

State of Colorado  
Oil and Gas Conservation Commission

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402523964  
Receive Date:  
11/03/2020  
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.

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) 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 #: 14181 Initial Form 27 Document #: 402159698

**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 type="checkbox"/> 909.c.(2), Rule 906: Spill/Release Remediation	<input checked="" 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: 466606	API #: _____	County Name: GARFIELD
Facility Name: L19-595 Dumpline	Latitude: 39.599413	Longitude: -108.106305	
** correct Lat/Long if needed: Latitude: _____		Longitude: _____	
QtrQtr: NWSW	Sec: 19	Twp: 5S	Range: 95W 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? No

**Other Potential Receptors within 1/4 mile**

# 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	~1500 cu yd	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 see documents for COGCC Remediation Project # 14181 and the release identified by Spill/Release Point ID 466606 for this information.

Since the last form submittal associated with this project, soil that was considered compliant with COGCC Table 910-1 Concentration Levels and approved for backfill via COGCC Document 402485864 was backfilled within the excavation associated with this project. Also as approved via the above-mentioned document, impacted soil (approximately 1,500 cubic yards) represented by soil sample 20200814-L19-595 (STOCK 02) was mixed with soil represented by soil sample 20200814-L19-595 (STOCK 03).

On 10/22/2020, three five-point composite samples (20201022-L19-595(STOCK01), 20201022-L19-595(STOCK02), and 20201022-L19-595(STOCK03)) were collected from the mixed stockpile mentioned above. The samples were submitted for laboratory analysis of TPH, BTEX, SAR, EC, pH, and arsenic as approved via COGCC Document 402349947. Laboratory results indicate that all samples (except soil sample 20201022-L19-595(STOCK01)) complied with all COGCC Table 910-1 Concentrations Levels for the analytes listed above or were below background concentrations for arsenic. Soil sample 20201022-L19-595(STOCK01) exhibited an SAR exceedance and will be buried (pending COGCC approval) below clean soil. More details on this burial are provided in the "Remediation Summary" section in this form. Table 1 summarizes the analytical data and results are attached. Figure 1 depicts the sampling locations.

## 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 ):

### 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 3

Number of soil samples exceeding 910-1 1

Was the areal and vertical extent of soil contamination delineated? Yes

Approximate areal extent (square feet) 10000  
0

### NA / ND

--          Highest concentration of TPH (mg/kg) 163.8  
56

--          Highest concentration of SAR 12.7

BTEX > 910-1 No

Vertical Extent > 910-1 (in feet) 0

### Groundwater

Number of groundwater samples collected 0

Was extent of groundwater contaminated delineated? No

Depth to groundwater (below ground surface, in feet) 0'

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?

Background soil samples collected from the L19-595 pad location on 8/31/2011 are being used for comparison. Analytical results are summarized in Table 1 and results are attached. A map of where these samples were collected was included as an attachment on COGCC Document 402349947

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.

No further source removal is necessary.

## 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.

No further remediation is necessary.

In order to address the arsenic exceedances exhibited in the soil samples collected on 10/22/2020, Caerus is requesting consideration for the COGCC Table 910-1 Concentration Level for arsenic under guidelines set forth under FAQ 31. Caerus believes the request for FAQ 31 consideration is acceptable as arsenic results for all samples collected were below background concentrations. Please see Table 1 and associated background soil sample results which are both included as an attachment. This sampling occurred in 2011 at the location. All samples were collected from undisturbed areas. A map of where these samples were collected was included as an attachment on COGCC Document 402349947.

In order to address the SAR exceedance exhibited in soil sample 20201022-L19-595(STOCK01), Caerus is requesting consideration for COGCC Table 910-1 Concentration Level for SAR under guidelines set forth under FAQ 32 as the soil represented by this sample will be buried at a depth of three feet or greater and be covered with clean soil including (pending COGCC approval) soil represented by soil samples 20201022-L19-595(STOCK02) and 20201022-L19-595(STOCK03). Caerus believes the request for FAQ 32 consideration is acceptable as there are minimal potential receptors in the area and environmental impacts to these receptors are unlikely. The nearest surface water is 350 feet to the east and groundwater at the site is estimated to be approximately 100 feet below the pad surface based on well information for a water well identified by Permit # 164780. The value for depth to groundwater listed on this form was taken from the construction details listed for this well.

## Soil Remediation Summary

### In Situ

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

### Ex Situ

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

## Groundwater Remediation Summary

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

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? 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 \_\_\_\_\_ 73

E&P waste (liquid) description Mixture of impacted soil and hydrovac  
rinsate

COGCC Disposal Facility ID #, if applicable: \_\_\_\_\_ 426582

Non-COGCC Disposal Facility: \_\_\_\_\_

## REMEDIATION COMPLETION REPORT

### REMEDIATION COMPLETION SUMMARY

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

Do all soils meet Table 910-1 standards? Yes

Does the previous reply indicate consideration of background concentrations? Yes

Are the only residual soil impacts pH, SAR, or EC at depths greater than 3 feet below ground surface? \_\_\_\_\_

Does Groundwater meet Table 910-1 standards? Yes

Is additional groundwater monitoring to be conducted? No

## 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 northern part of the pad will be reclaimed and seeded per COGCC rules regarding reclamation.

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. \_\_\_\_\_

Actual Spill or Release date, if known. \_\_\_\_\_

## **SITE INVESTIGATION DATES**

Date of Initial Actions described in Site Investigation Plan (start date). 08/08/2019

Date of commencement of Site Investigation. 08/08/2019

Date of completion of Site Investigation. 11/13/2019

## **REMEDIAL ACTION DATES**

Date of commencement of Remediation. 08/26/2019

Date of completion of Remediation. 10/22/2020

## **SITE RECLAMATION DATES**

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

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

**OPERATOR COMMENT**

The "Sample Summary" section of this form includes only the sample data from soil samples collected on 10/22/2020.

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

Signed: Jake Janicek \_\_\_\_\_

Title: EHS Specialist \_\_\_\_\_

Submit Date: 11/03/2020 \_\_\_\_\_

Email: jjanicek@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: 11/10/2020 \_\_\_\_\_

Remediation Project Number: 14181 \_\_\_\_\_

**COA Type****Description**

	Based on review of information presented it appears that no further action is necessary at this time, and COGCC approves the closure request. However, should future conditions at the site indicate contaminant concentrations in soils exceeding COGCC standards or if surface and/or ground water is found to be impacted, then further investigation and/or remediation activities will be required at the site. In addition, the non-working surface area disturbed by the remediation activity shall be reclaimed in accordance with the 1000 Series Reclamation Rules including the establishment of vegetative cover on non-cropland and successful growth on cropland. Landowner must approve reclamation of cropland.
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**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**

402523964	FORM 27-SUPPLEMENTAL-SUBMITTED
402523965	MAP
402523966	ANALYTICAL RESULTS
402523967	ANALYTICAL RESULTS
402523968	ANALYTICAL RESULTS

Total Attach: 5 Files

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

Environmental	Based on the analytical data provided for stockpile samples (doc #402523966) and the information provided under Remediation Summary, the Operator's plan to backfill the excavation with stockpiled soil is conditionally approved.	11/10/2020
Environmental	Based on the analytical data provided for background samples (docs #402523966 and #402523967), the COGCC approves of the operator's request for consideration of arsenic background concentrations (13-31 mg/kg) in exceedance of Table 910-1.	11/10/2020

Total: 2 comment(s)