

State of Colorado  
Oil and Gas Conservation Commission

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402725602  
Receive Date:  
06/23/2021

Report taken by:  
Steven Arauza

Site Investigation and Remediation Workplan (Initial 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 #: 19036 Initial Form 27 Document #: 402725602

**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**  Yes  Multiple Facilities

Facility Type: WELL Facility ID: \_\_\_\_\_ API #: 045-07004 County Name: GARFIELD

Facility Name: SHAEFFER 12-8 (H12W) Latitude: 39.461420 Longitude: -107.717070

\*\* correct Lat/Long if needed: Latitude: \_\_\_\_\_ Longitude: \_\_\_\_\_

QtrQtr: SENE Sec: 12 Twp: 7S Range: 93W Meridian: 6 Sensitive Area? Yes

Facility Type: LOCATION Facility ID: 323927 API #: \_\_\_\_\_ County Name: GARFIELD

Facility Name: SHAEFER-67S93W 12SENE Latitude: 39.461420 Longitude: -107.717070

\*\* correct Lat/Long if needed: Latitude: \_\_\_\_\_ Longitude: \_\_\_\_\_

QtrQtr: SENE Sec: 12 Twp: 7S Range: 93W Meridian: 6 Sensitive Area? Yes

## **SITE CONDITIONS**

General soil type - USCS Classifications GC

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**

The water well is located 0.25 miles northeast of the location but the application appears to have never been finalized (Well # 0378486). Groundwater is demonstrated to be greater than 100 feet in the area based on water well construction information.

# SITE INVESTIGATION PLAN

## TYPE OF WASTE:

- |  |   |  |
|--|---|--|
| <input type="checkbox"/> E&P Waste       | <input checked="" type="checkbox"/> Other E&P Waste   | <input type="checkbox"/> Non-E&P Waste |
| <input type="checkbox"/> Produced Water  | <input type="checkbox"/> Workover Fluids  | _____                                  |
| <input type="checkbox"/> Oil             | <input type="checkbox"/> Tank Bottoms   |  |
| <input type="checkbox"/> Condensate      | <input type="checkbox"/> Pigging Waste  |  |
| <input type="checkbox"/> Drilling Fluids | <input type="checkbox"/> Rig Wash   |  |
| <input type="checkbox"/> Drill Cuttings  | <input type="checkbox"/> Spent Filters  |  |
|  | <input type="checkbox"/> Pit Bottoms  |  |
|  | <input checked="" type="checkbox"/> Other (as described by EPA) _____ No waste associated with this project has been identified |  |

## DESCRIPTION OF IMPACT

Impacted?	Impacted Media	Extent of Impact	How Determined
UNDETERMINED	SOILS	To be determined	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 to comply with COGCC Rule 911.a.(4). as initial notification for the abandonment of the Shaeffer 12-8 well and closure of Location ID 323927. At this time, no spill has been identified at the wellhead, former separator location, or former third party custody transfer location.

## 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 ):

As part of the cut and cap operations, Caerus will excavate the Shaeffer 12-8 wellhead. Caerus will visually inspect and field screen the base and sidewalls within the wellhead abandonment excavation. Caerus will also field screen the footprint of the former separator location and the former custody transfer location on the well pad. If any of the field screening areas indicate impacts to soil, the samples exhibiting the highest degree of impacts based on field screening will be submitted for laboratory analysis of the full list of constituents listed in COGCC Table 915-1. Any impacted soil will be segregated, stockpiled on site, and the extent of impacts will be investigated through additional excavation and confirmation soil sampling. Continued on "Additional Investigative Actions" section below.

### Proposed Groundwater Sampling

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

Groundwater is not anticipated to be encountered during the proposed activities. In the event that groundwater is identified on location, Caerus will notify the COGCC and attempt to collect a representative sample for COGCC Table 915-1 analysis.

### Proposed Surface Water Sampling

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

Surface water is not anticipated to be encountered during the proposed activities. In the event that surface water is identified on location, Caerus will notify the COGCC and attempt to collect a representative sample for COGCC Table 915-1 analysis.

## Additional Investigative Actions

Additional alternative investigative actions described in attached Site Investigation Plan ( summary ):

Continued from "Proposed Soil Sampling": If no impacts are observed at the wellhead, separator, or former custody transfer point, one sample will be collected from the base of the excavation immediately adjacent to the well, one in the middle of the separator, and one adjacent to the custody transfer point. Samples will be submitted for laboratory analysis of the full list of constituents listed in COGCC Table 915-1.

# SITE INVESTIGATION REPORT

## SAMPLE SUMMARY

<b>Soil</b>	<b>NA / ND</b>
Number of soil samples collected _____ 0	NA Highest concentration of TPH (mg/kg) _____
Number of soil samples exceeding 915-1 _____ 0	NA Highest concentration of SAR _____

Was the areal and vertical extent of soil contamination delineated? No

BTEX > 915-1 No

Approximate areal extent (square feet) 0

Vertical Extent > 915-1 (in feet) 0

**Groundwater**

Number of groundwater samples collected 0

NA Highest concentration of Benzene (µg/l) \_\_\_\_\_

Was extent of groundwater contaminated delineated? Yes

NA Highest concentration of Toluene (µg/l) \_\_\_\_\_

Depth to groundwater (below ground surface, in feet) 100'

NA Highest concentration of Ethylbenzene (µg/l) \_\_\_\_\_

Number of groundwater monitoring wells installed 0

NA Highest concentration of Xylene (µg/l) \_\_\_\_\_

Number of groundwater samples exceeding 915-1 0

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**

**SOURCE REMOVAL SUMMARY**

Describe how source is to be removed.

No source of impact has been identified to date for the proposed activities. If impacts are identified and confirmed through laboratory analysis, Caerus will provide this information to the COGCC with plans for source removal and disposition of waste.

**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.

No source of impact has been identified to date for the proposed activities. If impacts are identified and confirmed through laboratory analysis, Caerus will provide this information to the COGCC with plans for source removal and disposition of waste.

**Soil Remediation Summary**

**In Situ**

**Ex Situ**

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

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

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

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

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

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

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

\_\_\_\_\_ Excavate and onsite remediation

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

\_\_\_\_\_ Land Treatment

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

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

\_\_\_\_\_ 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 is not anticipated to be encountered during the proposed activities. In the event that groundwater is identified on location, Caerus will notify the COGCC and 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 \_\_\_\_\_

### 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: \_\_\_\_\_

# 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 wellhead excavation area will be returned to grade with suitable material in preparation for final reclamation activities pursuant to the COGCC 1000 Series Rules.

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? No \_\_\_\_\_

## 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). 07/30/2021

Proposed site investigation commencement. \_\_\_\_\_

Proposed completion of site investigation. \_\_\_\_\_

### 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 to comply with COGCC Rule 911.a.(4). Caerus is planning to plug and abandon the Shaeffer 12-8 well, the former separator location, and former custody transfer point, in support of final reclamation activities. Excavation and sampling activities will be documented with photographs and provided along with field screening and laboratory analysis using a Supplemental eForm 27.

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: 06/23/2021

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: 07/19/2021

Remediation Project Number: 19036

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

	Operator shall comply with Rule 915.e.(2).B by collecting samples from areas most likely to have been impacted and determining the horizontal and vertical extent(s) of contamination.
	If historical impacts are discovered, operator shall report historical impacts via an eForm 19 (Initial w/ Supplemental) and shall collect representative soil samples for the complete Table 915-1 list. This eForm 19 may include a closure request referencing the Remediation Project number assigned upon approval of this report.
	Comply with COGCC Rule 1105 flowline abandonment requirements, including notification and verification requirements.
	Operator shall collect sample(s) from comparable, nearby non-impacted native soil for purposes of establishing background soil conditions including pH, electrical conductivity (EC) and sodium adsorption ratio (SAR), per Rule 915.e.(2).D.
	Per Rule 913.b.(2), the Operator will conduct sampling and analysis of soil, and groundwater--if encountered, to determine the horizontal and vertical extent of any contamination in excess of the cleanup concentrations in Table 915-1 for soil and groundwater. The Operator shall analyze samples for the complete Table 915-1 list and shall delineate the extent of impacts using the Table 915-1 Protection of Groundwater Soil Screening Level Concentrations.
5 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.

**Att Doc Num****Name**

402725602	FORM 27-INITIAL-SUBMITTED
402726104	SITE INVESTIGATION PLAN

Total Attach: 2 Files

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

		Stamp Upon Approval
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Total: 0 comment(s)