

**State of Colorado**  
**Energy & Carbon Management Commission**

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Document Number:  
404068888  
Receive Date:  
05/02/2025

Report taken by:  
John Heil

**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: <u>CAERUS PICEANCE LLC</u>	Operator No: <u>10456</u>	<b>Phone Numbers</b>
Address: <u>1001 17TH STREET #1600</u>		Phone: <u>(970) 640-6919</u>
City: <u>DENVER</u> State: <u>CO</u> Zip: <u>80202</u>		Mobile: <u>(970) 640-6919</u>
Contact Person: <u>Blair Rollins</u>	Email: <u>brollins@qb-energy.com</u>	

**PROJECT, PURPOSE & SITE INFORMATION**

**PROJECT INFORMATION**

Remediation Project #: 19200 Initial Form 27 Document #: 402614523

**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: \_\_\_\_\_

**SITE INFORMATION**

Yes  Multiple Facilities

Facility Type: <u>PIT</u>	Facility ID: <u>277362</u>	API #: _____	County Name: <u>GARFIELD</u>
Facility Name: <u>UNOCAL 16-11D</u>	Latitude: <u>39.526128</u>	Longitude: <u>-108.124417</u>	
** correct Lat/Long if needed: Latitude: _____		Longitude: _____	
QtrQtr: <u>SENE</u>	Sec: <u>17</u>	Twp: <u>6S</u>	Range: <u>96W</u> Meridian: <u>6</u> Sensitive Area? <u>No</u>

Facility Type: <u>LOCATION</u>	Facility ID: <u>335825</u>	API #: _____	County Name: <u>GARFIELD</u>
Facility Name: <u>N. Parachute MF H17 696</u>	Latitude: <u>39.527149</u>	Longitude: <u>-108.123650</u>	
** correct Lat/Long if needed: Latitude: <u>39.527343</u>		Longitude: <u>-108.123475</u>	
QtrQtr: <u>Lot 7</u>	Sec: <u>17</u>	Twp: <u>6S</u>	Range: <u>96W</u> Meridian: <u>6</u> Sensitive Area? <u>No</u>

## **SITE CONDITIONS**

General soil type - USCS Classifications SC

Most Sensitive Adjacent Land Use Riparian

Is domestic water well within 1/4 mile? Yes

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**

A domestic water well is located approximately 750 feet to the west and Parachute Creek is located approximately 920 feet to the west.

# 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 type="checkbox"/> Condensate                | <input type="checkbox"/> Pigging Waste               |  |
| <input type="checkbox"/> Drilling Fluids           | <input type="checkbox"/> Rig Wash                    |  |
| <input checked="" 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	160 feet x 47 feet x 15 feet bgs	Soil sampling and laboratory 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.

On June 3, 2011, a transducer failed during frac operations allowing pressure to spike. The water was sent to an emergency tank; however, the pump was not shut off quickly enough which resulted in the release of 15 barrels (bbls) of produced water. The release was confined to the Location's working surface and 10 bbls of water were recovered via hydro vacuum truck. The release was reported via Energy & Carbon Management Commission (ECMC) Form 19 Document 2214280. Form 27 Document 402614523 was later submitted to open Remediation Project 19200. Form 27 Document 403640417 approved a reduced analyte list of total petroleum hydrocarbons (TPH), electrical conductivity (EC), sodium adsorption ratio (SAR), pH, and hexavalent chromium and approved an alternative allowable limit for hexavalent chromium of 1.0 milligrams per kilogram (mg/kg). Form 27 Document 403937751 was later submitted and approved a reduced analyte suite consisting of TPH and pH, with an alternative allowable pH value of 8.83. See the attached Report of Work Completed (ROWC) for site investigation details to date.

## 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 ):

Based on the analytical results of the recent site investigation, both inorganic and organic constituents exceeding Table 915-1 Residential Soil Screening Levels (RSSLs) remain in the release area. However, all remaining constituents have been fully delineated. To address these impacts, QB Energy intends to excavate affected soil from an area approximately 75 feet long, 40 feet wide, and extending to a depth of 15 feet below ground surface (bgs), with the goal of removing remaining TPH exceedances and shallow elevated pH levels. Following excavation, confirmation soil samples will be collected from the base and sidewalls of the excavation as needed to verify the successful removal of impacted material. QB Energy will stage the excavated material on Location for additional assessment and characterization. Soil samples will be analyzed for the approved reduced analytical suite of TPH and pH. See the attached ROWC for details.

### Proposed Groundwater Sampling

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

Groundwater is not expected to be encountered. If groundwater is encountered, QB Energy will attempt to collect a representative groundwater sample for laboratory analysis.

### 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 7  
Number of soil samples exceeding 915-1 0  
Was the areal and vertical extent of soil contamination delineated? Yes  
Approximate areal extent (square feet) 5125

**NA / ND**

-- Highest concentration of TPH (mg/kg) 28.1  
NA Highest concentration of SAR \_\_\_\_\_  
BTEX > 915-1 No  
Vertical Extent > 915-1 (in feet) 31

**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?

In July 2021, four background soil samples were collected to characterize native levels of soil suitability for reclamation (SSR) constituents of concern at the Location. On August 27, 2024, five additional background soil samples were collected from comparable, nearby, non-impacted soil to establish native levels of inorganics at the Location. See the attached ROWC for 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? Yes

**SOURCE REMOVAL SUMMARY**

Describe how source is to be removed.

Based on the analytical results of recent site investigation, both inorganic and organic constituents exceeding Table 915-1 RSSLs remain in the release area. However, all remaining constituents have been fully delineated. To address these impacts, QB Energy intends to excavate affected soil from an area approximately 75 feet long, 40 feet wide, and extending to a depth of 15 feet bgs, with the goal of removing remaining TPH exceedances and shallow elevated pH levels. Following excavation, confirmation soil samples will be collected from the base and sidewalls of the excavation as needed to verify the successful removal of impacted material. QB Energy will stage the excavated soil on Location for additional assessment and characterization. Soil samples will be analyzed for the approved reduced analytical suite of TPH and pH. Once the excavation is complete, any remaining pH exceedances will be confined to depths greater than 10 feet bgs below the pad surface, where the impacts do not pose a significant risk. QB Energy intends to submit a reclamation plan in accordance with Rule 915.b for approval to leave the remaining pH exceedances in place. See the attached ROWC for details.

**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.

See the ROWC associated with Form 27 Document 403937751 for site investigation details prior to January 2025.

On January 13, 2025, drilling activities to delineate the extent of confirmed soil impacts were completed. Three soil borings (SB18 through SB20) were advanced to depths ranging from 21.5 to 26 feet bgs using a track-mounted solid stem drill rig. Seven soil samples were collected in total: three from SB18 to complete horizontal delineation to the east and two each from SB19 and SB20, which were collected to recharacterize and delineate pH levels associated with SB12 and SB06, respectively. Soil samples were evaluated through visual and olfactory observations and field-screened for volatile organic compounds (VOCs) using a photoionization detector (PID). Analytical results of delineation soil samples indicate that TPH and pH concentrations comply with Table 915-1 RSSLs or alternative allowable limits. See the attached ROWC for details.

### Soil Remediation Summary

In Situ

Ex Situ

\_\_\_\_\_ Bioremediation ( or enhanced bioremediation )

No \_\_\_\_\_ 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

Yes \_\_\_\_\_ Excavate and onsite remediation

\_\_\_\_\_ Other \_\_\_\_\_

No \_\_\_\_\_ Land Treatment

No \_\_\_\_\_ Bioremediation (or enhanced bioremediation)

No \_\_\_\_\_ Chemical oxidation

Yes Other \_\_\_\_\_ Onsite staging for assessment and characterization

### Groundwater Remediation Summary

No \_\_\_\_\_ Bioremediation ( or enhanced bioremediation )

No \_\_\_\_\_ Chemical oxidation

No \_\_\_\_\_ Air sparge / Soil vapor extraction

No \_\_\_\_\_ Natural Attenuation

No \_\_\_\_\_ 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.

Groundwater is not anticipated to be encountered as part of this investigation. In the event that groundwater is encountered, QB Energy will notify the ECMC and attempt to collect a representative sample for analysis of ECMC Table 915-1 standards.

# REMEDIATION 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 Q1 Q2 2025 Semi-Annual REM Status Update

## 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, QB Energy has general liability insurance in the amount of \$5M, and QB Energy has umbrella insurance, which sits over the general liability insurance in the amount of \$65M. The umbrella and general liability insurance covers property damage, bodily injury to third parties, and sudden or accidental pollution under a combined \$70M.

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:

No beneficial use.

Volume of E&P Waste (solid) in cubic yards 14

E&P waste (solid) description Hydrocarbon impacted soil

ECMC Disposal Facility ID #, if applicable: \_\_\_\_\_

Non-ECMC Disposal Facility: Greenleaf Environmental Services

Volume of E&P Waste (liquid) in barrels 0

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.

Once the excavation is complete, any remaining pH exceedances will be confined to depths greater than 10 feet bgs below the pad surface, where the impacts do not pose a significant risk. QB Energy intends to prepare a reclamation plan in accordance with Rule 915.b for approval to leave the remaining pH exceedances in place.

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 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. 06/03/2011

### SITE INVESTIGATION DATES

Date of Initial Actions described in Site Investigation Plan (start date). 06/03/2011

Proposed site investigation commencement. 07/28/2021

Proposed completion of site investigation. 09/30/2025

### REMEDIAL ACTION DATES

Proposed start date of Remediation. 07/28/2021

Proposed date of completion of Remediation. 12/31/2025

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

This form is being submitted to provide the ECMC with the Q1 Q2 semi-annual REM update of 2025. Based on the analytical results of the recent site investigation, values of TPH and pH exceeding Table 915-1 RSSLs remain in the release area. However, the exceedances have been fully delineated. To address these impacts, QB Energy intends to excavate affected soil from an area approximately 75 feet long, 40 feet wide, and extending to a depth of 15 feet bgs, with the goal of removing remaining TPH exceedances and shallow elevated pH levels. Following excavation, confirmation soil samples should be collected from the base and sidewalls of the excavation to verify the successful removal of impacted material. Excavated soil will be staged on Location for additional assessment.

Once the excavation is complete, any remaining pH exceedances will be confined to depths greater than 10 feet bgs below the pad surface, where the impacts do not pose a significant risk. QB Energy intends prepare a reclamation plan in accordance with Rule 915.b to allow the remaining pH exceedances to remain in place.

This form was originally submitted on 01/31/2025. Following the data integrity NTO issued on 04/08/2025, this form was returned to draft on 04/25/2025, and is now being resubmitted on 05/02/2025 with secured laboratory reports included and laboratory reports removed from the site investigation report..

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

Signed: Blair Rollins

Title: Environmental Specialist

Submit Date: 05/02/2025

Email: brollins@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: John Heil

Date: 07/08/2025

Remediation Project Number: 19200

### COA Type

### Description

<u>COA Type</u>	<u>Description</u>
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

<u>Att Doc Num</u>	<u>Name</u>
404068888	INVESTIGATION/REMEDATION WORKPLAN (SUPPLEMENTAL)
404183017	SITE INVESTIGATION REPORT
404187843	LABORATORY ANALYTICAL REPORT
404187845	LABORATORY ANALYTICAL REPORT
404187846	LABORATORY ANALYTICAL REPORT
404271126	FORM 27-SUPPLEMENTAL-SUBMITTED

Total Attach: 6 Files

### General Comments

### User Group

### Comment

### Comment Date

<u>User Group</u>	<u>Comment</u>	<u>Comment Date</u>
Environmental	ECMC has returned this form to Draft (RTD) due to the laboratory report not being secured. Laboratory reports shall be separated from the site investigation report and submitted as separate attachments.	04/25/2025

Total: 1 comment(s)