____

_____ Land Treatment

_____ Bioremediation (or enhanced bioremediation)

_____ Chemical oxidation

_____ Other _____

Groundwater Remediation Summary

Yes Bioremediation (or enhanced bioremediation)

_____ Chemical oxidation

Yes 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.

Please see the attached tabulated laboratory data for quarterly groundwater sampling and monitoring from remediation and monitoring wells within the spill area. Please note that due to increased groundwater depth resulting in no available water, some monitoring and remediation wells were not sampled during the quarter.

Included in the attached figures are potentiometric groundwater flow direction maps for each monthly sampling event.

Based on the increased groundwater depth and unimpacted groundwater sample results down-gradient of the spill, Caerus requests to change the groundwater sampling frequency to quarterly. During elevated groundwater flows identifying groundwater depth near the zone of impacted soil, Caerus will focus efforts to collect water samples to determine presence of impacted groundwater. If groundwater is impacted, Caerus will conduct additional air-sparge activities to remediate any hydrocarbons found in groundwater at the site.

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 quarterly 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.

Please refer to COGCC Document ID 401784284 for planned reclamation.

Is the described reclamation complete? Yes

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). 09/27/2018

Proposed site investigation commencement. 09/27/2018

Proposed completion of site investigation. 06/10/2019

REMEDIAL ACTION DATES

Proposed start date of Remediation. 06/03/2019

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

Based on available groundwater during the 2nd quarter of 2021, Caerus conducted two groundwater sampling events during the quarter.

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: 06/30/2021 _____

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: 08/13/2021 _____

Remediation Project Number: 11913 _____

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

COA Type	Description
0 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**

402734607	FORM 27-SUPPLEMENTAL-SUBMITTED
402734632	ANALYTICAL RESULTS
402734633	ANALYTICAL RESULTS
402734634	ANALYTICAL RESULTS
402734635	GROUND WATER ELEVATION MAP
402734637	OTHER
402734641	OTHER
402734643	ANALYTICAL RESULTS
402734644	OTHER

Total Attach: 9 Files

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

User Group	Comment	Comment Date
		Stamp Upon Approval

Total: 0 comment(s)