

State of Colorado  
Oil and Gas Conservation Commission

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Document Number:  
402345554  
Receive Date:  
03/23/2020  
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. Refer to Rules 340, 905, 906, 907, 908, 909, and 910

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) 640-691
Contact Person: Blair Rollins	Email: brollins@caerusoilandgas.com	

PROJECT, PURPOSE & SITE INFORMATION

**PROJECT INFORMATION**  
Remediation Project #: 15393 Initial Form 27 Document #: 402345554

**PURPOSE INFORMATION**

<input type="checkbox"/> 901.e. Sensitive Area Determination	<input type="checkbox"/> 909.c.(5), Rule 910.b.(4): Remediation of impacted ground water
<input type="checkbox"/> 909.c.(1), Rule 905: Pit or PW vessel closure	<input type="checkbox"/> Rule 909.e.(2)A.: Notice completion of remediation in accordance with Rule 909.b.
<input checked="" type="checkbox"/> 909.c.(2), Rule 906: Spill/Release Remediation	<input type="checkbox"/> Rule 909.e.(2)B.: Closure of remediation project
<input type="checkbox"/> 909.c.(3), Rule 907.e.: Land treatment of oily waste	<input type="checkbox"/> Rule 906.c.: Director request
<input type="checkbox"/> 909.c.(4), Rule 908.g.: Centralized E&P Waste Management Facility closure	<input type="checkbox"/> Other _____

**SITE INFORMATION**      N      Multiple Facilities ( in accordance with Rule 909.c. )

Facility Type: SPILL OR RELEASE	Facility ID: 473129	API #: _____	County Name: GARFIELD
Facility Name: SGV 12H tank battery	Latitude: 39.366067	Longitude: -108.051967	
** correct Lat/Long if needed: Latitude: _____		Longitude: _____	
QtrQtr: SENE	Sec: 12	Twp: 8S	Range: 96W Meridian: 6 Sensitive Area? Yes

**SITE CONDITIONS**

General soil type - USCS Classifications GW      Most Sensitive Adjacent Land Use Agricultural Land

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**

A dry drainage feature is located approximately 600 feet south of the facility. The nearest registered domestic water well is approximately 850 feet northwest of the 12H tank. The screened interval for the domestic water well is 150 - 300 below ground surface.

# SITE INVESTIGATION PLAN

## TYPE OF WASTE:

- |  |  |  |
|--|--|--|
| <input checked="" type="checkbox"/> E&P Waste      | <input type="checkbox"/> Other E&P Waste             | <input type="checkbox"/> Non-E&P Waste |
| <input checked="" type="checkbox"/> Produced Water | <input type="checkbox"/> Workover Fluids             | _____                                  |
| <input type="checkbox"/> Oil                       | <input type="checkbox"/> Tank Bottoms                |  |
| <input checked="" 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 type="checkbox"/> Other (as described by EPA) | _____                                  |

## DESCRIPTION OF IMPACT

Impacted?	Impacted Media	Extent of Impact	How Determined
Yes	SOILS	TBD	Laboratory 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 refer to COGCC document numbers 402340288 and 402346769.

## 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 ):

Caerus plans to remove the tank from the secondary containment to allow for access to excavate the impacted soil associated with this spill on location. The impacted soil will be staged on location until laboratory analytical results have been received to determine appropriate plans for impacted soil remediation moving forward.

### 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 2

Number of soil samples exceeding 910-1 2

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

Approximate areal extent (square feet) 1500

### NA / ND

--          Highest concentration of TPH (mg/kg) 20270

--          Highest concentration of SAR 17.8

BTEX > 910-1 Yes

Vertical Extent > 910-1 (in feet) 5

### Groundwater

Number of groundwater samples collected 0

Was extent of groundwater contaminated delineated? Yes

Depth to groundwater (below ground surface, in feet) 150'

Number of groundwater monitoring wells installed 0

Number of groundwater samples exceeding 910-1 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 910-1

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) 60

Volume of liquid waste (barrels) 60

Is further site investigation required?

Caerus proposes to remove the tank and excavate spill-impacted soil onto the location, until lab results can aid in developing a plan moving forward.

# REMEDIAL ACTION PLAN

## SOURCE REMOVAL SUMMARY

Describe how source is to be removed.

Caerus proposes to disconnect and move the tank outside of the secondary containment. Following removal and staging of the tank outside the secondary containment, Caerus will begin excavation and onsite staging of impacted soil. Caerus anticipates that confirmation soil samples of the excavation footprint will be collected along with spoils pile samples for characterization. Following receipt of laboratory analytical results, Caerus will provide this information to the COGCC with a plan for additional remedial actions required to ensure compliance with COGCC Table 910-1 soil standards.

## 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.

Caerus proposes to begin disconnecting the tank and storing it on location beginning March 24, 2020 and excavation will follow on approximately March 26th, 2020. Caerus requests a reduced analytical list for all future soil samples associated with this project to reflect the existing impacts found at the point of release of this project. The POR sample is represented as the 12H S sample on the attached tabulated lab data summary and lab report. Caerus requests to analyze all future soil samples as part of this project for TPH DRO and GRO, BTEX, PAH's, SAR, and pH. Caerus recognizes that arsenic is above the COGCC Table 910-1 standard but believes this is naturally occurring background concentration and is requesting relief under FAQ 31 as attached.

## Soil Remediation Summary

In Situ

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

Ex Situ

\_\_\_\_\_ No Excavate and offsite disposal  
\_\_\_\_\_ If Yes: Estimated Volume (Cubic Yards) \_\_\_\_\_  
\_\_\_\_\_ Name of Licensed Disposal Facility or COGCC Facility ID # \_\_\_\_\_  
\_\_\_\_\_ Yes Excavate and onsite remediation  
\_\_\_\_\_ No Land Treatment  
\_\_\_\_\_ No Bioremediation (or enhanced bioremediation)  
\_\_\_\_\_ No Chemical oxidation  
\_\_\_\_\_ Yes Other Staging and characterization for  
\_\_\_\_\_ treatment option \_\_\_\_\_

## Groundwater Remediation Summary

\_\_\_\_\_ No Bioremediation ( or enhanced bioremediation )  
\_\_\_\_\_ No Chemical oxidation  
\_\_\_\_\_ No Air sparge / Soil vapor extraction  
\_\_\_\_\_ Yes 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.

Based on the screened interval for the nearest groundwater well in the area, Caerus does not expect to encounter groundwater during the proposed excavation effort.

# REMEDIATION PROGRESS UPDATE

## PERIODIC REPORTING

Frequency:  Quarterly  Semi-Annually  Annually  Other \_\_\_\_\_

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.

Following excavation, Caerus will return the pad to the active working surface elevation for continued operation.

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 approve the seed mix?  Yes \_\_\_\_\_

If NO, does the seed mix comply with local soil conservation district recommendations?  Yes \_\_\_\_\_

## IMPLEMENTATION SCHEDULE

### PRIOR DATES

Date of Surface Owner notification/consultation, if required. 03/10/2020

Actual Spill or Release date, if known. 03/10/2020

### SITE INVESTIGATION DATES

Date of Initial Actions described in Site Investigation Plan (start date). 03/10/2020

Date of commencement of Site Investigation. 03/11/2020

Date of completion of Site Investigation. \_\_\_\_\_

### REMEDIAL ACTION DATES

Date of commencement of Remediation. \_\_\_\_\_

Date of completion of Remediation. \_\_\_\_\_

### SITE RECLAMATION DATES

Date of commencement of Reclamation. \_\_\_\_\_

Date of completion of Reclamation. \_\_\_\_\_

**OPERATOR COMMENT**

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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: 03/23/2020 \_\_\_\_\_

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: 04/06/2020 \_\_\_\_\_

Remediation Project Number: 15393 \_\_\_\_\_

### Condition of Approval

<u>COA Type</u>	<u>Description</u>
	Operator shall submit soil sampling results and a detailed remediation workplan via a Supplemental eForm 27 for COGCC approval prior to implementation.
	Attached analytical summary table (doc #402349835) describes background sample as "NW." Operator shall update this sample description to reflect the source well pad on future analytical summary tables submitted via Supplemental eForms 27.
	Analytical Results attachment doc #402349695 pdf (presumably TPH-GRO results for 3/11/2020 samples) is corrupted and cannot be opened. Operator shall resubmit the missing report as an attachment to a Supplemental eForm 27.
	Submit Supplemental eForm 19 to request closure of Spill/Release ID #473129. Supplemental report shall comply with outstanding COAs, indicate that work is proceeding under an approved eForm 27 and shall reference the Remediation Project number assigned upon approval of this report.
4 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.

<u>Att Doc Num</u>	<u>Name</u>
402345554	INVESTIGATION/REMEDATION WORKPLAN (INITIAL)
402349695	ANALYTICAL RESULTS
402349696	ANALYTICAL RESULTS
402349834	ANALYTICAL RESULTS
402349835	ANALYTICAL RESULTS
402349853	AERIAL IMAGE
402349854	AERIAL IMAGE
402363440	FORM 27-INITIAL-SUBMITTED

Total Attach: 8 Files

### General Comments

<u>User Group</u>	<u>Comment</u>	<u>Comment Date</u>
Environmental	Operator's request for a reduced analyte suite (TPH DRO and GRO, BTEX, PAH's, SAR, and pH) is conditionally approved, based on the information provided.	04/06/2020
Environmental	Attached laboratory report for 3/11/2020 samples (doc #402349696) indicates that the RDL for Dibenz(a,h)anthracene exceeds the Table 910-1 standard for Sample ID #20200311-12H S.	04/06/2020

Total: 2 comment(s)