

State of Colorado
Oil and Gas Conservation Commission

1120 Lincoln Street, Suite 801, Denver, Colorado 80203
Phone: (303) 894-2100 Fax: (303) 894-2109



Document Number:
403144342
Receive Date:
11/14/2022

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) 778-2314
City: DENVER State: CO Zip: 80202		Mobile: (970) 778-2314
Contact Person: Jake Janicek	Email: jjanicek@caerusoilandgas.com	

PROJECT, PURPOSE & SITE INFORMATION

PROJECT INFORMATION

Remediation Project #: 25004 Initial Form 27 Document #: 403131596

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: 482197	API #: _____	County Name: GARFIELD
Facility Name: Starkey 7 Dump Line	Latitude: 39.478155	Longitude: -108.151106	
** correct Lat/Long if needed: Latitude: _____		Longitude: _____	
QtrQtr: NESW	Sec: 31	Twp: 6S	Range: 96W Meridian: 6 Sensitive Area? Yes

SITE CONDITIONS

General soil type - USCS Classifications OH Most Sensitive Adjacent Land Use Rangeland
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

None

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	Approx. 3,700 cubic yards	Soil sample analytical results

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 see COGCC Form 19 403048976 for the initial response measures and Form 27 403131596 for initial assessment details.

On 7/18/2022, an excavation was built around the failure point and soil samples were collected from four sidewalls at 6 ft below ground surface (bgs) and from the base at 5 ft bgs and 11 ft bgs below the failure point. Visual inspection and field screening via Photo Ionization Detector were completed. On 8/8/2022, per COAs, a spring down-gradient of the site was located and a sample was collected. All samples were submitted for laboratory analysis of all Table 915-1 constituents. Additionally, four background samples were collected for comparison to Table 915-1 soil suitability parameters and Arsenic.

On September 26 and 27, additional delineation activities were conducted. Five soil borings were advanced at the failure point and in each direction outside the extent of the original excavation. Visual inspection and field screening via Photo Ionization Detector (PID) were completed at each soil boring at 5-foot intervals from 10 ft bgs to 25 ft bgs. Soil samples were collected from each soil boring at intervals of 15, 20, and 25 ft bgs and submitted for laboratory analysis of all Table 915-1 constituents.

Site Investigation Reports are included as attachments with sample location maps, updated imagery, analytical data tables, lab reports, field notes, and photo documentation at the Site.

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 "Operator Comments" for this information.

Proposed Groundwater Sampling

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

Proposed Surface Water Sampling

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

Per COAs, a spring sample was collected from Starkey Gulch on 8/8/2022 and submitted for laboratory analysis of Table 915-1 constituents. Analytical results indicated organic parameters were below the laboratory reporting detection limit (RDL) and inorganic parameters were compliant with Table 915-1 standards. Subsequent sampling is proposed on a quarterly basis to continue monitoring GW conditions.

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 25
Number of soil samples exceeding 915-1 25
Was the areal and vertical extent of soil contamination delineated? No
Approximate areal extent (square feet) 225

NA / ND

-- Highest concentration of TPH (mg/kg) 10072
-- Highest concentration of SAR 54.4
BTEX > 915-1 Yes
Vertical Extent > 915-1 (in feet) 25

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 915-1 _____

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

Surface Water

1 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?

Four background samples were collected at varying depths and analyzed for Table 915-1 soil suitability parameters and Arsenic. Laboratory results indicated naturally occurring elevated Arsenic concentrations ranging from 7.77 mg/kg to 13.6 mg/kg.

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?

Impacts have been delineated vertically to 25 ft bgs, with the highest concentrations between 10-20 ft bgs. Additional horizontal delineation is needed to the south and west of the failure point, while soil boring sample analysis indicates horizontal delineation to the north and east. A source water sample from the production tank onsite is proposed for comparison to pH levels and Arsenic concentrations, which historical data from the field shows produced water does not increase pH levels and Arsenic concentrations in the soil. Four additional soil borings are proposed to complete horizontal delineation and determine points of compliance in all directions.

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.

The source was a dumpline and has since been replaced.

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.

Remedial options will be determined once horizontal delineation is complete. A proposed remediation plan will be submitted in a subsequent Form 27.

Soil Remediation Summary

In Situ

Ex Situ

_____ Bioremediation (or enhanced bioremediation)
_____ Chemical oxidation
_____ Air sparge / Soil vapor extraction
_____ Natural Attenuation
_____ Other _____

_____ 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.

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 Soil remediation

Adequacy of Operator's General Liability Insurance and Financial Assurance

Describe the adequacy of the Operator's general liability insurance and Financial Assurance to fully address the anticipated costs of Remediation, including the estimated remaining cost for this project (below).

If this information has been provided on a Form 27 within the last 12 months, provide the Document Number of that form.

Per Rule 705.b, and in line with guidance laid out in the SBAP, Caerus has general liability insurance in the amount of \$1M, and Caerus has umbrella insurance, which sits over the general liability insurance in the amount of \$75M. The umbrella and general liability insurance covers property damage bodily injury to third parties, and sudden or accidental pollution under a combined \$76M.

Operator anticipates the remaining cost for this project to be: \$ 50000

WASTE DISPOSAL INFORMATION

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

Describe beneficial use, if any, of E&P Waste derived from this remediation project:

None

Volume of E&P Waste (solid) in cubic yards 0

E&P waste (solid) description _____

COGCC Disposal Facility ID #, if applicable: _____

Non-COGCC Disposal Facility: _____

Volume of E&P Waste (liquid) in barrels 20

E&P waste (liquid) description hydrovac rinsate mixed with soils impacted by E&P Waste

COGCC Disposal Facility ID #, if applicable: _____

Non-COGCC Disposal Facility: Greenleaf Environmental Services

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.

No reclamation is planned at this time.

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. 05/10/2022

SITE INVESTIGATION DATES

Date of Initial Actions described in Site Investigation Plan (start date). 05/10/2022

Proposed site investigation commencement. 05/10/2022

Proposed completion of site investigation. _____

REMEDIAL ACTION DATES

Proposed start date of Remediation. 04/01/2023

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

Caerus believes a pathway to groundwater does not exist based on the following reasons and requests all future soil samples be compared to COGCC Table 915-1 RSSLs:

- 1) Estimated depth to GW is ~80 ft;
- 3) Vertical delineation of impacts determined to be 20-25 ft bgs;
- 4) Spring sample collected per COA indicates compliance with all Table 915-1 standards;
- 5) Spring down-gradient from pad is ~550 ft lower in elevation from the site; and
- 6) Subsequent sampling and analysis of spring is proposed to confirm GW impacts are not present.

Additional soil borings are proposed to complete delineation. Please see site map included on the attached document titled "Starkey 7_Soil boring ROWC_20221110" which depicts proposed soil borings. A source water sample is proposed from the production tank onsite for comparison to pH and Arsenic concentrations as historical data from the field indicates produced water does not increase pH levels and Arsenic concentrations in the soil.

Based on laboratory results from soil boring samples and the proposed waste stream analysis, Caerus is requesting a reduced analytical suite for all future soil samples to include: TPH, BTEX, Naphthalene, SAR, and Hexavalent Chromium only.

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

Signed: Steve Sivigliano

Title: Environmental Project Mgr

Submit Date: 11/14/2022

Email: steve.sivigliano@camposepc.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: 12/12/2022

Remediation Project Number: 25004

COA Type

Description

	Based on the information provided, the Operator's request for a reduced analyte suite of TPH, BTEX, naphthalene, SAR, and hexavalent chromium only for soil samples is approved under the following conditions: Operator will include EC and pH analysis for all soil samples, based on analytical results and Conclusion provided in attached November 10, 2022 report (doc #403226047).
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

403144342	FORM 27-SUPPLEMENTAL-SUBMITTED
403144525	SITE INVESTIGATION REPORT
403226047	SITE INVESTIGATION REPORT

Total Attach: 3 Files

General Comments

User Group

Comment

Comment Date

Environmental	Operator's proposal to collect a source water sample to address arsenic exceedances is conditionally approved. If arsenic concentrations in produced water sample do not adequately address documented exceedances, additional soil sampling and remediation for arsenic may be required.	12/12/2022
Environmental	Based on the information provided under Operator Comment, the Operator's request to proceed under the Table 915-1 Residential Soil Screening Levels (RSSLs) is conditionally approved.	12/12/2022

Environmental	COGCC updated Sample Summary listed under Groundwater to ND based on Starkey Spring 01 sample results provided in doc #403144525. Operator had listed max BTEX concentrations for soil samples under this section.	12/12/2022
---------------	--	------------

Total: 3 comment(s)