

# 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:

403241019

Receive Date:

Report taken by:

## 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	<b>Phone Numbers</b>
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 #: 26046 Initial Form 27 Document #: 403231000

#### 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: 482681	API #: _____	County Name: GARFIELD
Facility Name: L24 meter skid bull plug failure	Latitude: 39.685029	Longitude: -108.123237	
** correct Lat/Long if needed: Latitude: _____		Longitude: _____	
QtrQtr: NWSW	Sec: 24	Twp: 4S	Range: 96W Meridian: 6 Sensitive Area? No

#### SITE CONDITIONS

General soil type - USCS Classifications GM Most Sensitive Adjacent Land Use Non-cropland

Is domestic water well within 1/4 mile? No Is surface water within 1/4 mile? No

Is groundwater less than 20 feet below ground surface? No

## 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	2 feet x 2 feet x 1 foot bgs	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.

On August 4, 2022, a field inspection identified a leaking bull plug on a meter skid. Soil which was visually saturated with produced water was removed using a hydrovacuum truck. Colorado Oil and Gas Conservation Commission (COGCC) Form 19 Document 403127657 was submitted to open Spill/Release Point ID 482681. COGCC Form 27 Document 403231000 was later submitted to open Remediation Project Number 26046. See the attached Report of Work Completed (ROWC) for site investigation details.

### 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 ):

No additional soil sampling is proposed.

#### 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 ):

### 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 6Number of soil samples exceeding 915-1 6Was the areal and vertical extent of soil contamination delineated? YesApproximate areal extent (square feet) 5**NA / ND**-- Highest concentration of TPH (mg/kg) 6.73-- Highest concentration of SAR 5.72BTEX > 915-1 NoVertical Extent > 915-1 (in feet) 1**Groundwater**Number of groundwater samples collected 0Was extent of groundwater contaminated delineated? NoDepth to groundwater (below ground surface, in feet) Number of groundwater monitoring wells installed Number of groundwater samples exceeding 915-1 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 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?

Background soil samples were collected from adjacent locations, and are included in the attached report of work completed.

☐ 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.

Soil which was visually saturated with produced water was removed using a hydrovacuum truck.

**REMEDIAL 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.

On October 20, 2022, a soil sample was collected from within the excavation extents to characterize soil beneath the point of release (POR). One soil sample was collected from beneath the POR at 1.5 feet below ground surface (bgs). The soil sample was submitted for analysis of COGCC Table 915-1 soil constituents of concern. Analytical results of the POR sample are within allowable limits for COGCC Table 915-1 Residential Soil Screening Levels except for pH and arsenic. Arsenic exceeds allowable limits at 1.61 milligrams per kilogram (mg/kg), and pH exceeds allowable limits at 8.66.

Although arsenic and pH values exceed allowable limits within the investigation area, analytical results of background samples collected from the nearby K24 Compressor Station (Location ID 431429) and A24 Pad (Location ID 458475) exceed allowable limits for arsenic and pH. Based on background data, Caerus requests consideration of COGCC Table 915-1 Footnote 1 to establish an alternative allowable limit for pH of 8.74 and Footnote 11 to establish an alternative allowable limit for arsenic of 5.84 mg/kg. Due to the significant elevation difference between the Location and nearest surface water, Caerus requests to compare analytical results to COGCC Table 915-1 Residential Soil Screening Levels. Assuming the proposed screening levels and alternative allowable limit are approved, Caerus requests closure of the remediation project with a no further action (NFA) determination. See the attached ROWC for details.

## **Soil Remediation Summary**

☐ In Situ

☒ Ex Situ

\_\_\_\_\_ Bioremediation ( or enhanced bioremediation )

Yes \_\_\_\_\_ Excavate and offsite disposal

\_\_\_\_\_ Chemical oxidation

\_\_\_\_\_ If Yes: Estimated Volume (Cubic Yards) \_\_\_\_\_ 1

\_\_\_\_\_ Air sparge / Soil vapor extraction

\_\_\_\_\_ Name of Licensed Disposal Facility or COGCC Facility ID # \_\_\_\_\_

\_\_\_\_\_ Natural Attenuation

No \_\_\_\_\_ Excavate and onsite remediation

\_\_\_\_\_ Other \_\_\_\_\_

\_\_\_\_\_ 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.

During field assessment and sampling, groundwater was not encountered at the site or within the excavation.

## 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 Q4 2022 REM update and NFA request

### 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: \$ 0

### 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:

## REMEDIATION COMPLETION REPORT

### REMEDIATION COMPLETION SUMMARY

Is this a Final Closure Request for this Remediation Project? Yes ☐

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? Yes ☐

Does the previous reply indicate consideration of background concentrations? Yes ☐

Does Groundwater meet Table 915-1 standards? Yes ☐

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.

All disturbances will be backfilled to the active working surface for continued operation. Caerus will follow the COGCC 1000 series rules at the time of final reclamation of the site.

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? \_\_\_\_\_

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). 10/06/2022

Proposed site investigation commencement. 10/06/2022

Proposed completion of site investigation. 10/06/2022

### REMEDIAL ACTION DATES

Proposed start date of Remediation. 10/05/2022

Proposed date of completion of Remediation. 10/05/2022

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 field assessment and desktop review of the area, Caerus believes there is no reasonable pathway for groundwater within the spill area. The approximate elevation for the Remediation Project is 8,195 feet. The nearest spring is located 0.62 miles west and the approximate elevation is 7,680 feet. The most relative (same ridgetop area) registered water well is located 1.2 miles north and the approximate ground elevation is 8,138 feet. This well located north of the site is drilled to 40 feet below ground surface and is used for septic tank leach monitoring. The well is dry to a depth of 40 feet below ground surface. Based on Operator Knowledge, groundwater on the ridge tops has been identified between 165 - 210 feet below ground surface. Groundwater on the valley bottoms has been identified between 25 - 50 feet below ground surface. Based on these details, and the small amount of produced water released from the bull plug associated with this release, Caerus requests to utilize the COGCC Table 915-1 Residential Soil Screening Level Concentrations for this project.

Background soil sample results from the area have identified identified elevated concentrations of naturally occurring pH and arsenic within the area, as outlined in the attached report of work completed. Caerus requests to utilize COGCC Table 915-1 Footnotes 1 and 11 to request consideration for alternative allowable limits for pH and arsenic, respectively.

Based on the information provided above and within the attached Report of Work Completed, Caerus requests closure and a no further action determination for COGCC REM Project Number 26046.

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

Signed: Chris McKisson

Title: Managing Partner

Submit Date: \_\_\_\_\_

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: \_\_\_\_\_

Date: \_\_\_\_\_

Remediation Project Number: 26046

**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**

403252076	SITE INVESTIGATION REPORT
-----------	---------------------------

Total Attach: 1 Files

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

		Stamp Upon Approval
--	--	---------------------

Total: 0 comment(s)