

State of Colorado
Oil and Gas Conservation Commission

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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	Phone Numbers
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 #: 7167 Initial Form 27 Document #: 2229808

PURPOSE INFORMATION

<input type="checkbox"/> 901.e. Sensitive Area Determination	<input checked="" 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 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: PIT	Facility ID: 285021	API #: _____	County Name: GARFIELD
Facility Name: NP EF07B N30 595	Latitude: 39.581253	Longitude: -108.098522	
** correct Lat/Long if needed: Latitude: _____		Longitude: _____	
QtrQtr: SESW	Sec: 30	Twp: 5S	Range: 95W Meridian: 6 Sensitive Area? Yes

SITE CONDITIONS

General soil type - USCS Classifications MH 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

According to COGCC GIS Online mapping, there is one stream and one groundwater monitoring water well within 1/4 mile.

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 checked="" type="checkbox"/> Pit Bottoms | |
| | <input type="checkbox"/> Other (as described by EPA) | _____ |

DESCRIPTION OF IMPACT

Impacted?	Impacted Media	Extent of Impact	How Determined
Yes	GROUNDWATER	40' by 50'	Laboratory analytical results
Yes	SOILS	40' by 100' by 30'	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 number 400786267.

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 does not plan to conduct soil boring and sampling as part of the hydrovac fluid recovery pilot test and continued solar-powered oil skimmer pilot test. Please see attached narrative.

Proposed Groundwater Sampling

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

During previous conversations and COAs assigned by the COGCC in Document # 401297665, Caerus was in direct conversations that requested continued groundwater monitoring at the site was meant to monitor fluid levels in the monitoring wells and to visually monitor for the presence of hydrocarbons per COGCC Table 910-1. Because of the absence of BTEX in the groundwater samples from around the site and the demonstration that the plume was stable, no additional BTEX analysis was requested. After recent conversations with the COGCC an additional BTEX analysis was requested to confirm previous analysis. The attached 2020 laboratory analytical data and summary table demonstrates the absence of BTEX and the stability of the plume found at the site. Based on the previous COA outlined in Doc #401297665 and the attached results demonstrating a stable plume with no BTEX present, Caerus intends to continue to monitor depth to groundwater at the site during each quarterly dewatering event.

Proposed Surface Water Sampling

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

Surface water samples are collected down gradient from this location on a quarterly basis for Caerus' North Parachute Ranch water sampling program.

Additional Investigative Actions

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

Please see the attached narrative. Caerus plans to continue solar-powered oil skimmer pilot test activities. Caerus proposes to conduct EFR activities using a hydrovac on a quarterly basis. Caerus will provide fluid recovery data, depth to groundwater/free product, free product thickness, and free product recovery data to the COGCC on a quarterly basis under a Supplemental eForm 27.

SITE INVESTIGATION REPORT

SAMPLE SUMMARY

Soil

Number of soil samples collected 82

Number of soil samples exceeding 910-1 31

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

Approximate areal extent (square feet) 12500

NA / ND

-- Highest concentration of TPH (mg/kg) 13450

-- Highest concentration of SAR 46

BTEX > 910-1 Yes

Vertical Extent > 910-1 (in feet) 52

Groundwater

Number of groundwater samples collected 7

Was extent of groundwater contaminated delineated? Yes

Depth to groundwater (below ground surface, in feet) 45

Number of groundwater monitoring wells installed 7

Number of groundwater samples exceeding 910-1 0

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

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) 0

Volume of liquid waste (barrels) 90

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.

Please see attached narrative.

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.

Please see attached narrative.

Soil Remediation Summary

In Situ

Ex Situ

Yes _____ Bioremediation (or enhanced bioremediation)

_____ Excavate and offsite disposal

No _____ Chemical oxidation

_____ If Yes: Estimated Volume (Cubic Yards) _____

Yes _____ Air sparge / Soil vapor extraction

_____ Name of Licensed Disposal Facility or COGCC Facility ID # _____

Yes _____ Natural Attenuation

_____ Excavate and onsite remediation

No _____ Other _____

_____ Land Treatment

_____ Bioremediation (or enhanced bioremediation)

_____ Chemical oxidation

_____ Other _____

Groundwater Remediation Summary

Yes _____ Bioremediation (or enhanced bioremediation)

No _____ Chemical oxidation

No _____ Air sparge / Soil vapor extraction

Yes _____ Natural Attenuation

Yes _____ Other _____ Mechanical removal using belt skimmer and hydrovac EFRs

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.

Please see attached narrative.

REMEDIATION PROGRESS UPDATE

PERIODIC REPORTING

Frequency: Quarterly Semi-Annually Annually Other _____

Report Type: Groundwater Monitoring Land Treatment Progress Report O&M Report

Other Q4 2020 Quarterly dewatering report _____

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? No _____

Do all soils meet Table 910-1 standards? _____

Does the previous reply indicate consideration of background concentrations? _____

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? _____

Is additional groundwater monitoring to be conducted? _____

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 footprint for the backfill pit occurs within the pad boundary for this location. During reclamation the backfill pit may be part of the pad's working surface and/or covered by recontoured and reseeded sloped installed to meet reclamation objectives. Interim and final reclamation activities will be carried out in accordance with COGCC 1000 Series requirements, and will be documented accordingly.

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 approve the seed mix? _____

If NO, does the seed mix comply with local soil conservation district recommendations? _____

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). 09/04/2019

Date of commencement of Site Investigation. _____

Date of completion of Site Investigation. _____

REMEDIAL ACTION DATES

Date of commencement of Remediation. 08/08/2012

Date of completion of Remediation. _____

SITE RECLAMATION DATES

Date of commencement of Reclamation. _____

Date of completion of Reclamation. _____

OPERATOR COMMENT

Caerus completed quarterly dewatering activities at the site on October 8th, 2020, please reference the attached tabulated data spreadsheet for recovery events.

Caerus proposes to increase the dewatering activities during each quarter to include one dewatering event by submersible pump and one dewatering event by transport truck. The submersible pump event will allow for skimming of the upper portion of the water column, while the transport truck event will provide gross removal of fluid from each well and introduce oxygen to the remediation system. Following each dewatering event conducted, Caerus will install sorbent booms in each well to absorb free product from the site.

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: 01/21/2021 _____

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: 02/19/2021 _____

Remediation Project Number: 7167 _____

COA Type**Description**

	Operator shall submit a project update during Q2 of 2021 that includes a comprehensive Remediation Summary section and an assessment of remediation effectiveness for the skimmer pilot test and EFR. Operator's update shall also address horizontal and vertical delineation of soil impacts conducted to date as well as future investigation required to demonstrate compliance with Table 915-1.
	Operator shall submit a quarterly updates per Rule 913.e.(3). The Operator's quarterly update may include a request for a modified reporting frequency.

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**

402571235	FORM 27-SUPPLEMENTAL-SUBMITTED
402580140	SITE MAP
402580261	GROUND WATER ELEVATION MAP

Total Attach: 3 Files

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

		Stamp Upon Approval
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Total: 0 comment(s)