

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 ECMC 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@qb-energy.com

PROJECT, PURPOSE & SITE INFORMATION

PROJECT INFORMATION

Remediation Project #: 11282 Initial Form 27 Document #: 401620554

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: 2024 Q2 Remediation Status Update

SITE INFORMATION

No Multiple Facilities

Facility Type: SPILL OR RELEASE Facility ID: 455233 API #: County Name: GARFIELD
Facility Name: Mesa 6 historic release Latitude: 39.512940 Longitude: -108.163810
** correct Lat/Long if needed: Latitude: 39.512544 Longitude: -108.164595
QtrQtr: NENE Sec: 24 Twp: 6S Range: 97W Meridian: 6 Sensitive Area? No

SITE CONDITIONS

General soil type - USCS Classifications GC Most Sensitive Adjacent Land Use Rangeland
Is domestic water well within 1/4 mile? No 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

NA

SITE INVESTIGATION PLAN

TYPE OF WASTE:

- X E&P Waste
Other E&P Waste
Non-E&P Waste
X 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)

DESCRIPTION OF IMPACT

Table with 4 columns: Impacted?, Impacted Media, Extent of Impact, How Determined. Row 1: Yes, GROUNDWATER, See Map, Lab 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.

Please review documents archived under Colorado Oil and Gas Conservation Commission (COGCC) RPN 11282 and COGCC Spill/Release Point ID 455233 for a description of activities completed prior to the second quarter of 2024.

Please see attached Report of Work Completed for a review of activities completed during the second quarter of 2024.

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):

Empty text box for soil sampling details.

Proposed Groundwater Sampling

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

Caerus will conduct groundwater sampling on a quarterly basis. Quarterly monitoring will include gauging fluid levels of all groundwater monitoring wells and collecting groundwater samples from all monitoring wells in which measurable light non-aqueous phase liquid (LNAPL) is not observed.

Proposed Surface Water Sampling

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

Empty text box for surface water sampling details.

Additional Investigative Actions

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

Additional monitoring wells will be installed to further characterize the plume's migration to the north. Please see Figure 4 of the attached document for proposed locations. This drilling is scheduled for September 2024.

SITE INVESTIGATION REPORT

SAMPLE SUMMARY

Soil

Number of soil samples collected 0
Number of soil samples exceeding 915-1 _____
Was the areal and vertical extent of soil contamination delineated? Yes
Approximate areal extent (square feet) _____

NA / ND

-- Highest concentration of TPH (mg/kg) _____
-- Highest concentration of SAR _____
BTEX > 915-1 No
Vertical Extent > 915-1 (in feet) _____

Groundwater

Number of groundwater samples collected 16
Was extent of groundwater contaminated delineated? Yes
Depth to groundwater (below ground surface, in feet) 35
Number of groundwater monitoring wells installed 2
Number of groundwater samples exceeding 915-1 10

-- Highest concentration of Benzene (µg/l) 12000
-- Highest concentration of Toluene (µg/l) 26000
-- Highest concentration of Ethylbenzene (µg/l) 1100
-- Highest concentration of Xylene (µg/l) 18200
NA Highest concentration of Methane (mg/l) _____

Surface Water

1 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

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.

Please see "Remediation Summary" section.

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.

Monitoring wells will be inspected for LNAPL on a bi-weekly basis. Downhole booms will be placed in wells where measurable LNAPL is detected.

Soil Remediation Summary

In Situ

Ex Situ

_____ Bioremediation (or enhanced bioremediation)

_____ Excavate and offsite disposal

Chemical oxidation
 Air sparge / Soil vapor extraction
 Natural Attenuation
 Other _____

If Yes: Estimated Volume (Cubic Yards) _____
 Name of Licensed Disposal Facility or ECMC Facility ID # _____
 Excavate and onsite remediation
 No Land Treatment
 No Bioremediation (or enhanced bioremediation)
 No Chemical oxidation
 No 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.

Caerus will conduct groundwater sampling on a quarterly basis. Quarterly monitoring will include gauging fluid levels of all groundwater monitoring wells and collecting groundwater samples from all monitoring wells in which measurable light non-aqueous phase liquid (LNAPL) is not observed. A sample will also be collected from spring sample point SC00609724BDD1. All water samples collected will be submitted for laboratory analysis of analytes listed for groundwater in COGCC Table 915-1. Groundwater monitoring and sampling activities will be reported to the COGCC quarterly via a Supplemental Form 27. Please see Figure 1 of the attached document which depicts all sample locations along with the abandoned monitoring well location MW-02.

REMEDIATION PROGRESS UPDATE

PERIODIC REPORTING

Approved Reporting Schedule:

Quarterly Semi-Annually Annually Other 2024 Q2 Remediation Status Update

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 _____

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: \$ 250000 _____

WASTE DISPOSAL INFORMATION

Was E&P waste generated as part of this remediation? No _____

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 _____

ECMC Disposal Facility ID #, if applicable: _____

Non-ECMC Disposal Facility: _____

Volume of E&P Waste (liquid) in barrels _____

E&P waste (liquid) description _____

ECMC Disposal Facility ID #, if applicable: _____

Non-ECMC Disposal Facility: _____

REMEDIATION COMPLETION REPORT

REMEDIATION 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 ECMC 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.

Please refer to the previously submitted Supplemental Form 27 (COGCC Document Number 403186507) for the reclamation plan.

Is the described reclamation complete? Yes

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). 03/28/2018

Proposed site investigation commencement. 03/28/2018

Proposed completion of site investigation. 08/14/2019

REMEDIAL ACTION DATES

Proposed start date of Remediation. 07/30/2019

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

In the second quarter of 2024, three (3) additional monitoring wells (designated MW16, MW17, and MW18) were planned to improve groundwater monitoring coverage to the east and northeast of the historic release and associated subsurface plumes. Due to severe weather interruptions, only two (2) of the planned wells were completed by the end of the quarter: MW17 and MW18. Please see Figure 1 in the attached report for the final surveyed locations of these wells. No hydrocarbons were observed during the installation of MW17 and MW18.

As the Site is located on fractured bedrock and drilling was conducted with an ODEX air-rotary rig, producing solid core, no soil samples were collected during monitoring well installation.

Caerus intends to drill and install MW16 in July 2024 as well as an additional four (4) new monitoring wells to the north (MW19-MW22) in September 2024. Please see Figure 4 in the attached report for proposed locations.

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: 10/11/2024

Email: jjanicek@qb-energy.com

Based on the information provided herein, this Application for Site Investigation and Remediation Workplan complies with ECMC Rules and applicable orders and is hereby approved.

ECMC Approved: Steven Arauza

Date: 12/17/2024

Remediation Project Number: 11282

COA Type

Description

0 COA	

ATTACHMENT 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

403922873	INVESTIGATION/REMEDATION WORKPLAN (SUPPLEMENTAL)
403927361	ANALYTICAL RESULTS
403954087	REMEDATION PROGRESS REPORT
404032371	FORM 27-SUPPLEMENTAL-SUBMITTED

Total Attach: 4 Files

General Comments

User Group

Comment

Comment Date

Environmental	Comply with outstanding COAs.	12/17/2024
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Total: 1 comment(s)