

State of Colorado
Energy & Carbon Management 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.

Closure request is not available for an Initial Site Investigation and Remediation Workplan.

OPERATOR INFORMATION

Name of Operator: CAERUS PICEANCE LLC	Operator No: 10456	Phone Numbers
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 #: 27775 Initial Form 27 Document #: 403326528

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: Q4 Status Update to Remediation Project Number (RPN) 27775

SITE INFORMATION

Yes Multiple Facilities

Facility Type: PIT	Facility ID: 117251	API #:	County Name: RIO BLANCO
Facility Name: PICEANCE CREEK UNIT 68-11	Latitude: 39.886142	Longitude: -108.245544	
** correct Lat/Long if needed: Latitude:		Longitude:	
QtrQtr: SWSE	Sec: 11	Twp: 2S	Range: 97W Meridian: 6 Sensitive Area? Yes

Facility Type: UIC DISPOSAL	Facility ID: 159173	API #:	County Name: RIO BLANCO
Facility Name: PCU T68X-11G	Latitude: 39.885470	Longitude: -108.244510	
** correct Lat/Long if needed: Latitude:		Longitude:	
QtrQtr: SWSE	Sec: 11	Twp: 2S	Range: 97W Meridian: 6 Sensitive Area? Yes

Facility Type: WELL	Facility ID: _____	API #: 103-05185	County Name: RIO BLANCO
Facility Name: PICEANCE CREEK UNIT T68X-11G	Latitude: 39.885470	Longitude: -108.244510	
** correct Lat/Long if needed: Latitude: _____		Longitude: _____	
QtrQtr: SWSE	Sec: 11	Twp: 2S	Range: 97W Meridian: 6 Sensitive Area? Yes

Facility Type: LOCATION	Facility ID: 314334	API #: _____	County Name: RIO BLANCO
Facility Name: PICEANCE CREEK UNIT-62S97W 11SWSE	Latitude: 39.885542	Longitude: -108.244494	
** correct Lat/Long if needed: Latitude: _____		Longitude: _____	
QtrQtr: SWSE	Sec: 11	Twp: 2S	Range: 97W Meridian: 6 Sensitive Area? Yes

Facility Type: NONFACILITY	Facility ID: 431140	API #: _____	County Name: RIO BLANCO
Facility Name: PCU 68-11 injection line 431140	Latitude: 39.890623	Longitude: -108.251488	
** correct Lat/Long if needed: Latitude: _____		Longitude: _____	
QtrQtr: SWSE	Sec: 11	Twp: 2S	Range: 97W Meridian: 6 Sensitive Area? Yes

SITE CONDITIONS

General soil type - USCS Classifications OH 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

It appears as if the permitted water wells populated within a quarter mile of the project area on the COGIS database, including the one on the PCU T68X-11G pad, are gas wells that were permitted by a previous operator through the DWR to allow them to use production water in a variety of ways. The submittal of this form includes the determination by the submitter that they are not domestic water wells.

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) Historic impacts associated with oil & gas production have been confirmed

DESCRIPTION OF IMPACT

Impacted?	Impacted Media	Extent of Impact	How Determined
Yes	SOILS	To be determined	Field investigation and soil sampling

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 associated with ECMC RPN 27775 for a list of activities completed prior to the fourth quarter of 2023.

On November 6, 2023, five confirmation soil samples were collected from the excavation footprint used to access and decommission production well PICEANCE CREEK UNIT T68X-11G to confirm the presence or absence of hydrocarbon impacts using a photoionization detector (PID) and visual, and olfactory senses. One base sample was collected immediately adjacent to the wellhead at 7 feet below ground surface (bgs) and four sidewall samples were collected from each exposed wall at depths of 6 feet bgs. Prior to sample collection and field soil screening, at least six inches of soil was removed from the sampling surface to ensure representative soil samples were collected. Additionally, one 5-point composite soil sample 20231106-PCU T68X-11G SWD-(STOCK01) was collected from the excavated stockpile soil removed to access and decommission the production well. All samples were submitted under the approved suite in Document Number (DN) 403470573.

Please see the attached report of work completed (ROWC) for additional investigative sampling 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):

Additional investigative work will continue at the decommissioned production well PICEANCE CREEK UNIT T68X-11G to remove the impacts identified along the sidewall and base of the current wellhead excavation extent. Prior to additional investigative work associated with the wellhead, per Rule 915 e. (2)C. Caerus requests the Director for approval to sample under a reduced analytical suite for all future wellhead confirmation soil samples of lead, total petroleum hydrocarbons (TPH), benzene, ethylbenzene, total xylenes, 1,2,4-trimethylbenzene, 1,3,5-trimethylbenzene, 1-methylnaphthalene, 2-methylnaphthalene, and naphthalene.

All other previously proposed work not completed during the fourth quarter can be referenced in approved ECMC DN 403470573. All confirmation soil samples associated with this work will submitted under approved suite in the above-mentioned DN.

Please see the attached ROWC for additional details.

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):

Please reference all other previously proposed work not completed during the fourth quarter in approved ECMC DN 403470573.

Please see the "Proposed Soil Sampling" and "Remediation Summary" sections of this form for additional details based on work completed during the fourth quarter.

SITE INVESTIGATION REPORT

SAMPLE SUMMARY

Soil

Number of soil samples collected 6

Number of soil samples exceeding 915-1 6

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

Approximate areal extent (square feet) 2500

NA / ND

-- Highest concentration of TPH (mg/kg) 4096

-- Highest concentration of SAR 3

BTEX > 915-1 Yes

Vertical Extent > 915-1 (in feet) 7

Groundwater

Number of groundwater samples collected 0

Was extent of groundwater contaminated delineated? No

Depth 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?

Please see ECMC Document 403470573 for this information.

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?

Please reference all other previously proposed work not completed during the fourth quarter in approved ECMC DN 403470573.
Please see the "Proposed Soil Sampling" and "Remediation Summary" sections of this form for additional details based on work completed during the fourth quarter.

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.

Since the impacts are considered historical, no source can be identified.

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.

A remediation plan will be submitted once all impacts have been delineated.

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

_____ 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.

If groundwater is observed during investigation activities, a representative sample will be collected and submitted for ECMC Table 915-1 for water.

REMEDATION 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 2023 Rem Status Update to RPN 27775

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: \$ 80000

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:

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 5

E&P waste (liquid) description Hydrovac rinseate mixed with impacted soils

COGCC Disposal Facility ID #, if applicable: _____

Non-COGCC Disposal Facility: Greenleaf Environmental Services

REMEDATION COMPLETION REPORT

REMEDATION COMPLETION SUMMARY

Is this a Final Closure Request for this Remediation Project? No

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? _____

Does the previous reply indicate consideration of background concentrations? _____

Does Groundwater meet Table 915-1 standards? _____

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.

Any excavations will be backfilled to the existing grade of the pad surface.

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 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). 05/01/2023

Proposed site investigation commencement. 05/01/2023

Proposed completion of site investigation. 07/08/2024

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

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: 01/08/2024

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: 02/05/2024

Remediation Project Number: 27775

COA Type**Description**

	<p>Comply with this COA from doc #403470573 for "all confirmation soil samples collected in association with previously proposed decommissioning work" (i.e., pit, separator, and flowline samples):</p> <p>"Based on the information provided for confirmation soil samples (doc #403473224), the Operator's request for a reduced analyte suite of lead, TPH (ORO/DRO/GRO), benzene, ethylbenzene, total xylenes, 1,2,4-trimethylbenzene, 1,3,5-trimethylbenzene, 1-methylnaphthalene, 2-methylnaphthalene, fluorene, naphthalene, and sodium adsorption ratio (SAR) is approved under the following condition:</p> <p>The Operator will continue to analyze confirmation soil samples for hexavalent chromium."</p>
	<p>Based on the information provided, the Operator's request for a reduced analyte suite of lead, total petroleum hydrocarbons (TPH), benzene, ethylbenzene, total xylenes, 1,2,4-trimethylbenzene, 1,3,5-trimethylbenzene, 1-methylnaphthalene, 2-methylnaphthalene, and naphthalene for wellhead samples is approved under the following condition:</p> <p>Operator will continue to analyze wellhead soil samples for hexavalent chromium in addition to the requested analytes.</p>
2 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
403624224	FORM 27-SUPPLEMENTAL-SUBMITTED
403627814	SITE INVESTIGATION REPORT

Total Attach: 2 Files

General Comments

User Group	Comment	Comment Date
		Stamp Upon Approval

Total: 0 comment(s)