

State of Colorado
Energy & Carbon Management Commission

1120 Lincoln Street, Suite 801, Denver, Colorado 80203
Phone: (303) 894-2100 Fax: (303) 894-2109



Document Number:
403967687
Receive Date:
01/28/2025
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 #: 25302 Initial Form 27 Document #: 403112417

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: Q3 Status Update to Remediation Project Number (RPN) 25302

SITE INFORMATION

Yes Multiple Facilities

Facility Type: PIT	Facility ID: 104876	API #: _____	County Name: RIO BLANCO
Facility Name: SAGEBRUSH HILLS 4504	Latitude: 39.896750	Longitude: -108.530633	
** correct Lat/Long if needed: Latitude: _____		Longitude: _____	
QtrQtr: NENW	Sec: 8	Twp: 2S	Range: 99W Meridian: 6 Sensitive Area? No
Facility Type: WELL	Facility ID: _____	API #: 103-07527	County Name: RIO BLANCO
Facility Name: SAGEBRUSH HILLS II UNIT A 4504	Latitude: 39.896976	Longitude: -108.530441	
** correct Lat/Long if needed: Latitude: _____		Longitude: _____	
QtrQtr: NENW	Sec: 8	Twp: 2S	Range: 99W Meridian: 6 Sensitive Area? No

Facility Type: LOCATION Facility ID: 314907 API #: County Name: RIO BLANCO
Facility Name: SAGEBRUSH HILLS II UNIT A- Latitude: 39.896740 Longitude: -108.530613
62S99W 8NENW
** correct Lat/Long if needed: Latitude: Longitude:
QtrQtr: NENW Sec: 8 Twp: 2S Range: 99W Meridian: 6 Sensitive Area? No

SITE CONDITIONS

General soil type - USCS Classifications SW Most Sensitive Adjacent Land Use Rangeland-BLM

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

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) _____

DESCRIPTION OF IMPACT

Impacted?	Impacted Media	Extent of Impact	How Determined
Yes	SOILS	TBD	Site Investigation/Laboratory Analytical

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 reference RPN 25302 for all investigative decommissioning activities completed prior to the third quarter (Q3) 2024 associated with the facility decommissioning activities of production well (API# 103-07527), pit (Facility ID: 104876), and location (Facility ID: 314907). Please reference Document Numbers (DNs) 403112417 and 403198591 for details regarding the initial and subsequent subsurface investigative activities associated with the historic pit

Between July 16 and July 23, 2024, 10 investigative borings were advanced to total depths of 55 feet below ground surface (bgs). Three investigative borings were completed to better define the shallow chromium (VI) impacts associated with the former production equipment footprints and the decommissioned production well footprint. Boring location (SBWH) was advanced adjacent of the former wellhead, and boring locations (SB01 and SB02) were advanced within the footprint of the former production equipment. The remaining 7 investigative borings were completed associated with the historic pit location to further define the chromium (VI) and sodium adsorption ratio (SAR) impacts laterally and vertically. Boring location (SBC3) was advanced within the former pit footprint and six borings were advanced beyond the former pit footprint; one at each short end (SBE2 and SBW2) and two on each long end (SBNW2, SBNE2, SBSW2, and SBSE2). (Figure 2). The discrete surficial sediments/bedrock were field screened using a photo-ionization detector (PID) at 5-foot intervals to each boring terminus. Discrete surficial sediments/bedrock were submitted at every 10-foot depth interval and at the boring terminus (60 in total).

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

See the "Remediation Summary" section for these 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):

SITE INVESTIGATION REPORT

SAMPLE SUMMARY

Soil

Number of soil samples collected 60
Number of soil samples exceeding 915-1 0
Was the areal and vertical extent of soil contamination delineated? No
Approximate areal extent (square feet) 85068

NA / ND

-- Highest concentration of TPH (mg/kg) 130.8
-- Highest concentration of SAR 30.6
BTEX > 915-1 Yes
Vertical Extent > 915-1 (in feet) 20

Groundwater

Number of groundwater samples collected 0
Was extent of groundwater contaminated delineated? Yes
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?

See Document Numbers 403112417 and 403198591 for references to previously collected site-specific background and boring bedrock samples.

One site-specific background boring was advanced east of the Site in native undisturbed land. The boring was advanced to a total depth of 55 feet bgs and samples were submitted at every five foot interval. A total of 10 site-specific background samples were submitted for analysis of ECMC Table 915-1 metals, SAR, EC, pH, and boron (hot water soluble).

See the attached ROWC for more details.

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? No

SOURCE REMOVAL SUMMARY

Describe how source is to be removed.

The impacts are considered historical so a source cannot be identified.

REMEDICATION 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 plans to address all previously reported shallow hexavalent chromium exceedances greater than 1.0 mg/kg throughout the Site and the one reported TPH exceedance within the historic pit through source removal via mechanical excavation. Caerus plans to complete a series of isolated excavations to remove previously reported impacts. One large excavation will encompass the footprints of the former production equipment staged on the western side of the former pad location. Additional isolated excavations will be completed at the western and eastern ends within the former pit boundary and to the northeast and east areas within and beyond the former historic pit boundary. The size of each excavation extent will be determined by the soil/bedrock removed to clear each excavation location. Confirmation bedrock samples will be collected from the sidewalls and base of each excavation extent. The number of samples will be determined by the size of each excavation. Additionally, stockpile samples will be collected from the material removed from each of the excavations. Each stockpile sample (5-point composite) will be collected to be representative of 500 cubic yards or less of material. All confirmation samples will be submitted under previously approved reduced suite in DN 403198591 that includes the analysis of total petroleum hydrocarbons (TPH), chromium (VI), boron (hot water soluble), electrical conductivity (EC), and sodium adsorption ration (SAR). All soils determined to be impacted will be transported to Wray Gulch for disposal. Impacted material associated with the historic production pit will be submitted under approved Special Waste Identification Code (SWIC) A240918 and all impacted material associated with the facility decommissioning equipment will be submitted under SWIC 230905. The proposed excavation extents and shallow hexavalent chromium exceedances > 1 mg/kg along with the one TPH exceedance within the historic pit are shown on the attached Figure 7.

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 ECMC 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.

REMEDIATION PROGRESS UPDATE

PERIODIC REPORTING

Approved Reporting Schedule:

Quarterly Semi-Annually Annually Other Q3 Status Update to RPN 25302

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 Q3 Status Update to RPN 25302

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? 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 312

E&P waste (solid) description soil impacted by E&P waste

ECMC Disposal Facility ID #, if applicable: _____

Non-ECMC Disposal Facility: Wray Gulch Landfill, Rio Blanco County

Volume of E&P Waste (liquid) in barrels 11

E&P waste (liquid) description hydro-vac rinsate mixed with impacted soils

ECMC Disposal Facility ID #, if applicable: 426582

Non-ECMC Disposal Facility: Greenleaf Environmental Services

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.

All disturbances within the interim reclaim will be reclaimed to match existing grade. When the site is decommissioned at a later date, it will be reclaimed in accordance with 1000 Series regulation.

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. 06/24/2022

SITE INVESTIGATION DATES

Date of Initial Actions described in Site Investigation Plan (start date). 06/24/2022

Proposed site investigation commencement. 08/10/2022

Proposed completion of site investigation. 08/01/2023

REMEDIAL ACTION DATES

Proposed start date of Remediation. 09/26/2022

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 order to address hexavalent chromium exceedances, Caerus requests from the Director use of ECMC Table 915-1, Footnote 9 to use the analytical laboratory's reporting detection limit of 1.0 mg/kg as an alternative screening level. Although there are reported hexavalent chromium concentrations exceeding the ECMC Table 915-1 RSSLCs within the pit footprint, the production equipment footprint, and the decommissioned production wellhead as described in the attached ROWC, the majority of these concentrations are below the Reporting Detection Limit (RDL) of 1.0 mg/kg resulting in an analytical laboratory qualifying J-flag. Caerus is proposing to address all shallow surficial sediment/bedrock hexavalent chromium concentrations greater than 1.0 mg/kg via source removal.

Though there was one reported concentration greater than 1.0 mg/kg under this investigation associated with pit delineation boring 20240722-C08 299(SBE2)@53-55 (1.02 mg/kg), the sample was re-run for analysis one additional time as described in the attached ROWC. The re-reported re-run value was less than 1.0 mg/kg (0.890 mg/kg) and the mean value for the sample and re-run was also less than 1.0 mg/kg. Based on this evaluation, Caerus believes hexavalent chromium exceedances associated with this project within the pit footprint, the production equipment footprint, and the decommissioned production well footprint are defined. All hexavalent chromium exceedances greater than 1.0 mg/kg will be address via mechanical excavation as described in the "Remediation Summary" section of this form and the attached ROWC.

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: 01/28/2025

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: 02/06/2025

Remediation Project Number: 25302

COA Type**Description**

	In addition to the hexavalent chromium and TPH exceedances described under Remediation Summary, the Operator will address documented exceedances of Table 915-1 for SAR.
1 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**

403967687	INVESTIGATION/REMEDICATION WORKPLAN (SUPPLEMENTAL)
403968068	ANALYTICAL RESULTS
403968071	ANALYTICAL RESULTS
403968072	ANALYTICAL RESULTS
403968076	ANALYTICAL RESULTS
403968096	ANALYTICAL RESULTS
403968099	ANALYTICAL RESULTS
403968102	ANALYTICAL RESULTS
403968103	ANALYTICAL RESULTS
403968104	ANALYTICAL RESULTS
403968252	ANALYTICAL RESULTS
403981382	SITE INVESTIGATION PLAN
404084273	FORM 27-SUPPLEMENTAL-SUBMITTED

Total Attach: 13 Files

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

Environmental	Comply with outstanding COAs.	02/06/2025
---------------	-------------------------------	------------

Environmental	Based on the information provided, the Operator's request to use the laboratory RDL (1.0 mg/kg) as an alternative allowable concentration to the Table 915-1 concentration of 0.255 mg/kg for hexavalent chromium is conditionally approved, per Table 915-1, Footnote 9.	01/16/2025
---------------	---	------------

Total: 2 comment(s)