

State of Colorado  
Energy & Carbon Management Commission

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Document Number:  
403711249  
Receive Date:  
03/08/2024  
Report taken by:  
Taylor Robinson

Site Investigation and Remediation Workplan (Initial 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>CUB CREEK ENERGY LLC</u>	Operator No: <u>10542</u>	<b>Phone Numbers</b>
Address: <u>200 PLAZA DRIVE SUITE 100</u>		Phone: <u>(303) 881-1530</u>
City: <u>HIGHLANDS RANCH</u> State: <u>CO</u> Zip: <u>80129</u>		Mobile: <u>(303) 881-1530</u>
Contact Person: <u>Christian Combs</u>	Email: <u>christian.combs@1876resources.com</u>	

PROJECT, PURPOSE & SITE INFORMATION

PROJECT INFORMATION

Remediation Project #: 34478 Initial Form 27 Document #: 403711249

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

No  Multiple Facilities

Facility Type: <u>TANK BATTERY</u>	Facility ID: <u>481785</u>	API #: _____	County Name: <u>WELD</u>
Facility Name: <u>Knight Pad Tank Battery</u>	Latitude: <u>40.197030</u>	Longitude: <u>-105.041390</u>	
** correct Lat/Long if needed: Latitude: _____		Longitude: _____	
QtrQtr: <u>SWNE</u>	Sec: <u>30</u>	Twps: <u>3N</u>	Range: <u>68W</u> Meridian: <u>6</u> Sensitive Area? <u>Yes</u>

SITE CONDITIONS

General soil type - USCS Classifications SP Most Sensitive Adjacent Land Use Occupied building  
 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**

Five water well permits were identified within a 1/2-mile radius of the release; however, three of these five well permits were listed as expired and the other two were listed as application denied. The closest constructed water well (Permit #12985) is a stock well located approximately 2,735 feet northeast of the release. The nearest surface water body and wetland were identified to be Union Reservoir located approximately 2,115 feet south of the release. High priority habitat identified by Colorado Parks and Wildlife is located approximately 1,700 feet south of the release. The nearest occupied building is located approximately 600 feet west of the release. Site Location map attached as Figure 1.

**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
UNDETERMINED	SOILS	Unknown	Soil sample collection

**INITIAL ACTION SUMMARY**

Description of initial action or emergency response measures take to abate, investigate, and/or remediate impacts associated with E&P Waste.

At approximately 0850 (5/9/23) the lease operator on location noticed condensate daylighting at surface (see attached aerial for release location). Within 10 minutes the impacted flowline was identified and shut in. The spilled condensate was contained on location. On 5/10/23, approximately 1bbl of free condensate was removed via a hydrovac. An estimated 1 cubic yard of impacted soil was also excavated at that same time and transported to Pawnee Waste, LLC, for offsite disposal (manifest attached).

**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 ):

Soil sample to be collected at base (SS01) of former excavation (3'x3' to depth of 6 feet bgs, photo attached) and a soil sample will be collected from each side (SS02 & SS03) of the former small excavation at a depth of 3 feet to be submitted for full ECMC Table 915-1 constituents to determine if contaminated soil was successfully removed. Release point and proposed soil sample locations presented on attached Figure 2.

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

### NA / ND

\_\_\_\_\_ Highest concentration of TPH (mg/kg) \_\_\_\_\_  
\_\_\_\_\_ Highest concentration of SAR \_\_\_\_\_  
\_\_\_\_\_ BTEX > 915-1 \_\_\_\_\_  
\_\_\_\_\_ Vertical Extent > 915-1 (in feet) \_\_\_\_\_

### 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?

Was investigation derived waste (IDW) generated as part of this investigation?

Volume of solid waste (cubic yards) \_\_\_\_\_ 1      Volume of liquid waste (barrels) \_\_\_\_\_ 0

Is further site investigation required?

## REMEDIAL ACTION PLAN

### SOURCE REMOVAL SUMMARY

Describe how source is to be removed.

Approximately 1 bbl of free condensate and an estimated 1 cubic yard of impacted soil was removed via hydrovac and transported to Pawnee Waste, LLC, for offsite disposal (manifest attached). Soil samples to be collected to determine if all contaminated soil was successfully removed. Should any samples indicate a ECMC Table 915-1 exceedance, exceeding analytes will be horizontally/vertically delineated and contaminated soil will be excavated and transported offsite for disposal.

### 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.

Approximately 1 bbl of free condensate and an estimated 1 cubic yard of impacted soil was removed via hydrovac and transported to Pawnee Waste, LLC, for offsite disposal (manifest attached). Soil samples to be collected to determine if all contaminated soil was successfully removed. Should any samples indicate a ECMC Table 915-1 exceedance, exceeding analytes will be horizontally/vertically delineated and contaminated soil will be excavated and transported offsite for disposal.

### Soil Remediation Summary

In Situ       Ex Situ

Bioremediation ( or enhanced bioremediation )  
 Chemical oxidation  
 Air sparge / Soil vapor extraction  
 Natural Attenuation  
 Other \_\_\_\_\_

Yes Excavate and offsite disposal  
If Yes: Estimated Volume (Cubic Yards) \_\_\_\_\_ 1  
Name of Licensed Disposal Facility or COGCC Facility ID # \_\_\_\_\_  
 No Excavate and onsite remediation  
 Land Treatment  
 Bioremediation (or enhanced bioremediation)  
 Chemical oxidation  
 Other \_\_\_\_\_

**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.

NA

# 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 Propose soil assessment results

## 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.

Cub Creek (1876 Resources) has sufficient insurance and bonding to fully address the anticipated costs of Remediation, including the remaining estimated costs for this project. Cub Creek (1876 Resources) has general liability insurance and financial assurance in-compliance with ECMC rules. The cost for remediation is a preliminary estimate only, costs may change upwards or downward based on site-specific information. Cub Creek (1876 Resources) makes no representation or guarantees as to the accuracy of the preliminary estimate.

Operator anticipates the remaining cost for this project to be: \$ 5000

## 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:

NA

Volume of E&P Waste (solid) in cubic yards 1

E&P waste (solid) description Contaminated soil

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

Non-ECMC Disposal Facility: Pawnee Waste, LLC

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

E&P waste (liquid) description \_\_\_\_\_

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

Non-ECMC Disposal Facility: \_\_\_\_\_

# 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.

Small excavation has been backfilled. Release occurred entirely within well production pad extent. Seeding not required. If soil sampling identifies ECMC Table 915-1 exceedances, impacted soil to be excavated and transported offsite for disposal. Reclamation date to be updated at that time (if necessary). Once impacted soil removed, excavation would be backfilled with clean fill and returned to pad grade.

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? No

If YES, does the seed mix comply with local soil conservation district recommendations? \_\_\_\_\_

Did the local soil conservation district provide the seed mix? No

## 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. 05/10/2023

Actual Spill or Release date, or date of discovery. 05/09/2023

### SITE INVESTIGATION DATES

Date of Initial Actions described in Site Investigation Plan (start date). 05/09/2023

Proposed site investigation commencement. 04/15/2024

Proposed completion of site investigation. 04/30/2024

### 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:

Soil sampling to be completed 4/15/2024, laboratory analytical results to be received by 4/30/2024. Site investigation and remediation completion dates to be update at that time (if soil sampling identifies ECMC Table 915-1 exceedances).

**OPERATOR COMMENT**

CPW correspondence attached in response to COA attached to approved Form 19 (Doc #403410984). Upon approval of this Form 27, a Form 19 will be submitted requesting closure of Spill/Release Point ID #484607 as work will proceed under the approved Remediation Project # provided via Form 27 submittals.

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

Signed: Michael A. Wicker, P.G.

Title: Project Manager

Submit Date: 03/08/2024

Email: mwicker@cdhconsult.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: Taylor Robinson

Date: 03/15/2024

Remediation Project Number: 34478

**COA Type****Description**

	Operator shall obtain background samples from a minimum of three (3) separate locations as an initial characterization. Background sampling locations should be sufficiently away from the impacted area to reflect conditions not impacted by oil and gas activity, and should be obtained from similar depths and soil horizons or lithologic materials for comparison to confirmation soil samples.
	Operator shall collect discrete soil samples from the base and all four sidewalls as described in the Rule 915.e.(2) Guidance Document. Operator will analyze soil samples for TPH (C6-C36), Table 915-1 Organic Compounds in Soil, including PAHs, Table 915-1 metals, and Table 915-1 Soil Suitability for Reclamation (Electrical conductivity, Sodium adsorption ratio, and pH by saturated paste method, and boron (hot water soluble)).
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**

403711249	INVESTIGATION/REMEDATION WORKPLAN (INITIAL)
403711734	AERIAL IMAGE
403711747	MAP
403711748	SITE MAP
403711750	DISPOSAL MANIFESTS
403711751	PHOTO DOCUMENTATION
403713096	CORRESPONDENCE
403721266	FORM 27-INITIAL-SUBMITTED

Total Attach: 8 Files

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

		Stamp Upon Approval
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Total: 0 comment(s)