

State of Colorado
Energy & Carbon Management Commission

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Receive Date:

Report taken by:

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: FULCRUM ENERGY OPERATING LLC	Operator No: 10805	Phone Numbers
Address: 240 SAINT PAUL STREET SUITE 502		Phone: (970) 896-5665
City: DENVER State: CO Zip: 80206		Mobile: ()
Contact Person: Rikki Ross	Email: rikki.ross@fulcrumeo.com	

PROJECT, PURPOSE & SITE INFORMATION

PROJECT INFORMATION

Remediation Project #: 28018 Initial Form 27 Document #: 403332543

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: TANK BATTERY	Facility ID: 436007	API #: _____	County Name: JACKSON
Facility Name: Grizzly 3-32H	Latitude: 40.627697	Longitude: -106.397825	
** correct Lat/Long if needed: Latitude: _____		Longitude: _____	
QtrQtr: NENW	Sec: 32	Twp: 8N	Range: 80W Meridian: 6 Sensitive Area? No

SITE CONDITIONS

General soil type - USCS Classifications SM Most Sensitive Adjacent Land Use Agricultural crop land

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? Yes

Other Potential Receptors within 1/4 mile

Grizzly Creek is within ~750' of the spill area across CO State HWY 14 to the west.

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	Within containment	Visual observation

INITIAL ACTION SUMMARY

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

A Form 19 Initial Report was submitted on 1/25/2023. After the collection system was shut down, a hydro-vac truck was dispatched immediately upon discovery and produced water was removed from containment to the extent that freezing conditions would allow. All of the release was captured within lined secondary containment and has since been fully removed.

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):

The extent of the impacted area has been delineated using a handheld auger, electrical conductivity (EC) soil probe and photoionization detector (PID). Focus has been given to locations where the liner indicated compromised integrity and visible staining was observed. Soil samples have been collected as needed to characterize and/or demonstrate confirmation of impacts. All soil samples have been analyzed for ECMC Table 915-1 parameters to determine regulatory compliance. Two (2) background samples were also collected in the adjacent undisturbed landscape to the same approximate soil depth as site samples.

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 47

Number of soil samples exceeding 915-1 15

Was the areal and vertical extent of soil contamination delineated? Yes

Approximate areal extent (square feet) 2520

NA / ND

-- Highest concentration of TPH (mg/kg) 577.2
4

-- Highest concentration of SAR 30.5

BTEX > 915-1 No

Vertical Extent > 915-1 (in feet) 10

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?

Two background samples were collected adjacent to the location at various depths to evaluate existing soil conditions in the adjacent native soil. SS_BG_01 was collected to a depth of 2' below ground surface (bgs) on 3/9/2023 to the east of location. SS_BG_02 was collected on 9/5/2023 at 3' bgs west of location and across State HWY 14. Both samples were analyzed for soil suitability parameters and SS_BG_02 indicated an exceedance in Arsenic.

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?

Soil sampling was conducted beneath the liner to a maximum depth of 24" on 3/9/2023 after the release was initially discovered. Samples were analyzed for Table 915-1 parameters and were found to be above the regulatory limits for EC, Boron, SAR and TPH. The tank battery and liner were then removed in order to begin excavation activities. The tank battery was not replaced as production from the pad was piped from the location through existing nearby infrastructure. Upon equipment removal the site was delineated vertically for impacts beneath each of the historic tanks. Soil samples were collected and analyzed on 9/5/2023 for Table 915-1 parameters and were above regulatory limits at (3) different locations for SAR and Boron, at a depth of 3'. Samples SS_G3-32H_02, SS_G3-32H_03 and SS_G3-32H_06 were sampled again on 10/11/2023 and 11/02/2023 after further excavation until all samples were determined to be below Table 915-1 regulatory limits, at a maximum depth of 10'. Horizontal delineation began on 10/11/2023 along the perimeter of the historic tank battery berm. Soil samples were collected at approximately 20' spacing. Three (3) sidewall samples failed for Table 915-1 constituents at a maximum depth of 3'. Further excavation to delineate impacts was conducted on 11/2/2023 and confirmation samples demonstrate that impacts were removed. All excavated material from the pit was staged on site, on top of a liner until it was hauled to an approved facility for disposal.

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.

Material has been excavated and hauled via trucks to the City of Cheyenne Landfill, WY. Waste manifests are provided in this Supplemental Report

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.

Remediation activities involved removal of site equipment, excavation of impacted soils and transport to an approved disposal facility. Confirmation sampling was conducted on 9/5/2023, 10/11/2023 and 11/02/2023 to confirm removal of impacts. Excavated areas were be backfilled with clean soil. Infrastructure will not be replaced

Soil Remediation Summary

In Situ

Ex Situ

_____ Bioremediation (or enhanced bioremediation)

Yes _____ Excavate and offsite disposal

_____ Chemical oxidation

If Yes: Estimated Volume (Cubic Yards) _____ 30

_____ 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.

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 _____

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.

Fulcrum has a general liability insurance coverage of \$2,000,000.

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

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:

Not applicable

Volume of E&P Waste (solid) in cubic yards _____ 400

E&P waste (solid) description Contaminated soil

COGCC Disposal Facility ID #, if applicable: _____

Non-COGCC Disposal Facility: Twin Enviro, Milner CO and City of Cheyenne WY Landfill

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

E&P waste (liquid) description _____

COGCC Disposal Facility ID #, if applicable: _____

Non-COGCC Disposal Facility: _____

REMEDIATION COMPLETION REPORT

REMEDIATION COMPLETION SUMMARY

Is this a Final Closure Request for this Remediation Project? Yes

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? Yes

Does the previous reply indicate consideration of background concentrations? Yes

Does Groundwater meet Table 915-1 standards? Yes

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.

The facility is presently in use and reclamation activities are not warranted at this time onsite.

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. 01/25/2023

Actual Spill or Release date, or date of discovery. 01/24/2023

SITE INVESTIGATION DATES

Date of Initial Actions described in Site Investigation Plan (start date). 01/24/2023

Proposed site investigation commencement. 03/08/2023

Proposed completion of site investigation. 08/31/2023

REMEDIAL ACTION DATES

Proposed start date of Remediation. 08/01/2023

Proposed date of completion of Remediation. 11/02/2023

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:

Due to the low severity of the spill which occurred in lined secondary containment and the seasonal conditions of the location subsurface resulting from adjacent irrigation activities, Fulcrum is requesting that no site investigation or remediation occur until later summer when groundwater levels return to basal conditions and do not impose a likelihood to cause potential harm to the adjacent environment.

OPERATOR COMMENT

Fulcrum Energy Operating respectfully requests closure of Remediation Project #28018.

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

Signed: Joel Mason

Title: Agent

Submit Date: _____

Email: joel.mason@absarokasolutions.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: _____

Date: _____

Remediation Project Number: 28018

COA Type**Description**

0 COA	

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**

403625955	MAP
403625956	OTHER
403625957	ANALYTICAL RESULTS
403625958	ANALYTICAL RESULTS
403626370	DISPOSAL MANIFESTS

Total Attach: 5 Files

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

		Stamp Upon Approval
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Total: 0 comment(s)